sky130_fd_sc_hs_ss_1.60v_150C.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_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00296	0.00286	0.00297	0.00309	0.00309	0.18729
sky130_fd_sc_hs__a2111oi_2	0.00564	0.00547	0.00463	0.00464	0.00465	0.34542
sky130_fd_sc_hs__a2111oi_4	0.01120	0.01097	0.00907	0.00893	0.00912	0.64963

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.47272	1.14700
sky130_fd_sc_hs__a2111oi_2	0.00000	0.83062	2.26049
sky130_fd_sc_hs__a2111oi_4	0.00000	1.51502	4.16059

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)	0.32181	1.36534	8.71293
	A2->Y (FR)	0.37656	1.44024	8.87266
	B1->Y (FR)	0.34928	1.40697	9.31867
	C1->Y (FR)	0.29872	1.38191	9.75275
	D1->Y (FR)	0.21952	1.32218	9.85841
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.29122	1.16213	8.60828
	A2->Y (FR)	0.35916	1.23819	8.73182
	B1->Y (FR)	0.31821	1.19716	9.07064
	C1->Y (FR)	0.26430	1.17348	9.60117
	D1->Y (FR)	0.15761	1.07858	9.67461
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.27604	0.98924	8.43071
	A2->Y (FR)	0.34806	1.07201	8.61157
	B1->Y (FR)	0.30812	1.03773	9.00865
	C1->Y (FR)	0.24867	1.00905	9.54529
	D1->Y (FR)	0.14502	0.92785	9.66888

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.06113	0.54694	4.18588
	A2->Y (RF)	0.06744	0.50084	3.72805
	B1->Y (RF)	0.04085	0.43091	3.37014
	C1->Y (RF)	0.04128	0.41927	3.34561
	D1->Y (RF)	0.03510	0.40286	3.31835
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.05164	0.49836	4.18641
	A2->Y (RF)	0.06112	0.45509	3.71268
	B1->Y (RF)	0.06244	0.54333	4.74186
	C1->Y (RF)	0.05935	0.52358	4.70240
	D1->Y (RF)	0.04317	0.49304	4.66008
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.05132	0.45820	4.21362
	A2->Y (RF)	0.05999	0.40647	3.61969
	B1->Y (RF)	0.05569	0.47872	4.55421
	C1->Y (RF)	0.05370	0.45652	4.51411
	D1->Y (RF)	0.03863	0.42768	4.52057

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00066	0.00047	0.00375
	A1	0.00837	0.00815	0.01147
	A2	0.00108	0.00096	0.00426
	A2	0.00972	0.00960	0.01289
	B1	0.00056	0.00043	0.00458
	B1	0.00861	0.00846	0.01228
	C1	0.00055	0.00046	0.00481
	C1	0.00764	0.00751	0.01156
	D1	0.00047	0.00077	0.00677
	D1	0.00664	0.00687	0.01250
sky130_fd_sc_hs__a2111oi_2	A1	0.00054	0.00020	0.00666
	A1	0.01517	0.01486	0.02130
	A2	0.00204	0.00173	0.00822
	A2	0.01845	0.01816	0.02464
	B1	0.00115	0.00101	0.00576
	B1	0.01585	0.01570	0.02000
	C1	0.00124	0.00115	0.00621
	C1	0.01380	0.01367	0.01837
	D1	0.00110	0.00154	0.00914
	D1	0.01161	0.01184	0.01914

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00023	-0.00044	0.01262
	A1	0.02960	0.02892	0.04197
	A2	0.00297	0.00238	0.01544
	A2	0.03595	0.03528	0.04837
	B1	0.00162	0.00135	0.01100
	B1	0.03072	0.03037	0.03905
	C1	0.00170	0.00157	0.01191
	C1	0.02651	0.02630	0.03581
	D1	0.00138	0.00256	0.01736
	D1	0.02211	0.02298	0.03705

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01128	0.01119	0.01502
	A1	0.00370	0.00358	0.00744
	A2	0.01221	0.01203	0.01549
	A2	0.00367	0.00348	0.00696
	B1	0.00853	0.00853	0.01306
	B1	0.00202	0.00202	0.00657
	C1	0.00744	0.00761	0.01178
	C1	0.00098	0.00112	0.00554
	D1	0.00459	0.00495	0.00924
	D1	-0.00005	0.00028	0.00457

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02137	0.02104	0.02863
	A1	0.00700	0.00666	0.01428
	A2	0.02314	0.02276	0.02950
	A2	0.00692	0.00650	0.01331
	B1	0.01682	0.01676	0.02215
	B1	0.00375	0.00358	0.00942
	C1	0.01266	0.01281	0.01817
	C1	0.00176	0.00176	0.00746
	D1	0.00766	0.00823	0.01370
	D1	-0.00121	-0.00069	0.00491
sky130_fd_sc_hs__a2111oi_4	**A1**	0.04176	0.04121	0.05637
	A1	0.01289	0.01228	0.02743
	A2	0.04538	0.04456	0.05832
	A2	0.01280	0.01200	0.02586
	B1	0.03299	0.03275	0.04392
	B1	0.00692	0.00653	0.01843
	C1	0.02461	0.02481	0.03577
	C1	0.00284	0.00282	0.01448
	D1	0.01520	0.01649	0.02726
	D1	-0.00251	-0.00136	0.00991

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)**	0.00130	0.00129	0.00129
	(A2 * B1 * D1 * !Y)	-0.00177	-0.00181	-0.00181
	(A2 * B1 * C1 * !D1 * !Y)	0.00130	0.00129	0.00129
	(A2 * B1 * C1 * !D1 * !Y)	-0.00177	-0.00181	-0.00181
	(A2 * B1 * !C1 * !D1 * !Y)	0.00135	0.00130	0.00130
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00181	-0.00182
	(A2 * !B1 * C1 * D1 * !Y)	0.00130	0.00131	0.00129
	(A2 * !B1 * C1 * D1 * !Y)	-0.00165	-0.00176	-0.00175
	(A2 * !B1 * C1 * !D1 * !Y)	0.00133	0.00131	0.00130
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00162	-0.00177	-0.00176
	(A2 * !B1 * !C1 * D1 * !Y)	0.00136	0.00132	0.00130
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00156	-0.00174	-0.00173
	(!A2 * B1 * D1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * B1 * D1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * B1 * C1 * !D1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00124	0.00124	0.00124
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00186	-0.00185	-0.00185
	(!A2 * !B1 * C1 * D1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00124	0.00124	0.00124
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00048	0.00048	0.00045
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00206	-0.00207	-0.00211

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00257	0.00259	0.00258
	(A2 * B1 * D1 * !Y)	-0.00351	-0.00363	-0.00361
	(A2 * B1 * C1 * !D1 * !Y)	0.00257	0.00259	0.00258
	(A2 * B1 * C1 * !D1 * !Y)	-0.00350	-0.00363	-0.00361
	(A2 * B1 * !C1 * !D1 * !Y)	0.00266	0.00260	0.00259
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00336	-0.00362	-0.00362
	(A2 * !B1 * C1 * D1 * !Y)	0.00257	0.00259	0.00258
	(A2 * !B1 * C1 * D1 * !Y)	-0.00325	-0.00351	-0.00347
	(A2 * !B1 * C1 * !D1 * !Y)	0.00262	0.00260	0.00259
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00321	-0.00350	-0.00349
	(A2 * !B1 * !C1 * D1 * !Y)	0.00270	0.00264	0.00259
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00310	-0.00347	-0.00344
	(!A2 * B1 * D1 * !Y)	0.00245	0.00248	0.00247
	(!A2 * B1 * D1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * B1 * C1 * !D1 * !Y)	0.00247	0.00247	0.00247
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00371	-0.00370	-0.00370
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00247	0.00249	0.00247
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00371	-0.00371	-0.00369
	(!A2 * !B1 * C1 * D1 * !Y)	0.00245	0.00248	0.00247
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00370	-0.00371	-0.00369
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00247	0.00247	0.00247
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00369	-0.00369	-0.00369
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00097	0.00098	0.00091
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00408	-0.00412	-0.00422

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00516	0.00520	0.00517
	(A2 * B1 * D1 * !Y)	-0.00704	-0.00728	-0.00722
	(A2 * B1 * C1 * !D1 * !Y)	0.00516	0.00520	0.00518
	(A2 * B1 * C1 * !D1 * !Y)	-0.00702	-0.00727	-0.00722
	(A2 * B1 * !C1 * !D1 * !Y)	0.00536	0.00521	0.00519
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00671	-0.00725	-0.00726
	(A2 * !B1 * C1 * D1 * !Y)	0.00517	0.00520	0.00518
	(A2 * !B1 * C1 * D1 * !Y)	-0.00654	-0.00695	-0.00696
	(A2 * !B1 * C1 * !D1 * !Y)	0.00528	0.00522	0.00519
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00645	-0.00701	-0.00700
	(A2 * !B1 * !C1 * D1 * !Y)	0.00544	0.00530	0.00520
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00622	-0.00697	-0.00691
	(!A2 * B1 * D1 * !Y)	0.00492	0.00497	0.00494
	(!A2 * B1 * D1 * !Y)	-0.00741	-0.00745	-0.00742
	(!A2 * B1 * C1 * !D1 * !Y)	0.00492	0.00497	0.00494
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00740	-0.00745	-0.00742
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00491	0.00498	0.00495
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00737	-0.00744	-0.00741
	(!A2 * !B1 * C1 * D1 * !Y)	0.00492	0.00497	0.00494
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00741	-0.00746	-0.00742
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00491	0.00497	0.00494
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00738	-0.00744	-0.00741
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00492	0.00497	0.00495
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00736	-0.00743	-0.00740
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00186	0.00188	0.00175
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00825	-0.00832	-0.00851

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)**	-0.00129	-0.00129	-0.00129
	(A2 * B1 * D1 * !Y)	0.00182	0.00181	0.00181
	(A2 * B1 * C1 * !D1 * !Y)	-0.00129	-0.00129	-0.00129
	(A2 * B1 * C1 * !D1 * !Y)	0.00181	0.00181	0.00181
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !C1 * !D1 * !Y)	0.00181	0.00182	0.00182
	(A2 * !B1 * C1 * D1 * !Y)	-0.00128	-0.00129	-0.00129
	(A2 * !B1 * C1 * D1 * !Y)	0.00174	0.00176	0.00175
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * C1 * !D1 * !Y)	0.00175	0.00177	0.00176
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * !C1 * D1 * !Y)	0.00172	0.00174	0.00173
	(!A2 * B1 * D1 * !Y)	-0.00122	-0.00124	-0.00123
	(!A2 * B1 * D1 * !Y)	0.00186	0.00189	0.00186
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * C1 * !D1 * !Y)	0.00187	0.00189	0.00186
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00122	-0.00124	-0.00124
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00187	0.00190	0.00187
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00122	-0.00124	-0.00123
	(!A2 * !B1 * C1 * D1 * !Y)	0.00186	0.00189	0.00186
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00122	-0.00124	-0.00124
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00187	0.00186	0.00187
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00122	-0.00123	-0.00124
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00188	0.00187	0.00187
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00212	0.00214	0.00213

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00257	-0.00258	-0.00257
	(A2 * B1 * D1 * !Y)	0.00362	0.00363	0.00361
	(A2 * B1 * C1 * !D1 * !Y)	-0.00257	-0.00258	-0.00257
	(A2 * B1 * C1 * !D1 * !Y)	0.00362	0.00363	0.00361
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00257	-0.00257	-0.00256
	(A2 * B1 * !C1 * !D1 * !Y)	0.00363	0.00364	0.00362
	(A2 * !B1 * C1 * D1 * !Y)	-0.00256	-0.00258	-0.00257
	(A2 * !B1 * C1 * D1 * !Y)	0.00347	0.00351	0.00347
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00256	-0.00257	-0.00256
	(A2 * !B1 * C1 * !D1 * !Y)	0.00348	0.00350	0.00349
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00255	-0.00257	-0.00254
	(A2 * !B1 * !C1 * D1 * !Y)	0.00343	0.00347	0.00344
	(!A2 * B1 * D1 * !Y)	-0.00244	-0.00248	-0.00247
	(!A2 * B1 * D1 * !Y)	0.00373	0.00372	0.00372
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00244	-0.00247	-0.00247
	(!A2 * B1 * C1 * !D1 * !Y)	0.00373	0.00373	0.00372
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00242	-0.00247	-0.00247
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00372	0.00373	0.00372
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00244	-0.00248	-0.00247
	(!A2 * !B1 * C1 * D1 * !Y)	0.00373	0.00372	0.00372
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00242	-0.00247	-0.00247
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00372	0.00373	0.00372
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00242	-0.00247	-0.00247
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00372	0.00373	0.00373
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00085	-0.00086	-0.00085
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00425	0.00426	0.00425

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00516	-0.00518	-0.00516
	(A2 * B1 * D1 * !Y)	0.00725	0.00728	0.00722
	(A2 * B1 * C1 * !D1 * !Y)	-0.00516	-0.00518	-0.00515
	(A2 * B1 * C1 * !D1 * !Y)	0.00725	0.00727	0.00722
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00516	-0.00517	-0.00515
	(A2 * B1 * !C1 * !D1 * !Y)	0.00728	0.00731	0.00726
	(A2 * !B1 * C1 * D1 * !Y)	-0.00516	-0.00515	-0.00516
	(A2 * !B1 * C1 * D1 * !Y)	0.00697	0.00695	0.00696
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00514	-0.00515	-0.00514
	(A2 * !B1 * C1 * !D1 * !Y)	0.00699	0.00701	0.00700
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00512	-0.00516	-0.00511
	(A2 * !B1 * !C1 * D1 * !Y)	0.00689	0.00697	0.00691
	(!A2 * B1 * D1 * !Y)	-0.00490	-0.00497	-0.00494
	(!A2 * B1 * D1 * !Y)	0.00747	0.00747	0.00745
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00490	-0.00497	-0.00494
	(!A2 * B1 * C1 * !D1 * !Y)	0.00747	0.00748	0.00745
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00487	-0.00497	-0.00495
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00746	0.00750	0.00747
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00489	-0.00497	-0.00494
	(!A2 * !B1 * C1 * D1 * !Y)	0.00747	0.00748	0.00745
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00486	-0.00497	-0.00494
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00745	0.00750	0.00746
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00485	-0.00496	-0.00495
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00746	0.00751	0.00747
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00166	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00858	0.00860	0.00858

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)**	0.00136	0.00137	0.00136
	(A1 * B1 * D1 * !Y)	-0.00177	-0.00182	-0.00182
	(A1 * B1 * C1 * !D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * B1 * C1 * !D1 * !Y)	-0.00177	-0.00182	-0.00182
	(A1 * B1 * !C1 * !D1 * !Y)	0.00142	0.00137	0.00137
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00182	-0.00183
	(A1 * !B1 * C1 * D1 * !Y)	0.00137	0.00138	0.00136
	(A1 * !B1 * C1 * D1 * !Y)	-0.00165	-0.00177	-0.00176
	(A1 * !B1 * C1 * !D1 * !Y)	0.00140	0.00139	0.00137
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00163	-0.00178	-0.00177
	(A1 * !B1 * !C1 * D1 * !Y)	0.00144	0.00139	0.00137
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00156	-0.00175	-0.00174
	(!A1 * B1 * !Y)	0.00131	0.00131	0.00131
	(!A1 * B1 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * !B1 * C1 * !Y)	0.00131	0.00132	0.00131
	(!A1 * !B1 * C1 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00132	0.00132	0.00131
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00186	-0.00186	-0.00185

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00259	0.00260	0.00259
	(A1 * B1 * D1 * !Y)	-0.00350	-0.00362	-0.00360
	(A1 * B1 * C1 * !D1 * !Y)	0.00259	0.00261	0.00259
	(A1 * B1 * C1 * !D1 * !Y)	-0.00349	-0.00362	-0.00360
	(A1 * B1 * !C1 * !D1 * !Y)	0.00267	0.00261	0.00260
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00336	-0.00361	-0.00361
	(A1 * !B1 * C1 * D1 * !Y)	0.00259	0.00260	0.00259
	(A1 * !B1 * C1 * D1 * !Y)	-0.00325	-0.00349	-0.00347
	(A1 * !B1 * C1 * !D1 * !Y)	0.00264	0.00262	0.00260
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00322	-0.00351	-0.00348
	(A1 * !B1 * !C1 * D1 * !Y)	0.00272	0.00265	0.00260
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00311	-0.00346	-0.00344
	(!A1 * B1 * !Y)	0.00247	0.00250	0.00248
	(!A1 * B1 * !Y)	-0.00368	-0.00371	-0.00369
	(!A1 * !B1 * C1 * !Y)	0.00247	0.00250	0.00248
	(!A1 * !B1 * C1 * !Y)	-0.00368	-0.00371	-0.00369
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00248	0.00251	0.00249
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00367	-0.00369	-0.00368
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00249	0.00252	0.00250
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00367	-0.00369	-0.00367

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00520	0.00523	0.00521
	(A1 * B1 * D1 * !Y)	-0.00703	-0.00724	-0.00721
	(A1 * B1 * C1 * !D1 * !Y)	0.00521	0.00523	0.00521
	(A1 * B1 * C1 * !D1 * !Y)	-0.00703	-0.00724	-0.00721
	(A1 * B1 * !C1 * !D1 * !Y)	0.00541	0.00525	0.00523
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00671	-0.00724	-0.00725
	(A1 * !B1 * C1 * D1 * !Y)	0.00522	0.00523	0.00521
	(A1 * !B1 * C1 * D1 * !Y)	-0.00655	-0.00698	-0.00696
	(A1 * !B1 * C1 * !D1 * !Y)	0.00532	0.00525	0.00522
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00646	-0.00705	-0.00699
	(A1 * !B1 * !C1 * D1 * !Y)	0.00548	0.00533	0.00523
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00624	-0.00694	-0.00691
	(!A1 * B1 * !Y)	0.00495	0.00499	0.00496
	(!A1 * B1 * !Y)	-0.00740	-0.00744	-0.00741
	(!A1 * !B1 * C1 * !Y)	0.00497	0.00501	0.00496
	(!A1 * !B1 * C1 * !Y)	-0.00742	-0.00744	-0.00741
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00499	0.00501	0.00499
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00740	-0.00741	-0.00739
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00501	0.00506	0.00501
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00739	-0.00742	-0.00737

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)**	-0.00136	-0.00136	-0.00136
	(A1 * B1 * D1 * !Y)	0.00182	0.00182	0.00182
	(A1 * B1 * C1 * !D1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * C1 * !D1 * !Y)	0.00182	0.00182	0.00182
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * !C1 * !D1 * !Y)	0.00182	0.00183	0.00183
	(A1 * !B1 * C1 * D1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * C1 * D1 * !Y)	0.00175	0.00177	0.00176
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !B1 * C1 * !D1 * !Y)	0.00176	0.00178	0.00177
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * !B1 * !C1 * D1 * !Y)	0.00173	0.00175	0.00174
	(!A1 * B1 * !Y)	-0.00130	-0.00131	-0.00131
	(!A1 * B1 * !Y)	0.00187	0.00190	0.00187
	(!A1 * !B1 * C1 * !Y)	-0.00130	-0.00132	-0.00131
	(!A1 * !B1 * C1 * !Y)	0.00188	0.00189	0.00187
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00130	-0.00132	-0.00131
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00189	0.00190	0.00188
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00198	0.00193	0.00188

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00258	-0.00259	-0.00258
	(A1 * B1 * D1 * !Y)	0.00360	0.00362	0.00360
	(A1 * B1 * C1 * !D1 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * B1 * C1 * !D1 * !Y)	0.00360	0.00362	0.00360
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * B1 * !C1 * !D1 * !Y)	0.00362	0.00363	0.00361
	(A1 * !B1 * C1 * D1 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * !B1 * C1 * D1 * !Y)	0.00346	0.00349	0.00347
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00257	-0.00259	-0.00257
	(A1 * !B1 * C1 * !D1 * !Y)	0.00348	0.00351	0.00348
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00257	-0.00258	-0.00256
	(A1 * !B1 * !C1 * D1 * !Y)	0.00343	0.00346	0.00344
	(!A1 * B1 * !Y)	-0.00245	-0.00250	-0.00248
	(!A1 * B1 * !Y)	0.00369	0.00374	0.00370
	(!A1 * !B1 * C1 * !Y)	-0.00245	-0.00250	-0.00248
	(!A1 * !B1 * C1 * !Y)	0.00369	0.00374	0.00370
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00244	-0.00250	-0.00249
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00370	0.00375	0.00371
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00228	-0.00247	-0.00249
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00387	0.00378	0.00371

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00519	-0.00520	-0.00519
	(A1 * B1 * D1 * !Y)	0.00721	0.00724	0.00721
	(A1 * B1 * C1 * !D1 * !Y)	-0.00519	-0.00520	-0.00519
	(A1 * B1 * C1 * !D1 * !Y)	0.00721	0.00724	0.00721
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00519	-0.00519	-0.00518
	(A1 * B1 * !C1 * !D1 * !Y)	0.00727	0.00728	0.00725
	(A1 * !B1 * C1 * D1 * !Y)	-0.00519	-0.00520	-0.00519
	(A1 * !B1 * C1 * D1 * !Y)	0.00696	0.00698	0.00696
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00518	-0.00520	-0.00517
	(A1 * !B1 * C1 * !D1 * !Y)	0.00699	0.00705	0.00699
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00516	-0.00518	-0.00514
	(A1 * !B1 * !C1 * D1 * !Y)	0.00689	0.00694	0.00691
	(!A1 * B1 * !Y)	-0.00491	-0.00499	-0.00496
	(!A1 * B1 * !Y)	0.00741	0.00751	0.00744
	(!A1 * !B1 * C1 * !Y)	-0.00491	-0.00501	-0.00496
	(!A1 * !B1 * C1 * !Y)	0.00742	0.00751	0.00744
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00489	-0.00501	-0.00499
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00744	0.00753	0.00746
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00455	-0.00494	-0.00500
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00781	0.00760	0.00746

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)**	0.00144	0.00142	0.00138
	(A1 * A2 * C1 * D1 * !Y)	-0.00129	-0.00131	-0.00130
	(A1 * A2 * C1 * !D1 * !Y)	0.00153	0.00148	0.00138
	(A1 * A2 * C1 * !D1 * !Y)	-0.00127	-0.00130	-0.00128
	(A1 * A2 * !C1 * D1 * !Y)	0.00146	0.00153	0.00142
	(A1 * A2 * !C1 * D1 * !Y)	-0.00122	-0.00121	-0.00123
	(A1 * A2 * !C1 * !D1 * !Y)	0.00138	0.00139	0.00135
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * C1 * D1 * !Y)	0.00139	0.00134	0.00133
	(A1 * !A2 * C1 * D1 * !Y)	-0.00172	-0.00180	-0.00179
	(A1 * !A2 * C1 * !D1 * !Y)	0.00164	0.00136	0.00135
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00149	-0.00178	-0.00179
	(A1 * !A2 * !C1 * D1 * !Y)	0.00160	0.00136	0.00134
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00142	-0.00173	-0.00173
	(!A1 * C1 * D1 * !Y)	0.00138	0.00134	0.00133
	(!A1 * C1 * D1 * !Y)	-0.00171	-0.00180	-0.00179
	(!A1 * C1 * !D1 * !Y)	0.00164	0.00136	0.00135
	(!A1 * C1 * !D1 * !Y)	-0.00150	-0.00178	-0.00179
	(!A1 * !C1 * D1 * !Y)	0.00160	0.00136	0.00134
	(!A1 * !C1 * D1 * !Y)	-0.00142	-0.00173	-0.00173

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00170	0.00165	0.00158
	(A1 * A2 * C1 * D1 * !Y)	-0.00256	-0.00258	-0.00256
	(A1 * A2 * C1 * !D1 * !Y)	0.00193	0.00182	0.00163
	(A1 * A2 * C1 * !D1 * !Y)	-0.00247	-0.00255	-0.00253
	(A1 * A2 * !C1 * D1 * !Y)	0.00176	0.00192	0.00169
	(A1 * A2 * !C1 * D1 * !Y)	-0.00249	-0.00247	-0.00248
	(A1 * A2 * !C1 * !D1 * !Y)	0.00160	0.00161	0.00156
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00181	-0.00183	-0.00184
	(A1 * !A2 * C1 * D1 * !Y)	0.00157	0.00153	0.00151
	(A1 * !A2 * C1 * D1 * !Y)	-0.00343	-0.00361	-0.00358
	(A1 * !A2 * C1 * !D1 * !Y)	0.00208	0.00157	0.00154
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00296	-0.00358	-0.00361
	(A1 * !A2 * !C1 * D1 * !Y)	0.00196	0.00158	0.00153
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00288	-0.00346	-0.00346
	(!A1 * C1 * D1 * !Y)	0.00157	0.00153	0.00151
	(!A1 * C1 * D1 * !Y)	-0.00344	-0.00361	-0.00358
	(!A1 * C1 * !D1 * !Y)	0.00207	0.00157	0.00154
	(!A1 * C1 * !D1 * !Y)	-0.00297	-0.00358	-0.00361
	(!A1 * !C1 * D1 * !Y)	0.00196	0.00158	0.00153
	(!A1 * !C1 * D1 * !Y)	-0.00289	-0.00345	-0.00346

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00330	0.00321	0.00306
	(A1 * A2 * C1 * D1 * !Y)	-0.00522	-0.00524	-0.00520
	(A1 * A2 * C1 * !D1 * !Y)	0.00364	0.00347	0.00311
	(A1 * A2 * C1 * !D1 * !Y)	-0.00509	-0.00519	-0.00514
	(A1 * A2 * !C1 * D1 * !Y)	0.00340	0.00373	0.00327
	(A1 * A2 * !C1 * D1 * !Y)	-0.00497	-0.00496	-0.00497
	(A1 * A2 * !C1 * !D1 * !Y)	0.00308	0.00308	0.00299
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00377	-0.00378	-0.00381
	(A1 * !A2 * C1 * D1 * !Y)	0.00309	0.00294	0.00291
	(A1 * !A2 * C1 * D1 * !Y)	-0.00705	-0.00738	-0.00733
	(A1 * !A2 * C1 * !D1 * !Y)	0.00417	0.00302	0.00296
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00608	-0.00731	-0.00736
	(A1 * !A2 * !C1 * D1 * !Y)	0.00387	0.00304	0.00294
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00580	-0.00705	-0.00705
	(!A1 * C1 * D1 * !Y)	0.00308	0.00294	0.00291
	(!A1 * C1 * D1 * !Y)	-0.00706	-0.00735	-0.00733
	(!A1 * C1 * !D1 * !Y)	0.00414	0.00302	0.00296
	(!A1 * C1 * !D1 * !Y)	-0.00611	-0.00732	-0.00736
	(!A1 * !C1 * D1 * !Y)	0.00385	0.00304	0.00294
	(!A1 * !C1 * D1 * !Y)	-0.00583	-0.00706	-0.00706

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)**	-0.00134	-0.00135	-0.00134
	(A1 * A2 * C1 * D1 * !Y)	0.00129	0.00131	0.00130
	(A1 * A2 * C1 * !D1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * C1 * !D1 * !Y)	0.00128	0.00130	0.00128
	(A1 * A2 * !C1 * D1 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * !C1 * D1 * !Y)	0.00122	0.00124	0.00123
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00122	-0.00124	-0.00126
	(A1 * A2 * !C1 * !D1 * !Y)	0.00104	0.00104	0.00101
	(A1 * !A2 * C1 * D1 * !Y)	-0.00133	-0.00133	-0.00133
	(A1 * !A2 * C1 * D1 * !Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * !A2 * C1 * !D1 * !Y)	0.00181	0.00181	0.00181
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00132	-0.00132	-0.00130
	(A1 * !A2 * !C1 * D1 * !Y)	0.00172	0.00173	0.00173
	(!A1 * C1 * D1 * !Y)	-0.00133	-0.00133	-0.00133
	(!A1 * C1 * D1 * !Y)	0.00179	0.00180	0.00179
	(!A1 * C1 * !D1 * !Y)	-0.00131	-0.00131	-0.00131
	(!A1 * C1 * !D1 * !Y)	0.00181	0.00181	0.00181
	(!A1 * !C1 * D1 * !Y)	-0.00131	-0.00132	-0.00130
	(!A1 * !C1 * D1 * !Y)	0.00171	0.00173	0.00173

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00151	-0.00152	-0.00151
	(A1 * A2 * C1 * D1 * !Y)	0.00256	0.00258	0.00256
	(A1 * A2 * C1 * !D1 * !Y)	-0.00151	-0.00152	-0.00150
	(A1 * A2 * C1 * !D1 * !Y)	0.00253	0.00256	0.00253
	(A1 * A2 * !C1 * D1 * !Y)	-0.00152	-0.00152	-0.00152
	(A1 * A2 * !C1 * D1 * !Y)	0.00249	0.00248	0.00248
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00131	-0.00133	-0.00134
	(A1 * A2 * !C1 * !D1 * !Y)	0.00207	0.00209	0.00205
	(A1 * !A2 * C1 * D1 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * C1 * D1 * !Y)	0.00358	0.00361	0.00358
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * C1 * !D1 * !Y)	0.00363	0.00365	0.00363
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00148	-0.00149	-0.00147
	(A1 * !A2 * !C1 * D1 * !Y)	0.00343	0.00346	0.00346
	(!A1 * C1 * D1 * !Y)	-0.00150	-0.00151	-0.00150
	(!A1 * C1 * D1 * !Y)	0.00358	0.00361	0.00358
	(!A1 * C1 * !D1 * !Y)	-0.00148	-0.00149	-0.00147
	(!A1 * C1 * !D1 * !Y)	0.00363	0.00365	0.00363
	(!A1 * !C1 * D1 * !Y)	-0.00148	-0.00149	-0.00147
	(!A1 * !C1 * D1 * !Y)	0.00343	0.00345	0.00346

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00290	-0.00291	-0.00290
	(A1 * A2 * C1 * D1 * !Y)	0.00522	0.00524	0.00520
	(A1 * A2 * C1 * !D1 * !Y)	-0.00289	-0.00291	-0.00289
	(A1 * A2 * C1 * !D1 * !Y)	0.00514	0.00519	0.00514
	(A1 * A2 * !C1 * D1 * !Y)	-0.00292	-0.00294	-0.00293
	(A1 * A2 * !C1 * D1 * !Y)	0.00497	0.00500	0.00497
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00253	-0.00255	-0.00257
	(A1 * A2 * !C1 * !D1 * !Y)	0.00422	0.00423	0.00418
	(A1 * !A2 * C1 * D1 * !Y)	-0.00289	-0.00291	-0.00289
	(A1 * !A2 * C1 * D1 * !Y)	0.00732	0.00738	0.00733
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00284	-0.00285	-0.00283
	(A1 * !A2 * C1 * !D1 * !Y)	0.00740	0.00744	0.00742
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00286	-0.00287	-0.00281
	(A1 * !A2 * !C1 * D1 * !Y)	0.00701	0.00705	0.00705
	(!A1 * C1 * D1 * !Y)	-0.00288	-0.00290	-0.00289
	(!A1 * C1 * D1 * !Y)	0.00730	0.00735	0.00733
	(!A1 * C1 * !D1 * !Y)	-0.00284	-0.00285	-0.00284
	(!A1 * C1 * !D1 * !Y)	0.00740	0.00744	0.00742
	(!A1 * !C1 * D1 * !Y)	-0.00285	-0.00287	-0.00282
	(!A1 * !C1 * D1 * !Y)	0.00697	0.00706	0.00706

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)**	0.00155	0.00155	0.00146
	(A1 * B1 * D1 * !Y)	-0.00115	-0.00117	-0.00117
	(A1 * B1 * !D1 * !Y)	0.00143	0.00143	0.00141
	(A1 * B1 * !D1 * !Y)	-0.00087	-0.00088	-0.00089
	(A1 * A2 * !B1 * D1 * !Y)	0.00177	0.00159	0.00149
	(A1 * A2 * !B1 * D1 * !Y)	-0.00104	-0.00118	-0.00120
	(A1 * A2 * !B1 * !D1 * !Y)	0.00144	0.00144	0.00141
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00086	-0.00086	-0.00088
	(A1 * !A2 * !B1 * D1 * !Y)	0.00184	0.00147	0.00141
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00134	-0.00170	-0.00175
	(!A1 * B1 * D1 * !Y)	0.00155	0.00154	0.00145
	(!A1 * B1 * D1 * !Y)	-0.00115	-0.00117	-0.00117
	(!A1 * B1 * !D1 * !Y)	0.00143	0.00144	0.00141
	(!A1 * B1 * !D1 * !Y)	-0.00087	-0.00087	-0.00089
	(!A1 * !B1 * D1 * !Y)	0.00184	0.00147	0.00141
	(!A1 * !B1 * D1 * !Y)	-0.00134	-0.00170	-0.00175

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00173	0.00178	0.00159
	(A1 * B1 * D1 * !Y)	-0.00249	-0.00248	-0.00249
	(A1 * B1 * !D1 * !Y)	0.00151	0.00151	0.00147
	(A1 * B1 * !D1 * !Y)	-0.00186	-0.00188	-0.00190
	(A1 * A2 * !B1 * D1 * !Y)	0.00218	0.00183	0.00162
	(A1 * A2 * !B1 * D1 * !Y)	-0.00224	-0.00250	-0.00255
	(A1 * A2 * !B1 * !D1 * !Y)	0.00153	0.00154	0.00148
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00183	-0.00185	-0.00188
	(A1 * !A2 * !B1 * D1 * !Y)	0.00237	0.00156	0.00145
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00279	-0.00361	-0.00370
	(!A1 * B1 * D1 * !Y)	0.00172	0.00176	0.00158
	(!A1 * B1 * D1 * !Y)	-0.00251	-0.00250	-0.00251
	(!A1 * B1 * !D1 * !Y)	0.00153	0.00153	0.00148
	(!A1 * B1 * !D1 * !Y)	-0.00186	-0.00187	-0.00190
	(!A1 * !B1 * D1 * !Y)	0.00237	0.00156	0.00145
	(!A1 * !B1 * D1 * !Y)	-0.00279	-0.00361	-0.00370

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00344	0.00348	0.00310
	(A1 * B1 * D1 * !Y)	-0.00484	-0.00485	-0.00489
	(A1 * B1 * !D1 * !Y)	0.00297	0.00298	0.00285
	(A1 * B1 * !D1 * !Y)	-0.00365	-0.00367	-0.00374
	(A1 * A2 * !B1 * D1 * !Y)	0.00433	0.00358	0.00315
	(A1 * A2 * !B1 * D1 * !Y)	-0.00427	-0.00483	-0.00495
	(A1 * A2 * !B1 * !D1 * !Y)	0.00301	0.00301	0.00288
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00358	-0.00361	-0.00368
	(A1 * !A2 * !B1 * D1 * !Y)	0.00474	0.00307	0.00281
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00538	-0.00707	-0.00728
	(!A1 * B1 * D1 * !Y)	0.00342	0.00345	0.00307
	(!A1 * B1 * D1 * !Y)	-0.00488	-0.00489	-0.00491
	(!A1 * B1 * !D1 * !Y)	0.00300	0.00300	0.00287
	(!A1 * B1 * !D1 * !Y)	-0.00364	-0.00366	-0.00374
	(!A1 * !B1 * D1 * !Y)	0.00474	0.00307	0.00281
	(!A1 * !B1 * D1 * !Y)	-0.00539	-0.00707	-0.00728

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)**	-0.00139	-0.00140	-0.00139
	(A1 * B1 * D1 * !Y)	0.00116	0.00117	0.00117
	(A1 * B1 * !D1 * !Y)	-0.00139	-0.00139	-0.00138
	(A1 * B1 * !D1 * !Y)	0.00093	0.00092	0.00093
	(A1 * A2 * !B1 * D1 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * A2 * !B1 * D1 * !Y)	0.00120	0.00121	0.00120
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00125	-0.00126	-0.00138
	(A1 * A2 * !B1 * !D1 * !Y)	0.00101	0.00100	0.00091
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * !A2 * !B1 * D1 * !Y)	0.00176	0.00177	0.00177
	(!A1 * B1 * D1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * B1 * D1 * !Y)	0.00116	0.00117	0.00117
	(!A1 * B1 * !D1 * !Y)	-0.00139	-0.00139	-0.00138
	(!A1 * B1 * !D1 * !Y)	0.00093	0.00093	0.00093
	(!A1 * !B1 * D1 * !Y)	-0.00138	-0.00138	-0.00137
	(!A1 * !B1 * D1 * !Y)	0.00176	0.00177	0.00177

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00146	-0.00147	-0.00146
	(A1 * B1 * D1 * !Y)	0.00249	0.00251	0.00249
	(A1 * B1 * !D1 * !Y)	-0.00140	-0.00140	-0.00138
	(A1 * B1 * !D1 * !Y)	0.00197	0.00197	0.00199
	(A1 * A2 * !B1 * D1 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * A2 * !B1 * D1 * !Y)	0.00255	0.00257	0.00255
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00118	-0.00119	-0.00138
	(A1 * A2 * !B1 * !D1 * !Y)	0.00210	0.00209	0.00197
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00140	-0.00141	-0.00139
	(A1 * !A2 * !B1 * D1 * !Y)	0.00368	0.00372	0.00372
	(!A1 * B1 * D1 * !Y)	-0.00146	-0.00147	-0.00146
	(!A1 * B1 * D1 * !Y)	0.00251	0.00253	0.00251
	(!A1 * B1 * !D1 * !Y)	-0.00140	-0.00140	-0.00138
	(!A1 * B1 * !D1 * !Y)	0.00198	0.00198	0.00200
	(!A1 * !B1 * D1 * !Y)	-0.00140	-0.00141	-0.00139
	(!A1 * !B1 * D1 * !Y)	0.00369	0.00372	0.00372

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00283	-0.00284	-0.00283
	(A1 * B1 * D1 * !Y)	0.00491	0.00490	0.00489
	(A1 * B1 * !D1 * !Y)	-0.00274	-0.00274	-0.00270
	(A1 * B1 * !D1 * !Y)	0.00390	0.00390	0.00391
	(A1 * A2 * !B1 * D1 * !Y)	-0.00278	-0.00278	-0.00277
	(A1 * A2 * !B1 * D1 * !Y)	0.00493	0.00495	0.00495
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00238	-0.00241	-0.00269
	(A1 * A2 * !B1 * !D1 * !Y)	0.00406	0.00404	0.00385
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00271	-0.00273	-0.00268
	(A1 * !A2 * !B1 * D1 * !Y)	0.00729	0.00736	0.00734
	(!A1 * B1 * D1 * !Y)	-0.00284	-0.00284	-0.00283
	(!A1 * B1 * D1 * !Y)	0.00493	0.00492	0.00491
	(!A1 * B1 * !D1 * !Y)	-0.00274	-0.00274	-0.00270
	(!A1 * B1 * !D1 * !Y)	0.00391	0.00390	0.00393
	(!A1 * !B1 * D1 * !Y)	-0.00271	-0.00273	-0.00269
	(!A1 * !B1 * D1 * !Y)	0.00729	0.00736	0.00735

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00156	0.00157	0.00157
	(A1 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * B1 * !C1 * !Y)	0.00157	0.00157	0.00157
	(A1 * B1 * !C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	0.00157	0.00158	0.00157
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * C1 * !Y)	0.00156	0.00157	0.00157
	(!A1 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * !C1 * !Y)	0.00156	0.00158	0.00157
	(!A1 * B1 * !C1 * !Y)	-0.00081	-0.00082	-0.00081

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00179	0.00180	0.00179
	(A1 * C1 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * B1 * !C1 * !Y)	0.00179	0.00179	0.00179
	(A1 * B1 * !C1 * !Y)	-0.00166	-0.00165	-0.00165
	(A1 * A2 * !B1 * !C1 * !Y)	0.00179	0.00180	0.00179
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * C1 * !Y)	0.00179	0.00180	0.00179
	(!A1 * C1 * !Y)	-0.00167	-0.00167	-0.00166
	(!A1 * B1 * !C1 * !Y)	0.00179	0.00180	0.00179
	(!A1 * B1 * !C1 * !Y)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00356	0.00356	0.00355
	(A1 * C1 * !Y)	-0.00328	-0.00328	-0.00327
	(A1 * B1 * !C1 * !Y)	0.00353	0.00355	0.00355
	(A1 * B1 * !C1 * !Y)	-0.00324	-0.00326	-0.00324
	(A1 * A2 * !B1 * !C1 * !Y)	0.00355	0.00357	0.00355
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00325	-0.00326	-0.00324
	(!A1 * C1 * !Y)	0.00356	0.00356	0.00355
	(!A1 * C1 * !Y)	-0.00329	-0.00328	-0.00327
	(!A1 * B1 * !C1 * !Y)	0.00354	0.00357	0.00355
	(!A1 * B1 * !C1 * !Y)	-0.00326	-0.00327	-0.00325

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00152	-0.00152	-0.00156
	(A1 * C1 * !Y)	0.00087	0.00086	0.00083
	(A1 * B1 * !C1 * !Y)	-0.00143	-0.00143	-0.00155
	(A1 * B1 * !C1 * !Y)	0.00092	0.00091	0.00083
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00121	-0.00122	-0.00149
	(A1 * A2 * !B1 * !C1 * !Y)	0.00106	0.00106	0.00087
	(!A1 * C1 * !Y)	-0.00152	-0.00152	-0.00156
	(!A1 * C1 * !Y)	0.00087	0.00086	0.00083
	(!A1 * B1 * !C1 * !Y)	-0.00142	-0.00143	-0.00155
	(!A1 * B1 * !C1 * !Y)	0.00091	0.00091	0.00083
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00163	-0.00164	-0.00178
	(A1 * C1 * !Y)	0.00182	0.00181	0.00170
	(A1 * B1 * !C1 * !Y)	-0.00143	-0.00144	-0.00173
	(A1 * B1 * !C1 * !Y)	0.00191	0.00190	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00098	-0.00102	-0.00162
	(A1 * A2 * !B1 * !C1 * !Y)	0.00217	0.00217	0.00178
	(!A1 * C1 * !Y)	-0.00162	-0.00164	-0.00178
	(!A1 * C1 * !Y)	0.00181	0.00182	0.00171
	(!A1 * B1 * !C1 * !Y)	-0.00142	-0.00144	-0.00173
	(!A1 * B1 * !C1 * !Y)	0.00190	0.00191	0.00170
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00328	-0.00329	-0.00353
	(A1 * C1 * !Y)	0.00353	0.00351	0.00334
	(A1 * B1 * !C1 * !Y)	-0.00286	-0.00288	-0.00344
	(A1 * B1 * !C1 * !Y)	0.00375	0.00372	0.00335
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00205	-0.00208	-0.00322
	(A1 * A2 * !B1 * !C1 * !Y)	0.00425	0.00422	0.00349
	(!A1 * C1 * !Y)	-0.00328	-0.00329	-0.00353
	(!A1 * C1 * !Y)	0.00354	0.00352	0.00334
	(!A1 * B1 * !C1 * !Y)	-0.00286	-0.00288	-0.00343
	(!A1 * B1 * !C1 * !Y)	0.00376	0.00374	0.00336

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00269	0.00282	0.00270	0.00275	0.00271	0.81118
sky130_fd_sc_hs__a2111o_2	0.00301	0.00313	0.00296	0.00304	0.00317	1.58818
sky130_fd_sc_hs__a2111o_4	0.00509	0.00502	0.00520	0.00522	0.00516	3.04285

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	1.04698	2.11934
sky130_fd_sc_hs__a2111o_2	0.00000	1.11873	2.80217
sky130_fd_sc_hs__a2111o_4	0.00000	2.57462	5.52637

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)	0.15152	0.90875	7.70948
	A2->X (RR)	0.15881	0.89063	7.66180
	B1->X (RR)	0.11069	0.82607	7.42122
	C1->X (RR)	0.10715	0.80570	7.31428
	D1->X (RR)	0.09723	0.77615	7.22689
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.15515	0.82479	7.76577
	A2->X (RR)	0.16205	0.79941	7.69623
	B1->X (RR)	0.10869	0.73182	7.46821
	C1->X (RR)	0.10447	0.71223	7.36392
	D1->X (RR)	0.09656	0.68814	7.28198
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.16351	0.75976	7.83239
	A2->X (RR)	0.17277	0.73821	7.76734
	B1->X (RR)	0.10768	0.65237	7.48427
	C1->X (RR)	0.10462	0.63439	7.37890
	D1->X (RR)	0.09398	0.60441	7.28250

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.46245	1.00158	4.80303
	A2->X (FF)	0.50337	1.05562	4.88717
	B1->X (FF)	0.46920	1.01379	5.09066
	C1->X (FF)	0.42278	0.99611	5.20973
	D1->X (FF)	0.35030	0.95713	5.16349
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.55884	1.09111	5.09480
	A2->X (FF)	0.59721	1.14390	5.18645
	B1->X (FF)	0.56325	1.09915	5.40231
	C1->X (FF)	0.51174	1.07786	5.55639
	D1->X (FF)	0.43938	1.03936	5.53415
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.57131	1.04866	5.07999
	A2->X (FF)	0.64148	1.13261	5.20566
	B1->X (FF)	0.61261	1.09911	5.46377
	C1->X (FF)	0.56049	1.07744	5.65482
	D1->X (FF)	0.45287	1.00843	5.59227

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01337	0.01361	0.02532
	A1	0.00638	0.00663	0.01852
	A2	0.01404	0.01411	0.02449
	A2	0.00638	0.00646	0.01701
	B1	0.01148	0.01184	0.02368
	B1	0.00485	0.00525	0.01783
	C1	0.00972	0.01018	0.02158
	C1	0.00400	0.00445	0.01656
	D1	0.00793	0.00848	0.02172
	D1	0.00307	0.00364	0.01769
sky130_fd_sc_hs__a2111o_2	A1	0.01706	0.01737	0.02927
	A1	0.00922	0.00954	0.02180
	A2	0.01798	0.01820	0.02873
	A2	0.00926	0.00949	0.02038
	B1	0.01488	0.01546	0.02744
	B1	0.00740	0.00803	0.02080
	C1	0.01277	0.01346	0.02501
	C1	0.00626	0.00699	0.01867
	D1	0.01094	0.01171	0.02478
	D1	0.00533	0.00607	0.02005

sky130_fd_sc_hs__a2111o_4	**A1**	0.03205	0.03266	0.05523
	A1	0.01837	0.01901	0.04220
	A2	0.03370	0.03415	0.05378
	A2	0.01836	0.01882	0.03912
	B1	0.02852	0.02969	0.05238
	B1	0.01503	0.01624	0.04085
	C1	0.02472	0.02610	0.04759
	C1	0.01319	0.01462	0.03635
	D1	0.02008	0.02173	0.04644
	D1	0.01048	0.01215	0.03738

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00401	0.00379	0.01425
	A1	0.01103	0.01089	0.02119
	A2	0.00458	0.00441	0.01458
	A2	0.01226	0.01212	0.02198
	B1	0.00393	0.00398	0.01545
	B1	0.01109	0.01098	0.02146
	C1	0.00394	0.00413	0.01540
	C1	0.01020	0.01023	0.02053
	D1	0.00397	0.00473	0.01845
	D1	0.00940	0.00992	0.02264

sky130_fd_sc_hs__a2111o_2	**A1**	0.00759	0.00666	0.01781
	A1	0.01550	0.01460	0.02459
	A2	0.00810	0.00711	0.01815
	A2	0.01686	0.01598	0.02566
	B1	0.00818	0.00676	0.01910
	B1	0.01561	0.01472	0.02501
	C1	0.00819	0.00743	0.01847
	C1	0.01466	0.01389	0.02412
	D1	0.00712	0.00738	0.02115
	D1	0.01369	0.01336	0.02583
sky130_fd_sc_hs__a2111o_4	**A1**	0.01489	0.01273	0.03238
	A1	0.02867	0.02659	0.04571
	A2	0.01658	0.01413	0.03515
	A2	0.03196	0.02961	0.04795
	B1	0.01657	0.01418	0.03462
	B1	0.02994	0.02755	0.04681
	C1	0.01667	0.01421	0.03435
	C1	0.02812	0.02594	0.04469
	D1	0.01661	0.01536	0.04013
	D1	0.02614	0.02494	0.04835

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)**	0.00132	0.00133	0.00132
	(A2 * B1 * D1 * X)	-0.00158	-0.00163	-0.00163
	(A2 * B1 * C1 * !D1 * X)	0.00132	0.00133	0.00132
	(A2 * B1 * C1 * !D1 * X)	-0.00158	-0.00163	-0.00163
	(A2 * B1 * !C1 * !D1 * X)	0.00144	0.00134	0.00133
	(A2 * B1 * !C1 * !D1 * X)	-0.00145	-0.00162	-0.00163
	(A2 * !B1 * C1 * D1 * X)	0.00132	0.00132	0.00132
	(A2 * !B1 * C1 * D1 * X)	-0.00148	-0.00159	-0.00157
	(A2 * !B1 * C1 * !D1 * X)	0.00140	0.00134	0.00133
	(A2 * !B1 * C1 * !D1 * X)	-0.00142	-0.00158	-0.00159
	(A2 * !B1 * !C1 * D1 * X)	0.00143	0.00135	0.00133
	(A2 * !B1 * !C1 * D1 * X)	-0.00137	-0.00155	-0.00157
	(!A2 * B1 * D1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * D1 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * C1 * !D1 * X)	0.00127	0.00127	0.00127
	(!A2 * B1 * C1 * !D1 * X)	-0.00166	-0.00165	-0.00165
	(!A2 * B1 * !C1 * !D1 * X)	0.00128	0.00127	0.00128
	(!A2 * B1 * !C1 * !D1 * X)	-0.00165	-0.00165	-0.00165
	(!A2 * !B1 * C1 * D1 * X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * C1 * D1 * X)	-0.00166	-0.00166	-0.00166
	(!A2 * !B1 * C1 * !D1 * X)	0.00127	0.00128	0.00128
	(!A2 * !B1 * C1 * !D1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * D1 * X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * D1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00059	0.00059	0.00057
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00186	-0.00187	-0.00190

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00137	0.00137	0.00136
	(A2 * B1 * D1 * X)	-0.00179	-0.00184	-0.00184
	(A2 * B1 * C1 * !D1 * X)	0.00137	0.00137	0.00136
	(A2 * B1 * C1 * !D1 * X)	-0.00179	-0.00184	-0.00184
	(A2 * B1 * !C1 * !D1 * X)	0.00141	0.00137	0.00137
	(A2 * B1 * !C1 * !D1 * X)	-0.00171	-0.00183	-0.00185
	(A2 * !B1 * C1 * D1 * X)	0.00136	0.00138	0.00136
	(A2 * !B1 * C1 * D1 * X)	-0.00166	-0.00179	-0.00178
	(A2 * !B1 * C1 * !D1 * X)	0.00138	0.00138	0.00137
	(A2 * !B1 * C1 * !D1 * X)	-0.00163	-0.00180	-0.00178
	(A2 * !B1 * !C1 * D1 * X)	0.00142	0.00139	0.00137
	(A2 * !B1 * !C1 * D1 * X)	-0.00157	-0.00177	-0.00176
	(!A2 * B1 * D1 * X)	0.00130	0.00131	0.00131
	(!A2 * B1 * D1 * X)	-0.00188	-0.00188	-0.00187
	(!A2 * B1 * C1 * !D1 * X)	0.00130	0.00131	0.00131
	(!A2 * B1 * C1 * !D1 * X)	-0.00188	-0.00188	-0.00187
	(!A2 * B1 * !C1 * !D1 * X)	0.00130	0.00131	0.00131
	(!A2 * B1 * !C1 * !D1 * X)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * C1 * D1 * X)	0.00130	0.00132	0.00131
	(!A2 * !B1 * C1 * D1 * X)	-0.00188	-0.00188	-0.00187
	(!A2 * !B1 * C1 * !D1 * X)	0.00130	0.00132	0.00131
	(!A2 * !B1 * C1 * !D1 * X)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * !C1 * D1 * X)	0.00131	0.00132	0.00131
	(!A2 * !B1 * !C1 * D1 * X)	-0.00186	-0.00188	-0.00187
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00052	0.00052	0.00050
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00210	-0.00211	-0.00214

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00225	0.00226	0.00226
	(A2 * B1 * D1 * X)	-0.00319	-0.00331	-0.00330
	(A2 * B1 * C1 * !D1 * X)	0.00225	0.00226	0.00226
	(A2 * B1 * C1 * !D1 * X)	-0.00318	-0.00330	-0.00330
	(A2 * B1 * !C1 * !D1 * X)	0.00242	0.00228	0.00228
	(A2 * B1 * !C1 * !D1 * X)	-0.00297	-0.00328	-0.00331
	(A2 * !B1 * C1 * D1 * X)	0.00225	0.00226	0.00226
	(A2 * !B1 * C1 * D1 * X)	-0.00297	-0.00321	-0.00318
	(A2 * !B1 * C1 * !D1 * X)	0.00237	0.00229	0.00227
	(A2 * !B1 * C1 * !D1 * X)	-0.00288	-0.00321	-0.00321
	(A2 * !B1 * !C1 * D1 * X)	0.00247	0.00234	0.00228
	(A2 * !B1 * !C1 * D1 * X)	-0.00276	-0.00316	-0.00319
	(!A2 * B1 * D1 * X)	0.00216	0.00217	0.00216
	(!A2 * B1 * D1 * X)	-0.00337	-0.00337	-0.00336
	(!A2 * B1 * C1 * !D1 * X)	0.00217	0.00217	0.00216
	(!A2 * B1 * C1 * !D1 * X)	-0.00337	-0.00337	-0.00336
	(!A2 * B1 * !C1 * !D1 * X)	0.00218	0.00218	0.00217
	(!A2 * B1 * !C1 * !D1 * X)	-0.00336	-0.00336	-0.00335
	(!A2 * !B1 * C1 * D1 * X)	0.00216	0.00218	0.00216
	(!A2 * !B1 * C1 * D1 * X)	-0.00337	-0.00338	-0.00336
	(!A2 * !B1 * C1 * !D1 * X)	0.00217	0.00218	0.00217
	(!A2 * !B1 * C1 * !D1 * X)	-0.00335	-0.00336	-0.00335
	(!A2 * !B1 * !C1 * D1 * X)	0.00218	0.00220	0.00218
	(!A2 * !B1 * !C1 * D1 * X)	-0.00334	-0.00335	-0.00334
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00091	0.00091	0.00084
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00370	-0.00371	-0.00380

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)**	-0.00131	-0.00131	-0.00131
	(A2 * B1 * D1 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * C1 * !D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * C1 * !D1 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * !C1 * !D1 * X)	-0.00131	-0.00131	-0.00130
	(A2 * B1 * !C1 * !D1 * X)	0.00164	0.00164	0.00164
	(A2 * !B1 * C1 * D1 * X)	-0.00131	-0.00132	-0.00131
	(A2 * !B1 * C1 * D1 * X)	0.00157	0.00159	0.00157
	(A2 * !B1 * C1 * !D1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * C1 * !D1 * X)	0.00158	0.00160	0.00159
	(A2 * !B1 * !C1 * D1 * X)	-0.00129	-0.00130	-0.00128
	(A2 * !B1 * !C1 * D1 * X)	0.00156	0.00158	0.00157
	(!A2 * B1 * D1 * X)	-0.00126	-0.00128	-0.00127
	(!A2 * B1 * D1 * X)	0.00166	0.00168	0.00167
	(!A2 * B1 * C1 * !D1 * X)	-0.00125	-0.00127	-0.00127
	(!A2 * B1 * C1 * !D1 * X)	0.00166	0.00169	0.00167
	(!A2 * B1 * !C1 * !D1 * X)	-0.00125	-0.00126	-0.00127
	(!A2 * B1 * !C1 * !D1 * X)	0.00167	0.00168	0.00168
	(!A2 * !B1 * C1 * D1 * X)	-0.00126	-0.00128	-0.00127
	(!A2 * !B1 * C1 * D1 * X)	0.00166	0.00169	0.00167
	(!A2 * !B1 * C1 * !D1 * X)	-0.00125	-0.00126	-0.00127
	(!A2 * !B1 * C1 * !D1 * X)	0.00167	0.00168	0.00168
	(!A2 * !B1 * !C1 * D1 * X)	-0.00124	-0.00126	-0.00126
	(!A2 * !B1 * !C1 * D1 * X)	0.00167	0.00169	0.00168
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00194	0.00194	0.00193

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00135	-0.00135	-0.00135
	(A2 * B1 * D1 * X)	0.00183	0.00184	0.00184
	(A2 * B1 * C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * C1 * !D1 * X)	0.00183	0.00184	0.00184
	(A2 * B1 * !C1 * !D1 * X)	-0.00134	-0.00134	-0.00135
	(A2 * B1 * !C1 * !D1 * X)	0.00184	0.00183	0.00185
	(A2 * !B1 * C1 * D1 * X)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * C1 * D1 * X)	0.00177	0.00179	0.00178
	(A2 * !B1 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00135
	(A2 * !B1 * C1 * !D1 * X)	0.00178	0.00180	0.00178
	(A2 * !B1 * !C1 * D1 * X)	-0.00134	-0.00134	-0.00133
	(A2 * !B1 * !C1 * D1 * X)	0.00175	0.00177	0.00176
	(!A2 * B1 * D1 * X)	-0.00129	-0.00131	-0.00131
	(!A2 * B1 * D1 * X)	0.00189	0.00192	0.00189
	(!A2 * B1 * C1 * !D1 * X)	-0.00129	-0.00131	-0.00131
	(!A2 * B1 * C1 * !D1 * X)	0.00189	0.00192	0.00189
	(!A2 * B1 * !C1 * !D1 * X)	-0.00128	-0.00131	-0.00131
	(!A2 * B1 * !C1 * !D1 * X)	0.00188	0.00191	0.00189
	(!A2 * !B1 * C1 * D1 * X)	-0.00128	-0.00131	-0.00131
	(!A2 * !B1 * C1 * D1 * X)	0.00188	0.00192	0.00189
	(!A2 * !B1 * C1 * !D1 * X)	-0.00129	-0.00131	-0.00131
	(!A2 * !B1 * C1 * !D1 * X)	0.00190	0.00191	0.00189
	(!A2 * !B1 * !C1 * D1 * X)	-0.00129	-0.00130	-0.00130
	(!A2 * !B1 * !C1 * D1 * X)	0.00191	0.00192	0.00190
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00218	0.00220	0.00219

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00223	-0.00224	-0.00223
	(A2 * B1 * D1 * X)	0.00331	0.00332	0.00330
	(A2 * B1 * C1 * !D1 * X)	-0.00223	-0.00223	-0.00222
	(A2 * B1 * C1 * !D1 * X)	0.00331	0.00332	0.00330
	(A2 * B1 * !C1 * !D1 * X)	-0.00222	-0.00223	-0.00222
	(A2 * B1 * !C1 * !D1 * X)	0.00334	0.00335	0.00333
	(A2 * !B1 * C1 * D1 * X)	-0.00223	-0.00224	-0.00223
	(A2 * !B1 * C1 * D1 * X)	0.00318	0.00321	0.00318
	(A2 * !B1 * C1 * !D1 * X)	-0.00221	-0.00222	-0.00221
	(A2 * !B1 * C1 * !D1 * X)	0.00320	0.00323	0.00321
	(A2 * !B1 * !C1 * D1 * X)	-0.00219	-0.00220	-0.00218
	(A2 * !B1 * !C1 * D1 * X)	0.00317	0.00320	0.00319
	(!A2 * B1 * D1 * X)	-0.00211	-0.00217	-0.00216
	(!A2 * B1 * D1 * X)	0.00338	0.00343	0.00339
	(!A2 * B1 * C1 * !D1 * X)	-0.00210	-0.00216	-0.00216
	(!A2 * B1 * C1 * !D1 * X)	0.00338	0.00343	0.00340
	(!A2 * B1 * !C1 * !D1 * X)	-0.00209	-0.00215	-0.00215
	(!A2 * B1 * !C1 * !D1 * X)	0.00339	0.00345	0.00341
	(!A2 * !B1 * C1 * D1 * X)	-0.00212	-0.00217	-0.00216
	(!A2 * !B1 * C1 * D1 * X)	0.00341	0.00343	0.00340
	(!A2 * !B1 * C1 * !D1 * X)	-0.00210	-0.00215	-0.00215
	(!A2 * !B1 * C1 * !D1 * X)	0.00342	0.00345	0.00341
	(!A2 * !B1 * !C1 * D1 * X)	-0.00209	-0.00214	-0.00214
	(!A2 * !B1 * !C1 * D1 * X)	0.00344	0.00346	0.00342
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00072	-0.00073	-0.00072
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00390	0.00392	0.00390

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)**	0.00121	0.00121	0.00120
	(A1 * B1 * D1 * X)	-0.00165	-0.00168	-0.00168
	(A1 * B1 * C1 * !D1 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * C1 * !D1 * X)	-0.00163	-0.00168	-0.00168
	(A1 * B1 * !C1 * !D1 * X)	0.00134	0.00122	0.00122
	(A1 * B1 * !C1 * !D1 * X)	-0.00149	-0.00167	-0.00169
	(A1 * !B1 * C1 * D1 * X)	0.00120	0.00122	0.00120
	(A1 * !B1 * C1 * D1 * X)	-0.00153	-0.00162	-0.00162
	(A1 * !B1 * C1 * !D1 * X)	0.00130	0.00123	0.00121
	(A1 * !B1 * C1 * !D1 * X)	-0.00145	-0.00164	-0.00164
	(A1 * !B1 * !C1 * D1 * X)	0.00133	0.00125	0.00122
	(A1 * !B1 * !C1 * D1 * X)	-0.00140	-0.00161	-0.00163
	(!A1 * B1 * X)	0.00116	0.00116	0.00115
	(!A1 * B1 * X)	-0.00172	-0.00172	-0.00172
	(!A1 * !B1 * C1 * X)	0.00116	0.00117	0.00115
	(!A1 * !B1 * C1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * !B1 * !C1 * D1 * X)	0.00117	0.00118	0.00117
	(!A1 * !B1 * !C1 * D1 * X)	-0.00171	-0.00171	-0.00170
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00104	0.00104	0.00104
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00185	-0.00185	-0.00184

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00136	0.00137	0.00137
	(A1 * B1 * D1 * X)	-0.00178	-0.00184	-0.00184
	(A1 * B1 * C1 * !D1 * X)	0.00137	0.00137	0.00137
	(A1 * B1 * C1 * !D1 * X)	-0.00178	-0.00184	-0.00184
	(A1 * B1 * !C1 * !D1 * X)	0.00143	0.00138	0.00138
	(A1 * B1 * !C1 * !D1 * X)	-0.00169	-0.00184	-0.00185
	(A1 * !B1 * C1 * D1 * X)	0.00137	0.00139	0.00137
	(A1 * !B1 * C1 * D1 * X)	-0.00166	-0.00179	-0.00178
	(A1 * !B1 * C1 * !D1 * X)	0.00140	0.00139	0.00138
	(A1 * !B1 * C1 * !D1 * X)	-0.00163	-0.00180	-0.00179
	(A1 * !B1 * !C1 * D1 * X)	0.00144	0.00140	0.00138
	(A1 * !B1 * !C1 * D1 * X)	-0.00157	-0.00177	-0.00176
	(!A1 * B1 * X)	0.00132	0.00132	0.00131
	(!A1 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * C1 * X)	0.00132	0.00133	0.00131
	(!A1 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * D1 * X)	0.00132	0.00133	0.00132
	(!A1 * !B1 * !C1 * D1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00124	0.00124	0.00124
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00196	-0.00196	-0.00195

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00231	0.00232	0.00231
	(A1 * B1 * D1 * X)	-0.00321	-0.00332	-0.00332
	(A1 * B1 * C1 * !D1 * X)	0.00231	0.00233	0.00232
	(A1 * B1 * C1 * !D1 * X)	-0.00320	-0.00332	-0.00332
	(A1 * B1 * !C1 * !D1 * X)	0.00250	0.00235	0.00234
	(A1 * B1 * !C1 * !D1 * X)	-0.00299	-0.00329	-0.00332
	(A1 * !B1 * C1 * D1 * X)	0.00232	0.00233	0.00232
	(A1 * !B1 * C1 * D1 * X)	-0.00299	-0.00322	-0.00319
	(A1 * !B1 * C1 * !D1 * X)	0.00243	0.00235	0.00233
	(A1 * !B1 * C1 * !D1 * X)	-0.00290	-0.00323	-0.00322
	(A1 * !B1 * !C1 * D1 * X)	0.00254	0.00241	0.00234
	(A1 * !B1 * !C1 * D1 * X)	-0.00278	-0.00317	-0.00321
	(!A1 * B1 * X)	0.00221	0.00223	0.00221
	(!A1 * B1 * X)	-0.00337	-0.00340	-0.00338
	(!A1 * !B1 * C1 * X)	0.00221	0.00223	0.00221
	(!A1 * !B1 * C1 * X)	-0.00338	-0.00340	-0.00338
	(!A1 * !B1 * !C1 * D1 * X)	0.00224	0.00226	0.00224
	(!A1 * !B1 * !C1 * D1 * X)	-0.00335	-0.00337	-0.00335
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00225	0.00227	0.00226
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00334	-0.00336	-0.00334

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)**	-0.00119	-0.00120	-0.00119
	(A1 * B1 * D1 * X)	0.00168	0.00169	0.00168
	(A1 * B1 * C1 * !D1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * B1 * C1 * !D1 * X)	0.00168	0.00169	0.00168
	(A1 * B1 * !C1 * !D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * B1 * !C1 * !D1 * X)	0.00169	0.00171	0.00170
	(A1 * !B1 * C1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !B1 * C1 * D1 * X)	0.00162	0.00162	0.00162
	(A1 * !B1 * C1 * !D1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !B1 * C1 * !D1 * X)	0.00163	0.00165	0.00164
	(A1 * !B1 * !C1 * D1 * X)	-0.00117	-0.00118	-0.00117
	(A1 * !B1 * !C1 * D1 * X)	0.00161	0.00163	0.00163
	(!A1 * B1 * X)	-0.00114	-0.00116	-0.00115
	(!A1 * B1 * X)	0.00172	0.00175	0.00173
	(!A1 * !B1 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * !B1 * C1 * X)	0.00174	0.00175	0.00173
	(!A1 * !B1 * !C1 * D1 * X)	-0.00113	-0.00115	-0.00115
	(!A1 * !B1 * !C1 * D1 * X)	0.00175	0.00177	0.00174
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00091	-0.00099	-0.00100
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00198	0.00193	0.00189

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00135	-0.00136	-0.00136
	(A1 * B1 * D1 * X)	0.00184	0.00185	0.00184
	(A1 * B1 * C1 * !D1 * X)	-0.00135	-0.00136	-0.00136
	(A1 * B1 * C1 * !D1 * X)	0.00184	0.00185	0.00184
	(A1 * B1 * !C1 * !D1 * X)	-0.00135	-0.00136	-0.00135
	(A1 * B1 * !C1 * !D1 * X)	0.00185	0.00186	0.00185
	(A1 * !B1 * C1 * D1 * X)	-0.00135	-0.00136	-0.00136
	(A1 * !B1 * C1 * D1 * X)	0.00177	0.00179	0.00178
	(A1 * !B1 * C1 * !D1 * X)	-0.00135	-0.00136	-0.00135
	(A1 * !B1 * C1 * !D1 * X)	0.00178	0.00180	0.00179
	(A1 * !B1 * !C1 * D1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * !B1 * !C1 * D1 * X)	0.00175	0.00177	0.00176
	(!A1 * B1 * X)	-0.00129	-0.00132	-0.00131
	(!A1 * B1 * X)	0.00189	0.00192	0.00190
	(!A1 * !B1 * C1 * X)	-0.00129	-0.00132	-0.00131
	(!A1 * !B1 * C1 * X)	0.00189	0.00193	0.00190
	(!A1 * !B1 * !C1 * D1 * X)	-0.00129	-0.00132	-0.00131
	(!A1 * !B1 * !C1 * D1 * X)	0.00190	0.00193	0.00190
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00109	-0.00118	-0.00120
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00210	0.00206	0.00201

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00229	-0.00229	-0.00229
	(A1 * B1 * D1 * X)	0.00332	0.00334	0.00332
	(A1 * B1 * C1 * !D1 * X)	-0.00228	-0.00229	-0.00228
	(A1 * B1 * C1 * !D1 * X)	0.00332	0.00334	0.00332
	(A1 * B1 * !C1 * !D1 * X)	-0.00228	-0.00229	-0.00228
	(A1 * B1 * !C1 * !D1 * X)	0.00334	0.00337	0.00334
	(A1 * !B1 * C1 * D1 * X)	-0.00228	-0.00230	-0.00229
	(A1 * !B1 * C1 * D1 * X)	0.00319	0.00322	0.00319
	(A1 * !B1 * C1 * !D1 * X)	-0.00227	-0.00228	-0.00227
	(A1 * !B1 * C1 * !D1 * X)	0.00322	0.00325	0.00322
	(A1 * !B1 * !C1 * D1 * X)	-0.00226	-0.00226	-0.00224
	(A1 * !B1 * !C1 * D1 * X)	0.00319	0.00321	0.00321
	(!A1 * B1 * X)	-0.00217	-0.00222	-0.00221
	(!A1 * B1 * X)	0.00340	0.00345	0.00341
	(!A1 * !B1 * C1 * X)	-0.00216	-0.00222	-0.00221
	(!A1 * !B1 * C1 * X)	0.00340	0.00344	0.00341
	(!A1 * !B1 * !C1 * D1 * X)	-0.00214	-0.00219	-0.00219
	(!A1 * !B1 * !C1 * D1 * X)	0.00342	0.00347	0.00344
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00197	-0.00215	-0.00218
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00360	0.00352	0.00345

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)**	0.00133	0.00131	0.00127
	(A1 * A2 * C1 * D1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * C1 * !D1 * X)	0.00141	0.00137	0.00126
	(A1 * A2 * C1 * !D1 * X)	-0.00108	-0.00114	-0.00114
	(A1 * A2 * !C1 * D1 * X)	0.00137	0.00143	0.00132
	(A1 * A2 * !C1 * D1 * X)	-0.00109	-0.00106	-0.00108
	(A1 * A2 * !C1 * !D1 * X)	0.00127	0.00128	0.00125
	(A1 * A2 * !C1 * !D1 * X)	-0.00081	-0.00081	-0.00082
	(A1 * !A2 * C1 * D1 * X)	0.00129	0.00124	0.00123
	(A1 * !A2 * C1 * D1 * X)	-0.00150	-0.00160	-0.00160
	(A1 * !A2 * C1 * !D1 * X)	0.00154	0.00128	0.00125
	(A1 * !A2 * C1 * !D1 * X)	-0.00128	-0.00157	-0.00159
	(A1 * !A2 * !C1 * D1 * X)	0.00154	0.00129	0.00124
	(A1 * !A2 * !C1 * D1 * X)	-0.00120	-0.00153	-0.00157
	(!A1 * C1 * D1 * X)	0.00130	0.00124	0.00123
	(!A1 * C1 * D1 * X)	-0.00149	-0.00160	-0.00160
	(!A1 * C1 * !D1 * X)	0.00155	0.00128	0.00125
	(!A1 * C1 * !D1 * X)	-0.00127	-0.00157	-0.00159
	(!A1 * !C1 * D1 * X)	0.00155	0.00129	0.00124
	(!A1 * !C1 * D1 * X)	-0.00119	-0.00153	-0.00157

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00142	0.00139	0.00136
	(A1 * A2 * C1 * D1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * A2 * C1 * !D1 * X)	0.00151	0.00145	0.00135
	(A1 * A2 * C1 * !D1 * X)	-0.00126	-0.00130	-0.00129
	(A1 * A2 * !C1 * D1 * X)	0.00144	0.00151	0.00140
	(A1 * A2 * !C1 * D1 * X)	-0.00124	-0.00121	-0.00123
	(A1 * A2 * !C1 * !D1 * X)	0.00136	0.00138	0.00134
	(A1 * A2 * !C1 * !D1 * X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * C1 * D1 * X)	0.00137	0.00133	0.00132
	(A1 * !A2 * C1 * D1 * X)	-0.00171	-0.00180	-0.00179
	(A1 * !A2 * C1 * !D1 * X)	0.00163	0.00135	0.00134
	(A1 * !A2 * C1 * !D1 * X)	-0.00149	-0.00178	-0.00179
	(A1 * !A2 * !C1 * D1 * X)	0.00159	0.00135	0.00133
	(A1 * !A2 * !C1 * D1 * X)	-0.00142	-0.00173	-0.00174
	(!A1 * C1 * D1 * X)	0.00138	0.00133	0.00132
	(!A1 * C1 * D1 * X)	-0.00172	-0.00180	-0.00179
	(!A1 * C1 * !D1 * X)	0.00163	0.00135	0.00134
	(!A1 * C1 * !D1 * X)	-0.00149	-0.00178	-0.00179
	(!A1 * !C1 * D1 * X)	0.00159	0.00136	0.00133
	(!A1 * !C1 * D1 * X)	-0.00141	-0.00172	-0.00173

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00263	0.00257	0.00249
	(A1 * A2 * C1 * D1 * X)	-0.00237	-0.00239	-0.00236
	(A1 * A2 * C1 * !D1 * X)	0.00284	0.00272	0.00254
	(A1 * A2 * C1 * !D1 * X)	-0.00222	-0.00230	-0.00234
	(A1 * A2 * !C1 * D1 * X)	0.00267	0.00284	0.00260
	(A1 * A2 * !C1 * D1 * X)	-0.00231	-0.00222	-0.00227
	(A1 * A2 * !C1 * !D1 * X)	0.00254	0.00254	0.00247
	(A1 * A2 * !C1 * !D1 * X)	-0.00168	-0.00168	-0.00170
	(A1 * !A2 * C1 * D1 * X)	0.00252	0.00243	0.00241
	(A1 * !A2 * C1 * D1 * X)	-0.00315	-0.00330	-0.00330
	(A1 * !A2 * C1 * !D1 * X)	0.00307	0.00251	0.00246
	(A1 * !A2 * C1 * !D1 * X)	-0.00265	-0.00323	-0.00327
	(A1 * !A2 * !C1 * D1 * X)	0.00299	0.00253	0.00244
	(A1 * !A2 * !C1 * D1 * X)	-0.00252	-0.00313	-0.00323
	(!A1 * C1 * D1 * X)	0.00252	0.00243	0.00241
	(!A1 * C1 * D1 * X)	-0.00315	-0.00330	-0.00330
	(!A1 * C1 * !D1 * X)	0.00306	0.00251	0.00246
	(!A1 * C1 * !D1 * X)	-0.00266	-0.00324	-0.00327
	(!A1 * !C1 * D1 * X)	0.00298	0.00253	0.00244
	(!A1 * !C1 * D1 * X)	-0.00253	-0.00313	-0.00323

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)**	-0.00122	-0.00122	-0.00122
	(A1 * A2 * C1 * D1 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * C1 * !D1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * A2 * C1 * !D1 * X)	0.00114	0.00114	0.00114
	(A1 * A2 * !C1 * D1 * X)	-0.00121	-0.00122	-0.00122
	(A1 * A2 * !C1 * D1 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * !C1 * !D1 * X)	-0.00112	-0.00114	-0.00116
	(A1 * A2 * !C1 * !D1 * X)	0.00095	0.00095	0.00091
	(A1 * !A2 * C1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * C1 * D1 * X)	0.00159	0.00162	0.00160
	(A1 * !A2 * C1 * !D1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * X)	0.00163	0.00164	0.00164
	(A1 * !A2 * !C1 * D1 * X)	-0.00119	-0.00120	-0.00118
	(A1 * !A2 * !C1 * D1 * X)	0.00155	0.00156	0.00157
	(!A1 * C1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * C1 * D1 * X)	0.00159	0.00162	0.00160
	(!A1 * C1 * !D1 * X)	-0.00118	-0.00119	-0.00118
	(!A1 * C1 * !D1 * X)	0.00163	0.00164	0.00164
	(!A1 * !C1 * D1 * X)	-0.00119	-0.00120	-0.00118
	(!A1 * !C1 * D1 * X)	0.00155	0.00156	0.00157

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00130	-0.00132	-0.00131
	(A1 * A2 * C1 * D1 * X)	0.00130	0.00131	0.00130
	(A1 * A2 * C1 * !D1 * X)	-0.00130	-0.00131	-0.00131
	(A1 * A2 * C1 * !D1 * X)	0.00128	0.00130	0.00129
	(A1 * A2 * !C1 * D1 * X)	-0.00131	-0.00131	-0.00130
	(A1 * A2 * !C1 * D1 * X)	0.00124	0.00124	0.00123
	(A1 * A2 * !C1 * !D1 * X)	-0.00120	-0.00121	-0.00124
	(A1 * A2 * !C1 * !D1 * X)	0.00104	0.00104	0.00101
	(A1 * !A2 * C1 * D1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * !A2 * C1 * D1 * X)	0.00179	0.00180	0.00179
	(A1 * !A2 * C1 * !D1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * C1 * !D1 * X)	0.00181	0.00182	0.00182
	(A1 * !A2 * !C1 * D1 * X)	-0.00129	-0.00130	-0.00128
	(A1 * !A2 * !C1 * D1 * X)	0.00173	0.00174	0.00174
	(!A1 * C1 * D1 * X)	-0.00131	-0.00131	-0.00131
	(!A1 * C1 * D1 * X)	0.00179	0.00180	0.00179
	(!A1 * C1 * !D1 * X)	-0.00129	-0.00129	-0.00129
	(!A1 * C1 * !D1 * X)	0.00181	0.00182	0.00182
	(!A1 * !C1 * D1 * X)	-0.00129	-0.00130	-0.00128
	(!A1 * !C1 * D1 * X)	0.00172	0.00173	0.00173

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00238	-0.00240	-0.00238
	(A1 * A2 * C1 * D1 * X)	0.00237	0.00239	0.00236
	(A1 * A2 * C1 * !D1 * X)	-0.00238	-0.00240	-0.00238
	(A1 * A2 * C1 * !D1 * X)	0.00234	0.00236	0.00234
	(A1 * A2 * !C1 * D1 * X)	-0.00240	-0.00241	-0.00239
	(A1 * A2 * !C1 * D1 * X)	0.00231	0.00232	0.00230
	(A1 * A2 * !C1 * !D1 * X)	-0.00220	-0.00222	-0.00222
	(A1 * A2 * !C1 * !D1 * X)	0.00197	0.00198	0.00194
	(A1 * !A2 * C1 * D1 * X)	-0.00237	-0.00238	-0.00238
	(A1 * !A2 * C1 * D1 * X)	0.00329	0.00330	0.00330
	(A1 * !A2 * C1 * !D1 * X)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * C1 * !D1 * X)	0.00335	0.00336	0.00336
	(A1 * !A2 * !C1 * D1 * X)	-0.00235	-0.00235	-0.00232
	(A1 * !A2 * !C1 * D1 * X)	0.00320	0.00321	0.00323
	(!A1 * C1 * D1 * X)	-0.00237	-0.00238	-0.00238
	(!A1 * C1 * D1 * X)	0.00329	0.00330	0.00330
	(!A1 * C1 * !D1 * X)	-0.00233	-0.00234	-0.00233
	(!A1 * C1 * !D1 * X)	0.00335	0.00336	0.00336
	(!A1 * !C1 * D1 * X)	-0.00235	-0.00235	-0.00232
	(!A1 * !C1 * D1 * X)	0.00321	0.00321	0.00323

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)**	0.00136	0.00137	0.00129
	(A1 * B1 * D1 * X)	-0.00104	-0.00103	-0.00105
	(A1 * B1 * !D1 * X)	0.00127	0.00127	0.00124
	(A1 * B1 * !D1 * X)	-0.00081	-0.00081	-0.00082
	(A1 * A2 * !B1 * D1 * X)	0.00157	0.00140	0.00133
	(A1 * A2 * !B1 * D1 * X)	-0.00091	-0.00103	-0.00106
	(A1 * A2 * !B1 * !D1 * X)	0.00127	0.00128	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00079	-0.00080	-0.00081
	(A1 * !A2 * !B1 * D1 * X)	0.00166	0.00132	0.00125
	(A1 * !A2 * !B1 * D1 * X)	-0.00116	-0.00151	-0.00157
	(!A1 * B1 * D1 * X)	0.00135	0.00137	0.00128
	(!A1 * B1 * D1 * X)	-0.00104	-0.00105	-0.00105
	(!A1 * B1 * !D1 * X)	0.00128	0.00128	0.00125
	(!A1 * B1 * !D1 * X)	-0.00081	-0.00081	-0.00082
	(!A1 * !B1 * D1 * X)	0.00167	0.00132	0.00125
	(!A1 * !B1 * D1 * X)	-0.00116	-0.00151	-0.00157

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00145	0.00146	0.00137
	(A1 * B1 * D1 * X)	-0.00122	-0.00124	-0.00125
	(A1 * B1 * !D1 * X)	0.00134	0.00135	0.00132
	(A1 * B1 * !D1 * X)	-0.00095	-0.00095	-0.00096
	(A1 * A2 * !B1 * D1 * X)	0.00167	0.00150	0.00140
	(A1 * A2 * !B1 * D1 * X)	-0.00111	-0.00125	-0.00126
	(A1 * A2 * !B1 * !D1 * X)	0.00135	0.00135	0.00132
	(A1 * A2 * !B1 * !D1 * X)	-0.00093	-0.00093	-0.00095
	(A1 * !A2 * !B1 * D1 * X)	0.00175	0.00139	0.00132
	(A1 * !A2 * !B1 * D1 * X)	-0.00143	-0.00180	-0.00184
	(!A1 * B1 * D1 * X)	0.00145	0.00145	0.00136
	(!A1 * B1 * D1 * X)	-0.00124	-0.00126	-0.00126
	(!A1 * B1 * !D1 * X)	0.00134	0.00135	0.00132
	(!A1 * B1 * !D1 * X)	-0.00096	-0.00096	-0.00097
	(!A1 * !B1 * D1 * X)	0.00175	0.00139	0.00132
	(!A1 * !B1 * D1 * X)	-0.00143	-0.00180	-0.00184

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00264	0.00269	0.00251
	(A1 * B1 * D1 * X)	-0.00226	-0.00224	-0.00230
	(A1 * B1 * !D1 * X)	0.00242	0.00244	0.00238
	(A1 * B1 * !D1 * X)	-0.00173	-0.00174	-0.00177
	(A1 * A2 * !B1 * D1 * X)	0.00307	0.00276	0.00255
	(A1 * A2 * !B1 * D1 * X)	-0.00200	-0.00224	-0.00230
	(A1 * A2 * !B1 * !D1 * X)	0.00246	0.00246	0.00240
	(A1 * A2 * !B1 * !D1 * X)	-0.00171	-0.00171	-0.00174
	(A1 * !A2 * !B1 * D1 * X)	0.00332	0.00253	0.00238
	(A1 * !A2 * !B1 * D1 * X)	-0.00245	-0.00324	-0.00335
	(!A1 * B1 * D1 * X)	0.00262	0.00268	0.00250
	(!A1 * B1 * D1 * X)	-0.00229	-0.00226	-0.00232
	(!A1 * B1 * !D1 * X)	0.00245	0.00246	0.00240
	(!A1 * B1 * !D1 * X)	-0.00172	-0.00173	-0.00177
	(!A1 * !B1 * D1 * X)	0.00332	0.00253	0.00238
	(!A1 * !B1 * D1 * X)	-0.00245	-0.00324	-0.00335

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)**	-0.00122	-0.00123	-0.00122
	(A1 * B1 * D1 * X)	0.00105	0.00106	0.00105
	(A1 * B1 * !D1 * X)	-0.00122	-0.00122	-0.00121
	(A1 * B1 * !D1 * X)	0.00085	0.00086	0.00086
	(A1 * A2 * !B1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !B1 * D1 * X)	0.00108	0.00110	0.00109
	(A1 * A2 * !B1 * !D1 * X)	-0.00110	-0.00111	-0.00121
	(A1 * A2 * !B1 * !D1 * X)	0.00093	0.00093	0.00085
	(A1 * !A2 * !B1 * D1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !B1 * D1 * X)	0.00161	0.00163	0.00162
	(!A1 * B1 * D1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * B1 * D1 * X)	0.00106	0.00106	0.00105
	(!A1 * B1 * !D1 * X)	-0.00122	-0.00122	-0.00121
	(!A1 * B1 * !D1 * X)	0.00086	0.00086	0.00086
	(!A1 * !B1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * !B1 * D1 * X)	0.00162	0.00162	0.00162

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00129	-0.00130	-0.00129
	(A1 * B1 * D1 * X)	0.00125	0.00125	0.00125
	(A1 * B1 * !D1 * X)	-0.00129	-0.00129	-0.00128
	(A1 * B1 * !D1 * X)	0.00101	0.00101	0.00101
	(A1 * A2 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !B1 * D1 * X)	0.00127	0.00128	0.00127
	(A1 * A2 * !B1 * !D1 * X)	-0.00115	-0.00116	-0.00128
	(A1 * A2 * !B1 * !D1 * X)	0.00108	0.00108	0.00099
	(A1 * !A2 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * D1 * X)	0.00187	0.00187	0.00187
	(!A1 * B1 * D1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * D1 * X)	0.00127	0.00127	0.00126
	(!A1 * B1 * !D1 * X)	-0.00129	-0.00129	-0.00128
	(!A1 * B1 * !D1 * X)	0.00102	0.00102	0.00102
	(!A1 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * D1 * X)	0.00187	0.00187	0.00187

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00234	-0.00236	-0.00234
	(A1 * B1 * D1 * X)	0.00230	0.00232	0.00230
	(A1 * B1 * !D1 * X)	-0.00230	-0.00230	-0.00227
	(A1 * B1 * !D1 * X)	0.00185	0.00185	0.00188
	(A1 * A2 * !B1 * D1 * X)	-0.00232	-0.00233	-0.00232
	(A1 * A2 * !B1 * D1 * X)	0.00235	0.00237	0.00236
	(A1 * A2 * !B1 * !D1 * X)	-0.00209	-0.00211	-0.00227
	(A1 * A2 * !B1 * !D1 * X)	0.00198	0.00197	0.00187
	(A1 * !A2 * !B1 * D1 * X)	-0.00227	-0.00229	-0.00227
	(A1 * !A2 * !B1 * D1 * X)	0.00342	0.00345	0.00345
	(!A1 * B1 * D1 * X)	-0.00234	-0.00236	-0.00234
	(!A1 * B1 * D1 * X)	0.00232	0.00234	0.00232
	(!A1 * B1 * !D1 * X)	-0.00230	-0.00230	-0.00227
	(!A1 * B1 * !D1 * X)	0.00187	0.00186	0.00189
	(!A1 * !B1 * D1 * X)	-0.00227	-0.00229	-0.00227
	(!A1 * !B1 * D1 * X)	0.00342	0.00345	0.00345

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00133	0.00134	0.00133
	(A1 * C1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !C1 * X)	0.00133	0.00134	0.00133
	(A1 * B1 * !C1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * !B1 * !C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * !C1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * C1 * X)	0.00133	0.00134	0.00133
	(!A1 * C1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * B1 * !C1 * X)	0.00133	0.00134	0.00133
	(!A1 * B1 * !C1 * X)	-0.00076	-0.00077	-0.00076

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00161	0.00162	0.00161
	(A1 * C1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * B1 * !C1 * X)	0.00161	0.00162	0.00161
	(A1 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00161	0.00162	0.00162
	(A1 * A2 * !B1 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * C1 * X)	0.00161	0.00162	0.00162
	(!A1 * C1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !C1 * X)	0.00161	0.00162	0.00162
	(!A1 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00260	0.00261	0.00260
	(A1 * C1 * X)	-0.00157	-0.00157	-0.00157
	(A1 * B1 * !C1 * X)	0.00260	0.00260	0.00260
	(A1 * B1 * !C1 * X)	-0.00156	-0.00156	-0.00155
	(A1 * A2 * !B1 * !C1 * X)	0.00260	0.00261	0.00260
	(A1 * A2 * !B1 * !C1 * X)	-0.00154	-0.00155	-0.00154
	(!A1 * C1 * X)	0.00260	0.00261	0.00260
	(!A1 * C1 * X)	-0.00157	-0.00157	-0.00157
	(!A1 * B1 * !C1 * X)	0.00259	0.00261	0.00260
	(!A1 * B1 * !C1 * X)	-0.00155	-0.00156	-0.00155

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00128	-0.00128	-0.00132
	(A1 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B1 * !C1 * X)	-0.00120	-0.00121	-0.00131
	(A1 * B1 * !C1 * X)	0.00086	0.00086	0.00079
	(A1 * A2 * !B1 * !C1 * X)	-0.00100	-0.00101	-0.00125
	(A1 * A2 * !B1 * !C1 * X)	0.00099	0.00099	0.00083
	(!A1 * C1 * X)	-0.00128	-0.00128	-0.00132
	(!A1 * C1 * X)	0.00083	0.00082	0.00079
	(!A1 * B1 * !C1 * X)	-0.00120	-0.00120	-0.00131
	(!A1 * B1 * !C1 * X)	0.00086	0.00086	0.00079
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00155	-0.00156	-0.00160
	(A1 * C1 * X)	0.00089	0.00089	0.00086
	(A1 * B1 * !C1 * X)	-0.00146	-0.00147	-0.00158
	(A1 * B1 * !C1 * X)	0.00094	0.00094	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00125	-0.00153
	(A1 * A2 * !B1 * !C1 * X)	0.00109	0.00108	0.00090
	(!A1 * C1 * X)	-0.00155	-0.00156	-0.00160
	(!A1 * C1 * X)	0.00089	0.00089	0.00086
	(!A1 * B1 * !C1 * X)	-0.00146	-0.00147	-0.00158
	(!A1 * B1 * !C1 * X)	0.00094	0.00094	0.00086
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00242	-0.00243	-0.00256
	(A1 * C1 * X)	0.00174	0.00174	0.00163
	(A1 * B1 * !C1 * X)	-0.00223	-0.00224	-0.00252
	(A1 * B1 * !C1 * X)	0.00182	0.00181	0.00162
	(A1 * A2 * !B1 * !C1 * X)	-0.00182	-0.00184	-0.00241
	(A1 * A2 * !B1 * !C1 * X)	0.00210	0.00208	0.00170
	(!A1 * C1 * X)	-0.00242	-0.00243	-0.00256
	(!A1 * C1 * X)	0.00175	0.00174	0.00163
	(!A1 * B1 * !C1 * X)	-0.00222	-0.00224	-0.00252
	(!A1 * B1 * !C1 * X)	0.00183	0.00183	0.00163

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00301	0.00286	0.00300	0.00305	0.25283
sky130_fd_sc_hs__a211oi_2	0.00553	0.00578	0.00469	0.00449	0.47728
sky130_fd_sc_hs__a211oi_4	0.01112	0.01115	0.00898	0.00913	0.87612

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.60134	1.11406
sky130_fd_sc_hs__a211oi_2	0.00000	1.01572	2.04147
sky130_fd_sc_hs__a211oi_4	0.00000	1.93753	4.07138

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)	0.21017	1.18423	9.07887
	A2->Y (FR)	0.24723	1.23940	9.23529
	B1->Y (FR)	0.21906	1.23435	9.83131
	C1->Y (FR)	0.16648	1.20301	10.04480
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.18326	0.99637	9.02387
	A2->Y (FR)	0.23327	1.04616	9.07137
	B1->Y (FR)	0.19866	1.04762	9.66863
	C1->Y (FR)	0.12747	0.99495	9.86897
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.17459	0.84517	8.74960
	A2->Y (FR)	0.22756	0.90769	8.92080
	B1->Y (FR)	0.18796	0.90167	9.55344
	C1->Y (FR)	0.12059	0.85857	9.81234

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.05987	0.57485	4.88352
	A2->Y (RF)	0.06541	0.52852	4.35734
	B1->Y (RF)	0.03921	0.44892	3.91934
	C1->Y (RF)	0.03329	0.43272	3.90480
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.05167	0.52123	4.95230
	A2->Y (RF)	0.06225	0.48194	4.41463
	B1->Y (RF)	0.05821	0.56016	5.53328
	C1->Y (RF)	0.04023	0.52613	5.43016
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.05083	0.47415	4.92472
	A2->Y (RF)	0.05959	0.42310	4.24647
	B1->Y (RF)	0.05553	0.50481	5.46228
	C1->Y (RF)	0.03863	0.47100	5.42203

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00061	0.00046	0.00381
	A1	0.00703	0.00688	0.01026
	A2	0.00099	0.00089	0.00427
	A2	0.00828	0.00819	0.01158
	B1	0.00051	0.00046	0.00466
	B1	0.00579	0.00567	0.00995
	C1	0.00034	0.00071	0.00649
	C1	0.00473	0.00498	0.01088
sky130_fd_sc_hs__a211oi_2	A1	0.00021	-0.00004	0.00667
	A1	0.01252	0.01232	0.01899
	A2	0.00186	0.00156	0.00824
	A2	0.01611	0.01577	0.02257
	B1	0.00094	0.00087	0.00559
	B1	0.01338	0.01324	0.01758
	C1	0.00077	0.00136	0.00838
	C1	0.01106	0.01149	0.01810
sky130_fd_sc_hs__a211oi_4	A1	-0.00008	-0.00058	0.01286
	A1	0.02441	0.02396	0.03753
	A2	0.00261	0.00211	0.01553
	A2	0.03095	0.03039	0.04385
	B1	0.00136	0.00131	0.01106
	B1	0.02550	0.02527	0.03412
	C1	0.00110	0.00242	0.01639
	C1	0.02112	0.02188	0.03519

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00888	0.00884	0.01240
	A1	0.00253	0.00250	0.00605
	A2	0.00975	0.00967	0.01286
	A2	0.00251	0.00237	0.00561
	B1	0.00610	0.00627	0.01042
	B1	0.00084	0.00097	0.00513
	C1	0.00415	0.00446	0.00851
	C1	-0.00023	0.00008	0.00408
sky130_fd_sc_hs__a211oi_2	A1	0.01666	0.01665	0.02357
	A1	0.00445	0.00443	0.01142
	A2	0.01864	0.01830	0.02474
	A2	0.00442	0.00410	0.01044
	B1	0.01261	0.01275	0.01798
	B1	0.00182	0.00185	0.00698
	C1	0.00744	0.00801	0.01346
	C1	-0.00115	-0.00071	0.00445
sky130_fd_sc_hs__a211oi_4	A1	0.03300	0.03279	0.04685
	A1	0.00874	0.00849	0.02259
	A2	0.03686	0.03624	0.04926
	A2	0.00867	0.00807	0.02111
	B1	0.02396	0.02390	0.03464
	B1	0.00269	0.00288	0.01329
	C1	0.01058	0.01149	0.02249
	C1	-0.00273	-0.00180	0.00862

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)**	0.00131	0.00130	0.00130
	(A2 * B1 * C1 * !Y)	-0.00177	-0.00181	-0.00181
	(A2 * B1 * !C1 * !Y)	0.00146	0.00131	0.00131
	(A2 * B1 * !C1 * !Y)	-0.00162	-0.00180	-0.00182
	(A2 * !B1 * C1 * !Y)	0.00146	0.00133	0.00130
	(A2 * !B1 * C1 * !Y)	-0.00153	-0.00177	-0.00177
	(!A2 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * B1 * C1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * B1 * !C1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * B1 * !C1 * !Y)	-0.00185	-0.00185	-0.00185
	(!A2 * !B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(!A2 * !B1 * C1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * Y)	0.00045	0.00045	0.00043
	(!A2 * !B1 * !C1 * Y)	-0.00208	-0.00209	-0.00212
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00265	0.00266	0.00265
	(A2 * B1 * C1 * !Y)	-0.00346	-0.00358	-0.00356
	(A2 * B1 * !C1 * !Y)	0.00290	0.00268	0.00266
	(A2 * B1 * !C1 * !Y)	-0.00322	-0.00357	-0.00358
	(A2 * !B1 * C1 * !Y)	0.00290	0.00269	0.00266
	(A2 * !B1 * C1 * !Y)	-0.00308	-0.00347	-0.00348
	(!A2 * B1 * C1 * !Y)	0.00252	0.00255	0.00253
	(!A2 * B1 * C1 * !Y)	-0.00364	-0.00366	-0.00365
	(!A2 * B1 * !C1 * !Y)	0.00252	0.00255	0.00254
	(!A2 * B1 * !C1 * !Y)	-0.00362	-0.00366	-0.00364
	(!A2 * !B1 * C1 * !Y)	0.00253	0.00256	0.00254
	(!A2 * !B1 * C1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A2 * !B1 * !C1 * Y)	0.00106	0.00107	0.00099
	(!A2 * !B1 * !C1 * Y)	-0.00402	-0.00405	-0.00415

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00514	0.00517	0.00515
	(A2 * B1 * C1 * !Y)	-0.00699	-0.00726	-0.00721
	(A2 * B1 * !C1 * !Y)	0.00575	0.00520	0.00518
	(A2 * B1 * !C1 * !Y)	-0.00642	-0.00723	-0.00726
	(A2 * !B1 * C1 * !Y)	0.00574	0.00525	0.00518
	(A2 * !B1 * C1 * !Y)	-0.00613	-0.00705	-0.00705
	(!A2 * B1 * C1 * !Y)	0.00489	0.00494	0.00491
	(!A2 * B1 * C1 * !Y)	-0.00739	-0.00744	-0.00741
	(!A2 * B1 * !C1 * !Y)	0.00491	0.00494	0.00492
	(!A2 * B1 * !C1 * !Y)	-0.00741	-0.00743	-0.00740
	(!A2 * !B1 * C1 * !Y)	0.00489	0.00495	0.00492
	(!A2 * !B1 * C1 * !Y)	-0.00736	-0.00742	-0.00739
	(!A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00173
	(!A2 * !B1 * !C1 * Y)	-0.00825	-0.00831	-0.00849

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)**	-0.00130	-0.00130	-0.00129
	(A2 * B1 * C1 * !Y)	0.00181	0.00181	0.00181
	(A2 * B1 * !C1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !C1 * !Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * C1 * !Y)	-0.00128	-0.00129	-0.00127
	(A2 * !B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(!A2 * B1 * C1 * !Y)	-0.00123	-0.00125	-0.00124
	(!A2 * B1 * C1 * !Y)	0.00185	0.00188	0.00186
	(!A2 * B1 * !C1 * !Y)	-0.00123	-0.00125	-0.00124
	(!A2 * B1 * !C1 * !Y)	0.00187	0.00188	0.00186
	(!A2 * !B1 * C1 * !Y)	-0.00123	-0.00125	-0.00125
	(!A2 * !B1 * C1 * !Y)	0.00187	0.00188	0.00186
	(!A2 * !B1 * !C1 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * Y)	0.00213	0.00215	0.00214
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00263	-0.00265	-0.00264
	(A2 * B1 * C1 * !Y)	0.00353	0.00358	0.00356
	(A2 * B1 * !C1 * !Y)	-0.00263	-0.00264	-0.00262
	(A2 * B1 * !C1 * !Y)	0.00359	0.00360	0.00358
	(A2 * !B1 * C1 * !Y)	-0.00262	-0.00262	-0.00261
	(A2 * !B1 * C1 * !Y)	0.00347	0.00347	0.00348
	(!A2 * B1 * C1 * !Y)	-0.00251	-0.00255	-0.00253
	(!A2 * B1 * C1 * !Y)	0.00367	0.00367	0.00366
	(!A2 * B1 * !C1 * !Y)	-0.00249	-0.00254	-0.00254
	(!A2 * B1 * !C1 * !Y)	0.00366	0.00369	0.00367
	(!A2 * !B1 * C1 * !Y)	-0.00249	-0.00253	-0.00254
	(!A2 * !B1 * C1 * !Y)	0.00367	0.00368	0.00367
	(!A2 * !B1 * !C1 * Y)	-0.00095	-0.00094	-0.00094
	(!A2 * !B1 * !C1 * Y)	0.00420	0.00421	0.00418

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00514	-0.00515	-0.00513
	(A2 * B1 * C1 * !Y)	0.00724	0.00726	0.00721
	(A2 * B1 * !C1 * !Y)	-0.00512	-0.00512	-0.00510
	(A2 * B1 * !C1 * !Y)	0.00728	0.00730	0.00726
	(A2 * !B1 * C1 * !Y)	-0.00509	-0.00511	-0.00507
	(A2 * !B1 * C1 * !Y)	0.00702	0.00706	0.00705
	(!A2 * B1 * C1 * !Y)	-0.00487	-0.00494	-0.00491
	(!A2 * B1 * C1 * !Y)	0.00746	0.00746	0.00744
	(!A2 * B1 * !C1 * !Y)	-0.00483	-0.00494	-0.00492
	(!A2 * B1 * !C1 * !Y)	0.00744	0.00749	0.00745
	(!A2 * !B1 * C1 * !Y)	-0.00482	-0.00493	-0.00492
	(!A2 * !B1 * C1 * !Y)	0.00744	0.00750	0.00746
	(!A2 * !B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !C1 * Y)	0.00854	0.00859	0.00855

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)**	0.00131	0.00132	0.00131
	(A1 * B1 * C1 * !Y)	-0.00177	-0.00183	-0.00182
	(A1 * B1 * !C1 * !Y)	0.00148	0.00133	0.00132
	(A1 * B1 * !C1 * !Y)	-0.00162	-0.00182	-0.00183
	(A1 * !B1 * C1 * !Y)	0.00147	0.00135	0.00132
	(A1 * !B1 * C1 * !Y)	-0.00154	-0.00178	-0.00178
	(!A1 * B1 * !Y)	0.00126	0.00126	0.00125
	(!A1 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(!A1 * !B1 * C1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !B1 * !C1 * Y)	0.00127	0.00127	0.00127
	(!A1 * !B1 * !C1 * Y)	-0.00186	-0.00186	-0.00185

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00272	0.00272	0.00271
	(A1 * B1 * C1 * !Y)	-0.00357	-0.00367	-0.00366
	(A1 * B1 * !C1 * !Y)	0.00303	0.00274	0.00273
	(A1 * B1 * !C1 * !Y)	-0.00328	-0.00366	-0.00369
	(A1 * !B1 * C1 * !Y)	0.00301	0.00276	0.00272
	(A1 * !B1 * C1 * !Y)	-0.00313	-0.00357	-0.00358
	(!A1 * B1 * !Y)	0.00259	0.00261	0.00260
	(!A1 * B1 * !Y)	-0.00375	-0.00377	-0.00376
	(!A1 * !B1 * C1 * !Y)	0.00260	0.00263	0.00261
	(!A1 * !B1 * C1 * !Y)	-0.00374	-0.00376	-0.00375
	(!A1 * !B1 * !C1 * Y)	0.00241	0.00243	0.00242
	(!A1 * !B1 * !C1 * Y)	-0.00394	-0.00396	-0.00394
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00530	0.00531	0.00528
	(A1 * B1 * C1 * !Y)	-0.00708	-0.00730	-0.00727
	(A1 * B1 * !C1 * !Y)	0.00594	0.00535	0.00531
	(A1 * B1 * !C1 * !Y)	-0.00648	-0.00729	-0.00733
	(A1 * !B1 * C1 * !Y)	0.00591	0.00540	0.00531
	(A1 * !B1 * C1 * !Y)	-0.00619	-0.00711	-0.00711
	(!A1 * B1 * !Y)	0.00502	0.00508	0.00503
	(!A1 * B1 * !Y)	-0.00747	-0.00751	-0.00748
	(!A1 * !B1 * C1 * !Y)	0.00506	0.00510	0.00506
	(!A1 * !B1 * C1 * !Y)	-0.00747	-0.00749	-0.00746
	(!A1 * !B1 * !C1 * Y)	0.00508	0.00513	0.00508
	(!A1 * !B1 * !C1 * Y)	-0.00746	-0.00749	-0.00744

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)**	-0.00131	-0.00131	-0.00131
	(A1 * B1 * C1 * !Y)	0.00182	0.00183	0.00182
	(A1 * B1 * !C1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * B1 * !C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * !B1 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * C1 * !Y)	0.00177	0.00179	0.00178
	(!A1 * B1 * !Y)	-0.00124	-0.00126	-0.00125
	(!A1 * B1 * !Y)	0.00186	0.00190	0.00187
	(!A1 * !B1 * C1 * !Y)	-0.00124	-0.00127	-0.00126
	(!A1 * !B1 * C1 * !Y)	0.00187	0.00190	0.00188
	(!A1 * !B1 * !C1 * Y)	-0.00115	-0.00124	-0.00126
	(!A1 * !B1 * !C1 * Y)	0.00197	0.00193	0.00188
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00270	-0.00271	-0.00270
	(A1 * B1 * C1 * !Y)	0.00366	0.00367	0.00366
	(A1 * B1 * !C1 * !Y)	-0.00269	-0.00270	-0.00269
	(A1 * B1 * !C1 * !Y)	0.00369	0.00371	0.00369
	(A1 * !B1 * C1 * !Y)	-0.00269	-0.00270	-0.00267
	(A1 * !B1 * C1 * !Y)	0.00357	0.00360	0.00358
	(!A1 * B1 * !Y)	-0.00257	-0.00261	-0.00260
	(!A1 * B1 * !Y)	0.00376	0.00381	0.00378
	(!A1 * !B1 * C1 * !Y)	-0.00255	-0.00262	-0.00261
	(!A1 * !B1 * C1 * !Y)	0.00376	0.00382	0.00379
	(!A1 * !B1 * !C1 * Y)	-0.00221	-0.00240	-0.00242
	(!A1 * !B1 * !C1 * Y)	0.00411	0.00404	0.00398

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00527	-0.00527	-0.00526
	(A1 * B1 * C1 * !Y)	0.00727	0.00730	0.00727
	(A1 * B1 * !C1 * !Y)	-0.00525	-0.00525	-0.00523
	(A1 * B1 * !C1 * !Y)	0.00735	0.00735	0.00733
	(A1 * !B1 * C1 * !Y)	-0.00523	-0.00526	-0.00520
	(A1 * !B1 * C1 * !Y)	0.00709	0.00714	0.00711
	(!A1 * B1 * !Y)	-0.00498	-0.00508	-0.00503
	(!A1 * B1 * !Y)	0.00748	0.00758	0.00751
	(!A1 * !B1 * C1 * !Y)	-0.00497	-0.00508	-0.00506
	(!A1 * !B1 * C1 * !Y)	0.00751	0.00760	0.00753
	(!A1 * !B1 * !C1 * Y)	-0.00461	-0.00502	-0.00508
	(!A1 * !B1 * !C1 * Y)	0.00789	0.00767	0.00752

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)	0.00160	0.00154	0.00145
	(A1 * A2 * C1 * !Y)	-0.00121	-0.00126	-0.00127
	(A1 * A2 * !C1 * !Y)	0.00141	0.00142	0.00139
	(A1 * A2 * !C1 * !Y)	-0.00090	-0.00090	-0.00092
	(A1 * !A2 * C1 * !Y)	0.00180	0.00143	0.00138
	(A1 * !A2 * C1 * !Y)	-0.00139	-0.00175	-0.00179
	(!A1 * C1 * !Y)	0.00178	0.00143	0.00138
	(!A1 * C1 * !Y)	-0.00139	-0.00175	-0.00179
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00201	0.00196	0.00178
	(A1 * A2 * C1 * !Y)	-0.00244	-0.00246	-0.00250
	(A1 * A2 * !C1 * !Y)	0.00170	0.00170	0.00164
	(A1 * A2 * !C1 * !Y)	-0.00175	-0.00176	-0.00179
	(A1 * !A2 * C1 * !Y)	0.00247	0.00170	0.00160
	(A1 * !A2 * C1 * !Y)	-0.00269	-0.00348	-0.00355
	(!A1 * C1 * !Y)	0.00247	0.00170	0.00160
	(!A1 * C1 * !Y)	-0.00269	-0.00348	-0.00355
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00372	0.00357	0.00319
	(A1 * A2 * C1 * !Y)	-0.00495	-0.00505	-0.00510
	(A1 * A2 * !C1 * !Y)	0.00308	0.00309	0.00296
	(A1 * A2 * !C1 * !Y)	-0.00364	-0.00367	-0.00373
	(A1 * !A2 * C1 * !Y)	0.00470	0.00310	0.00289
	(A1 * !A2 * C1 * !Y)	-0.00554	-0.00716	-0.00732
	(!A1 * C1 * !Y)	0.00467	0.00310	0.00289
	(!A1 * C1 * !Y)	-0.00557	-0.00716	-0.00732

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)	-0.00136	-0.00137	-0.00136
	(A1 * A2 * C1 * !Y)	0.00127	0.00128	0.00127
	(A1 * A2 * !C1 * !Y)	-0.00133	-0.00133	-0.00135
	(A1 * A2 * !C1 * !Y)	0.00099	0.00099	0.00097
	(A1 * !A2 * C1 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * C1 * !Y)	0.00180	0.00181	0.00181
	(!A1 * C1 * !Y)	-0.00135	-0.00135	-0.00135
	(!A1 * C1 * !Y)	0.00180	0.00181	0.00181
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00162	-0.00163	-0.00162
	(A1 * A2 * C1 * !Y)	0.00251	0.00251	0.00250
	(A1 * A2 * !C1 * !Y)	-0.00153	-0.00153	-0.00154
	(A1 * A2 * !C1 * !Y)	0.00191	0.00191	0.00191
	(A1 * !A2 * C1 * !Y)	-0.00155	-0.00157	-0.00154
	(A1 * !A2 * C1 * !Y)	0.00355	0.00359	0.00358
	(!A1 * C1 * !Y)	-0.00156	-0.00157	-0.00154
	(!A1 * C1 * !Y)	0.00355	0.00359	0.00358
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00287	-0.00289	-0.00288
	(A1 * A2 * C1 * !Y)	0.00508	0.00513	0.00510
	(A1 * A2 * !C1 * !Y)	-0.00274	-0.00275	-0.00276
	(A1 * A2 * !C1 * !Y)	0.00398	0.00396	0.00395
	(A1 * !A2 * C1 * !Y)	-0.00280	-0.00279	-0.00277
	(A1 * !A2 * C1 * !Y)	0.00733	0.00732	0.00738
	(!A1 * C1 * !Y)	-0.00280	-0.00282	-0.00277
	(!A1 * C1 * !Y)	0.00734	0.00741	0.00738

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00162	0.00163	0.00163
	(A1 * B1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * !Y)	0.00162	0.00164	0.00163
	(A1 * A2 * !B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !Y)	0.00163	0.00163	0.00163
	(!A1 * B1 * !Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00173	0.00174	0.00173
	(A1 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * !B1 * !Y)	0.00173	0.00174	0.00173
	(A1 * A2 * !B1 * !Y)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * !Y)	0.00173	0.00174	0.00173
	(!A1 * B1 * !Y)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00349	0.00350	0.00349
	(A1 * B1 * !Y)	-0.00337	-0.00337	-0.00335
	(A1 * A2 * !B1 * !Y)	0.00349	0.00351	0.00349
	(A1 * A2 * !B1 * !Y)	-0.00333	-0.00335	-0.00332
	(!A1 * B1 * !Y)	0.00349	0.00352	0.00350
	(!A1 * B1 * !Y)	-0.00336	-0.00339	-0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00157	-0.00157	-0.00162
	(A1 * B1 * !Y)	0.00087	0.00087	0.00083
	(A1 * A2 * !B1 * !Y)	-0.00141	-0.00142	-0.00159
	(A1 * A2 * !B1 * !Y)	0.00097	0.00097	0.00085
	(!A1 * B1 * !Y)	-0.00156	-0.00158	-0.00162
	(!A1 * B1 * !Y)	0.00087	0.00087	0.00084
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00157	-0.00157	-0.00172
	(A1 * B1 * !Y)	0.00183	0.00182	0.00171
	(A1 * A2 * !B1 * !Y)	-0.00128	-0.00129	-0.00165
	(A1 * A2 * !B1 * !Y)	0.00199	0.00198	0.00173
	(!A1 * B1 * !Y)	-0.00156	-0.00157	-0.00171
	(!A1 * B1 * !Y)	0.00184	0.00183	0.00172
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00321	-0.00322	-0.00347
	(A1 * B1 * !Y)	0.00364	0.00362	0.00343
	(A1 * A2 * !B1 * !Y)	-0.00257	-0.00261	-0.00333
	(A1 * A2 * !B1 * !Y)	0.00396	0.00397	0.00348
	(!A1 * B1 * !Y)	-0.00318	-0.00322	-0.00347
	(!A1 * B1 * !Y)	0.00363	0.00365	0.00344

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00275	0.00261	0.00279	0.00277	0.81065
sky130_fd_sc_hs__a211o_2	0.00301	0.00300	0.00296	0.00287	1.57493
sky130_fd_sc_hs__a211o_4	0.00514	0.00526	0.00554	0.00505	3.05451

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	1.32348	2.13878
sky130_fd_sc_hs__a211o_2	0.00000	1.63155	2.50024
sky130_fd_sc_hs__a211o_4	0.00000	3.11260	4.89694

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)	0.14259	0.87099	7.60817
	A2->X (RR)	0.14863	0.85466	7.55972
	B1->X (RR)	0.10432	0.79515	7.32519
	C1->X (RR)	0.09569	0.76589	7.24101
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.14256	0.78038	7.58694
	A2->X (RR)	0.14912	0.75905	7.52038
	B1->X (RR)	0.10164	0.70133	7.31208
	C1->X (RR)	0.09387	0.67877	7.23915
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.14657	0.71001	7.70103
	A2->X (RR)	0.15404	0.69188	7.64046
	B1->X (RR)	0.09928	0.61736	7.38078
	C1->X (RR)	0.09347	0.59881	7.32594

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.31334	0.81863	4.55876
	A2->X (FF)	0.35564	0.87295	4.66765
	B1->X (FF)	0.32365	0.85859	4.89100
	C1->X (FF)	0.27397	0.83757	4.87742
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.40574	0.90759	4.89119
	A2->X (FF)	0.45859	0.97224	5.01649
	B1->X (FF)	0.42736	0.96835	5.28917
	C1->X (FF)	0.37407	0.94768	5.29608
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.37435	0.81666	4.74772
	A2->X (FF)	0.40313	0.85829	4.83261
	B1->X (FF)	0.37743	0.85289	5.06521
	C1->X (FF)	0.32016	0.82661	5.06145

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01139	0.01160	0.02410
	A1	0.00563	0.00584	0.01851
	A2	0.01211	0.01217	0.02325
	A2	0.00562	0.00566	0.01676
	B1	0.00971	0.01018	0.02289
	B1	0.00410	0.00461	0.01836
	C1	0.00726	0.00790	0.02371
	C1	0.00325	0.00389	0.01980
sky130_fd_sc_hs__a211o_2	A1	0.01414	0.01450	0.02707
	A1	0.00790	0.00827	0.02121
	A2	0.01508	0.01528	0.02648
	A2	0.00787	0.00816	0.01934
	B1	0.01255	0.01324	0.02591
	B1	0.00637	0.00713	0.02100
	C1	0.01078	0.01157	0.02612
	C1	0.00548	0.00630	0.02218
sky130_fd_sc_hs__a211o_4	A1	0.02657	0.02742	0.05256
	A1	0.01520	0.01606	0.04188
	A2	0.02844	0.02908	0.05140
	A2	0.01523	0.01588	0.03889
	B1	0.02312	0.02434	0.04920
	B1	0.01201	0.01327	0.04010
	C1	0.01887	0.02059	0.04938
	C1	0.00995	0.01176	0.04288

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00368	0.00370	0.01482
	A1	0.00948	0.00949	0.02058
	A2	0.00410	0.00419	0.01507
	A2	0.01060	0.01067	0.02142
	B1	0.00332	0.00370	0.01659
	B1	0.00947	0.00971	0.02127
	C1	0.00324	0.00429	0.01976
	C1	0.00726	0.00829	0.02369
sky130_fd_sc_hs__a211o_2	A1	0.00653	0.00565	0.01734
	A1	0.01277	0.01241	0.02359
	A2	0.00707	0.00650	0.01846
	A2	0.01428	0.01379	0.02478
	B1	0.00618	0.00630	0.01964
	B1	0.01326	0.01289	0.02432
	C1	0.00613	0.00680	0.02308
	C1	0.01233	0.01248	0.02654
sky130_fd_sc_hs__a211o_4	A1	0.01242	0.01178	0.03528
	A1	0.02386	0.02319	0.04585
	A2	0.01294	0.01221	0.03462
	A2	0.02613	0.02550	0.04737
	B1	0.01166	0.01195	0.03743
	B1	0.02443	0.02375	0.04604
	C1	0.01166	0.01312	0.04502
	C1	0.02228	0.02282	0.05055

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)**	0.00115	0.00114	0.00114
	(A2 * B1 * C1 * X)	-0.00162	-0.00167	-0.00167
	(A2 * B1 * !C1 * X)	0.00137	0.00117	0.00116
	(A2 * B1 * !C1 * X)	-0.00143	-0.00165	-0.00167
	(A2 * !B1 * C1 * X)	0.00138	0.00120	0.00115
	(A2 * !B1 * C1 * X)	-0.00135	-0.00161	-0.00165
	(!A2 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A2 * B1 * C1 * X)	-0.00170	-0.00171	-0.00171
	(!A2 * B1 * !C1 * X)	0.00110	0.00110	0.00110
	(!A2 * B1 * !C1 * X)	-0.00171	-0.00170	-0.00170
	(!A2 * !B1 * C1 * X)	0.00111	0.00111	0.00110
	(!A2 * !B1 * C1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * !B1 * !C1 * !X)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !C1 * !X)	-0.00196	-0.00196	-0.00199
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00141	0.00141	0.00140
	(A2 * B1 * C1 * X)	-0.00155	-0.00161	-0.00161
	(A2 * B1 * !C1 * X)	0.00161	0.00143	0.00142
	(A2 * B1 * !C1 * X)	-0.00138	-0.00159	-0.00161
	(A2 * !B1 * C1 * X)	0.00161	0.00146	0.00142
	(A2 * !B1 * C1 * X)	-0.00130	-0.00156	-0.00159
	(!A2 * B1 * C1 * X)	0.00134	0.00135	0.00134
	(!A2 * B1 * C1 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * B1 * !C1 * X)	0.00134	0.00136	0.00135
	(!A2 * B1 * !C1 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * !B1 * C1 * X)	0.00135	0.00137	0.00136
	(!A2 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00195	-0.00196	-0.00199

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00224	0.00223	0.00223
	(A2 * B1 * C1 * X)	-0.00322	-0.00333	-0.00332
	(A2 * B1 * !C1 * X)	0.00263	0.00228	0.00226
	(A2 * B1 * !C1 * X)	-0.00286	-0.00328	-0.00333
	(A2 * !B1 * C1 * X)	0.00264	0.00231	0.00226
	(A2 * !B1 * C1 * X)	-0.00272	-0.00319	-0.00329
	(!A2 * B1 * C1 * X)	0.00212	0.00213	0.00213
	(!A2 * B1 * C1 * X)	-0.00339	-0.00341	-0.00339
	(!A2 * B1 * !C1 * X)	0.00213	0.00215	0.00214
	(!A2 * B1 * !C1 * X)	-0.00338	-0.00339	-0.00338
	(!A2 * !B1 * C1 * X)	0.00215	0.00216	0.00215
	(!A2 * !B1 * C1 * X)	-0.00338	-0.00338	-0.00337
	(!A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00073
	(!A2 * !B1 * !C1 * !X)	-0.00380	-0.00383	-0.00389

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)**	-0.00113	-0.00113	-0.00113
	(A2 * B1 * C1 * X)	0.00167	0.00168	0.00167
	(A2 * B1 * !C1 * X)	-0.00110	-0.00111	-0.00110
	(A2 * B1 * !C1 * X)	0.00170	0.00171	0.00170
	(A2 * !B1 * C1 * X)	-0.00111	-0.00111	-0.00110
	(A2 * !B1 * C1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * C1 * X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1 * C1 * X)	0.00173	0.00175	0.00172
	(!A2 * B1 * !C1 * X)	-0.00107	-0.00109	-0.00109
	(!A2 * B1 * !C1 * X)	0.00174	0.00176	0.00173
	(!A2 * !B1 * C1 * X)	-0.00107	-0.00109	-0.00108
	(!A2 * !B1 * C1 * X)	0.00174	0.00176	0.00174
	(!A2 * !B1 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !C1 * !X)	0.00202	0.00203	0.00203
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00139	-0.00140	-0.00139
	(A2 * B1 * C1 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * !C1 * X)	-0.00137	-0.00138	-0.00137
	(A2 * B1 * !C1 * X)	0.00162	0.00164	0.00163
	(A2 * !B1 * C1 * X)	-0.00137	-0.00138	-0.00136
	(A2 * !B1 * C1 * X)	0.00158	0.00160	0.00159
	(!A2 * B1 * C1 * X)	-0.00132	-0.00135	-0.00134
	(!A2 * B1 * C1 * X)	0.00165	0.00168	0.00165
	(!A2 * B1 * !C1 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * B1 * !C1 * X)	0.00167	0.00168	0.00166
	(!A2 * !B1 * C1 * X)	-0.00132	-0.00133	-0.00133
	(!A2 * !B1 * C1 * X)	0.00167	0.00168	0.00167
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00203	0.00204	0.00203

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00221	-0.00221	-0.00220
	(A2 * B1 * C1 * X)	0.00334	0.00334	0.00332
	(A2 * B1 * !C1 * X)	-0.00217	-0.00217	-0.00216
	(A2 * B1 * !C1 * X)	0.00338	0.00338	0.00338
	(A2 * !B1 * C1 * X)	-0.00216	-0.00217	-0.00214
	(A2 * !B1 * C1 * X)	0.00327	0.00330	0.00329
	(!A2 * B1 * C1 * X)	-0.00209	-0.00213	-0.00213
	(!A2 * B1 * C1 * X)	0.00342	0.00346	0.00343
	(!A2 * B1 * !C1 * X)	-0.00207	-0.00212	-0.00212
	(!A2 * B1 * !C1 * X)	0.00343	0.00348	0.00344
	(!A2 * !B1 * C1 * X)	-0.00207	-0.00211	-0.00211
	(!A2 * !B1 * C1 * X)	0.00347	0.00349	0.00345
	(!A2 * !B1 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(!A2 * !B1 * !C1 * !X)	0.00397	0.00399	0.00398

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)**	0.00118	0.00117	0.00116
	(A1 * B1 * C1 * X)	-0.00161	-0.00166	-0.00166
	(A1 * B1 * !C1 * X)	0.00137	0.00119	0.00118
	(A1 * B1 * !C1 * X)	-0.00141	-0.00163	-0.00166
	(A1 * !B1 * C1 * X)	0.00138	0.00122	0.00118
	(A1 * !B1 * C1 * X)	-0.00135	-0.00160	-0.00164
	(!A1 * B1 * X)	0.00112	0.00112	0.00112
	(!A1 * B1 * X)	-0.00169	-0.00169	-0.00169
	(!A1 * !B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * C1 * X)	-0.00167	-0.00168	-0.00168
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * !C1 * !X)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00151	0.00151	0.00150
	(A1 * B1 * C1 * X)	-0.00156	-0.00162	-0.00162
	(A1 * B1 * !C1 * X)	0.00170	0.00153	0.00152
	(A1 * B1 * !C1 * X)	-0.00139	-0.00160	-0.00162
	(A1 * !B1 * C1 * X)	0.00171	0.00156	0.00152
	(A1 * !B1 * C1 * X)	-0.00132	-0.00156	-0.00160
	(!A1 * B1 * X)	0.00144	0.00145	0.00144
	(!A1 * B1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * !B1 * C1 * X)	0.00146	0.00147	0.00146
	(!A1 * !B1 * C1 * X)	-0.00164	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !B1 * !C1 * !X)	-0.00184	-0.00184	-0.00184
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00268	0.00269	0.00267
	(A1 * B1 * C1 * X)	-0.00312	-0.00324	-0.00323
	(A1 * B1 * !C1 * X)	0.00303	0.00273	0.00269
	(A1 * B1 * !C1 * X)	-0.00280	-0.00321	-0.00323
	(A1 * !B1 * C1 * X)	0.00305	0.00276	0.00270
	(A1 * !B1 * C1 * X)	-0.00266	-0.00312	-0.00320
	(!A1 * B1 * X)	0.00257	0.00259	0.00257
	(!A1 * B1 * X)	-0.00329	-0.00331	-0.00329
	(!A1 * !B1 * C1 * X)	0.00259	0.00261	0.00259
	(!A1 * !B1 * C1 * X)	-0.00326	-0.00328	-0.00327
	(!A1 * !B1 * !C1 * !X)	0.00256	0.00258	0.00256
	(!A1 * !B1 * !C1 * !X)	-0.00331	-0.00333	-0.00331

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)**	-0.00115	-0.00116	-0.00115
	(A1 * B1 * C1 * X)	0.00165	0.00166	0.00166
	(A1 * B1 * !C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * B1 * !C1 * X)	0.00167	0.00169	0.00168
	(A1 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00112
	(A1 * !B1 * C1 * X)	0.00162	0.00164	0.00164
	(!A1 * B1 * X)	-0.00111	-0.00112	-0.00112
	(!A1 * B1 * X)	0.00171	0.00173	0.00170
	(!A1 * !B1 * C1 * X)	-0.00109	-0.00111	-0.00111
	(!A1 * !B1 * C1 * X)	0.00172	0.00174	0.00172
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00099	-0.00100
	(!A1 * !B1 * !C1 * !X)	0.00191	0.00186	0.00182
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00149	-0.00149	-0.00149
	(A1 * B1 * C1 * X)	0.00161	0.00162	0.00162
	(A1 * B1 * !C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * B1 * !C1 * X)	0.00164	0.00165	0.00164
	(A1 * !B1 * C1 * X)	-0.00147	-0.00148	-0.00146
	(A1 * !B1 * C1 * X)	0.00159	0.00161	0.00160
	(!A1 * B1 * X)	-0.00142	-0.00145	-0.00144
	(!A1 * B1 * X)	0.00166	0.00169	0.00166
	(!A1 * !B1 * C1 * X)	-0.00141	-0.00144	-0.00143
	(!A1 * !B1 * C1 * X)	0.00167	0.00170	0.00168
	(!A1 * !B1 * !C1 * !X)	-0.00111	-0.00120	-0.00122
	(!A1 * !B1 * !C1 * !X)	0.00198	0.00194	0.00189

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00265	-0.00265	-0.00265
	(A1 * B1 * C1 * X)	0.00323	0.00324	0.00323
	(A1 * B1 * !C1 * X)	-0.00262	-0.00263	-0.00261
	(A1 * B1 * !C1 * X)	0.00327	0.00329	0.00328
	(A1 * !B1 * C1 * X)	-0.00260	-0.00261	-0.00259
	(A1 * !B1 * C1 * X)	0.00318	0.00321	0.00321
	(!A1 * B1 * X)	-0.00254	-0.00256	-0.00257
	(!A1 * B1 * X)	0.00332	0.00333	0.00333
	(!A1 * !B1 * C1 * X)	-0.00251	-0.00254	-0.00255
	(!A1 * !B1 * C1 * X)	0.00335	0.00335	0.00335
	(!A1 * !B1 * !C1 * !X)	-0.00231	-0.00245	-0.00249
	(!A1 * !B1 * !C1 * !X)	0.00357	0.00345	0.00341

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)	0.00158	0.00154	0.00145
	(A1 * A2 * C1 * X)	-0.00104	-0.00111	-0.00113
	(A1 * A2 * !C1 * X)	0.00139	0.00141	0.00138
	(A1 * A2 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * C1 * X)	0.00176	0.00144	0.00137
	(A1 * !A2 * C1 * X)	-0.00120	-0.00154	-0.00159
	(!A1 * C1 * X)	0.00175	0.00144	0.00137
	(!A1 * C1 * X)	-0.00121	-0.00155	-0.00159
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00166	0.00160	0.00153
	(A1 * A2 * C1 * X)	-0.00106	-0.00110	-0.00113
	(A1 * A2 * !C1 * X)	0.00147	0.00147	0.00144
	(A1 * A2 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * C1 * X)	0.00184	0.00150	0.00143
	(A1 * !A2 * C1 * X)	-0.00121	-0.00154	-0.00159
	(!A1 * C1 * X)	0.00183	0.00150	0.00143
	(!A1 * C1 * X)	-0.00122	-0.00154	-0.00159
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00295	0.00285	0.00267
	(A1 * A2 * C1 * X)	-0.00222	-0.00229	-0.00236
	(A1 * A2 * !C1 * X)	0.00259	0.00260	0.00254
	(A1 * A2 * !C1 * X)	-0.00169	-0.00170	-0.00173
	(A1 * !A2 * C1 * X)	0.00335	0.00264	0.00252
	(A1 * !A2 * C1 * X)	-0.00251	-0.00320	-0.00329
	(!A1 * C1 * X)	0.00336	0.00265	0.00252
	(!A1 * C1 * X)	-0.00250	-0.00320	-0.00329

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)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * !C1 * X)	-0.00130	-0.00131	-0.00133
	(A1 * A2 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * !A2 * C1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * !A2 * C1 * X)	0.00164	0.00165	0.00164
	(!A1 * C1 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * C1 * X)	0.00163	0.00165	0.00164
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * C1 * X)	0.00113	0.00115	0.00114
	(A1 * A2 * !C1 * X)	-0.00137	-0.00137	-0.00140
	(A1 * A2 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * !A2 * C1 * X)	-0.00137	-0.00138	-0.00138
	(A1 * !A2 * C1 * X)	0.00163	0.00164	0.00164
	(!A1 * C1 * X)	-0.00138	-0.00138	-0.00138
	(!A1 * C1 * X)	0.00163	0.00164	0.00164
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00246	-0.00248	-0.00247
	(A1 * A2 * C1 * X)	0.00237	0.00240	0.00237
	(A1 * A2 * !C1 * X)	-0.00239	-0.00240	-0.00243
	(A1 * A2 * !C1 * X)	0.00190	0.00189	0.00186
	(A1 * !A2 * C1 * X)	-0.00241	-0.00241	-0.00240
	(A1 * !A2 * C1 * X)	0.00337	0.00338	0.00339
	(!A1 * C1 * X)	-0.00241	-0.00241	-0.00241
	(!A1 * C1 * X)	0.00337	0.00338	0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00149	0.00150	0.00149
	(A1 * B1 * X)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * !B1 * X)	0.00148	0.00150	0.00149
	(A1 * A2 * !B1 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * B1 * X)	0.00150	0.00150	0.00149
	(!A1 * B1 * X)	-0.00077	-0.00077	-0.00076
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00151	0.00152	0.00152
	(A1 * B1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * !B1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * B1 * X)	0.00152	0.00152	0.00152
	(!A1 * B1 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00244	0.00245	0.00244
	(A1 * B1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * A2 * !B1 * X)	0.00244	0.00245	0.00245
	(A1 * A2 * !B1 * X)	-0.00150	-0.00152	-0.00151
	(!A1 * B1 * X)	0.00244	0.00245	0.00244
	(!A1 * B1 * X)	-0.00154	-0.00155	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00143	-0.00144	-0.00148
	(A1 * B1 * X)	0.00081	0.00082	0.00078
	(A1 * A2 * !B1 * X)	-0.00127	-0.00129	-0.00144
	(A1 * A2 * !B1 * X)	0.00091	0.00092	0.00080
	(!A1 * B1 * X)	-0.00143	-0.00144	-0.00147
	(!A1 * B1 * X)	0.00081	0.00082	0.00079
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00146	-0.00146	-0.00150
	(A1 * B1 * X)	0.00085	0.00085	0.00081
	(A1 * A2 * !B1 * X)	-0.00131	-0.00132	-0.00147
	(A1 * A2 * !B1 * X)	0.00095	0.00094	0.00083
	(!A1 * B1 * X)	-0.00146	-0.00146	-0.00150
	(!A1 * B1 * X)	0.00085	0.00085	0.00082
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00230	-0.00231	-0.00241
	(A1 * B1 * X)	0.00166	0.00166	0.00158
	(A1 * A2 * !B1 * X)	-0.00200	-0.00201	-0.00234
	(A1 * A2 * !B1 * X)	0.00186	0.00185	0.00161
	(!A1 * B1 * X)	-0.00229	-0.00230	-0.00240
	(!A1 * B1 * X)	0.00168	0.00168	0.00160

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00295	0.00287	0.00266	0.38281
sky130_fd_sc_hs__a21boi_2	0.00561	0.00545	0.00266	0.74338
sky130_fd_sc_hs__a21boi_4	0.01114	0.01110	0.00394	1.37694

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	2.29197	4.10627
sky130_fd_sc_hs__a21boi_2	0.00000	2.34275	3.80173
sky130_fd_sc_hs__a21boi_4	0.00000	5.63052	9.74111

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)	0.11490	1.02474	9.68155
	A2->Y (FR)	0.14147	1.07097	9.87983
	B1_N->Y (RR)	0.14944	0.96757	7.48942
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.10400	0.87680	9.78940
	A2->Y (FR)	0.13229	0.90634	9.78348
	B1_N->Y (RR)	0.14174	0.82577	7.42466
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.10414	0.75535	9.63006
	A2->Y (FR)	0.13162	0.77800	9.52721
	B1_N->Y (RR)	0.13237	0.75206	7.79390

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.05346	0.62507	6.08951
	A2->Y (RF)	0.05936	0.57716	5.46320
	B1_N->Y (FF)	0.11032	0.47888	2.39417
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.04885	0.56858	6.26567
	A2->Y (RF)	0.05733	0.52189	5.61402
	B1_N->Y (FF)	0.11867	0.49933	2.57852
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.04931	0.51046	6.27011
	A2->Y (RF)	0.05775	0.45496	5.46941
	B1_N->Y (FF)	0.12609	0.47498	2.33397

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00120	0.00116	0.00423
	A1	0.00500	0.00495	0.00801
	A2	0.00175	0.00172	0.00481
	A2	0.00638	0.00633	0.00942
	B1_N	0.00731	0.00786	0.02518
	B1_N	0.00498	0.00553	0.02286
sky130_fd_sc_hs__a21boi_2	A1	0.00238	0.00234	0.00834
	A1	0.00971	0.00950	0.01568
	A2	0.00402	0.00391	0.00999
	A2	0.01306	0.01294	0.01892
	B1_N	0.01118	0.01186	0.03116
	B1_N	0.01007	0.01073	0.03013
sky130_fd_sc_hs__a21boi_4	A1	0.00490	0.00482	0.01709
	A1	0.01979	0.01982	0.03203
	A2	0.00756	0.00736	0.01964
	A2	0.02596	0.02571	0.03806
	B1_N	0.01969	0.02070	0.05049
	B1_N	0.01937	0.02038	0.05014

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00533	0.00537	0.00847
	A1	0.00156	0.00161	0.00462
	A2	0.00618	0.00615	0.00895
	A2	0.00156	0.00148	0.00422
	B1_N	0.00410	0.00530	0.02195
	B1_N	0.00634	0.00748	0.02416
sky130_fd_sc_hs__a21boi_2	A1	0.00964	0.00964	0.01585
	A1	0.00233	0.00233	0.00824
	A2	0.01138	0.01130	0.01751
	A2	0.00231	0.00212	0.00749
	B1_N	0.00759	0.00919	0.02753
	B1_N	0.00849	0.01004	0.02839
sky130_fd_sc_hs__a21boi_4	A1	0.01883	0.01900	0.03173
	A1	0.00401	0.00410	0.01598
	A2	0.02259	0.02225	0.03361
	A2	0.00412	0.00375	0.01497
	B1_N	0.01540	0.01783	0.04741
	B1_N	0.01536	0.01773	0.04733

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)	0.00164	0.00137	0.00134
	(A2 * !B1_N * !Y)	-0.00159	-0.00185	-0.00189
	(!A2 * B1_N * Y)	0.00058	0.00058	0.00056
	(!A2 * B1_N * Y)	-0.00205	-0.00206	-0.00209
	(!A2 * !B1_N * !Y)	0.00128	0.00129	0.00128
	(!A2 * !B1_N * !Y)	-0.00190	-0.00190	-0.00190
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00325	0.00272	0.00264
	(A2 * !B1_N * !Y)	-0.00300	-0.00359	-0.00366
	(!A2 * B1_N * Y)	0.00103	0.00102	0.00096
	(!A2 * B1_N * Y)	-0.00409	-0.00410	-0.00422
	(!A2 * !B1_N * !Y)	0.00251	0.00255	0.00253
	(!A2 * !B1_N * !Y)	-0.00368	-0.00371	-0.00369
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00647	0.00537	0.00520
	(A2 * !B1_N * !Y)	-0.00603	-0.00722	-0.00737
	(!A2 * B1_N * Y)	0.00194	0.00195	0.00182
	(!A2 * B1_N * Y)	-0.00824	-0.00832	-0.00847
	(!A2 * !B1_N * !Y)	0.00495	0.00500	0.00497
	(!A2 * !B1_N * !Y)	-0.00741	-0.00746	-0.00743

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)	-0.00132	-0.00132	-0.00131
	(A2 * !B1_N * !Y)	0.00191	0.00191	0.00191
	(!A2 * B1_N * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * B1_N * Y)	0.00215	0.00217	0.00216
	(!A2 * !B1_N * !Y)	-0.00126	-0.00129	-0.00128
	(!A2 * !B1_N * !Y)	0.00193	0.00195	0.00192
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00260	-0.00260	-0.00257
	(A2 * !B1_N * !Y)	0.00370	0.00371	0.00370
	(!A2 * B1_N * Y)	-0.00089	-0.00089	-0.00088
	(!A2 * B1_N * Y)	0.00430	0.00431	0.00428
	(!A2 * !B1_N * !Y)	-0.00247	-0.00252	-0.00253
	(!A2 * !B1_N * !Y)	0.00374	0.00375	0.00373
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00512	-0.00511	-0.00507
	(A2 * !B1_N * !Y)	0.00745	0.00746	0.00745
	(!A2 * B1_N * Y)	-0.00164	-0.00165	-0.00163
	(!A2 * B1_N * Y)	0.00863	0.00870	0.00864
	(!A2 * !B1_N * !Y)	-0.00488	-0.00496	-0.00497
	(!A2 * !B1_N * !Y)	0.00753	0.00753	0.00750

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)	0.00170	0.00143	0.00139
	(A1 * !B1_N * !Y)	-0.00150	-0.00179	-0.00183
	(!A1 * B1_N * Y)	0.00136	0.00137	0.00136
	(!A1 * B1_N * Y)	-0.00183	-0.00184	-0.00182
	(!A1 * !B1_N * !Y)	0.00134	0.00134	0.00134
	(!A1 * !B1_N * !Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00320	0.00267	0.00260
	(A1 * !B1_N * !Y)	-0.00301	-0.00358	-0.00365
	(!A1 * B1_N * Y)	0.00249	0.00252	0.00250
	(!A1 * B1_N * Y)	-0.00366	-0.00368	-0.00366
	(!A1 * !B1_N * !Y)	0.00248	0.00250	0.00248
	(!A1 * !B1_N * !Y)	-0.00367	-0.00369	-0.00368
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00656	0.00543	0.00526
	(A1 * !B1_N * !Y)	-0.00597	-0.00719	-0.00734
	(!A1 * B1_N * Y)	0.00484	0.00491	0.00487
	(!A1 * B1_N * Y)	-0.00756	-0.00762	-0.00756
	(!A1 * !B1_N * !Y)	0.00502	0.00507	0.00503
	(!A1 * !B1_N * !Y)	-0.00738	-0.00742	-0.00739

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)	-0.00136	-0.00137	-0.00136
	(A1 * !B1_N * !Y)	0.00184	0.00186	0.00185
	(!A1 * B1_N * Y)	-0.00121	-0.00129	-0.00130
	(!A1 * B1_N * Y)	0.00199	0.00193	0.00190
	(!A1 * !B1_N * !Y)	-0.00131	-0.00134	-0.00133
	(!A1 * !B1_N * !Y)	0.00186	0.00189	0.00187
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00255	-0.00254	-0.00253
	(A1 * !B1_N * !Y)	0.00368	0.00367	0.00369
	(!A1 * B1_N * Y)	-0.00226	-0.00245	-0.00247
	(!A1 * B1_N * Y)	0.00388	0.00379	0.00373
	(!A1 * !B1_N * !Y)	-0.00242	-0.00248	-0.00248
	(!A1 * !B1_N * !Y)	0.00371	0.00376	0.00372
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00516	-0.00517	-0.00512
	(A1 * !B1_N * !Y)	0.00739	0.00743	0.00742
	(!A1 * B1_N * Y)	-0.00434	-0.00472	-0.00477
	(!A1 * B1_N * Y)	0.00805	0.00788	0.00774
	(!A1 * !B1_N * !Y)	-0.00492	-0.00505	-0.00503
	(!A1 * !B1_N * !Y)	0.00744	0.00754	0.00747

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)	0.00426	0.00480	0.02194
	(A1 * A2 * !Y)	0.00075	0.00127	0.01843
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00510	0.00566	0.02471
	(A1 * A2 * !Y)	0.00159	0.00213	0.02120
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00792	0.00854	0.03782
	(A1 * A2 * !Y)	0.00270	0.00330	0.03261

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)	0.00096	0.00203	0.01959
	(A1 * A2 * !Y)	0.00446	0.00553	0.02309
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00259	0.00377	0.02318
	(A1 * A2 * !Y)	0.00608	0.00726	0.02666
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00544	0.00725	0.03787
	(A1 * A2 * !Y)	0.01062	0.01244	0.04303

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00272	0.00262	0.00227	0.76347
sky130_fd_sc_hs__a21bo_2	0.00290	0.00275	0.00236	1.43607
sky130_fd_sc_hs__a21bo_4	0.00504	0.00533	0.00276	2.74041

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	3.26804	5.21154
sky130_fd_sc_hs__a21bo_2	0.00000	3.65660	5.42330
sky130_fd_sc_hs__a21bo_4	0.00000	5.06809	6.45230

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)	0.13649	0.86070	7.65355
	A2->X (RR)	0.14158	0.84824	7.61358
	B1_N->X (FR)	0.17854	0.88807	7.61290
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.13166	0.75107	7.40696
	A2->X (RR)	0.13760	0.73273	7.34512
	B1_N->X (FR)	0.18469	0.78656	7.42772
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.13565	0.68132	7.52401
	A2->X (RR)	0.14458	0.66843	7.47631
	B1_N->X (FR)	0.20558	0.75751	7.63236

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.20088	0.68041	4.30175
	A2->X (FF)	0.22632	0.72120	4.39496
	B1_N->X (RF)	0.23421	0.65188	3.76850
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.25261	0.72145	4.39068
	A2->X (FF)	0.28562	0.76946	4.50335
	B1_N->X (RF)	0.30339	0.70013	3.71665
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.23949	0.65528	4.26274
	A2->X (FF)	0.26192	0.69254	4.35550
	B1_N->X (RF)	0.27674	0.64371	3.68648

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00829	0.00878	0.02256
	A1	0.00471	0.00520	0.01914
	A2	0.00909	0.00942	0.02182
	A2	0.00473	0.00506	0.01761
	B1_N	0.00742	0.00863	0.02638
	B1_N	0.00920	0.01040	0.02854
sky130_fd_sc_hs__a21bo_2	A1	0.01085	0.01151	0.02560
	A1	0.00711	0.00778	0.02198
	A2	0.01161	0.01214	0.02476
	A2	0.00709	0.00762	0.02041
	B1_N	0.01033	0.01159	0.02925
	B1_N	0.01212	0.01337	0.03154
sky130_fd_sc_hs__a21bo_4	A1	0.02004	0.02132	0.04868
	A1	0.01351	0.01481	0.04233
	A2	0.02213	0.02305	0.04748
	A2	0.01355	0.01448	0.03906
	B1_N	0.01843	0.02014	0.04094
	B1_N	0.01974	0.02157	0.04339

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00445	0.00472	0.01829
	A1	0.00804	0.00830	0.02147
	A2	0.00462	0.00498	0.01786
	A2	0.00896	0.00931	0.02187
	B1_N	0.00957	0.01032	0.02741
	B1_N	0.00772	0.00848	0.02512
sky130_fd_sc_hs__a21bo_2	A1	0.00662	0.00692	0.02063
	A1	0.01036	0.01065	0.02388
	A2	0.00726	0.00754	0.02081
	A2	0.01177	0.01205	0.02485
	B1_N	0.01284	0.01337	0.03000
	B1_N	0.01096	0.01144	0.02806
sky130_fd_sc_hs__a21bo_4	A1	0.01306	0.01366	0.04052
	A1	0.01960	0.02018	0.04582
	A2	0.01361	0.01423	0.04026
	A2	0.02212	0.02273	0.04739
	B1_N	0.02161	0.02255	0.04269
	B1_N	0.02011	0.02104	0.04058

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)	0.00152	0.00122	0.00116
	(A2 * !B1_N * X)	-0.00141	-0.00170	-0.00176
	(!A2 * B1_N * !X)	0.00049	0.00049	0.00047
	(!A2 * B1_N * !X)	-0.00192	-0.00193	-0.00195
	(!A2 * !B1_N * X)	0.00110	0.00111	0.00111
	(!A2 * !B1_N * X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00171	0.00143	0.00138
	(A2 * !B1_N * X)	-0.00138	-0.00167	-0.00172
	(!A2 * B1_N * !X)	0.00061	0.00061	0.00059
	(!A2 * B1_N * !X)	-0.00190	-0.00191	-0.00194
	(!A2 * !B1_N * X)	0.00132	0.00133	0.00132
	(!A2 * !B1_N * X)	-0.00174	-0.00174	-0.00174
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00286	0.00232	0.00221
	(A2 * !B1_N * X)	-0.00263	-0.00321	-0.00331
	(!A2 * B1_N * !X)	0.00079	0.00080	0.00074
	(!A2 * B1_N * !X)	-0.00370	-0.00374	-0.00381
	(!A2 * !B1_N * X)	0.00209	0.00210	0.00210
	(!A2 * !B1_N * X)	-0.00333	-0.00335	-0.00334

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)	-0.00111	-0.00111	-0.00110
	(A2 * !B1_N * X)	0.00180	0.00181	0.00181
	(!A2 * B1_N * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * B1_N * !X)	0.00203	0.00204	0.00203
	(!A2 * !B1_N * X)	-0.00107	-0.00108	-0.00108
	(!A2 * !B1_N * X)	0.00183	0.00184	0.00182
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00133	-0.00133	-0.00132
	(A2 * !B1_N * X)	0.00176	0.00178	0.00178
	(!A2 * B1_N * !X)	-0.00049	-0.00049	-0.00049
	(!A2 * B1_N * !X)	0.00203	0.00204	0.00203
	(!A2 * !B1_N * X)	-0.00128	-0.00130	-0.00130
	(!A2 * !B1_N * X)	0.00179	0.00181	0.00178
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00211	-0.00211	-0.00209
	(A2 * !B1_N * X)	0.00339	0.00341	0.00341
	(!A2 * B1_N * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * B1_N * !X)	0.00392	0.00394	0.00392
	(!A2 * !B1_N * X)	-0.00200	-0.00205	-0.00205
	(!A2 * !B1_N * X)	0.00344	0.00346	0.00343

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)	0.00166	0.00140	0.00134
	(A1 * !B1_N * X)	-0.00131	-0.00159	-0.00163
	(!A1 * B1_N * !X)	0.00132	0.00132	0.00132
	(!A1 * B1_N * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !B1_N * X)	0.00129	0.00130	0.00129
	(!A1 * !B1_N * X)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00169	0.00141	0.00135
	(A1 * !B1_N * X)	-0.00133	-0.00163	-0.00168
	(!A1 * B1_N * !X)	0.00131	0.00133	0.00132
	(!A1 * B1_N * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1_N * X)	0.00129	0.00130	0.00129
	(!A1 * !B1_N * X)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00332	0.00282	0.00271
	(A1 * !B1_N * X)	-0.00265	-0.00321	-0.00329
	(!A1 * B1_N * !X)	0.00262	0.00265	0.00262
	(!A1 * B1_N * !X)	-0.00329	-0.00331	-0.00329
	(!A1 * !B1_N * X)	0.00260	0.00262	0.00260
	(!A1 * !B1_N * X)	-0.00331	-0.00333	-0.00331

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)	-0.00129	-0.00130	-0.00129
	(A1 * !B1_N * X)	0.00167	0.00169	0.00168
	(!A1 * B1_N * !X)	-0.00115	-0.00124	-0.00124
	(!A1 * B1_N * !X)	0.00179	0.00175	0.00171
	(!A1 * !B1_N * X)	-0.00125	-0.00127	-0.00127
	(!A1 * !B1_N * X)	0.00168	0.00171	0.00169
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00129	-0.00130	-0.00129
	(A1 * !B1_N * X)	0.00173	0.00174	0.00174
	(!A1 * B1_N * !X)	-0.00113	-0.00123	-0.00124
	(!A1 * B1_N * !X)	0.00185	0.00181	0.00177
	(!A1 * !B1_N * X)	-0.00124	-0.00127	-0.00126
	(!A1 * !B1_N * X)	0.00174	0.00177	0.00175
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00261	-0.00262	-0.00260
	(A1 * !B1_N * X)	0.00336	0.00340	0.00339
	(!A1 * B1_N * !X)	-0.00233	-0.00249	-0.00253
	(!A1 * B1_N * !X)	0.00359	0.00346	0.00341
	(!A1 * !B1_N * X)	-0.00251	-0.00253	-0.00255
	(!A1 * !B1_N * X)	0.00340	0.00341	0.00340

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)	0.00358	0.00420	0.02127
	(A1 * A2 * X)	0.00059	0.00119	0.01827
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00403	0.00456	0.02147
	(A1 * A2 * X)	0.00089	0.00141	0.01834
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00547	0.00604	0.02490
	(A1 * A2 * X)	0.00180	0.00236	0.02125

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)	0.00113	0.00224	0.01969
	(A1 * A2 * X)	0.00410	0.00523	0.02268
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00136	0.00241	0.01976
	(A1 * A2 * X)	0.00448	0.00554	0.02289
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00210	0.00316	0.02245
	(A1 * A2 * X)	0.00574	0.00680	0.02608

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00305	0.00287	0.00299	0.37647
sky130_fd_sc_hs__a21oi_2	0.00557	0.00578	0.00454	0.68627
sky130_fd_sc_hs__a21oi_4	0.01133	0.01107	0.00896	1.33031

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.70617	1.11501
sky130_fd_sc_hs__a21oi_2	0.00000	1.22461	2.04276
sky130_fd_sc_hs__a21oi_4	0.00000	2.39274	3.90758

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)	0.11436	1.01945	9.57848
	A2->Y (FR)	0.13836	1.05970	9.76426
	B1->Y (FR)	0.10599	1.05641	10.24680
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.10535	0.89384	9.74186
	A2->Y (FR)	0.13761	0.91692	9.64753
	B1->Y (FR)	0.05819	0.87474	10.13370
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.09857	0.75846	9.61706
	A2->Y (FR)	0.12640	0.77731	9.47793
	B1->Y (FR)	0.05361	0.74957	10.05630

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.05414	0.62210	6.02919
	A2->Y (RF)	0.05896	0.57404	5.41313
	B1->Y (RF)	0.02958	0.47484	4.76422
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.04922	0.55904	6.04218
	A2->Y (RF)	0.05963	0.51409	5.39078
	B1->Y (RF)	0.03665	0.57634	6.53295
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.04821	0.50442	6.15272
	A2->Y (RF)	0.05594	0.44825	5.34704
	B1->Y (RF)	0.03650	0.52480	6.72693

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00004	-0.00010	0.00301
	A1	0.00510	0.00505	0.00817
	A2	0.00034	0.00030	0.00343
	A2	0.00633	0.00620	0.00936
	B1	-0.00031	0.00009	0.00547
	B1	0.00373	0.00401	0.00954
sky130_fd_sc_hs__a21oi_2	A1	-0.00027	-0.00031	0.00586
	A1	0.00944	0.00936	0.01553
	A2	0.00122	0.00107	0.00727
	A2	0.01296	0.01283	0.01902
	B1	0.00020	0.00082	0.00717
	B1	0.01021	0.01062	0.01648
sky130_fd_sc_hs__a21oi_4	A1	-0.00115	-0.00115	0.01148
	A1	0.01863	0.01857	0.03132
	A2	0.00176	0.00159	0.01445
	A2	0.02521	0.02508	0.03795
	B1	0.00012	0.00147	0.01381
	B1	0.01964	0.02080	0.03187

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00655	0.00663	0.00994
	A1	0.00144	0.00147	0.00451
	A2	0.00743	0.00739	0.01034
	A2	0.00143	0.00136	0.00413
	B1	0.00375	0.00411	0.00772
	B1	-0.00029	0.00004	0.00357
sky130_fd_sc_hs__a21oi_2	A1	0.01191	0.01189	0.01799
	A1	0.00227	0.00225	0.00838
	A2	0.01411	0.01391	0.01988
	A2	0.00231	0.00209	0.00763
	B1	0.00479	0.00525	0.01037
	B1	-0.00155	-0.00111	0.00350
sky130_fd_sc_hs__a21oi_4	A1	0.02378	0.02375	0.03558
	A1	0.00408	0.00400	0.01593
	A2	0.02741	0.02710	0.03923
	A2	0.00393	0.00353	0.01472
	B1	0.00989	0.01083	0.02065
	B1	-0.00280	-0.00195	0.00702

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00166	0.00140	0.00136
	(A2 * B1 * !Y)	-0.00148	-0.00178	-0.00182
	(!A2 * B1 * !Y)	0.00129	0.00131	0.00130
	(!A2 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * Y)	0.00045	0.00045	0.00043
	(!A2 * !B1 * Y)	-0.00212	-0.00214	-0.00216
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00334	0.00277	0.00270
	(A2 * B1 * !Y)	-0.00289	-0.00350	-0.00357
	(!A2 * B1 * !Y)	0.00251	0.00255	0.00253
	(!A2 * B1 * !Y)	-0.00361	-0.00365	-0.00363
	(!A2 * !B1 * Y)	0.00098	0.00098	0.00092
	(!A2 * !B1 * Y)	-0.00402	-0.00404	-0.00417
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00673	0.00560	0.00543
	(A2 * B1 * !Y)	-0.00576	-0.00699	-0.00713
	(!A2 * B1 * !Y)	0.00517	0.00519	0.00517
	(!A2 * B1 * !Y)	-0.00723	-0.00723	-0.00722
	(!A2 * !B1 * Y)	0.00185	0.00185	0.00173
	(!A2 * !B1 * Y)	-0.00833	-0.00837	-0.00857

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00134	-0.00134	-0.00133
	(A2 * B1 * !Y)	0.00183	0.00183	0.00183
	(!A2 * B1 * !Y)	-0.00128	-0.00129	-0.00130
	(!A2 * B1 * !Y)	0.00187	0.00186	0.00186
	(!A2 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(!A2 * !B1 * Y)	0.00217	0.00219	0.00218
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00266	-0.00266	-0.00264
	(A2 * B1 * !Y)	0.00358	0.00358	0.00358
	(!A2 * B1 * !Y)	-0.00247	-0.00254	-0.00253
	(!A2 * B1 * !Y)	0.00366	0.00368	0.00366
	(!A2 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(!A2 * !B1 * Y)	0.00421	0.00423	0.00420
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00532	-0.00536	-0.00532
	(A2 * B1 * !Y)	0.00707	0.00717	0.00716
	(!A2 * B1 * !Y)	-0.00507	-0.00518	-0.00517
	(!A2 * B1 * !Y)	0.00728	0.00733	0.00729
	(!A2 * !B1 * Y)	-0.00166	-0.00167	-0.00164
	(!A2 * !B1 * Y)	0.00866	0.00874	0.00863

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00167	0.00140	0.00136
	(A1 * B1 * !Y)	-0.00148	-0.00178	-0.00182
	(!A1 * B1 * !Y)	0.00131	0.00131	0.00130
	(!A1 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * Y)	0.00130	0.00131	0.00131
	(!A1 * !B1 * Y)	-0.00183	-0.00184	-0.00184
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00345	0.00287	0.00279
	(A1 * B1 * !Y)	-0.00289	-0.00351	-0.00358
	(!A1 * B1 * !Y)	0.00263	0.00266	0.00263
	(!A1 * B1 * !Y)	-0.00363	-0.00365	-0.00363
	(!A1 * !B1 * Y)	0.00253	0.00256	0.00254
	(!A1 * !B1 * Y)	-0.00373	-0.00376	-0.00373
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00661	0.00547	0.00530
	(A1 * B1 * !Y)	-0.00591	-0.00714	-0.00731
	(!A1 * B1 * !Y)	0.00502	0.00507	0.00504
	(!A1 * B1 * !Y)	-0.00739	-0.00743	-0.00740
	(!A1 * !B1 * Y)	0.00501	0.00505	0.00502
	(!A1 * !B1 * Y)	-0.00745	-0.00748	-0.00743

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * B1 * !Y)	0.00182	0.00183	0.00183
	(!A1 * B1 * !Y)	-0.00128	-0.00131	-0.00130
	(!A1 * B1 * !Y)	0.00185	0.00189	0.00186
	(!A1 * !B1 * Y)	-0.00120	-0.00129	-0.00130
	(!A1 * !B1 * Y)	0.00194	0.00191	0.00186
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00276	-0.00275	-0.00273
	(A1 * B1 * !Y)	0.00358	0.00359	0.00359
	(!A1 * B1 * !Y)	-0.00257	-0.00265	-0.00263
	(!A1 * B1 * !Y)	0.00366	0.00370	0.00367
	(!A1 * !B1 * Y)	-0.00231	-0.00252	-0.00254
	(!A1 * !B1 * Y)	0.00392	0.00383	0.00376
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00522	-0.00521	-0.00518
	(A1 * B1 * !Y)	0.00734	0.00734	0.00734
	(!A1 * B1 * !Y)	-0.00494	-0.00506	-0.00504
	(!A1 * B1 * !Y)	0.00745	0.00755	0.00748
	(!A1 * !B1 * Y)	-0.00457	-0.00496	-0.00502
	(!A1 * !B1 * Y)	0.00786	0.00765	0.00750

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00159	0.00161	0.00160
	(A1 * A2 * !Y)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00178	0.00179	0.00178
	(A1 * A2 * !Y)	-0.00170	-0.00172	-0.00171
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00345	0.00347	0.00345
	(A1 * A2 * !Y)	-0.00331	-0.00332	-0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00148	-0.00149	-0.00158
	(A1 * A2 * !Y)	0.00094	0.00093	0.00086
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00155	-0.00157	-0.00175
	(A1 * A2 * !Y)	0.00191	0.00192	0.00177
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00300	-0.00303	-0.00339
	(A1 * A2 * !Y)	0.00367	0.00368	0.00341

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00255	0.00261	0.00261	0.81021
sky130_fd_sc_hs__a21o_2	0.00284	0.00274	0.00288	1.58204
sky130_fd_sc_hs__a21o_4	0.00515	0.00493	0.00525	3.05595

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	1.67131	2.22034
sky130_fd_sc_hs__a21o_2	0.00000	2.06593	2.43211
sky130_fd_sc_hs__a21o_4	0.00000	4.04128	4.69338

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)	0.13020	0.83266	7.53752
	A2->X (RR)	0.13703	0.82365	7.50399
	B1->X (RR)	0.08873	0.74917	7.27810
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.12878	0.73792	7.48317
	A2->X (RR)	0.13490	0.72059	7.41864
	B1->X (RR)	0.08611	0.65355	7.21438
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.14292	0.68954	7.69295
	A2->X (RR)	0.15144	0.67374	7.63487
	B1->X (RR)	0.08864	0.58754	7.38434

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.19073	0.67666	4.46365
	A2->X (FF)	0.21982	0.72212	4.56590
	B1->X (FF)	0.18779	0.70998	4.58950
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.23776	0.71237	4.58518
	A2->X (FF)	0.27038	0.75933	4.69588
	B1->X (FF)	0.24040	0.76327	4.78120
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.23885	0.67201	4.62420
	A2->X (FF)	0.27122	0.71820	4.73420
	B1->X (FF)	0.23718	0.71495	4.82080

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00905	0.00953	0.02333
	A1	0.00465	0.00513	0.01895
	A2	0.01003	0.01032	0.02268
	A2	0.00465	0.00494	0.01735
	B1	0.00649	0.00718	0.02502
	B1	0.00305	0.00374	0.02158
sky130_fd_sc_hs__a21o_2	A1	0.01188	0.01257	0.02680
	A1	0.00708	0.00778	0.02208
	A2	0.01280	0.01333	0.02608
	A2	0.00707	0.00762	0.02047
	B1	0.01018	0.01100	0.02772
	B1	0.00547	0.00640	0.02493
sky130_fd_sc_hs__a21o_4	A1	0.02280	0.02392	0.05079
	A1	0.01361	0.01544	0.04230
	A2	0.02429	0.02511	0.04898
	A2	0.01360	0.01445	0.03898
	B1	0.01890	0.02051	0.05247
	B1	0.01006	0.01182	0.04721

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00318	0.00348	0.01669
	A1	0.00759	0.00788	0.02109
	A2	0.00336	0.00372	0.01627
	A2	0.00871	0.00907	0.02161
	B1	0.00303	0.00429	0.02084
	B1	0.00648	0.00768	0.02408
sky130_fd_sc_hs__a21o_2	A1	0.00540	0.00591	0.01953
	A1	0.01021	0.01057	0.02397
	A2	0.00588	0.00617	0.01928
	A2	0.01159	0.01193	0.02491
	B1	0.00511	0.00650	0.02450
	B1	0.01063	0.01151	0.02756
sky130_fd_sc_hs__a21o_4	A1	0.01097	0.01156	0.03745
	A1	0.02016	0.02073	0.04596
	A2	0.01237	0.01312	0.04131
	A2	0.02301	0.02361	0.04782
	B1	0.01038	0.01287	0.04667
	B1	0.01757	0.02005	0.05386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00143	0.00114	0.00109
	(A2 * B1 * X)	-0.00131	-0.00159	-0.00164
	(!A2 * B1 * X)	0.00104	0.00105	0.00104
	(!A2 * B1 * X)	-0.00166	-0.00168	-0.00167
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00184	-0.00185	-0.00188
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00166	0.00137	0.00131
	(A2 * B1 * X)	-0.00132	-0.00161	-0.00166
	(!A2 * B1 * X)	0.00125	0.00126	0.00125
	(!A2 * B1 * X)	-0.00168	-0.00169	-0.00169
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00189	-0.00190	-0.00193
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00302	0.00246	0.00235
	(A2 * B1 * X)	-0.00257	-0.00319	-0.00328
	(!A2 * B1 * X)	0.00225	0.00226	0.00225
	(!A2 * B1 * X)	-0.00335	-0.00335	-0.00333
	(!A2 * !B1 * !X)	0.00090	0.00091	0.00084
	(!A2 * !B1 * !X)	-0.00374	-0.00378	-0.00387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00105	-0.00105	-0.00104
	(A2 * B1 * X)	0.00167	0.00169	0.00168
	(!A2 * B1 * X)	-0.00100	-0.00102	-0.00102
	(!A2 * B1 * X)	0.00171	0.00173	0.00171
	(!A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !X)	0.00190	0.00191	0.00191
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * X)	0.00169	0.00171	0.00170
	(!A2 * B1 * X)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * X)	0.00174	0.00176	0.00173
	(!A2 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(!A2 * !B1 * !X)	0.00197	0.00198	0.00197
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00226	-0.00226	-0.00224
	(A2 * B1 * X)	0.00337	0.00338	0.00337
	(!A2 * B1 * X)	-0.00216	-0.00220	-0.00221
	(!A2 * B1 * X)	0.00343	0.00345	0.00342
	(!A2 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * !X)	0.00395	0.00397	0.00395

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00169	0.00142	0.00136
	(A1 * B1 * X)	-0.00129	-0.00158	-0.00162
	(!A1 * B1 * X)	0.00131	0.00131	0.00131
	(!A1 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !B1 * !X)	-0.00165	-0.00166	-0.00164
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00171	0.00144	0.00138
	(A1 * B1 * X)	-0.00131	-0.00161	-0.00166
	(!A1 * B1 * X)	0.00133	0.00133	0.00132
	(!A1 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A1 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !B1 * !X)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00297	0.00242	0.00231
	(A1 * B1 * X)	-0.00258	-0.00319	-0.00328
	(!A1 * B1 * X)	0.00221	0.00222	0.00221
	(!A1 * B1 * X)	-0.00333	-0.00334	-0.00332
	(!A1 * !B1 * !X)	0.00221	0.00223	0.00221
	(!A1 * !B1 * !X)	-0.00332	-0.00334	-0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00132	-0.00133	-0.00131
	(A1 * B1 * X)	0.00165	0.00167	0.00166
	(!A1 * B1 * X)	-0.00127	-0.00129	-0.00129
	(!A1 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * !B1 * !X)	-0.00121	-0.00128	-0.00130
	(!A1 * !B1 * !X)	0.00175	0.00171	0.00168
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * X)	0.00169	0.00170	0.00170
	(!A1 * B1 * X)	-0.00128	-0.00130	-0.00130
	(!A1 * B1 * X)	0.00172	0.00174	0.00173
	(!A1 * !B1 * !X)	-0.00120	-0.00129	-0.00130
	(!A1 * !B1 * !X)	0.00180	0.00177	0.00173
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00221	-0.00222	-0.00220
	(A1 * B1 * X)	0.00334	0.00337	0.00336
	(!A1 * B1 * X)	-0.00211	-0.00216	-0.00216
	(!A1 * B1 * X)	0.00340	0.00344	0.00341
	(!A1 * !B1 * !X)	-0.00195	-0.00213	-0.00215
	(!A1 * !B1 * !X)	0.00355	0.00347	0.00341

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00130	0.00131	0.00131
	(A1 * A2 * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00156	0.00157	0.00156
	(A1 * A2 * X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00270	0.00272	0.00270
	(A1 * A2 * X)	-0.00160	-0.00161	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00118	-0.00118	-0.00128
	(A1 * A2 * X)	0.00090	0.00089	0.00082
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00142	-0.00143	-0.00153
	(A1 * A2 * X)	0.00089	0.00089	0.00081
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00243	-0.00244	-0.00264
	(A1 * A2 * X)	0.00185	0.00184	0.00168

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00294	0.00290	0.00299	0.00308	0.00308	0.24296
sky130_fd_sc_hs__a221oi_2	0.00621	0.00563	0.00610	0.00559	0.00570	0.42675
sky130_fd_sc_hs__a221oi_4	0.01147	0.01142	0.01138	0.01109	0.01130	0.79539

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.83150	1.35872
sky130_fd_sc_hs__a221oi_2	0.00000	1.42180	2.16860
sky130_fd_sc_hs__a221oi_4	0.00000	2.85578	4.32978

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)	0.29918	1.29666	9.14391
	A2->Y (FR)	0.33381	1.33780	9.19963
	B1->Y (FR)	0.25754	1.26852	9.67932
	B2->Y (FR)	0.29635	1.31634	9.77625
	C1->Y (FR)	0.21989	1.26130	10.04270
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.26976	1.07069	8.61876
	A2->Y (FR)	0.33371	1.16639	9.00895
	B1->Y (FR)	0.24206	1.07896	9.41277
	B2->Y (FR)	0.29043	1.14453	9.60280
	C1->Y (FR)	0.20484	1.08548	9.93564
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.28972	0.98108	8.83392
	A2->Y (FR)	0.34423	1.04374	8.98056
	B1->Y (FR)	0.24122	0.94881	9.38925
	B2->Y (FR)	0.29885	1.02453	9.63880
	C1->Y (FR)	0.21324	0.98425	10.09950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.06619	0.59148	4.81990
	A2->Y (RF)	0.07188	0.54285	4.29837
	B1->Y (RF)	0.06603	0.57265	4.81783
	B2->Y (RF)	0.07285	0.52619	4.30876
	C1->Y (RF)	0.03582	0.43522	3.83531
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.05708	0.51964	4.61956
	A2->Y (RF)	0.06611	0.48242	4.15460
	B1->Y (RF)	0.05708	0.49289	4.56466
	B2->Y (RF)	0.06440	0.45528	4.10576
	C1->Y (RF)	0.03124	0.37365	3.66912
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.05808	0.48647	4.70006
	A2->Y (RF)	0.06647	0.43248	4.04522
	B1->Y (RF)	0.06127	0.45936	4.66555
	B2->Y (RF)	0.06930	0.41015	4.01268
	C1->Y (RF)	0.02879	0.32269	3.53120

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00188	0.00167	0.00476
	A1	0.00943	0.00922	0.01232
	A2	0.00218	0.00206	0.00516
	A2	0.01067	0.01055	0.01367
	B1	0.00133	0.00119	0.00492
	B1	0.00815	0.00798	0.01140
	B2	0.00174	0.00164	0.00535
	B2	0.00947	0.00935	0.01274
	C1	0.00111	0.00152	0.00770
	C1	0.00554	0.00595	0.01222
sky130_fd_sc_hs__a221oi_2	A1	0.00232	0.00191	0.00861
	A1	0.01776	0.01730	0.02404
	A2	0.00376	0.00342	0.00996
	A2	0.02051	0.02020	0.02668
	B1	0.00103	0.00081	0.00861
	B1	0.01536	0.01498	0.02208
	B2	0.00217	0.00197	0.00980
	B2	0.01784	0.01761	0.02471
	C1	0.00065	0.00169	0.01427
	C1	0.00929	0.01033	0.02304

sky130_fd_sc_hs__a221oi_4	**A1**	0.00438	0.00344	0.01636
	A1	0.03500	0.03411	0.04702
	A2	0.00664	0.00598	0.01892
	A2	0.04082	0.03995	0.05308
	B1	0.00111	0.00069	0.01575
	B1	0.02975	0.02906	0.04261
	B2	0.00373	0.00336	0.01827
	B2	0.03574	0.03528	0.04863
	C1	0.00033	0.00257	0.02698
	C1	0.01740	0.01967	0.04433

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01155	0.01148	0.01517
	A1	0.00415	0.00408	0.00770
	A2	0.01250	0.01236	0.01556
	A2	0.00413	0.00395	0.00723
	B1	0.00697	0.00697	0.01081
	B1	0.00160	0.00159	0.00534
	B2	0.00881	0.00878	0.01202
	B2	0.00158	0.00149	0.00483
	C1	0.00412	0.00449	0.00870
	C1	-0.00030	0.00006	0.00426

sky130_fd_sc_hs__a221oi_2	**A1**	0.02168	0.02157	0.02926
	A1	0.00652	0.00637	0.01398
	A2	0.02326	0.02291	0.02946
	A2	0.00670	0.00633	0.01301
	B1	0.01327	0.01329	0.02133
	B1	0.00233	0.00231	0.01010
	B2	0.01488	0.01476	0.02169
	B2	0.00243	0.00227	0.00918
	C1	0.00733	0.00813	0.01695
	C1	-0.00131	-0.00055	0.00827
sky130_fd_sc_hs__a221oi_4	**A1**	0.04347	0.04302	0.05749
	A1	0.01359	0.01310	0.02771
	A2	0.04706	0.04624	0.05978
	A2	0.01346	0.01260	0.02609
	B1	0.02644	0.02651	0.04191
	B1	0.00439	0.00438	0.01955
	B2	0.03021	0.02987	0.04406
	B2	0.00442	0.00405	0.01792
	C1	0.01525	0.01648	0.03439
	C1	-0.00179	-0.00060	0.01722

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)**	0.00129	0.00130	0.00128
	(A2 * B1 * B2 * C1 * !Y)	-0.00173	-0.00180	-0.00179
	(A2 * B1 * B2 * !C1 * !Y)	0.00141	0.00131	0.00129
	(A2 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00179	-0.00180
	(A2 * B1 * !B2 * C1 * !Y)	0.00138	0.00131	0.00129
	(A2 * B1 * !B2 * C1 * !Y)	-0.00158	-0.00176	-0.00175
	(A2 * !B1 * C1 * !Y)	0.00138	0.00131	0.00129
	(A2 * !B1 * C1 * !Y)	-0.00157	-0.00176	-0.00175
	(!A2 * B1 * B2 * C1 * !Y)	0.00122	0.00123	0.00123
	(!A2 * B1 * B2 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A2 * B1 * B2 * !C1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00182	-0.00183	-0.00183
	(!A2 * B1 * !B2 * C1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A2 * B1 * !B2 * !C1 * Y)	0.00046	0.00046	0.00044
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00204	-0.00205	-0.00208
	(!A2 * !B1 * C1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * !B1 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * !C1 * Y)	0.00046	0.00046	0.00044
	(!A2 * !B1 * !C1 * Y)	-0.00204	-0.00205	-0.00208

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00273	0.00273	0.00273
	(A2 * B1 * B2 * C1 * !Y)	-0.00361	-0.00375	-0.00374
	(A2 * B1 * B2 * !C1 * !Y)	0.00311	0.00277	0.00275
	(A2 * B1 * B2 * !C1 * !Y)	-0.00326	-0.00374	-0.00378
	(A2 * B1 * !B2 * C1 * !Y)	0.00294	0.00275	0.00274
	(A2 * B1 * !B2 * C1 * !Y)	-0.00327	-0.00366	-0.00366
	(A2 * !B1 * C1 * !Y)	0.00294	0.00276	0.00274
	(A2 * !B1 * C1 * !Y)	-0.00327	-0.00366	-0.00366
	(!A2 * B1 * B2 * C1 * !Y)	0.00261	0.00264	0.00263
	(!A2 * B1 * B2 * C1 * !Y)	-0.00384	-0.00388	-0.00386
	(!A2 * B1 * B2 * !C1 * !Y)	0.00263	0.00265	0.00263
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00385	-0.00387	-0.00385
	(!A2 * B1 * !B2 * C1 * !Y)	0.00262	0.00264	0.00263
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00384	-0.00386	-0.00385
	(!A2 * B1 * !B2 * !C1 * Y)	0.00104	0.00105	0.00097
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00436	-0.00440	-0.00449
	(!A2 * !B1 * C1 * !Y)	0.00262	0.00265	0.00263
	(!A2 * !B1 * C1 * !Y)	-0.00384	-0.00386	-0.00385
	(!A2 * !B1 * !C1 * Y)	0.00104	0.00105	0.00097
	(!A2 * !B1 * !C1 * Y)	-0.00436	-0.00440	-0.00449

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00528	0.00528	0.00526
	(A2 * B1 * B2 * C1 * !Y)	-0.00690	-0.00726	-0.00723
	(A2 * B1 * B2 * !C1 * !Y)	0.00616	0.00540	0.00533
	(A2 * B1 * B2 * !C1 * !Y)	-0.00610	-0.00716	-0.00727
	(A2 * B1 * !B2 * C1 * !Y)	0.00575	0.00536	0.00528
	(A2 * B1 * !B2 * C1 * !Y)	-0.00618	-0.00705	-0.00706
	(A2 * !B1 * C1 * !Y)	0.00577	0.00536	0.00528
	(A2 * !B1 * C1 * !Y)	-0.00616	-0.00709	-0.00706
	(!A2 * B1 * B2 * C1 * !Y)	0.00502	0.00508	0.00504
	(!A2 * B1 * B2 * C1 * !Y)	-0.00742	-0.00746	-0.00742
	(!A2 * B1 * B2 * !C1 * !Y)	0.00507	0.00512	0.00506
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00734	-0.00739	-0.00737
	(!A2 * B1 * !B2 * C1 * !Y)	0.00503	0.00506	0.00505
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00745	-0.00748	-0.00747
	(!A2 * B1 * !B2 * !C1 * Y)	0.00187	0.00188	0.00176
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00843	-0.00851	-0.00867
	(!A2 * !B1 * C1 * !Y)	0.00503	0.00506	0.00505
	(!A2 * !B1 * C1 * !Y)	-0.00745	-0.00748	-0.00747
	(!A2 * !B1 * !C1 * Y)	0.00187	0.00189	0.00176
	(!A2 * !B1 * !C1 * Y)	-0.00843	-0.00851	-0.00867

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)**	-0.00127	-0.00128	-0.00128
	(A2 * B1 * B2 * C1 * !Y)	0.00178	0.00180	0.00179
	(A2 * B1 * B2 * !C1 * !Y)	-0.00127	-0.00127	-0.00127
	(A2 * B1 * B2 * !C1 * !Y)	0.00179	0.00181	0.00180
	(A2 * B1 * !B2 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * !B2 * C1 * !Y)	0.00174	0.00176	0.00175
	(A2 * !B1 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * C1 * !Y)	0.00174	0.00176	0.00175
	(!A2 * B1 * B2 * C1 * !Y)	-0.00122	-0.00123	-0.00123
	(!A2 * B1 * B2 * C1 * !Y)	0.00185	0.00186	0.00184
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00121	-0.00123	-0.00123
	(!A2 * B1 * B2 * !C1 * !Y)	0.00186	0.00186	0.00185
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00122	-0.00123	-0.00123
	(!A2 * B1 * !B2 * C1 * !Y)	0.00186	0.00185	0.00185
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(!A2 * B1 * !B2 * !C1 * Y)	0.00209	0.00211	0.00210
	(!A2 * !B1 * C1 * !Y)	-0.00122	-0.00123	-0.00123
	(!A2 * !B1 * C1 * !Y)	0.00186	0.00185	0.00185
	(!A2 * !B1 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !C1 * Y)	0.00209	0.00210	0.00210

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00272	-0.00272	-0.00271
	(A2 * B1 * B2 * C1 * !Y)	0.00376	0.00375	0.00374
	(A2 * B1 * B2 * !C1 * !Y)	-0.00270	-0.00270	-0.00269
	(A2 * B1 * B2 * !C1 * !Y)	0.00379	0.00379	0.00378
	(A2 * B1 * !B2 * C1 * !Y)	-0.00270	-0.00272	-0.00269
	(A2 * B1 * !B2 * C1 * !Y)	0.00365	0.00369	0.00366
	(A2 * !B1 * C1 * !Y)	-0.00270	-0.00271	-0.00269
	(A2 * !B1 * C1 * !Y)	0.00365	0.00369	0.00366
	(!A2 * B1 * B2 * C1 * !Y)	-0.00260	-0.00264	-0.00263
	(!A2 * B1 * B2 * C1 * !Y)	0.00390	0.00392	0.00388
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00258	-0.00262	-0.00263
	(!A2 * B1 * B2 * !C1 * !Y)	0.00391	0.00390	0.00390
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00259	-0.00263	-0.00263
	(!A2 * B1 * !B2 * C1 * !Y)	0.00391	0.00390	0.00389
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00092	-0.00092	-0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	0.00453	0.00455	0.00453
	(!A2 * !B1 * C1 * !Y)	-0.00259	-0.00263	-0.00263
	(!A2 * !B1 * C1 * !Y)	0.00391	0.00391	0.00389
	(!A2 * !B1 * !C1 * Y)	-0.00092	-0.00092	-0.00091
	(!A2 * !B1 * !C1 * Y)	0.00453	0.00455	0.00453

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00525	-0.00525	-0.00523
	(A2 * B1 * B2 * C1 * !Y)	0.00726	0.00726	0.00723
	(A2 * B1 * B2 * !C1 * !Y)	-0.00522	-0.00523	-0.00521
	(A2 * B1 * B2 * !C1 * !Y)	0.00724	0.00728	0.00727
	(A2 * B1 * !B2 * C1 * !Y)	-0.00520	-0.00520	-0.00517
	(A2 * B1 * !B2 * C1 * !Y)	0.00703	0.00705	0.00706
	(A2 * !B1 * C1 * !Y)	-0.00519	-0.00523	-0.00517
	(A2 * !B1 * C1 * !Y)	0.00702	0.00710	0.00706
	(!A2 * B1 * B2 * C1 * !Y)	-0.00499	-0.00507	-0.00504
	(!A2 * B1 * B2 * C1 * !Y)	0.00749	0.00747	0.00746
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00496	-0.00506	-0.00506
	(!A2 * B1 * B2 * !C1 * !Y)	0.00745	0.00749	0.00746
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00497	-0.00505	-0.00505
	(!A2 * B1 * !B2 * C1 * !Y)	0.00757	0.00758	0.00754
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00165	-0.00165	-0.00164
	(!A2 * B1 * !B2 * !C1 * Y)	0.00875	0.00879	0.00875
	(!A2 * !B1 * C1 * !Y)	-0.00496	-0.00504	-0.00505
	(!A2 * !B1 * C1 * !Y)	0.00756	0.00757	0.00754
	(!A2 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * Y)	0.00875	0.00879	0.00875

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)**	0.00138	0.00138	0.00137
	(A1 * B1 * B2 * C1 * !Y)	-0.00175	-0.00183	-0.00182
	(A1 * B1 * B2 * !C1 * !Y)	0.00150	0.00140	0.00138
	(A1 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00182	-0.00183
	(A1 * B1 * !B2 * C1 * !Y)	0.00146	0.00140	0.00137
	(A1 * B1 * !B2 * C1 * !Y)	-0.00159	-0.00178	-0.00178
	(A1 * !B1 * C1 * !Y)	0.00146	0.00140	0.00137
	(A1 * !B1 * C1 * !Y)	-0.00159	-0.00178	-0.00178
	(!A1 * B1 * B2 * !Y)	0.00131	0.00132	0.00131
	(!A1 * B1 * B2 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00130	0.00133	0.00131
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00185	-0.00187	-0.00186
	(!A1 * B1 * !B2 * !C1 * Y)	0.00132	0.00133	0.00133
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * Y)	0.00132	0.00133	0.00133
	(!A1 * !B1 * !C1 * Y)	-0.00184	-0.00186	-0.00185

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00261	0.00261	0.00260
	(A1 * B1 * B2 * C1 * !Y)	-0.00337	-0.00352	-0.00350
	(A1 * B1 * B2 * !C1 * !Y)	0.00298	0.00264	0.00262
	(A1 * B1 * B2 * !C1 * !Y)	-0.00304	-0.00351	-0.00354
	(A1 * B1 * !B2 * C1 * !Y)	0.00281	0.00264	0.00261
	(A1 * B1 * !B2 * C1 * !Y)	-0.00304	-0.00345	-0.00343
	(A1 * !B1 * C1 * !Y)	0.00281	0.00264	0.00261
	(A1 * !B1 * C1 * !Y)	-0.00304	-0.00345	-0.00343
	(!A1 * B1 * B2 * !Y)	0.00249	0.00252	0.00250
	(!A1 * B1 * B2 * !Y)	-0.00361	-0.00363	-0.00362
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00250	0.00253	0.00251
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00360	-0.00362	-0.00361
	(!A1 * B1 * !B2 * !C1 * Y)	0.00239	0.00241	0.00241
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00371	-0.00372	-0.00371
	(!A1 * !B1 * !C1 * Y)	0.00239	0.00242	0.00241
	(!A1 * !B1 * !C1 * Y)	-0.00371	-0.00373	-0.00371

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00538	0.00534	0.00531
	(A1 * B1 * B2 * C1 * !Y)	-0.00696	-0.00730	-0.00726
	(A1 * B1 * B2 * !C1 * !Y)	0.00628	0.00549	0.00539
	(A1 * B1 * B2 * !C1 * !Y)	-0.00615	-0.00717	-0.00729
	(A1 * B1 * !B2 * C1 * !Y)	0.00585	0.00542	0.00534
	(A1 * B1 * !B2 * C1 * !Y)	-0.00624	-0.00712	-0.00709
	(A1 * !B1 * C1 * !Y)	0.00584	0.00542	0.00534
	(A1 * !B1 * C1 * !Y)	-0.00622	-0.00712	-0.00709
	(!A1 * B1 * B2 * !Y)	0.00511	0.00515	0.00509
	(!A1 * B1 * B2 * !Y)	-0.00746	-0.00749	-0.00745
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00513	0.00517	0.00511
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00752	-0.00755	-0.00751
	(!A1 * B1 * !B2 * !C1 * Y)	0.00482	0.00486	0.00483
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00782	-0.00784	-0.00780
	(!A1 * !B1 * !C1 * Y)	0.00482	0.00485	0.00482
	(!A1 * !B1 * !C1 * Y)	-0.00783	-0.00784	-0.00780

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)**	-0.00135	-0.00137	-0.00136
	(A1 * B1 * B2 * C1 * !Y)	0.00180	0.00183	0.00182
	(A1 * B1 * B2 * !C1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * B1 * B2 * !C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * B1 * !B2 * C1 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * B1 * !B2 * C1 * !Y)	0.00177	0.00178	0.00178
	(A1 * !B1 * C1 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * !B1 * C1 * !Y)	0.00178	0.00178	0.00178
	(!A1 * B1 * B2 * !Y)	-0.00130	-0.00132	-0.00131
	(!A1 * B1 * B2 * !Y)	0.00187	0.00190	0.00188
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00130	-0.00132	-0.00131
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00189	0.00191	0.00188
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * B1 * !B2 * !C1 * Y)	0.00198	0.00193	0.00188
	(!A1 * !B1 * !C1 * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * !B1 * !C1 * Y)	0.00198	0.00193	0.00188

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00258	-0.00259	-0.00258
	(A1 * B1 * B2 * C1 * !Y)	0.00350	0.00352	0.00350
	(A1 * B1 * B2 * !C1 * !Y)	-0.00257	-0.00257	-0.00257
	(A1 * B1 * B2 * !C1 * !Y)	0.00353	0.00355	0.00354
	(A1 * B1 * !B2 * C1 * !Y)	-0.00257	-0.00258	-0.00256
	(A1 * B1 * !B2 * C1 * !Y)	0.00341	0.00345	0.00343
	(A1 * !B1 * C1 * !Y)	-0.00257	-0.00258	-0.00256
	(A1 * !B1 * C1 * !Y)	0.00341	0.00345	0.00343
	(!A1 * B1 * B2 * !Y)	-0.00246	-0.00252	-0.00250
	(!A1 * B1 * B2 * !Y)	0.00362	0.00367	0.00363
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00245	-0.00251	-0.00251
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00363	0.00368	0.00364
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00218	-0.00237	-0.00239
	(!A1 * B1 * !B2 * !C1 * Y)	0.00390	0.00382	0.00376
	(!A1 * !B1 * !C1 * Y)	-0.00218	-0.00237	-0.00239
	(!A1 * !B1 * !C1 * Y)	0.00390	0.00382	0.00376

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00529	-0.00531	-0.00529
	(A1 * B1 * B2 * C1 * !Y)	0.00726	0.00730	0.00726
	(A1 * B1 * B2 * !C1 * !Y)	-0.00528	-0.00531	-0.00527
	(A1 * B1 * B2 * !C1 * !Y)	0.00728	0.00734	0.00729
	(A1 * B1 * !B2 * C1 * !Y)	-0.00525	-0.00528	-0.00522
	(A1 * B1 * !B2 * C1 * !Y)	0.00707	0.00712	0.00709
	(A1 * !B1 * C1 * !Y)	-0.00525	-0.00528	-0.00522
	(A1 * !B1 * C1 * !Y)	0.00707	0.00712	0.00709
	(!A1 * B1 * B2 * !Y)	-0.00504	-0.00515	-0.00509
	(!A1 * B1 * B2 * !Y)	0.00747	0.00756	0.00749
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00501	-0.00513	-0.00511
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00756	0.00765	0.00758
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00438	-0.00475	-0.00480
	(!A1 * B1 * !B2 * !C1 * Y)	0.00821	0.00804	0.00790
	(!A1 * !B1 * !C1 * Y)	-0.00438	-0.00476	-0.00481
	(!A1 * !B1 * !C1 * Y)	0.00821	0.00803	0.00790

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)**	0.00155	0.00153	0.00141
	(A1 * A2 * B2 * C1 * !Y)	-0.00129	-0.00132	-0.00136
	(A1 * A2 * B2 * !C1 * !Y)	0.00136	0.00136	0.00134
	(A1 * A2 * B2 * !C1 * !Y)	-0.00092	-0.00092	-0.00094
	(A1 * A2 * !B2 * C1 * !Y)	0.00147	0.00149	0.00134
	(A1 * A2 * !B2 * C1 * !Y)	-0.00121	-0.00123	-0.00126
	(A1 * A2 * !B2 * !C1 * !Y)	0.00131	0.00132	0.00128
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00090	-0.00091	-0.00092
	(A1 * !A2 * B2 * C1 * !Y)	0.00166	0.00136	0.00132
	(A1 * !A2 * B2 * C1 * !Y)	-0.00145	-0.00179	-0.00182
	(A1 * !A2 * !B2 * C1 * !Y)	0.00126	0.00126	0.00126
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00184	-0.00184	-0.00184
	(A1 * !A2 * !B2 * !C1 * Y)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00208	-0.00208	-0.00212
	(!A1 * B2 * C1 * !Y)	0.00166	0.00136	0.00132
	(!A1 * B2 * C1 * !Y)	-0.00146	-0.00179	-0.00182
	(!A1 * !B2 * C1 * !Y)	0.00126	0.00126	0.00126
	(!A1 * !B2 * C1 * !Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !B2 * !C1 * Y)	0.00045	0.00045	0.00043
	(!A1 * !B2 * !C1 * Y)	-0.00208	-0.00208	-0.00212

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00311	0.00309	0.00285
	(A1 * A2 * B2 * C1 * !Y)	-0.00263	-0.00263	-0.00271
	(A1 * A2 * B2 * !C1 * !Y)	0.00276	0.00277	0.00270
	(A1 * A2 * B2 * !C1 * !Y)	-0.00191	-0.00191	-0.00194
	(A1 * A2 * !B2 * C1 * !Y)	0.00304	0.00304	0.00273
	(A1 * A2 * !B2 * C1 * !Y)	-0.00239	-0.00241	-0.00250
	(A1 * A2 * !B2 * !C1 * !Y)	0.00270	0.00272	0.00261
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00183	-0.00185	-0.00190
	(A1 * !A2 * B2 * C1 * !Y)	0.00344	0.00276	0.00266
	(A1 * !A2 * B2 * C1 * !Y)	-0.00297	-0.00369	-0.00376
	(A1 * !A2 * !B2 * C1 * !Y)	0.00255	0.00256	0.00254
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00380	-0.00382	-0.00380
	(A1 * !A2 * !B2 * !C1 * Y)	0.00094	0.00093	0.00088
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00433	-0.00433	-0.00442
	(!A1 * B2 * C1 * !Y)	0.00344	0.00276	0.00266
	(!A1 * B2 * C1 * !Y)	-0.00298	-0.00369	-0.00376
	(!A1 * !B2 * C1 * !Y)	0.00255	0.00256	0.00255
	(!A1 * !B2 * C1 * !Y)	-0.00381	-0.00382	-0.00380
	(!A1 * !B2 * !C1 * Y)	0.00094	0.00093	0.00088
	(!A1 * !B2 * !C1 * Y)	-0.00434	-0.00432	-0.00442

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00627	0.00612	0.00562
	(A1 * A2 * B2 * C1 * !Y)	-0.00492	-0.00503	-0.00516
	(A1 * A2 * B2 * !C1 * !Y)	0.00552	0.00551	0.00534
	(A1 * A2 * B2 * !C1 * !Y)	-0.00364	-0.00362	-0.00368
	(A1 * A2 * !B2 * C1 * !Y)	0.00595	0.00594	0.00536
	(A1 * A2 * !B2 * C1 * !Y)	-0.00456	-0.00460	-0.00478
	(A1 * A2 * !B2 * !C1 * !Y)	0.00528	0.00530	0.00511
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00355	-0.00357	-0.00363
	(A1 * !A2 * B2 * C1 * !Y)	0.00689	0.00547	0.00525
	(A1 * !A2 * B2 * C1 * !Y)	-0.00562	-0.00711	-0.00729
	(A1 * !A2 * !B2 * C1 * !Y)	0.00499	0.00501	0.00500
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00739	-0.00742	-0.00741
	(A1 * !A2 * !B2 * !C1 * Y)	0.00188	0.00185	0.00174
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00838	-0.00835	-0.00857
	(!A1 * B2 * C1 * !Y)	0.00687	0.00546	0.00525
	(!A1 * B2 * C1 * !Y)	-0.00564	-0.00711	-0.00729
	(!A1 * !B2 * C1 * !Y)	0.00500	0.00502	0.00500
	(!A1 * !B2 * C1 * !Y)	-0.00740	-0.00742	-0.00741
	(!A1 * !B2 * !C1 * Y)	0.00188	0.00186	0.00174
	(!A1 * !B2 * !C1 * Y)	-0.00838	-0.00836	-0.00857

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)**	-0.00131	-0.00132	-0.00131
	(A1 * A2 * B2 * C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * A2 * B2 * !C1 * !Y)	-0.00122	-0.00123	-0.00126
	(A1 * A2 * B2 * !C1 * !Y)	0.00105	0.00105	0.00102
	(A1 * A2 * !B2 * C1 * !Y)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * !B2 * C1 * !Y)	0.00127	0.00127	0.00126
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00125	-0.00126	-0.00126
	(A1 * A2 * !B2 * !C1 * !Y)	0.00096	0.00096	0.00096
	(A1 * !A2 * B2 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * B2 * C1 * !Y)	0.00181	0.00182	0.00183
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00124	-0.00125	-0.00126
	(A1 * !A2 * !B2 * C1 * !Y)	0.00186	0.00186	0.00186
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * !C1 * Y)	0.00213	0.00215	0.00214
	(!A1 * B2 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B2 * C1 * !Y)	0.00181	0.00182	0.00183
	(!A1 * !B2 * C1 * !Y)	-0.00124	-0.00125	-0.00126
	(!A1 * !B2 * C1 * !Y)	0.00186	0.00186	0.00186
	(!A1 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * !C1 * Y)	0.00213	0.00215	0.00214

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00265	-0.00267	-0.00266
	(A1 * A2 * B2 * C1 * !Y)	0.00270	0.00272	0.00271
	(A1 * A2 * B2 * !C1 * !Y)	-0.00253	-0.00255	-0.00257
	(A1 * A2 * B2 * !C1 * !Y)	0.00208	0.00210	0.00208
	(A1 * A2 * !B2 * C1 * !Y)	-0.00254	-0.00258	-0.00258
	(A1 * A2 * !B2 * C1 * !Y)	0.00252	0.00252	0.00250
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00252	-0.00256	-0.00257
	(A1 * A2 * !B2 * !C1 * !Y)	0.00199	0.00198	0.00198
	(A1 * !A2 * B2 * C1 * !Y)	-0.00261	-0.00262	-0.00260
	(A1 * !A2 * B2 * C1 * !Y)	0.00374	0.00376	0.00377
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00251	-0.00254	-0.00254
	(A1 * !A2 * !B2 * C1 * !Y)	0.00385	0.00383	0.00383
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00082	-0.00083	-0.00082
	(A1 * !A2 * !B2 * !C1 * Y)	0.00445	0.00447	0.00445
	(!A1 * B2 * C1 * !Y)	-0.00261	-0.00262	-0.00260
	(!A1 * B2 * C1 * !Y)	0.00374	0.00377	0.00377
	(!A1 * !B2 * C1 * !Y)	-0.00251	-0.00254	-0.00255
	(!A1 * !B2 * C1 * !Y)	0.00385	0.00384	0.00383
	(!A1 * !B2 * !C1 * Y)	-0.00083	-0.00083	-0.00082
	(!A1 * !B2 * !C1 * Y)	0.00445	0.00447	0.00445

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00522	-0.00525	-0.00522
	(A1 * A2 * B2 * C1 * !Y)	0.00516	0.00520	0.00516
	(A1 * A2 * B2 * !C1 * !Y)	-0.00507	-0.00511	-0.00508
	(A1 * A2 * B2 * !C1 * !Y)	0.00402	0.00405	0.00395
	(A1 * A2 * !B2 * C1 * !Y)	-0.00496	-0.00505	-0.00507
	(A1 * A2 * !B2 * C1 * !Y)	0.00481	0.00481	0.00478
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00494	-0.00503	-0.00505
	(A1 * A2 * !B2 * !C1 * !Y)	0.00378	0.00377	0.00376
	(A1 * !A2 * B2 * C1 * !Y)	-0.00515	-0.00516	-0.00511
	(A1 * !A2 * B2 * C1 * !Y)	0.00725	0.00728	0.00729
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00492	-0.00500	-0.00500
	(A1 * !A2 * !B2 * C1 * !Y)	0.00750	0.00749	0.00748
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00163	-0.00163	-0.00162
	(A1 * !A2 * !B2 * !C1 * Y)	0.00864	0.00867	0.00865
	(!A1 * B2 * C1 * !Y)	-0.00515	-0.00516	-0.00511
	(!A1 * B2 * C1 * !Y)	0.00725	0.00729	0.00730
	(!A1 * !B2 * C1 * !Y)	-0.00491	-0.00500	-0.00500
	(!A1 * !B2 * C1 * !Y)	0.00749	0.00750	0.00748
	(!A1 * !B2 * !C1 * Y)	-0.00164	-0.00164	-0.00163
	(!A1 * !B2 * !C1 * Y)	0.00864	0.00867	0.00864

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)**	0.00160	0.00158	0.00146
	(A1 * A2 * B1 * C1 * !Y)	-0.00132	-0.00136	-0.00140
	(A1 * A2 * B1 * !C1 * !Y)	0.00141	0.00142	0.00138
	(A1 * A2 * B1 * !C1 * !Y)	-0.00095	-0.00096	-0.00097
	(A1 * A2 * !B1 * C1 * !Y)	0.00153	0.00154	0.00139
	(A1 * A2 * !B1 * C1 * !Y)	-0.00124	-0.00126	-0.00129
	(A1 * A2 * !B1 * !C1 * !Y)	0.00137	0.00139	0.00133
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00093	-0.00095	-0.00096
	(A1 * !A2 * B1 * C1 * !Y)	0.00172	0.00140	0.00136
	(A1 * !A2 * B1 * C1 * !Y)	-0.00148	-0.00183	-0.00187
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00130	0.00130	0.00130
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * !B1 * !C1 * Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00198	-0.00198	-0.00197
	(!A1 * B1 * C1 * !Y)	0.00172	0.00140	0.00136
	(!A1 * B1 * C1 * !Y)	-0.00148	-0.00183	-0.00187
	(!A1 * !B1 * !C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !B1 * !C1 * Y)	-0.00198	-0.00198	-0.00197

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00303	0.00301	0.00278
	(A1 * A2 * B1 * C1 * !Y)	-0.00248	-0.00249	-0.00257
	(A1 * A2 * B1 * !C1 * !Y)	0.00267	0.00268	0.00262
	(A1 * A2 * B1 * !C1 * !Y)	-0.00176	-0.00177	-0.00179
	(A1 * A2 * !B1 * C1 * !Y)	0.00293	0.00292	0.00265
	(A1 * A2 * !B1 * C1 * !Y)	-0.00227	-0.00229	-0.00237
	(A1 * A2 * !B1 * !C1 * !Y)	0.00257	0.00259	0.00252
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00172	-0.00174	-0.00177
	(A1 * !A2 * B1 * C1 * !Y)	0.00329	0.00268	0.00259
	(A1 * !A2 * B1 * C1 * !Y)	-0.00278	-0.00348	-0.00355
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00248	0.00250	0.00247
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00359	-0.00361	-0.00359
	(A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00243	0.00241
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00367	-0.00368	-0.00366
	(!A1 * B1 * C1 * !Y)	0.00328	0.00268	0.00259
	(!A1 * B1 * C1 * !Y)	-0.00279	-0.00349	-0.00355
	(!A1 * !B1 * !C1 * Y)	0.00240	0.00241	0.00241
	(!A1 * !B1 * !C1 * Y)	-0.00367	-0.00367	-0.00366

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00625	0.00612	0.00563
	(A1 * A2 * B1 * C1 * !Y)	-0.00488	-0.00502	-0.00516
	(A1 * A2 * B1 * !C1 * !Y)	0.00553	0.00552	0.00535
	(A1 * A2 * B1 * !C1 * !Y)	-0.00363	-0.00363	-0.00369
	(A1 * A2 * !B1 * C1 * !Y)	0.00594	0.00596	0.00535
	(A1 * A2 * !B1 * C1 * !Y)	-0.00456	-0.00461	-0.00478
	(A1 * A2 * !B1 * !C1 * !Y)	0.00530	0.00530	0.00512
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00355	-0.00356	-0.00364
	(A1 * !A2 * B1 * C1 * !Y)	0.00688	0.00548	0.00526
	(A1 * !A2 * B1 * C1 * !Y)	-0.00554	-0.00711	-0.00729
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00500	0.00505	0.00501
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00738	-0.00743	-0.00740
	(A1 * !A2 * !B1 * !C1 * Y)	0.00501	0.00511	0.00504
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00738	-0.00745	-0.00738
	(!A1 * B1 * C1 * !Y)	0.00687	0.00548	0.00526
	(!A1 * B1 * C1 * !Y)	-0.00556	-0.00711	-0.00729
	(!A1 * !B1 * !C1 * Y)	0.00501	0.00511	0.00504
	(!A1 * !B1 * !C1 * Y)	-0.00738	-0.00745	-0.00738

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)**	-0.00135	-0.00136	-0.00135
	(A1 * A2 * B1 * C1 * !Y)	0.00139	0.00140	0.00140
	(A1 * A2 * B1 * !C1 * !Y)	-0.00128	-0.00128	-0.00131
	(A1 * A2 * B1 * !C1 * !Y)	0.00108	0.00107	0.00105
	(A1 * A2 * !B1 * C1 * !Y)	-0.00130	-0.00132	-0.00131
	(A1 * A2 * !B1 * C1 * !Y)	0.00130	0.00131	0.00129
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00129	-0.00131	-0.00130
	(A1 * A2 * !B1 * !C1 * !Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !A2 * B1 * C1 * !Y)	0.00186	0.00188	0.00187
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00128	-0.00130	-0.00130
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00190	0.00192	0.00191
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00110	-0.00119	-0.00120
	(A1 * !A2 * !B1 * !C1 * Y)	0.00210	0.00204	0.00200
	(!A1 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00133
	(!A1 * B1 * C1 * !Y)	0.00186	0.00188	0.00187
	(!A1 * !B1 * !C1 * Y)	-0.00110	-0.00119	-0.00120
	(!A1 * !B1 * !C1 * Y)	0.00210	0.00204	0.00200

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00258	-0.00260	-0.00258
	(A1 * A2 * B1 * C1 * !Y)	0.00256	0.00258	0.00257
	(A1 * A2 * B1 * !C1 * !Y)	-0.00243	-0.00245	-0.00249
	(A1 * A2 * B1 * !C1 * !Y)	0.00194	0.00195	0.00193
	(A1 * A2 * !B1 * C1 * !Y)	-0.00245	-0.00251	-0.00251
	(A1 * A2 * !B1 * C1 * !Y)	0.00236	0.00239	0.00237
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00244	-0.00249	-0.00249
	(A1 * A2 * !B1 * !C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * B1 * C1 * !Y)	-0.00254	-0.00255	-0.00253
	(A1 * !A2 * B1 * C1 * !Y)	0.00353	0.00356	0.00356
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00242	-0.00248	-0.00247
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00361	0.00365	0.00362
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00217	-0.00236	-0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	0.00389	0.00377	0.00371
	(!A1 * B1 * C1 * !Y)	-0.00254	-0.00255	-0.00253
	(!A1 * B1 * C1 * !Y)	0.00353	0.00356	0.00356
	(!A1 * !B1 * !C1 * Y)	-0.00217	-0.00236	-0.00239
	(!A1 * !B1 * !C1 * Y)	0.00388	0.00377	0.00371

	(A1 * A2 * B1 * C1 * !Y)	-0.00523	-0.00525	-0.00523
	(A1 * A2 * B1 * C1 * !Y)	0.00516	0.00519	0.00516
	(A1 * A2 * B1 * !C1 * !Y)	-0.00507	-0.00510	-0.00509
	(A1 * A2 * B1 * !C1 * !Y)	0.00403	0.00405	0.00395
	(A1 * A2 * !B1 * C1 * !Y)	-0.00494	-0.00506	-0.00506
	(A1 * A2 * !B1 * C1 * !Y)	0.00476	0.00483	0.00478
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00496	-0.00505	-0.00504
	(A1 * A2 * !B1 * !C1 * !Y)	0.00377	0.00379	0.00376
	(A1 * !A2 * B1 * C1 * !Y)	-0.00516	-0.00515	-0.00512
sky130_fd_sc_hs__a221oi_4	**(A1 * !A2 * B1 * C1 * !Y)**	0.00724	0.00725	0.00729
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00491	-0.00503	-0.00501
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00745	0.00753	0.00747
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00454	-0.00495	-0.00501
	(A1 * !A2 * !B1 * !C1 * Y)	0.00783	0.00760	0.00748
	(!A1 * B1 * C1 * !Y)	-0.00516	-0.00516	-0.00512
	(!A1 * B1 * C1 * !Y)	0.00725	0.00725	0.00729
	(!A1 * !B1 * !C1 * Y)	-0.00455	-0.00496	-0.00501
	(!A1 * !B1 * !C1 * Y)	0.00782	0.00760	0.00747

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)	0.00159	0.00159	0.00158
	(A1 * B1 * B2 * !Y)	-0.00091	-0.00090	-0.00090
	(A1 * A2 * B1 * !B2 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * B1 * !B2 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * !B1 * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * B1 * B2 * !Y)	0.00158	0.00159	0.00158
	(!A1 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00296	0.00298	0.00297
	(A1 * B1 * B2 * !Y)	-0.00166	-0.00166	-0.00166
	(A1 * A2 * B1 * !B2 * !Y)	0.00296	0.00299	0.00297
	(A1 * A2 * B1 * !B2 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !B1 * !Y)	0.00297	0.00299	0.00297
	(A1 * A2 * !B1 * !Y)	-0.00165	-0.00166	-0.00164
	(!A1 * B1 * B2 * !Y)	0.00297	0.00299	0.00297
	(!A1 * B1 * B2 * !Y)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00587	0.00589	0.00587
	(A1 * B1 * B2 * !Y)	-0.00333	-0.00333	-0.00332
	(A1 * A2 * B1 * !B2 * !Y)	0.00585	0.00591	0.00587
	(A1 * A2 * B1 * !B2 * !Y)	-0.00331	-0.00334	-0.00330
	(A1 * A2 * !B1 * !Y)	0.00590	0.00592	0.00587
	(A1 * A2 * !B1 * !Y)	-0.00335	-0.00334	-0.00330
	(!A1 * B1 * B2 * !Y)	0.00590	0.00596	0.00588
	(!A1 * B1 * B2 * !Y)	-0.00336	-0.00338	-0.00333

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)	-0.00146	-0.00147	-0.00157
	(A1 * B1 * B2 * !Y)	0.00101	0.00100	0.00093
	(A1 * A2 * B1 * !B2 * !Y)	-0.00124	-0.00125	-0.00152
	(A1 * A2 * B1 * !B2 * !Y)	0.00115	0.00115	0.00096
	(A1 * A2 * !B1 * !Y)	-0.00124	-0.00125	-0.00152
	(A1 * A2 * !B1 * !Y)	0.00116	0.00115	0.00096
	(!A1 * B1 * B2 * !Y)	-0.00146	-0.00147	-0.00156
	(!A1 * B1 * B2 * !Y)	0.00102	0.00102	0.00093
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00273	-0.00276	-0.00294
	(A1 * B1 * B2 * !Y)	0.00185	0.00186	0.00171
	(A1 * A2 * B1 * !B2 * !Y)	-0.00237	-0.00241	-0.00286
	(A1 * A2 * B1 * !B2 * !Y)	0.00207	0.00207	0.00174
	(A1 * A2 * !B1 * !Y)	-0.00237	-0.00241	-0.00286
	(A1 * A2 * !B1 * !Y)	0.00207	0.00207	0.00174
	(!A1 * B1 * B2 * !Y)	-0.00273	-0.00276	-0.00294
	(!A1 * B1 * B2 * !Y)	0.00187	0.00188	0.00172
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00544	-0.00549	-0.00582
	(A1 * B1 * B2 * !Y)	0.00362	0.00363	0.00340
	(A1 * A2 * B1 * !B2 * !Y)	-0.00471	-0.00477	-0.00566
	(A1 * A2 * B1 * !B2 * !Y)	0.00413	0.00414	0.00353
	(A1 * A2 * !B1 * !Y)	-0.00472	-0.00477	-0.00566
	(A1 * A2 * !B1 * !Y)	0.00414	0.00414	0.00353
	(!A1 * B1 * B2 * !Y)	-0.00543	-0.00548	-0.00581
	(!A1 * B1 * B2 * !Y)	0.00367	0.00367	0.00343

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00274	0.00284	0.00271	0.00273	0.00269	0.82048
sky130_fd_sc_hs__a221o_2	0.00287	0.00295	0.00294	0.00296	0.00286	1.56589
sky130_fd_sc_hs__a221o_4	0.00508	0.00508	0.00522	0.00534	0.00518	2.58962

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	1.65900	2.24066
sky130_fd_sc_hs__a221o_2	0.00000	2.03556	2.61433
sky130_fd_sc_hs__a221o_4	0.00000	3.90243	5.14320

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)	0.15673	0.91021	7.78405
	A2->X (RR)	0.16382	0.88947	7.70147
	B1->X (RR)	0.14810	0.87696	7.60190
	B2->X (RR)	0.15482	0.85937	7.55617
	C1->X (RR)	0.10051	0.78673	7.33977
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.15967	0.82443	7.70660
	A2->X (RR)	0.16677	0.79695	7.60862
	B1->X (RR)	0.15263	0.79731	7.55131
	B2->X (RR)	0.15905	0.77289	7.48947
	C1->X (RR)	0.10139	0.70243	7.28595
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.17854	0.78971	7.61034
	A2->X (RR)	0.18804	0.75053	7.44399
	B1->X (RR)	0.16790	0.75015	7.38770
	B2->X (RR)	0.17822	0.72010	7.27911
	C1->X (RR)	0.10036	0.62299	7.02623

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.38657	0.91475	4.72874
	A2->X (FF)	0.42169	0.95763	4.81356
	B1->X (FF)	0.35632	0.89924	4.92259
	B2->X (FF)	0.38573	0.94303	5.01987
	C1->X (FF)	0.30924	0.89548	5.01245
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.49063	1.01534	5.08134
	A2->X (FF)	0.52923	1.06284	5.17777
	B1->X (FF)	0.47008	1.01470	5.34145
	B2->X (FF)	0.49586	1.05492	5.44890
	C1->X (FF)	0.42028	1.01220	5.46352
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.48410	0.93113	4.47992
	A2->X (FF)	0.53077	0.99112	4.61639
	B1->X (FF)	0.45671	0.93066	4.79659
	B2->X (FF)	0.49688	0.98445	4.91764
	C1->X (FF)	0.40637	0.92658	4.91835

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01361	0.01377	0.02607
	A1	0.00668	0.00684	0.01930
	A2	0.01450	0.01448	0.02436
	A2	0.00670	0.00669	0.01674
	B1	0.01054	0.01088	0.02189
	B1	0.00471	0.00508	0.01725
	B2	0.01134	0.01150	0.02117
	B2	0.00478	0.00495	0.01579
	C1	0.00730	0.00796	0.02377
	C1	0.00311	0.00377	0.01967
sky130_fd_sc_hs__a221o_2	A1	0.01623	0.01649	0.02869
	A1	0.00879	0.00905	0.02162
	A2	0.01721	0.01727	0.02721
	A2	0.00880	0.00887	0.01917
	B1	0.01368	0.01421	0.02536
	B1	0.00722	0.00778	0.02036
	B2	0.01460	0.01497	0.02482
	B2	0.00735	0.00775	0.01881
	C1	0.01187	0.01268	0.02591
	C1	0.00561	0.00648	0.02247

sky130_fd_sc_hs__a221o_4	**A1**	0.03206	0.03261	0.05616
	A1	0.01856	0.01914	0.04323
	A2	0.03364	0.03391	0.05290
	A2	0.01861	0.01889	0.03815
	B1	0.02651	0.02740	0.04805
	B1	0.01520	0.01613	0.03731
	B2	0.02834	0.02898	0.04707
	B2	0.01508	0.01578	0.03615
	C1	0.02181	0.02345	0.04809
	C1	0.01093	0.01264	0.04224

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00438	0.00429	0.01482
	A1	0.01135	0.01129	0.02177
	A2	0.00463	0.00443	0.01445
	A2	0.01242	0.01224	0.02222
	B1	0.00385	0.00396	0.01584
	B1	0.01014	0.01007	0.02073
	B2	0.00418	0.00433	0.01577
	B2	0.01118	0.01118	0.02148
	C1	0.00351	0.00457	0.02097
	C1	0.00770	0.00876	0.02487

sky130_fd_sc_hs__a221o_2	**A1**	0.00812	0.00736	0.01873
	A1	0.01557	0.01492	0.02532
	A2	0.00850	0.00771	0.01823
	A2	0.01688	0.01608	0.02612
	B1	0.00716	0.00695	0.01997
	B1	0.01445	0.01378	0.02441
	B2	0.00850	0.00784	0.01925
	B2	0.01566	0.01498	0.02546
	C1	0.00670	0.00756	0.02454
	C1	0.01465	0.01460	0.02811
sky130_fd_sc_hs__a221o_4	**A1**	0.01493	0.01343	0.03429
	A1	0.02840	0.02713	0.04682
	A2	0.01639	0.01464	0.03441
	A2	0.03133	0.02972	0.04853
	B1	0.01514	0.01343	0.03347
	B1	0.02635	0.02488	0.04432
	B2	0.01615	0.01447	0.03376
	B2	0.02905	0.02759	0.04661
	C1	0.01213	0.01378	0.04500
	C1	0.02720	0.02669	0.05161

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)**	0.00117	0.00115	0.00115
	(A2 * B1 * B2 * C1 * X)	-0.00161	-0.00167	-0.00168
	(A2 * B1 * B2 * !C1 * X)	0.00140	0.00119	0.00118
	(A2 * B1 * B2 * !C1 * X)	-0.00141	-0.00164	-0.00167
	(A2 * B1 * !B2 * C1 * X)	0.00132	0.00120	0.00117
	(A2 * B1 * !B2 * C1 * X)	-0.00142	-0.00163	-0.00166
	(A2 * !B1 * C1 * X)	0.00132	0.00120	0.00117
	(A2 * !B1 * C1 * X)	-0.00142	-0.00163	-0.00166
	(!A2 * B1 * B2 * C1 * X)	0.00110	0.00111	0.00110
	(!A2 * B1 * B2 * C1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * B1 * B2 * !C1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * B2 * !C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !B2 * C1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * !B2 * C1 * X)	-0.00170	-0.00172	-0.00171
	(!A2 * B1 * !B2 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00193	-0.00194	-0.00196
	(!A2 * !B1 * C1 * X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * C1 * X)	-0.00170	-0.00172	-0.00171
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A2 * !B1 * !C1 * !X)	-0.00193	-0.00194	-0.00196

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00134	0.00132	0.00133
	(A2 * B1 * B2 * C1 * X)	-0.00160	-0.00166	-0.00167
	(A2 * B1 * B2 * !C1 * X)	0.00158	0.00136	0.00135
	(A2 * B1 * B2 * !C1 * X)	-0.00139	-0.00163	-0.00166
	(A2 * B1 * !B2 * C1 * X)	0.00149	0.00138	0.00134
	(A2 * B1 * !B2 * C1 * X)	-0.00141	-0.00162	-0.00165
	(A2 * !B1 * C1 * X)	0.00149	0.00138	0.00134
	(A2 * !B1 * C1 * X)	-0.00141	-0.00162	-0.00165
	(!A2 * B1 * B2 * C1 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * B2 * C1 * X)	-0.00171	-0.00171	-0.00170
	(!A2 * B1 * B2 * !C1 * X)	0.00127	0.00128	0.00128
	(!A2 * B1 * B2 * !C1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * B1 * !B2 * C1 * X)	0.00127	0.00129	0.00128
	(!A2 * B1 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * B1 * !B2 * !C1 * !X)	0.00047	0.00047	0.00045
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00193	-0.00194	-0.00197
	(!A2 * !B1 * C1 * X)	0.00127	0.00129	0.00128
	(!A2 * !B1 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00193	-0.00194	-0.00197

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00260	0.00259	0.00257
	(A2 * B1 * B2 * C1 * X)	-0.00313	-0.00325	-0.00326
	(A2 * B1 * B2 * !C1 * X)	0.00293	0.00264	0.00262
	(A2 * B1 * B2 * !C1 * X)	-0.00283	-0.00323	-0.00326
	(A2 * B1 * !B2 * C1 * X)	0.00283	0.00264	0.00260
	(A2 * B1 * !B2 * C1 * X)	-0.00285	-0.00317	-0.00324
	(A2 * !B1 * C1 * X)	0.00283	0.00264	0.00260
	(A2 * !B1 * C1 * X)	-0.00285	-0.00317	-0.00324
	(!A2 * B1 * B2 * C1 * X)	0.00245	0.00246	0.00245
	(!A2 * B1 * B2 * C1 * X)	-0.00335	-0.00336	-0.00335
	(!A2 * B1 * B2 * !C1 * X)	0.00246	0.00249	0.00247
	(!A2 * B1 * B2 * !C1 * X)	-0.00331	-0.00334	-0.00332
	(!A2 * B1 * !B2 * C1 * X)	0.00248	0.00247	0.00248
	(!A2 * B1 * !B2 * C1 * X)	-0.00333	-0.00332	-0.00332
	(!A2 * B1 * !B2 * !C1 * !X)	0.00128	0.00128	0.00121
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00359	-0.00361	-0.00370
	(!A2 * !B1 * C1 * X)	0.00248	0.00247	0.00248
	(!A2 * !B1 * C1 * X)	-0.00333	-0.00332	-0.00332
	(!A2 * !B1 * !C1 * !X)	0.00128	0.00128	0.00121
	(!A2 * !B1 * !C1 * !X)	-0.00359	-0.00361	-0.00370

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)**	-0.00114	-0.00114	-0.00114
	(A2 * B1 * B2 * C1 * X)	0.00167	0.00169	0.00168
	(A2 * B1 * B2 * !C1 * X)	-0.00112	-0.00112	-0.00112
	(A2 * B1 * B2 * !C1 * X)	0.00170	0.00171	0.00171
	(A2 * B1 * !B2 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * !B2 * C1 * X)	0.00165	0.00166	0.00166
	(A2 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !B1 * C1 * X)	0.00165	0.00166	0.00166
	(!A2 * B1 * B2 * C1 * X)	-0.00108	-0.00111	-0.00110
	(!A2 * B1 * B2 * C1 * X)	0.00172	0.00176	0.00173
	(!A2 * B1 * B2 * !C1 * X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1 * B2 * !C1 * X)	0.00176	0.00175	0.00175
	(!A2 * B1 * !B2 * C1 * X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1 * !B2 * C1 * X)	0.00175	0.00176	0.00175
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * !X)	0.00199	0.00200	0.00200
	(!A2 * !B1 * C1 * X)	-0.00108	-0.00109	-0.00109
	(!A2 * !B1 * C1 * X)	0.00175	0.00176	0.00175
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00199	0.00200	0.00200

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00130	-0.00131	-0.00131
	(A2 * B1 * B2 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00129	-0.00129
	(A2 * B1 * B2 * !C1 * X)	0.00169	0.00170	0.00170
	(A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00128
	(A2 * B1 * !B2 * C1 * X)	0.00163	0.00165	0.00165
	(A2 * !B1 * C1 * X)	-0.00129	-0.00130	-0.00128
	(A2 * !B1 * C1 * X)	0.00163	0.00165	0.00165
	(!A2 * B1 * B2 * C1 * X)	-0.00124	-0.00127	-0.00126
	(!A2 * B1 * B2 * C1 * X)	0.00171	0.00175	0.00172
	(!A2 * B1 * B2 * !C1 * X)	-0.00124	-0.00126	-0.00125
	(!A2 * B1 * B2 * !C1 * X)	0.00174	0.00176	0.00174
	(!A2 * B1 * !B2 * C1 * X)	-0.00124	-0.00126	-0.00125
	(!A2 * B1 * !B2 * C1 * X)	0.00174	0.00176	0.00173
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	0.00202	0.00203	0.00202
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00126	-0.00125
	(!A2 * !B1 * C1 * X)	0.00174	0.00176	0.00173
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00202	0.00203	0.00202

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00254	-0.00254	-0.00255
	(A2 * B1 * B2 * C1 * X)	0.00325	0.00325	0.00326
	(A2 * B1 * B2 * !C1 * X)	-0.00251	-0.00253	-0.00252
	(A2 * B1 * B2 * !C1 * X)	0.00329	0.00333	0.00331
	(A2 * B1 * !B2 * C1 * X)	-0.00252	-0.00251	-0.00249
	(A2 * B1 * !B2 * C1 * X)	0.00323	0.00322	0.00324
	(A2 * !B1 * C1 * X)	-0.00252	-0.00251	-0.00249
	(A2 * !B1 * C1 * X)	0.00323	0.00322	0.00324
	(!A2 * B1 * B2 * C1 * X)	-0.00240	-0.00245	-0.00245
	(!A2 * B1 * B2 * C1 * X)	0.00337	0.00340	0.00338
	(!A2 * B1 * B2 * !C1 * X)	-0.00237	-0.00243	-0.00244
	(!A2 * B1 * B2 * !C1 * X)	0.00340	0.00345	0.00341
	(!A2 * B1 * !B2 * C1 * X)	-0.00238	-0.00243	-0.00244
	(!A2 * B1 * !B2 * C1 * X)	0.00340	0.00341	0.00340
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00112	-0.00110
	(!A2 * B1 * !B2 * !C1 * !X)	0.00378	0.00384	0.00379
	(!A2 * !B1 * C1 * X)	-0.00238	-0.00243	-0.00244
	(!A2 * !B1 * C1 * X)	0.00340	0.00342	0.00340
	(!A2 * !B1 * !C1 * !X)	-0.00110	-0.00112	-0.00110
	(!A2 * !B1 * !C1 * !X)	0.00378	0.00384	0.00379

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)**	0.00135	0.00133	0.00133
	(A1 * B1 * B2 * C1 * X)	-0.00157	-0.00162	-0.00163
	(A1 * B1 * B2 * !C1 * X)	0.00157	0.00138	0.00136
	(A1 * B1 * B2 * !C1 * X)	-0.00138	-0.00161	-0.00163
	(A1 * B1 * !B2 * C1 * X)	0.00148	0.00138	0.00135
	(A1 * B1 * !B2 * C1 * X)	-0.00138	-0.00158	-0.00161
	(A1 * !B1 * C1 * X)	0.00148	0.00138	0.00135
	(A1 * !B1 * C1 * X)	-0.00138	-0.00158	-0.00161
	(!A1 * B1 * B2 * X)	0.00129	0.00130	0.00129
	(!A1 * B1 * B2 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00130	0.00131	0.00130
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00148	0.00147	0.00148
	(A1 * B1 * B2 * C1 * X)	-0.00154	-0.00161	-0.00162
	(A1 * B1 * B2 * !C1 * X)	0.00170	0.00153	0.00150
	(A1 * B1 * B2 * !C1 * X)	-0.00135	-0.00160	-0.00161
	(A1 * B1 * !B2 * C1 * X)	0.00162	0.00153	0.00149
	(A1 * B1 * !B2 * C1 * X)	-0.00137	-0.00157	-0.00161
	(A1 * !B1 * C1 * X)	0.00162	0.00153	0.00149
	(A1 * !B1 * C1 * X)	-0.00137	-0.00157	-0.00160
	(!A1 * B1 * B2 * X)	0.00142	0.00143	0.00142
	(!A1 * B1 * B2 * X)	-0.00166	-0.00166	-0.00165
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00143	0.00144	0.00143
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !B1 * !C1 * !X)	-0.00183	-0.00183	-0.00182

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00255	0.00256	0.00254
	(A1 * B1 * B2 * C1 * X)	-0.00309	-0.00324	-0.00324
	(A1 * B1 * B2 * !C1 * X)	0.00292	0.00262	0.00258
	(A1 * B1 * B2 * !C1 * X)	-0.00277	-0.00320	-0.00323
	(A1 * B1 * !B2 * C1 * X)	0.00279	0.00262	0.00256
	(A1 * B1 * !B2 * C1 * X)	-0.00279	-0.00315	-0.00322
	(A1 * !B1 * C1 * X)	0.00279	0.00261	0.00256
	(A1 * !B1 * C1 * X)	-0.00279	-0.00315	-0.00322
	(!A1 * B1 * B2 * X)	0.00243	0.00245	0.00243
	(!A1 * B1 * B2 * X)	-0.00333	-0.00334	-0.00333
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00245	0.00245	0.00245
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00330	-0.00330	-0.00330
	(!A1 * B1 * !B2 * !C1 * !X)	0.00240	0.00242	0.00240
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00336	-0.00337	-0.00335
	(!A1 * !B1 * !C1 * !X)	0.00240	0.00241	0.00240
	(!A1 * !B1 * !C1 * !X)	-0.00336	-0.00337	-0.00335

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)**	-0.00132	-0.00133	-0.00132
	(A1 * B1 * B2 * C1 * X)	0.00163	0.00164	0.00163
	(A1 * B1 * B2 * !C1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * B2 * !C1 * X)	0.00165	0.00166	0.00166
	(A1 * B1 * !B2 * C1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !B2 * C1 * X)	0.00160	0.00162	0.00161
	(A1 * !B1 * C1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * B2 * X)	-0.00127	-0.00129	-0.00129
	(!A1 * B1 * B2 * X)	0.00168	0.00171	0.00168
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00126	-0.00128	-0.00128
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00171	0.00172	0.00170
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00107	-0.00108
	(!A1 * B1 * !B2 * !C1 * !X)	0.00199	0.00194	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00099	-0.00107	-0.00108
	(!A1 * !B1 * !C1 * !X)	0.00199	0.00194	0.00189

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00145	-0.00146	-0.00146
	(A1 * B1 * B2 * C1 * X)	0.00161	0.00163	0.00162
	(A1 * B1 * B2 * !C1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * B2 * !C1 * X)	0.00164	0.00165	0.00165
	(A1 * B1 * !B2 * C1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * !B2 * C1 * X)	0.00159	0.00161	0.00161
	(A1 * !B1 * C1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * !B1 * C1 * X)	0.00159	0.00161	0.00160
	(!A1 * B1 * B2 * X)	-0.00140	-0.00142	-0.00142
	(!A1 * B1 * B2 * X)	0.00167	0.00170	0.00167
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00138	-0.00141	-0.00141
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00168	0.00171	0.00169
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00119	-0.00121
	(!A1 * B1 * !B2 * !C1 * !X)	0.00197	0.00193	0.00188
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00119	-0.00121
	(!A1 * !B1 * !C1 * !X)	0.00197	0.00193	0.00188

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00251	-0.00252	-0.00252
	(A1 * B1 * B2 * C1 * X)	0.00322	0.00324	0.00324
	(A1 * B1 * B2 * !C1 * X)	-0.00248	-0.00249	-0.00248
	(A1 * B1 * B2 * !C1 * X)	0.00327	0.00331	0.00329
	(A1 * B1 * !B2 * C1 * X)	-0.00248	-0.00248	-0.00246
	(A1 * B1 * !B2 * C1 * X)	0.00321	0.00320	0.00322
	(A1 * !B1 * C1 * X)	-0.00248	-0.00248	-0.00246
	(A1 * !B1 * C1 * X)	0.00321	0.00320	0.00322
	(!A1 * B1 * B2 * X)	-0.00237	-0.00243	-0.00243
	(!A1 * B1 * B2 * X)	0.00335	0.00340	0.00336
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00235	-0.00241	-0.00241
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00338	0.00342	0.00338
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00215	-0.00231	-0.00233
	(!A1 * B1 * !B2 * !C1 * !X)	0.00359	0.00352	0.00345
	(!A1 * !B1 * !C1 * !X)	-0.00215	-0.00232	-0.00234
	(!A1 * !B1 * !C1 * !X)	0.00359	0.00351	0.00345

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)**	0.00137	0.00138	0.00127
	(A1 * A2 * B2 * C1 * X)	-0.00116	-0.00116	-0.00122
	(A1 * A2 * B2 * !C1 * X)	0.00121	0.00121	0.00119
	(A1 * A2 * B2 * !C1 * X)	-0.00086	-0.00086	-0.00088
	(A1 * A2 * !B2 * C1 * X)	0.00136	0.00136	0.00121
	(A1 * A2 * !B2 * C1 * X)	-0.00105	-0.00106	-0.00114
	(A1 * A2 * !B2 * !C1 * X)	0.00120	0.00120	0.00115
	(A1 * A2 * !B2 * !C1 * X)	-0.00082	-0.00084	-0.00086
	(A1 * !A2 * B2 * C1 * X)	0.00155	0.00123	0.00117
	(A1 * !A2 * B2 * C1 * X)	-0.00128	-0.00163	-0.00167
	(A1 * !A2 * !B2 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !B2 * !C1 * !X)	0.00040	0.00040	0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00193	-0.00195	-0.00197
	(!A1 * B2 * C1 * X)	0.00155	0.00123	0.00117
	(!A1 * B2 * C1 * X)	-0.00128	-0.00163	-0.00167
	(!A1 * !B2 * C1 * X)	0.00112	0.00113	0.00112
	(!A1 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * !B2 * !C1 * !X)	0.00040	0.00040	0.00038
	(!A1 * !B2 * !C1 * !X)	-0.00193	-0.00195	-0.00197

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00164	0.00163	0.00152
	(A1 * A2 * B2 * C1 * X)	-0.00118	-0.00118	-0.00123
	(A1 * A2 * B2 * !C1 * X)	0.00147	0.00147	0.00144
	(A1 * A2 * B2 * !C1 * X)	-0.00088	-0.00088	-0.00089
	(A1 * A2 * !B2 * C1 * X)	0.00160	0.00161	0.00145
	(A1 * A2 * !B2 * C1 * X)	-0.00107	-0.00108	-0.00115
	(A1 * A2 * !B2 * !C1 * X)	0.00144	0.00144	0.00139
	(A1 * A2 * !B2 * !C1 * X)	-0.00084	-0.00085	-0.00087
	(A1 * !A2 * B2 * C1 * X)	0.00180	0.00148	0.00142
	(A1 * !A2 * B2 * C1 * X)	-0.00130	-0.00164	-0.00169
	(A1 * !A2 * !B2 * C1 * X)	0.00135	0.00136	0.00136
	(A1 * !A2 * !B2 * C1 * X)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * !B2 * !C1 * !X)	0.00048	0.00048	0.00046
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00201	-0.00203	-0.00206
	(!A1 * B2 * C1 * X)	0.00180	0.00148	0.00142
	(!A1 * B2 * C1 * X)	-0.00130	-0.00164	-0.00169
	(!A1 * !B2 * C1 * X)	0.00136	0.00136	0.00136
	(!A1 * !B2 * C1 * X)	-0.00170	-0.00171	-0.00171
	(!A1 * !B2 * !C1 * !X)	0.00048	0.00048	0.00046
	(!A1 * !B2 * !C1 * !X)	-0.00201	-0.00203	-0.00206

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00299	0.00294	0.00271
	(A1 * A2 * B2 * C1 * X)	-0.00236	-0.00239	-0.00251
	(A1 * A2 * B2 * !C1 * X)	0.00261	0.00261	0.00255
	(A1 * A2 * B2 * !C1 * X)	-0.00175	-0.00175	-0.00179
	(A1 * A2 * !B2 * C1 * X)	0.00287	0.00286	0.00259
	(A1 * A2 * !B2 * C1 * X)	-0.00221	-0.00222	-0.00236
	(A1 * A2 * !B2 * !C1 * X)	0.00254	0.00254	0.00246
	(A1 * A2 * !B2 * !C1 * X)	-0.00172	-0.00173	-0.00177
	(A1 * !A2 * B2 * C1 * X)	0.00329	0.00262	0.00250
	(A1 * !A2 * B2 * C1 * X)	-0.00258	-0.00327	-0.00336
	(A1 * !A2 * !B2 * C1 * X)	0.00241	0.00242	0.00240
	(A1 * !A2 * !B2 * C1 * X)	-0.00340	-0.00341	-0.00339
	(A1 * !A2 * !B2 * !C1 * !X)	0.00103	0.00104	0.00096
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00383	-0.00386	-0.00395
	(!A1 * B2 * C1 * X)	0.00330	0.00262	0.00250
	(!A1 * B2 * C1 * X)	-0.00257	-0.00327	-0.00336
	(!A1 * !B2 * C1 * X)	0.00241	0.00242	0.00240
	(!A1 * !B2 * C1 * X)	-0.00340	-0.00341	-0.00339
	(!A1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00096
	(!A1 * !B2 * !C1 * !X)	-0.00383	-0.00386	-0.00396

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)**	-0.00116	-0.00116	-0.00116
	(A1 * A2 * B2 * C1 * X)	0.00124	0.00123	0.00123
	(A1 * A2 * B2 * !C1 * X)	-0.00108	-0.00109	-0.00111
	(A1 * A2 * B2 * !C1 * X)	0.00098	0.00097	0.00096
	(A1 * A2 * !B2 * C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B2 * C1 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * !B2 * !C1 * X)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * !B2 * !C1 * X)	0.00092	0.00091	0.00091
	(A1 * !A2 * B2 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * B2 * C1 * X)	0.00169	0.00170	0.00171
	(A1 * !A2 * !B2 * C1 * X)	-0.00108	-0.00110	-0.00110
	(A1 * !A2 * !B2 * C1 * X)	0.00174	0.00174	0.00173
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	0.00200	0.00201	0.00200
	(!A1 * B2 * C1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B2 * C1 * X)	0.00169	0.00171	0.00171
	(!A1 * !B2 * C1 * X)	-0.00108	-0.00110	-0.00110
	(!A1 * !B2 * C1 * X)	0.00174	0.00174	0.00173
	(!A1 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00200	0.00201	0.00200

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00141	-0.00141	-0.00140
	(A1 * A2 * B2 * C1 * X)	0.00125	0.00125	0.00125
	(A1 * A2 * B2 * !C1 * X)	-0.00134	-0.00134	-0.00135
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * !B2 * C1 * X)	-0.00135	-0.00137	-0.00136
	(A1 * A2 * !B2 * C1 * X)	0.00116	0.00117	0.00115
	(A1 * A2 * !B2 * !C1 * X)	-0.00134	-0.00136	-0.00135
	(A1 * A2 * !B2 * !C1 * X)	0.00094	0.00094	0.00093
	(A1 * !A2 * B2 * C1 * X)	-0.00137	-0.00137	-0.00136
	(A1 * !A2 * B2 * C1 * X)	0.00172	0.00172	0.00173
	(A1 * !A2 * !B2 * C1 * X)	-0.00132	-0.00134	-0.00133
	(A1 * !A2 * !B2 * C1 * X)	0.00175	0.00177	0.00175
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * !B2 * !C1 * !X)	0.00210	0.00211	0.00210
	(!A1 * B2 * C1 * X)	-0.00137	-0.00137	-0.00136
	(!A1 * B2 * C1 * X)	0.00172	0.00172	0.00173
	(!A1 * !B2 * C1 * X)	-0.00132	-0.00134	-0.00133
	(!A1 * !B2 * C1 * X)	0.00175	0.00177	0.00175
	(!A1 * !B2 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !B2 * !C1 * !X)	0.00210	0.00211	0.00210

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00248	-0.00249	-0.00248
	(A1 * A2 * B2 * C1 * X)	0.00255	0.00257	0.00255
	(A1 * A2 * B2 * !C1 * X)	-0.00234	-0.00236	-0.00237
	(A1 * A2 * B2 * !C1 * X)	0.00198	0.00199	0.00197
	(A1 * A2 * !B2 * C1 * X)	-0.00236	-0.00242	-0.00241
	(A1 * A2 * !B2 * C1 * X)	0.00238	0.00239	0.00237
	(A1 * A2 * !B2 * !C1 * X)	-0.00234	-0.00237	-0.00238
	(A1 * A2 * !B2 * !C1 * X)	0.00188	0.00188	0.00188
	(A1 * !A2 * B2 * C1 * X)	-0.00240	-0.00240	-0.00238
	(A1 * !A2 * B2 * C1 * X)	0.00342	0.00343	0.00344
	(A1 * !A2 * !B2 * C1 * X)	-0.00231	-0.00236	-0.00236
	(A1 * !A2 * !B2 * C1 * X)	0.00349	0.00350	0.00347
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !B2 * !C1 * !X)	0.00404	0.00405	0.00405
	(!A1 * B2 * C1 * X)	-0.00240	-0.00240	-0.00238
	(!A1 * B2 * C1 * X)	0.00342	0.00342	0.00344
	(!A1 * !B2 * C1 * X)	-0.00231	-0.00236	-0.00236
	(!A1 * !B2 * C1 * X)	0.00349	0.00350	0.00347
	(!A1 * !B2 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * !B2 * !C1 * !X)	0.00404	0.00405	0.00405

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)**	0.00143	0.00142	0.00131
	(A1 * A2 * B1 * C1 * X)	-0.00112	-0.00114	-0.00119
	(A1 * A2 * B1 * !C1 * X)	0.00126	0.00127	0.00123
	(A1 * A2 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00085
	(A1 * A2 * !B1 * C1 * X)	0.00140	0.00140	0.00125
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00123	0.00125	0.00119
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00082	-0.00084
	(A1 * !A2 * B1 * C1 * X)	0.00160	0.00127	0.00121
	(A1 * !A2 * B1 * C1 * X)	-0.00124	-0.00159	-0.00164
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00116	0.00116	0.00116
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00105
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00176	-0.00178	-0.00177
	(!A1 * B1 * C1 * X)	0.00160	0.00127	0.00121
	(!A1 * B1 * C1 * X)	-0.00124	-0.00159	-0.00164
	(!A1 * !B1 * !C1 * !X)	0.00104	0.00105	0.00105
	(!A1 * !B1 * !C1 * !X)	-0.00176	-0.00178	-0.00177

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00168	0.00166	0.00156
	(A1 * A2 * B1 * C1 * X)	-0.00108	-0.00109	-0.00115
	(A1 * A2 * B1 * !C1 * X)	0.00150	0.00150	0.00148
	(A1 * A2 * B1 * !C1 * X)	-0.00079	-0.00080	-0.00081
	(A1 * A2 * !B1 * C1 * X)	0.00163	0.00163	0.00149
	(A1 * A2 * !B1 * C1 * X)	-0.00100	-0.00101	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00146	0.00148	0.00143
	(A1 * A2 * !B1 * !C1 * X)	-0.00078	-0.00079	-0.00080
	(A1 * !A2 * B1 * C1 * X)	0.00185	0.00151	0.00146
	(A1 * !A2 * B1 * C1 * X)	-0.00121	-0.00155	-0.00159
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00140	0.00140	0.00140
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00178	-0.00178	-0.00177
	(!A1 * B1 * C1 * X)	0.00185	0.00152	0.00146
	(!A1 * B1 * C1 * X)	-0.00122	-0.00155	-0.00159
	(!A1 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !B1 * !C1 * !X)	-0.00178	-0.00178	-0.00177

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00322	0.00319	0.00298
	(A1 * A2 * B1 * C1 * X)	-0.00225	-0.00230	-0.00242
	(A1 * A2 * B1 * !C1 * X)	0.00286	0.00290	0.00281
	(A1 * A2 * B1 * !C1 * X)	-0.00165	-0.00169	-0.00170
	(A1 * A2 * !B1 * C1 * X)	0.00311	0.00315	0.00285
	(A1 * A2 * !B1 * C1 * X)	-0.00209	-0.00214	-0.00227
	(A1 * A2 * !B1 * !C1 * X)	0.00280	0.00281	0.00273
	(A1 * A2 * !B1 * !C1 * X)	-0.00161	-0.00164	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00352	0.00288	0.00276
	(A1 * !A2 * B1 * C1 * X)	-0.00247	-0.00317	-0.00326
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00268	0.00268	0.00267
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00329	-0.00331	-0.00330
	(A1 * !A2 * !B1 * !C1 * !X)	0.00261	0.00261	0.00261
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00336	-0.00336	-0.00335
	(!A1 * B1 * C1 * X)	0.00352	0.00288	0.00276
	(!A1 * B1 * C1 * X)	-0.00247	-0.00317	-0.00326
	(!A1 * !B1 * !C1 * !X)	0.00261	0.00261	0.00261
	(!A1 * !B1 * !C1 * !X)	-0.00336	-0.00336	-0.00336

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)**	-0.00120	-0.00120	-0.00119
	(A1 * A2 * B1 * C1 * X)	0.00122	0.00121	0.00121
	(A1 * A2 * B1 * !C1 * X)	-0.00113	-0.00114	-0.00115
	(A1 * A2 * B1 * !C1 * X)	0.00094	0.00094	0.00093
	(A1 * A2 * !B1 * C1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !B1 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !B1 * !C1 * X)	-0.00114	-0.00116	-0.00115
	(A1 * A2 * !B1 * !C1 * X)	0.00089	0.00090	0.00089
	(A1 * !A2 * B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * B1 * C1 * X)	0.00166	0.00168	0.00168
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00112	-0.00114	-0.00114
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00169	0.00171	0.00170
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00093	-0.00101	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00185	0.00181
	(!A1 * B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * B1 * C1 * X)	0.00166	0.00168	0.00168
	(!A1 * !B1 * !C1 * !X)	-0.00093	-0.00101	-0.00102
	(!A1 * !B1 * !C1 * !X)	0.00190	0.00185	0.00181

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00145	-0.00144	-0.00144
	(A1 * A2 * B1 * C1 * X)	0.00118	0.00117	0.00117
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00137	-0.00139
	(A1 * A2 * B1 * !C1 * X)	0.00091	0.00091	0.00090
	(A1 * A2 * !B1 * C1 * X)	-0.00138	-0.00140	-0.00140
	(A1 * A2 * !B1 * C1 * X)	0.00109	0.00110	0.00108
	(A1 * A2 * !B1 * !C1 * X)	-0.00137	-0.00139	-0.00138
	(A1 * A2 * !B1 * !C1 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * B1 * C1 * X)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * B1 * C1 * X)	0.00161	0.00163	0.00163
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00135	-0.00137	-0.00137
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00164	0.00166	0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00109	-0.00118	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00193	0.00187	0.00183
	(!A1 * B1 * C1 * X)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * C1 * X)	0.00161	0.00163	0.00163
	(!A1 * !B1 * !C1 * !X)	-0.00109	-0.00118	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00193	0.00187	0.00183

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00274	-0.00275	-0.00274
	(A1 * A2 * B1 * C1 * X)	0.00245	0.00246	0.00246
	(A1 * A2 * B1 * !C1 * X)	-0.00259	-0.00260	-0.00263
	(A1 * A2 * B1 * !C1 * X)	0.00190	0.00190	0.00188
	(A1 * A2 * !B1 * C1 * X)	-0.00263	-0.00266	-0.00267
	(A1 * A2 * !B1 * C1 * X)	0.00227	0.00228	0.00228
	(A1 * A2 * !B1 * !C1 * X)	-0.00260	-0.00264	-0.00264
	(A1 * A2 * !B1 * !C1 * X)	0.00178	0.00178	0.00178
	(A1 * !A2 * B1 * C1 * X)	-0.00266	-0.00267	-0.00264
	(A1 * !A2 * B1 * C1 * X)	0.00331	0.00333	0.00335
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00257	-0.00261	-0.00262
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00337	0.00339	0.00338
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00236	-0.00250	-0.00254
	(A1 * !A2 * !B1 * !C1 * !X)	0.00359	0.00349	0.00345
	(!A1 * B1 * C1 * X)	-0.00266	-0.00267	-0.00264
	(!A1 * B1 * C1 * X)	0.00331	0.00333	0.00335
	(!A1 * !B1 * !C1 * !X)	-0.00236	-0.00251	-0.00254
	(!A1 * !B1 * !C1 * !X)	0.00359	0.00348	0.00345

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)	0.00147	0.00147	0.00146
	(A1 * B1 * B2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * B1 * !B2 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * B1 * !B2 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !B1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * B1 * B2 * X)	0.00147	0.00148	0.00147
	(!A1 * B1 * B2 * X)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00156	0.00155	0.00155
	(A1 * B1 * B2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * B1 * !B2 * X)	0.00154	0.00156	0.00155
	(A1 * A2 * B1 * !B2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * A2 * !B1 * X)	0.00154	0.00156	0.00155
	(A1 * A2 * !B1 * X)	-0.00075	-0.00076	-0.00076
	(!A1 * B1 * B2 * X)	0.00155	0.00156	0.00155
	(!A1 * B1 * B2 * X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00260	0.00261	0.00260
	(A1 * B1 * B2 * X)	-0.00163	-0.00163	-0.00163
	(A1 * A2 * B1 * !B2 * X)	0.00261	0.00262	0.00261
	(A1 * A2 * B1 * !B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * !B1 * X)	0.00261	0.00262	0.00261
	(A1 * A2 * !B1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * B1 * B2 * X)	0.00260	0.00261	0.00260
	(!A1 * B1 * B2 * X)	-0.00165	-0.00166	-0.00165

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)	-0.00135	-0.00135	-0.00144
	(A1 * B1 * B2 * X)	0.00088	0.00088	0.00080
	(A1 * A2 * B1 * !B2 * X)	-0.00117	-0.00119	-0.00140
	(A1 * A2 * B1 * !B2 * X)	0.00099	0.00098	0.00082
	(A1 * A2 * !B1 * X)	-0.00116	-0.00119	-0.00140
	(A1 * A2 * !B1 * X)	0.00098	0.00098	0.00082
	(!A1 * B1 * B2 * X)	-0.00134	-0.00135	-0.00144
	(!A1 * B1 * B2 * X)	0.00089	0.00089	0.00081
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00142	-0.00143	-0.00152
	(A1 * B1 * B2 * X)	0.00088	0.00087	0.00080
	(A1 * A2 * B1 * !B2 * X)	-0.00125	-0.00127	-0.00149
	(A1 * A2 * B1 * !B2 * X)	0.00098	0.00098	0.00082
	(A1 * A2 * !B1 * X)	-0.00125	-0.00126	-0.00149
	(A1 * A2 * !B1 * X)	0.00098	0.00098	0.00082
	(!A1 * B1 * B2 * X)	-0.00142	-0.00142	-0.00152
	(!A1 * B1 * B2 * X)	0.00089	0.00089	0.00081
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00233	-0.00235	-0.00255
	(A1 * B1 * B2 * X)	0.00187	0.00187	0.00170
	(A1 * A2 * B1 * !B2 * X)	-0.00196	-0.00199	-0.00247
	(A1 * A2 * B1 * !B2 * X)	0.00212	0.00211	0.00175
	(A1 * A2 * !B1 * X)	-0.00197	-0.00199	-0.00247
	(A1 * A2 * !B1 * X)	0.00213	0.00211	0.00175
	(!A1 * B1 * B2 * X)	-0.00231	-0.00233	-0.00254
	(!A1 * B1 * B2 * X)	0.00192	0.00192	0.00174

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00277	0.00262	0.00271	0.00274	0.00274	0.00283	0.21931
sky130_fd_sc_hs__a222oi_2	0.00556	0.00496	0.00550	0.00508	0.00502	0.00565	0.40057

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	1.51241	3.52911
sky130_fd_sc_hs__a222oi_2	0.00000	2.83091	6.87866

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)	0.35571	1.36079	8.99085
	A2->Y (FR)	0.38778	1.40061	9.04741
	B1->Y (FR)	0.31375	1.33056	9.52103
	B2->Y (FR)	0.35133	1.37695	9.60911
	C1->Y (FR)	0.23249	1.27588	9.80364
	C2->Y (FR)	0.26720	1.31317	9.84269
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.33804	1.16332	8.77294
	A2->Y (FR)	0.38017	1.21711	8.90834
	B1->Y (FR)	0.29392	1.12819	9.25610
	B2->Y (FR)	0.34321	1.20773	9.59467
	C1->Y (FR)	0.20814	1.09192	9.78681
	C2->Y (FR)	0.25478	1.14225	9.82909

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.10101	0.64196	4.96272
	A2->Y (RF)	0.10680	0.59643	4.46546
	B1->Y (RF)	0.08701	0.61020	4.88425
	B2->Y (RF)	0.09409	0.56437	4.39093
	C1->Y (RF)	0.06002	0.56967	4.83262
	C2->Y (RF)	0.06638	0.52691	4.34375
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.09425	0.57765	4.84888
	A2->Y (RF)	0.10056	0.53744	4.38970
	B1->Y (RF)	0.08272	0.54727	4.79965
	B2->Y (RF)	0.09007	0.50874	4.35088
	C1->Y (RF)	0.04949	0.48742	4.62964
	C2->Y (RF)	0.05796	0.45192	4.17621

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00200	0.00181	0.00473
	A1	0.00988	0.00968	0.01260
	A2	0.00227	0.00218	0.00513
	A2	0.01091	0.01080	0.01378
	B1	0.00104	0.00091	0.00464
	B1	0.00698	0.00686	0.01064
	B2	0.00137	0.00128	0.00501
	B2	0.00980	0.00969	0.01300
	C1	0.00093	0.00123	0.00692
	C1	0.00517	0.00545	0.01120
	C2	0.00132	0.00162	0.00739
	C2	0.00872	0.00891	0.01397
sky130_fd_sc_hs__a222oi_2	A1	0.00329	0.00289	0.00914
	A1	0.01902	0.01865	0.02489
	A2	0.00421	0.00395	0.01027
	A2	0.02103	0.02081	0.02707
	B1	0.00107	0.00082	0.00855
	B1	0.01675	0.01642	0.02333
	B2	0.00305	0.00287	0.01020
	B2	0.01873	0.01854	0.02520
	C1	0.00094	0.00174	0.01309
	C1	0.00900	0.00979	0.02123
	C2	0.00179	0.00249	0.01399
	C2	0.01177	0.01248	0.02405

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01323	0.01321	0.01689
	A1	0.00540	0.00538	0.00900
	A2	0.01397	0.01387	0.01710
	A2	0.00537	0.00525	0.00848
	B1	0.00887	0.00895	0.01280
	B1	0.00296	0.00299	0.00675
	B2	0.00974	0.00968	0.01305
	B2	0.00298	0.00291	0.00622
	C1	0.00494	0.00521	0.00891
	C1	0.00071	0.00099	0.00458
	C2	0.00573	0.00581	0.00911
	C2	0.00071	0.00074	0.00409
sky130_fd_sc_hs__a222oi_2	A1	0.02488	0.02484	0.03242
	A1	0.00925	0.00919	0.01672
	A2	0.02606	0.02586	0.03260
	A2	0.00928	0.00905	0.01572
	B1	0.01686	0.01699	0.02484
	B1	0.00493	0.00497	0.01269
	B2	0.01836	0.01825	0.02498
	B2	0.00518	0.00505	0.01173
	C1	0.00865	0.00920	0.01694
	C1	0.00064	0.00117	0.00866
	C2	0.01059	0.01069	0.01755
	C2	0.00057	0.00065	0.00754

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)**	0.00115	0.00115	0.00114
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00161	-0.00168	-0.00167
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00133	0.00118	0.00116
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00144	-0.00166	-0.00167
	(A2 * B1 * B2 * !C1 * !Y)	0.00133	0.00118	0.00116
	(A2 * B1 * B2 * !C1 * !Y)	-0.00144	-0.00166	-0.00167
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00137	0.00122	0.00117
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00137	-0.00160	-0.00165
	(A2 * !B1 * C1 * C2 * !Y)	0.00137	0.00122	0.00117
	(A2 * !B1 * C1 * C2 * !Y)	-0.00136	-0.00160	-0.00165
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00171	-0.00172	-0.00171
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00110	0.00111	0.00110
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * B2 * !C1 * !Y)	0.00110	0.00111	0.00110
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00111	0.00112	0.00112
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00169
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00190	-0.00191	-0.00193
	(!A2 * B1 * !B2 * !C1 * Y)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00190	-0.00191	-0.00193
	(!A2 * !B1 * C1 * C2 * !Y)	0.00111	0.00112	0.00112
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00169
	(!A2 * !B1 * C1 * !C2 * Y)	0.00043	0.00043	0.00041
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00190	-0.00191	-0.00193
	(!A2 * !B1 * !C1 * Y)	0.00043	0.00043	0.00041
	(!A2 * !B1 * !C1 * Y)	-0.00190	-0.00191	-0.00193

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00238	0.00236	0.00236
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00325	-0.00338	-0.00337
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00284	0.00243	0.00241
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00284	-0.00332	-0.00338
	(A2 * B1 * B2 * !C1 * !Y)	0.00284	0.00243	0.00241
	(A2 * B1 * B2 * !C1 * !Y)	-0.00284	-0.00332	-0.00338
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00285	0.00252	0.00242
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00272	-0.00323	-0.00333
	(A2 * !B1 * C1 * C2 * !Y)	0.00286	0.00252	0.00242
	(A2 * !B1 * C1 * C2 * !Y)	-0.00270	-0.00323	-0.00333
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00226	0.00228	0.00226
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00347	-0.00349	-0.00347
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00228	0.00228	0.00228
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00344	-0.00344	-0.00344
	(!A2 * B1 * B2 * !C1 * !Y)	0.00228	0.00229	0.00228
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00344	-0.00345	-0.00344
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00230	0.00232	0.00231
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00341	-0.00343	-0.00342
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00086	0.00086	0.00081
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00396	-0.00397	-0.00404
	(!A2 * B1 * !B2 * !C1 * Y)	0.00086	0.00086	0.00081
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00396	-0.00397	-0.00404
	(!A2 * !B1 * C1 * C2 * !Y)	0.00230	0.00232	0.00231
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00341	-0.00343	-0.00342
	(!A2 * !B1 * C1 * !C2 * Y)	0.00086	0.00086	0.00081
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00396	-0.00397	-0.00404
	(!A2 * !B1 * !C1 * Y)	0.00086	0.00086	0.00081
	(!A2 * !B1 * !C1 * Y)	-0.00396	-0.00397	-0.00404

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)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00167	0.00168	0.00167
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00112	-0.00112	-0.00112
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00169	0.00170	0.00169
	(A2 * B1 * B2 * !C1 * !Y)	-0.00112	-0.00112	-0.00112
	(A2 * B1 * B2 * !C1 * !Y)	0.00169	0.00170	0.00169
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00110	-0.00110	-0.00108
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00167	0.00168	0.00167
	(A2 * !B1 * C1 * C2 * !Y)	-0.00110	-0.00110	-0.00108
	(A2 * !B1 * C1 * C2 * !Y)	0.00167	0.00167	0.00167
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00108	-0.00110	-0.00109
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00173	0.00175	0.00172
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00107	-0.00108	-0.00108
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00175	0.00174	0.00174
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00107	-0.00108	-0.00108
	(!A2 * B1 * B2 * !C1 * !Y)	0.00174	0.00174	0.00174
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00106	-0.00107	-0.00107
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00176	0.00175	0.00175
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00039	-0.00039	-0.00039
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00195	0.00196	0.00195
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00039	-0.00039	-0.00039
	(!A2 * B1 * !B2 * !C1 * Y)	0.00195	0.00196	0.00195
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00105	-0.00107	-0.00107
	(!A2 * !B1 * C1 * C2 * !Y)	0.00175	0.00175	0.00175
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * C1 * !C2 * Y)	0.00194	0.00196	0.00195
	(!A2 * !B1 * !C1 * Y)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !C1 * Y)	0.00194	0.00196	0.00195

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00234	-0.00235	-0.00234
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00336	0.00338	0.00337
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00231	-0.00232	-0.00231
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00342	0.00344	0.00343
	(A2 * B1 * B2 * !C1 * !Y)	-0.00231	-0.00231	-0.00231
	(A2 * B1 * B2 * !C1 * !Y)	0.00342	0.00343	0.00343
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00227	-0.00229	-0.00225
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00335	0.00339	0.00339
	(A2 * !B1 * C1 * C2 * !Y)	-0.00227	-0.00229	-0.00225
	(A2 * !B1 * C1 * C2 * !Y)	0.00335	0.00339	0.00339
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00224	-0.00226	-0.00226
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00351	0.00349	0.00349
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00221	-0.00224	-0.00225
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00353	0.00353	0.00352
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00221	-0.00225	-0.00225
	(!A2 * B1 * B2 * !C1 * !Y)	0.00353	0.00354	0.00352
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00222	-0.00223
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00356	0.00356	0.00354
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00076	-0.00076	-0.00076
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00406	0.00409	0.00407
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00076	-0.00076	-0.00076
	(!A2 * B1 * !B2 * !C1 * Y)	0.00406	0.00409	0.00407
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00218	-0.00221	-0.00223
	(!A2 * !B1 * C1 * C2 * !Y)	0.00356	0.00355	0.00354
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00076	-0.00076	-0.00076
	(!A2 * !B1 * C1 * !C2 * Y)	0.00406	0.00409	0.00407
	(!A2 * !B1 * !C1 * Y)	-0.00076	-0.00077	-0.00076
	(!A2 * !B1 * !C1 * Y)	0.00406	0.00409	0.00407

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00119	0.00118	0.00118
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00159	-0.00167	-0.00166
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00136	0.00121	0.00120
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00143	-0.00164	-0.00167
	(A1 * B1 * B2 * !C1 * !Y)	0.00136	0.00121	0.00120
	(A1 * B1 * B2 * !C1 * !Y)	-0.00143	-0.00164	-0.00167
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00140	0.00126	0.00121
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00136	-0.00160	-0.00164
	(A1 * !B1 * C1 * C2 * !Y)	0.00140	0.00126	0.00121
	(A1 * !B1 * C1 * C2 * !Y)	-0.00136	-0.00160	-0.00164
	(!A1 * B1 * B2 * !Y)	0.00114	0.00114	0.00113
	(!A1 * B1 * B2 * !Y)	-0.00171	-0.00172	-0.00171
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00116	0.00117	0.00116
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00115	0.00115	0.00115
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * B1 * !B2 * !C1 * Y)	0.00115	0.00115	0.00115
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * C1 * !C2 * Y)	0.00115	0.00115	0.00115
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * !C1 * Y)	0.00115	0.00115	0.00115
	(!A1 * !B1 * !C1 * Y)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00222	0.00222	0.00222
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00303	-0.00318	-0.00316
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00258	0.00228	0.00226
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00272	-0.00313	-0.00317
	(A1 * B1 * B2 * !C1 * !Y)	0.00258	0.00228	0.00226
	(A1 * B1 * B2 * !C1 * !Y)	-0.00272	-0.00313	-0.00317
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00262	0.00236	0.00228
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00261	-0.00304	-0.00313
	(A1 * !B1 * C1 * C2 * !Y)	0.00263	0.00236	0.00228
	(A1 * !B1 * C1 * C2 * !Y)	-0.00260	-0.00304	-0.00313
	(!A1 * B1 * B2 * !Y)	0.00213	0.00214	0.00212
	(!A1 * B1 * B2 * !Y)	-0.00325	-0.00326	-0.00325
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00218	0.00218	0.00218
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00320	-0.00320	-0.00319
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00206	0.00209	0.00208
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00330	-0.00332	-0.00330
	(!A1 * B1 * !B2 * !C1 * Y)	0.00206	0.00209	0.00208
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00330	-0.00332	-0.00330
	(!A1 * !B1 * C1 * !C2 * Y)	0.00206	0.00209	0.00208
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00330	-0.00332	-0.00330
	(!A1 * !B1 * !C1 * Y)	0.00206	0.00209	0.00207
	(!A1 * !B1 * !C1 * Y)	-0.00330	-0.00332	-0.00330

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

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

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00117	-0.00118	-0.00118
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00165	0.00167	0.00166
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00168	0.00170	0.00169
	(A1 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * B1 * B2 * !C1 * !Y)	0.00168	0.00170	0.00169
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00114	-0.00114	-0.00113
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00165	0.00167	0.00167
	(A1 * !B1 * C1 * C2 * !Y)	-0.00114	-0.00114	-0.00113
	(A1 * !B1 * C1 * C2 * !Y)	0.00165	0.00167	0.00167
	(!A1 * B1 * B2 * !Y)	-0.00112	-0.00114	-0.00113
	(!A1 * B1 * B2 * !Y)	0.00171	0.00174	0.00172
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00110	-0.00112	-0.00111
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00175	0.00177	0.00175
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00105	-0.00112	-0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00182	0.00177	0.00173
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00105	-0.00112	-0.00113
	(!A1 * B1 * !B2 * !C1 * Y)	0.00182	0.00177	0.00173
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00105	-0.00112	-0.00113
	(!A1 * !B1 * C1 * !C2 * Y)	0.00182	0.00177	0.00173
	(!A1 * !B1 * !C1 * Y)	-0.00105	-0.00112	-0.00113
	(!A1 * !B1 * !C1 * Y)	0.00182	0.00177	0.00173

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00220	-0.00221	-0.00220
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00316	0.00318	0.00316
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00321	0.00324	0.00321
	(A1 * B1 * B2 * !C1 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * B1 * B2 * !C1 * !Y)	0.00321	0.00324	0.00321
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00214	-0.00215	-0.00211
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00316	0.00319	0.00318
	(A1 * !B1 * C1 * C2 * !Y)	-0.00214	-0.00215	-0.00211
	(A1 * !B1 * C1 * C2 * !Y)	0.00316	0.00318	0.00318
	(!A1 * B1 * B2 * !Y)	-0.00209	-0.00214	-0.00212
	(!A1 * B1 * B2 * !Y)	0.00325	0.00330	0.00327
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00204	-0.00209	-0.00209
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00331	0.00335	0.00332
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00186	-0.00203	-0.00205
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00351	0.00341	0.00335
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00186	-0.00203	-0.00206
	(!A1 * B1 * !B2 * !C1 * Y)	0.00351	0.00341	0.00335
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00186	-0.00203	-0.00206
	(!A1 * !B1 * C1 * !C2 * Y)	0.00351	0.00341	0.00335
	(!A1 * !B1 * !C1 * Y)	-0.00186	-0.00203	-0.00206
	(!A1 * !B1 * !C1 * Y)	0.00350	0.00341	0.00335

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)**	0.00138	0.00137	0.00127
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00113	-0.00115	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00118	0.00119	0.00117
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00085	-0.00086	-0.00087
	(A1 * A2 * B2 * !C1 * !Y)	0.00119	0.00119	0.00117
	(A1 * A2 * B2 * !C1 * !Y)	-0.00085	-0.00086	-0.00087
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00133	0.00134	0.00119
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00105	-0.00107	-0.00115
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00115	0.00117	0.00113
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00083	-0.00085	-0.00085
	(A1 * A2 * !B2 * !C1 * !Y)	0.00115	0.00117	0.00113
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00083	-0.00085	-0.00085
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00159	0.00123	0.00116
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00119	-0.00157	-0.00163
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00110	0.00112	0.00111
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00164	-0.00166	-0.00165
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00041	0.00041	0.00039
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00189	-0.00190	-0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	0.00041	0.00041	0.00039
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00189	-0.00190	-0.00192
	(!A1 * B2 * C1 * C2 * !Y)	0.00159	0.00123	0.00116
	(!A1 * B2 * C1 * C2 * !Y)	-0.00120	-0.00157	-0.00163
	(!A1 * !B2 * C1 * C2 * !Y)	0.00111	0.00112	0.00111
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00166	-0.00166	-0.00165
	(!A1 * !B2 * C1 * !C2 * Y)	0.00041	0.00041	0.00039
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00189	-0.00190	-0.00192
	(!A1 * !B2 * !C1 * Y)	0.00041	0.00041	0.00039
	(!A1 * !B2 * !C1 * Y)	-0.00189	-0.00190	-0.00192

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00282	0.00283	0.00261
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00235	-0.00232	-0.00244
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00246	0.00247	0.00242
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00178	-0.00178	-0.00180
	(A1 * A2 * B2 * !C1 * !Y)	0.00246	0.00247	0.00242
	(A1 * A2 * B2 * !C1 * !Y)	-0.00178	-0.00178	-0.00180
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00279	0.00279	0.00247
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00211	-0.00213	-0.00230
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00243	0.00244	0.00235
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00169	-0.00172	-0.00176
	(A1 * A2 * !B2 * !C1 * !Y)	0.00243	0.00244	0.00235
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00169	-0.00172	-0.00176
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00332	0.00256	0.00241
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00246	-0.00324	-0.00336
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00231	0.00230	0.00230
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00340	-0.00340	-0.00340
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00083	0.00082	0.00079
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00396	-0.00395	-0.00404
	(A1 * !A2 * !B2 * !C1 * Y)	0.00083	0.00082	0.00079
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00396	-0.00395	-0.00404
	(!A1 * B2 * C1 * C2 * !Y)	0.00331	0.00255	0.00241
	(!A1 * B2 * C1 * C2 * !Y)	-0.00248	-0.00324	-0.00336
	(!A1 * !B2 * C1 * C2 * !Y)	0.00230	0.00231	0.00230
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00339	-0.00341	-0.00340
	(!A1 * !B2 * C1 * !C2 * Y)	0.00083	0.00082	0.00079
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00396	-0.00396	-0.00404
	(!A1 * !B2 * !C1 * Y)	0.00083	0.00082	0.00078
	(!A1 * !B2 * !C1 * Y)	-0.00396	-0.00396	-0.00404

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)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00125	0.00125	0.00124
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00102	-0.00103	-0.00108
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00101	0.00100	0.00096
	(A1 * A2 * B2 * !C1 * !Y)	-0.00102	-0.00103	-0.00108
	(A1 * A2 * B2 * !C1 * !Y)	0.00101	0.00100	0.00096
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00116	0.00117	0.00116
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00108	-0.00109	-0.00109
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00108	-0.00109	-0.00109
	(A1 * A2 * !B2 * !C1 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00109	-0.00109	-0.00108
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00169	0.00170	0.00170
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00172	0.00172	0.00172
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00037	-0.00036	-0.00036
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00195	0.00194	0.00194
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00037	-0.00036	-0.00036
	(A1 * !A2 * !B2 * !C1 * Y)	0.00195	0.00194	0.00194
	(!A1 * B2 * C1 * C2 * !Y)	-0.00109	-0.00109	-0.00108
	(!A1 * B2 * C1 * C2 * !Y)	0.00170	0.00170	0.00170
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00104	-0.00106	-0.00106
	(!A1 * !B2 * C1 * C2 * !Y)	0.00172	0.00172	0.00172
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00037	-0.00036	-0.00036
	(!A1 * !B2 * C1 * !C2 * Y)	0.00195	0.00194	0.00194
	(!A1 * !B2 * !C1 * Y)	-0.00037	-0.00036	-0.00036
	(!A1 * !B2 * !C1 * Y)	0.00195	0.00194	0.00194

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00235	-0.00237	-0.00236
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00249	0.00251	0.00250
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00217	-0.00220	-0.00225
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00200	0.00202	0.00196
	(A1 * A2 * B2 * !C1 * !Y)	-0.00217	-0.00220	-0.00225
	(A1 * A2 * B2 * !C1 * !Y)	0.00201	0.00202	0.00196
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00225	-0.00228	-0.00229
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00234	0.00232	0.00232
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00224	-0.00227	-0.00227
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00187	0.00186	0.00186
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00224	-0.00227	-0.00227
	(A1 * A2 * !B2 * !C1 * !Y)	0.00187	0.00186	0.00186
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00226	-0.00227	-0.00224
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00346	0.00349	0.00350
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00221	-0.00222
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00354	0.00354	0.00353
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00407	0.00409	0.00408
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * !B2 * !C1 * Y)	0.00407	0.00409	0.00408
	(!A1 * B2 * C1 * C2 * !Y)	-0.00226	-0.00226	-0.00224
	(!A1 * B2 * C1 * C2 * !Y)	0.00346	0.00349	0.00350
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00217	-0.00220	-0.00222
	(!A1 * !B2 * C1 * C2 * !Y)	0.00354	0.00353	0.00353
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !B2 * C1 * !C2 * Y)	0.00407	0.00409	0.00408
	(!A1 * !B2 * !C1 * Y)	-0.00074	-0.00074	-0.00073
	(!A1 * !B2 * !C1 * Y)	0.00407	0.00409	0.00408

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)	0.00149	0.00148	0.00137
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00114	-0.00115	-0.00121
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00129	0.00129	0.00127
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00086	-0.00086	-0.00087
	(A1 * A2 * B1 * !C1 * !Y)	0.00129	0.00129	0.00127
	(A1 * A2 * B1 * !C1 * !Y)	-0.00086	-0.00086	-0.00087
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00145	0.00145	0.00129
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00106	-0.00107	-0.00115
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00127	0.00128	0.00123
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00084	-0.00085	-0.00086
	(A1 * A2 * !B1 * !C1 * !Y)	0.00127	0.00128	0.00123
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00084	-0.00085	-0.00086
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00171	0.00134	0.00126
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00119	-0.00158	-0.00164
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00106	0.00107	0.00106
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00182	-0.00182	-0.00181
	(A1 * !A2 * !B1 * !C1 * Y)	0.00106	0.00107	0.00106
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * B1 * C1 * C2 * !Y)	0.00171	0.00134	0.00126
	(!A1 * B1 * C1 * C2 * !Y)	-0.00119	-0.00158	-0.00164
	(!A1 * !B1 * C1 * !C2 * Y)	0.00106	0.00107	0.00106
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * !B1 * !C1 * Y)	0.00106	0.00107	0.00106
	(!A1 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00181

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00277	0.00276	0.00254
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00213	-0.00217	-0.00228
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00240	0.00240	0.00235
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00160	-0.00161	-0.00164
	(A1 * A2 * B1 * !C1 * !Y)	0.00240	0.00241	0.00235
	(A1 * A2 * B1 * !C1 * !Y)	-0.00160	-0.00161	-0.00164
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00268	0.00268	0.00240
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00197	-0.00200	-0.00216
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00233	0.00236	0.00227
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00157	-0.00160	-0.00161
	(A1 * A2 * !B1 * !C1 * !Y)	0.00233	0.00236	0.00227
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00157	-0.00160	-0.00161
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00327	0.00250	0.00235
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00220	-0.00303	-0.00315
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00225	0.00227	0.00225
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00318	-0.00321	-0.00319
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00212	0.00214	0.00212
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00333	-0.00335	-0.00333
	(A1 * !A2 * !B1 * !C1 * Y)	0.00212	0.00214	0.00212
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00333	-0.00335	-0.00333
	(!A1 * B1 * C1 * C2 * !Y)	0.00326	0.00250	0.00235
	(!A1 * B1 * C1 * C2 * !Y)	-0.00220	-0.00303	-0.00315
	(!A1 * !B1 * C1 * !C2 * Y)	0.00212	0.00214	0.00212
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00333	-0.00335	-0.00333
	(!A1 * !B1 * !C1 * Y)	0.00211	0.00214	0.00212
	(!A1 * !B1 * !C1 * Y)	-0.00333	-0.00335	-0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00125	0.00125	0.00125
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00112	-0.00113	-0.00118
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00101	0.00100	0.00096
	(A1 * A2 * B1 * !C1 * !Y)	-0.00112	-0.00113	-0.00118
	(A1 * A2 * B1 * !C1 * !Y)	0.00100	0.00100	0.00096
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00117	0.00117	0.00116
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00091	0.00091	0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * !B1 * !C1 * !Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00119	-0.00120	-0.00118
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00171	0.00171	0.00171
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00115	-0.00117	-0.00116
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00173	0.00174	0.00172
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00096	-0.00103	-0.00105
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00193	0.00188	0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00096	-0.00103	-0.00105
	(A1 * !A2 * !B1 * !C1 * Y)	0.00193	0.00188	0.00184
	(!A1 * B1 * C1 * C2 * !Y)	-0.00119	-0.00120	-0.00118
	(!A1 * B1 * C1 * C2 * !Y)	0.00171	0.00171	0.00171
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00096	-0.00103	-0.00105
	(!A1 * !B1 * C1 * !C2 * Y)	0.00193	0.00188	0.00184
	(!A1 * !B1 * !C1 * Y)	-0.00096	-0.00103	-0.00105
	(!A1 * !B1 * !C1 * Y)	0.00193	0.00188	0.00184

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00229	-0.00231	-0.00230
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00233	0.00235	0.00234
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00212	-0.00213	-0.00219
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00186	0.00185	0.00180
	(A1 * A2 * B1 * !C1 * !Y)	-0.00212	-0.00213	-0.00219
	(A1 * A2 * B1 * !C1 * !Y)	0.00186	0.00185	0.00180
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00218	-0.00223	-0.00223
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00216	0.00219	0.00217
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00218	-0.00222	-0.00221
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00170	0.00171	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00218	-0.00222	-0.00221
	(A1 * A2 * !B1 * !C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00220	-0.00221	-0.00218
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00325	0.00327	0.00329
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00211	-0.00216	-0.00216
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00331	0.00334	0.00332
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00189	-0.00207	-0.00210
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00353	0.00343	0.00337
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00189	-0.00207	-0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	0.00353	0.00343	0.00337
	(!A1 * B1 * C1 * C2 * !Y)	-0.00220	-0.00221	-0.00218
	(!A1 * B1 * C1 * C2 * !Y)	0.00325	0.00327	0.00329
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00189	-0.00207	-0.00210
	(!A1 * !B1 * C1 * !C2 * Y)	0.00353	0.00343	0.00337
	(!A1 * !B1 * !C1 * Y)	-0.00189	-0.00207	-0.00210
	(!A1 * !B1 * !C1 * Y)	0.00353	0.00343	0.00337

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)	0.00137	0.00138	0.00137
	(A1 * B1 * B2 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * B1 * B2 * !C2 * !Y)	0.00133	0.00135	0.00133
	(A1 * B1 * B2 * !C2 * !Y)	-0.00077	-0.00078	-0.00077
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00137	0.00138	0.00138
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00136	0.00136	0.00134
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * A2 * !B1 * C2 * !Y)	0.00137	0.00138	0.00138
	(A1 * A2 * !B1 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !B1 * !C2 * !Y)	0.00136	0.00136	0.00134
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00045	0.00045	0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00193	-0.00194	-0.00196
	(A1 * !A2 * !B1 * !C2 * Y)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00193	-0.00194	-0.00196
	(!A1 * B1 * B2 * C2 * !Y)	0.00138	0.00138	0.00138
	(!A1 * B1 * B2 * C2 * !Y)	-0.00079	-0.00079	-0.00078
	(!A1 * B1 * B2 * !C2 * !Y)	0.00136	0.00136	0.00134
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * !B2 * !C2 * Y)	0.00045	0.00045	0.00043
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00193	-0.00194	-0.00196
	(!A1 * !B1 * !C2 * Y)	0.00045	0.00045	0.00043
	(!A1 * !B1 * !C2 * Y)	-0.00193	-0.00192	-0.00196

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00242	0.00243	0.00242
	(A1 * B1 * B2 * C2 * !Y)	-0.00153	-0.00153	-0.00153
	(A1 * B1 * B2 * !C2 * !Y)	0.00234	0.00236	0.00233
	(A1 * B1 * B2 * !C2 * !Y)	-0.00150	-0.00151	-0.00151
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00244	0.00244	0.00243
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00153	-0.00152	-0.00151
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00239	0.00239	0.00236
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00146	-0.00146	-0.00148
	(A1 * A2 * !B1 * C2 * !Y)	0.00244	0.00244	0.00243
	(A1 * A2 * !B1 * C2 * !Y)	-0.00153	-0.00152	-0.00151
	(A1 * A2 * !B1 * !C2 * !Y)	0.00238	0.00240	0.00236
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00145	-0.00147	-0.00148
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00082	0.00081	0.00077
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00362	-0.00361	-0.00369
	(A1 * !A2 * !B1 * !C2 * Y)	0.00082	0.00081	0.00076
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00362	-0.00362	-0.00369
	(!A1 * B1 * B2 * C2 * !Y)	0.00244	0.00244	0.00243
	(!A1 * B1 * B2 * C2 * !Y)	-0.00155	-0.00154	-0.00153
	(!A1 * B1 * B2 * !C2 * !Y)	0.00240	0.00241	0.00237
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00145	-0.00146	-0.00148
	(!A1 * B1 * !B2 * !C2 * Y)	0.00082	0.00081	0.00076
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00362	-0.00361	-0.00369
	(!A1 * !B1 * !C2 * Y)	0.00082	0.00081	0.00076
	(!A1 * !B1 * !C2 * Y)	-0.00362	-0.00362	-0.00369

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)**	-0.00124	-0.00125	-0.00135
	(A1 * B1 * B2 * C2 * !Y)	0.00090	0.00090	0.00081
	(A1 * B1 * B2 * !C2 * !Y)	-0.00132	-0.00132	-0.00133
	(A1 * B1 * B2 * !C2 * !Y)	0.00079	0.00079	0.00079
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00101	-0.00103	-0.00130
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00106	0.00105	0.00085
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00131	-0.00132	-0.00132
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00080	0.00080	0.00079
	(A1 * A2 * !B1 * C2 * !Y)	-0.00102	-0.00103	-0.00130
	(A1 * A2 * !B1 * C2 * !Y)	0.00106	0.00105	0.00085
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00131	-0.00132	-0.00132
	(A1 * A2 * !B1 * !C2 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00198	0.00199	0.00198
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * !B1 * !C2 * Y)	0.00197	0.00199	0.00198
	(!A1 * B1 * B2 * C2 * !Y)	-0.00124	-0.00124	-0.00135
	(!A1 * B1 * B2 * C2 * !Y)	0.00092	0.00091	0.00082
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00131	-0.00132	-0.00132
	(!A1 * B1 * B2 * !C2 * !Y)	0.00080	0.00080	0.00080
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * B1 * !B2 * !C2 * Y)	0.00197	0.00199	0.00198
	(!A1 * !B1 * !C2 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * !B1 * !C2 * Y)	0.00197	0.00199	0.00198

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00216	-0.00219	-0.00239
	(A1 * B1 * B2 * C2 * !Y)	0.00174	0.00174	0.00159
	(A1 * B1 * B2 * !C2 * !Y)	-0.00231	-0.00233	-0.00233
	(A1 * B1 * B2 * !C2 * !Y)	0.00154	0.00153	0.00153
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00178	-0.00182	-0.00230
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00199	0.00199	0.00164
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00230	-0.00233	-0.00233
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00155	0.00155	0.00155
	(A1 * A2 * !B1 * C2 * !Y)	-0.00178	-0.00182	-0.00230
	(A1 * A2 * !B1 * C2 * !Y)	0.00199	0.00199	0.00164
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00230	-0.00233	-0.00233
	(A1 * A2 * !B1 * !C2 * !Y)	0.00155	0.00155	0.00155
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00072	-0.00072	-0.00071
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00372	0.00374	0.00373
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00072	-0.00072	-0.00071
	(A1 * !A2 * !B1 * !C2 * Y)	0.00372	0.00374	0.00373
	(!A1 * B1 * B2 * C2 * !Y)	-0.00215	-0.00218	-0.00238
	(!A1 * B1 * B2 * C2 * !Y)	0.00176	0.00177	0.00160
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00230	-0.00233	-0.00233
	(!A1 * B1 * B2 * !C2 * !Y)	0.00155	0.00155	0.00155
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00072	-0.00072	-0.00071
	(!A1 * B1 * !B2 * !C2 * Y)	0.00372	0.00374	0.00373
	(!A1 * !B1 * !C2 * Y)	-0.00072	-0.00072	-0.00071
	(!A1 * !B1 * !C2 * Y)	0.00372	0.00374	0.00373

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)**	0.00143	0.00143	0.00143
	(A1 * B1 * B2 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * B2 * !C1 * !Y)	0.00139	0.00141	0.00138
	(A1 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00142	0.00143	0.00140
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00076	-0.00076	-0.00077
	(A1 * A2 * !B1 * C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * A2 * !B1 * C1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * !C1 * !Y)	0.00142	0.00143	0.00140
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00076	-0.00076	-0.00077
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00109	0.00109	0.00108
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00185	-0.00185	-0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	0.00109	0.00109	0.00108
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * B1 * B2 * C1 * !Y)	0.00143	0.00144	0.00143
	(!A1 * B1 * B2 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * B1 * B2 * !C1 * !Y)	0.00142	0.00143	0.00140
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00076	-0.00076	-0.00077
	(!A1 * B1 * !B2 * !C1 * Y)	0.00109	0.00109	0.00108
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !B1 * !C1 * Y)	0.00109	0.00109	0.00108
	(!A1 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00185

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00286	0.00287	0.00286
	(A1 * B1 * B2 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * B1 * B2 * !C1 * !Y)	0.00280	0.00280	0.00277
	(A1 * B1 * B2 * !C1 * !Y)	-0.00156	-0.00156	-0.00157
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00286	0.00288	0.00286
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00284	0.00285	0.00281
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00152	-0.00152	-0.00153
	(A1 * A2 * !B1 * C1 * !Y)	0.00286	0.00288	0.00286
	(A1 * A2 * !B1 * C1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * A2 * !B1 * !C1 * !Y)	0.00284	0.00285	0.00281
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00152	-0.00153	-0.00153
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00215	0.00219	0.00216
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00370	-0.00373	-0.00370
	(A1 * !A2 * !B1 * !C1 * Y)	0.00215	0.00219	0.00216
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00370	-0.00373	-0.00370
	(!A1 * B1 * B2 * C1 * !Y)	0.00286	0.00288	0.00286
	(!A1 * B1 * B2 * C1 * !Y)	-0.00159	-0.00160	-0.00158
	(!A1 * B1 * B2 * !C1 * !Y)	0.00286	0.00286	0.00281
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00152	-0.00152	-0.00154
	(!A1 * B1 * !B2 * !C1 * Y)	0.00215	0.00219	0.00216
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00370	-0.00373	-0.00370
	(!A1 * !B1 * !C1 * Y)	0.00215	0.00219	0.00216
	(!A1 * !B1 * !C1 * Y)	-0.00370	-0.00373	-0.00370

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)**	-0.00129	-0.00130	-0.00141
	(A1 * B1 * B2 * C1 * !Y)	0.00092	0.00091	0.00083
	(A1 * B1 * B2 * !C1 * !Y)	-0.00137	-0.00139	-0.00138
	(A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00081	0.00080
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00107	-0.00108	-0.00135
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00107	0.00106	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00137	-0.00139	-0.00138
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * C1 * !Y)	-0.00107	-0.00108	-0.00135
	(A1 * A2 * !B1 * C1 * !Y)	0.00107	0.00106	0.00086
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00137	-0.00139	-0.00138
	(A1 * A2 * !B1 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00099	-0.00106	-0.00107
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00196	0.00191	0.00187
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00099	-0.00106	-0.00107
	(A1 * !A2 * !B1 * !C1 * Y)	0.00196	0.00191	0.00187
	(!A1 * B1 * B2 * C1 * !Y)	-0.00129	-0.00129	-0.00140
	(!A1 * B1 * B2 * C1 * !Y)	0.00093	0.00092	0.00083
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00137	-0.00139	-0.00138
	(!A1 * B1 * B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00099	-0.00106	-0.00107
	(!A1 * B1 * !B2 * !C1 * Y)	0.00196	0.00191	0.00187
	(!A1 * !B1 * !C1 * Y)	-0.00099	-0.00106	-0.00107
	(!A1 * !B1 * !C1 * Y)	0.00196	0.00191	0.00187

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00261	-0.00262	-0.00282
	(A1 * B1 * B2 * C1 * !Y)	0.00181	0.00180	0.00164
	(A1 * B1 * B2 * !C1 * !Y)	-0.00275	-0.00279	-0.00277
	(A1 * B1 * B2 * !C1 * !Y)	0.00160	0.00160	0.00159
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00223	-0.00224	-0.00273
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00206	0.00204	0.00170
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00274	-0.00277	-0.00277
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00161	0.00161	0.00160
	(A1 * A2 * !B1 * C1 * !Y)	-0.00223	-0.00225	-0.00273
	(A1 * A2 * !B1 * C1 * !Y)	0.00206	0.00204	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00274	-0.00277	-0.00277
	(A1 * A2 * !B1 * !C1 * !Y)	0.00161	0.00161	0.00160
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00211	-0.00213
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00391	0.00380	0.00374
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00197	-0.00211	-0.00213
	(A1 * !A2 * !B1 * !C1 * Y)	0.00391	0.00380	0.00374
	(!A1 * B1 * B2 * C1 * !Y)	-0.00259	-0.00260	-0.00281
	(!A1 * B1 * B2 * C1 * !Y)	0.00183	0.00182	0.00165
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00274	-0.00278	-0.00277
	(!A1 * B1 * B2 * !C1 * !Y)	0.00161	0.00162	0.00161
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00211	-0.00213
	(!A1 * B1 * !B2 * !C1 * Y)	0.00391	0.00380	0.00374
	(!A1 * !B1 * !C1 * Y)	-0.00197	-0.00211	-0.00214
	(!A1 * !B1 * !C1 * Y)	0.00391	0.00380	0.00374

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00268	0.00273	0.00276	0.00267	0.00275	0.00281	0.80996
sky130_fd_sc_hs__a222o_2	0.00271	0.00257	0.00270	0.00266	0.00272	0.00286	1.45930

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	2.03337	3.69735
sky130_fd_sc_hs__a222o_2	0.00000	2.47159	4.05971

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)	0.18818	0.96775	7.91047
	A2->X (RR)	0.19444	0.93823	7.82676
	B1->X (RR)	0.17268	0.93069	7.72612
	B2->X (RR)	0.17841	0.90550	7.66420
	C1->X (RR)	0.14239	0.87054	7.55386
	C2->X (RR)	0.14855	0.85242	7.50389
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.21095	0.91973	8.00693
	A2->X (RR)	0.22012	0.88763	7.91564
	B1->X (RR)	0.18526	0.87775	7.85031
	B2->X (RR)	0.19114	0.84817	7.77893
	C1->X (RR)	0.15425	0.82895	7.71560
	C2->X (RR)	0.16159	0.80505	7.63736

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.47328	1.04043	5.00568
	A2->X (FF)	0.50708	1.08060	5.08788
	B1->X (FF)	0.44167	1.02480	5.23615
	B2->X (FF)	0.46616	1.06233	5.33235
	C1->X (FF)	0.33909	0.95240	5.18483
	C2->X (FF)	0.36716	0.98913	5.27226
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.55826	1.09420	4.99135
	A2->X (FF)	0.57925	1.12895	5.08047
	B1->X (FF)	0.52913	1.08799	5.27585
	B2->X (FF)	0.54088	1.10405	5.30978
	C1->X (FF)	0.42724	1.01484	5.20723
	C2->X (FF)	0.46615	1.06110	5.33245

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01618	0.01618	0.02788
	A1	0.00816	0.00815	0.01999
	A2	0.01701	0.01683	0.02623
	A2	0.00817	0.00799	0.01757
	B1	0.01303	0.01333	0.02414
	B1	0.00603	0.00633	0.01846
	B2	0.01373	0.01388	0.02337
	B2	0.00612	0.00627	0.01700
	C1	0.00911	0.00962	0.02202
	C1	0.00322	0.00376	0.01859
	C2	0.00984	0.01015	0.02144
	C2	0.00327	0.00358	0.01717
sky130_fd_sc_hs__a222o_2	A1	0.01887	0.01914	0.02937
	A1	0.01109	0.01134	0.02178
	A2	0.01967	0.01989	0.03023
	A2	0.01101	0.01124	0.02186
	B1	0.01499	0.01548	0.02695
	B1	0.00816	0.00866	0.02047
	B2	0.01572	0.01608	0.02640
	B2	0.00815	0.00854	0.01919
	C1	0.01212	0.01263	0.02550
	C1	0.00634	0.00691	0.02079
	C2	0.01293	0.01322	0.02489
	C2	0.00632	0.00667	0.01938

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00487	0.00474	0.01459
	A1	0.01292	0.01282	0.02258
	A2	0.00519	0.00490	0.01488
	A2	0.01402	0.01379	0.02322
	B1	0.00427	0.00426	0.01712
	B1	0.01178	0.01160	0.02207
	B2	0.00465	0.00472	0.01645
	B2	0.01275	0.01266	0.02283
	C1	0.00417	0.00502	0.02056
	C1	0.01109	0.01149	0.02432
	C2	0.00456	0.00541	0.02056
	C2	0.01214	0.01267	0.02532
sky130_fd_sc_hs__a222o_2	A1	0.00662	0.00607	0.01619
	A1	0.01447	0.01399	0.02391
	A2	0.00920	0.00844	0.01877
	A2	0.01780	0.01702	0.02659
	B1	0.00890	0.00800	0.01863
	B1	0.01566	0.01484	0.02471
	B2	0.00851	0.00792	0.01939
	B2	0.01601	0.01553	0.02589
	C1	0.00785	0.00801	0.02293
	C1	0.01441	0.01417	0.02665
	C2	0.00924	0.00877	0.02185
	C2	0.01572	0.01538	0.02781

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)**	0.00116	0.00115	0.00115
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00159	-0.00165	-0.00165
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00133	0.00118	0.00117
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00144	-0.00163	-0.00165
	(A2 * B1 * B2 * !C1 * X)	0.00133	0.00118	0.00117
	(A2 * B1 * B2 * !C1 * X)	-0.00144	-0.00163	-0.00165
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00136	0.00122	0.00118
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00138	-0.00159	-0.00163
	(A2 * !B1 * C1 * C2 * X)	0.00136	0.00123	0.00118
	(A2 * !B1 * C1 * C2 * X)	-0.00138	-0.00159	-0.00163
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00110	0.00111	0.00110
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00167	-0.00168	-0.00168
	(!A2 * B1 * B2 * !C1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * B2 * !C1 * X)	-0.00168	-0.00168	-0.00168
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00113	0.00113	0.00113
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00166	-0.00167	-0.00167
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00190	-0.00190	-0.00193
	(!A2 * B1 * !B2 * !C1 * !X)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00190	-0.00190	-0.00193
	(!A2 * !B1 * C1 * C2 * X)	0.00113	0.00113	0.00113
	(!A2 * !B1 * C1 * C2 * X)	-0.00166	-0.00167	-0.00167
	(!A2 * !B1 * C1 * !C2 * !X)	0.00043	0.00043	0.00041
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00190	-0.00190	-0.00193
	(!A2 * !B1 * !C1 * !X)	0.00043	0.00043	0.00041
	(!A2 * !B1 * !C1 * !X)	-0.00190	-0.00190	-0.00193

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00125	0.00125	0.00124
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00157	-0.00165	-0.00165
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00144	0.00129	0.00126
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00139	-0.00161	-0.00163
	(A2 * B1 * B2 * !C1 * X)	0.00144	0.00129	0.00126
	(A2 * B1 * B2 * !C1 * X)	-0.00139	-0.00161	-0.00163
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00147	0.00131	0.00127
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00134	-0.00157	-0.00161
	(A2 * !B1 * C1 * C2 * X)	0.00147	0.00131	0.00127
	(A2 * !B1 * C1 * C2 * X)	-0.00133	-0.00157	-0.00161
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00119	0.00120	0.00119
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00121	0.00122	0.00121
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00164	-0.00165	-0.00165
	(!A2 * B1 * B2 * !C1 * X)	0.00121	0.00122	0.00121
	(!A2 * B1 * B2 * !C1 * X)	-0.00164	-0.00165	-0.00165
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00051	0.00051	0.00046
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00190	-0.00191	-0.00198
	(!A2 * B1 * !B2 * !C1 * !X)	0.00051	0.00051	0.00046
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00190	-0.00191	-0.00198
	(!A2 * !B1 * C1 * C2 * X)	0.00121	0.00121	0.00121
	(!A2 * !B1 * C1 * C2 * X)	-0.00165	-0.00165	-0.00165
	(!A2 * !B1 * C1 * !C2 * !X)	0.00051	0.00051	0.00046
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00190	-0.00191	-0.00198
	(!A2 * !B1 * !C1 * !X)	0.00051	0.00051	0.00046
	(!A2 * !B1 * !C1 * !X)	-0.00190	-0.00191	-0.00198

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)	-0.00114	-0.00114	-0.00114
	(A2 * B1 * B2 * C1 * C2 * X)	0.00165	0.00167	0.00165
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00167	0.00169	0.00168
	(A2 * B1 * B2 * !C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * B2 * !C1 * X)	0.00166	0.00169	0.00168
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00109
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00165	0.00166	0.00166
	(A2 * !B1 * C1 * C2 * X)	-0.00111	-0.00111	-0.00109
	(A2 * !B1 * C1 * C2 * X)	0.00165	0.00166	0.00166
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00109	-0.00111	-0.00110
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00172	0.00173	0.00171
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00108	-0.00110	-0.00109
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00173	0.00175	0.00172
	(!A2 * B1 * B2 * !C1 * X)	-0.00108	-0.00108	-0.00109
	(!A2 * B1 * B2 * !C1 * X)	0.00173	0.00171	0.00172
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00174	0.00176	0.00173
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00196	0.00197	0.00196
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	0.00196	0.00197	0.00196
	(!A2 * !B1 * C1 * C2 * X)	-0.00106	-0.00107	-0.00108
	(!A2 * !B1 * C1 * C2 * X)	0.00174	0.00173	0.00173
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * C1 * !C2 * !X)	0.00196	0.00197	0.00196
	(!A2 * !B1 * !C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !C1 * !X)	0.00196	0.00197	0.00196

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00122	-0.00122	-0.00122
	(A2 * B1 * B2 * C1 * C2 * X)	0.00164	0.00165	0.00165
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00121	-0.00122	-0.00121
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00165	0.00167	0.00166
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00122	-0.00121
	(A2 * B1 * B2 * !C1 * X)	0.00165	0.00167	0.00166
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00119	-0.00119	-0.00117
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00164	0.00165	0.00165
	(A2 * !B1 * C1 * C2 * X)	-0.00118	-0.00119	-0.00117
	(A2 * !B1 * C1 * C2 * X)	0.00163	0.00165	0.00165
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00115	-0.00119	-0.00119
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00168	0.00170	0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00114	-0.00118	-0.00118
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00169	0.00171	0.00169
	(!A2 * B1 * B2 * !C1 * X)	-0.00114	-0.00118	-0.00118
	(!A2 * B1 * B2 * !C1 * X)	0.00169	0.00171	0.00169
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00112	-0.00116	-0.00116
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00172	0.00174	0.00172
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00203	0.00204	0.00203
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	0.00202	0.00204	0.00203
	(!A2 * !B1 * C1 * C2 * X)	-0.00112	-0.00116	-0.00116
	(!A2 * !B1 * C1 * C2 * X)	0.00172	0.00174	0.00172
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * C1 * !C2 * !X)	0.00203	0.00204	0.00203
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00203	0.00204	0.00203

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)	0.00129	0.00130	0.00129
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00153	-0.00161	-0.00160
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00144	0.00133	0.00131
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00140	-0.00159	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00144	0.00133	0.00131
	(A1 * B1 * B2 * !C1 * X)	-0.00140	-0.00159	-0.00160
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00147	0.00136	0.00132
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00133	-0.00154	-0.00158
	(A1 * !B1 * C1 * C2 * X)	0.00147	0.00136	0.00132
	(A1 * !B1 * C1 * C2 * X)	-0.00133	-0.00154	-0.00158
	(!A1 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(!A1 * B1 * B2 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00127	0.00126	0.00126
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00107	0.00107	0.00107
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * B1 * !B2 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00181	-0.00180	-0.00181
	(!A1 * !B1 * C1 * !C2 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * !B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * !C1 * !X)	-0.00181	-0.00181	-0.00181

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00122	0.00122	0.00121
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00158	-0.00165	-0.00165
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00138	0.00125	0.00123
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00143	-0.00163	-0.00164
	(A1 * B1 * B2 * !C1 * X)	0.00138	0.00125	0.00123
	(A1 * B1 * B2 * !C1 * X)	-0.00143	-0.00163	-0.00164
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00142	0.00128	0.00124
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00136	-0.00157	-0.00161
	(A1 * !B1 * C1 * C2 * X)	0.00141	0.00128	0.00124
	(A1 * !B1 * C1 * C2 * X)	-0.00136	-0.00157	-0.00161
	(!A1 * B1 * B2 * X)	0.00116	0.00116	0.00116
	(!A1 * B1 * B2 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00118	0.00119	0.00118
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00117	0.00117	0.00117
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00117	0.00117	0.00117
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * C1 * !C2 * !X)	0.00116	0.00117	0.00117
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * !X)	0.00116	0.00117	0.00117
	(!A1 * !B1 * !C1 * !X)	-0.00166	-0.00166	-0.00166

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

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

	(A1 * B1 * B2 * C1 * C2 * X)	-0.00127	-0.00127	-0.00127
	(A1 * B1 * B2 * C1 * C2 * X)	0.00160	0.00161	0.00160
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00126	-0.00126	-0.00126
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00162	0.00162	0.00163
	(A1 * B1 * B2 * !C1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * B1 * B2 * !C1 * X)	0.00162	0.00162	0.00163
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00124	-0.00124	-0.00123
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00159	0.00161	0.00161
	(A1 * !B1 * C1 * C2 * X)	-0.00124	-0.00124	-0.00123
	(A1 * !B1 * C1 * C2 * X)	0.00159	0.00161	0.00161
	(!A1 * B1 * B2 * X)	-0.00122	-0.00124	-0.00124
sky130_fd_sc_hs__a222o_1	**(!A1 * B1 * B2 * X)**	0.00165	0.00168	0.00166
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00120	-0.00122	-0.00121
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00169	0.00170	0.00168
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00194	0.00189	0.00185
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	0.00194	0.00189	0.00185
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * !B1 * C1 * !C2 * !X)	0.00194	0.00189	0.00185
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00194	0.00189	0.00185

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00119	-0.00119	-0.00119
	(A1 * B1 * B2 * C1 * C2 * X)	0.00165	0.00165	0.00165
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00118	-0.00119	-0.00118
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00167	0.00168	0.00167
	(A1 * B1 * B2 * !C1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * B1 * B2 * !C1 * X)	0.00167	0.00168	0.00167
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00116	-0.00116	-0.00115
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00164	0.00165	0.00165
	(A1 * !B1 * C1 * C2 * X)	-0.00116	-0.00116	-0.00115
	(A1 * !B1 * C1 * C2 * X)	0.00164	0.00165	0.00165
	(!A1 * B1 * B2 * X)	-0.00113	-0.00115	-0.00116
	(!A1 * B1 * B2 * X)	0.00170	0.00170	0.00169
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00110	-0.00113	-0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00172	0.00173	0.00172
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00105	-0.00112	-0.00114
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00178	0.00173	0.00171
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00105	-0.00112	-0.00114
	(!A1 * B1 * !B2 * !C1 * !X)	0.00178	0.00173	0.00171
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00105	-0.00112	-0.00114
	(!A1 * !B1 * C1 * !C2 * !X)	0.00178	0.00173	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00105	-0.00112	-0.00114
	(!A1 * !B1 * !C1 * !X)	0.00178	0.00173	0.00171

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)**	0.00140	0.00143	0.00132
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00123	-0.00119	-0.00126
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00124	0.00124	0.00122
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00090	-0.00090	-0.00091
	(A1 * A2 * B2 * !C1 * X)	0.00124	0.00124	0.00122
	(A1 * A2 * B2 * !C1 * X)	-0.00090	-0.00090	-0.00091
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00140	0.00141	0.00125
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00109	-0.00111	-0.00119
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00123	0.00123	0.00119
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00086	-0.00088	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.00123	0.00123	0.00119
	(A1 * A2 * !B2 * !C1 * X)	-0.00086	-0.00088	-0.00090
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00165	0.00129	0.00122
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00126	-0.00163	-0.00169
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00117	0.00117	0.00117
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00196	-0.00197	-0.00200
	(A1 * !A2 * !B2 * !C1 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00200
	(!A1 * B2 * C1 * C2 * X)	0.00165	0.00129	0.00122
	(!A1 * B2 * C1 * C2 * X)	-0.00126	-0.00163	-0.00169
	(!A1 * !B2 * C1 * C2 * X)	0.00117	0.00117	0.00117
	(!A1 * !B2 * C1 * C2 * X)	-0.00171	-0.00171	-0.00171
	(!A1 * !B2 * C1 * !C2 * !X)	0.00045	0.00045	0.00043
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00196	-0.00197	-0.00200
	(!A1 * !B2 * !C1 * !X)	0.00045	0.00045	0.00043
	(!A1 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00200

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00140	0.00139	0.00128
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00110	-0.00112	-0.00118
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00121	0.00122	0.00119
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00082	-0.00082	-0.00084
	(A1 * A2 * B2 * !C1 * X)	0.00121	0.00122	0.00119
	(A1 * A2 * B2 * !C1 * X)	-0.00082	-0.00082	-0.00084
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00135	0.00135	0.00121
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00101	-0.00103	-0.00111
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00118	0.00118	0.00115
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !B2 * !C1 * X)	0.00118	0.00118	0.00115
	(A1 * A2 * !B2 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00164	0.00126	0.00118
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00112	-0.00153	-0.00160
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00113	0.00113	0.00113
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00044	0.00043	0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00184	-0.00185	-0.00187
	(A1 * !A2 * !B2 * !C1 * !X)	0.00044	0.00043	0.00041
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00185	-0.00185	-0.00187
	(!A1 * B2 * C1 * C2 * X)	0.00163	0.00126	0.00118
	(!A1 * B2 * C1 * C2 * X)	-0.00113	-0.00153	-0.00160
	(!A1 * !B2 * C1 * C2 * X)	0.00113	0.00113	0.00113
	(!A1 * !B2 * C1 * C2 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B2 * C1 * !C2 * !X)	0.00044	0.00044	0.00042
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00184	-0.00185	-0.00187
	(!A1 * !B2 * !C1 * !X)	0.00044	0.00044	0.00042
	(!A1 * !B2 * !C1 * !X)	-0.00184	-0.00185	-0.00187

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)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * B2 * C1 * C2 * X)	0.00130	0.00130	0.00129
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00108	-0.00109	-0.00111
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00104	0.00104	0.00102
	(A1 * A2 * B2 * !C1 * X)	-0.00108	-0.00109	-0.00111
	(A1 * A2 * B2 * !C1 * X)	0.00104	0.00104	0.00102
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00114	-0.00116	-0.00115
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00113	-0.00115	-0.00114
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B2 * !C1 * X)	-0.00113	-0.00114	-0.00114
	(A1 * A2 * !B2 * !C1 * X)	0.00095	0.00094	0.00095
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00115	-0.00114	-0.00113
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00174	0.00175	0.00176
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00112
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00178	0.00177	0.00178
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00203	0.00204	0.00203
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	0.00203	0.00204	0.00203
	(!A1 * B2 * C1 * C2 * X)	-0.00115	-0.00114	-0.00113
	(!A1 * B2 * C1 * C2 * X)	0.00175	0.00175	0.00176
	(!A1 * !B2 * C1 * C2 * X)	-0.00110	-0.00111	-0.00112
	(!A1 * !B2 * C1 * C2 * X)	0.00178	0.00177	0.00178
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * C1 * !C2 * !X)	0.00203	0.00204	0.00203
	(!A1 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * !C1 * !X)	0.00203	0.00203	0.00203

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B2 * C1 * C2 * X)	0.00122	0.00122	0.00122
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00106	-0.00106	-0.00109
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00098	0.00097	0.00094
	(A1 * A2 * B2 * !C1 * X)	-0.00106	-0.00106	-0.00109
	(A1 * A2 * B2 * !C1 * X)	0.00098	0.00097	0.00094
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00110	-0.00112	-0.00111
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00114	0.00114	0.00113
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !B2 * !C1 * X)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !B2 * !C1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00110	-0.00111	-0.00109
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00170	0.00171	0.00170
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00191	0.00192	0.00192
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * !B2 * !C1 * !X)	0.00191	0.00192	0.00192
	(!A1 * B2 * C1 * C2 * X)	-0.00110	-0.00111	-0.00109
	(!A1 * B2 * C1 * C2 * X)	0.00165	0.00168	0.00167
	(!A1 * !B2 * C1 * C2 * X)	-0.00106	-0.00107	-0.00107
	(!A1 * !B2 * C1 * C2 * X)	0.00170	0.00171	0.00170
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00037	-0.00037
	(!A1 * !B2 * C1 * !C2 * !X)	0.00193	0.00192	0.00192
	(!A1 * !B2 * !C1 * !X)	-0.00038	-0.00037	-0.00037
	(!A1 * !B2 * !C1 * !X)	0.00193	0.00192	0.00192

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)	0.00136	0.00138	0.00127
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00115	-0.00114	-0.00121
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00120	0.00120	0.00118
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00084	-0.00085	-0.00086
	(A1 * A2 * B1 * !C1 * X)	0.00120	0.00120	0.00118
	(A1 * A2 * B1 * !C1 * X)	-0.00084	-0.00085	-0.00086
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00134	0.00135	0.00120
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00106	-0.00107	-0.00115
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00117	0.00118	0.00114
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00082	-0.00084	-0.00085
	(A1 * A2 * !B1 * !C1 * X)	0.00117	0.00118	0.00114
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00084	-0.00085
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00160	0.00125	0.00118
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00118	-0.00156	-0.00162
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00170	-0.00170	-0.00170
	(A1 * !A2 * !B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * B1 * C1 * C2 * X)	0.00160	0.00125	0.00118
	(!A1 * B1 * C1 * C2 * X)	-0.00118	-0.00156	-0.00162
	(!A1 * !B1 * C1 * !C2 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * !C1 * !X)	-0.00171	-0.00170	-0.00170

	(A1 * A2 * B1 * C1 * C2 * X)	0.00140	0.00141	0.00130
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00111	-0.00112	-0.00118
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00122	0.00122	0.00120
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00082	-0.00083	-0.00084
	(A1 * A2 * B1 * !C1 * X)	0.00122	0.00122	0.00120
	(A1 * A2 * B1 * !C1 * X)	-0.00082	-0.00083	-0.00084
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00137	0.00138	0.00122
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00102	-0.00103	-0.00111
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00119	0.00121	0.00116
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !B1 * !C1 * X)	0.00119	0.00121	0.00116
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00164	0.00127	0.00120
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00114	-0.00153	-0.00160
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00115	0.00116	0.00114
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00111	0.00111	0.00111
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00164	-0.00164	-0.00163
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00164	-0.00164	-0.00163
	(!A1 * B1 * C1 * C2 * X)	0.00165	0.00127	0.00120
	(!A1 * B1 * C1 * C2 * X)	-0.00113	-0.00153	-0.00160
	(!A1 * !B1 * C1 * !C2 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00163	-0.00163	-0.00163

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)	-0.00115	-0.00114	-0.00114
	(A1 * A2 * B1 * C1 * C2 * X)	0.00126	0.00125	0.00124
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00104	-0.00104	-0.00107
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00098	0.00098	0.00096
	(A1 * A2 * B1 * !C1 * X)	-0.00104	-0.00104	-0.00107
	(A1 * A2 * B1 * !C1 * X)	0.00098	0.00098	0.00096
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00117	0.00117	0.00116
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !B1 * !C1 * X)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !B1 * !C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00110	-0.00110	-0.00108
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00168	0.00169	0.00169
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00106	-0.00108	-0.00107
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00171	0.00173	0.00171
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00095	-0.00103	-0.00104
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00183	0.00178	0.00174
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00178	0.00174
	(!A1 * B1 * C1 * C2 * X)	-0.00110	-0.00110	-0.00108
	(!A1 * B1 * C1 * C2 * X)	0.00168	0.00169	0.00169
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00095	-0.00103	-0.00104
	(!A1 * !B1 * C1 * !C2 * !X)	0.00183	0.00178	0.00174
	(!A1 * !B1 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00183	0.00178	0.00174

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * A2 * B1 * C1 * C2 * X)	0.00122	0.00122	0.00121
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00106	-0.00107	-0.00110
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00098	0.00098	0.00094
	(A1 * A2 * B1 * !C1 * X)	-0.00106	-0.00107	-0.00110
	(A1 * A2 * B1 * !C1 * X)	0.00098	0.00098	0.00094
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00113
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00088	0.00089	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00088	0.00089	0.00088
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00111	-0.00112	-0.00110
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00107	-0.00109	-0.00109
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00170	0.00171	0.00169
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00097	-0.00105	-0.00106
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00178	0.00173	0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00097	-0.00105	-0.00106
	(A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00173	0.00169
	(!A1 * B1 * C1 * C2 * X)	-0.00111	-0.00112	-0.00110
	(!A1 * B1 * C1 * C2 * X)	0.00165	0.00168	0.00167
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00101	-0.00109	-0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	0.00177	0.00172	0.00168
	(!A1 * !B1 * !C1 * !X)	-0.00101	-0.00109	-0.00110
	(!A1 * !B1 * !C1 * !X)	0.00177	0.00172	0.00168

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)	0.00139	0.00140	0.00139
	(A1 * B1 * B2 * C2 * X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * B2 * !C2 * X)	0.00136	0.00137	0.00135
	(A1 * B1 * B2 * !C2 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00140	0.00140	0.00140
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00138	0.00138	0.00137
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00078	-0.00078	-0.00080
	(A1 * A2 * !B1 * C2 * X)	0.00139	0.00140	0.00140
	(A1 * A2 * !B1 * C2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * !C2 * X)	0.00139	0.00138	0.00137
	(A1 * A2 * !B1 * !C2 * X)	-0.00079	-0.00079	-0.00080
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00199	-0.00199	-0.00202
	(A1 * !A2 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00199	-0.00199	-0.00202
	(!A1 * B1 * B2 * C2 * X)	0.00140	0.00140	0.00140
	(!A1 * B1 * B2 * C2 * X)	-0.00083	-0.00083	-0.00082
	(!A1 * B1 * B2 * !C2 * X)	0.00139	0.00139	0.00137
	(!A1 * B1 * B2 * !C2 * X)	-0.00079	-0.00079	-0.00080
	(!A1 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00199	-0.00199	-0.00202
	(!A1 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * !B1 * !C2 * !X)	-0.00199	-0.00199	-0.00202

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00136	0.00136	0.00136
	(A1 * B1 * B2 * C2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * B2 * !C2 * X)	0.00131	0.00132	0.00131
	(A1 * B1 * B2 * !C2 * X)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00134	0.00134	0.00133
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00074	-0.00075	-0.00075
	(A1 * A2 * !B1 * C2 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * !B1 * C2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !B1 * !C2 * X)	0.00134	0.00134	0.00133
	(A1 * A2 * !B1 * !C2 * X)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00189	-0.00190	-0.00193
	(A1 * !A2 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00189	-0.00190	-0.00193
	(!A1 * B1 * B2 * C2 * X)	0.00136	0.00137	0.00137
	(!A1 * B1 * B2 * C2 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * B1 * B2 * !C2 * X)	0.00134	0.00135	0.00133
	(!A1 * B1 * B2 * !C2 * X)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00190	-0.00190	-0.00193
	(!A1 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * !B1 * !C2 * !X)	-0.00190	-0.00190	-0.00193

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)**	-0.00121	-0.00122	-0.00136
	(A1 * B1 * B2 * C2 * X)	0.00099	0.00098	0.00087
	(A1 * B1 * B2 * !C2 * X)	-0.00134	-0.00135	-0.00135
	(A1 * B1 * B2 * !C2 * X)	0.00084	0.00084	0.00083
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00102	-0.00104	-0.00132
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00111	0.00110	0.00089
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00133	-0.00134	-0.00134
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !B1 * C2 * X)	-0.00102	-0.00104	-0.00132
	(A1 * A2 * !B1 * C2 * X)	0.00111	0.00110	0.00089
	(A1 * A2 * !B1 * !C2 * X)	-0.00133	-0.00134	-0.00134
	(A1 * A2 * !B1 * !C2 * X)	0.00084	0.00084	0.00084
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00205	0.00206	0.00205
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * !B1 * !C2 * !X)	0.00204	0.00206	0.00205
	(!A1 * B1 * B2 * C2 * X)	-0.00120	-0.00122	-0.00136
	(!A1 * B1 * B2 * C2 * X)	0.00100	0.00100	0.00088
	(!A1 * B1 * B2 * !C2 * X)	-0.00133	-0.00134	-0.00134
	(!A1 * B1 * B2 * !C2 * X)	0.00084	0.00084	0.00084
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * B1 * !B2 * !C2 * !X)	0.00204	0.00206	0.00205
	(!A1 * !B1 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !B1 * !C2 * !X)	0.00204	0.00206	0.00205

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00122	-0.00122	-0.00133
	(A1 * B1 * B2 * C2 * X)	0.00090	0.00089	0.00081
	(A1 * B1 * B2 * !C2 * X)	-0.00130	-0.00131	-0.00131
	(A1 * B1 * B2 * !C2 * X)	0.00079	0.00079	0.00078
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00102	-0.00103	-0.00129
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00104	0.00104	0.00085
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00129	-0.00130	-0.00130
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00080	0.00079	0.00079
	(A1 * A2 * !B1 * C2 * X)	-0.00102	-0.00103	-0.00128
	(A1 * A2 * !B1 * C2 * X)	0.00104	0.00104	0.00085
	(A1 * A2 * !B1 * !C2 * X)	-0.00129	-0.00130	-0.00130
	(A1 * A2 * !B1 * !C2 * X)	0.00080	0.00079	0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00039	-0.00040	-0.00040
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00197	0.00198	0.00197
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00039	-0.00040	-0.00040
	(A1 * !A2 * !B1 * !C2 * !X)	0.00197	0.00198	0.00197
	(!A1 * B1 * B2 * C2 * X)	-0.00121	-0.00122	-0.00133
	(!A1 * B1 * B2 * C2 * X)	0.00091	0.00090	0.00082
	(!A1 * B1 * B2 * !C2 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * B1 * B2 * !C2 * X)	0.00080	0.00079	0.00079
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * B1 * !B2 * !C2 * !X)	0.00197	0.00198	0.00197
	(!A1 * !B1 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !B1 * !C2 * !X)	0.00197	0.00198	0.00197

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)**	0.00139	0.00140	0.00139
	(A1 * B1 * B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * B2 * !C1 * X)	0.00135	0.00138	0.00135
	(A1 * B1 * B2 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00140	0.00140	0.00140
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00138	0.00140	0.00137
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00075	-0.00077	-0.00077
	(A1 * A2 * !B1 * C1 * X)	0.00140	0.00140	0.00140
	(A1 * A2 * !B1 * C1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00138	0.00140	0.00137
	(A1 * A2 * !B1 * !C1 * X)	-0.00075	-0.00077	-0.00077
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * B1 * B2 * C1 * X)	0.00140	0.00140	0.00140
	(!A1 * B1 * B2 * C1 * X)	-0.00079	-0.00080	-0.00079
	(!A1 * B1 * B2 * !C1 * X)	0.00138	0.00140	0.00137
	(!A1 * B1 * B2 * !C1 * X)	-0.00075	-0.00077	-0.00077
	(!A1 * B1 * !B2 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !B1 * !C1 * !X)	-0.00181	-0.00181	-0.00180

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00144	0.00144	0.00144
	(A1 * B1 * B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * B2 * !C1 * X)	0.00140	0.00142	0.00140
	(A1 * B1 * B2 * !C1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00144	0.00145	0.00144
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00143	0.00145	0.00141
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00075	-0.00077	-0.00076
	(A1 * A2 * !B1 * C1 * X)	0.00144	0.00145	0.00144
	(A1 * A2 * !B1 * C1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00143	0.00145	0.00141
	(A1 * A2 * !B1 * !C1 * X)	-0.00075	-0.00077	-0.00076
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00187	-0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00186
	(!A1 * B1 * B2 * C1 * X)	0.00144	0.00145	0.00144
	(!A1 * B1 * B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * B1 * B2 * !C1 * X)	0.00143	0.00145	0.00141
	(!A1 * B1 * B2 * !C1 * X)	-0.00075	-0.00077	-0.00077
	(!A1 * B1 * !B2 * !C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00187	-0.00186
	(!A1 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00186

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)**	-0.00121	-0.00122	-0.00136
	(A1 * B1 * B2 * C1 * X)	0.00095	0.00095	0.00083
	(A1 * B1 * B2 * !C1 * X)	-0.00134	-0.00135	-0.00135
	(A1 * B1 * B2 * !C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00102	-0.00103	-0.00132
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00108	0.00107	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00133	-0.00135	-0.00134
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !B1 * C1 * X)	-0.00102	-0.00103	-0.00132
	(A1 * A2 * !B1 * C1 * X)	0.00108	0.00107	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00133	-0.00135	-0.00134
	(A1 * A2 * !B1 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00105	-0.00106
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00193	0.00188	0.00184
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00105	-0.00106
	(A1 * !A2 * !B1 * !C1 * !X)	0.00193	0.00188	0.00184
	(!A1 * B1 * B2 * C1 * X)	-0.00120	-0.00121	-0.00136
	(!A1 * B1 * B2 * C1 * X)	0.00097	0.00096	0.00084
	(!A1 * B1 * B2 * !C1 * X)	-0.00133	-0.00135	-0.00134
	(!A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00105	-0.00106
	(!A1 * B1 * !B2 * !C1 * !X)	0.00193	0.00188	0.00184
	(!A1 * !B1 * !C1 * !X)	-0.00098	-0.00105	-0.00106
	(!A1 * !B1 * !C1 * !X)	0.00193	0.00188	0.00184

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00130	-0.00130	-0.00141
	(A1 * B1 * B2 * C1 * X)	0.00092	0.00091	0.00083
	(A1 * B1 * B2 * !C1 * X)	-0.00138	-0.00139	-0.00139
	(A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00110	-0.00110	-0.00136
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00106	0.00105	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00137	-0.00139	-0.00138
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00136
	(A1 * A2 * !B1 * C1 * X)	0.00106	0.00105	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00137	-0.00139	-0.00138
	(A1 * A2 * !B1 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00103	-0.00103
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00201	0.00195	0.00191
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00195	0.00191
	(!A1 * B1 * B2 * C1 * X)	-0.00129	-0.00130	-0.00141
	(!A1 * B1 * B2 * C1 * X)	0.00092	0.00092	0.00083
	(!A1 * B1 * B2 * !C1 * X)	-0.00137	-0.00139	-0.00138
	(!A1 * B1 * B2 * !C1 * X)	0.00082	0.00082	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	0.00201	0.00195	0.00191
	(!A1 * !B1 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00201	0.00195	0.00191

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00292	0.00291	0.00303	0.00304	0.37217
sky130_fd_sc_hs__a22oi_2	0.00636	0.00563	0.00610	0.00559	0.67930
sky130_fd_sc_hs__a22oi_4	0.01123	0.01110	0.01136	0.01117	1.28210

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.81722	1.59219
sky130_fd_sc_hs__a22oi_2	0.00000	1.66529	3.18848
sky130_fd_sc_hs__a22oi_4	0.00000	3.13927	6.36859

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)	0.15403	1.07692	9.71879
	A2->Y (FR)	0.17988	1.10801	9.77276
	B1->Y (FR)	0.11154	1.05456	10.13440
	B2->Y (FR)	0.13664	1.09459	10.24450
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.16032	0.92520	9.44838
	A2->Y (FR)	0.18817	0.96483	9.60941
	B1->Y (FR)	0.11273	0.91452	9.97406
	B2->Y (FR)	0.14391	0.96153	10.18540
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.14607	0.78929	9.27012
	A2->Y (FR)	0.18021	0.83248	9.43919
	B1->Y (FR)	0.10258	0.79083	9.85388
	B2->Y (FR)	0.13774	0.83898	10.09150

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.07008	0.64190	6.03199
	A2->Y (RF)	0.07705	0.59383	5.40658
	B1->Y (RF)	0.04435	0.60945	6.03183
	B2->Y (RF)	0.05102	0.56256	5.42695
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.07149	0.57392	5.89593
	A2->Y (RF)	0.07764	0.53011	5.32669
	B1->Y (RF)	0.04347	0.53030	5.85201
	B2->Y (RF)	0.05180	0.49015	5.28371
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.06976	0.52778	6.04489
	A2->Y (RF)	0.07790	0.47186	5.26935
	B1->Y (RF)	0.04017	0.47835	6.01960
	B2->Y (RF)	0.04884	0.42508	5.22046

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00000	-0.00008	0.00302
	A1	0.00619	0.00612	0.00923
	A2	0.00052	0.00046	0.00356
	A2	0.00770	0.00763	0.01074
	B1	-0.00007	0.00029	0.00513
	B1	0.00404	0.00430	0.00923
	B2	0.00029	0.00054	0.00544
	B2	0.00537	0.00562	0.01054
sky130_fd_sc_hs__a22oi_2	A1	0.00049	0.00028	0.00682
	A1	0.01508	0.01479	0.02113
	A2	0.00309	0.00289	0.00924
	A2	0.01741	0.01725	0.02356
	B1	0.00022	0.00095	0.01108
	B1	0.00876	0.00922	0.01968
	B2	0.00176	0.00261	0.01244
	B2	0.01172	0.01260	0.02248
sky130_fd_sc_hs__a22oi_4	A1	-0.00088	-0.00114	0.01200
	A1	0.02727	0.02678	0.03964
	A2	0.00488	0.00455	0.01724
	A2	0.03339	0.03310	0.04579
	B1	-0.00124	0.00103	0.01992
	B1	0.01485	0.01718	0.03599
	B2	0.00166	0.00318	0.02238
	B2	0.02135	0.02287	0.04208

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00885	0.00894	0.01202
	A1	0.00271	0.00278	0.00589
	A2	0.00981	0.00974	0.01282
	A2	0.00266	0.00257	0.00541
	B1	0.00391	0.00419	0.00751
	B1	-0.00019	0.00007	0.00318
	B2	0.00495	0.00501	0.00815
	B2	-0.00016	-0.00011	0.00274
sky130_fd_sc_hs__a22oi_2	A1	0.01771	0.01761	0.02476
	A1	0.00482	0.00471	0.01131
	A2	0.01906	0.01893	0.02541
	A2	0.00488	0.00469	0.01051
	B1	0.00830	0.00889	0.01597
	B1	-0.00023	0.00029	0.00689
	B2	0.00993	0.01007	0.01659
	B2	-0.00010	-0.00005	0.00596
sky130_fd_sc_hs__a22oi_4	A1	0.03365	0.03369	0.04665
	A1	0.00920	0.00911	0.02205
	A2	0.03740	0.03709	0.04967
	A2	0.00911	0.00870	0.02053
	B1	0.01516	0.01600	0.02899
	B1	-0.00093	-0.00015	0.01289
	B2	0.01915	0.01933	0.03206
	B2	-0.00066	-0.00054	0.01137

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)	0.00164	0.00135	0.00130
	(A2 * B1 * B2 * !Y)	-0.00143	-0.00176	-0.00180
	(!A2 * B1 * B2 * !Y)	0.00124	0.00124	0.00124
	(!A2 * B1 * B2 * !Y)	-0.00182	-0.00182	-0.00182
	(!A2 * B1 * !B2 * Y)	0.00049	0.00049	0.00046
	(!A2 * B1 * !B2 * Y)	-0.00203	-0.00204	-0.00208
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00046
	(!A2 * !B1 * Y)	-0.00203	-0.00204	-0.00208
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00364	0.00295	0.00283
	(A2 * B1 * B2 * !Y)	-0.00292	-0.00369	-0.00380
	(!A2 * B1 * B2 * !Y)	0.00270	0.00270	0.00270
	(!A2 * B1 * B2 * !Y)	-0.00388	-0.00387	-0.00387
	(!A2 * B1 * !B2 * Y)	0.00096	0.00097	0.00092
	(!A2 * B1 * !B2 * Y)	-0.00448	-0.00451	-0.00460
	(!A2 * !B1 * Y)	0.00096	0.00097	0.00092
	(!A2 * !B1 * Y)	-0.00448	-0.00451	-0.00460
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00675	0.00547	0.00526
	(A2 * B1 * B2 * !Y)	-0.00563	-0.00707	-0.00726
	(!A2 * B1 * B2 * !Y)	0.00497	0.00500	0.00499
	(!A2 * B1 * B2 * !Y)	-0.00736	-0.00739	-0.00737
	(!A2 * B1 * !B2 * Y)	0.00186	0.00186	0.00174
	(!A2 * B1 * !B2 * Y)	-0.00828	-0.00833	-0.00853
	(!A2 * !B1 * Y)	0.00186	0.00187	0.00175
	(!A2 * !B1 * Y)	-0.00828	-0.00833	-0.00853

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)	-0.00126	-0.00127	-0.00125
	(A2 * B1 * B2 * !Y)	0.00181	0.00183	0.00182
	(!A2 * B1 * B2 * !Y)	-0.00121	-0.00123	-0.00123
	(!A2 * B1 * B2 * !Y)	0.00185	0.00186	0.00185
	(!A2 * B1 * !B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * Y)	0.00208	0.00210	0.00209
	(!A2 * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * Y)	0.00209	0.00210	0.00209
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00275	-0.00275	-0.00272
	(A2 * B1 * B2 * !Y)	0.00383	0.00385	0.00385
	(!A2 * B1 * B2 * !Y)	-0.00264	-0.00267	-0.00269
	(!A2 * B1 * B2 * !Y)	0.00395	0.00394	0.00393
	(!A2 * B1 * !B2 * Y)	-0.00087	-0.00088	-0.00087
	(!A2 * B1 * !B2 * Y)	0.00462	0.00466	0.00463
	(!A2 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(!A2 * !B1 * Y)	0.00462	0.00466	0.00463
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00511	-0.00510	-0.00505
	(A2 * B1 * B2 * !Y)	0.00735	0.00734	0.00736
	(!A2 * B1 * B2 * !Y)	-0.00486	-0.00495	-0.00498
	(!A2 * B1 * B2 * !Y)	0.00753	0.00755	0.00750
	(!A2 * B1 * !B2 * Y)	-0.00167	-0.00167	-0.00165
	(!A2 * B1 * !B2 * Y)	0.00863	0.00871	0.00859
	(!A2 * !B1 * Y)	-0.00167	-0.00168	-0.00166
	(!A2 * !B1 * Y)	0.00862	0.00870	0.00859

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)	0.00173	0.00143	0.00137
	(A1 * B1 * B2 * !Y)	-0.00148	-0.00182	-0.00186
	(!A1 * B1 * B2 * !Y)	0.00132	0.00132	0.00132
	(!A1 * B1 * B2 * !Y)	-0.00188	-0.00189	-0.00188
	(!A1 * B1 * !B2 * Y)	0.00131	0.00131	0.00131
	(!A1 * B1 * !B2 * Y)	-0.00189	-0.00189	-0.00189
	(!A1 * !B1 * Y)	0.00131	0.00131	0.00131
	(!A1 * !B1 * Y)	-0.00189	-0.00189	-0.00189
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00329	0.00270	0.00260
	(A1 * B1 * B2 * !Y)	-0.00280	-0.00347	-0.00355
	(!A1 * B1 * B2 * !Y)	0.00249	0.00247	0.00248
	(!A1 * B1 * B2 * !Y)	-0.00361	-0.00359	-0.00360
	(!A1 * B1 * !B2 * Y)	0.00239	0.00242	0.00240
	(!A1 * B1 * !B2 * Y)	-0.00370	-0.00371	-0.00369
	(!A1 * !B1 * Y)	0.00239	0.00242	0.00240
	(!A1 * !B1 * Y)	-0.00370	-0.00371	-0.00369
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00680	0.00549	0.00529
	(A1 * B1 * B2 * !Y)	-0.00567	-0.00707	-0.00729
	(!A1 * B1 * B2 * !Y)	0.00503	0.00505	0.00503
	(!A1 * B1 * B2 * !Y)	-0.00740	-0.00741	-0.00740
	(!A1 * B1 * !B2 * Y)	0.00502	0.00507	0.00503
	(!A1 * B1 * !B2 * Y)	-0.00743	-0.00746	-0.00740
	(!A1 * !B1 * Y)	0.00502	0.00507	0.00503
	(!A1 * !B1 * Y)	-0.00743	-0.00746	-0.00741

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)	-0.00133	-0.00133	-0.00132
	(A1 * B1 * B2 * !Y)	0.00187	0.00187	0.00188
	(!A1 * B1 * B2 * !Y)	-0.00128	-0.00131	-0.00130
	(!A1 * B1 * B2 * !Y)	0.00191	0.00194	0.00192
	(!A1 * B1 * !B2 * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * B1 * !B2 * Y)	0.00200	0.00195	0.00191
	(!A1 * !B1 * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * !B1 * Y)	0.00200	0.00195	0.00191
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00252	-0.00252	-0.00250
	(A1 * B1 * B2 * !Y)	0.00358	0.00357	0.00360
	(!A1 * B1 * B2 * !Y)	-0.00240	-0.00246	-0.00246
	(!A1 * B1 * B2 * !Y)	0.00365	0.00370	0.00367
	(!A1 * B1 * !B2 * Y)	-0.00216	-0.00236	-0.00239
	(!A1 * B1 * !B2 * Y)	0.00391	0.00381	0.00373
	(!A1 * !B1 * Y)	-0.00217	-0.00236	-0.00239
	(!A1 * !B1 * Y)	0.00391	0.00380	0.00373
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00514	-0.00515	-0.00509
	(A1 * B1 * B2 * !Y)	0.00735	0.00741	0.00739
	(!A1 * B1 * B2 * !Y)	-0.00488	-0.00499	-0.00499
	(!A1 * B1 * B2 * !Y)	0.00751	0.00760	0.00752
	(!A1 * B1 * !B2 * Y)	-0.00455	-0.00496	-0.00502
	(!A1 * B1 * !B2 * Y)	0.00786	0.00764	0.00749
	(!A1 * !B1 * Y)	-0.00455	-0.00496	-0.00502
	(!A1 * !B1 * Y)	0.00785	0.00764	0.00749

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)	0.00149	0.00150	0.00149
	(A1 * A2 * B2 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * !B2 * !Y)	0.00145	0.00146	0.00144
	(A1 * A2 * !B2 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * !B2 * Y)	0.00044	0.00044	0.00042
	(A1 * !A2 * !B2 * Y)	-0.00212	-0.00212	-0.00216
	(!A1 * !B2 * Y)	0.00044	0.00044	0.00042
	(!A1 * !B2 * Y)	-0.00212	-0.00212	-0.00216
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00319	0.00320	0.00318
	(A1 * A2 * B2 * !Y)	-0.00166	-0.00165	-0.00164
	(A1 * A2 * !B2 * !Y)	0.00308	0.00310	0.00306
	(A1 * A2 * !B2 * !Y)	-0.00159	-0.00160	-0.00161
	(A1 * !A2 * !B2 * Y)	0.00104	0.00104	0.00099
	(A1 * !A2 * !B2 * Y)	-0.00420	-0.00422	-0.00431
	(!A1 * !B2 * Y)	0.00104	0.00104	0.00099
	(!A1 * !B2 * Y)	-0.00421	-0.00422	-0.00431
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00591	0.00594	0.00590
	(A1 * A2 * B2 * !Y)	-0.00335	-0.00334	-0.00331
	(A1 * A2 * !B2 * !Y)	0.00572	0.00577	0.00569
	(A1 * A2 * !B2 * !Y)	-0.00319	-0.00324	-0.00325
	(A1 * !A2 * !B2 * Y)	0.00186	0.00185	0.00173
	(A1 * !A2 * !B2 * Y)	-0.00835	-0.00836	-0.00856
	(!A1 * !B2 * Y)	0.00186	0.00185	0.00173
	(!A1 * !B2 * Y)	-0.00835	-0.00836	-0.00856

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)	-0.00131	-0.00133	-0.00146
	(A1 * A2 * B2 * !Y)	0.00099	0.00100	0.00088
	(A1 * A2 * !B2 * !Y)	-0.00142	-0.00143	-0.00144
	(A1 * A2 * !B2 * !Y)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B2 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * Y)	0.00216	0.00219	0.00217
	(!A1 * !B2 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * Y)	0.00216	0.00219	0.00217
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00286	-0.00290	-0.00313
	(A1 * A2 * B2 * !Y)	0.00189	0.00190	0.00171
	(A1 * A2 * !B2 * !Y)	-0.00302	-0.00306	-0.00306
	(A1 * A2 * !B2 * !Y)	0.00165	0.00165	0.00165
	(A1 * !A2 * !B2 * Y)	-0.00094	-0.00096	-0.00094
	(A1 * !A2 * !B2 * Y)	0.00433	0.00438	0.00434
	(!A1 * !B2 * Y)	-0.00094	-0.00096	-0.00094
	(!A1 * !B2 * Y)	0.00433	0.00438	0.00434
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00531	-0.00538	-0.00582
	(A1 * A2 * B2 * !Y)	0.00380	0.00381	0.00344
	(A1 * A2 * !B2 * !Y)	-0.00557	-0.00569	-0.00569
	(A1 * A2 * !B2 * !Y)	0.00332	0.00334	0.00333
	(A1 * !A2 * !B2 * Y)	-0.00165	-0.00166	-0.00163
	(A1 * !A2 * !B2 * Y)	0.00863	0.00871	0.00862
	(!A1 * !B2 * Y)	-0.00166	-0.00167	-0.00164
	(!A1 * !B2 * Y)	0.00863	0.00871	0.00862

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)	0.00162	0.00163	0.00162
	(A1 * A2 * B1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !B1 * !Y)	0.00159	0.00161	0.00157
	(A1 * A2 * !B1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * !A2 * !B1 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * !B1 * Y)	-0.00195	-0.00195	-0.00194
	(!A1 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !B1 * Y)	-0.00195	-0.00195	-0.00194
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00281	0.00283	0.00282
	(A1 * A2 * B1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !B1 * !Y)	0.00273	0.00276	0.00272
	(A1 * A2 * !B1 * !Y)	-0.00159	-0.00161	-0.00162
	(A1 * !A2 * !B1 * Y)	0.00238	0.00241	0.00239
	(A1 * !A2 * !B1 * Y)	-0.00367	-0.00368	-0.00366
	(!A1 * !B1 * Y)	0.00238	0.00241	0.00239
	(!A1 * !B1 * Y)	-0.00367	-0.00369	-0.00366
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00592	0.00594	0.00590
	(A1 * A2 * B1 * !Y)	-0.00334	-0.00334	-0.00331
	(A1 * A2 * !B1 * !Y)	0.00576	0.00577	0.00569
	(A1 * A2 * !B1 * !Y)	-0.00323	-0.00323	-0.00326
	(A1 * !A2 * !B1 * Y)	0.00498	0.00503	0.00501
	(A1 * !A2 * !B1 * Y)	-0.00737	-0.00740	-0.00737
	(!A1 * !B1 * Y)	0.00498	0.00502	0.00501
	(!A1 * !B1 * Y)	-0.00737	-0.00740	-0.00737

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)	-0.00144	-0.00145	-0.00159
	(A1 * A2 * B1 * !Y)	0.00100	0.00100	0.00089
	(A1 * A2 * !B1 * !Y)	-0.00155	-0.00158	-0.00157
	(A1 * A2 * !B1 * !Y)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * Y)	-0.00121	-0.00130	-0.00132
	(A1 * !A2 * !B1 * Y)	0.00205	0.00200	0.00196
	(!A1 * !B1 * Y)	-0.00121	-0.00130	-0.00132
	(!A1 * !B1 * Y)	0.00205	0.00200	0.00196
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00250	-0.00253	-0.00277
	(A1 * A2 * B1 * !Y)	0.00190	0.00190	0.00172
	(A1 * A2 * !B1 * !Y)	-0.00265	-0.00272	-0.00272
	(A1 * A2 * !B1 * !Y)	0.00165	0.00167	0.00166
	(A1 * !A2 * !B1 * Y)	-0.00217	-0.00236	-0.00238
	(A1 * !A2 * !B1 * Y)	0.00387	0.00376	0.00370
	(!A1 * !B1 * Y)	-0.00217	-0.00236	-0.00238
	(!A1 * !B1 * Y)	0.00387	0.00376	0.00370
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00530	-0.00536	-0.00581
	(A1 * A2 * B1 * !Y)	0.00380	0.00380	0.00345
	(A1 * A2 * !B1 * !Y)	-0.00560	-0.00570	-0.00569
	(A1 * A2 * !B1 * !Y)	0.00334	0.00335	0.00333
	(A1 * !A2 * !B1 * Y)	-0.00455	-0.00494	-0.00500
	(A1 * !A2 * !B1 * Y)	0.00780	0.00758	0.00745
	(!A1 * !B1 * Y)	-0.00455	-0.00495	-0.00500
	(!A1 * !B1 * Y)	0.00780	0.00758	0.00745

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00282	0.00261	0.00276	0.00283	0.80261
sky130_fd_sc_hs__a22o_2	0.00294	0.00273	0.00290	0.00283	1.55721
sky130_fd_sc_hs__a22o_4	0.00503	0.00529	0.00505	0.00551	3.16193

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	1.91310	3.67638
sky130_fd_sc_hs__a22o_2	0.00000	2.41779	3.89092
sky130_fd_sc_hs__a22o_4	0.00000	4.79027	7.76772

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)	0.15620	0.89314	7.72937
	A2->X (RR)	0.16490	0.87526	7.68243
	B1->X (RR)	0.12588	0.83128	7.60487
	B2->X (RR)	0.13265	0.82048	7.56380
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.15029	0.79493	7.64659
	A2->X (RR)	0.16463	0.77083	7.57850
	B1->X (RR)	0.12601	0.74456	7.52692
	B2->X (RR)	0.13205	0.72685	7.47091
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.15668	0.71778	7.82150
	A2->X (RR)	0.16465	0.69793	7.75672
	B1->X (RR)	0.12691	0.66380	7.65505
	B2->X (RR)	0.13453	0.64829	7.61384

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.23298	0.73492	4.52205
	A2->X (FF)	0.25511	0.77776	4.64054
	B1->X (FF)	0.20411	0.73354	4.59487
	B2->X (FF)	0.22091	0.76187	4.65785
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.28863	0.77780	4.69418
	A2->X (FF)	0.31641	0.82497	4.83145
	B1->X (FF)	0.26332	0.79206	4.81511
	B2->X (FF)	0.27985	0.81759	4.88573
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.27831	0.73362	4.84957
	A2->X (FF)	0.29702	0.76462	4.93256
	B1->X (FF)	0.24801	0.73909	4.93391
	B2->X (FF)	0.25891	0.75407	4.96935

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01109	0.01143	0.02357
	A1	0.00542	0.00577	0.01806
	A2	0.01200	0.01222	0.02436
	A2	0.00543	0.00571	0.01794
	B1	0.00792	0.00854	0.02428
	B1	0.00325	0.00392	0.01999
	B2	0.00873	0.00912	0.02385
	B2	0.00323	0.00364	0.01851
sky130_fd_sc_hs__a22o_2	A1	0.01341	0.01396	0.02639
	A1	0.00739	0.00796	0.02073
	A2	0.01432	0.01473	0.02706
	A2	0.00735	0.00776	0.02010
	B1	0.01059	0.01135	0.02726
	B1	0.00565	0.00643	0.02239
	B2	0.01144	0.01205	0.02689
	B2	0.00561	0.00624	0.02132
sky130_fd_sc_hs__a22o_4	A1	0.02609	0.02724	0.05414
	A1	0.01510	0.01629	0.04381
	A2	0.02803	0.02883	0.05293
	A2	0.01513	0.01594	0.04070
	B1	0.02019	0.02147	0.05122
	B1	0.01158	0.01307	0.04544
	B2	0.02185	0.02267	0.05066
	B2	0.01138	0.01231	0.04304

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00302	0.00310	0.01616
	A1	0.00870	0.00876	0.02166
	A2	0.00368	0.00398	0.01691
	A2	0.01021	0.01050	0.02325
	B1	0.00302	0.00408	0.02108
	B1	0.00672	0.00778	0.02472
	B2	0.00330	0.00438	0.02114
	B2	0.00966	0.01056	0.02583
sky130_fd_sc_hs__a22o_2	A1	0.00539	0.00564	0.01875
	A1	0.01127	0.01148	0.02449
	A2	0.00645	0.00682	0.01996
	A2	0.01325	0.01361	0.02669
	B1	0.00535	0.00666	0.02421
	B1	0.01168	0.01240	0.02805
	B2	0.00577	0.00701	0.02451
	B2	0.01294	0.01371	0.02943
sky130_fd_sc_hs__a22o_4	A1	0.01068	0.01137	0.03872
	A1	0.02169	0.02237	0.04822
	A2	0.01106	0.01184	0.03871
	A2	0.02391	0.02461	0.04975
	B1	0.01061	0.01266	0.04378
	B1	0.02059	0.02195	0.05065
	B2	0.01137	0.01369	0.04939
	B2	0.02022	0.02242	0.05409

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)	0.00174	0.00144	0.00137
	(A2 * B1 * B2 * X)	-0.00121	-0.00154	-0.00158
	(!A2 * B1 * B2 * X)	0.00131	0.00132	0.00131
	(!A2 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !B2 * !X)	0.00049	0.00049	0.00045
	(!A2 * B1 * !B2 * !X)	-0.00197	-0.00198	-0.00204
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00045
	(!A2 * !B1 * !X)	-0.00197	-0.00198	-0.00204
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00189	0.00159	0.00152
	(A2 * B1 * B2 * X)	-0.00120	-0.00152	-0.00156
	(!A2 * B1 * B2 * X)	0.00146	0.00146	0.00146
	(!A2 * B1 * B2 * X)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * !B2 * !X)	0.00055	0.00055	0.00050
	(!A2 * B1 * !B2 * !X)	-0.00196	-0.00197	-0.00204
	(!A2 * !B1 * !X)	0.00055	0.00055	0.00050
	(!A2 * !B1 * !X)	-0.00196	-0.00197	-0.00205
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00302	0.00238	0.00224
	(A2 * B1 * B2 * X)	-0.00249	-0.00314	-0.00326
	(!A2 * B1 * B2 * X)	0.00213	0.00213	0.00213
	(!A2 * B1 * B2 * X)	-0.00332	-0.00333	-0.00332
	(!A2 * B1 * !B2 * !X)	0.00077	0.00077	0.00073
	(!A2 * B1 * !B2 * !X)	-0.00375	-0.00376	-0.00382
	(!A2 * !B1 * !X)	0.00076	0.00077	0.00073
	(!A2 * !B1 * !X)	-0.00372	-0.00376	-0.00382

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)	-0.00129	-0.00130	-0.00129
	(A2 * B1 * B2 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * B2 * X)	-0.00123	-0.00127	-0.00127
	(!A2 * B1 * B2 * X)	0.00166	0.00170	0.00167
	(!A2 * B1 * !B2 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * B1 * !B2 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !X)	0.00206	0.00208	0.00207
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00144	-0.00145	-0.00143
	(A2 * B1 * B2 * X)	0.00163	0.00165	0.00164
	(!A2 * B1 * B2 * X)	-0.00137	-0.00141	-0.00142
	(!A2 * B1 * B2 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * !X)	0.00209	0.00210	0.00209
	(!A2 * !B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !X)	0.00209	0.00210	0.00209
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00208	-0.00207	-0.00206
	(A2 * B1 * B2 * X)	0.00339	0.00338	0.00342
	(!A2 * B1 * B2 * X)	-0.00199	-0.00202	-0.00203
	(!A2 * B1 * B2 * X)	0.00348	0.00348	0.00346
	(!A2 * B1 * !B2 * !X)	-0.00063	-0.00064	-0.00063
	(!A2 * B1 * !B2 * !X)	0.00390	0.00391	0.00390
	(!A2 * !B1 * !X)	-0.00063	-0.00064	-0.00063
	(!A2 * !B1 * !X)	0.00390	0.00391	0.00390

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)	0.00172	0.00142	0.00135
	(A1 * B1 * B2 * X)	-0.00121	-0.00153	-0.00158
	(!A1 * B1 * B2 * X)	0.00129	0.00130	0.00129
	(!A1 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00177	0.00147	0.00140
	(A1 * B1 * B2 * X)	-0.00126	-0.00159	-0.00163
	(!A1 * B1 * B2 * X)	0.00134	0.00134	0.00134
	(!A1 * B1 * B2 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * B1 * !B2 * !X)	0.00132	0.00133	0.00133
	(!A1 * B1 * !B2 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !B1 * !X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00345	0.00285	0.00272
	(A1 * B1 * B2 * X)	-0.00244	-0.00311	-0.00321
	(!A1 * B1 * B2 * X)	0.00261	0.00263	0.00261
	(!A1 * B1 * B2 * X)	-0.00325	-0.00327	-0.00326
	(!A1 * B1 * !B2 * !X)	0.00253	0.00256	0.00254
	(!A1 * B1 * !B2 * !X)	-0.00333	-0.00335	-0.00333
	(!A1 * !B1 * !X)	0.00253	0.00256	0.00254
	(!A1 * !B1 * !X)	-0.00333	-0.00335	-0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * B1 * B2 * X)	-0.00128	-0.00128	-0.00127
	(A1 * B1 * B2 * X)	0.00164	0.00165	0.00166
	(!A1 * B1 * B2 * X)	-0.00121	-0.00124	-0.00125
	(!A1 * B1 * B2 * X)	0.00166	0.00169	0.00167
	(!A1 * B1 * !B2 * !X)	-0.00118	-0.00125	-0.00126
	(!A1 * B1 * !B2 * !X)	0.00172	0.00168	0.00165
	(!A1 * !B1 * !X)	-0.00118	-0.00125	-0.00126
	(!A1 * !B1 * !X)	0.00172	0.00168	0.00165
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00132	-0.00132	-0.00131
	(A1 * B1 * B2 * X)	0.00169	0.00170	0.00171
	(!A1 * B1 * B2 * X)	-0.00126	-0.00129	-0.00129
	(!A1 * B1 * B2 * X)	0.00173	0.00174	0.00172
	(!A1 * B1 * !B2 * !X)	-0.00121	-0.00129	-0.00130
	(!A1 * B1 * !B2 * !X)	0.00178	0.00173	0.00171
	(!A1 * !B1 * !X)	-0.00121	-0.00129	-0.00130
	(!A1 * !B1 * !X)	0.00178	0.00173	0.00171
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00255	-0.00256	-0.00253
	(A1 * B1 * B2 * X)	0.00333	0.00335	0.00336
	(!A1 * B1 * B2 * X)	-0.00246	-0.00249	-0.00250
	(!A1 * B1 * B2 * X)	0.00340	0.00340	0.00340
	(!A1 * B1 * !B2 * !X)	-0.00229	-0.00243	-0.00247
	(!A1 * B1 * !B2 * !X)	0.00359	0.00346	0.00342
	(!A1 * !B1 * !X)	-0.00229	-0.00243	-0.00247
	(!A1 * !B1 * !X)	0.00358	0.00346	0.00342

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)	0.00130	0.00131	0.00130
	(A1 * A2 * B2 * X)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * !B2 * X)	0.00128	0.00129	0.00127
	(A1 * A2 * !B2 * X)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00185	-0.00186	-0.00189
	(!A1 * !B2 * !X)	0.00043	0.00043	0.00042
	(!A1 * !B2 * !X)	-0.00185	-0.00185	-0.00189
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00147	0.00147	0.00147
	(A1 * A2 * B2 * X)	-0.00076	-0.00076	-0.00075
	(A1 * A2 * !B2 * X)	0.00144	0.00145	0.00143
	(A1 * A2 * !B2 * X)	-0.00071	-0.00073	-0.00073
	(A1 * !A2 * !B2 * !X)	0.00047	0.00047	0.00044
	(A1 * !A2 * !B2 * !X)	-0.00188	-0.00189	-0.00192
	(!A1 * !B2 * !X)	0.00047	0.00047	0.00045
	(!A1 * !B2 * !X)	-0.00188	-0.00189	-0.00192
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00242	0.00243	0.00243
	(A1 * A2 * B2 * X)	-0.00150	-0.00150	-0.00149
	(A1 * A2 * !B2 * X)	0.00238	0.00239	0.00236
	(A1 * A2 * !B2 * X)	-0.00142	-0.00145	-0.00146
	(A1 * !A2 * !B2 * !X)	0.00080	0.00079	0.00075
	(A1 * !A2 * !B2 * !X)	-0.00359	-0.00359	-0.00367
	(!A1 * !B2 * !X)	0.00080	0.00079	0.00075
	(!A1 * !B2 * !X)	-0.00359	-0.00358	-0.00367

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)	-0.00116	-0.00117	-0.00127
	(A1 * A2 * B2 * X)	0.00089	0.00089	0.00080
	(A1 * A2 * !B2 * X)	-0.00123	-0.00125	-0.00125
	(A1 * A2 * !B2 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B2 * !X)	0.00191	0.00193	0.00192
	(!A1 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * !X)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00132	-0.00133	-0.00143
	(A1 * A2 * B2 * X)	0.00089	0.00088	0.00080
	(A1 * A2 * !B2 * X)	-0.00139	-0.00140	-0.00140
	(A1 * A2 * !B2 * X)	0.00078	0.00077	0.00077
	(A1 * !A2 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00196	0.00197	0.00196
	(!A1 * !B2 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * !X)	0.00195	0.00197	0.00196
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00211	-0.00213	-0.00236
	(A1 * A2 * B2 * X)	0.00177	0.00176	0.00158
	(A1 * A2 * !B2 * X)	-0.00228	-0.00231	-0.00231
	(A1 * A2 * !B2 * X)	0.00154	0.00154	0.00154
	(A1 * !A2 * !B2 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * !B2 * !X)	0.00374	0.00376	0.00375
	(!A1 * !B2 * !X)	-0.00066	-0.00067	-0.00066
	(!A1 * !B2 * !X)	0.00374	0.00376	0.00375

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)	0.00136	0.00137	0.00136
	(A1 * A2 * B1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * X)	0.00135	0.00137	0.00133
	(A1 * A2 * !B1 * X)	-0.00078	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !X)	-0.00170	-0.00170	-0.00169
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00144	0.00144	0.00144
	(A1 * A2 * B1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * X)	0.00143	0.00146	0.00141
	(A1 * A2 * !B1 * X)	-0.00073	-0.00075	-0.00076
	(A1 * !A2 * !B1 * !X)	0.00127	0.00127	0.00127
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00163	-0.00163
	(!A1 * !B1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !B1 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00263	0.00265	0.00264
	(A1 * A2 * B1 * X)	-0.00164	-0.00165	-0.00163
	(A1 * A2 * !B1 * X)	0.00266	0.00267	0.00260
	(A1 * A2 * !B1 * X)	-0.00153	-0.00154	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00206	0.00209	0.00207
	(A1 * !A2 * !B1 * !X)	-0.00364	-0.00367	-0.00365
	(!A1 * !B1 * !X)	0.00205	0.00209	0.00207
	(!A1 * !B1 * !X)	-0.00365	-0.00367	-0.00365

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	-0.00122	-0.00122	-0.00133
	(A1 * A2 * B1 * X)	0.00096	0.00095	0.00087
	(A1 * A2 * !B1 * X)	-0.00130	-0.00131	-0.00131
	(A1 * A2 * !B1 * X)	0.00084	0.00085	0.00084
	(A1 * !A2 * !B1 * !X)	-0.00100	-0.00108	-0.00110
	(A1 * !A2 * !B1 * !X)	0.00185	0.00180	0.00174
	(!A1 * !B1 * !X)	-0.00109	-0.00117	-0.00117
	(!A1 * !B1 * !X)	0.00182	0.00177	0.00173
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00129	-0.00130	-0.00141
	(A1 * A2 * B1 * X)	0.00092	0.00091	0.00083
	(A1 * A2 * !B1 * X)	-0.00136	-0.00138	-0.00138
	(A1 * A2 * !B1 * X)	0.00081	0.00081	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00113	-0.00122	-0.00123
	(A1 * !A2 * !B1 * !X)	0.00178	0.00172	0.00168
	(!A1 * !B1 * !X)	-0.00117	-0.00126	-0.00127
	(!A1 * !B1 * !X)	0.00177	0.00171	0.00168
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00233	-0.00234	-0.00257
	(A1 * A2 * B1 * X)	0.00191	0.00190	0.00173
	(A1 * A2 * !B1 * X)	-0.00250	-0.00254	-0.00253
	(A1 * A2 * !B1 * X)	0.00168	0.00169	0.00167
	(A1 * !A2 * !B1 * !X)	-0.00184	-0.00198	-0.00201
	(A1 * !A2 * !B1 * !X)	0.00391	0.00380	0.00374
	(!A1 * !B1 * !X)	-0.00184	-0.00198	-0.00201
	(!A1 * !B1 * !X)	0.00391	0.00379	0.00374

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00244	0.00264	0.00287	0.00305	0.36541
sky130_fd_sc_hs__a2bb2oi_2	0.00268	0.00278	0.00559	0.00563	0.72544
sky130_fd_sc_hs__a2bb2oi_4	0.00429	0.00450	0.01111	0.01130	1.35801

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	1.50013	2.87371
sky130_fd_sc_hs__a2bb2oi_2	0.00000	2.18766	3.80148
sky130_fd_sc_hs__a2bb2oi_4	0.00000	4.11440	7.25408

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)	0.16831	1.03317	7.58010
	A2_N->Y (RR)	0.15878	0.99468	7.45850
	B1->Y (FR)	0.14605	1.08325	9.85489
	B2->Y (FR)	0.11720	1.02777	9.57358
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.15483	0.86433	7.40294
	A2_N->Y (RR)	0.14773	0.83730	7.30589
	B1->Y (FR)	0.13439	0.91180	9.76081
	B2->Y (FR)	0.10224	0.86970	9.63072
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.19086	0.83938	7.85552
	A2_N->Y (RR)	0.17115	0.79216	7.70644
	B1->Y (FR)	0.13265	0.78596	9.60434
	B2->Y (FR)	0.09954	0.74185	9.40032

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)	0.18034	0.55535	2.55705
	A2_N->Y (FF)	0.16259	0.55305	2.54108
	B1->Y (RF)	0.05910	0.56907	5.32382
	B2->Y (RF)	0.05347	0.61674	5.94077
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.23050	0.62208	2.92151
	A2_N->Y (FF)	0.21162	0.63181	2.93429
	B1->Y (RF)	0.05851	0.52124	5.56090
	B2->Y (RF)	0.04910	0.56691	6.20835
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.22648	0.57895	2.57180
	A2_N->Y (FF)	0.19679	0.57013	2.62012
	B1->Y (RF)	0.05692	0.45297	5.42297
	B2->Y (RF)	0.04870	0.50731	6.20938

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	0.00896	0.00937	0.02235
	A1_N	0.00583	0.00623	0.01921
	A2_N	0.00734	0.00773	0.02290
	A2_N	0.00504	0.00543	0.02060
	B1	0.00178	0.00174	0.00490
	B1	0.00637	0.00627	0.00948
	B2	0.00118	0.00113	0.00428
	B2	0.00503	0.00498	0.00814
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01334	0.01391	0.02849
	A1_N	0.01107	0.01164	0.02627
	A2_N	0.01152	0.01197	0.02839
	A2_N	0.01021	0.01068	0.02716
	B1	0.00397	0.00385	0.00997
	B1	0.01315	0.01303	0.01918
	B2	0.00235	0.00230	0.00844
	B2	0.00967	0.00957	0.01580
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02452	0.02513	0.04695
	A1_N	0.02154	0.02214	0.04418
	A2_N	0.02069	0.02149	0.04767
	A2_N	0.01931	0.02011	0.04653
	B1	0.00740	0.00722	0.01981
	B1	0.02593	0.02570	0.03833
	B2	0.00457	0.00452	0.01714
	B2	0.01947	0.01944	0.03214

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00450	0.00502	0.01748
	A1_N	0.00753	0.00800	0.02050
	A2_N	0.00449	0.00552	0.02011
	A2_N	0.00669	0.00770	0.02229
	B1	0.00599	0.00592	0.00885
	B1	0.00139	0.00131	0.00411
	B2	0.00522	0.00527	0.00856
	B2	0.00139	0.00143	0.00451
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00763	0.00831	0.02199
	A1_N	0.00974	0.01032	0.02398
	A2_N	0.00782	0.00906	0.02452
	A2_N	0.00893	0.01008	0.02553
	B1	0.01146	0.01135	0.01758
	B1	0.00225	0.00204	0.00740
	B2	0.00958	0.00956	0.01554
	B2	0.00228	0.00225	0.00825
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01590	0.01693	0.03653
	A1_N	0.01855	0.01942	0.03907
	A2_N	0.01554	0.01759	0.04405
	A2_N	0.01652	0.01868	0.04493
	B1	0.02257	0.02227	0.03447
	B1	0.00399	0.00363	0.01474
	B2	0.01882	0.01897	0.03122
	B2	0.00402	0.00400	0.01603

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)	0.00136	0.00109	0.00104
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00134	-0.00159	-0.00165
	(!A2_N * B1 * B2 * !Y)	0.00579	0.00609	0.01864
	(!A2_N * B1 * B2 * !Y)	0.00147	0.00177	0.01436
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00172	0.00146	0.00140
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00129	-0.00155	-0.00159
	(!A2_N * B1 * B2 * !Y)	0.00726	0.00759	0.02159
	(!A2_N * B1 * B2 * !Y)	0.00255	0.00291	0.01692
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00225	0.00164	0.00151
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00252	-0.00316	-0.00326
	(!A2_N * B1 * B2 * !Y)	0.01292	0.01308	0.03426
	(!A2_N * B1 * B2 * !Y)	0.00501	0.00517	0.02645

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)	-0.00098	-0.00098	-0.00098
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00170	0.00172	0.00171
	(!A2_N * B1 * B2 * !Y)	0.00151	0.00175	0.01436
	(!A2_N * B1 * B2 * !Y)	0.00580	0.00605	0.01866
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00166	0.00168	0.00167
	(!A2_N * B1 * B2 * !Y)	0.00257	0.00278	0.01656
	(!A2_N * B1 * B2 * !Y)	0.00722	0.00745	0.02123
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00137	-0.00136	-0.00135
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00340	0.00339	0.00341
	(!A2_N * B1 * B2 * !Y)	0.00573	0.00586	0.02722
	(!A2_N * B1 * B2 * !Y)	0.01351	0.01366	0.03502

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)	0.00122	0.00123	0.00122
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00078	-0.00078	-0.00078
	(!A1_N * B1 * B2 * !Y)	0.00416	0.00462	0.01947
	(!A1_N * B1 * B2 * !Y)	0.00066	0.00112	0.01598
sky130_fd_sc_hs__a2bb2oi_2	(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) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(!A1_N * B1 * B2 * !Y)	0.00548	0.00585	0.02201
	(!A1_N * B1 * B2 * !Y)	0.00175	0.00210	0.01829
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00202	0.00204	0.00204
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00155	-0.00157	-0.00157
	(!A1_N * B1 * B2 * !Y)	0.00892	0.00928	0.03467
	(!A1_N * B1 * B2 * !Y)	0.00264	0.00298	0.02841

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)	-0.00115	-0.00115	-0.00119
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00085	0.00085	0.00081
	(!A1_N * B1 * B2 * !Y)	0.00149	0.00232	0.01755
	(!A1_N * B1 * B2 * !Y)	0.00497	0.00581	0.02103
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00131	-0.00131	-0.00135
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00085	0.00085	0.00082
	(!A1_N * B1 * B2 * !Y)	0.00275	0.00352	0.01998
	(!A1_N * B1 * B2 * !Y)	0.00646	0.00724	0.02369
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00180	-0.00181	-0.00194
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00179	0.00178	0.00168
	(!A1_N * B1 * B2 * !Y)	0.00533	0.00657	0.03300
	(!A1_N * B1 * B2 * !Y)	0.01154	0.01281	0.03924

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)	0.00132	0.00132	0.00132
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00183	-0.00183	-0.00183
	(!A1_N * !A2_N * B2 * !Y)	0.00169	0.00141	0.00137
	(!A1_N * !A2_N * B2 * !Y)	-0.00149	-0.00178	-0.00182
	(!A1_N * !A2_N * !B2 * !Y)	0.00132	0.00133	0.00132
	(!A1_N * !A2_N * !B2 * !Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00252	0.00255	0.00253
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00370	-0.00372	-0.00370
	(!A1_N * !A2_N * B2 * !Y)	0.00328	0.00273	0.00265
	(!A1_N * !A2_N * B2 * !Y)	-0.00301	-0.00361	-0.00368
	(!A1_N * !A2_N * !B2 * !Y)	0.00252	0.00255	0.00253
	(!A1_N * !A2_N * !B2 * !Y)	-0.00370	-0.00372	-0.00371
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00505	0.00510	0.00506
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00744	-0.00746	-0.00741
	(!A1_N * !A2_N * B2 * !Y)	0.00660	0.00547	0.00530
	(!A1_N * !A2_N * B2 * !Y)	-0.00600	-0.00721	-0.00737
	(!A1_N * !A2_N * !B2 * !Y)	0.00502	0.00507	0.00503
	(!A1_N * !A2_N * !B2 * !Y)	-0.00742	-0.00746	-0.00743

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)	-0.00121	-0.00130	-0.00131
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00193	0.00189	0.00185
	(!A1_N * !A2_N * B2 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1_N * !A2_N * B2 * !Y)	0.00183	0.00184	0.00184
	(!A1_N * !A2_N * !B2 * !Y)	-0.00129	-0.00132	-0.00131
	(!A1_N * !A2_N * !B2 * !Y)	0.00185	0.00188	0.00186
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00230	-0.00250	-0.00253
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00391	0.00381	0.00374
	(!A1_N * !A2_N * B2 * !Y)	-0.00261	-0.00260	-0.00258
	(!A1_N * !A2_N * B2 * !Y)	0.00371	0.00372	0.00372
	(!A1_N * !A2_N * !B2 * !Y)	-0.00246	-0.00252	-0.00252
	(!A1_N * !A2_N * !B2 * !Y)	0.00374	0.00379	0.00375
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00458	-0.00499	-0.00505
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00788	0.00765	0.00750
	(!A1_N * !A2_N * B2 * !Y)	-0.00520	-0.00520	-0.00517
	(!A1_N * !A2_N * B2 * !Y)	0.00742	0.00744	0.00744
	(!A1_N * !A2_N * !B2 * !Y)	-0.00493	-0.00505	-0.00503
	(!A1_N * !A2_N * !B2 * !Y)	0.00748	0.00759	0.00751

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)	0.00059	0.00059	0.00057
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00209	-0.00210	-0.00214
	(!A1_N * !A2_N * B1 * !Y)	0.00168	0.00141	0.00137
	(!A1_N * !A2_N * B1 * !Y)	-0.00159	-0.00189	-0.00192
	(!A1_N * !A2_N * !B1 * !Y)	0.00131	0.00132	0.00131
	(!A1_N * !A2_N * !B1 * !Y)	-0.00194	-0.00195	-0.00194
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00101	0.00101	0.00094
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00408	-0.00409	-0.00422
	(!A1_N * !A2_N * B1 * !Y)	0.00324	0.00272	0.00264
	(!A1_N * !A2_N * B1 * !Y)	-0.00300	-0.00358	-0.00365
	(!A1_N * !A2_N * !B1 * !Y)	0.00251	0.00254	0.00252
	(!A1_N * !A2_N * !B1 * !Y)	-0.00366	-0.00369	-0.00368
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00189	0.00189	0.00178
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00834	-0.00835	-0.00859
	(!A1_N * !A2_N * B1 * !Y)	0.00654	0.00543	0.00526
	(!A1_N * !A2_N * B1 * !Y)	-0.00602	-0.00724	-0.00739
	(!A1_N * !A2_N * !B1 * !Y)	0.00500	0.00504	0.00501
	(!A1_N * !A2_N * !B1 * !Y)	-0.00744	-0.00748	-0.00745

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)	-0.00055	-0.00055	-0.00054
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00216	0.00218	0.00216
	(!A1_N * !A2_N * B1 * !Y)	-0.00134	-0.00134	-0.00133
	(!A1_N * !A2_N * B1 * !Y)	0.00195	0.00195	0.00195
	(!A1_N * !A2_N * !B1 * !Y)	-0.00129	-0.00131	-0.00131
	(!A1_N * !A2_N * !B1 * !Y)	0.00197	0.00199	0.00196
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00090	-0.00090	-0.00089
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00427	0.00428	0.00426
	(!A1_N * !A2_N * B1 * !Y)	-0.00260	-0.00260	-0.00257
	(!A1_N * !A2_N * B1 * !Y)	0.00369	0.00370	0.00369
	(!A1_N * !A2_N * !B1 * !Y)	-0.00246	-0.00251	-0.00252
	(!A1_N * !A2_N * !B1 * !Y)	0.00373	0.00374	0.00372
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00169	-0.00171	-0.00168
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00865	0.00877	0.00866
	(!A1_N * !A2_N * B1 * !Y)	-0.00518	-0.00517	-0.00513
	(!A1_N * !A2_N * B1 * !Y)	0.00747	0.00747	0.00747
	(!A1_N * !A2_N * !B1 * !Y)	-0.00491	-0.00500	-0.00501
	(!A1_N * !A2_N * !B1 * !Y)	0.00756	0.00756	0.00754

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00242	0.00249	0.00265	0.00257	0.80359
sky130_fd_sc_hs__a2bb2o_2	0.00254	0.00259	0.00279	0.00297	1.44709
sky130_fd_sc_hs__a2bb2o_4	0.00279	0.00295	0.00504	0.00506	3.04273

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	2.46148	3.97903
sky130_fd_sc_hs__a2bb2o_2	0.00000	2.95163	4.19078
sky130_fd_sc_hs__a2bb2o_4	0.00000	4.63017	5.58310

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)	0.25536	0.94224	7.72758
	A2_N->X (FR)	0.23500	0.94050	7.77028
	B1->X (RR)	0.14187	0.83821	7.58665
	B2->X (RR)	0.13461	0.84859	7.62302
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.26104	0.84421	7.58010
	A2_N->X (FR)	0.24111	0.84214	7.62451
	B1->X (RR)	0.14020	0.73941	7.39006
	B2->X (RR)	0.13539	0.75970	7.45193
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.33076	0.86286	7.98370
	A2_N->X (FR)	0.31126	0.86877	8.03910
	B1->X (RR)	0.15485	0.67971	7.65090
	B2->X (RR)	0.14575	0.69591	7.71371

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)	0.25360	0.70544	3.94676
	A2_N->X (RF)	0.24263	0.66934	3.79031
	B1->X (FF)	0.22976	0.72842	4.45537
	B2->X (FF)	0.19913	0.68140	4.35348
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.30639	0.72869	3.79592
	A2_N->X (RF)	0.29517	0.68970	3.63421
	B1->X (FF)	0.28177	0.76865	4.50865
	B2->X (FF)	0.25214	0.72566	4.39938
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.29378	0.68739	4.02742
	A2_N->X (RF)	0.28224	0.65324	3.87408
	B1->X (FF)	0.27897	0.72577	4.72372
	B2->X (FF)	0.24419	0.67736	4.60644

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	0.00793	0.00829	0.02120
	A1_N	0.01076	0.01116	0.02439
	A2_N	0.00787	0.00888	0.02479
	A2_N	0.00984	0.01088	0.02714
	B1	0.00919	0.00947	0.02176
	B1	0.00469	0.00497	0.01742
	B2	0.00828	0.00876	0.02252
	B2	0.00468	0.00518	0.01909
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01058	0.01131	0.02393
	A1_N	0.01358	0.01433	0.02739
	A2_N	0.01064	0.01194	0.02784
	A2_N	0.01266	0.01399	0.03047
	B1	0.01197	0.01250	0.02526
	B1	0.00739	0.00793	0.02081
	B2	0.01119	0.01184	0.02599
	B2	0.00740	0.00820	0.02230
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01778	0.01870	0.03289
	A1_N	0.02012	0.02113	0.03589
	A2_N	0.01768	0.01921	0.03654
	A2_N	0.01906	0.02065	0.03860
	B1	0.02213	0.02299	0.04687
	B1	0.01363	0.01449	0.03904
	B2	0.02048	0.02167	0.04859
	B2	0.01364	0.01484	0.04243

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01166	0.01214	0.02537
	A1_N	0.00873	0.00922	0.02218
	A2_N	0.00991	0.01051	0.02596
	A2_N	0.00784	0.00843	0.02371
	B1	0.00461	0.00494	0.01775
	B1	0.00908	0.00941	0.02194
	B2	0.00431	0.00461	0.01805
	B2	0.00790	0.00819	0.02132
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01430	0.01481	0.02760
	A1_N	0.01118	0.01171	0.02444
	A2_N	0.01255	0.01322	0.02866
	A2_N	0.01041	0.01107	0.02607
	B1	0.00711	0.00746	0.02057
	B1	0.01166	0.01199	0.02489
	B2	0.00668	0.00699	0.02110
	B2	0.01046	0.01077	0.02405
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02422	0.02506	0.04035
	A1_N	0.02163	0.02248	0.03773
	A2_N	0.02223	0.02345	0.04215
	A2_N	0.02061	0.02157	0.03885
	B1	0.01504	0.01558	0.04156
	B1	0.02347	0.02400	0.04821
	B2	0.01372	0.01431	0.03951
	B2	0.02058	0.02115	0.04635

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)	0.00145	0.00118	0.00112
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00125	-0.00151	-0.00156
	(!A2_N * B1 * B2 * X)	0.00561	0.00592	0.01848
	(!A2_N * B1 * B2 * X)	0.00145	0.00174	0.01435
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00149	0.00122	0.00116
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00132	-0.00158	-0.00163
	(!A2_N * B1 * B2 * X)	0.00573	0.00602	0.01848
	(!A2_N * B1 * B2 * X)	0.00137	0.00165	0.01415
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00166	0.00138	0.00133
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00144	-0.00171	-0.00176
	(!A2_N * B1 * B2 * X)	0.00741	0.00775	0.02175
	(!A2_N * B1 * B2 * X)	0.00249	0.00282	0.01686

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)	-0.00104	-0.00105	-0.00104
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00163	0.00165	0.00164
	(!A2_N * B1 * B2 * X)	0.00148	0.00173	0.01435
	(!A2_N * B1 * B2 * X)	0.00562	0.00588	0.01850
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00171	0.00173	0.00172
	(!A2_N * B1 * B2 * X)	0.00141	0.00164	0.01418
	(!A2_N * B1 * B2 * X)	0.00575	0.00599	0.01852
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00123	-0.00123	-0.00122
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00187	0.00186	0.00187
	(!A2_N * B1 * B2 * X)	0.00132	0.00151	0.01536
	(!A2_N * B1 * B2 * X)	0.00621	0.00642	0.02026

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)	0.00122	0.00123	0.00123
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(!A1_N * B1 * B2 * X)	0.00391	0.00434	0.01926
	(!A1_N * B1 * B2 * X)	0.00059	0.00102	0.01595
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00124	0.00124	0.00124
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00073	-0.00073	-0.00073
	(!A1_N * B1 * B2 * X)	0.00399	0.00446	0.01926
	(!A1_N * B1 * B2 * X)	0.00058	0.00106	0.01587
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00150	0.00151	0.00150
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1_N * B1 * B2 * X)	0.00558	0.00597	0.02204
	(!A1_N * B1 * B2 * X)	0.00159	0.00198	0.01807

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)	-0.00113	-0.00114	-0.00118
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00082	0.00082	0.00079
	(!A1_N * B1 * B2 * X)	0.00146	0.00231	0.01750
	(!A1_N * B1 * B2 * X)	0.00474	0.00561	0.02079
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00114	-0.00115	-0.00119
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00082	0.00082	0.00079
	(!A1_N * B1 * B2 * X)	0.00146	0.00229	0.01745
	(!A1_N * B1 * B2 * X)	0.00483	0.00569	0.02083
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00137	-0.00137	-0.00141
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00093	0.00093	0.00089
	(!A1_N * B1 * B2 * X)	0.00130	0.00210	0.01831
	(!A1_N * B1 * B2 * X)	0.00525	0.00606	0.02226

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)	0.00137	0.00138	0.00137
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00165	-0.00166	-0.00165
	(!A1_N * !A2_N * B2 * X)	0.00173	0.00147	0.00142
	(!A1_N * !A2_N * B2 * X)	-0.00131	-0.00159	-0.00163
	(!A1_N * !A2_N * !B2 * X)	0.00137	0.00138	0.00137
	(!A1_N * !A2_N * !B2 * X)	-0.00164	-0.00165	-0.00165
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00133	0.00135	0.00134
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00166	-0.00167	-0.00167
	(!A1_N * !A2_N * B2 * X)	0.00172	0.00145	0.00140
	(!A1_N * !A2_N * B2 * X)	-0.00132	-0.00161	-0.00166
	(!A1_N * !A2_N * !B2 * X)	0.00134	0.00134	0.00133
	(!A1_N * !A2_N * !B2 * X)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00223	0.00225	0.00224
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00335	-0.00337	-0.00335
	(!A1_N * !A2_N * B2 * X)	0.00303	0.00246	0.00235
	(!A1_N * !A2_N * B2 * X)	-0.00261	-0.00322	-0.00332
	(!A1_N * !A2_N * !B2 * X)	0.00223	0.00226	0.00224
	(!A1_N * !A2_N * !B2 * X)	-0.00334	-0.00336	-0.00335

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)	-0.00126	-0.00134	-0.00135
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00175	0.00171	0.00168
	(!A1_N * !A2_N * B2 * X)	-0.00137	-0.00137	-0.00136
	(!A1_N * !A2_N * B2 * X)	0.00168	0.00169	0.00169
	(!A1_N * !A2_N * !B2 * X)	-0.00132	-0.00134	-0.00134
	(!A1_N * !A2_N * !B2 * X)	0.00168	0.00171	0.00169
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00120	-0.00129	-0.00130
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00181	0.00176	0.00172
	(!A1_N * !A2_N * B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1_N * !A2_N * B2 * X)	0.00170	0.00171	0.00171
	(!A1_N * !A2_N * !B2 * X)	-0.00128	-0.00131	-0.00131
	(!A1_N * !A2_N * !B2 * X)	0.00171	0.00174	0.00172
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00197	-0.00215	-0.00218
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00359	0.00350	0.00344
	(!A1_N * !A2_N * B2 * X)	-0.00224	-0.00224	-0.00222
	(!A1_N * !A2_N * B2 * X)	0.00341	0.00343	0.00343
	(!A1_N * !A2_N * !B2 * X)	-0.00213	-0.00218	-0.00218
	(!A1_N * !A2_N * !B2 * X)	0.00343	0.00347	0.00344

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)	0.00055	0.00055	0.00053
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00183	-0.00184	-0.00187
	(!A1_N * !A2_N * B1 * X)	0.00144	0.00116	0.00111
	(!A1_N * !A2_N * B1 * X)	-0.00144	-0.00171	-0.00176
	(!A1_N * !A2_N * !B1 * X)	0.00106	0.00107	0.00106
	(!A1_N * !A2_N * !B1 * X)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00054	0.00055	0.00053
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00195	-0.00198	-0.00201
	(!A1_N * !A2_N * B1 * X)	0.00173	0.00143	0.00138
	(!A1_N * !A2_N * B1 * X)	-0.00141	-0.00169	-0.00175
	(!A1_N * !A2_N * !B1 * X)	0.00131	0.00132	0.00131
	(!A1_N * !A2_N * !B1 * X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00094	0.00095	0.00089
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00366	-0.00369	-0.00378
	(!A1_N * !A2_N * B1 * X)	0.00302	0.00246	0.00235
	(!A1_N * !A2_N * B1 * X)	-0.00262	-0.00322	-0.00332
	(!A1_N * !A2_N * !B1 * X)	0.00222	0.00224	0.00223
	(!A1_N * !A2_N * !B1 * X)	-0.00333	-0.00337	-0.00334

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)	-0.00048	-0.00049	-0.00049
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00189	0.00191	0.00190
	(!A1_N * !A2_N * B1 * X)	-0.00105	-0.00106	-0.00105
	(!A1_N * !A2_N * B1 * X)	0.00180	0.00182	0.00182
	(!A1_N * !A2_N * !B1 * X)	-0.00101	-0.00104	-0.00103
	(!A1_N * !A2_N * !B1 * X)	0.00183	0.00185	0.00182
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00205	0.00206	0.00205
	(!A1_N * !A2_N * B1 * X)	-0.00132	-0.00132	-0.00131
	(!A1_N * !A2_N * B1 * X)	0.00179	0.00181	0.00181
	(!A1_N * !A2_N * !B1 * X)	-0.00126	-0.00128	-0.00128
	(!A1_N * !A2_N * !B1 * X)	0.00181	0.00183	0.00182
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00385	0.00388	0.00386
	(!A1_N * !A2_N * B1 * X)	-0.00225	-0.00225	-0.00223
	(!A1_N * !A2_N * B1 * X)	0.00342	0.00342	0.00342
	(!A1_N * !A2_N * !B1 * X)	-0.00214	-0.00217	-0.00218
	(!A1_N * !A2_N * !B1 * X)	0.00345	0.00345	0.00344

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00305	0.00310	0.00301	0.00318	0.00304	0.24861
sky130_fd_sc_hs__a311oi_2	0.00580	0.00561	0.00542	0.00469	0.00460	0.46991
sky130_fd_sc_hs__a311oi_4	0.01125	0.01096	0.01096	0.00886	0.00900	0.86020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.62884	1.41359
sky130_fd_sc_hs__a311oi_2	0.00000	1.06120	2.81521
sky130_fd_sc_hs__a311oi_4	0.00000	2.01556	5.44971

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)	0.22976	1.21218	9.11108
	A2->Y (FR)	0.28065	1.28493	9.32481
	A3->Y (FR)	0.30344	1.29922	9.23035
	B1->Y (FR)	0.24375	1.27298	9.94000
	C1->Y (FR)	0.18509	1.23558	10.13740
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.19247	1.00784	8.93490
	A2->Y (FR)	0.23632	1.05262	9.01901
	A3->Y (FR)	0.27516	1.10149	9.07128
	B1->Y (FR)	0.23380	1.09080	9.69206
	C1->Y (FR)	0.16434	1.03860	9.89530
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.18035	0.84733	8.59089
	A2->Y (FR)	0.22918	0.90241	8.73823
	A3->Y (FR)	0.27354	0.95997	8.87800
	B1->Y (FR)	0.22898	0.95009	9.57361
	C1->Y (FR)	0.16046	0.90649	9.82269

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.09345	0.69337	5.77145
	A2->Y (RF)	0.10803	0.66884	5.34933
	A3->Y (RF)	0.11280	0.62707	4.78398
	B1->Y (RF)	0.04139	0.44875	3.89836
	C1->Y (RF)	0.03530	0.43456	3.88439
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.08165	0.64316	6.01972
	A2->Y (RF)	0.09582	0.60166	5.40200
	A3->Y (RF)	0.10363	0.56573	4.83937
	B1->Y (RF)	0.05588	0.55030	5.41725
	C1->Y (RF)	0.04036	0.52321	5.37835
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.07938	0.58137	5.95868
	A2->Y (RF)	0.09459	0.53899	5.32368
	A3->Y (RF)	0.10225	0.49650	4.67965
	B1->Y (RF)	0.05115	0.48279	5.20487
	C1->Y (RF)	0.03832	0.46800	5.37151

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00073	0.00057	0.00365
	A1	0.00759	0.00743	0.01053
	A2	0.00138	0.00119	0.00428
	A2	0.00913	0.00895	0.01204
	A3	0.00166	0.00153	0.00468
	A3	0.01030	0.01017	0.01332
	B1	0.00057	0.00051	0.00482
	B1	0.00917	0.00904	0.01286
	C1	0.00048	0.00087	0.00676
	C1	0.00809	0.00833	0.01368
sky130_fd_sc_hs__a311oi_2	A1	0.00036	0.00007	0.00607
	A1	0.01308	0.01282	0.01881
	A2	0.00163	0.00130	0.00733
	A2	0.01599	0.01552	0.02167
	A3	0.00301	0.00273	0.00877
	A3	0.01896	0.01867	0.02476
	B1	0.00100	0.00095	0.00583
	B1	0.01616	0.01603	0.02032
	C1	0.00086	0.00146	0.00869
	C1	0.01390	0.01422	0.02090

sky130_fd_sc_hs__a311oi_4	**A1**	0.00008	-0.00046	0.01192
	A1	0.02504	0.02449	0.03689
	A2	0.00265	0.00195	0.01435
	A2	0.03103	0.03025	0.04272
	A3	0.00510	0.00452	0.01695
	A3	0.03695	0.03639	0.04872
	B1	0.00137	0.00137	0.01161
	B1	0.03104	0.03088	0.03979
	C1	0.00112	0.00249	0.01683
	C1	0.02674	0.02756	0.04066

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00944	0.00937	0.01265
	A1	0.00266	0.00256	0.00576
	A2	0.01035	0.01016	0.01303
	A2	0.00264	0.00244	0.00526
	A3	0.01125	0.01107	0.01412
	A3	0.00260	0.00240	0.00539
	B1	0.00755	0.00768	0.01184
	B1	0.00095	0.00106	0.00531
	C1	0.00548	0.00577	0.00979
	C1	-0.00012	0.00015	0.00425

sky130_fd_sc_hs__a311oi_2	**A1**	0.01789	0.01773	0.02379
	A1	0.00528	0.00510	0.01123
	A2	0.01962	0.01926	0.02525
	A2	0.00531	0.00494	0.01055
	A3	0.02129	0.02091	0.02670
	A3	0.00530	0.00490	0.01078
	B1	0.01414	0.01428	0.01944
	B1	0.00166	0.00165	0.00699
	C1	0.00902	0.00958	0.01482
	C1	-0.00126	-0.00083	0.00445
sky130_fd_sc_hs__a311oi_4	**A1**	0.03456	0.03411	0.04654
	A1	0.00988	0.00944	0.02192
	A2	0.03806	0.03733	0.04934
	A2	0.00985	0.00911	0.02048
	A3	0.04171	0.04093	0.05287
	A3	0.00980	0.00898	0.02110
	B1	0.02734	0.02737	0.03826
	B1	0.00269	0.00291	0.01383
	C1	0.01778	0.01896	0.02931
	C1	-0.00262	-0.00170	0.00894

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)**	0.00137	0.00137	0.00136
	(A2 * A3 * B1 * C1 * !Y)	-0.00171	-0.00177	-0.00176
	(A2 * A3 * B1 * !C1 * !Y)	0.00148	0.00137	0.00137
	(A2 * A3 * B1 * !C1 * !Y)	-0.00159	-0.00177	-0.00177
	(A2 * A3 * !B1 * C1 * !Y)	0.00150	0.00140	0.00137
	(A2 * A3 * !B1 * C1 * !Y)	-0.00150	-0.00174	-0.00173
	(A2 * !A3 * B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(A2 * !A3 * B1 * C1 * !Y)	-0.00182	-0.00183	-0.00182
	(A2 * !A3 * B1 * !C1 * !Y)	0.00126	0.00128	0.00127
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A2 * !A3 * !B1 * C1 * !Y)	0.00126	0.00128	0.00127
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A2 * !A3 * !B1 * !C1 * Y)	0.00047	0.00047	0.00042
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00204	-0.00205	-0.00214
	(!A2 * B1 * C1 * !Y)	0.00130	0.00131	0.00131
	(!A2 * B1 * C1 * !Y)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * !C1 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * !C1 * !Y)	-0.00182	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !Y)	0.00131	0.00132	0.00131
	(!A2 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * Y)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * Y)	-0.00210	-0.00211	-0.00215

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00267	0.00266	0.00266
	(A2 * A3 * B1 * C1 * !Y)	-0.00356	-0.00367	-0.00365
	(A2 * A3 * B1 * !C1 * !Y)	0.00287	0.00267	0.00267
	(A2 * A3 * B1 * !C1 * !Y)	-0.00336	-0.00366	-0.00367
	(A2 * A3 * !B1 * C1 * !Y)	0.00291	0.00273	0.00268
	(A2 * A3 * !B1 * C1 * !Y)	-0.00318	-0.00358	-0.00358
	(A2 * !A3 * B1 * C1 * !Y)	0.00247	0.00249	0.00247
	(A2 * !A3 * B1 * C1 * !Y)	-0.00377	-0.00379	-0.00377
	(A2 * !A3 * B1 * !C1 * !Y)	0.00246	0.00248	0.00247
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00376	-0.00377	-0.00376
	(A2 * !A3 * !B1 * C1 * !Y)	0.00246	0.00249	0.00247
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00375	-0.00378	-0.00376
	(A2 * !A3 * !B1 * !C1 * Y)	0.00104	0.00103	0.00091
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00407	-0.00409	-0.00431
	(!A2 * B1 * C1 * !Y)	0.00255	0.00255	0.00255
	(!A2 * B1 * C1 * !Y)	-0.00378	-0.00377	-0.00377
	(!A2 * B1 * !C1 * !Y)	0.00255	0.00256	0.00255
	(!A2 * B1 * !C1 * !Y)	-0.00376	-0.00377	-0.00376
	(!A2 * !B1 * C1 * !Y)	0.00255	0.00257	0.00256
	(!A2 * !B1 * C1 * !Y)	-0.00376	-0.00377	-0.00376
	(!A2 * !B1 * !C1 * Y)	0.00099	0.00099	0.00093
	(!A2 * !B1 * !C1 * Y)	-0.00424	-0.00426	-0.00434

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00522	0.00523	0.00521
	(A2 * A3 * B1 * C1 * !Y)	-0.00704	-0.00729	-0.00723
	(A2 * A3 * B1 * !C1 * !Y)	0.00564	0.00526	0.00523
	(A2 * A3 * B1 * !C1 * !Y)	-0.00661	-0.00728	-0.00728
	(A2 * A3 * !B1 * C1 * !Y)	0.00573	0.00531	0.00524
	(A2 * A3 * !B1 * C1 * !Y)	-0.00625	-0.00710	-0.00709
	(A2 * !A3 * B1 * C1 * !Y)	0.00481	0.00485	0.00482
	(A2 * !A3 * B1 * C1 * !Y)	-0.00748	-0.00750	-0.00747
	(A2 * !A3 * B1 * !C1 * !Y)	0.00480	0.00484	0.00480
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00747	-0.00750	-0.00746
	(A2 * !A3 * !B1 * C1 * !Y)	0.00480	0.00483	0.00480
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00746	-0.00749	-0.00745
	(A2 * !A3 * !B1 * !C1 * Y)	0.00195	0.00194	0.00172
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00803	-0.00804	-0.00852
	(!A2 * B1 * C1 * !Y)	0.00498	0.00502	0.00498
	(!A2 * B1 * C1 * !Y)	-0.00748	-0.00751	-0.00747
	(!A2 * B1 * !C1 * !Y)	0.00497	0.00501	0.00499
	(!A2 * B1 * !C1 * !Y)	-0.00745	-0.00748	-0.00746
	(!A2 * !B1 * C1 * !Y)	0.00498	0.00501	0.00499
	(!A2 * !B1 * C1 * !Y)	-0.00744	-0.00747	-0.00745
	(!A2 * !B1 * !C1 * Y)	0.00188	0.00187	0.00177
	(!A2 * !B1 * !C1 * Y)	-0.00837	-0.00838	-0.00858

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)**	-0.00136	-0.00136	-0.00136
	(A2 * A3 * B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(A2 * A3 * B1 * !C1 * !Y)	-0.00135	-0.00136	-0.00135
	(A2 * A3 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(A2 * A3 * !B1 * C1 * !Y)	-0.00134	-0.00136	-0.00134
	(A2 * A3 * !B1 * C1 * !Y)	0.00171	0.00174	0.00173
	(A2 * !A3 * B1 * C1 * !Y)	-0.00119	-0.00127	-0.00126
	(A2 * !A3 * B1 * C1 * !Y)	0.00182	0.00184	0.00182
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00117	-0.00128	-0.00127
	(A2 * !A3 * B1 * !C1 * !Y)	0.00182	0.00185	0.00183
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00118	-0.00128	-0.00127
	(A2 * !A3 * !B1 * C1 * !Y)	0.00184	0.00185	0.00183
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00040	-0.00040	-0.00040
	(A2 * !A3 * !B1 * !C1 * Y)	0.00216	0.00218	0.00217
	(!A2 * B1 * C1 * !Y)	-0.00130	-0.00131	-0.00131
	(!A2 * B1 * C1 * !Y)	0.00183	0.00184	0.00182
	(!A2 * B1 * !C1 * !Y)	-0.00129	-0.00132	-0.00131
	(!A2 * B1 * !C1 * !Y)	0.00183	0.00185	0.00183
	(!A2 * !B1 * C1 * !Y)	-0.00129	-0.00131	-0.00131
	(!A2 * !B1 * C1 * !Y)	0.00184	0.00183	0.00183
	(!A2 * !B1 * !C1 * Y)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * Y)	0.00216	0.00218	0.00217

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00265	-0.00266	-0.00265
	(A2 * A3 * B1 * C1 * !Y)	0.00365	0.00367	0.00365
	(A2 * A3 * B1 * !C1 * !Y)	-0.00264	-0.00265	-0.00264
	(A2 * A3 * B1 * !C1 * !Y)	0.00366	0.00369	0.00367
	(A2 * A3 * !B1 * C1 * !Y)	-0.00263	-0.00264	-0.00262
	(A2 * A3 * !B1 * C1 * !Y)	0.00356	0.00358	0.00358
	(A2 * !A3 * B1 * C1 * !Y)	-0.00231	-0.00249	-0.00247
	(A2 * !A3 * B1 * C1 * !Y)	0.00378	0.00383	0.00378
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00228	-0.00248	-0.00247
	(A2 * !A3 * B1 * !C1 * !Y)	0.00378	0.00379	0.00379
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00227	-0.00249	-0.00247
	(A2 * !A3 * !B1 * C1 * !Y)	0.00378	0.00380	0.00380
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00086	-0.00086	-0.00085
	(A2 * !A3 * !B1 * !C1 * Y)	0.00436	0.00438	0.00437
	(!A2 * B1 * C1 * !Y)	-0.00253	-0.00255	-0.00255
	(!A2 * B1 * C1 * !Y)	0.00380	0.00378	0.00378
	(!A2 * B1 * !C1 * !Y)	-0.00251	-0.00256	-0.00255
	(!A2 * B1 * !C1 * !Y)	0.00378	0.00381	0.00379
	(!A2 * !B1 * C1 * !Y)	-0.00251	-0.00256	-0.00256
	(!A2 * !B1 * C1 * !Y)	0.00379	0.00381	0.00380
	(!A2 * !B1 * !C1 * Y)	-0.00088	-0.00089	-0.00088
	(!A2 * !B1 * !C1 * Y)	0.00436	0.00439	0.00437

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00520	-0.00522	-0.00519
	(A2 * A3 * B1 * C1 * !Y)	0.00726	0.00729	0.00723
	(A2 * A3 * B1 * !C1 * !Y)	-0.00518	-0.00519	-0.00517
	(A2 * A3 * B1 * !C1 * !Y)	0.00730	0.00732	0.00728
	(A2 * A3 * !B1 * C1 * !Y)	-0.00516	-0.00517	-0.00514
	(A2 * A3 * !B1 * C1 * !Y)	0.00706	0.00710	0.00709
	(A2 * !A3 * B1 * C1 * !Y)	-0.00448	-0.00485	-0.00482
	(A2 * !A3 * B1 * C1 * !Y)	0.00753	0.00750	0.00750
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00442	-0.00484	-0.00480
	(A2 * !A3 * B1 * !C1 * !Y)	0.00751	0.00753	0.00751
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00439	-0.00483	-0.00480
	(A2 * !A3 * !B1 * C1 * !Y)	0.00751	0.00755	0.00752
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00162	-0.00164	-0.00163
	(A2 * !A3 * !B1 * !C1 * Y)	0.00858	0.00868	0.00862
	(!A2 * B1 * C1 * !Y)	-0.00493	-0.00502	-0.00498
	(!A2 * B1 * C1 * !Y)	0.00748	0.00752	0.00750
	(!A2 * B1 * !C1 * !Y)	-0.00493	-0.00499	-0.00499
	(!A2 * B1 * !C1 * !Y)	0.00754	0.00751	0.00751
	(!A2 * !B1 * C1 * !Y)	-0.00492	-0.00501	-0.00499
	(!A2 * !B1 * C1 * !Y)	0.00754	0.00761	0.00752
	(!A2 * !B1 * !C1 * Y)	-0.00168	-0.00170	-0.00168
	(!A2 * !B1 * !C1 * Y)	0.00860	0.00869	0.00864

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)**	0.00142	0.00142	0.00142
	(A1 * A3 * B1 * C1 * !Y)	-0.00170	-0.00177	-0.00176
	(A1 * A3 * B1 * !C1 * !Y)	0.00154	0.00143	0.00143
	(A1 * A3 * B1 * !C1 * !Y)	-0.00159	-0.00177	-0.00177
	(A1 * A3 * !B1 * C1 * !Y)	0.00155	0.00145	0.00142
	(A1 * A3 * !B1 * C1 * !Y)	-0.00151	-0.00174	-0.00173
	(A1 * !A3 * B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !A3 * B1 * C1 * !Y)	-0.00182	-0.00182	-0.00182
	(A1 * !A3 * B1 * !C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00182	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00054	0.00054	0.00055
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00199	-0.00199	-0.00197
	(!A1 * A3 * B1 * !Y)	0.00137	0.00137	0.00136
	(!A1 * A3 * B1 * !Y)	-0.00182	-0.00182	-0.00182
	(!A1 * A3 * !B1 * C1 * !Y)	0.00137	0.00138	0.00137
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A3 * !B1 * !C1 * Y)	0.00120	0.00121	0.00120
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00198	-0.00199	-0.00198
	(!A1 * !A3 * B1 * !Y)	0.00086	0.00087	0.00086
	(!A1 * !A3 * B1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00087	0.00088	0.00087
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00068	0.00069	0.00068
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00198	-0.00199	-0.00198

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00264	0.00262	0.00262
	(A1 * A3 * B1 * C1 * !Y)	-0.00352	-0.00363	-0.00361
	(A1 * A3 * B1 * !C1 * !Y)	0.00281	0.00264	0.00263
	(A1 * A3 * B1 * !C1 * !Y)	-0.00330	-0.00362	-0.00364
	(A1 * A3 * !B1 * C1 * !Y)	0.00286	0.00269	0.00263
	(A1 * A3 * !B1 * C1 * !Y)	-0.00312	-0.00356	-0.00354
	(A1 * !A3 * B1 * C1 * !Y)	0.00249	0.00250	0.00249
	(A1 * !A3 * B1 * C1 * !Y)	-0.00374	-0.00375	-0.00374
	(A1 * !A3 * B1 * !C1 * !Y)	0.00250	0.00250	0.00250
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00373	-0.00374	-0.00373
	(A1 * !A3 * !B1 * C1 * !Y)	0.00250	0.00251	0.00250
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00373	-0.00374	-0.00373
	(A1 * !A3 * !B1 * !C1 * Y)	0.00121	0.00121	0.00121
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00375	-0.00375	-0.00372
	(!A1 * A3 * B1 * !Y)	0.00251	0.00252	0.00251
	(!A1 * A3 * B1 * !Y)	-0.00374	-0.00374	-0.00374
	(!A1 * A3 * !B1 * C1 * !Y)	0.00252	0.00253	0.00252
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00373	-0.00374	-0.00372
	(!A1 * A3 * !B1 * !C1 * Y)	0.00252	0.00254	0.00253
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00372	-0.00374	-0.00372
	(!A1 * !A3 * B1 * !Y)	0.00155	0.00155	0.00154
	(!A1 * !A3 * B1 * !Y)	-0.00374	-0.00376	-0.00374
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00156	0.00156	0.00155
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00374	-0.00375	-0.00373
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00151	0.00151	0.00150
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00377	-0.00377	-0.00375

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00521	0.00523	0.00522
	(A1 * A3 * B1 * C1 * !Y)	-0.00696	-0.00725	-0.00719
	(A1 * A3 * B1 * !C1 * !Y)	0.00563	0.00526	0.00525
	(A1 * A3 * B1 * !C1 * !Y)	-0.00657	-0.00722	-0.00723
	(A1 * A3 * !B1 * C1 * !Y)	0.00571	0.00531	0.00525
	(A1 * A3 * !B1 * C1 * !Y)	-0.00622	-0.00704	-0.00705
	(A1 * !A3 * B1 * C1 * !Y)	0.00494	0.00496	0.00494
	(A1 * !A3 * B1 * C1 * !Y)	-0.00743	-0.00745	-0.00742
	(A1 * !A3 * B1 * !C1 * !Y)	0.00495	0.00497	0.00495
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00741	-0.00744	-0.00741
	(A1 * !A3 * !B1 * C1 * !Y)	0.00492	0.00498	0.00496
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00736	-0.00743	-0.00740
	(A1 * !A3 * !B1 * !C1 * Y)	0.00229	0.00231	0.00232
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00739	-0.00744	-0.00737
	(!A1 * A3 * B1 * !Y)	0.00499	0.00501	0.00500
	(!A1 * A3 * B1 * !Y)	-0.00742	-0.00744	-0.00742
	(!A1 * A3 * !B1 * C1 * !Y)	0.00500	0.00506	0.00502
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00738	-0.00743	-0.00740
	(!A1 * A3 * !B1 * !C1 * Y)	0.00501	0.00507	0.00504
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00738	-0.00742	-0.00738
	(!A1 * !A3 * B1 * !Y)	0.00293	0.00296	0.00293
	(!A1 * !A3 * B1 * !Y)	-0.00741	-0.00747	-0.00743
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00295	0.00298	0.00296
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00739	-0.00744	-0.00740
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00286	0.00289	0.00287
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00743	-0.00748	-0.00744

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)**	-0.00142	-0.00142	-0.00142
	(A1 * A3 * B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(A1 * A3 * B1 * !C1 * !Y)	-0.00142	-0.00142	-0.00141
	(A1 * A3 * B1 * !C1 * !Y)	0.00178	0.00178	0.00177
	(A1 * A3 * !B1 * C1 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * A3 * !B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(A1 * !A3 * B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A3 * B1 * C1 * !Y)	0.00183	0.00183	0.00182
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A3 * B1 * !C1 * !Y)	0.00183	0.00183	0.00183
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A3 * !B1 * C1 * !Y)	0.00184	0.00184	0.00183
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00049	-0.00049	-0.00051
	(A1 * !A3 * !B1 * !C1 * Y)	0.00205	0.00206	0.00202
	(!A1 * A3 * B1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * A3 * B1 * !Y)	0.00183	0.00184	0.00182
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00135	-0.00137	-0.00137
	(!A1 * A3 * !B1 * C1 * !Y)	0.00184	0.00185	0.00183
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00108	-0.00118	-0.00120
	(!A1 * A3 * !B1 * !C1 * Y)	0.00211	0.00204	0.00200
	(!A1 * !A3 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(!A1 * !A3 * B1 * !Y)	0.00182	0.00183	0.00182
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00087	-0.00088	-0.00087
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00068	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00206	0.00207	0.00202

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00262	-0.00262	-0.00261
	(A1 * A3 * B1 * C1 * !Y)	0.00363	0.00363	0.00361
	(A1 * A3 * B1 * !C1 * !Y)	-0.00261	-0.00260	-0.00260
	(A1 * A3 * B1 * !C1 * !Y)	0.00365	0.00365	0.00364
	(A1 * A3 * !B1 * C1 * !Y)	-0.00259	-0.00261	-0.00258
	(A1 * A3 * !B1 * C1 * !Y)	0.00353	0.00357	0.00354
	(A1 * !A3 * B1 * C1 * !Y)	-0.00248	-0.00250	-0.00249
	(A1 * !A3 * B1 * C1 * !Y)	0.00376	0.00377	0.00375
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00246	-0.00250	-0.00250
	(A1 * !A3 * B1 * !C1 * !Y)	0.00375	0.00378	0.00376
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00246	-0.00251	-0.00250
	(A1 * !A3 * !B1 * C1 * !Y)	0.00375	0.00380	0.00376
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00108	-0.00109	-0.00112
	(A1 * !A3 * !B1 * !C1 * Y)	0.00387	0.00389	0.00380
	(!A1 * A3 * B1 * !Y)	-0.00249	-0.00252	-0.00251
	(!A1 * A3 * B1 * !Y)	0.00376	0.00376	0.00375
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00248	-0.00252	-0.00252
	(!A1 * A3 * !B1 * C1 * !Y)	0.00377	0.00377	0.00376
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00226	-0.00248	-0.00252
	(!A1 * A3 * !B1 * !C1 * Y)	0.00401	0.00380	0.00376
	(!A1 * !A3 * B1 * !Y)	-0.00155	-0.00155	-0.00154
	(!A1 * !A3 * B1 * !Y)	0.00374	0.00377	0.00375
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00156	-0.00156	-0.00155
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00375	0.00378	0.00376
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00151	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00391	0.00393	0.00381

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00521	-0.00523	-0.00520
	(A1 * A3 * B1 * C1 * !Y)	0.00722	0.00726	0.00719
	(A1 * A3 * B1 * !C1 * !Y)	-0.00520	-0.00520	-0.00518
	(A1 * A3 * B1 * !C1 * !Y)	0.00726	0.00727	0.00723
	(A1 * A3 * !B1 * C1 * !Y)	-0.00517	-0.00518	-0.00515
	(A1 * A3 * !B1 * C1 * !Y)	0.00702	0.00705	0.00705
	(A1 * !A3 * B1 * C1 * !Y)	-0.00491	-0.00496	-0.00494
	(A1 * !A3 * B1 * C1 * !Y)	0.00744	0.00749	0.00745
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00489	-0.00497	-0.00495
	(A1 * !A3 * B1 * !C1 * !Y)	0.00745	0.00756	0.00747
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00488	-0.00498	-0.00496
	(A1 * !A3 * !B1 * C1 * !Y)	0.00746	0.00757	0.00748
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00209	-0.00210	-0.00217
	(A1 * !A3 * !B1 * !C1 * Y)	0.00768	0.00772	0.00754
	(!A1 * A3 * B1 * !Y)	-0.00496	-0.00501	-0.00500
	(!A1 * A3 * B1 * !Y)	0.00747	0.00749	0.00745
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00494	-0.00502	-0.00502
	(!A1 * A3 * !B1 * C1 * !Y)	0.00750	0.00751	0.00747
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00448	-0.00496	-0.00504
	(!A1 * A3 * !B1 * !C1 * Y)	0.00798	0.00758	0.00746
	(!A1 * !A3 * B1 * !Y)	-0.00293	-0.00296	-0.00293
	(!A1 * !A3 * B1 * !Y)	0.00744	0.00748	0.00746
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00295	-0.00298	-0.00296
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00746	0.00750	0.00748
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00286	-0.00289	-0.00287
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00777	0.00780	0.00756

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)**	0.00151	0.00151	0.00150
	(A1 * A2 * B1 * C1 * !Y)	-0.00172	-0.00179	-0.00177
	(A1 * A2 * B1 * !C1 * !Y)	0.00162	0.00151	0.00151
	(A1 * A2 * B1 * !C1 * !Y)	-0.00161	-0.00178	-0.00178
	(A1 * A2 * !B1 * C1 * !Y)	0.00163	0.00154	0.00151
	(A1 * A2 * !B1 * C1 * !Y)	-0.00153	-0.00175	-0.00174
	(A1 * !A2 * !B1 * !C1 * Y)	0.00132	0.00132	0.00132
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00195	-0.00195	-0.00195
	(!A2 * B1 * !Y)	0.00145	0.00145	0.00144
	(!A2 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A2 * !B1 * C1 * !Y)	0.00145	0.00146	0.00145
	(!A2 * !B1 * C1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * B1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * A2 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !B1 * C1 * !Y)	0.00142	0.00143	0.00141
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00196	-0.00196	-0.00195

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00257	0.00258	0.00257
	(A1 * A2 * B1 * C1 * !Y)	-0.00344	-0.00357	-0.00355
	(A1 * A2 * B1 * !C1 * !Y)	0.00274	0.00259	0.00258
	(A1 * A2 * B1 * !C1 * !Y)	-0.00327	-0.00355	-0.00357
	(A1 * A2 * !B1 * C1 * !Y)	0.00279	0.00261	0.00258
	(A1 * A2 * !B1 * C1 * !Y)	-0.00310	-0.00348	-0.00348
	(A1 * !A2 * !B1 * !C1 * Y)	0.00246	0.00248	0.00247
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00365	-0.00367	-0.00365
	(!A2 * B1 * !Y)	0.00246	0.00247	0.00246
	(!A2 * B1 * !Y)	-0.00366	-0.00367	-0.00366
	(!A2 * !B1 * C1 * !Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * C1 * !Y)	-0.00364	-0.00367	-0.00365
	(!A1 * A2 * B1 * !Y)	0.00238	0.00240	0.00238
	(!A1 * A2 * B1 * !Y)	-0.00366	-0.00368	-0.00366
	(!A1 * A2 * !B1 * C1 * !Y)	0.00240	0.00241	0.00239
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00365	-0.00366	-0.00365
	(!A1 * A2 * !B1 * !C1 * Y)	0.00239	0.00241	0.00239
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00365	-0.00366	-0.00365
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00246	0.00247	0.00246
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00366	-0.00367	-0.00366

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00522	0.00521	0.00521
	(A1 * A2 * B1 * C1 * !Y)	-0.00696	-0.00720	-0.00716
	(A1 * A2 * B1 * !C1 * !Y)	0.00561	0.00524	0.00523
	(A1 * A2 * B1 * !C1 * !Y)	-0.00657	-0.00719	-0.00721
	(A1 * A2 * !B1 * C1 * !Y)	0.00568	0.00529	0.00524
	(A1 * A2 * !B1 * C1 * !Y)	-0.00624	-0.00701	-0.00702
	(A1 * !A2 * !B1 * !C1 * Y)	0.00498	0.00502	0.00498
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00738	-0.00741	-0.00737
	(!A2 * B1 * !Y)	0.00494	0.00497	0.00495
	(!A2 * B1 * !Y)	-0.00738	-0.00741	-0.00739
	(!A2 * !B1 * C1 * !Y)	0.00498	0.00501	0.00497
	(!A2 * !B1 * C1 * !Y)	-0.00738	-0.00740	-0.00737
	(!A1 * A2 * B1 * !Y)	0.00480	0.00484	0.00479
	(!A1 * A2 * B1 * !Y)	-0.00740	-0.00743	-0.00739
	(!A1 * A2 * !B1 * C1 * !Y)	0.00482	0.00486	0.00482
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00738	-0.00741	-0.00737
	(!A1 * A2 * !B1 * !C1 * Y)	0.00482	0.00485	0.00482
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00738	-0.00740	-0.00736
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00493	0.00499	0.00495
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00737	-0.00742	-0.00738

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)**	-0.00150	-0.00151	-0.00150
	(A1 * A2 * B1 * C1 * !Y)	0.00177	0.00179	0.00177
	(A1 * A2 * B1 * !C1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * B1 * !C1 * !Y)	0.00178	0.00180	0.00178
	(A1 * A2 * !B1 * C1 * !Y)	-0.00149	-0.00150	-0.00148
	(A1 * A2 * !B1 * C1 * !Y)	0.00173	0.00175	0.00174
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00125	-0.00131	-0.00131
	(A1 * !A2 * !B1 * !C1 * Y)	0.00198	0.00200	0.00197
	(!A2 * B1 * !Y)	-0.00143	-0.00145	-0.00144
	(!A2 * B1 * !Y)	0.00182	0.00186	0.00183
	(!A2 * !B1 * C1 * !Y)	-0.00143	-0.00145	-0.00145
	(!A2 * !B1 * C1 * !Y)	0.00183	0.00186	0.00184
	(!A1 * A2 * B1 * !Y)	-0.00134	-0.00142	-0.00141
	(!A1 * A2 * B1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00142	-0.00141
	(!A1 * A2 * !B1 * C1 * !Y)	0.00183	0.00185	0.00184
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00118	-0.00128	-0.00128
	(!A1 * A2 * !B1 * !C1 * Y)	0.00199	0.00199	0.00197
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00128	-0.00131	-0.00131
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00197	0.00200	0.00197

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00256	-0.00257	-0.00256
	(A1 * A2 * B1 * C1 * !Y)	0.00354	0.00357	0.00355
	(A1 * A2 * B1 * !C1 * !Y)	-0.00256	-0.00254	-0.00255
	(A1 * A2 * B1 * !C1 * !Y)	0.00358	0.00355	0.00357
	(A1 * A2 * !B1 * C1 * !Y)	-0.00254	-0.00256	-0.00253
	(A1 * A2 * !B1 * C1 * !Y)	0.00347	0.00350	0.00348
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00246	-0.00247
	(A1 * !A2 * !B1 * !C1 * Y)	0.00369	0.00372	0.00369
	(!A2 * B1 * !Y)	-0.00242	-0.00247	-0.00246
	(!A2 * B1 * !Y)	0.00366	0.00371	0.00368
	(!A2 * !B1 * C1 * !Y)	-0.00241	-0.00247	-0.00247
	(!A2 * !B1 * C1 * !Y)	0.00367	0.00372	0.00369
	(!A1 * A2 * B1 * !Y)	-0.00225	-0.00240	-0.00238
	(!A1 * A2 * B1 * !Y)	0.00367	0.00371	0.00368
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00223	-0.00241	-0.00239
	(!A1 * A2 * !B1 * C1 * !Y)	0.00368	0.00372	0.00369
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00219	-0.00240	-0.00239
	(!A1 * A2 * !B1 * !C1 * Y)	0.00374	0.00372	0.00368
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00238	-0.00247	-0.00246
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00366	0.00372	0.00368

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00519	-0.00520	-0.00519
	(A1 * A2 * B1 * C1 * !Y)	0.00716	0.00720	0.00716
	(A1 * A2 * B1 * !C1 * !Y)	-0.00517	-0.00520	-0.00517
	(A1 * A2 * B1 * !C1 * !Y)	0.00720	0.00726	0.00721
	(A1 * A2 * !B1 * C1 * !Y)	-0.00516	-0.00518	-0.00514
	(A1 * A2 * !B1 * C1 * !Y)	0.00701	0.00706	0.00702
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00470	-0.00497	-0.00498
	(A1 * !A2 * !B1 * !C1 * Y)	0.00747	0.00751	0.00744
	(!A2 * B1 * !Y)	-0.00489	-0.00497	-0.00495
	(!A2 * B1 * !Y)	0.00739	0.00749	0.00742
	(!A2 * !B1 * C1 * !Y)	-0.00487	-0.00499	-0.00497
	(!A2 * !B1 * C1 * !Y)	0.00743	0.00751	0.00744
	(!A1 * A2 * B1 * !Y)	-0.00452	-0.00484	-0.00479
	(!A1 * A2 * B1 * !Y)	0.00742	0.00748	0.00742
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00450	-0.00486	-0.00482
	(!A1 * A2 * !B1 * C1 * !Y)	0.00744	0.00750	0.00744
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00440	-0.00484	-0.00482
	(!A1 * A2 * !B1 * !C1 * Y)	0.00757	0.00752	0.00743
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00480	-0.00499	-0.00495
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00741	0.00751	0.00743

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)**	0.00172	0.00164	0.00155
	(A1 * A2 * A3 * C1 * !Y)	-0.00118	-0.00123	-0.00126
	(A1 * A2 * A3 * !C1 * !Y)	0.00150	0.00151	0.00147
	(A1 * A2 * A3 * !C1 * !Y)	-0.00088	-0.00089	-0.00090
	(A1 * A2 * !A3 * C1 * !Y)	0.00187	0.00151	0.00145
	(A1 * A2 * !A3 * C1 * !Y)	-0.00138	-0.00174	-0.00178
	(A1 * !A2 * C1 * !Y)	0.00187	0.00151	0.00145
	(A1 * !A2 * C1 * !Y)	-0.00138	-0.00174	-0.00178
	(!A1 * C1 * !Y)	0.00186	0.00151	0.00145
	(!A1 * C1 * !Y)	-0.00139	-0.00174	-0.00178
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00197	0.00184	0.00164
	(A1 * A2 * A3 * C1 * !Y)	-0.00249	-0.00258	-0.00264
	(A1 * A2 * A3 * !C1 * !Y)	0.00159	0.00159	0.00152
	(A1 * A2 * A3 * !C1 * !Y)	-0.00182	-0.00184	-0.00188
	(A1 * A2 * !A3 * C1 * !Y)	0.00235	0.00157	0.00147
	(A1 * A2 * !A3 * C1 * !Y)	-0.00278	-0.00359	-0.00367
	(A1 * !A2 * C1 * !Y)	0.00235	0.00157	0.00147
	(A1 * !A2 * C1 * !Y)	-0.00279	-0.00359	-0.00367
	(!A1 * C1 * !Y)	0.00234	0.00157	0.00147
	(!A1 * C1 * !Y)	-0.00279	-0.00359	-0.00367
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00378	0.00354	0.00316
	(A1 * A2 * A3 * C1 * !Y)	-0.00480	-0.00503	-0.00513
	(A1 * A2 * A3 * !C1 * !Y)	0.00303	0.00304	0.00291
	(A1 * A2 * A3 * !C1 * !Y)	-0.00358	-0.00360	-0.00367
	(A1 * A2 * !A3 * C1 * !Y)	0.00463	0.00304	0.00283
	(A1 * A2 * !A3 * C1 * !Y)	-0.00550	-0.00710	-0.00726
	(A1 * !A2 * C1 * !Y)	0.00461	0.00304	0.00283
	(A1 * !A2 * C1 * !Y)	-0.00551	-0.00710	-0.00726
	(!A1 * C1 * !Y)	0.00459	0.00304	0.00283
	(!A1 * C1 * !Y)	-0.00554	-0.00710	-0.00726

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)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * A3 * C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * A3 * !C1 * !Y)	-0.00140	-0.00141	-0.00143
	(A1 * A2 * A3 * !C1 * !Y)	0.00098	0.00097	0.00095
	(A1 * A2 * !A3 * C1 * !Y)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * !A3 * C1 * !Y)	0.00179	0.00180	0.00180
	(A1 * !A2 * C1 * !Y)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * C1 * !Y)	0.00179	0.00180	0.00180
	(!A1 * C1 * !Y)	-0.00142	-0.00143	-0.00142
	(!A1 * C1 * !Y)	0.00179	0.00180	0.00180
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00146	-0.00148	-0.00147
	(A1 * A2 * A3 * C1 * !Y)	0.00262	0.00265	0.00264
	(A1 * A2 * A3 * !C1 * !Y)	-0.00136	-0.00137	-0.00140
	(A1 * A2 * A3 * !C1 * !Y)	0.00203	0.00202	0.00200
	(A1 * A2 * !A3 * C1 * !Y)	-0.00143	-0.00143	-0.00141
	(A1 * A2 * !A3 * C1 * !Y)	0.00368	0.00371	0.00370
	(A1 * !A2 * C1 * !Y)	-0.00143	-0.00143	-0.00141
	(A1 * !A2 * C1 * !Y)	0.00368	0.00371	0.00370
	(!A1 * C1 * !Y)	-0.00143	-0.00143	-0.00141
	(!A1 * C1 * !Y)	0.00368	0.00371	0.00370

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00282	-0.00284	-0.00282
	(A1 * A2 * A3 * C1 * !Y)	0.00511	0.00517	0.00513
	(A1 * A2 * A3 * !C1 * !Y)	-0.00259	-0.00261	-0.00270
	(A1 * A2 * A3 * !C1 * !Y)	0.00400	0.00398	0.00391
	(A1 * A2 * !A3 * C1 * !Y)	-0.00273	-0.00275	-0.00271
	(A1 * A2 * !A3 * C1 * !Y)	0.00727	0.00734	0.00732
	(A1 * !A2 * C1 * !Y)	-0.00273	-0.00275	-0.00271
	(A1 * !A2 * C1 * !Y)	0.00727	0.00734	0.00732
	(!A1 * C1 * !Y)	-0.00274	-0.00275	-0.00271
	(!A1 * C1 * !Y)	0.00728	0.00735	0.00733

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)	0.00154	0.00155	0.00154
	(A1 * A2 * B1 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * A3 * !B1 * !Y)	0.00154	0.00156	0.00155
	(A1 * A2 * A3 * !B1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * B1 * !Y)	0.00154	0.00155	0.00155
	(A1 * !A2 * B1 * !Y)	-0.00086	-0.00086	-0.00086
	(!A1 * B1 * !Y)	0.00154	0.00155	0.00155
	(!A1 * B1 * !Y)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00174	0.00175	0.00175
	(A1 * A2 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * A3 * !B1 * !Y)	0.00174	0.00175	0.00175
	(A1 * A2 * A3 * !B1 * !Y)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * B1 * !Y)	0.00174	0.00176	0.00175
	(A1 * !A2 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * B1 * !Y)	0.00175	0.00176	0.00175
	(!A1 * B1 * !Y)	-0.00168	-0.00168	-0.00167
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00347	0.00348	0.00347
	(A1 * A2 * B1 * !Y)	-0.00333	-0.00333	-0.00331
	(A1 * A2 * A3 * !B1 * !Y)	0.00346	0.00349	0.00347
	(A1 * A2 * A3 * !B1 * !Y)	-0.00329	-0.00331	-0.00328
	(A1 * !A2 * B1 * !Y)	0.00348	0.00349	0.00347
	(A1 * !A2 * B1 * !Y)	-0.00333	-0.00334	-0.00332
	(!A1 * B1 * !Y)	0.00348	0.00350	0.00348
	(!A1 * B1 * !Y)	-0.00333	-0.00334	-0.00332

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)	-0.00149	-0.00149	-0.00154
	(A1 * A2 * B1 * !Y)	0.00091	0.00091	0.00087
	(A1 * A2 * A3 * !B1 * !Y)	-0.00131	-0.00133	-0.00150
	(A1 * A2 * A3 * !B1 * !Y)	0.00101	0.00102	0.00089
	(A1 * !A2 * B1 * !Y)	-0.00149	-0.00149	-0.00154
	(A1 * !A2 * B1 * !Y)	0.00091	0.00091	0.00087
	(!A1 * B1 * !Y)	-0.00148	-0.00149	-0.00154
	(!A1 * B1 * !Y)	0.00091	0.00091	0.00087
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00158	-0.00159	-0.00173
	(A1 * A2 * B1 * !Y)	0.00183	0.00182	0.00171
	(A1 * A2 * A3 * !B1 * !Y)	-0.00119	-0.00120	-0.00164
	(A1 * A2 * A3 * !B1 * !Y)	0.00207	0.00206	0.00175
	(A1 * !A2 * B1 * !Y)	-0.00158	-0.00159	-0.00173
	(A1 * !A2 * B1 * !Y)	0.00184	0.00183	0.00172
	(!A1 * B1 * !Y)	-0.00157	-0.00159	-0.00173
	(!A1 * B1 * !Y)	0.00183	0.00183	0.00172
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00318	-0.00319	-0.00344
	(A1 * A2 * B1 * !Y)	0.00360	0.00358	0.00339
	(A1 * A2 * A3 * !B1 * !Y)	-0.00240	-0.00244	-0.00327
	(A1 * A2 * A3 * !B1 * !Y)	0.00403	0.00403	0.00347
	(A1 * !A2 * B1 * !Y)	-0.00318	-0.00319	-0.00344
	(A1 * !A2 * B1 * !Y)	0.00361	0.00360	0.00340
	(!A1 * B1 * !Y)	-0.00316	-0.00320	-0.00344
	(!A1 * B1 * !Y)	0.00359	0.00360	0.00340

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00276	0.00263	0.00263	0.00271	0.00280	0.81005
sky130_fd_sc_hs__a311o_2	0.00285	0.00285	0.00301	0.00305	0.00290	1.43956
sky130_fd_sc_hs__a311o_4	0.00522	0.00488	0.00515	0.00503	0.00504	2.58265

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	1.39079	2.77447
sky130_fd_sc_hs__a311o_2	0.00000	1.71867	2.99797
sky130_fd_sc_hs__a311o_4	0.00000	3.36869	5.98437

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)	0.18527	0.93841	7.83126
	A2->X (RR)	0.19824	0.93397	7.80016
	A3->X (RR)	0.20543	0.90889	7.65463
	B1->X (RR)	0.10472	0.80742	7.37929
	C1->X (RR)	0.09650	0.78061	7.29821
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.19719	0.87542	7.72897
	A2->X (RR)	0.21061	0.86448	7.68816
	A3->X (RR)	0.21871	0.83594	7.49601
	B1->X (RR)	0.10718	0.72792	7.24992
	C1->X (RR)	0.09938	0.70686	7.17279
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.22789	0.84309	7.75133
	A2->X (RR)	0.24749	0.84141	7.71793
	A3->X (RR)	0.25542	0.79458	7.44973
	B1->X (RR)	0.10654	0.64704	7.11343
	C1->X (RR)	0.09671	0.61889	7.01552

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.31205	0.82459	4.58017
	A2->X (FF)	0.35564	0.88031	4.69475
	A3->X (FF)	0.38758	0.91958	4.80147
	B1->X (FF)	0.35364	0.90642	5.06776
	C1->X (FF)	0.30564	0.88748	5.05865
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.41792	0.91566	4.61017
	A2->X (FF)	0.47553	0.98372	4.73935
	A3->X (FF)	0.51590	1.02977	4.83979
	B1->X (FF)	0.48307	1.02326	5.14916
	C1->X (FF)	0.42756	1.00028	5.16379
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.42253	0.85420	4.29305
	A2->X (FF)	0.47851	0.91884	4.40917
	A3->X (FF)	0.52291	0.97385	4.55363
	B1->X (FF)	0.48783	0.96940	4.90256
	C1->X (FF)	0.41382	0.93044	4.91413

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01152	0.01161	0.02322
	A1	0.00556	0.00565	0.01743
	A2	0.01211	0.01201	0.02228
	A2	0.00555	0.00545	0.01589
	A3	0.01289	0.01267	0.02199
	A3	0.00554	0.00532	0.01481
	B1	0.01022	0.01069	0.02241
	B1	0.00392	0.00445	0.01810
	C1	0.00794	0.00854	0.02344
	C1	0.00309	0.00372	0.01947
sky130_fd_sc_hs__a311o_2	A1	0.01481	0.01496	0.02678
	A1	0.00843	0.00860	0.02077
	A2	0.01565	0.01565	0.02607
	A2	0.00843	0.00844	0.01921
	A3	0.01667	0.01656	0.02473
	A3	0.00844	0.00832	0.01657
	B1	0.01387	0.01456	0.02503
	B1	0.00672	0.00744	0.01984
	C1	0.01205	0.01284	0.02441
	C1	0.00580	0.00660	0.02050

sky130_fd_sc_hs__a311o_4	**A1**	0.02933	0.02959	0.05222
	A1	0.01799	0.01826	0.04164
	A2	0.03070	0.03073	0.05043
	A2	0.01789	0.01795	0.03839
	A3	0.03254	0.03241	0.05032
	A3	0.01802	0.01791	0.03638
	B1	0.02623	0.02737	0.04877
	B1	0.01392	0.01516	0.03942
	C1	0.02161	0.02324	0.04780
	C1	0.01114	0.01277	0.04068

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00331	0.00332	0.01354
	A1	0.00928	0.00928	0.01947
	A2	0.00397	0.00399	0.01427
	A2	0.01052	0.01054	0.02046
	A3	0.00437	0.00423	0.01434
	A3	0.01166	0.01155	0.02139
	B1	0.00316	0.00354	0.01660
	B1	0.01048	0.01056	0.02163
	C1	0.00298	0.00401	0.01967
	C1	0.00835	0.00924	0.02411

sky130_fd_sc_hs__a311o_2	**A1**	0.00671	0.00630	0.01708
	A1	0.01309	0.01267	0.02314
	A2	0.00751	0.00691	0.01766
	A2	0.01471	0.01412	0.02443
	A3	0.00784	0.00682	0.01698
	A3	0.01598	0.01503	0.02471
	B1	0.00704	0.00675	0.01915
	B1	0.01495	0.01415	0.02465
	C1	0.00696	0.00734	0.02212
	C1	0.01399	0.01376	0.02669
sky130_fd_sc_hs__a311o_4	**A1**	0.01359	0.01258	0.03328
	A1	0.02499	0.02394	0.04399
	A2	0.01597	0.01449	0.03457
	A2	0.02873	0.02730	0.04666
	A3	0.01650	0.01480	0.03517
	A3	0.03087	0.02914	0.04825
	B1	0.01497	0.01433	0.03756
	B1	0.02883	0.02724	0.04669
	C1	0.01483	0.01527	0.04426
	C1	0.02690	0.02632	0.05121

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)**	0.00128	0.00128	0.00127
	(A2 * A3 * B1 * C1 * X)	-0.00155	-0.00161	-0.00160
	(A2 * A3 * B1 * !C1 * X)	0.00144	0.00130	0.00128
	(A2 * A3 * B1 * !C1 * X)	-0.00140	-0.00160	-0.00161
	(A2 * A3 * !B1 * C1 * X)	0.00147	0.00131	0.00128
	(A2 * A3 * !B1 * C1 * X)	-0.00132	-0.00155	-0.00159
	(A2 * !A3 * B1 * C1 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * C1 * X)	-0.00165	-0.00165	-0.00164
	(A2 * !A3 * B1 * !C1 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * !C1 * X)	-0.00164	-0.00165	-0.00164
	(A2 * !A3 * !B1 * C1 * X)	0.00120	0.00120	0.00120
	(A2 * !A3 * !B1 * C1 * X)	-0.00163	-0.00163	-0.00163
	(A2 * !A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00052
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00179	-0.00179	-0.00188
	(!A2 * B1 * C1 * X)	0.00122	0.00121	0.00122
	(!A2 * B1 * C1 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * B1 * !C1 * X)	0.00122	0.00124	0.00123
	(!A2 * B1 * !C1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * C1 * X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * !B1 * !C1 * !X)	0.00055	0.00055	0.00053
	(!A2 * !B1 * !C1 * !X)	-0.00185	-0.00186	-0.00189

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00136	0.00136	0.00136
	(A2 * A3 * B1 * C1 * X)	-0.00154	-0.00160	-0.00160
	(A2 * A3 * B1 * !C1 * X)	0.00152	0.00137	0.00137
	(A2 * A3 * B1 * !C1 * X)	-0.00138	-0.00158	-0.00160
	(A2 * A3 * !B1 * C1 * X)	0.00154	0.00141	0.00137
	(A2 * A3 * !B1 * C1 * X)	-0.00130	-0.00155	-0.00158
	(A2 * !A3 * B1 * C1 * X)	0.00125	0.00127	0.00126
	(A2 * !A3 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A2 * !A3 * B1 * !C1 * X)	0.00126	0.00127	0.00126
	(A2 * !A3 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00162
	(A2 * !A3 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(A2 * !A3 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A2 * !A3 * !B1 * !C1 * !X)	0.00049	0.00049	0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00183	-0.00184	-0.00193
	(!A2 * B1 * C1 * X)	0.00130	0.00130	0.00130
	(!A2 * B1 * C1 * X)	-0.00164	-0.00164	-0.00163
	(!A2 * B1 * !C1 * X)	0.00131	0.00131	0.00131
	(!A2 * B1 * !C1 * X)	-0.00163	-0.00163	-0.00162
	(!A2 * !B1 * C1 * X)	0.00131	0.00132	0.00131
	(!A2 * !B1 * C1 * X)	-0.00162	-0.00162	-0.00162
	(!A2 * !B1 * !C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00189	-0.00190	-0.00194

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00232	0.00232	0.00231
	(A2 * A3 * B1 * C1 * X)	-0.00321	-0.00332	-0.00331
	(A2 * A3 * B1 * !C1 * X)	0.00262	0.00235	0.00234
	(A2 * A3 * B1 * !C1 * X)	-0.00292	-0.00329	-0.00333
	(A2 * A3 * !B1 * C1 * X)	0.00267	0.00239	0.00234
	(A2 * A3 * !B1 * C1 * X)	-0.00277	-0.00320	-0.00329
	(A2 * !A3 * B1 * C1 * X)	0.00213	0.00215	0.00214
	(A2 * !A3 * B1 * C1 * X)	-0.00339	-0.00341	-0.00339
	(A2 * !A3 * B1 * !C1 * X)	0.00214	0.00216	0.00215
	(A2 * !A3 * B1 * !C1 * X)	-0.00338	-0.00340	-0.00338
	(A2 * !A3 * !B1 * C1 * X)	0.00215	0.00217	0.00216
	(A2 * !A3 * !B1 * C1 * X)	-0.00337	-0.00339	-0.00337
	(A2 * !A3 * !B1 * !C1 * !X)	0.00095	0.00095	0.00082
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00358	-0.00362	-0.00383
	(!A2 * B1 * C1 * X)	0.00222	0.00223	0.00222
	(!A2 * B1 * C1 * X)	-0.00341	-0.00341	-0.00339
	(!A2 * B1 * !C1 * X)	0.00223	0.00224	0.00223
	(!A2 * B1 * !C1 * X)	-0.00339	-0.00339	-0.00338
	(!A2 * !B1 * C1 * X)	0.00223	0.00225	0.00224
	(!A2 * !B1 * C1 * X)	-0.00335	-0.00338	-0.00337
	(!A2 * !B1 * !C1 * !X)	0.00098	0.00099	0.00090
	(!A2 * !B1 * !C1 * !X)	-0.00370	-0.00373	-0.00385

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)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * C1 * X)	0.00160	0.00161	0.00160
	(A2 * A3 * B1 * !C1 * X)	-0.00124	-0.00125	-0.00124
	(A2 * A3 * B1 * !C1 * X)	0.00162	0.00163	0.00163
	(A2 * A3 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00123
	(A2 * A3 * !B1 * C1 * X)	0.00158	0.00160	0.00159
	(A2 * !A3 * B1 * C1 * X)	-0.00112	-0.00120	-0.00119
	(A2 * !A3 * B1 * C1 * X)	0.00165	0.00168	0.00166
	(A2 * !A3 * B1 * !C1 * X)	-0.00111	-0.00120	-0.00119
	(A2 * !A3 * B1 * !C1 * X)	0.00166	0.00169	0.00166
	(A2 * !A3 * !B1 * C1 * X)	-0.00110	-0.00118	-0.00120
	(A2 * !A3 * !B1 * C1 * X)	0.00166	0.00167	0.00167
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00048	-0.00048	-0.00048
	(A2 * !A3 * !B1 * !C1 * !X)	0.00193	0.00193	0.00192
	(!A2 * B1 * C1 * X)	-0.00121	-0.00121	-0.00122
	(!A2 * B1 * C1 * X)	0.00165	0.00168	0.00166
	(!A2 * B1 * !C1 * X)	-0.00120	-0.00121	-0.00122
	(!A2 * B1 * !C1 * X)	0.00165	0.00167	0.00166
	(!A2 * !B1 * C1 * X)	-0.00119	-0.00121	-0.00121
	(!A2 * !B1 * C1 * X)	0.00166	0.00168	0.00167
	(!A2 * !B1 * !C1 * !X)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * !C1 * !X)	0.00193	0.00193	0.00192

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00134	-0.00135	-0.00134
	(A2 * A3 * B1 * C1 * X)	0.00159	0.00161	0.00160
	(A2 * A3 * B1 * !C1 * X)	-0.00133	-0.00133	-0.00133
	(A2 * A3 * B1 * !C1 * X)	0.00161	0.00162	0.00162
	(A2 * A3 * !B1 * C1 * X)	-0.00132	-0.00133	-0.00131
	(A2 * A3 * !B1 * C1 * X)	0.00157	0.00159	0.00159
	(A2 * !A3 * B1 * C1 * X)	-0.00117	-0.00127	-0.00126
	(A2 * !A3 * B1 * C1 * X)	0.00164	0.00166	0.00165
	(A2 * !A3 * B1 * !C1 * X)	-0.00116	-0.00126	-0.00126
	(A2 * !A3 * B1 * !C1 * X)	0.00165	0.00167	0.00165
	(A2 * !A3 * !B1 * C1 * X)	-0.00115	-0.00126	-0.00127
	(A2 * !A3 * !B1 * C1 * X)	0.00165	0.00168	0.00166
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00039	-0.00040	-0.00040
	(A2 * !A3 * !B1 * !C1 * !X)	0.00198	0.00199	0.00198
	(!A2 * B1 * C1 * X)	-0.00127	-0.00130	-0.00130
	(!A2 * B1 * C1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * X)	-0.00127	-0.00130	-0.00130
	(!A2 * B1 * !C1 * X)	0.00166	0.00167	0.00165
	(!A2 * !B1 * C1 * X)	-0.00127	-0.00129	-0.00129
	(!A2 * !B1 * C1 * X)	0.00167	0.00168	0.00166
	(!A2 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !C1 * !X)	0.00198	0.00199	0.00199

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00229	-0.00229	-0.00229
	(A2 * A3 * B1 * C1 * X)	0.00333	0.00332	0.00331
	(A2 * A3 * B1 * !C1 * X)	-0.00226	-0.00226	-0.00226
	(A2 * A3 * B1 * !C1 * X)	0.00336	0.00336	0.00336
	(A2 * A3 * !B1 * C1 * X)	-0.00225	-0.00226	-0.00223
	(A2 * A3 * !B1 * C1 * X)	0.00327	0.00330	0.00329
	(A2 * !A3 * B1 * C1 * X)	-0.00198	-0.00215	-0.00214
	(A2 * !A3 * B1 * C1 * X)	0.00342	0.00347	0.00343
	(A2 * !A3 * B1 * !C1 * X)	-0.00196	-0.00215	-0.00215
	(A2 * !A3 * B1 * !C1 * X)	0.00344	0.00348	0.00344
	(A2 * !A3 * !B1 * C1 * X)	-0.00195	-0.00213	-0.00216
	(A2 * !A3 * !B1 * C1 * X)	0.00345	0.00349	0.00345
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !B1 * !C1 * !X)	0.00394	0.00396	0.00395
	(!A2 * B1 * C1 * X)	-0.00217	-0.00222	-0.00222
	(!A2 * B1 * C1 * X)	0.00344	0.00346	0.00343
	(!A2 * B1 * !C1 * X)	-0.00215	-0.00221	-0.00221
	(!A2 * B1 * !C1 * X)	0.00346	0.00348	0.00344
	(!A2 * !B1 * C1 * X)	-0.00214	-0.00220	-0.00220
	(!A2 * !B1 * C1 * X)	0.00347	0.00349	0.00345
	(!A2 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * !C1 * !X)	0.00394	0.00396	0.00395

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)**	0.00111	0.00110	0.00110
	(A1 * A3 * B1 * C1 * X)	-0.00160	-0.00164	-0.00164
	(A1 * A3 * B1 * !C1 * X)	0.00129	0.00112	0.00112
	(A1 * A3 * B1 * !C1 * X)	-0.00143	-0.00162	-0.00165
	(A1 * A3 * !B1 * C1 * X)	0.00131	0.00116	0.00112
	(A1 * A3 * !B1 * C1 * X)	-0.00135	-0.00159	-0.00163
	(A1 * !A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(A1 * !A3 * B1 * C1 * X)	-0.00168	-0.00169	-0.00168
	(A1 * !A3 * B1 * !C1 * X)	0.00106	0.00107	0.00106
	(A1 * !A3 * B1 * !C1 * X)	-0.00167	-0.00169	-0.00168
	(A1 * !A3 * !B1 * C1 * X)	0.00106	0.00107	0.00107
	(A1 * !A3 * !B1 * C1 * X)	-0.00167	-0.00167	-0.00167
	(A1 * !A3 * !B1 * !C1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00174	-0.00174	-0.00173
	(!A1 * A3 * B1 * X)	0.00106	0.00106	0.00105
	(!A1 * A3 * B1 * X)	-0.00169	-0.00169	-0.00168
	(!A1 * A3 * !B1 * C1 * X)	0.00107	0.00107	0.00107
	(!A1 * A3 * !B1 * C1 * X)	-0.00168	-0.00167	-0.00167
	(!A1 * A3 * !B1 * !C1 * !X)	0.00100	0.00102	0.00101
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * B1 * X)	0.00065	0.00065	0.00065
	(!A1 * !A3 * B1 * X)	-0.00169	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * C1 * X)	0.00067	0.00067	0.00066
	(!A1 * !A3 * !B1 * C1 * X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00059	0.00058	0.00058
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00175	-0.00175	-0.00174

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00136	0.00135	0.00135
	(A1 * A3 * B1 * C1 * X)	-0.00155	-0.00160	-0.00160
	(A1 * A3 * B1 * !C1 * X)	0.00152	0.00136	0.00136
	(A1 * A3 * B1 * !C1 * X)	-0.00140	-0.00158	-0.00160
	(A1 * A3 * !B1 * C1 * X)	0.00154	0.00140	0.00136
	(A1 * A3 * !B1 * C1 * X)	-0.00132	-0.00155	-0.00158
	(A1 * !A3 * B1 * C1 * X)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * B1 * !C1 * X)	0.00129	0.00130	0.00129
	(A1 * !A3 * B1 * !C1 * X)	-0.00163	-0.00163	-0.00162
	(A1 * !A3 * !B1 * C1 * X)	0.00130	0.00130	0.00130
	(A1 * !A3 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00169
	(!A1 * A3 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * A3 * !B1 * C1 * X)	0.00130	0.00131	0.00130
	(!A1 * A3 * !B1 * C1 * X)	-0.00162	-0.00162	-0.00162
	(!A1 * A3 * !B1 * !C1 * !X)	0.00122	0.00123	0.00122
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A3 * B1 * X)	0.00079	0.00080	0.00079
	(!A1 * !A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * C1 * X)	0.00081	0.00081	0.00081
	(!A1 * !A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00162
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00069	0.00070	0.00070
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00171

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00221	0.00222	0.00221
	(A1 * A3 * B1 * C1 * X)	-0.00316	-0.00328	-0.00328
	(A1 * A3 * B1 * !C1 * X)	0.00245	0.00225	0.00224
	(A1 * A3 * B1 * !C1 * X)	-0.00294	-0.00326	-0.00329
	(A1 * A3 * !B1 * C1 * X)	0.00250	0.00231	0.00224
	(A1 * A3 * !B1 * C1 * X)	-0.00280	-0.00320	-0.00326
	(A1 * !A3 * B1 * C1 * X)	0.00210	0.00212	0.00211
	(A1 * !A3 * B1 * C1 * X)	-0.00333	-0.00336	-0.00334
	(A1 * !A3 * B1 * !C1 * X)	0.00212	0.00213	0.00213
	(A1 * !A3 * B1 * !C1 * X)	-0.00333	-0.00335	-0.00333
	(A1 * !A3 * !B1 * C1 * X)	0.00213	0.00215	0.00214
	(A1 * !A3 * !B1 * C1 * X)	-0.00331	-0.00334	-0.00332
	(A1 * !A3 * !B1 * !C1 * !X)	0.00105	0.00106	0.00108
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00332	-0.00333	-0.00329
	(!A1 * A3 * B1 * X)	0.00212	0.00213	0.00212
	(!A1 * A3 * B1 * X)	-0.00335	-0.00335	-0.00334
	(!A1 * A3 * !B1 * C1 * X)	0.00215	0.00216	0.00215
	(!A1 * A3 * !B1 * C1 * X)	-0.00332	-0.00333	-0.00332
	(!A1 * A3 * !B1 * !C1 * !X)	0.00216	0.00218	0.00216
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00331	-0.00332	-0.00330
	(!A1 * !A3 * B1 * X)	0.00137	0.00138	0.00137
	(!A1 * !A3 * B1 * X)	-0.00335	-0.00335	-0.00334
	(!A1 * !A3 * !B1 * C1 * X)	0.00140	0.00140	0.00140
	(!A1 * !A3 * !B1 * C1 * X)	-0.00332	-0.00332	-0.00332
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00136	0.00137	0.00136
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00333	-0.00335	-0.00333

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

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

sky130_fd_sc_hs__a311o_1	**(A1 * A3 * B1 * C1 * X)**	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * C1 * X)	0.00164	0.00164	0.00164
	(A1 * A3 * B1 * !C1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * A3 * B1 * !C1 * X)	0.00166	0.00166	0.00167
	(A1 * A3 * !B1 * C1 * X)	-0.00107	-0.00108	-0.00106
	(A1 * A3 * !B1 * C1 * X)	0.00162	0.00163	0.00163
	(A1 * !A3 * B1 * C1 * X)	-0.00104	-0.00106	-0.00105
	(A1 * !A3 * B1 * C1 * X)	0.00171	0.00170	0.00170
	(A1 * !A3 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00105
	(A1 * !A3 * B1 * !C1 * X)	0.00171	0.00171	0.00170
	(A1 * !A3 * !B1 * C1 * X)	-0.00103	-0.00104	-0.00105
	(A1 * !A3 * !B1 * C1 * X)	0.00172	0.00172	0.00171
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00039	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !C1 * !X)	0.00181	0.00182	0.00178
	(!A1 * A3 * B1 * X)	-0.00104	-0.00106	-0.00105
	(!A1 * A3 * B1 * X)	0.00171	0.00172	0.00170
	(!A1 * A3 * !B1 * C1 * X)	-0.00103	-0.00105	-0.00105
	(!A1 * A3 * !B1 * C1 * X)	0.00172	0.00173	0.00171
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00088	-0.00097	-0.00098
	(!A1 * A3 * !B1 * !C1 * !X)	0.00188	0.00181	0.00177
	(!A1 * !A3 * B1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A3 * B1 * X)	0.00169	0.00170	0.00170
	(!A1 * !A3 * !B1 * C1 * X)	-0.00067	-0.00067	-0.00066
	(!A1 * !A3 * !B1 * C1 * X)	0.00170	0.00172	0.00171
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00059	-0.00058	-0.00058
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00183	0.00184	0.00179

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00134	-0.00134	-0.00133
	(A1 * A3 * B1 * C1 * X)	0.00161	0.00160	0.00160
	(A1 * A3 * B1 * !C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * A3 * B1 * !C1 * X)	0.00162	0.00162	0.00162
	(A1 * A3 * !B1 * C1 * X)	-0.00131	-0.00132	-0.00130
	(A1 * A3 * !B1 * C1 * X)	0.00158	0.00159	0.00159
	(A1 * !A3 * B1 * C1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * !A3 * B1 * C1 * X)	0.00166	0.00165	0.00165
	(A1 * !A3 * B1 * !C1 * X)	-0.00126	-0.00128	-0.00128
	(A1 * !A3 * B1 * !C1 * X)	0.00166	0.00166	0.00165
	(A1 * !A3 * !B1 * C1 * X)	-0.00126	-0.00127	-0.00127
	(A1 * !A3 * !B1 * C1 * X)	0.00167	0.00167	0.00166
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00048	-0.00048	-0.00049
	(A1 * !A3 * !B1 * !C1 * !X)	0.00180	0.00181	0.00177
	(!A1 * A3 * B1 * X)	-0.00127	-0.00129	-0.00129
	(!A1 * A3 * B1 * X)	0.00166	0.00167	0.00165
	(!A1 * A3 * !B1 * C1 * X)	-0.00126	-0.00128	-0.00128
	(!A1 * A3 * !B1 * C1 * X)	0.00167	0.00168	0.00166
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00107	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !C1 * !X)	0.00186	0.00179	0.00175
	(!A1 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A3 * B1 * X)	0.00165	0.00165	0.00165
	(!A1 * !A3 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * !A3 * !B1 * C1 * X)	0.00166	0.00167	0.00166
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00069	-0.00070	-0.00070
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00182	0.00183	0.00177

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00220	-0.00219	-0.00219
	(A1 * A3 * B1 * C1 * X)	0.00329	0.00329	0.00328
	(A1 * A3 * B1 * !C1 * X)	-0.00217	-0.00217	-0.00217
	(A1 * A3 * B1 * !C1 * X)	0.00332	0.00331	0.00331
	(A1 * A3 * !B1 * C1 * X)	-0.00215	-0.00216	-0.00214
	(A1 * A3 * !B1 * C1 * X)	0.00324	0.00327	0.00326
	(A1 * !A3 * B1 * C1 * X)	-0.00207	-0.00211	-0.00211
	(A1 * !A3 * B1 * C1 * X)	0.00339	0.00339	0.00338
	(A1 * !A3 * B1 * !C1 * X)	-0.00206	-0.00209	-0.00211
	(A1 * !A3 * B1 * !C1 * X)	0.00341	0.00341	0.00339
	(A1 * !A3 * !B1 * C1 * X)	-0.00205	-0.00208	-0.00210
	(A1 * !A3 * !B1 * C1 * X)	0.00342	0.00342	0.00341
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00093
	(A1 * !A3 * !B1 * !C1 * !X)	0.00354	0.00355	0.00346
	(!A1 * A3 * B1 * X)	-0.00207	-0.00212	-0.00212
	(!A1 * A3 * B1 * X)	0.00339	0.00340	0.00338
	(!A1 * A3 * !B1 * C1 * X)	-0.00204	-0.00209	-0.00210
	(!A1 * A3 * !B1 * C1 * X)	0.00341	0.00342	0.00340
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00186	-0.00206	-0.00209
	(!A1 * A3 * !B1 * !C1 * !X)	0.00361	0.00345	0.00341
	(!A1 * !A3 * B1 * X)	-0.00137	-0.00138	-0.00137
	(!A1 * !A3 * B1 * X)	0.00336	0.00340	0.00338
	(!A1 * !A3 * !B1 * C1 * X)	-0.00140	-0.00140	-0.00140
	(!A1 * !A3 * !B1 * C1 * X)	0.00343	0.00342	0.00341
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00354	0.00356	0.00345

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)**	0.00122	0.00123	0.00121
	(A1 * A2 * B1 * C1 * X)	-0.00157	-0.00163	-0.00162
	(A1 * A2 * B1 * !C1 * X)	0.00138	0.00125	0.00122
	(A1 * A2 * B1 * !C1 * X)	-0.00142	-0.00161	-0.00162
	(A1 * A2 * !B1 * C1 * X)	0.00140	0.00126	0.00123
	(A1 * A2 * !B1 * C1 * X)	-0.00134	-0.00157	-0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00103	0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00179	-0.00180	-0.00180
	(!A2 * B1 * X)	0.00116	0.00117	0.00117
	(!A2 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * B1 * X)	0.00113	0.00114	0.00113
	(!A1 * A2 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * !B1 * C1 * X)	0.00115	0.00115	0.00115
	(!A1 * A2 * !B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * !B1 * !C1 * !X)	0.00100	0.00101	0.00100
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00154	0.00153	0.00153
	(A1 * A2 * B1 * C1 * X)	-0.00153	-0.00159	-0.00159
	(A1 * A2 * B1 * !C1 * X)	0.00170	0.00155	0.00154
	(A1 * A2 * B1 * !C1 * X)	-0.00138	-0.00157	-0.00159
	(A1 * A2 * !B1 * C1 * X)	0.00172	0.00159	0.00155
	(A1 * A2 * !B1 * C1 * X)	-0.00131	-0.00154	-0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00186
	(!A2 * B1 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * X)	0.00149	0.00150	0.00148
	(!A2 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * A2 * B1 * X)	0.00143	0.00145	0.00144
	(!A1 * A2 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * A2 * !B1 * C1 * X)	0.00145	0.00146	0.00145
	(!A1 * A2 * !B1 * C1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * A2 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00254	0.00254	0.00253
	(A1 * A2 * B1 * C1 * X)	-0.00309	-0.00320	-0.00319
	(A1 * A2 * B1 * !C1 * X)	0.00280	0.00257	0.00255
	(A1 * A2 * B1 * !C1 * X)	-0.00285	-0.00317	-0.00320
	(A1 * A2 * !B1 * C1 * X)	0.00285	0.00260	0.00256
	(A1 * A2 * !B1 * C1 * X)	-0.00270	-0.00308	-0.00317
	(A1 * !A2 * !B1 * !C1 * !X)	0.00219	0.00221	0.00219
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00350	-0.00351	-0.00350
	(!A2 * B1 * X)	0.00244	0.00244	0.00243
	(!A2 * B1 * X)	-0.00327	-0.00327	-0.00326
	(!A2 * !B1 * C1 * X)	0.00246	0.00247	0.00246
	(!A2 * !B1 * C1 * X)	-0.00324	-0.00325	-0.00323
	(!A1 * A2 * B1 * X)	0.00238	0.00240	0.00238
	(!A1 * A2 * B1 * X)	-0.00326	-0.00327	-0.00326
	(!A1 * A2 * !B1 * C1 * X)	0.00241	0.00242	0.00241
	(!A1 * A2 * !B1 * C1 * X)	-0.00323	-0.00324	-0.00323
	(!A1 * A2 * !B1 * !C1 * !X)	0.00215	0.00215	0.00215
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00350	-0.00350	-0.00349
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00219	0.00220	0.00218
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00351	-0.00352	-0.00350

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)**	-0.00120	-0.00121	-0.00120
	(A1 * A2 * B1 * C1 * X)	0.00161	0.00163	0.00162
	(A1 * A2 * B1 * !C1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * B1 * !C1 * X)	0.00163	0.00164	0.00164
	(A1 * A2 * !B1 * C1 * X)	-0.00118	-0.00119	-0.00117
	(A1 * A2 * !B1 * C1 * X)	0.00159	0.00161	0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00186	0.00183
	(!A2 * B1 * X)	-0.00115	-0.00117	-0.00117
	(!A2 * B1 * X)	0.00166	0.00169	0.00167
	(!A2 * !B1 * C1 * X)	-0.00114	-0.00116	-0.00116
	(!A2 * !B1 * C1 * X)	0.00169	0.00170	0.00168
	(!A1 * A2 * B1 * X)	-0.00107	-0.00114	-0.00113
	(!A1 * A2 * B1 * X)	0.00166	0.00168	0.00167
	(!A1 * A2 * !B1 * C1 * X)	-0.00106	-0.00113	-0.00114
	(!A1 * A2 * !B1 * C1 * X)	0.00168	0.00169	0.00168
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00089	-0.00097	-0.00099
	(!A1 * A2 * !B1 * !C1 * !X)	0.00185	0.00185	0.00183
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00100	-0.00100
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00184	0.00185	0.00183

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00152	-0.00153	-0.00152
	(A1 * A2 * B1 * C1 * X)	0.00158	0.00160	0.00159
	(A1 * A2 * B1 * !C1 * X)	-0.00150	-0.00151	-0.00150
	(A1 * A2 * B1 * !C1 * X)	0.00160	0.00161	0.00161
	(A1 * A2 * !B1 * C1 * X)	-0.00150	-0.00151	-0.00149
	(A1 * A2 * !B1 * C1 * X)	0.00156	0.00158	0.00158
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00113	-0.00119	-0.00120
	(A1 * !A2 * !B1 * !C1 * !X)	0.00192	0.00194	0.00191
	(!A2 * B1 * X)	-0.00145	-0.00148	-0.00147
	(!A2 * B1 * X)	0.00163	0.00166	0.00164
	(!A2 * !B1 * C1 * X)	-0.00144	-0.00147	-0.00146
	(!A2 * !B1 * C1 * X)	0.00165	0.00167	0.00165
	(!A1 * A2 * B1 * X)	-0.00136	-0.00144	-0.00144
	(!A1 * A2 * B1 * X)	0.00163	0.00165	0.00164
	(!A1 * A2 * !B1 * C1 * X)	-0.00135	-0.00143	-0.00145
	(!A1 * A2 * !B1 * C1 * X)	0.00165	0.00166	0.00165
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00106	-0.00116	-0.00118
	(!A1 * A2 * !B1 * !C1 * !X)	0.00194	0.00193	0.00191
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00191

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00250	-0.00251	-0.00251
	(A1 * A2 * B1 * C1 * X)	0.00319	0.00321	0.00319
	(A1 * A2 * B1 * !C1 * X)	-0.00248	-0.00249	-0.00248
	(A1 * A2 * B1 * !C1 * X)	0.00322	0.00324	0.00323
	(A1 * A2 * !B1 * C1 * X)	-0.00247	-0.00248	-0.00245
	(A1 * A2 * !B1 * C1 * X)	0.00315	0.00318	0.00317
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00202	-0.00212	-0.00213
	(A1 * !A2 * !B1 * !C1 * !X)	0.00360	0.00363	0.00359
	(!A2 * B1 * X)	-0.00238	-0.00244	-0.00243
	(!A2 * B1 * X)	0.00328	0.00332	0.00329
	(!A2 * !B1 * C1 * X)	-0.00236	-0.00241	-0.00241
	(!A2 * !B1 * C1 * X)	0.00331	0.00335	0.00332
	(!A1 * A2 * B1 * X)	-0.00226	-0.00239	-0.00238
	(!A1 * A2 * B1 * X)	0.00329	0.00332	0.00329
	(!A1 * A2 * !B1 * C1 * X)	-0.00223	-0.00236	-0.00239
	(!A1 * A2 * !B1 * C1 * X)	0.00331	0.00334	0.00332
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00193	-0.00208	-0.00211
	(!A1 * A2 * !B1 * !C1 * !X)	0.00363	0.00362	0.00359
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00205	-0.00213	-0.00213
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00358	0.00362	0.00359

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)**	0.00148	0.00143	0.00134
	(A1 * A2 * A3 * C1 * X)	-0.00103	-0.00111	-0.00112
	(A1 * A2 * A3 * !C1 * X)	0.00129	0.00130	0.00127
	(A1 * A2 * A3 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !A3 * C1 * X)	0.00164	0.00133	0.00125
	(A1 * A2 * !A3 * C1 * X)	-0.00121	-0.00155	-0.00159
	(A1 * !A2 * C1 * X)	0.00164	0.00133	0.00125
	(A1 * !A2 * C1 * X)	-0.00121	-0.00155	-0.00159
	(!A1 * C1 * X)	0.00164	0.00133	0.00125
	(!A1 * C1 * X)	-0.00122	-0.00155	-0.00159
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00173	0.00165	0.00157
	(A1 * A2 * A3 * C1 * X)	-0.00104	-0.00110	-0.00113
	(A1 * A2 * A3 * !C1 * X)	0.00152	0.00152	0.00149
	(A1 * A2 * A3 * !C1 * X)	-0.00080	-0.00080	-0.00081
	(A1 * A2 * !A3 * C1 * X)	0.00188	0.00154	0.00147
	(A1 * A2 * !A3 * C1 * X)	-0.00122	-0.00154	-0.00159
	(A1 * !A2 * C1 * X)	0.00188	0.00154	0.00147
	(A1 * !A2 * C1 * X)	-0.00122	-0.00154	-0.00159
	(!A1 * C1 * X)	0.00187	0.00154	0.00147
	(!A1 * C1 * X)	-0.00123	-0.00154	-0.00159
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00280	0.00269	0.00251
	(A1 * A2 * A3 * C1 * X)	-0.00224	-0.00236	-0.00244
	(A1 * A2 * A3 * !C1 * X)	0.00244	0.00244	0.00238
	(A1 * A2 * A3 * !C1 * X)	-0.00171	-0.00171	-0.00175
	(A1 * A2 * !A3 * C1 * X)	0.00321	0.00247	0.00234
	(A1 * A2 * !A3 * C1 * X)	-0.00246	-0.00320	-0.00330
	(A1 * !A2 * C1 * X)	0.00321	0.00247	0.00234
	(A1 * !A2 * C1 * X)	-0.00246	-0.00321	-0.00330
	(!A1 * C1 * X)	0.00321	0.00247	0.00234
	(!A1 * C1 * X)	-0.00246	-0.00321	-0.00330

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)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * A3 * C1 * X)	0.00114	0.00114	0.00114
	(A1 * A2 * A3 * !C1 * X)	-0.00118	-0.00119	-0.00122
	(A1 * A2 * A3 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * A2 * !A3 * C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * A2 * !A3 * C1 * X)	0.00163	0.00165	0.00164
	(A1 * !A2 * C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * C1 * X)	0.00163	0.00165	0.00164
	(!A1 * C1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * C1 * X)	0.00163	0.00165	0.00164
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00146	-0.00148	-0.00146
	(A1 * A2 * A3 * C1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * A3 * !C1 * X)	-0.00140	-0.00141	-0.00144
	(A1 * A2 * A3 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * A2 * !A3 * C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * !A3 * C1 * X)	0.00163	0.00165	0.00164
	(A1 * !A2 * C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * C1 * X)	0.00163	0.00164	0.00164
	(!A1 * C1 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * C1 * X)	0.00163	0.00164	0.00164

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00229	-0.00230	-0.00229
	(A1 * A2 * A3 * C1 * X)	0.00248	0.00251	0.00249
	(A1 * A2 * A3 * !C1 * X)	-0.00217	-0.00218	-0.00223
	(A1 * A2 * A3 * !C1 * X)	0.00196	0.00195	0.00190
	(A1 * A2 * !A3 * C1 * X)	-0.00223	-0.00224	-0.00222
	(A1 * A2 * !A3 * C1 * X)	0.00337	0.00341	0.00340
	(A1 * !A2 * C1 * X)	-0.00223	-0.00224	-0.00222
	(A1 * !A2 * C1 * X)	0.00337	0.00341	0.00340
	(!A1 * C1 * X)	-0.00223	-0.00224	-0.00222
	(!A1 * C1 * X)	0.00337	0.00341	0.00340

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)	0.00152	0.00153	0.00152
	(A1 * A2 * B1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * A3 * !B1 * X)	0.00152	0.00154	0.00152
	(A1 * A2 * A3 * !B1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * B1 * X)	0.00152	0.00153	0.00152
	(A1 * !A2 * B1 * X)	-0.00077	-0.00077	-0.00076
	(!A1 * B1 * X)	0.00152	0.00153	0.00152
	(!A1 * B1 * X)	-0.00077	-0.00077	-0.00076
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * A3 * !B1 * X)	0.00152	0.00152	0.00152
	(A1 * A2 * A3 * !B1 * X)	-0.00080	-0.00080	-0.00079
	(A1 * !A2 * B1 * X)	0.00151	0.00152	0.00152
	(A1 * !A2 * B1 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00151	0.00152	0.00152
	(!A1 * B1 * X)	-0.00081	-0.00081	-0.00080
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00247	0.00248	0.00247
	(A1 * A2 * B1 * X)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * A3 * !B1 * X)	0.00248	0.00249	0.00248
	(A1 * A2 * A3 * !B1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * B1 * X)	0.00247	0.00248	0.00248
	(A1 * !A2 * B1 * X)	-0.00172	-0.00172	-0.00171
	(!A1 * B1 * X)	0.00247	0.00248	0.00248
	(!A1 * B1 * X)	-0.00172	-0.00172	-0.00171

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)	-0.00146	-0.00147	-0.00150
	(A1 * A2 * B1 * X)	0.00081	0.00082	0.00078
	(A1 * A2 * A3 * !B1 * X)	-0.00129	-0.00130	-0.00147
	(A1 * A2 * A3 * !B1 * X)	0.00092	0.00093	0.00080
	(A1 * !A2 * B1 * X)	-0.00145	-0.00147	-0.00150
	(A1 * !A2 * B1 * X)	0.00081	0.00082	0.00079
	(!A1 * B1 * X)	-0.00145	-0.00147	-0.00150
	(!A1 * B1 * X)	0.00081	0.00082	0.00079
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00145	-0.00146	-0.00150
	(A1 * A2 * B1 * X)	0.00086	0.00086	0.00083
	(A1 * A2 * A3 * !B1 * X)	-0.00129	-0.00130	-0.00146
	(A1 * A2 * A3 * !B1 * X)	0.00098	0.00097	0.00085
	(A1 * !A2 * B1 * X)	-0.00145	-0.00146	-0.00150
	(A1 * !A2 * B1 * X)	0.00087	0.00087	0.00083
	(!A1 * B1 * X)	-0.00145	-0.00146	-0.00150
	(!A1 * B1 * X)	0.00087	0.00087	0.00083
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00230	-0.00231	-0.00243
	(A1 * A2 * B1 * X)	0.00189	0.00188	0.00177
	(A1 * A2 * A3 * !B1 * X)	-0.00193	-0.00195	-0.00236
	(A1 * A2 * A3 * !B1 * X)	0.00213	0.00212	0.00182
	(A1 * !A2 * B1 * X)	-0.00229	-0.00230	-0.00243
	(A1 * !A2 * B1 * X)	0.00190	0.00189	0.00178
	(!A1 * B1 * X)	-0.00229	-0.00230	-0.00243
	(!A1 * B1 * X)	0.00190	0.00189	0.00178

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00300	0.00308	0.00298	0.00304	0.38185
sky130_fd_sc_hs__a31oi_2	0.00574	0.00561	0.00595	0.00464	0.75214
sky130_fd_sc_hs__a31oi_4	0.01162	0.01106	0.01103	0.00935	1.28665

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.73311	1.44923
sky130_fd_sc_hs__a31oi_2	0.00000	1.29281	2.88834
sky130_fd_sc_hs__a31oi_4	0.00000	2.52509	5.65036

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)	0.12502	1.03710	9.68010
	A2->Y (FR)	0.15706	1.08424	9.85466
	A3->Y (FR)	0.17198	1.09776	9.81060
	B1->Y (FR)	0.11597	1.07344	10.31950
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.11204	0.89479	9.87397
	A2->Y (FR)	0.13579	0.91569	9.85240
	A3->Y (FR)	0.15427	0.92906	9.72852
	B1->Y (FR)	0.08837	0.90244	10.30530
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.10977	0.76292	9.37400
	A2->Y (FR)	0.13829	0.78355	9.28153
	A3->Y (FR)	0.16490	0.82209	9.41777
	B1->Y (FR)	0.11742	0.82002	10.01870

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.08029	0.75371	7.25634
	A2->Y (RF)	0.09523	0.73101	6.77856
	A3->Y (RF)	0.09966	0.68858	6.19008
	B1->Y (RF)	0.03163	0.48018	4.80721
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.07475	0.69632	7.65320
	A2->Y (RF)	0.08648	0.64603	6.91348
	A3->Y (RF)	0.09406	0.61355	6.38073
	B1->Y (RF)	0.03903	0.60409	6.95393
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.07638	0.62342	7.50598
	A2->Y (RF)	0.09189	0.57974	6.77389
	A3->Y (RF)	0.09921	0.53728	6.09993
	B1->Y (RF)	0.03589	0.50165	6.35577

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00020	0.00013	0.00293
	A1	0.00558	0.00552	0.00831
	A2	0.00089	0.00076	0.00356
	A2	0.00719	0.00707	0.00986
	A3	0.00119	0.00111	0.00393
	A3	0.00839	0.00831	0.01112
	B1	-0.00016	0.00033	0.00568
	B1	0.00578	0.00617	0.01131
sky130_fd_sc_hs__a31oi_2	A1	0.00040	0.00030	0.00570
	A1	0.01061	0.01048	0.01589
	A2	0.00163	0.00145	0.00692
	A2	0.01348	0.01331	0.01874
	A3	0.00266	0.00247	0.00790
	A3	0.01637	0.01620	0.02140
	B1	0.00085	0.00143	0.00762
	B1	0.01336	0.01367	0.01930
sky130_fd_sc_hs__a31oi_4	A1	-0.00070	-0.00086	0.01050
	A1	0.02015	0.01994	0.03146
	A2	0.00256	0.00209	0.01359
	A2	0.02676	0.02635	0.03792
	A3	0.00498	0.00459	0.01609
	A3	0.03267	0.03233	0.04381
	B1	0.00036	0.00170	0.01480
	B1	0.02679	0.02778	0.03906

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00715	0.00709	0.00987
	A1	0.00180	0.00179	0.00449
	A2	0.00811	0.00798	0.01041
	A2	0.00179	0.00164	0.00403
	A3	0.00898	0.00885	0.01137
	A3	0.00172	0.00158	0.00411
	B1	0.00422	0.00449	0.00831
	B1	-0.00011	0.00013	0.00380
sky130_fd_sc_hs__a31oi_2	A1	0.01329	0.01322	0.01827
	A1	0.00315	0.00310	0.00816
	A2	0.01498	0.01477	0.01974
	A2	0.00312	0.00286	0.00760
	A3	0.01699	0.01666	0.02161
	A3	0.00316	0.00283	0.00780
	B1	0.00684	0.00728	0.01169
	B1	-0.00143	-0.00090	0.00336
sky130_fd_sc_hs__a31oi_4	A1	0.02679	0.02670	0.03698
	A1	0.00605	0.00596	0.01620
	A2	0.03012	0.02958	0.03954
	A2	0.00596	0.00525	0.01488
	A3	0.03382	0.03311	0.04406
	A3	0.00586	0.00513	0.01547
	B1	0.01400	0.01494	0.02518
	B1	-0.00296	-0.00211	0.00742

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)**	0.00162	0.00137	0.00135
	(A2 * A3 * B1 * !Y)	-0.00149	-0.00175	-0.00179
	(A2 * !A3 * B1 * !Y)	0.00125	0.00126	0.00125
	(A2 * !A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(A2 * !A3 * !B1 * Y)	0.00049	0.00048	0.00043
	(A2 * !A3 * !B1 * Y)	-0.00201	-0.00200	-0.00211
	(!A2 * B1 * !Y)	0.00129	0.00129	0.00129
	(!A2 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * !B1 * Y)	0.00048	0.00048	0.00045
	(!A2 * !B1 * Y)	-0.00207	-0.00209	-0.00212
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00323	0.00277	0.00271
	(A2 * A3 * B1 * !Y)	-0.00305	-0.00358	-0.00364
	(A2 * !A3 * B1 * !Y)	0.00249	0.00252	0.00250
	(A2 * !A3 * B1 * !Y)	-0.00368	-0.00370	-0.00369
	(A2 * !A3 * !B1 * Y)	0.00096	0.00095	0.00084
	(A2 * !A3 * !B1 * Y)	-0.00410	-0.00411	-0.00433
	(!A2 * B1 * !Y)	0.00257	0.00260	0.00258
	(!A2 * B1 * !Y)	-0.00367	-0.00370	-0.00369
	(!A2 * !B1 * Y)	0.00090	0.00090	0.00085
	(!A2 * !B1 * Y)	-0.00427	-0.00427	-0.00437
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00671	0.00574	0.00561
	(A2 * A3 * B1 * !Y)	-0.00596	-0.00708	-0.00719
	(A2 * !A3 * B1 * !Y)	0.00518	0.00521	0.00518
	(A2 * !A3 * B1 * !Y)	-0.00729	-0.00731	-0.00728
	(A2 * !A3 * !B1 * Y)	0.00203	0.00202	0.00177
	(A2 * !A3 * !B1 * Y)	-0.00814	-0.00820	-0.00867
	(!A2 * B1 * !Y)	0.00537	0.00539	0.00537
	(!A2 * B1 * !Y)	-0.00730	-0.00730	-0.00728
	(!A2 * !B1 * Y)	0.00199	0.00199	0.00185
	(!A2 * !B1 * Y)	-0.00849	-0.00852	-0.00873

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)	-0.00132	-0.00132	-0.00132
	(A2 * A3 * B1 * !Y)	0.00178	0.00178	0.00179
	(A2 * !A3 * B1 * !Y)	-0.00115	-0.00126	-0.00125
	(A2 * !A3 * B1 * !Y)	0.00182	0.00185	0.00183
	(A2 * !A3 * !B1 * Y)	-0.00042	-0.00042	-0.00042
	(A2 * !A3 * !B1 * Y)	0.00213	0.00215	0.00213
	(!A2 * B1 * !Y)	-0.00127	-0.00129	-0.00129
	(!A2 * B1 * !Y)	0.00184	0.00185	0.00183
	(!A2 * !B1 * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * !B1 * Y)	0.00213	0.00215	0.00214
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00267	-0.00268	-0.00265
	(A2 * A3 * B1 * !Y)	0.00362	0.00365	0.00364
	(A2 * !A3 * B1 * !Y)	-0.00230	-0.00252	-0.00250
	(A2 * !A3 * B1 * !Y)	0.00371	0.00374	0.00372
	(A2 * !A3 * !B1 * Y)	-0.00080	-0.00080	-0.00079
	(A2 * !A3 * !B1 * Y)	0.00440	0.00442	0.00439
	(!A2 * B1 * !Y)	-0.00254	-0.00259	-0.00258
	(!A2 * B1 * !Y)	0.00373	0.00374	0.00372
	(!A2 * !B1 * Y)	-0.00081	-0.00082	-0.00080
	(!A2 * !B1 * Y)	0.00441	0.00445	0.00440

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00554	-0.00551	-0.00549
	(A2 * A3 * B1 * !Y)	0.00718	0.00713	0.00719
	(A2 * !A3 * B1 * !Y)	-0.00477	-0.00521	-0.00518
	(A2 * !A3 * B1 * !Y)	0.00735	0.00738	0.00736
	(A2 * !A3 * !B1 * Y)	-0.00169	-0.00172	-0.00170
	(A2 * !A3 * !B1 * Y)	0.00874	0.00890	0.00878
	(!A2 * B1 * !Y)	-0.00529	-0.00538	-0.00537
	(!A2 * B1 * !Y)	0.00738	0.00739	0.00735
	(!A2 * !B1 * Y)	-0.00176	-0.00179	-0.00176
	(!A2 * !B1 * Y)	0.00875	0.00891	0.00879

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)**	0.00171	0.00146	0.00143
	(A1 * A3 * B1 * !Y)	-0.00149	-0.00175	-0.00179
	(A1 * !A3 * B1 * !Y)	0.00137	0.00138	0.00137
	(A1 * !A3 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(A1 * !A3 * !B1 * Y)	0.00055	0.00055	0.00055
	(A1 * !A3 * !B1 * Y)	-0.00199	-0.00199	-0.00197
	(!A1 * A3 * B1 * !Y)	0.00138	0.00139	0.00138
	(!A1 * A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A3 * !B1 * Y)	0.00121	0.00122	0.00121
	(!A1 * A3 * !B1 * Y)	-0.00198	-0.00199	-0.00198
	(!A1 * !A3 * B1 * !Y)	0.00089	0.00090	0.00089
	(!A1 * !A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * !A3 * !B1 * Y)	0.00069	0.00070	0.00070
	(!A1 * !A3 * !B1 * Y)	-0.00198	-0.00200	-0.00199

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00302	0.00256	0.00251
	(A1 * A3 * B1 * !Y)	-0.00305	-0.00357	-0.00366
	(A1 * !A3 * B1 * !Y)	0.00238	0.00239	0.00239
	(A1 * !A3 * B1 * !Y)	-0.00371	-0.00372	-0.00371
	(A1 * !A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(A1 * !A3 * !B1 * Y)	-0.00373	-0.00374	-0.00370
	(!A1 * A3 * B1 * !Y)	0.00239	0.00241	0.00239
	(!A1 * A3 * B1 * !Y)	-0.00370	-0.00372	-0.00371
	(!A1 * A3 * !B1 * Y)	0.00238	0.00241	0.00239
	(!A1 * A3 * !B1 * Y)	-0.00371	-0.00373	-0.00371
	(!A1 * !A3 * B1 * !Y)	0.00143	0.00144	0.00142
	(!A1 * !A3 * B1 * !Y)	-0.00372	-0.00373	-0.00371
	(!A1 * !A3 * !B1 * Y)	0.00137	0.00137	0.00136
	(!A1 * !A3 * !B1 * Y)	-0.00376	-0.00377	-0.00375
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00642	0.00544	0.00533
	(A1 * A3 * B1 * !Y)	-0.00606	-0.00718	-0.00733
	(A1 * !A3 * B1 * !Y)	0.00502	0.00505	0.00502
	(A1 * !A3 * B1 * !Y)	-0.00744	-0.00747	-0.00743
	(A1 * !A3 * !B1 * Y)	0.00232	0.00235	0.00238
	(A1 * !A3 * !B1 * Y)	-0.00748	-0.00753	-0.00745
	(!A1 * A3 * B1 * !Y)	0.00512	0.00514	0.00510
	(!A1 * A3 * B1 * !Y)	-0.00746	-0.00747	-0.00743
	(!A1 * A3 * !B1 * Y)	0.00504	0.00509	0.00507
	(!A1 * A3 * !B1 * Y)	-0.00746	-0.00750	-0.00747
	(!A1 * !A3 * B1 * !Y)	0.00312	0.00316	0.00313
	(!A1 * !A3 * B1 * !Y)	-0.00742	-0.00748	-0.00744
	(!A1 * !A3 * !B1 * Y)	0.00296	0.00300	0.00298
	(!A1 * !A3 * !B1 * Y)	-0.00751	-0.00758	-0.00754

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)	-0.00141	-0.00141	-0.00141
	(A1 * A3 * B1 * !Y)	0.00178	0.00178	0.00179
	(A1 * !A3 * B1 * !Y)	-0.00136	-0.00137	-0.00137
	(A1 * !A3 * B1 * !Y)	0.00184	0.00184	0.00183
	(A1 * !A3 * !B1 * Y)	-0.00050	-0.00050	-0.00052
	(A1 * !A3 * !B1 * Y)	0.00204	0.00206	0.00201
	(!A1 * A3 * B1 * !Y)	-0.00136	-0.00138	-0.00138
	(!A1 * A3 * B1 * !Y)	0.00184	0.00185	0.00183
	(!A1 * A3 * !B1 * Y)	-0.00109	-0.00120	-0.00121
	(!A1 * A3 * !B1 * Y)	0.00211	0.00203	0.00200
	(!A1 * !A3 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * B1 * !Y)	0.00182	0.00183	0.00183
	(!A1 * !A3 * !B1 * Y)	-0.00069	-0.00070	-0.00070
	(!A1 * !A3 * !B1 * Y)	0.00206	0.00207	0.00202
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00248	-0.00247	-0.00246
	(A1 * A3 * B1 * !Y)	0.00366	0.00366	0.00366
	(A1 * !A3 * B1 * !Y)	-0.00235	-0.00239	-0.00239
	(A1 * !A3 * B1 * !Y)	0.00374	0.00377	0.00374
	(A1 * !A3 * !B1 * Y)	-0.00098	-0.00099	-0.00101
	(A1 * !A3 * !B1 * Y)	0.00385	0.00387	0.00379
	(!A1 * A3 * B1 * !Y)	-0.00234	-0.00240	-0.00239
	(!A1 * A3 * B1 * !Y)	0.00376	0.00378	0.00374
	(!A1 * A3 * !B1 * Y)	-0.00215	-0.00235	-0.00239
	(!A1 * A3 * !B1 * Y)	0.00397	0.00376	0.00374
	(!A1 * !A3 * B1 * !Y)	-0.00143	-0.00144	-0.00142
	(!A1 * !A3 * B1 * !Y)	0.00374	0.00376	0.00374
	(!A1 * !A3 * !B1 * Y)	-0.00137	-0.00137	-0.00136
	(!A1 * !A3 * !B1 * Y)	0.00390	0.00392	0.00380

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00526	-0.00526	-0.00521
	(A1 * A3 * B1 * !Y)	0.00733	0.00735	0.00733
	(A1 * !A3 * B1 * !Y)	-0.00495	-0.00505	-0.00502
	(A1 * !A3 * B1 * !Y)	0.00749	0.00760	0.00751
	(A1 * !A3 * !B1 * Y)	-0.00212	-0.00214	-0.00222
	(A1 * !A3 * !B1 * Y)	0.00778	0.00782	0.00763
	(!A1 * A3 * B1 * !Y)	-0.00500	-0.00510	-0.00510
	(!A1 * A3 * B1 * !Y)	0.00753	0.00755	0.00750
	(!A1 * A3 * !B1 * Y)	-0.00454	-0.00501	-0.00507
	(!A1 * A3 * !B1 * Y)	0.00802	0.00764	0.00754
	(!A1 * !A3 * B1 * !Y)	-0.00312	-0.00316	-0.00313
	(!A1 * !A3 * B1 * !Y)	0.00750	0.00754	0.00751
	(!A1 * !A3 * !B1 * Y)	-0.00296	-0.00300	-0.00298
	(!A1 * !A3 * !B1 * Y)	0.00784	0.00788	0.00765

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)**	0.00174	0.00151	0.00148
	(A1 * A2 * B1 * !Y)	-0.00154	-0.00180	-0.00184
	(A1 * !A2 * !B1 * Y)	0.00133	0.00133	0.00132
	(A1 * !A2 * !B1 * Y)	-0.00196	-0.00196	-0.00196
	(!A2 * B1 * !Y)	0.00143	0.00143	0.00142
	(!A2 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * A2 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * A2 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * Y)	-0.00196	-0.00197	-0.00196

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00328	0.00283	0.00277
	(A1 * A2 * B1 * !Y)	-0.00303	-0.00356	-0.00363
	(A1 * !A2 * !B1 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * !B1 * Y)	-0.00369	-0.00370	-0.00368
	(!A2 * B1 * !Y)	0.00266	0.00267	0.00265
	(!A2 * B1 * !Y)	-0.00368	-0.00369	-0.00367
	(!A1 * A2 * B1 * !Y)	0.00256	0.00258	0.00255
	(!A1 * A2 * B1 * !Y)	-0.00367	-0.00369	-0.00367
	(!A1 * A2 * !B1 * Y)	0.00255	0.00256	0.00255
	(!A1 * A2 * !B1 * Y)	-0.00368	-0.00369	-0.00368
	(!A1 * !A2 * !B1 * Y)	0.00261	0.00262	0.00260
	(!A1 * !A2 * !B1 * Y)	-0.00369	-0.00370	-0.00368
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00635	0.00540	0.00529
	(A1 * A2 * B1 * !Y)	-0.00608	-0.00716	-0.00731
	(A1 * !A2 * !B1 * Y)	0.00501	0.00506	0.00501
	(A1 * !A2 * !B1 * Y)	-0.00743	-0.00746	-0.00742
	(!A2 * B1 * !Y)	0.00500	0.00504	0.00501
	(!A2 * B1 * !Y)	-0.00739	-0.00743	-0.00741
	(!A1 * A2 * B1 * !Y)	0.00488	0.00492	0.00488
	(!A1 * A2 * B1 * !Y)	-0.00741	-0.00744	-0.00741
	(!A1 * A2 * !B1 * Y)	0.00487	0.00488	0.00487
	(!A1 * A2 * !B1 * Y)	-0.00742	-0.00743	-0.00741
	(!A1 * !A2 * !B1 * Y)	0.00497	0.00503	0.00498
	(!A1 * !A2 * !B1 * Y)	-0.00742	-0.00746	-0.00743

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)**	-0.00146	-0.00146	-0.00146
	(A1 * A2 * B1 * !Y)	0.00183	0.00182	0.00184
	(A1 * !A2 * !B1 * Y)	-0.00126	-0.00132	-0.00132
	(A1 * !A2 * !B1 * Y)	0.00198	0.00201	0.00198
	(!A2 * B1 * !Y)	-0.00140	-0.00143	-0.00142
	(!A2 * B1 * !Y)	0.00187	0.00190	0.00188
	(!A1 * A2 * B1 * !Y)	-0.00132	-0.00140	-0.00139
	(!A1 * A2 * B1 * !Y)	0.00187	0.00189	0.00188
	(!A1 * A2 * !B1 * Y)	-0.00119	-0.00129	-0.00129
	(!A1 * A2 * !B1 * Y)	0.00200	0.00199	0.00198
	(!A1 * !A2 * !B1 * Y)	-0.00129	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * Y)	0.00198	0.00200	0.00198
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00273	-0.00274	-0.00271
	(A1 * A2 * B1 * !Y)	0.00361	0.00364	0.00363
	(A1 * !A2 * !B1 * Y)	-0.00244	-0.00258	-0.00260
	(A1 * !A2 * !B1 * Y)	0.00375	0.00376	0.00371
	(!A2 * B1 * !Y)	-0.00260	-0.00266	-0.00265
	(!A2 * B1 * !Y)	0.00370	0.00374	0.00371
	(!A1 * A2 * B1 * !Y)	-0.00239	-0.00257	-0.00255
	(!A1 * A2 * B1 * !Y)	0.00370	0.00374	0.00371
	(!A1 * A2 * !B1 * Y)	-0.00234	-0.00256	-0.00255
	(!A1 * A2 * !B1 * Y)	0.00378	0.00375	0.00371
	(!A1 * !A2 * !B1 * Y)	-0.00253	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * Y)	0.00370	0.00374	0.00371

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00521	-0.00523	-0.00517
	(A1 * A2 * B1 * !Y)	0.00728	0.00734	0.00731
	(A1 * !A2 * !B1 * Y)	-0.00476	-0.00502	-0.00501
	(A1 * !A2 * !B1 * Y)	0.00749	0.00755	0.00748
	(!A2 * B1 * !Y)	-0.00492	-0.00504	-0.00501
	(!A2 * B1 * !Y)	0.00746	0.00755	0.00748
	(!A1 * A2 * B1 * !Y)	-0.00456	-0.00491	-0.00488
	(!A1 * A2 * B1 * !Y)	0.00748	0.00754	0.00748
	(!A1 * A2 * !B1 * Y)	-0.00447	-0.00488	-0.00487
	(!A1 * A2 * !B1 * Y)	0.00759	0.00755	0.00747
	(!A1 * !A2 * !B1 * Y)	-0.00485	-0.00503	-0.00498
	(!A1 * !A2 * !B1 * Y)	0.00743	0.00754	0.00747

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)**	0.00164	0.00165	0.00164
	(A1 * A2 * A3 * !Y)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00175	0.00177	0.00176
	(A1 * A2 * A3 * !Y)	-0.00162	-0.00164	-0.00163
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00365	0.00368	0.00365
	(A1 * A2 * A3 * !Y)	-0.00334	-0.00336	-0.00333

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)	-0.00151	-0.00151	-0.00162
	(A1 * A2 * A3 * !Y)	0.00094	0.00094	0.00085
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00144	-0.00145	-0.00171
	(A1 * A2 * A3 * !Y)	0.00191	0.00190	0.00170
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00303	-0.00308	-0.00356
	(A1 * A2 * A3 * !Y)	0.00384	0.00385	0.00348

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00265	0.00264	0.00264	0.00285	0.80853
sky130_fd_sc_hs__a31o_2	0.00295	0.00286	0.00288	0.00279	1.58511
sky130_fd_sc_hs__a31o_4	0.00523	0.00510	0.00508	0.00522	3.11826

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	1.75924	2.91456
sky130_fd_sc_hs__a31o_2	0.00000	2.19059	3.13691
sky130_fd_sc_hs__a31o_4	0.00000	4.33956	6.29729

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)	0.16653	0.89314	7.74021
	A2->X (RR)	0.17966	0.89226	7.71981
	A3->X (RR)	0.18588	0.86890	7.56944
	B1->X (RR)	0.09078	0.75667	7.34427
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.17265	0.81494	7.72056
	A2->X (RR)	0.18538	0.80727	7.68337
	A3->X (RR)	0.19167	0.78031	7.53108
	B1->X (RR)	0.08919	0.67628	7.30012
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.19373	0.77644	7.94120
	A2->X (RR)	0.20753	0.76260	7.87064
	A3->X (RR)	0.21542	0.73637	7.71557
	B1->X (RR)	0.08908	0.60335	7.43320

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.19692	0.68032	4.30114
	A2->X (FF)	0.22721	0.72630	4.41387
	A3->X (FF)	0.24467	0.75330	4.51067
	B1->X (FF)	0.21109	0.74523	4.62623
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.25877	0.74231	4.59835
	A2->X (FF)	0.29774	0.79361	4.72269
	A3->X (FF)	0.31221	0.81436	4.79411
	B1->X (FF)	0.27629	0.81873	4.94264
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.25150	0.69201	4.59573
	A2->X (FF)	0.28186	0.73527	4.71139
	A3->X (FF)	0.30956	0.77289	4.82953
	B1->X (FF)	0.26624	0.76177	4.94498

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00934	0.00964	0.02256
	A1	0.00457	0.00489	0.01797
	A2	0.01005	0.01013	0.02167
	A2	0.00458	0.00466	0.01637
	A3	0.01084	0.01081	0.02127
	A3	0.00457	0.00455	0.01501
	B1	0.00771	0.00843	0.02549
	B1	0.00297	0.00377	0.02194
sky130_fd_sc_hs__a31o_2	A1	0.01240	0.01278	0.02591
	A1	0.00725	0.00763	0.02112
	A2	0.01321	0.01342	0.02513
	A2	0.00725	0.00746	0.01952
	A3	0.01411	0.01423	0.02491
	A3	0.00722	0.00734	0.01808
	B1	0.01135	0.01217	0.02740
	B1	0.00554	0.00642	0.02385
sky130_fd_sc_hs__a31o_4	A1	0.02431	0.02493	0.05001
	A1	0.01476	0.01538	0.04094
	A2	0.02583	0.02616	0.04865
	A2	0.01474	0.01545	0.03816
	A3	0.02743	0.02770	0.04990
	A3	0.01472	0.01499	0.03791
	B1	0.02047	0.02221	0.05419
	B1	0.01006	0.01196	0.04721

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00318	0.00341	0.01566
	A1	0.00795	0.00817	0.02009
	A2	0.00373	0.00396	0.01559
	A2	0.00918	0.00940	0.02087
	A3	0.00400	0.00414	0.01586
	A3	0.01020	0.01033	0.02175
	B1	0.00268	0.00393	0.02241
	B1	0.00794	0.00899	0.02632
sky130_fd_sc_hs__a31o_2	A1	0.00562	0.00586	0.01799
	A1	0.01078	0.01101	0.02314
	A2	0.00641	0.00650	0.01866
	A2	0.01235	0.01245	0.02430
	A3	0.00672	0.00678	0.01878
	A3	0.01352	0.01357	0.02541
	B1	0.00514	0.00660	0.02547
	B1	0.01086	0.01195	0.02944
sky130_fd_sc_hs__a31o_4	A1	0.01152	0.01186	0.03681
	A1	0.02110	0.02142	0.04509
	A2	0.01276	0.01295	0.03669
	A2	0.02381	0.02396	0.04688
	A3	0.01400	0.01421	0.03868
	A3	0.02655	0.02678	0.04983
	B1	0.01076	0.01346	0.04929
	B1	0.02082	0.02300	0.05705

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)**	0.00144	0.00117	0.00113
	(A2 * A3 * B1 * X)	-0.00133	-0.00160	-0.00165
	(A2 * !A3 * B1 * X)	0.00104	0.00105	0.00104
	(A2 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00035
	(A2 * !A3 * !B1 * !X)	-0.00184	-0.00185	-0.00193
	(!A2 * B1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * X)	-0.00168	-0.00168	-0.00167
	(!A2 * !B1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !X)	-0.00190	-0.00191	-0.00194
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00172	0.00147	0.00143
	(A2 * A3 * B1 * X)	-0.00127	-0.00155	-0.00159
	(A2 * !A3 * B1 * X)	0.00133	0.00134	0.00133
	(A2 * !A3 * B1 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * !B1 * !X)	0.00051	0.00051	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00188	-0.00189	-0.00198
	(!A2 * B1 * X)	0.00137	0.00138	0.00137
	(!A2 * B1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !X)	-0.00194	-0.00195	-0.00199
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00302	0.00252	0.00241
	(A2 * A3 * B1 * X)	-0.00266	-0.00323	-0.00330
	(A2 * !A3 * B1 * X)	0.00223	0.00224	0.00224
	(A2 * !A3 * B1 * X)	-0.00335	-0.00336	-0.00335
	(A2 * !A3 * !B1 * !X)	0.00095	0.00095	0.00083
	(A2 * !A3 * !B1 * !X)	-0.00367	-0.00369	-0.00390
	(!A2 * B1 * X)	0.00230	0.00231	0.00231
	(!A2 * B1 * X)	-0.00335	-0.00336	-0.00335
	(!A2 * !B1 * !X)	0.00091	0.00091	0.00085
	(!A2 * !B1 * !X)	-0.00383	-0.00385	-0.00393

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)	-0.00108	-0.00109	-0.00108
	(A2 * A3 * B1 * X)	0.00167	0.00168	0.00168
	(A2 * !A3 * B1 * X)	-0.00095	-0.00103	-0.00104
	(A2 * !A3 * B1 * X)	0.00172	0.00173	0.00171
	(A2 * !A3 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(A2 * !A3 * !B1 * !X)	0.00196	0.00197	0.00196
	(!A2 * B1 * X)	-0.00104	-0.00106	-0.00106
	(!A2 * B1 * X)	0.00172	0.00173	0.00171
	(!A2 * !B1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * !X)	0.00196	0.00198	0.00197
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00138	-0.00138	-0.00138
	(A2 * A3 * B1 * X)	0.00162	0.00163	0.00163
	(A2 * !A3 * B1 * X)	-0.00123	-0.00132	-0.00133
	(A2 * !A3 * B1 * X)	0.00167	0.00167	0.00166
	(A2 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00202	0.00204	0.00203
	(!A2 * B1 * X)	-0.00133	-0.00135	-0.00135
	(!A2 * B1 * X)	0.00166	0.00167	0.00166
	(!A2 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !X)	0.00202	0.00204	0.00203

sky130_fd_sc_hs__a31o_4	(A2 * A3 * B1 * X)	-0.00231	-0.00232	-0.00230
	(A2 * A3 * B1 * X)	0.00334	0.00337	0.00337
	(A2 * !A3 * B1 * X)	-0.00203	-0.00221	-0.00223
	(A2 * !A3 * B1 * X)	0.00343	0.00347	0.00344
	(A2 * !A3 * !B1 * !X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00400	0.00402	0.00401
	(!A2 * B1 * X)	-0.00222	-0.00226	-0.00226
	(!A2 * B1 * X)	0.00345	0.00347	0.00344
	(!A2 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * !B1 * !X)	0.00400	0.00402	0.00401

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)	0.00142	0.00115	0.00111
	(A1 * A3 * B1 * X)	-0.00132	-0.00159	-0.00164
	(A1 * !A3 * B1 * X)	0.00105	0.00106	0.00106
	(A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00045	0.00045	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00173	-0.00173	-0.00171
	(!A1 * A3 * B1 * X)	0.00106	0.00107	0.00106
	(!A1 * A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * A3 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * A3 * !B1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * B1 * X)	0.00064	0.00065	0.00064
	(!A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00173

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00168	0.00142	0.00138
	(A1 * A3 * B1 * X)	-0.00128	-0.00155	-0.00159
	(A1 * !A3 * B1 * X)	0.00132	0.00132	0.00132
	(A1 * !A3 * B1 * X)	-0.00162	-0.00162	-0.00161
	(A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00171
	(!A1 * A3 * B1 * X)	0.00132	0.00133	0.00132
	(!A1 * A3 * B1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !X)	0.00122	0.00123	0.00123
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00172	-0.00171
	(!A1 * !A3 * B1 * X)	0.00084	0.00085	0.00084
	(!A1 * !A3 * B1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A3 * !B1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00173
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00301	0.00247	0.00238
	(A1 * A3 * B1 * X)	-0.00267	-0.00323	-0.00333
	(A1 * !A3 * B1 * X)	0.00225	0.00227	0.00226
	(A1 * !A3 * B1 * X)	-0.00338	-0.00340	-0.00338
	(A1 * !A3 * !B1 * !X)	0.00113	0.00114	0.00114
	(A1 * !A3 * !B1 * !X)	-0.00341	-0.00341	-0.00338
	(!A1 * A3 * B1 * X)	0.00228	0.00229	0.00228
	(!A1 * A3 * B1 * X)	-0.00338	-0.00339	-0.00338
	(!A1 * A3 * !B1 * !X)	0.00228	0.00230	0.00229
	(!A1 * A3 * !B1 * !X)	-0.00337	-0.00338	-0.00337
	(!A1 * !A3 * B1 * X)	0.00146	0.00146	0.00145
	(!A1 * !A3 * B1 * X)	-0.00339	-0.00340	-0.00338
	(!A1 * !A3 * !B1 * !X)	0.00140	0.00140	0.00139
	(!A1 * !A3 * !B1 * !X)	-0.00343	-0.00343	-0.00342

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)	-0.00106	-0.00107	-0.00106
	(A1 * A3 * B1 * X)	0.00167	0.00168	0.00168
	(A1 * !A3 * B1 * X)	-0.00102	-0.00103	-0.00103
	(A1 * !A3 * B1 * X)	0.00171	0.00172	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00039	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !X)	0.00179	0.00180	0.00176
	(!A1 * A3 * B1 * X)	-0.00102	-0.00104	-0.00104
	(!A1 * A3 * B1 * X)	0.00171	0.00172	0.00171
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00098	-0.00099
	(!A1 * A3 * !B1 * !X)	0.00185	0.00179	0.00175
	(!A1 * !A3 * B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A3 * B1 * X)	0.00170	0.00171	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A3 * !B1 * !X)	0.00180	0.00182	0.00177
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * A3 * B1 * X)	0.00162	0.00163	0.00163
	(A1 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00130
	(A1 * !A3 * B1 * X)	0.00166	0.00166	0.00166
	(A1 * !A3 * !B1 * !X)	-0.00049	-0.00049	-0.00051
	(A1 * !A3 * !B1 * !X)	0.00181	0.00182	0.00178
	(!A1 * A3 * B1 * X)	-0.00128	-0.00130	-0.00130
	(!A1 * A3 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A3 * !B1 * !X)	-0.00108	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !X)	0.00187	0.00179	0.00176
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A3 * !B1 * !X)	0.00182	0.00184	0.00178

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00229	-0.00230	-0.00227
	(A1 * A3 * B1 * X)	0.00338	0.00341	0.00340
	(A1 * !A3 * B1 * X)	-0.00217	-0.00220	-0.00222
	(A1 * !A3 * B1 * X)	0.00348	0.00347	0.00347
	(A1 * !A3 * !B1 * !X)	-0.00096	-0.00097	-0.00101
	(A1 * !A3 * !B1 * !X)	0.00358	0.00360	0.00352
	(!A1 * A3 * B1 * X)	-0.00219	-0.00222	-0.00223
	(!A1 * A3 * B1 * X)	0.00348	0.00346	0.00346
	(!A1 * A3 * !B1 * !X)	-0.00199	-0.00218	-0.00223
	(!A1 * A3 * !B1 * !X)	0.00369	0.00349	0.00347
	(!A1 * !A3 * B1 * X)	-0.00146	-0.00146	-0.00145
	(!A1 * !A3 * B1 * X)	0.00346	0.00348	0.00347
	(!A1 * !A3 * !B1 * !X)	-0.00140	-0.00140	-0.00139
	(!A1 * !A3 * !B1 * !X)	0.00362	0.00364	0.00353

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)**	0.00151	0.00127	0.00122
	(A1 * A2 * B1 * X)	-0.00132	-0.00159	-0.00162
	(A1 * !A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !X)	-0.00179	-0.00179	-0.00178
	(!A2 * B1 * X)	0.00117	0.00118	0.00117
	(!A2 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * B1 * X)	0.00113	0.00115	0.00114
	(!A1 * A2 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * !B1 * !X)	0.00099	0.00100	0.00100
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * !B1 * !X)	-0.00179	-0.00179	-0.00179

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00175	0.00153	0.00148
	(A1 * A2 * B1 * X)	-0.00126	-0.00154	-0.00157
	(A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * X)	0.00142	0.00143	0.00142
	(!A2 * B1 * X)	-0.00160	-0.00160	-0.00159
	(!A1 * A2 * B1 * X)	0.00138	0.00139	0.00139
	(!A1 * A2 * B1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * A2 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !X)	0.00122	0.00121	0.00122
	(!A1 * !A2 * !B1 * !X)	-0.00179	-0.00178	-0.00179
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00297	0.00243	0.00236
	(A1 * A2 * B1 * X)	-0.00266	-0.00323	-0.00334
	(A1 * !A2 * !B1 * !X)	0.00223	0.00225	0.00224
	(A1 * !A2 * !B1 * !X)	-0.00338	-0.00340	-0.00339
	(!A2 * B1 * X)	0.00225	0.00225	0.00224
	(!A2 * B1 * X)	-0.00340	-0.00340	-0.00339
	(!A1 * A2 * B1 * X)	0.00217	0.00219	0.00218
	(!A1 * A2 * B1 * X)	-0.00338	-0.00340	-0.00339
	(!A1 * A2 * !B1 * !X)	0.00217	0.00218	0.00218
	(!A1 * A2 * !B1 * !X)	-0.00339	-0.00340	-0.00339
	(!A1 * !A2 * !B1 * !X)	0.00222	0.00224	0.00223
	(!A1 * !A2 * !B1 * !X)	-0.00339	-0.00341	-0.00340

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)**	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B1 * X)	0.00164	0.00166	0.00166
	(A1 * !A2 * !B1 * !X)	-0.00096	-0.00101	-0.00101
	(A1 * !A2 * !B1 * !X)	0.00184	0.00184	0.00182
	(!A2 * B1 * X)	-0.00112	-0.00115	-0.00115
	(!A2 * B1 * X)	0.00167	0.00170	0.00168
	(!A1 * A2 * B1 * X)	-0.00105	-0.00112	-0.00113
	(!A1 * A2 * B1 * X)	0.00168	0.00169	0.00168
	(!A1 * A2 * !B1 * !X)	-0.00090	-0.00098	-0.00100
	(!A1 * A2 * !B1 * !X)	0.00184	0.00183	0.00181
	(!A1 * !A2 * !B1 * !X)	-0.00099	-0.00101	-0.00101
	(!A1 * !A2 * !B1 * !X)	0.00182	0.00184	0.00181
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00143	-0.00143	-0.00142
	(A1 * A2 * B1 * X)	0.00160	0.00161	0.00161
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00120	-0.00120
	(A1 * !A2 * !B1 * !X)	0.00185	0.00185	0.00183
	(!A2 * B1 * X)	-0.00137	-0.00140	-0.00139
	(!A2 * B1 * X)	0.00163	0.00166	0.00164
	(!A1 * A2 * B1 * X)	-0.00128	-0.00136	-0.00138
	(!A1 * A2 * B1 * X)	0.00163	0.00165	0.00164
	(!A1 * A2 * !B1 * !X)	-0.00107	-0.00117	-0.00119
	(!A1 * A2 * !B1 * !X)	0.00185	0.00184	0.00183
	(!A1 * !A2 * !B1 * !X)	-0.00117	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * !X)	0.00184	0.00185	0.00183

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00226	-0.00228	-0.00224
	(A1 * A2 * B1 * X)	0.00339	0.00343	0.00341
	(A1 * !A2 * !B1 * !X)	-0.00208	-0.00218	-0.00219
	(A1 * !A2 * !B1 * !X)	0.00352	0.00351	0.00348
	(!A2 * B1 * X)	-0.00213	-0.00219	-0.00220
	(!A2 * B1 * X)	0.00346	0.00350	0.00347
	(!A1 * A2 * B1 * X)	-0.00199	-0.00214	-0.00217
	(!A1 * A2 * B1 * X)	0.00347	0.00350	0.00347
	(!A1 * A2 * !B1 * !X)	-0.00194	-0.00212	-0.00216
	(!A1 * A2 * !B1 * !X)	0.00353	0.00351	0.00348
	(!A1 * !A2 * !B1 * !X)	-0.00212	-0.00219	-0.00219
	(!A1 * !A2 * !B1 * !X)	0.00350	0.00351	0.00348

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)**	0.00162	0.00164	0.00162
	(A1 * A2 * A3 * X)	-0.00076	-0.00077	-0.00076
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00154	0.00156	0.00155
	(A1 * A2 * A3 * X)	-0.00074	-0.00075	-0.00074
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00265	0.00268	0.00267
	(A1 * A2 * A3 * X)	-0.00160	-0.00162	-0.00161

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)	-0.00147	-0.00149	-0.00159
	(A1 * A2 * A3 * X)	0.00088	0.00089	0.00080
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00140	-0.00141	-0.00151
	(A1 * A2 * A3 * X)	0.00087	0.00087	0.00079
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00230	-0.00232	-0.00259
	(A1 * A2 * A3 * X)	0.00193	0.00191	0.00171

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00306	0.00306	0.00278	0.00312	0.00290	0.37892
sky130_fd_sc_hs__a32oi_2	0.00577	0.00563	0.00554	0.00583	0.00568	0.71346
sky130_fd_sc_hs__a32oi_4	0.01143	0.01113	0.01107	0.01164	0.01126	1.23400

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.87502	1.59915
sky130_fd_sc_hs__a32oi_2	0.00000	1.68702	3.19757
sky130_fd_sc_hs__a32oi_4	0.00000	3.26651	6.38875

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)	0.17355	1.10405	9.83989
	A2->Y (FR)	0.19723	1.12773	9.85771
	A3->Y (FR)	0.21506	1.14600	9.83495
	B1->Y (FR)	0.12219	1.07634	10.30120
	B2->Y (FR)	0.14313	1.10286	10.31310
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.15479	0.91932	9.49468
	A2->Y (FR)	0.19431	0.97877	9.78257
	A3->Y (FR)	0.21211	0.99599	9.72309
	B1->Y (FR)	0.10408	0.91383	10.15720
	B2->Y (FR)	0.13716	0.95305	10.26240
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.16833	0.82651	9.40158
	A2->Y (FR)	0.19899	0.85437	9.38002
	A3->Y (FR)	0.22263	0.87985	9.38437
	B1->Y (FR)	0.13390	0.82936	9.85703
	B2->Y (FR)	0.17292	0.87882	10.09710

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.10833	0.78089	7.24574
	A2->Y (RF)	0.12033	0.75592	6.77464
	A3->Y (RF)	0.12536	0.71427	6.17385
	B1->Y (RF)	0.04837	0.61267	6.04502
	B2->Y (RF)	0.05362	0.56308	5.42507
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.10491	0.71937	7.49818
	A2->Y (RF)	0.12407	0.69888	7.01837
	A3->Y (RF)	0.12966	0.64155	6.23482
	B1->Y (RF)	0.04086	0.54539	6.14118
	B2->Y (RF)	0.05080	0.50057	5.48375
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.10611	0.64171	7.22761
	A2->Y (RF)	0.12294	0.61274	6.67058
	A3->Y (RF)	0.12879	0.55413	5.85860
	B1->Y (RF)	0.04147	0.47574	5.91010
	B2->Y (RF)	0.05020	0.42203	5.11313

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00057	0.00045	0.00331
	A1	0.00706	0.00696	0.00984
	A2	0.00103	0.00089	0.00374
	A2	0.00842	0.00830	0.01117
	A3	0.00218	0.00210	0.00486
	A3	0.01033	0.01025	0.01297
	B1	0.00046	0.00078	0.00580
	B1	0.00626	0.00657	0.01130
	B2	0.00090	0.00118	0.00628
	B2	0.00748	0.00773	0.01265
sky130_fd_sc_hs__a32oi_2	A1	0.00153	0.00128	0.00666
	A1	0.01439	0.01415	0.01954
	A2	0.00332	0.00299	0.00826
	A2	0.01795	0.01764	0.02276
	A3	0.00416	0.00399	0.00934
	A3	0.02049	0.02034	0.02562
	B1	-0.00062	0.00020	0.00995
	B1	0.01135	0.01192	0.02131
	B2	0.00112	0.00171	0.01151
	B2	0.01475	0.01524	0.02468

sky130_fd_sc_hs__a32oi_4	**A1**	0.00282	0.00221	0.01355
	A1	0.02865	0.02807	0.03944
	A2	0.00553	0.00487	0.01632
	A2	0.03483	0.03418	0.04570
	A3	0.00735	0.00701	0.01854
	A3	0.04015	0.03961	0.05137
	B1	-0.00119	0.00111	0.02052
	B1	0.02233	0.02408	0.04270
	B2	0.00194	0.00331	0.02319
	B2	0.02863	0.02974	0.04895

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00964	0.00967	0.01254
	A1	0.00319	0.00321	0.00601
	A2	0.01057	0.01039	0.01304
	A2	0.00318	0.00308	0.00556
	A3	0.01131	0.01120	0.01383
	A3	0.00315	0.00302	0.00568
	B1	0.00521	0.00547	0.00874
	B1	-0.00003	0.00010	0.00340
	B2	0.00606	0.00614	0.00918
	B2	-0.00002	0.00000	0.00296

sky130_fd_sc_hs__a32oi_2	**A1**	0.01879	0.01879	0.02428
	A1	0.00612	0.00609	0.01164
	A2	0.02068	0.02033	0.02527
	A2	0.00616	0.00583	0.01058
	A3	0.02246	0.02218	0.02759
	A3	0.00615	0.00580	0.01104
	B1	0.00784	0.00823	0.01471
	B1	-0.00035	0.00002	0.00650
	B2	0.01170	0.01187	0.01787
	B2	-0.00027	-0.00023	0.00555
sky130_fd_sc_hs__a32oi_4	**A1**	0.03670	0.03657	0.04804
	A1	0.01136	0.01114	0.02236
	A2	0.04029	0.03959	0.04949
	A2	0.01130	0.01059	0.02056
	A3	0.04387	0.04319	0.05512
	A3	0.01115	0.01042	0.02152
	B1	0.01590	0.01700	0.03017
	B1	-0.00077	0.00028	0.01328
	B2	0.02347	0.02366	0.03735
	B2	-0.00053	-0.00050	0.01170

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)**	0.00170	0.00145	0.00141
	(A2 * A3 * B1 * B2 * !Y)	-0.00145	-0.00175	-0.00178
	(A2 * !A3 * B1 * B2 * !Y)	0.00130	0.00131	0.00130
	(A2 * !A3 * B1 * B2 * !Y)	-0.00179	-0.00181	-0.00180
	(A2 * !A3 * B1 * !B2 * Y)	0.00051	0.00051	0.00046
	(A2 * !A3 * B1 * !B2 * Y)	-0.00203	-0.00205	-0.00214
	(A2 * !A3 * !B1 * Y)	0.00051	0.00051	0.00046
	(A2 * !A3 * !B1 * Y)	-0.00203	-0.00205	-0.00214
	(!A2 * B1 * B2 * !Y)	0.00134	0.00135	0.00134
	(!A2 * B1 * B2 * !Y)	-0.00181	-0.00181	-0.00180
	(!A2 * B1 * !B2 * Y)	0.00048	0.00048	0.00046
	(!A2 * B1 * !B2 * Y)	-0.00211	-0.00212	-0.00215
	(!A2 * !B1 * Y)	0.00048	0.00048	0.00046
	(!A2 * !B1 * Y)	-0.00211	-0.00212	-0.00215
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00335	0.00285	0.00278
	(A2 * A3 * B1 * B2 * !Y)	-0.00290	-0.00348	-0.00355
	(A2 * !A3 * B1 * B2 * !Y)	0.00256	0.00258	0.00257
	(A2 * !A3 * B1 * B2 * !Y)	-0.00359	-0.00362	-0.00360
	(A2 * !A3 * B1 * !B2 * Y)	0.00108	0.00107	0.00093
	(A2 * !A3 * B1 * !B2 * Y)	-0.00398	-0.00398	-0.00424
	(A2 * !A3 * !B1 * Y)	0.00108	0.00107	0.00094
	(A2 * !A3 * !B1 * Y)	-0.00398	-0.00399	-0.00424
	(!A2 * B1 * B2 * !Y)	0.00266	0.00268	0.00267
	(!A2 * B1 * B2 * !Y)	-0.00360	-0.00362	-0.00360
	(!A2 * B1 * !B2 * Y)	0.00106	0.00106	0.00098
	(!A2 * B1 * !B2 * Y)	-0.00413	-0.00414	-0.00426
	(!A2 * !B1 * Y)	0.00107	0.00106	0.00098
	(!A2 * !B1 * Y)	-0.00413	-0.00413	-0.00426

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00676	0.00567	0.00550
	(A2 * A3 * B1 * B2 * !Y)	-0.00563	-0.00696	-0.00712
	(A2 * !A3 * B1 * B2 * !Y)	0.00504	0.00504	0.00505
	(A2 * !A3 * B1 * B2 * !Y)	-0.00721	-0.00721	-0.00721
	(A2 * !A3 * B1 * !B2 * Y)	0.00191	0.00191	0.00169
	(A2 * !A3 * B1 * !B2 * Y)	-0.00806	-0.00812	-0.00857
	(A2 * !A3 * !B1 * Y)	0.00191	0.00192	0.00169
	(A2 * !A3 * !B1 * Y)	-0.00807	-0.00812	-0.00857
	(!A2 * B1 * B2 * !Y)	0.00525	0.00529	0.00526
	(!A2 * B1 * B2 * !Y)	-0.00721	-0.00726	-0.00721
	(!A2 * B1 * !B2 * Y)	0.00189	0.00190	0.00178
	(!A2 * B1 * !B2 * Y)	-0.00838	-0.00842	-0.00863
	(!A2 * !B1 * Y)	0.00190	0.00190	0.00178
	(!A2 * !B1 * Y)	-0.00839	-0.00842	-0.00863

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)**	-0.00137	-0.00137	-0.00136
	(A2 * A3 * B1 * B2 * !Y)	0.00180	0.00180	0.00180
	(A2 * !A3 * B1 * B2 * !Y)	-0.00120	-0.00131	-0.00130
	(A2 * !A3 * B1 * B2 * !Y)	0.00183	0.00187	0.00183
	(A2 * !A3 * B1 * !B2 * Y)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * B1 * !B2 * Y)	0.00216	0.00217	0.00216
	(A2 * !A3 * !B1 * Y)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * !B1 * Y)	0.00215	0.00217	0.00216
	(!A2 * B1 * B2 * !Y)	-0.00132	-0.00133	-0.00134
	(!A2 * B1 * B2 * !Y)	0.00184	0.00184	0.00183
	(!A2 * B1 * !B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * Y)	0.00216	0.00218	0.00216
	(!A2 * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * Y)	0.00216	0.00218	0.00216
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00270	-0.00272	-0.00269
	(A2 * A3 * B1 * B2 * !Y)	0.00356	0.00359	0.00359
	(A2 * !A3 * B1 * B2 * !Y)	-0.00234	-0.00257	-0.00257
	(A2 * !A3 * B1 * B2 * !Y)	0.00366	0.00367	0.00367
	(A2 * !A3 * B1 * !B2 * Y)	-0.00089	-0.00090	-0.00089
	(A2 * !A3 * B1 * !B2 * Y)	0.00429	0.00432	0.00429
	(A2 * !A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * !B1 * Y)	0.00429	0.00432	0.00429
	(!A2 * B1 * B2 * !Y)	-0.00258	-0.00264	-0.00266
	(!A2 * B1 * B2 * !Y)	0.00366	0.00368	0.00366
	(!A2 * B1 * !B2 * Y)	-0.00093	-0.00093	-0.00092
	(!A2 * B1 * !B2 * Y)	0.00432	0.00433	0.00430
	(!A2 * !B1 * Y)	-0.00094	-0.00094	-0.00093
	(!A2 * !B1 * Y)	0.00431	0.00432	0.00430

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00534	-0.00537	-0.00530
	(A2 * A3 * B1 * B2 * !Y)	0.00712	0.00720	0.00719
	(A2 * !A3 * B1 * B2 * !Y)	-0.00458	-0.00504	-0.00505
	(A2 * !A3 * B1 * B2 * !Y)	0.00731	0.00736	0.00735
	(A2 * !A3 * B1 * !B2 * Y)	-0.00162	-0.00163	-0.00162
	(A2 * !A3 * B1 * !B2 * Y)	0.00867	0.00873	0.00868
	(A2 * !A3 * !B1 * Y)	-0.00163	-0.00163	-0.00162
	(A2 * !A3 * !B1 * Y)	0.00867	0.00873	0.00868
	(!A2 * B1 * B2 * !Y)	-0.00511	-0.00521	-0.00524
	(!A2 * B1 * B2 * !Y)	0.00733	0.00738	0.00735
	(!A2 * B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * !B2 * Y)	0.00869	0.00875	0.00869
	(!A2 * !B1 * Y)	-0.00169	-0.00170	-0.00168
	(!A2 * !B1 * Y)	0.00868	0.00874	0.00869

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)**	0.00174	0.00150	0.00145
	(A1 * A3 * B1 * B2 * !Y)	-0.00145	-0.00175	-0.00178
	(A1 * !A3 * B1 * B2 * !Y)	0.00138	0.00140	0.00139
	(A1 * !A3 * B1 * B2 * !Y)	-0.00180	-0.00181	-0.00181
	(A1 * !A3 * B1 * !B2 * Y)	0.00065	0.00065	0.00065
	(A1 * !A3 * B1 * !B2 * Y)	-0.00190	-0.00190	-0.00189
	(A1 * !A3 * !B1 * Y)	0.00065	0.00065	0.00065
	(A1 * !A3 * !B1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * A3 * B1 * B2 * !Y)	0.00139	0.00140	0.00139
	(!A1 * A3 * B1 * B2 * !Y)	-0.00181	-0.00181	-0.00181
	(!A1 * A3 * B1 * !B2 * Y)	0.00130	0.00130	0.00130
	(!A1 * A3 * B1 * !B2 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * A3 * !B1 * Y)	0.00130	0.00130	0.00130
	(!A1 * A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A3 * B1 * B2 * !Y)	0.00089	0.00090	0.00089
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * !A3 * B1 * !B2 * Y)	0.00079	0.00079	0.00078
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * Y)	0.00079	0.00079	0.00078
	(!A1 * !A3 * !B1 * Y)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00332	0.00275	0.00267
	(A1 * A3 * B1 * B2 * !Y)	-0.00291	-0.00357	-0.00367
	(A1 * !A3 * B1 * B2 * !Y)	0.00253	0.00254	0.00253
	(A1 * !A3 * B1 * B2 * !Y)	-0.00372	-0.00373	-0.00372
	(A1 * !A3 * B1 * !B2 * Y)	0.00119	0.00119	0.00121
	(A1 * !A3 * B1 * !B2 * Y)	-0.00379	-0.00380	-0.00375
	(A1 * !A3 * !B1 * Y)	0.00119	0.00119	0.00121
	(A1 * !A3 * !B1 * Y)	-0.00379	-0.00380	-0.00375
	(!A1 * A3 * B1 * B2 * !Y)	0.00255	0.00258	0.00256
	(!A1 * A3 * B1 * B2 * !Y)	-0.00371	-0.00373	-0.00372
	(!A1 * A3 * B1 * !B2 * Y)	0.00252	0.00253	0.00252
	(!A1 * A3 * B1 * !B2 * Y)	-0.00378	-0.00378	-0.00376
	(!A1 * A3 * !B1 * Y)	0.00252	0.00253	0.00252
	(!A1 * A3 * !B1 * Y)	-0.00378	-0.00378	-0.00376
	(!A1 * !A3 * B1 * B2 * !Y)	0.00162	0.00163	0.00162
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00373	-0.00375	-0.00373
	(!A1 * !A3 * B1 * !B2 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00380	-0.00382	-0.00380
	(!A1 * !A3 * !B1 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A3 * !B1 * Y)	-0.00380	-0.00382	-0.00380

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00671	0.00555	0.00536
	(A1 * A3 * B1 * B2 * !Y)	-0.00574	-0.00711	-0.00729
	(A1 * !A3 * B1 * B2 * !Y)	0.00504	0.00508	0.00505
	(A1 * !A3 * B1 * B2 * !Y)	-0.00738	-0.00743	-0.00739
	(A1 * !A3 * B1 * !B2 * Y)	0.00226	0.00229	0.00231
	(A1 * !A3 * B1 * !B2 * Y)	-0.00747	-0.00753	-0.00744
	(A1 * !A3 * !B1 * Y)	0.00226	0.00229	0.00231
	(A1 * !A3 * !B1 * Y)	-0.00748	-0.00753	-0.00745
	(!A1 * A3 * B1 * B2 * !Y)	0.00512	0.00517	0.00513
	(!A1 * A3 * B1 * B2 * !Y)	-0.00738	-0.00743	-0.00739
	(!A1 * A3 * B1 * !B2 * Y)	0.00504	0.00509	0.00507
	(!A1 * A3 * B1 * !B2 * Y)	-0.00745	-0.00749	-0.00746
	(!A1 * A3 * !B1 * Y)	0.00504	0.00509	0.00507
	(!A1 * A3 * !B1 * Y)	-0.00746	-0.00750	-0.00746
	(!A1 * !A3 * B1 * B2 * !Y)	0.00307	0.00309	0.00307
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00739	-0.00743	-0.00739
	(!A1 * !A3 * B1 * !B2 * Y)	0.00287	0.00290	0.00287
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00752	-0.00758	-0.00753
	(!A1 * !A3 * !B1 * Y)	0.00287	0.00290	0.00287
	(!A1 * !A3 * !B1 * Y)	-0.00753	-0.00758	-0.00753

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)**	-0.00141	-0.00141	-0.00140
	(A1 * A3 * B1 * B2 * !Y)	0.00179	0.00180	0.00180
	(A1 * !A3 * B1 * B2 * !Y)	-0.00135	-0.00137	-0.00138
	(A1 * !A3 * B1 * B2 * !Y)	0.00184	0.00185	0.00184
	(A1 * !A3 * B1 * !B2 * Y)	-0.00059	-0.00060	-0.00061
	(A1 * !A3 * B1 * !B2 * Y)	0.00195	0.00196	0.00192
	(A1 * !A3 * !B1 * Y)	-0.00059	-0.00060	-0.00061
	(A1 * !A3 * !B1 * Y)	0.00195	0.00196	0.00192
	(!A1 * A3 * B1 * B2 * !Y)	-0.00136	-0.00137	-0.00137
	(!A1 * A3 * B1 * B2 * !Y)	0.00185	0.00184	0.00184
	(!A1 * A3 * B1 * !B2 * Y)	-0.00117	-0.00127	-0.00129
	(!A1 * A3 * B1 * !B2 * Y)	0.00204	0.00194	0.00192
	(!A1 * A3 * !B1 * Y)	-0.00117	-0.00127	-0.00129
	(!A1 * A3 * !B1 * Y)	0.00204	0.00194	0.00192
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * B1 * B2 * !Y)	0.00183	0.00184	0.00184
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A3 * B1 * !B2 * Y)	0.00198	0.00199	0.00193
	(!A1 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A3 * !B1 * Y)	0.00198	0.00199	0.00193

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00259	-0.00260	-0.00257
	(A1 * A3 * B1 * B2 * !Y)	0.00367	0.00371	0.00370
	(A1 * !A3 * B1 * B2 * !Y)	-0.00246	-0.00252	-0.00253
	(A1 * !A3 * B1 * B2 * !Y)	0.00378	0.00383	0.00379
	(A1 * !A3 * B1 * !B2 * Y)	-0.00106	-0.00107	-0.00112
	(A1 * !A3 * B1 * !B2 * Y)	0.00393	0.00396	0.00386
	(A1 * !A3 * !B1 * Y)	-0.00106	-0.00108	-0.00112
	(A1 * !A3 * !B1 * Y)	0.00393	0.00396	0.00386
	(!A1 * A3 * B1 * B2 * !Y)	-0.00248	-0.00253	-0.00254
	(!A1 * A3 * B1 * B2 * !Y)	0.00380	0.00379	0.00378
	(!A1 * A3 * B1 * !B2 * Y)	-0.00226	-0.00248	-0.00252
	(!A1 * A3 * B1 * !B2 * Y)	0.00403	0.00384	0.00380
	(!A1 * A3 * !B1 * Y)	-0.00226	-0.00248	-0.00252
	(!A1 * A3 * !B1 * Y)	0.00403	0.00384	0.00380
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * !A3 * B1 * B2 * !Y)	0.00379	0.00381	0.00380
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00153	-0.00154	-0.00153
	(!A1 * !A3 * B1 * !B2 * Y)	0.00395	0.00397	0.00386
	(!A1 * !A3 * !B1 * Y)	-0.00153	-0.00154	-0.00153
	(!A1 * !A3 * !B1 * Y)	0.00395	0.00397	0.00386

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00522	-0.00521	-0.00516
	(A1 * A3 * B1 * B2 * !Y)	0.00734	0.00735	0.00736
	(A1 * !A3 * B1 * B2 * !Y)	-0.00495	-0.00503	-0.00504
	(A1 * !A3 * B1 * B2 * !Y)	0.00755	0.00762	0.00752
	(A1 * !A3 * B1 * !B2 * Y)	-0.00207	-0.00208	-0.00215
	(A1 * !A3 * B1 * !B2 * Y)	0.00780	0.00781	0.00763
	(A1 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00216
	(A1 * !A3 * !B1 * Y)	0.00779	0.00781	0.00763
	(!A1 * A3 * B1 * B2 * !Y)	-0.00499	-0.00507	-0.00510
	(!A1 * A3 * B1 * B2 * !Y)	0.00754	0.00754	0.00752
	(!A1 * A3 * B1 * !B2 * Y)	-0.00451	-0.00498	-0.00507
	(!A1 * A3 * B1 * !B2 * Y)	0.00805	0.00763	0.00754
	(!A1 * A3 * !B1 * Y)	-0.00452	-0.00499	-0.00507
	(!A1 * A3 * !B1 * Y)	0.00804	0.00763	0.00754
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00307	-0.00309	-0.00307
	(!A1 * !A3 * B1 * B2 * !Y)	0.00752	0.00755	0.00752
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00287	-0.00290	-0.00287
	(!A1 * !A3 * B1 * !B2 * Y)	0.00784	0.00788	0.00765
	(!A1 * !A3 * !B1 * Y)	-0.00287	-0.00290	-0.00287
	(!A1 * !A3 * !B1 * Y)	0.00783	0.00788	0.00765

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)**	0.00164	0.00140	0.00136
	(A1 * A2 * B1 * B2 * !Y)	-0.00148	-0.00177	-0.00180
	(A1 * !A2 * B1 * !B2 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * B1 * !B2 * Y)	-0.00182	-0.00184	-0.00183
	(A1 * !A2 * !B1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B1 * Y)	-0.00182	-0.00184	-0.00183
	(!A2 * B1 * B2 * !Y)	0.00130	0.00132	0.00130
	(!A2 * B1 * B2 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * A2 * B1 * B2 * !Y)	0.00126	0.00127	0.00126
	(!A1 * A2 * B1 * B2 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * B1 * !B2 * Y)	0.00126	0.00127	0.00126
	(!A1 * A2 * B1 * !B2 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !B1 * Y)	0.00126	0.00127	0.00126
	(!A1 * A2 * !B1 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * !A2 * B1 * !B2 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A2 * !B1 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00336	0.00282	0.00273
	(A1 * A2 * B1 * B2 * !Y)	-0.00291	-0.00354	-0.00363
	(A1 * !A2 * B1 * !B2 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * B1 * !B2 * Y)	-0.00370	-0.00371	-0.00370
	(A1 * !A2 * !B1 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * !B1 * Y)	-0.00370	-0.00371	-0.00370
	(!A2 * B1 * B2 * !Y)	0.00260	0.00263	0.00261
	(!A2 * B1 * B2 * !Y)	-0.00368	-0.00370	-0.00368
	(!A1 * A2 * B1 * B2 * !Y)	0.00255	0.00256	0.00255
	(!A1 * A2 * B1 * B2 * !Y)	-0.00368	-0.00369	-0.00368
	(!A1 * A2 * B1 * !B2 * Y)	0.00254	0.00255	0.00254
	(!A1 * A2 * B1 * !B2 * Y)	-0.00369	-0.00370	-0.00369
	(!A1 * A2 * !B1 * Y)	0.00254	0.00254	0.00254
	(!A1 * A2 * !B1 * Y)	-0.00370	-0.00370	-0.00369
	(!A1 * !A2 * B1 * !B2 * Y)	0.00258	0.00261	0.00258
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00369	-0.00372	-0.00370
	(!A1 * !A2 * !B1 * Y)	0.00257	0.00261	0.00258
	(!A1 * !A2 * !B1 * Y)	-0.00369	-0.00372	-0.00370

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00663	0.00550	0.00531
	(A1 * A2 * B1 * B2 * !Y)	-0.00585	-0.00714	-0.00732
	(A1 * !A2 * B1 * !B2 * Y)	0.00502	0.00503	0.00501
	(A1 * !A2 * B1 * !B2 * Y)	-0.00747	-0.00748	-0.00746
	(A1 * !A2 * !B1 * Y)	0.00502	0.00502	0.00501
	(A1 * !A2 * !B1 * Y)	-0.00747	-0.00748	-0.00746
	(!A2 * B1 * B2 * !Y)	0.00504	0.00507	0.00503
	(!A2 * B1 * B2 * !Y)	-0.00744	-0.00746	-0.00743
	(!A1 * A2 * B1 * B2 * !Y)	0.00491	0.00493	0.00490
	(!A1 * A2 * B1 * B2 * !Y)	-0.00744	-0.00745	-0.00743
	(!A1 * A2 * B1 * !B2 * Y)	0.00487	0.00490	0.00487
	(!A1 * A2 * B1 * !B2 * Y)	-0.00747	-0.00749	-0.00745
	(!A1 * A2 * !B1 * Y)	0.00487	0.00490	0.00487
	(!A1 * A2 * !B1 * Y)	-0.00747	-0.00749	-0.00745
	(!A1 * !A2 * B1 * !B2 * Y)	0.00499	0.00503	0.00498
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00748	-0.00751	-0.00747
	(!A1 * !A2 * !B1 * Y)	0.00499	0.00503	0.00498
	(!A1 * !A2 * !B1 * Y)	-0.00748	-0.00751	-0.00747

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)**	-0.00132	-0.00134	-0.00131
	(A1 * A2 * B1 * B2 * !Y)	0.00180	0.00184	0.00182
	(A1 * !A2 * B1 * !B2 * Y)	-0.00124	-0.00129	-0.00130
	(A1 * !A2 * B1 * !B2 * Y)	0.00186	0.00186	0.00185
	(A1 * !A2 * !B1 * Y)	-0.00124	-0.00129	-0.00130
	(A1 * !A2 * !B1 * Y)	0.00186	0.00186	0.00185
	(!A2 * B1 * B2 * !Y)	-0.00127	-0.00129	-0.00129
	(!A2 * B1 * B2 * !Y)	0.00186	0.00187	0.00185
	(!A1 * A2 * B1 * B2 * !Y)	-0.00117	-0.00126	-0.00126
	(!A1 * A2 * B1 * B2 * !Y)	0.00185	0.00186	0.00185
	(!A1 * A2 * B1 * !B2 * Y)	-0.00116	-0.00126	-0.00126
	(!A1 * A2 * B1 * !B2 * Y)	0.00186	0.00186	0.00184
	(!A1 * A2 * !B1 * Y)	-0.00116	-0.00126	-0.00126
	(!A1 * A2 * !B1 * Y)	0.00186	0.00186	0.00184
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00127	-0.00130	-0.00129
	(!A1 * !A2 * B1 * !B2 * Y)	0.00185	0.00186	0.00184
	(!A1 * !A2 * !B1 * Y)	-0.00127	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * Y)	0.00185	0.00186	0.00184

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00265	-0.00266	-0.00263
	(A1 * A2 * B1 * B2 * !Y)	0.00363	0.00366	0.00366
	(A1 * !A2 * B1 * !B2 * Y)	-0.00247	-0.00259	-0.00260
	(A1 * !A2 * B1 * !B2 * Y)	0.00373	0.00377	0.00373
	(A1 * !A2 * !B1 * Y)	-0.00248	-0.00259	-0.00260
	(A1 * !A2 * !B1 * Y)	0.00373	0.00376	0.00373
	(!A2 * B1 * B2 * !Y)	-0.00253	-0.00259	-0.00259
	(!A2 * B1 * B2 * !Y)	0.00373	0.00378	0.00374
	(!A1 * A2 * B1 * B2 * !Y)	-0.00237	-0.00253	-0.00255
	(!A1 * A2 * B1 * B2 * !Y)	0.00374	0.00377	0.00374
	(!A1 * A2 * B1 * !B2 * Y)	-0.00235	-0.00254	-0.00254
	(!A1 * A2 * B1 * !B2 * Y)	0.00376	0.00376	0.00373
	(!A1 * A2 * !B1 * Y)	-0.00235	-0.00254	-0.00254
	(!A1 * A2 * !B1 * Y)	0.00376	0.00376	0.00372
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00251	-0.00260	-0.00258
	(!A1 * !A2 * B1 * !B2 * Y)	0.00372	0.00376	0.00373
	(!A1 * !A2 * !B1 * Y)	-0.00251	-0.00260	-0.00258
	(!A1 * !A2 * !B1 * Y)	0.00371	0.00376	0.00372

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00515	-0.00516	-0.00511
	(A1 * A2 * B1 * B2 * !Y)	0.00735	0.00738	0.00739
	(A1 * !A2 * B1 * !B2 * Y)	-0.00474	-0.00499	-0.00501
	(A1 * !A2 * B1 * !B2 * Y)	0.00755	0.00760	0.00753
	(A1 * !A2 * !B1 * Y)	-0.00474	-0.00499	-0.00501
	(A1 * !A2 * !B1 * Y)	0.00755	0.00760	0.00753
	(!A2 * B1 * B2 * !Y)	-0.00488	-0.00499	-0.00500
	(!A2 * B1 * B2 * !Y)	0.00753	0.00763	0.00756
	(!A1 * A2 * B1 * B2 * !Y)	-0.00454	-0.00487	-0.00490
	(!A1 * A2 * B1 * B2 * !Y)	0.00756	0.00762	0.00756
	(!A1 * A2 * B1 * !B2 * Y)	-0.00448	-0.00488	-0.00487
	(!A1 * A2 * B1 * !B2 * Y)	0.00764	0.00760	0.00752
	(!A1 * A2 * !B1 * Y)	-0.00448	-0.00489	-0.00487
	(!A1 * A2 * !B1 * Y)	0.00764	0.00760	0.00752
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00483	-0.00501	-0.00498
	(!A1 * !A2 * B1 * !B2 * Y)	0.00749	0.00759	0.00752
	(!A1 * !A2 * !B1 * Y)	-0.00484	-0.00501	-0.00498
	(!A1 * !A2 * !B1 * Y)	0.00749	0.00759	0.00752

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)**	0.00159	0.00159	0.00158
	(A1 * A2 * A3 * B2 * !Y)	-0.00083	-0.00083	-0.00082
	(A1 * A2 * A3 * !B2 * !Y)	0.00155	0.00155	0.00153
	(A1 * A2 * A3 * !B2 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !A3 * !B2 * Y)	0.00048	0.00048	0.00046
	(A1 * A2 * !A3 * !B2 * Y)	-0.00215	-0.00215	-0.00219
	(A1 * !A2 * !B2 * Y)	0.00048	0.00047	0.00045
	(A1 * !A2 * !B2 * Y)	-0.00215	-0.00215	-0.00219
	(!A1 * !B2 * Y)	0.00048	0.00047	0.00045
	(!A1 * !B2 * Y)	-0.00215	-0.00215	-0.00219
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00302	0.00305	0.00301
	(A1 * A2 * A3 * B2 * !Y)	-0.00166	-0.00167	-0.00164
	(A1 * A2 * A3 * !B2 * !Y)	0.00293	0.00295	0.00291
	(A1 * A2 * A3 * !B2 * !Y)	-0.00159	-0.00161	-0.00161
	(A1 * A2 * !A3 * !B2 * Y)	0.00101	0.00101	0.00093
	(A1 * A2 * !A3 * !B2 * Y)	-0.00414	-0.00415	-0.00427
	(A1 * !A2 * !B2 * Y)	0.00101	0.00101	0.00093
	(A1 * !A2 * !B2 * Y)	-0.00415	-0.00415	-0.00427
	(!A1 * !B2 * Y)	0.00101	0.00101	0.00093
	(!A1 * !B2 * Y)	-0.00415	-0.00415	-0.00427
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00609	0.00616	0.00608
	(A1 * A2 * A3 * B2 * !Y)	-0.00336	-0.00338	-0.00332
	(A1 * A2 * A3 * !B2 * !Y)	0.00589	0.00591	0.00586
	(A1 * A2 * A3 * !B2 * !Y)	-0.00322	-0.00324	-0.00326
	(A1 * A2 * !A3 * !B2 * Y)	0.00192	0.00191	0.00179
	(A1 * A2 * !A3 * !B2 * Y)	-0.00844	-0.00845	-0.00867
	(A1 * !A2 * !B2 * Y)	0.00192	0.00191	0.00178
	(A1 * !A2 * !B2 * Y)	-0.00844	-0.00845	-0.00867
	(!A1 * !B2 * Y)	0.00193	0.00191	0.00179
	(!A1 * !B2 * Y)	-0.00844	-0.00845	-0.00867

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)	-0.00138	-0.00139	-0.00155
	(A1 * A2 * A3 * B2 * !Y)	0.00100	0.00100	0.00086
	(A1 * A2 * A3 * !B2 * !Y)	-0.00151	-0.00153	-0.00153
	(A1 * A2 * A3 * !B2 * !Y)	0.00083	0.00083	0.00083
	(A1 * A2 * !A3 * !B2 * Y)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * !A3 * !B2 * Y)	0.00220	0.00223	0.00221
	(A1 * !A2 * !B2 * Y)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * Y)	0.00220	0.00223	0.00221
	(!A1 * !B2 * Y)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * Y)	0.00220	0.00223	0.00221
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00259	-0.00263	-0.00295
	(A1 * A2 * A3 * B2 * !Y)	0.00198	0.00199	0.00173
	(A1 * A2 * A3 * !B2 * !Y)	-0.00284	-0.00290	-0.00291
	(A1 * A2 * A3 * !B2 * !Y)	0.00165	0.00167	0.00166
	(A1 * A2 * !A3 * !B2 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * !A3 * !B2 * Y)	0.00430	0.00435	0.00431
	(A1 * !A2 * !B2 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !B2 * Y)	0.00430	0.00435	0.00430
	(!A1 * !B2 * Y)	-0.00088	-0.00090	-0.00088
	(!A1 * !B2 * Y)	0.00429	0.00435	0.00430

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00532	-0.00539	-0.00596
	(A1 * A2 * A3 * B2 * !Y)	0.00394	0.00396	0.00349
	(A1 * A2 * A3 * !B2 * !Y)	-0.00573	-0.00586	-0.00586
	(A1 * A2 * A3 * !B2 * !Y)	0.00335	0.00337	0.00336
	(A1 * A2 * !A3 * !B2 * Y)	-0.00171	-0.00171	-0.00168
	(A1 * A2 * !A3 * !B2 * Y)	0.00876	0.00882	0.00873
	(A1 * !A2 * !B2 * Y)	-0.00171	-0.00171	-0.00168
	(A1 * !A2 * !B2 * Y)	0.00876	0.00882	0.00873
	(!A1 * !B2 * Y)	-0.00172	-0.00172	-0.00169
	(!A1 * !B2 * Y)	0.00875	0.00881	0.00872

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)**	0.00152	0.00153	0.00152
	(A1 * A2 * A3 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * A3 * !B1 * !Y)	0.00149	0.00152	0.00148
	(A1 * A2 * A3 * !B1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !A3 * !B1 * Y)	0.00130	0.00131	0.00130
	(A1 * A2 * !A3 * !B1 * Y)	-0.00188	-0.00188	-0.00188
	(A1 * !A2 * !B1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B1 * Y)	-0.00188	-0.00188	-0.00188
	(!A1 * !B1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !B1 * Y)	-0.00188	-0.00188	-0.00188

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00300	0.00302	0.00300
	(A1 * A2 * A3 * B1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A2 * A3 * !B1 * !Y)	0.00294	0.00295	0.00291
	(A1 * A2 * A3 * !B1 * !Y)	-0.00163	-0.00164	-0.00165
	(A1 * A2 * !A3 * !B1 * Y)	0.00258	0.00260	0.00258
	(A1 * A2 * !A3 * !B1 * Y)	-0.00370	-0.00371	-0.00369
	(A1 * !A2 * !B1 * Y)	0.00258	0.00260	0.00258
	(A1 * !A2 * !B1 * Y)	-0.00371	-0.00371	-0.00369
	(!A1 * !B1 * Y)	0.00258	0.00260	0.00258
	(!A1 * !B1 * Y)	-0.00371	-0.00372	-0.00369
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00597	0.00603	0.00595
	(A1 * A2 * A3 * B1 * !Y)	-0.00337	-0.00339	-0.00334
	(A1 * A2 * A3 * !B1 * !Y)	0.00582	0.00583	0.00575
	(A1 * A2 * A3 * !B1 * !Y)	-0.00325	-0.00326	-0.00327
	(A1 * A2 * !A3 * !B1 * Y)	0.00504	0.00509	0.00507
	(A1 * A2 * !A3 * !B1 * Y)	-0.00738	-0.00741	-0.00738
	(A1 * !A2 * !B1 * Y)	0.00504	0.00510	0.00507
	(A1 * !A2 * !B1 * Y)	-0.00738	-0.00742	-0.00738
	(!A1 * !B1 * Y)	0.00504	0.00509	0.00507
	(!A1 * !B1 * Y)	-0.00739	-0.00742	-0.00738

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)**	-0.00132	-0.00132	-0.00149
	(A1 * A2 * A3 * B1 * !Y)	0.00104	0.00104	0.00091
	(A1 * A2 * A3 * !B1 * !Y)	-0.00146	-0.00147	-0.00147
	(A1 * A2 * A3 * !B1 * !Y)	0.00087	0.00088	0.00087
	(A1 * A2 * !A3 * !B1 * Y)	-0.00120	-0.00128	-0.00129
	(A1 * A2 * !A3 * !B1 * Y)	0.00200	0.00193	0.00190
	(A1 * !A2 * !B1 * Y)	-0.00120	-0.00128	-0.00129
	(A1 * !A2 * !B1 * Y)	0.00200	0.00193	0.00190
	(!A1 * !B1 * Y)	-0.00120	-0.00128	-0.00129
	(!A1 * !B1 * Y)	0.00200	0.00193	0.00190
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00259	-0.00262	-0.00294
	(A1 * A2 * A3 * B1 * !Y)	0.00202	0.00202	0.00177
	(A1 * A2 * A3 * !B1 * !Y)	-0.00285	-0.00290	-0.00290
	(A1 * A2 * A3 * !B1 * !Y)	0.00171	0.00171	0.00170
	(A1 * A2 * !A3 * !B1 * Y)	-0.00235	-0.00255	-0.00257
	(A1 * A2 * !A3 * !B1 * Y)	0.00389	0.00379	0.00373
	(A1 * !A2 * !B1 * Y)	-0.00235	-0.00255	-0.00257
	(A1 * !A2 * !B1 * Y)	0.00389	0.00379	0.00373
	(!A1 * !B1 * Y)	-0.00235	-0.00255	-0.00258
	(!A1 * !B1 * Y)	0.00388	0.00379	0.00373
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00519	-0.00525	-0.00583
	(A1 * A2 * A3 * B1 * !Y)	0.00396	0.00396	0.00351
	(A1 * A2 * A3 * !B1 * !Y)	-0.00563	-0.00573	-0.00573
	(A1 * A2 * A3 * !B1 * !Y)	0.00338	0.00339	0.00337
	(A1 * A2 * !A3 * !B1 * Y)	-0.00459	-0.00500	-0.00506
	(A1 * A2 * !A3 * !B1 * Y)	0.00782	0.00759	0.00746
	(A1 * !A2 * !B1 * Y)	-0.00460	-0.00500	-0.00506
	(A1 * !A2 * !B1 * Y)	0.00781	0.00759	0.00746
	(!A1 * !B1 * Y)	-0.00460	-0.00501	-0.00506
	(!A1 * !B1 * Y)	0.00781	0.00759	0.00746

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00270	0.00268	0.00277	0.00271	0.00252	0.80039
sky130_fd_sc_hs__a32o_2	0.00290	0.00286	0.00294	0.00285	0.00271	1.45893
sky130_fd_sc_hs__a32o_4	0.00499	0.00558	0.00503	0.00519	0.00587	3.04701

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	2.04060	3.69048
sky130_fd_sc_hs__a32o_2	0.00000	2.56538	3.90008
sky130_fd_sc_hs__a32o_4	0.00000	5.08681	7.78516

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)	0.20660	0.96722	7.95775
	A2->X (RR)	0.21952	0.95982	7.93074
	A3->X (RR)	0.22687	0.93173	7.75859
	B1->X (RR)	0.13093	0.85120	7.61018
	B2->X (RR)	0.13614	0.83515	7.54413
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.19628	0.88050	7.87501
	A2->X (RR)	0.21767	0.86794	7.82541
	A3->X (RR)	0.21753	0.84027	7.63001
	B1->X (RR)	0.12957	0.77092	7.51528
	B2->X (RR)	0.13630	0.75120	7.44171
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.22224	0.82188	8.06094
	A2->X (RR)	0.23954	0.81489	8.03037
	A3->X (RR)	0.24721	0.78707	7.85929
	B1->X (RR)	0.12856	0.68965	7.69285
	B2->X (RR)	0.13560	0.67253	7.62677

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.26043	0.78373	4.54541
	A2->X (FF)	0.28831	0.82266	4.65387
	A3->X (FF)	0.30218	0.84194	4.72438
	B1->X (FF)	0.22958	0.78127	4.70273
	B2->X (FF)	0.25059	0.81887	4.80180
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.31780	0.81769	4.55928
	A2->X (FF)	0.35029	0.86017	4.67376
	A3->X (FF)	0.37482	0.89129	4.77061
	B1->X (FF)	0.29103	0.83181	4.75607
	B2->X (FF)	0.32185	0.87777	4.88247
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.29561	0.75122	4.68338
	A2->X (FF)	0.31546	0.78328	4.77217
	A3->X (FF)	0.35000	0.82653	4.89647
	B1->X (FF)	0.27980	0.77952	4.89609
	B2->X (FF)	0.29899	0.80660	4.97331

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01198	0.01206	0.02439
	A1	0.00610	0.00618	0.01860
	A2	0.01266	0.01256	0.02349
	A2	0.00609	0.00598	0.01703
	A3	0.01349	0.01326	0.02290
	A3	0.00608	0.00584	0.01563
	B1	0.00802	0.00860	0.02416
	B1	0.00335	0.00401	0.02056
	B2	0.00875	0.00912	0.02339
	B2	0.00336	0.00376	0.01890
sky130_fd_sc_hs__a32o_2	A1	0.01452	0.01475	0.02737
	A1	0.00831	0.00855	0.02147
	A2	0.01536	0.01541	0.02665
	A2	0.00832	0.00838	0.01995
	A3	0.01633	0.01626	0.02525
	A3	0.00832	0.00825	0.01760
	B1	0.01184	0.01259	0.02522
	B1	0.00600	0.00680	0.02210
	B2	0.01274	0.01329	0.02448
	B2	0.00597	0.00660	0.02151

sky130_fd_sc_hs__a32o_4	**A1**	0.02792	0.02850	0.05338
	A1	0.01651	0.01712	0.04233
	A2	0.02980	0.02991	0.05199
	A2	0.01652	0.01663	0.03907
	A3	0.03211	0.03218	0.05408
	A3	0.01749	0.01757	0.04005
	B1	0.02183	0.02323	0.05275
	B1	0.01132	0.01276	0.04543
	B2	0.02416	0.02505	0.05241
	B2	0.01126	0.01228	0.04283

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00353	0.00365	0.01509
	A1	0.00941	0.00953	0.02090
	A2	0.00406	0.00419	0.01545
	A2	0.01063	0.01075	0.02187
	A3	0.00433	0.00431	0.01534
	A3	0.01168	0.01166	0.02265
	B1	0.00344	0.00451	0.02195
	B1	0.00863	0.00950	0.02573
	B2	0.00374	0.00478	0.02156
	B2	0.00963	0.01053	0.02644

sky130_fd_sc_hs__a32o_2	**A1**	0.00557	0.00582	0.01801
	A1	0.01165	0.01189	0.02373
	A2	0.00627	0.00646	0.01838
	A2	0.01315	0.01335	0.02506
	A3	0.00752	0.00713	0.01814
	A3	0.01541	0.01505	0.02563
	B1	0.00534	0.00657	0.02440
	B1	0.01108	0.01199	0.02833
	B2	0.00669	0.00758	0.02417
	B2	0.01251	0.01339	0.02952
sky130_fd_sc_hs__a32o_4	**A1**	0.01095	0.01154	0.03593
	A1	0.02225	0.02270	0.04673
	A2	0.01191	0.01237	0.03641
	A2	0.02505	0.02549	0.04862
	A3	0.01479	0.01472	0.03853
	A3	0.02931	0.02930	0.05145
	B1	0.01044	0.01293	0.04632
	B1	0.02420	0.02524	0.05377
	B2	0.01186	0.01386	0.04547
	B2	0.02667	0.02777	0.05634

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)**	0.00158	0.00129	0.00123
	(A2 * A3 * B1 * B2 * X)	-0.00122	-0.00154	-0.00158
	(A2 * !A3 * B1 * B2 * X)	0.00113	0.00114	0.00114
	(A2 * !A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00161
	(A2 * !A3 * B1 * !B2 * !X)	0.00044	0.00044	0.00040
	(A2 * !A3 * B1 * !B2 * !X)	-0.00183	-0.00184	-0.00192
	(A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00040
	(A2 * !A3 * !B1 * !X)	-0.00183	-0.00184	-0.00192
	(!A2 * B1 * B2 * X)	0.00117	0.00118	0.00118
	(!A2 * B1 * B2 * X)	-0.00160	-0.00161	-0.00161
	(!A2 * B1 * !B2 * !X)	0.00044	0.00044	0.00042
	(!A2 * B1 * !B2 * !X)	-0.00188	-0.00189	-0.00192
	(!A2 * !B1 * !X)	0.00044	0.00044	0.00041
	(!A2 * !B1 * !X)	-0.00188	-0.00189	-0.00193
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00175	0.00147	0.00141
	(A2 * A3 * B1 * B2 * X)	-0.00122	-0.00154	-0.00158
	(A2 * !A3 * B1 * B2 * X)	0.00130	0.00130	0.00130
	(A2 * !A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(A2 * !A3 * B1 * !B2 * !X)	0.00050	0.00050	0.00045
	(A2 * !A3 * B1 * !B2 * !X)	-0.00184	-0.00185	-0.00195
	(A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00184	-0.00185	-0.00195
	(!A2 * B1 * B2 * X)	0.00134	0.00135	0.00135
	(!A2 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !B2 * !X)	0.00050	0.00050	0.00047
	(!A2 * B1 * !B2 * !X)	-0.00191	-0.00192	-0.00196
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00047
	(!A2 * !B1 * !X)	-0.00191	-0.00192	-0.00196

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00287	0.00233	0.00223
	(A2 * A3 * B1 * B2 * X)	-0.00249	-0.00306	-0.00316
	(A2 * !A3 * B1 * B2 * X)	0.00205	0.00206	0.00205
	(A2 * !A3 * B1 * B2 * X)	-0.00319	-0.00322	-0.00320
	(A2 * !A3 * B1 * !B2 * !X)	0.00087	0.00087	0.00075
	(A2 * !A3 * B1 * !B2 * !X)	-0.00344	-0.00346	-0.00366
	(A2 * !A3 * !B1 * !X)	0.00087	0.00087	0.00075
	(A2 * !A3 * !B1 * !X)	-0.00344	-0.00346	-0.00366
	(!A2 * B1 * B2 * X)	0.00212	0.00214	0.00213
	(!A2 * B1 * B2 * X)	-0.00321	-0.00322	-0.00320
	(!A2 * B1 * !B2 * !X)	0.00080	0.00080	0.00075
	(!A2 * B1 * !B2 * !X)	-0.00361	-0.00363	-0.00370
	(!A2 * !B1 * !X)	0.00080	0.00080	0.00075
	(!A2 * !B1 * !X)	-0.00361	-0.00363	-0.00370

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)**	-0.00115	-0.00115	-0.00114
	(A2 * A3 * B1 * B2 * X)	0.00165	0.00165	0.00165
	(A2 * !A3 * B1 * B2 * X)	-0.00101	-0.00110	-0.00111
	(A2 * !A3 * B1 * B2 * X)	0.00167	0.00170	0.00167
	(A2 * !A3 * B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * !A3 * B1 * !B2 * !X)	0.00195	0.00196	0.00195
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00195	0.00196	0.00195
	(!A2 * B1 * B2 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * B2 * X)	0.00167	0.00170	0.00167
	(!A2 * B1 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * B1 * !B2 * !X)	0.00195	0.00196	0.00195
	(!A2 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !X)	0.00195	0.00196	0.00195
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00132	-0.00133	-0.00132
	(A2 * A3 * B1 * B2 * X)	0.00163	0.00166	0.00165
	(A2 * !A3 * B1 * B2 * X)	-0.00117	-0.00126	-0.00128
	(A2 * !A3 * B1 * B2 * X)	0.00169	0.00169	0.00167
	(A2 * !A3 * B1 * !B2 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !A3 * B1 * !B2 * !X)	0.00199	0.00200	0.00200
	(A2 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !A3 * !B1 * !X)	0.00199	0.00200	0.00200
	(!A2 * B1 * B2 * X)	-0.00127	-0.00130	-0.00130
	(!A2 * B1 * B2 * X)	0.00168	0.00169	0.00167
	(!A2 * B1 * !B2 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !X)	0.00200	0.00201	0.00200
	(!A2 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !X)	0.00199	0.00201	0.00200

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00207	-0.00208	-0.00205
	(A2 * A3 * B1 * B2 * X)	0.00327	0.00330	0.00330
	(A2 * !A3 * B1 * B2 * X)	-0.00179	-0.00197	-0.00200
	(A2 * !A3 * B1 * B2 * X)	0.00334	0.00338	0.00335
	(A2 * !A3 * B1 * !B2 * !X)	-0.00063	-0.00063	-0.00062
	(A2 * !A3 * B1 * !B2 * !X)	0.00377	0.00378	0.00377
	(A2 * !A3 * !B1 * !X)	-0.00063	-0.00063	-0.00062
	(A2 * !A3 * !B1 * !X)	0.00377	0.00378	0.00377
	(!A2 * B1 * B2 * X)	-0.00198	-0.00201	-0.00203
	(!A2 * B1 * B2 * X)	0.00336	0.00336	0.00335
	(!A2 * B1 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(!A2 * B1 * !B2 * !X)	0.00377	0.00379	0.00378
	(!A2 * !B1 * !X)	-0.00065	-0.00066	-0.00065
	(!A2 * !B1 * !X)	0.00377	0.00379	0.00378

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)**	0.00155	0.00127	0.00120
	(A1 * A3 * B1 * B2 * X)	-0.00122	-0.00154	-0.00158
	(A1 * !A3 * B1 * B2 * X)	0.00115	0.00115	0.00115
	(A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00161	-0.00161
	(A1 * !A3 * B1 * !B2 * !X)	0.00049	0.00049	0.00049
	(A1 * !A3 * B1 * !B2 * !X)	-0.00173	-0.00173	-0.00171
	(A1 * !A3 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * !A3 * !B1 * !X)	-0.00173	-0.00173	-0.00171
	(!A1 * A3 * B1 * B2 * X)	0.00115	0.00115	0.00115
	(!A1 * A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00161
	(!A1 * A3 * B1 * !B2 * !X)	0.00105	0.00105	0.00104
	(!A1 * A3 * B1 * !B2 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * A3 * !B1 * !X)	0.00105	0.00105	0.00104
	(!A1 * A3 * !B1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * B1 * B2 * X)	0.00075	0.00075	0.00074
	(!A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A3 * B1 * !B2 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00173	0.00145	0.00138
	(A1 * A3 * B1 * B2 * X)	-0.00122	-0.00154	-0.00158
	(A1 * !A3 * B1 * B2 * X)	0.00132	0.00132	0.00132
	(A1 * !A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(A1 * !A3 * B1 * !B2 * !X)	0.00056	0.00056	0.00057
	(A1 * !A3 * B1 * !B2 * !X)	-0.00172	-0.00172	-0.00170
	(A1 * !A3 * !B1 * !X)	0.00056	0.00056	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00172	-0.00172	-0.00170
	(!A1 * A3 * B1 * B2 * X)	0.00132	0.00133	0.00133
	(!A1 * A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * A3 * B1 * !B2 * !X)	0.00121	0.00122	0.00122
	(!A1 * A3 * B1 * !B2 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * A3 * !B1 * !X)	0.00121	0.00122	0.00122
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !A3 * B1 * B2 * X)	0.00084	0.00085	0.00084
	(!A1 * !A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * !A3 * B1 * !B2 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * !B1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00172

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00317	0.00250	0.00237
	(A1 * A3 * B1 * B2 * X)	-0.00259	-0.00327	-0.00341
	(A1 * !A3 * B1 * B2 * X)	0.00226	0.00226	0.00226
	(A1 * !A3 * B1 * B2 * X)	-0.00347	-0.00349	-0.00347
	(A1 * !A3 * B1 * !B2 * !X)	0.00104	0.00105	0.00103
	(A1 * !A3 * B1 * !B2 * !X)	-0.00364	-0.00366	-0.00363
	(A1 * !A3 * !B1 * !X)	0.00104	0.00105	0.00103
	(A1 * !A3 * !B1 * !X)	-0.00364	-0.00366	-0.00363
	(!A1 * A3 * B1 * B2 * X)	0.00226	0.00228	0.00226
	(!A1 * A3 * B1 * B2 * X)	-0.00348	-0.00349	-0.00347
	(!A1 * A3 * B1 * !B2 * !X)	0.00210	0.00212	0.00211
	(!A1 * A3 * B1 * !B2 * !X)	-0.00364	-0.00365	-0.00363
	(!A1 * A3 * !B1 * !X)	0.00210	0.00212	0.00211
	(!A1 * A3 * !B1 * !X)	-0.00364	-0.00365	-0.00363
	(!A1 * !A3 * B1 * B2 * X)	0.00152	0.00153	0.00152
	(!A1 * !A3 * B1 * B2 * X)	-0.00348	-0.00349	-0.00347
	(!A1 * !A3 * B1 * !B2 * !X)	0.00130	0.00132	0.00131
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00365	-0.00368	-0.00366
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00132	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00365	-0.00368	-0.00366

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

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

sky130_fd_sc_hs__a32o_1	**(A1 * A3 * B1 * B2 * X)**	-0.00113	-0.00113	-0.00111
	(A1 * A3 * B1 * B2 * X)	0.00164	0.00166	0.00165
	(A1 * !A3 * B1 * B2 * X)	-0.00108	-0.00109	-0.00110
	(A1 * !A3 * B1 * B2 * X)	0.00168	0.00168	0.00167
	(A1 * !A3 * B1 * !B2 * !X)	-0.00043	-0.00043	-0.00044
	(A1 * !A3 * B1 * !B2 * !X)	0.00179	0.00180	0.00177
	(A1 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00044
	(A1 * !A3 * !B1 * !X)	0.00179	0.00180	0.00177
	(!A1 * A3 * B1 * B2 * X)	-0.00108	-0.00110	-0.00110
	(!A1 * A3 * B1 * B2 * X)	0.00168	0.00169	0.00167
	(!A1 * A3 * B1 * !B2 * !X)	-0.00092	-0.00101	-0.00102
	(!A1 * A3 * B1 * !B2 * !X)	0.00185	0.00178	0.00175
	(!A1 * A3 * !B1 * !X)	-0.00092	-0.00101	-0.00102
	(!A1 * A3 * !B1 * !X)	0.00185	0.00178	0.00175
	(!A1 * !A3 * B1 * B2 * X)	-0.00075	-0.00075	-0.00074
	(!A1 * !A3 * B1 * B2 * X)	0.00167	0.00168	0.00167
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A3 * B1 * !B2 * !X)	0.00181	0.00182	0.00177
	(!A1 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * !X)	0.00181	0.00182	0.00177

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00130	-0.00131	-0.00129
	(A1 * A3 * B1 * B2 * X)	0.00164	0.00166	0.00165
	(A1 * !A3 * B1 * B2 * X)	-0.00125	-0.00126	-0.00127
	(A1 * !A3 * B1 * B2 * X)	0.00168	0.00168	0.00167
	(A1 * !A3 * B1 * !B2 * !X)	-0.00048	-0.00049	-0.00050
	(A1 * !A3 * B1 * !B2 * !X)	0.00180	0.00181	0.00177
	(A1 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00050
	(A1 * !A3 * !B1 * !X)	0.00180	0.00181	0.00177
	(!A1 * A3 * B1 * B2 * X)	-0.00125	-0.00128	-0.00127
	(!A1 * A3 * B1 * B2 * X)	0.00168	0.00169	0.00167
	(!A1 * A3 * B1 * !B2 * !X)	-0.00107	-0.00118	-0.00119
	(!A1 * A3 * B1 * !B2 * !X)	0.00187	0.00179	0.00176
	(!A1 * A3 * !B1 * !X)	-0.00107	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !X)	0.00186	0.00179	0.00175
	(!A1 * !A3 * B1 * B2 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * B1 * B2 * X)	0.00167	0.00168	0.00167
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A3 * B1 * !B2 * !X)	0.00182	0.00183	0.00177
	(!A1 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A3 * !B1 * !X)	0.00182	0.00183	0.00177

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00220	-0.00221	-0.00217
	(A1 * A3 * B1 * B2 * X)	0.00353	0.00357	0.00356
	(A1 * !A3 * B1 * B2 * X)	-0.00209	-0.00214	-0.00216
	(A1 * !A3 * B1 * B2 * X)	0.00361	0.00363	0.00361
	(A1 * !A3 * B1 * !B2 * !X)	-0.00086	-0.00087	-0.00090
	(A1 * !A3 * B1 * !B2 * !X)	0.00382	0.00384	0.00376
	(A1 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00090
	(A1 * !A3 * !B1 * !X)	0.00382	0.00384	0.00376
	(!A1 * A3 * B1 * B2 * X)	-0.00212	-0.00214	-0.00216
	(!A1 * A3 * B1 * B2 * X)	0.00363	0.00361	0.00361
	(!A1 * A3 * B1 * !B2 * !X)	-0.00181	-0.00200	-0.00204
	(!A1 * A3 * B1 * !B2 * !X)	0.00395	0.00376	0.00372
	(!A1 * A3 * !B1 * !X)	-0.00181	-0.00200	-0.00204
	(!A1 * A3 * !B1 * !X)	0.00395	0.00376	0.00372
	(!A1 * !A3 * B1 * B2 * X)	-0.00152	-0.00153	-0.00150
	(!A1 * !A3 * B1 * B2 * X)	0.00361	0.00363	0.00362
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00130	-0.00132	-0.00131
	(!A1 * !A3 * B1 * !B2 * !X)	0.00390	0.00389	0.00378
	(!A1 * !A3 * !B1 * !X)	-0.00130	-0.00132	-0.00130
	(!A1 * !A3 * !B1 * !X)	0.00390	0.00389	0.00378

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)**	0.00167	0.00141	0.00135
	(A1 * A2 * B1 * B2 * X)	-0.00122	-0.00152	-0.00156
	(A1 * !A2 * B1 * !B2 * !X)	0.00106	0.00105	0.00106
	(A1 * !A2 * B1 * !B2 * !X)	-0.00183	-0.00182	-0.00183
	(A1 * !A2 * !B1 * !X)	0.00106	0.00107	0.00106
	(A1 * !A2 * !B1 * !X)	-0.00183	-0.00184	-0.00183
	(!A2 * B1 * B2 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * B1 * B2 * X)	0.00127	0.00127	0.00126
	(!A1 * A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * B1 * !B2 * !X)	0.00102	0.00103	0.00102
	(!A1 * A2 * B1 * !B2 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00183	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !B1 * !X)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00186	0.00159	0.00153
	(A1 * A2 * B1 * B2 * X)	-0.00122	-0.00153	-0.00157
	(A1 * !A2 * B1 * !B2 * !X)	0.00124	0.00124	0.00124
	(A1 * !A2 * B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182
	(A1 * !A2 * !B1 * !X)	0.00124	0.00124	0.00124
	(A1 * !A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182
	(!A2 * B1 * B2 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * A2 * B1 * B2 * X)	0.00143	0.00144	0.00143
	(!A1 * A2 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * A2 * B1 * !B2 * !X)	0.00120	0.00120	0.00120
	(!A1 * A2 * B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * !A2 * !B1 * !X)	0.00123	0.00123	0.00123
	(!A1 * !A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00310	0.00249	0.00235
	(A1 * A2 * B1 * B2 * X)	-0.00252	-0.00320	-0.00330
	(A1 * !A2 * B1 * !B2 * !X)	0.00221	0.00221	0.00221
	(A1 * !A2 * B1 * !B2 * !X)	-0.00339	-0.00339	-0.00339
	(A1 * !A2 * !B1 * !X)	0.00220	0.00221	0.00221
	(A1 * !A2 * !B1 * !X)	-0.00339	-0.00339	-0.00339
	(!A2 * B1 * B2 * X)	0.00223	0.00224	0.00224
	(!A2 * B1 * B2 * X)	-0.00335	-0.00336	-0.00336
	(!A1 * A2 * B1 * B2 * X)	0.00216	0.00218	0.00216
	(!A1 * A2 * B1 * B2 * X)	-0.00336	-0.00337	-0.00336
	(!A1 * A2 * B1 * !B2 * !X)	0.00213	0.00215	0.00214
	(!A1 * A2 * B1 * !B2 * !X)	-0.00338	-0.00340	-0.00338
	(!A1 * A2 * !B1 * !X)	0.00213	0.00214	0.00214
	(!A1 * A2 * !B1 * !X)	-0.00338	-0.00340	-0.00338
	(!A1 * !A2 * B1 * !B2 * !X)	0.00219	0.00222	0.00219
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00339	-0.00341	-0.00339
	(!A1 * !A2 * !B1 * !X)	0.00219	0.00222	0.00219
	(!A1 * !A2 * !B1 * !X)	-0.00339	-0.00341	-0.00339

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)**	-0.00127	-0.00127	-0.00126
	(A1 * A2 * B1 * B2 * X)	0.00162	0.00164	0.00163
	(A1 * !A2 * B1 * !B2 * !X)	-0.00098	-0.00103	-0.00103
	(A1 * !A2 * B1 * !B2 * !X)	0.00188	0.00188	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00099	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !X)	0.00188	0.00188	0.00186
	(!A2 * B1 * B2 * X)	-0.00122	-0.00125	-0.00124
	(!A2 * B1 * B2 * X)	0.00164	0.00167	0.00165
	(!A1 * A2 * B1 * B2 * X)	-0.00115	-0.00122	-0.00123
	(!A1 * A2 * B1 * B2 * X)	0.00165	0.00166	0.00165
	(!A1 * A2 * B1 * !B2 * !X)	-0.00092	-0.00101	-0.00102
	(!A1 * A2 * B1 * !B2 * !X)	0.00188	0.00187	0.00186
	(!A1 * A2 * !B1 * !X)	-0.00092	-0.00101	-0.00102
	(!A1 * A2 * !B1 * !X)	0.00188	0.00187	0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00101	-0.00104	-0.00104
	(!A1 * !A2 * B1 * !B2 * !X)	0.00187	0.00188	0.00186
	(!A1 * !A2 * !B1 * !X)	-0.00101	-0.00104	-0.00104
	(!A1 * !A2 * !B1 * !X)	0.00187	0.00188	0.00186

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00145	-0.00146	-0.00144
	(A1 * A2 * B1 * B2 * X)	0.00163	0.00164	0.00164
	(A1 * !A2 * B1 * !B2 * !X)	-0.00115	-0.00121	-0.00121
	(A1 * !A2 * B1 * !B2 * !X)	0.00187	0.00189	0.00187
	(A1 * !A2 * !B1 * !X)	-0.00115	-0.00121	-0.00121
	(A1 * !A2 * !B1 * !X)	0.00187	0.00189	0.00186
	(!A2 * B1 * B2 * X)	-0.00139	-0.00142	-0.00141
	(!A2 * B1 * B2 * X)	0.00165	0.00168	0.00166
	(!A1 * A2 * B1 * B2 * X)	-0.00130	-0.00138	-0.00140
	(!A1 * A2 * B1 * B2 * X)	0.00166	0.00167	0.00166
	(!A1 * A2 * B1 * !B2 * !X)	-0.00108	-0.00118	-0.00120
	(!A1 * A2 * B1 * !B2 * !X)	0.00189	0.00188	0.00186
	(!A1 * A2 * !B1 * !X)	-0.00108	-0.00118	-0.00120
	(!A1 * A2 * !B1 * !X)	0.00188	0.00188	0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00118	-0.00121	-0.00121
	(!A1 * !A2 * B1 * !B2 * !X)	0.00187	0.00189	0.00186
	(!A1 * !A2 * !B1 * !X)	-0.00118	-0.00121	-0.00121
	(!A1 * !A2 * !B1 * !X)	0.00187	0.00188	0.00186

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00218	-0.00219	-0.00216
	(A1 * A2 * B1 * B2 * X)	0.00342	0.00346	0.00345
	(A1 * !A2 * B1 * !B2 * !X)	-0.00203	-0.00214	-0.00215
	(A1 * !A2 * B1 * !B2 * !X)	0.00352	0.00351	0.00348
	(A1 * !A2 * !B1 * !X)	-0.00203	-0.00214	-0.00215
	(A1 * !A2 * !B1 * !X)	0.00352	0.00351	0.00348
	(!A2 * B1 * B2 * X)	-0.00209	-0.00213	-0.00214
	(!A2 * B1 * B2 * X)	0.00352	0.00353	0.00350
	(!A1 * A2 * B1 * B2 * X)	-0.00192	-0.00207	-0.00210
	(!A1 * A2 * B1 * B2 * X)	0.00349	0.00353	0.00350
	(!A1 * A2 * B1 * !B2 * !X)	-0.00189	-0.00209	-0.00212
	(!A1 * A2 * B1 * !B2 * !X)	0.00353	0.00351	0.00347
	(!A1 * A2 * !B1 * !X)	-0.00189	-0.00209	-0.00212
	(!A1 * A2 * !B1 * !X)	0.00353	0.00351	0.00347
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00208	-0.00215	-0.00216
	(!A1 * !A2 * B1 * !B2 * !X)	0.00349	0.00350	0.00347
	(!A1 * !A2 * !B1 * !X)	-0.00208	-0.00215	-0.00216
	(!A1 * !A2 * !B1 * !X)	0.00349	0.00350	0.00347

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)**	0.00131	0.00131	0.00131
	(A1 * A2 * A3 * B2 * X)	-0.00075	-0.00075	-0.00074
	(A1 * A2 * A3 * !B2 * X)	0.00130	0.00130	0.00128
	(A1 * A2 * A3 * !B2 * X)	-0.00071	-0.00071	-0.00072
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00041	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00187	-0.00186	-0.00190
	(A1 * !A2 * !B2 * !X)	0.00042	0.00041	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00187	-0.00186	-0.00190
	(!A1 * !B2 * !X)	0.00042	0.00041	0.00040
	(!A1 * !B2 * !X)	-0.00187	-0.00186	-0.00190
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00147	0.00147	0.00147
	(A1 * A2 * A3 * B2 * X)	-0.00076	-0.00076	-0.00075
	(A1 * A2 * A3 * !B2 * X)	0.00145	0.00145	0.00144
	(A1 * A2 * A3 * !B2 * X)	-0.00072	-0.00072	-0.00073
	(A1 * A2 * !A3 * !B2 * !X)	0.00052	0.00052	0.00049
	(A1 * A2 * !A3 * !B2 * !X)	-0.00185	-0.00186	-0.00190
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00049
	(A1 * !A2 * !B2 * !X)	-0.00185	-0.00186	-0.00190
	(!A1 * !B2 * !X)	0.00052	0.00052	0.00049
	(!A1 * !B2 * !X)	-0.00185	-0.00186	-0.00190
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00261	0.00262	0.00262
	(A1 * A2 * A3 * B2 * X)	-0.00151	-0.00151	-0.00150
	(A1 * A2 * A3 * !B2 * X)	0.00256	0.00257	0.00254
	(A1 * A2 * A3 * !B2 * X)	-0.00142	-0.00145	-0.00146
	(A1 * A2 * !A3 * !B2 * !X)	0.00079	0.00078	0.00075
	(A1 * A2 * !A3 * !B2 * !X)	-0.00376	-0.00374	-0.00383
	(A1 * !A2 * !B2 * !X)	0.00079	0.00078	0.00074
	(A1 * !A2 * !B2 * !X)	-0.00376	-0.00374	-0.00383
	(!A1 * !B2 * !X)	0.00079	0.00077	0.00074
	(!A1 * !B2 * !X)	-0.00376	-0.00373	-0.00383

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)	-0.00111	-0.00112	-0.00127
	(A1 * A2 * A3 * B2 * X)	0.00092	0.00092	0.00080
	(A1 * A2 * A3 * !B2 * X)	-0.00124	-0.00125	-0.00125
	(A1 * A2 * A3 * !B2 * X)	0.00077	0.00077	0.00077
	(A1 * A2 * !A3 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * A2 * !A3 * !B2 * !X)	0.00192	0.00194	0.00193
	(A1 * !A2 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B2 * !X)	0.00192	0.00194	0.00193
	(!A1 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !B2 * !X)	0.00192	0.00194	0.00193
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00127	-0.00128	-0.00142
	(A1 * A2 * A3 * B2 * X)	0.00093	0.00093	0.00081
	(A1 * A2 * A3 * !B2 * X)	-0.00138	-0.00140	-0.00140
	(A1 * A2 * A3 * !B2 * X)	0.00079	0.00078	0.00078
	(A1 * A2 * !A3 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * !A3 * !B2 * !X)	0.00193	0.00195	0.00194
	(A1 * !A2 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * !X)	0.00193	0.00195	0.00194
	(!A1 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * !X)	0.00193	0.00194	0.00194

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00219	-0.00221	-0.00253
	(A1 * A2 * A3 * B2 * X)	0.00187	0.00187	0.00162
	(A1 * A2 * A3 * !B2 * X)	-0.00244	-0.00247	-0.00248
	(A1 * A2 * A3 * !B2 * X)	0.00157	0.00157	0.00156
	(A1 * A2 * !A3 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !A3 * !B2 * !X)	0.00390	0.00392	0.00391
	(A1 * !A2 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * !B2 * !X)	0.00390	0.00392	0.00391
	(!A1 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * !B2 * !X)	0.00390	0.00392	0.00391

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)**	0.00128	0.00128	0.00128
	(A1 * A2 * A3 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * A3 * !B1 * X)	0.00129	0.00130	0.00126
	(A1 * A2 * A3 * !B1 * X)	-0.00074	-0.00075	-0.00075
	(A1 * A2 * !A3 * !B1 * !X)	0.00114	0.00114	0.00113
	(A1 * A2 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !X)	0.00114	0.00114	0.00113
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !B1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00148	0.00149	0.00148
	(A1 * A2 * A3 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * A3 * !B1 * X)	0.00149	0.00149	0.00146
	(A1 * A2 * A3 * !B1 * X)	-0.00075	-0.00075	-0.00076
	(A1 * A2 * !A3 * !B1 * !X)	0.00134	0.00135	0.00134
	(A1 * A2 * !A3 * !B1 * !X)	-0.00165	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * !X)	-0.00165	-0.00165	-0.00164
	(!A1 * !B1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !X)	-0.00165	-0.00165	-0.00164
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00331	0.00335	0.00331
	(A1 * A2 * A3 * B1 * X)	-0.00157	-0.00159	-0.00156
	(A1 * A2 * A3 * !B1 * X)	0.00328	0.00328	0.00324
	(A1 * A2 * A3 * !B1 * X)	-0.00149	-0.00150	-0.00151
	(A1 * A2 * !A3 * !B1 * !X)	0.00282	0.00283	0.00282
	(A1 * A2 * !A3 * !B1 * !X)	-0.00345	-0.00346	-0.00344
	(A1 * !A2 * !B1 * !X)	0.00282	0.00283	0.00282
	(A1 * !A2 * !B1 * !X)	-0.00345	-0.00346	-0.00345
	(!A1 * !B1 * !X)	0.00282	0.00283	0.00282
	(!A1 * !B1 * !X)	-0.00345	-0.00346	-0.00345

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)**	-0.00108	-0.00109	-0.00124
	(A1 * A2 * A3 * B1 * X)	0.00096	0.00095	0.00083
	(A1 * A2 * A3 * !B1 * X)	-0.00121	-0.00123	-0.00122
	(A1 * A2 * A3 * !B1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !A3 * !B1 * !X)	-0.00103	-0.00110	-0.00111
	(A1 * A2 * !A3 * !B1 * !X)	0.00176	0.00171	0.00167
	(A1 * !A2 * !B1 * !X)	-0.00103	-0.00110	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00176	0.00171	0.00167
	(!A1 * !B1 * !X)	-0.00103	-0.00110	-0.00111
	(!A1 * !B1 * !X)	0.00176	0.00171	0.00167
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00129	-0.00129	-0.00144
	(A1 * A2 * A3 * B1 * X)	0.00097	0.00096	0.00085
	(A1 * A2 * A3 * !B1 * X)	-0.00140	-0.00143	-0.00142
	(A1 * A2 * A3 * !B1 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * !A3 * !B1 * !X)	-0.00122	-0.00129	-0.00131
	(A1 * A2 * !A3 * !B1 * !X)	0.00177	0.00171	0.00169
	(A1 * !A2 * !B1 * !X)	-0.00122	-0.00130	-0.00131
	(A1 * !A2 * !B1 * !X)	0.00177	0.00171	0.00169
	(!A1 * !B1 * !X)	-0.00122	-0.00130	-0.00131
	(!A1 * !B1 * !X)	0.00177	0.00172	0.00169
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00288	-0.00291	-0.00322
	(A1 * A2 * A3 * B1 * X)	0.00193	0.00193	0.00168
	(A1 * A2 * A3 * !B1 * X)	-0.00314	-0.00318	-0.00316
	(A1 * A2 * A3 * !B1 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !A3 * !B1 * !X)	-0.00255	-0.00273	-0.00275
	(A1 * A2 * !A3 * !B1 * !X)	0.00374	0.00361	0.00354
	(A1 * !A2 * !B1 * !X)	-0.00256	-0.00273	-0.00276
	(A1 * !A2 * !B1 * !X)	0.00374	0.00361	0.00354
	(!A1 * !B1 * !X)	-0.00256	-0.00274	-0.00276
	(!A1 * !B1 * !X)	0.00374	0.00361	0.00354

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00301	0.00305	0.00300	0.00303	0.00306	0.35793
sky130_fd_sc_hs__a41oi_2	0.00583	0.00570	0.00560	0.00559	0.00457	0.69671
sky130_fd_sc_hs__a41oi_4	0.01140	0.01107	0.01118	0.01107	0.00903	1.25381

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.78499	1.94619
sky130_fd_sc_hs__a41oi_2	0.00000	1.27959	3.71438
sky130_fd_sc_hs__a41oi_4	0.00000	2.48105	7.21043

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)	0.14555	1.07128	9.62247
	A2->Y (FR)	0.17755	1.11461	9.75465
	A3->Y (FR)	0.19527	1.12023	9.61735
	A4->Y (FR)	0.20208	1.10357	9.37120
	B1->Y (FR)	0.12363	1.09263	10.26690
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.11932	0.90966	9.71988
	A2->Y (FR)	0.14794	0.92130	9.53680
	A3->Y (FR)	0.16976	0.95086	9.60382
	A4->Y (FR)	0.19085	0.98168	9.65489
	B1->Y (FR)	0.13153	0.95419	10.10470
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.11028	0.76303	9.23741
	A2->Y (FR)	0.14338	0.78435	9.09902
	A3->Y (FR)	0.17020	0.82268	9.24661
	A4->Y (FR)	0.19391	0.86114	9.41238
	B1->Y (FR)	0.13693	0.84957	10.05870

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.10929	0.86401	8.02562
	A2->Y (RF)	0.13031	0.85760	7.66937
	A3->Y (RF)	0.14237	0.83266	7.17884
	A4->Y (RF)	0.14918	0.80762	6.72961
	B1->Y (RF)	0.03193	0.46963	4.62915
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.09649	0.79418	8.54490
	A2->Y (RF)	0.12296	0.79336	8.20963
	A3->Y (RF)	0.13624	0.75604	7.57653
	A4->Y (RF)	0.14459	0.73808	7.13812
	B1->Y (RF)	0.03639	0.58145	6.60272
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.09244	0.69929	8.37046
	A2->Y (RF)	0.12190	0.69545	7.99804
	A3->Y (RF)	0.13686	0.66090	7.37339
	A4->Y (RF)	0.14353	0.63340	6.84637
	B1->Y (RF)	0.03415	0.49913	6.32536

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00047	0.00040	0.00301
	A1	0.00622	0.00615	0.00878
	A2	0.00123	0.00110	0.00372
	A2	0.00777	0.00765	0.01023
	A3	0.00186	0.00172	0.00437
	A3	0.00917	0.00903	0.01166
	A4	0.00223	0.00212	0.00479
	A4	0.01038	0.01026	0.01294
	B1	0.00020	0.00063	0.00637
	B1	0.00765	0.00802	0.01340
sky130_fd_sc_hs__a41oi_2	A1	-0.00041	-0.00042	0.00461
	A1	0.01016	0.01017	0.01503
	A2	0.00141	0.00115	0.00623
	A2	0.01379	0.01352	0.01859
	A3	0.00255	0.00227	0.00734
	A3	0.01644	0.01620	0.02122
	A4	0.00392	0.00367	0.00873
	A4	0.01956	0.01934	0.02432
	B1	0.00008	0.00070	0.00731
	B1	0.01619	0.01653	0.02222

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00144	-0.00139	0.00959
	A1	0.01967	0.01961	0.03083
	A2	0.00263	0.00207	0.01321
	A2	0.02723	0.02669	0.03791
	A3	0.00488	0.00426	0.01544
	A3	0.03295	0.03236	0.04360
	A4	0.00713	0.00668	0.01772
	A4	0.03844	0.03791	0.04900
	B1	-0.00022	0.00134	0.01574
	B1	0.03176	0.03253	0.04482

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00800	0.00785	0.01046
	A1	0.00228	0.00220	0.00476
	A2	0.00881	0.00859	0.01088
	A2	0.00228	0.00210	0.00429
	A3	0.00960	0.00943	0.01171
	A3	0.00226	0.00206	0.00432
	A4	0.01053	0.01032	0.01280
	A4	0.00227	0.00205	0.00448
	B1	0.00580	0.00615	0.00991
	B1	-0.00032	-0.00009	0.00375

sky130_fd_sc_hs__a41oi_2	**A1**	0.01468	0.01453	0.01936
	A1	0.00418	0.00399	0.00876
	A2	0.01650	0.01609	0.02026
	A2	0.00413	0.00372	0.00787
	A3	0.01814	0.01772	0.02229
	A3	0.00412	0.00374	0.00805
	A4	0.01998	0.01954	0.02411
	A4	0.00408	0.00362	0.00821
	B1	0.00864	0.00910	0.01443
	B1	-0.00146	-0.00113	0.00362
sky130_fd_sc_hs__a41oi_4	**A1**	0.02844	0.02819	0.03766
	A1	0.00750	0.00723	0.01751
	A2	0.03200	0.03115	0.04045
	A2	0.00741	0.00661	0.01558
	A3	0.03565	0.03473	0.04406
	A3	0.00734	0.00641	0.01583
	A4	0.03913	0.03825	0.04890
	A4	0.00729	0.00636	0.01653
	B1	0.01737	0.01851	0.02998
	B1	-0.00302	-0.00202	0.00867

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)**	0.00161	0.00142	0.00139
	(A2 * A3 * A4 * B1 * !Y)	-0.00155	-0.00182	-0.00184
	(A2 * A3 * !A4 * B1 * !Y)	0.00128	0.00129	0.00127
	(A2 * A3 * !A4 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(A2 * A3 * !A4 * !B1 * Y)	0.00058	0.00058	0.00050
	(A2 * A3 * !A4 * !B1 * Y)	-0.00197	-0.00199	-0.00215
	(A2 * !A3 * B1 * !Y)	0.00129	0.00130	0.00130
	(A2 * !A3 * B1 * !Y)	-0.00187	-0.00187	-0.00187
	(A2 * !A3 * !B1 * Y)	0.00056	0.00055	0.00050
	(A2 * !A3 * !B1 * Y)	-0.00205	-0.00204	-0.00216
	(!A2 * B1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * Y)	0.00054	0.00054	0.00051
	(!A2 * !B1 * Y)	-0.00212	-0.00214	-0.00217
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00319	0.00281	0.00276
	(A2 * A3 * A4 * B1 * !Y)	-0.00303	-0.00355	-0.00359
	(A2 * A3 * !A4 * B1 * !Y)	0.00250	0.00250	0.00250
	(A2 * A3 * !A4 * B1 * !Y)	-0.00366	-0.00367	-0.00366
	(A2 * A3 * !A4 * !B1 * Y)	0.00109	0.00109	0.00090
	(A2 * A3 * !A4 * !B1 * Y)	-0.00385	-0.00389	-0.00428
	(A2 * !A3 * B1 * !Y)	0.00254	0.00257	0.00255
	(A2 * !A3 * B1 * !Y)	-0.00365	-0.00368	-0.00366
	(A2 * !A3 * !B1 * Y)	0.00100	0.00101	0.00088
	(A2 * !A3 * !B1 * Y)	-0.00405	-0.00409	-0.00433
	(!A2 * B1 * !Y)	0.00264	0.00266	0.00264
	(!A2 * B1 * !Y)	-0.00366	-0.00368	-0.00366
	(!A2 * !B1 * Y)	0.00098	0.00098	0.00091
	(!A2 * !B1 * Y)	-0.00423	-0.00425	-0.00436

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00641	0.00562	0.00552
	(A2 * A3 * A4 * B1 * !Y)	-0.00600	-0.00703	-0.00712
	(A2 * A3 * !A4 * B1 * !Y)	0.00496	0.00498	0.00496
	(A2 * A3 * !A4 * B1 * !Y)	-0.00726	-0.00728	-0.00725
	(A2 * A3 * !A4 * !B1 * Y)	0.00219	0.00219	0.00181
	(A2 * A3 * !A4 * !B1 * Y)	-0.00760	-0.00765	-0.00843
	(A2 * !A3 * B1 * !Y)	0.00508	0.00511	0.00508
	(A2 * !A3 * B1 * !Y)	-0.00726	-0.00729	-0.00725
	(A2 * !A3 * !B1 * Y)	0.00204	0.00204	0.00179
	(A2 * !A3 * !B1 * Y)	-0.00797	-0.00802	-0.00851
	(!A2 * B1 * !Y)	0.00527	0.00532	0.00528
	(!A2 * B1 * !Y)	-0.00725	-0.00729	-0.00725
	(!A2 * !B1 * Y)	0.00206	0.00205	0.00190
	(!A2 * !B1 * Y)	-0.00829	-0.00832	-0.00857

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)**	-0.00136	-0.00137	-0.00136
	(A2 * A3 * A4 * B1 * !Y)	0.00182	0.00184	0.00184
	(A2 * A3 * !A4 * B1 * !Y)	-0.00115	-0.00129	-0.00127
	(A2 * A3 * !A4 * B1 * !Y)	0.00188	0.00191	0.00189
	(A2 * A3 * !A4 * !B1 * Y)	-0.00047	-0.00047	-0.00047
	(A2 * A3 * !A4 * !B1 * Y)	0.00218	0.00220	0.00219
	(A2 * !A3 * B1 * !Y)	-0.00120	-0.00130	-0.00130
	(A2 * !A3 * B1 * !Y)	0.00188	0.00191	0.00189
	(A2 * !A3 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(A2 * !A3 * !B1 * Y)	0.00218	0.00220	0.00219
	(!A2 * B1 * !Y)	-0.00131	-0.00134	-0.00133
	(!A2 * B1 * !Y)	0.00189	0.00191	0.00189
	(!A2 * !B1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * Y)	0.00218	0.00220	0.00219
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00271	-0.00273	-0.00270
	(A2 * A3 * A4 * B1 * !Y)	0.00357	0.00361	0.00359
	(A2 * A3 * !A4 * B1 * !Y)	-0.00225	-0.00250	-0.00250
	(A2 * A3 * !A4 * B1 * !Y)	0.00369	0.00371	0.00370
	(A2 * A3 * !A4 * !B1 * Y)	-0.00083	-0.00084	-0.00083
	(A2 * A3 * !A4 * !B1 * Y)	0.00436	0.00444	0.00439
	(A2 * !A3 * B1 * !Y)	-0.00235	-0.00257	-0.00255
	(A2 * !A3 * B1 * !Y)	0.00369	0.00371	0.00370
	(A2 * !A3 * !B1 * Y)	-0.00083	-0.00085	-0.00084
	(A2 * !A3 * !B1 * Y)	0.00436	0.00444	0.00439
	(!A2 * B1 * !Y)	-0.00259	-0.00264	-0.00264
	(!A2 * B1 * !Y)	0.00369	0.00371	0.00370
	(!A2 * !B1 * Y)	-0.00087	-0.00088	-0.00086
	(!A2 * !B1 * Y)	0.00441	0.00445	0.00439

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00544	-0.00547	-0.00541
	(A2 * A3 * A4 * B1 * !Y)	0.00707	0.00716	0.00712
	(A2 * A3 * !A4 * B1 * !Y)	-0.00444	-0.00498	-0.00496
	(A2 * A3 * !A4 * B1 * !Y)	0.00731	0.00734	0.00733
	(A2 * A3 * !A4 * !B1 * Y)	-0.00174	-0.00174	-0.00173
	(A2 * A3 * !A4 * !B1 * Y)	0.00865	0.00867	0.00862
	(A2 * !A3 * B1 * !Y)	-0.00465	-0.00511	-0.00508
	(A2 * !A3 * B1 * !Y)	0.00731	0.00737	0.00733
	(A2 * !A3 * !B1 * Y)	-0.00175	-0.00174	-0.00174
	(A2 * !A3 * !B1 * Y)	0.00865	0.00867	0.00862
	(!A2 * B1 * !Y)	-0.00517	-0.00529	-0.00528
	(!A2 * B1 * !Y)	0.00730	0.00736	0.00733
	(!A2 * !B1 * Y)	-0.00182	-0.00182	-0.00181
	(!A2 * !B1 * Y)	0.00862	0.00869	0.00863

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)**	0.00157	0.00135	0.00133
	(A1 * A3 * A4 * B1 * !Y)	-0.00156	-0.00180	-0.00183
	(A1 * A3 * !A4 * B1 * !Y)	0.00123	0.00124	0.00124
	(A1 * A3 * !A4 * B1 * !Y)	-0.00186	-0.00187	-0.00187
	(A1 * A3 * !A4 * !B1 * Y)	0.00054	0.00054	0.00055
	(A1 * A3 * !A4 * !B1 * Y)	-0.00195	-0.00195	-0.00193
	(A1 * !A3 * B1 * !Y)	0.00128	0.00128	0.00128
	(A1 * !A3 * B1 * !Y)	-0.00186	-0.00187	-0.00187
	(A1 * !A3 * !B1 * Y)	0.00058	0.00058	0.00058
	(A1 * !A3 * !B1 * Y)	-0.00195	-0.00196	-0.00193
	(!A1 * A3 * A4 * B1 * !Y)	0.00128	0.00129	0.00128
	(!A1 * A3 * A4 * B1 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * A3 * A4 * !B1 * Y)	0.00120	0.00122	0.00121
	(!A1 * A3 * A4 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * A3 * !A4 * B1 * !Y)	0.00081	0.00081	0.00080
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * A3 * !A4 * !B1 * Y)	0.00071	0.00072	0.00071
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(!A1 * !A3 * B1 * !Y)	0.00084	0.00084	0.00083
	(!A1 * !A3 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A3 * !B1 * Y)	-0.00196	-0.00196	-0.00195

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00316	0.00273	0.00269
	(A1 * A3 * A4 * B1 * !Y)	-0.00310	-0.00359	-0.00365
	(A1 * A3 * !A4 * B1 * !Y)	0.00247	0.00248	0.00247
	(A1 * A3 * !A4 * B1 * !Y)	-0.00373	-0.00374	-0.00372
	(A1 * A3 * !A4 * !B1 * Y)	0.00119	0.00119	0.00121
	(A1 * A3 * !A4 * !B1 * Y)	-0.00376	-0.00377	-0.00374
	(A1 * !A3 * B1 * !Y)	0.00256	0.00258	0.00257
	(A1 * !A3 * B1 * !Y)	-0.00372	-0.00374	-0.00372
	(A1 * !A3 * !B1 * Y)	0.00125	0.00125	0.00126
	(A1 * !A3 * !B1 * Y)	-0.00377	-0.00378	-0.00374
	(!A1 * A3 * A4 * B1 * !Y)	0.00256	0.00258	0.00257
	(!A1 * A3 * A4 * B1 * !Y)	-0.00371	-0.00374	-0.00372
	(!A1 * A3 * A4 * !B1 * Y)	0.00254	0.00255	0.00254
	(!A1 * A3 * A4 * !B1 * Y)	-0.00376	-0.00377	-0.00375
	(!A1 * A3 * !A4 * B1 * !Y)	0.00162	0.00164	0.00162
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00373	-0.00375	-0.00372
	(!A1 * A3 * !A4 * !B1 * Y)	0.00155	0.00155	0.00155
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00378	-0.00378	-0.00378
	(!A1 * !A3 * B1 * !Y)	0.00166	0.00168	0.00166
	(!A1 * !A3 * B1 * !Y)	-0.00372	-0.00375	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00156	0.00158	0.00157
	(!A1 * !A3 * !B1 * Y)	-0.00378	-0.00381	-0.00379

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00628	0.00541	0.00532
	(A1 * A3 * A4 * B1 * !Y)	-0.00613	-0.00714	-0.00725
	(A1 * A3 * !A4 * B1 * !Y)	0.00483	0.00482	0.00481
	(A1 * A3 * !A4 * B1 * !Y)	-0.00742	-0.00741	-0.00740
	(A1 * A3 * !A4 * !B1 * Y)	0.00223	0.00227	0.00233
	(A1 * A3 * !A4 * !B1 * Y)	-0.00738	-0.00745	-0.00737
	(A1 * !A3 * B1 * !Y)	0.00501	0.00505	0.00502
	(A1 * !A3 * B1 * !Y)	-0.00738	-0.00743	-0.00740
	(A1 * !A3 * !B1 * Y)	0.00231	0.00235	0.00239
	(A1 * !A3 * !B1 * Y)	-0.00739	-0.00747	-0.00737
	(!A1 * A3 * A4 * B1 * !Y)	0.00508	0.00511	0.00508
	(!A1 * A3 * A4 * B1 * !Y)	-0.00740	-0.00743	-0.00740
	(!A1 * A3 * A4 * !B1 * Y)	0.00505	0.00507	0.00506
	(!A1 * A3 * A4 * !B1 * Y)	-0.00743	-0.00745	-0.00742
	(!A1 * A3 * !A4 * B1 * !Y)	0.00308	0.00312	0.00308
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00739	-0.00744	-0.00740
	(!A1 * A3 * !A4 * !B1 * Y)	0.00299	0.00302	0.00299
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00745	-0.00750	-0.00745
	(!A1 * !A3 * B1 * !Y)	0.00314	0.00314	0.00313
	(!A1 * !A3 * B1 * !Y)	-0.00740	-0.00741	-0.00740
	(!A1 * !A3 * !B1 * Y)	0.00300	0.00303	0.00300
	(!A1 * !A3 * !B1 * Y)	-0.00745	-0.00751	-0.00747

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)**	-0.00131	-0.00132	-0.00130
	(A1 * A3 * A4 * B1 * !Y)	0.00182	0.00184	0.00183
	(A1 * A3 * !A4 * B1 * !Y)	-0.00113	-0.00124	-0.00124
	(A1 * A3 * !A4 * B1 * !Y)	0.00188	0.00188	0.00189
	(A1 * A3 * !A4 * !B1 * Y)	-0.00050	-0.00051	-0.00052
	(A1 * A3 * !A4 * !B1 * Y)	0.00201	0.00202	0.00198
	(A1 * !A3 * B1 * !Y)	-0.00126	-0.00128	-0.00128
	(A1 * !A3 * B1 * !Y)	0.00189	0.00189	0.00189
	(A1 * !A3 * !B1 * Y)	-0.00052	-0.00052	-0.00054
	(A1 * !A3 * !B1 * Y)	0.00201	0.00202	0.00198
	(!A1 * A3 * A4 * B1 * !Y)	-0.00126	-0.00128	-0.00128
	(!A1 * A3 * A4 * B1 * !Y)	0.00189	0.00189	0.00189
	(!A1 * A3 * A4 * !B1 * Y)	-0.00108	-0.00119	-0.00121
	(!A1 * A3 * A4 * !B1 * Y)	0.00208	0.00198	0.00196
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * A3 * !A4 * B1 * !Y)	0.00188	0.00189	0.00189
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A1 * A3 * !A4 * !B1 * Y)	0.00207	0.00205	0.00199
	(!A1 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00083
	(!A1 * !A3 * B1 * !Y)	0.00188	0.00189	0.00189
	(!A1 * !A3 * !B1 * Y)	-0.00074	-0.00075	-0.00074
	(!A1 * !A3 * !B1 * Y)	0.00203	0.00204	0.00198

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00265	-0.00266	-0.00263
	(A1 * A3 * A4 * B1 * !Y)	0.00363	0.00367	0.00365
	(A1 * A3 * !A4 * B1 * !Y)	-0.00227	-0.00248	-0.00247
	(A1 * A3 * !A4 * B1 * !Y)	0.00374	0.00376	0.00376
	(A1 * A3 * !A4 * !B1 * Y)	-0.00108	-0.00109	-0.00113
	(A1 * A3 * !A4 * !B1 * Y)	0.00391	0.00393	0.00384
	(A1 * !A3 * B1 * !Y)	-0.00252	-0.00257	-0.00257
	(A1 * !A3 * B1 * !Y)	0.00375	0.00378	0.00376
	(A1 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00117
	(A1 * !A3 * !B1 * Y)	0.00391	0.00394	0.00384
	(!A1 * A3 * A4 * B1 * !Y)	-0.00252	-0.00257	-0.00257
	(!A1 * A3 * A4 * B1 * !Y)	0.00375	0.00377	0.00376
	(!A1 * A3 * A4 * !B1 * Y)	-0.00225	-0.00251	-0.00254
	(!A1 * A3 * A4 * !B1 * Y)	0.00403	0.00384	0.00379
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00162	-0.00164	-0.00162
	(!A1 * A3 * !A4 * B1 * !Y)	0.00376	0.00378	0.00376
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00155	-0.00155	-0.00155
	(!A1 * A3 * !A4 * !B1 * Y)	0.00402	0.00397	0.00385
	(!A1 * !A3 * B1 * !Y)	-0.00166	-0.00168	-0.00166
	(!A1 * !A3 * B1 * !Y)	0.00375	0.00377	0.00376
	(!A1 * !A3 * !B1 * Y)	-0.00156	-0.00158	-0.00157
	(!A1 * !A3 * !B1 * Y)	0.00393	0.00396	0.00384

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00522	-0.00526	-0.00520
	(A1 * A3 * A4 * B1 * !Y)	0.00719	0.00729	0.00725
	(A1 * A3 * !A4 * B1 * !Y)	-0.00443	-0.00482	-0.00481
	(A1 * A3 * !A4 * B1 * !Y)	0.00745	0.00750	0.00747
	(A1 * A3 * !A4 * !B1 * Y)	-0.00207	-0.00209	-0.00217
	(A1 * A3 * !A4 * !B1 * Y)	0.00773	0.00776	0.00757
	(A1 * !A3 * B1 * !Y)	-0.00495	-0.00505	-0.00502
	(A1 * !A3 * B1 * !Y)	0.00746	0.00756	0.00747
	(A1 * !A3 * !B1 * Y)	-0.00212	-0.00214	-0.00222
	(A1 * !A3 * !B1 * Y)	0.00773	0.00777	0.00757
	(!A1 * A3 * A4 * B1 * !Y)	-0.00497	-0.00509	-0.00508
	(!A1 * A3 * A4 * B1 * !Y)	0.00745	0.00750	0.00747
	(!A1 * A3 * A4 * !B1 * Y)	-0.00446	-0.00500	-0.00506
	(!A1 * A3 * A4 * !B1 * Y)	0.00798	0.00759	0.00749
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00308	-0.00312	-0.00308
	(!A1 * A3 * !A4 * B1 * !Y)	0.00751	0.00751	0.00747
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00299	-0.00302	-0.00299
	(!A1 * A3 * !A4 * !B1 * Y)	0.00794	0.00785	0.00760
	(!A1 * !A3 * B1 * !Y)	-0.00314	-0.00314	-0.00313
	(!A1 * !A3 * B1 * !Y)	0.00745	0.00750	0.00747
	(!A1 * !A3 * !B1 * Y)	-0.00300	-0.00303	-0.00300
	(!A1 * !A3 * !B1 * Y)	0.00775	0.00781	0.00758

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)**	0.00153	0.00135	0.00131
	(A1 * A2 * A4 * B1 * !Y)	-0.00157	-0.00182	-0.00183
	(A1 * A2 * !A4 * B1 * !Y)	0.00125	0.00125	0.00125
	(A1 * A2 * !A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * A2 * !A4 * !B1 * Y)	0.00057	0.00057	0.00058
	(A1 * A2 * !A4 * !B1 * Y)	-0.00188	-0.00188	-0.00187
	(A1 * !A2 * A4 * !B1 * Y)	0.00120	0.00122	0.00121
	(A1 * !A2 * A4 * !B1 * Y)	-0.00192	-0.00193	-0.00192
	(A1 * !A2 * !A4 * !B1 * Y)	0.00070	0.00071	0.00070
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00192	-0.00194	-0.00193
	(!A2 * A4 * B1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !A4 * B1 * !Y)	0.00077	0.00078	0.00077
	(!A2 * !A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A2 * A4 * B1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * A2 * A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A2 * A4 * !B1 * Y)	0.00116	0.00118	0.00117
	(!A1 * A2 * A4 * !B1 * Y)	-0.00191	-0.00193	-0.00192
	(!A1 * A2 * !A4 * B1 * !Y)	0.00077	0.00078	0.00077
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A2 * !A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00192	-0.00192	-0.00192
	(!A1 * !A2 * A4 * !B1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00193	-0.00193	-0.00193

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00309	0.00269	0.00264
	(A1 * A2 * A4 * B1 * !Y)	-0.00308	-0.00359	-0.00363
	(A1 * A2 * !A4 * B1 * !Y)	0.00250	0.00252	0.00250
	(A1 * A2 * !A4 * B1 * !Y)	-0.00370	-0.00372	-0.00370
	(A1 * A2 * !A4 * !B1 * Y)	0.00126	0.00127	0.00128
	(A1 * A2 * !A4 * !B1 * Y)	-0.00360	-0.00361	-0.00357
	(A1 * !A2 * A4 * !B1 * Y)	0.00252	0.00254	0.00252
	(A1 * !A2 * A4 * !B1 * Y)	-0.00371	-0.00372	-0.00371
	(A1 * !A2 * !A4 * !B1 * Y)	0.00151	0.00153	0.00151
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(!A2 * A4 * B1 * !Y)	0.00252	0.00252	0.00252
	(!A2 * A4 * B1 * !Y)	-0.00371	-0.00370	-0.00370
	(!A2 * !A4 * B1 * !Y)	0.00155	0.00156	0.00155
	(!A2 * !A4 * B1 * !Y)	-0.00370	-0.00371	-0.00370
	(!A1 * A2 * A4 * B1 * !Y)	0.00245	0.00248	0.00246
	(!A1 * A2 * A4 * B1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * A2 * A4 * !B1 * Y)	0.00244	0.00247	0.00245
	(!A1 * A2 * A4 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(!A1 * A2 * !A4 * B1 * !Y)	0.00156	0.00156	0.00156
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00370	-0.00370	-0.00370
	(!A1 * A2 * !A4 * !B1 * Y)	0.00151	0.00152	0.00152
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00372	-0.00374	-0.00372
	(!A1 * !A2 * A4 * !B1 * Y)	0.00251	0.00253	0.00251
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00372	-0.00373	-0.00371
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00372	-0.00372	-0.00371

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00620	0.00536	0.00526
	(A1 * A2 * A4 * B1 * !Y)	-0.00616	-0.00721	-0.00732
	(A1 * A2 * !A4 * B1 * !Y)	0.00499	0.00502	0.00499
	(A1 * A2 * !A4 * B1 * !Y)	-0.00747	-0.00751	-0.00747
	(A1 * A2 * !A4 * !B1 * Y)	0.00242	0.00243	0.00243
	(A1 * A2 * !A4 * !B1 * Y)	-0.00725	-0.00728	-0.00721
	(A1 * !A2 * A4 * !B1 * Y)	0.00497	0.00502	0.00499
	(A1 * !A2 * A4 * !B1 * Y)	-0.00748	-0.00751	-0.00748
	(A1 * !A2 * !A4 * !B1 * Y)	0.00284	0.00287	0.00285
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00746	-0.00753	-0.00748
	(!A2 * A4 * B1 * !Y)	0.00498	0.00501	0.00498
	(!A2 * A4 * B1 * !Y)	-0.00749	-0.00750	-0.00747
	(!A2 * !A4 * B1 * !Y)	0.00292	0.00294	0.00293
	(!A2 * !A4 * B1 * !Y)	-0.00745	-0.00749	-0.00747
	(!A1 * A2 * A4 * B1 * !Y)	0.00482	0.00487	0.00483
	(!A1 * A2 * A4 * B1 * !Y)	-0.00746	-0.00750	-0.00747
	(!A1 * A2 * A4 * !B1 * Y)	0.00481	0.00486	0.00483
	(!A1 * A2 * A4 * !B1 * Y)	-0.00748	-0.00751	-0.00747
	(!A1 * A2 * !A4 * B1 * !Y)	0.00299	0.00302	0.00300
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00744	-0.00749	-0.00747
	(!A1 * A2 * !A4 * !B1 * Y)	0.00295	0.00296	0.00294
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00751	-0.00753	-0.00750
	(!A1 * !A2 * A4 * !B1 * Y)	0.00492	0.00497	0.00495
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00746	-0.00751	-0.00749
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00288	0.00287	0.00288
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00749	-0.00746	-0.00749

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)**	-0.00129	-0.00129	-0.00128
	(A1 * A2 * A4 * B1 * !Y)	0.00183	0.00184	0.00183
	(A1 * A2 * !A4 * B1 * !Y)	-0.00123	-0.00125	-0.00125
	(A1 * A2 * !A4 * B1 * !Y)	0.00189	0.00189	0.00189
	(A1 * A2 * !A4 * !B1 * Y)	-0.00051	-0.00052	-0.00052
	(A1 * A2 * !A4 * !B1 * Y)	0.00197	0.00198	0.00196
	(A1 * !A2 * A4 * !B1 * Y)	-0.00114	-0.00120	-0.00121
	(A1 * !A2 * A4 * !B1 * Y)	0.00196	0.00196	0.00194
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00070	-0.00071	-0.00070
	(A1 * !A2 * !A4 * !B1 * Y)	0.00199	0.00200	0.00197
	(!A2 * A4 * B1 * !Y)	-0.00124	-0.00126	-0.00126
	(!A2 * A4 * B1 * !Y)	0.00189	0.00191	0.00188
	(!A2 * !A4 * B1 * !Y)	-0.00077	-0.00078	-0.00077
	(!A2 * !A4 * B1 * !Y)	0.00188	0.00189	0.00189
	(!A1 * A2 * A4 * B1 * !Y)	-0.00113	-0.00123	-0.00122
	(!A1 * A2 * A4 * B1 * !Y)	0.00188	0.00191	0.00188
	(!A1 * A2 * A4 * !B1 * Y)	-0.00105	-0.00118	-0.00117
	(!A1 * A2 * A4 * !B1 * Y)	0.00197	0.00196	0.00194
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * !A4 * B1 * !Y)	0.00189	0.00189	0.00189
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * A2 * !A4 * !B1 * Y)	0.00199	0.00201	0.00196
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00117	-0.00120	-0.00120
	(!A1 * !A2 * A4 * !B1 * Y)	0.00194	0.00196	0.00194
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00194	0.00195	0.00195

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00260	-0.00261	-0.00258
	(A1 * A2 * A4 * B1 * !Y)	0.00361	0.00364	0.00363
	(A1 * A2 * !A4 * B1 * !Y)	-0.00247	-0.00252	-0.00250
	(A1 * A2 * !A4 * B1 * !Y)	0.00375	0.00377	0.00374
	(A1 * A2 * !A4 * !B1 * Y)	-0.00112	-0.00112	-0.00114
	(A1 * A2 * !A4 * !B1 * Y)	0.00382	0.00384	0.00378
	(A1 * !A2 * A4 * !B1 * Y)	-0.00237	-0.00251	-0.00252
	(A1 * !A2 * A4 * !B1 * Y)	0.00376	0.00376	0.00374
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00151	-0.00153	-0.00151
	(A1 * !A2 * !A4 * !B1 * Y)	0.00386	0.00387	0.00380
	(!A2 * A4 * B1 * !Y)	-0.00247	-0.00252	-0.00252
	(!A2 * A4 * B1 * !Y)	0.00373	0.00376	0.00374
	(!A2 * !A4 * B1 * !Y)	-0.00155	-0.00156	-0.00155
	(!A2 * !A4 * B1 * !Y)	0.00372	0.00376	0.00374
	(!A1 * A2 * A4 * B1 * !Y)	-0.00228	-0.00246	-0.00246
	(!A1 * A2 * A4 * B1 * !Y)	0.00375	0.00373	0.00374
	(!A1 * A2 * A4 * !B1 * Y)	-0.00221	-0.00246	-0.00245
	(!A1 * A2 * A4 * !B1 * Y)	0.00383	0.00374	0.00373
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00156	-0.00156	-0.00156
	(!A1 * A2 * !A4 * B1 * !Y)	0.00372	0.00376	0.00374
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00151	-0.00152	-0.00152
	(!A1 * A2 * !A4 * !B1 * Y)	0.00385	0.00389	0.00379
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00244	-0.00252	-0.00251
	(!A1 * !A2 * A4 * !B1 * Y)	0.00372	0.00375	0.00373
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00153	-0.00154	-0.00153
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00377	0.00376	0.00374

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00518	-0.00519	-0.00515
	(A1 * A2 * A4 * B1 * !Y)	0.00729	0.00734	0.00732
	(A1 * A2 * !A4 * B1 * !Y)	-0.00491	-0.00502	-0.00499
	(A1 * A2 * !A4 * B1 * !Y)	0.00753	0.00764	0.00755
	(A1 * A2 * !A4 * !B1 * Y)	-0.00209	-0.00211	-0.00215
	(A1 * A2 * !A4 * !B1 * Y)	0.00773	0.00777	0.00763
	(A1 * !A2 * A4 * !B1 * Y)	-0.00468	-0.00495	-0.00499
	(A1 * !A2 * A4 * !B1 * Y)	0.00764	0.00756	0.00754
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00284	-0.00287	-0.00285
	(A1 * !A2 * !A4 * !B1 * Y)	0.00779	0.00780	0.00766
	(!A2 * A4 * B1 * !Y)	-0.00491	-0.00498	-0.00498
	(!A2 * A4 * B1 * !Y)	0.00757	0.00756	0.00754
	(!A2 * !A4 * B1 * !Y)	-0.00292	-0.00294	-0.00293
	(!A2 * !A4 * B1 * !Y)	0.00753	0.00757	0.00754
	(!A1 * A2 * A4 * B1 * !Y)	-0.00444	-0.00486	-0.00483
	(!A1 * A2 * A4 * B1 * !Y)	0.00754	0.00753	0.00754
	(!A1 * A2 * A4 * !B1 * Y)	-0.00429	-0.00486	-0.00483
	(!A1 * A2 * A4 * !B1 * Y)	0.00772	0.00754	0.00753
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00299	-0.00302	-0.00300
	(!A1 * A2 * !A4 * B1 * !Y)	0.00759	0.00759	0.00754
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00295	-0.00296	-0.00294
	(!A1 * A2 * !A4 * !B1 * Y)	0.00775	0.00786	0.00763
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00483	-0.00497	-0.00495
	(!A1 * !A2 * A4 * !B1 * Y)	0.00755	0.00754	0.00752
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00288	-0.00287	-0.00288
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00754	0.00758	0.00755

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)**	0.00161	0.00143	0.00140
	(A1 * A2 * A3 * B1 * !Y)	-0.00155	-0.00181	-0.00183
	(A1 * A2 * !A3 * !B1 * Y)	0.00123	0.00123	0.00123
	(A1 * A2 * !A3 * !B1 * Y)	-0.00198	-0.00198	-0.00197
	(A1 * !A2 * A3 * !B1 * Y)	0.00118	0.00120	0.00119
	(A1 * !A2 * A3 * !B1 * Y)	-0.00197	-0.00198	-0.00198
	(A1 * !A2 * !A3 * !B1 * Y)	0.00122	0.00123	0.00122
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00198	-0.00198	-0.00198
	(!A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A3 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A2 * A3 * B1 * !Y)	0.00130	0.00132	0.00130
	(!A2 * A3 * B1 * !Y)	-0.00185	-0.00187	-0.00186
	(!A1 * A2 * A3 * B1 * !Y)	0.00130	0.00131	0.00129
	(!A1 * A2 * A3 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A2 * A3 * !B1 * Y)	0.00117	0.00117	0.00118
	(!A1 * A2 * A3 * !B1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A3 * !B1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !A3 * !B1 * Y)	-0.00198	-0.00198	-0.00198
	(!A1 * !A2 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00197	-0.00199	-0.00198

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00309	0.00272	0.00266
	(A1 * A2 * A3 * B1 * !Y)	-0.00309	-0.00360	-0.00365
	(A1 * A2 * !A3 * !B1 * Y)	0.00253	0.00255	0.00253
	(A1 * A2 * !A3 * !B1 * Y)	-0.00372	-0.00373	-0.00372
	(A1 * !A2 * A3 * !B1 * Y)	0.00245	0.00247	0.00245
	(A1 * !A2 * A3 * !B1 * Y)	-0.00372	-0.00373	-0.00372
	(A1 * !A2 * !A3 * !B1 * Y)	0.00253	0.00254	0.00252
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00372	-0.00374	-0.00372
	(!A3 * B1 * !Y)	0.00254	0.00256	0.00253
	(!A3 * B1 * !Y)	-0.00372	-0.00373	-0.00371
	(!A2 * A3 * B1 * !Y)	0.00246	0.00248	0.00246
	(!A2 * A3 * B1 * !Y)	-0.00371	-0.00373	-0.00371
	(!A1 * A2 * A3 * B1 * !Y)	0.00242	0.00243	0.00243
	(!A1 * A2 * A3 * B1 * !Y)	-0.00370	-0.00371	-0.00371
	(!A1 * A2 * A3 * !B1 * Y)	0.00242	0.00242	0.00243
	(!A1 * A2 * A3 * !B1 * Y)	-0.00371	-0.00372	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00252	0.00254	0.00252
	(!A1 * !A3 * !B1 * Y)	-0.00373	-0.00374	-0.00372
	(!A1 * !A2 * A3 * !B1 * Y)	0.00244	0.00247	0.00245
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00372	-0.00374	-0.00372

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00620	0.00538	0.00528
	(A1 * A2 * A3 * B1 * !Y)	-0.00618	-0.00717	-0.00728
	(A1 * A2 * !A3 * !B1 * Y)	0.00502	0.00508	0.00502
	(A1 * A2 * !A3 * !B1 * Y)	-0.00745	-0.00748	-0.00744
	(A1 * !A2 * A3 * !B1 * Y)	0.00483	0.00487	0.00483
	(A1 * !A2 * A3 * !B1 * Y)	-0.00745	-0.00747	-0.00744
	(A1 * !A2 * !A3 * !B1 * Y)	0.00498	0.00504	0.00500
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00743	-0.00747	-0.00744
	(!A3 * B1 * !Y)	0.00503	0.00505	0.00502
	(!A3 * B1 * !Y)	-0.00743	-0.00745	-0.00743
	(!A2 * A3 * B1 * !Y)	0.00485	0.00489	0.00484
	(!A2 * A3 * B1 * !Y)	-0.00743	-0.00746	-0.00743
	(!A1 * A2 * A3 * B1 * !Y)	0.00480	0.00480	0.00481
	(!A1 * A2 * A3 * B1 * !Y)	-0.00742	-0.00742	-0.00742
	(!A1 * A2 * A3 * !B1 * Y)	0.00478	0.00478	0.00478
	(!A1 * A2 * A3 * !B1 * Y)	-0.00744	-0.00743	-0.00743
	(!A1 * !A3 * !B1 * Y)	0.00500	0.00504	0.00500
	(!A1 * !A3 * !B1 * Y)	-0.00745	-0.00748	-0.00744
	(!A1 * !A2 * A3 * !B1 * Y)	0.00482	0.00486	0.00481
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00745	-0.00748	-0.00744

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)**	-0.00137	-0.00138	-0.00137
	(A1 * A2 * A3 * B1 * !Y)	0.00182	0.00183	0.00183
	(A1 * A2 * !A3 * !B1 * Y)	-0.00117	-0.00122	-0.00122
	(A1 * A2 * !A3 * !B1 * Y)	0.00199	0.00202	0.00199
	(A1 * !A2 * A3 * !B1 * Y)	-0.00111	-0.00119	-0.00119
	(A1 * !A2 * A3 * !B1 * Y)	0.00199	0.00200	0.00199
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00119	-0.00123	-0.00122
	(A1 * !A2 * !A3 * !B1 * Y)	0.00200	0.00202	0.00199
	(!A3 * B1 * !Y)	-0.00132	-0.00134	-0.00134
	(!A3 * B1 * !Y)	0.00187	0.00190	0.00188
	(!A2 * A3 * B1 * !Y)	-0.00123	-0.00131	-0.00130
	(!A2 * A3 * B1 * !Y)	0.00187	0.00189	0.00188
	(!A1 * A2 * A3 * B1 * !Y)	-0.00121	-0.00130	-0.00129
	(!A1 * A2 * A3 * B1 * !Y)	0.00187	0.00188	0.00188
	(!A1 * A2 * A3 * !B1 * Y)	-0.00109	-0.00117	-0.00118
	(!A1 * A2 * A3 * !B1 * Y)	0.00200	0.00200	0.00199
	(!A1 * !A3 * !B1 * Y)	-0.00119	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * Y)	0.00199	0.00202	0.00199
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00111	-0.00119	-0.00118
	(!A1 * !A2 * A3 * !B1 * Y)	0.00198	0.00200	0.00199

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00262	-0.00263	-0.00260
	(A1 * A2 * A3 * B1 * !Y)	0.00363	0.00365	0.00365
	(A1 * A2 * !A3 * !B1 * Y)	-0.00241	-0.00253	-0.00253
	(A1 * A2 * !A3 * !B1 * Y)	0.00374	0.00378	0.00375
	(A1 * !A2 * A3 * !B1 * Y)	-0.00228	-0.00247	-0.00245
	(A1 * !A2 * A3 * !B1 * Y)	0.00375	0.00378	0.00374
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00245	-0.00254	-0.00252
	(A1 * !A2 * !A3 * !B1 * Y)	0.00373	0.00378	0.00374
	(!A3 * B1 * !Y)	-0.00248	-0.00254	-0.00253
	(!A3 * B1 * !Y)	0.00374	0.00379	0.00375
	(!A2 * A3 * B1 * !Y)	-0.00230	-0.00248	-0.00246
	(!A2 * A3 * B1 * !Y)	0.00375	0.00378	0.00375
	(!A1 * A2 * A3 * B1 * !Y)	-0.00224	-0.00243	-0.00243
	(!A1 * A2 * A3 * B1 * !Y)	0.00375	0.00378	0.00375
	(!A1 * A2 * A3 * !B1 * Y)	-0.00223	-0.00242	-0.00243
	(!A1 * A2 * A3 * !B1 * Y)	0.00377	0.00378	0.00374
	(!A1 * !A3 * !B1 * Y)	-0.00245	-0.00254	-0.00252
	(!A1 * !A3 * !B1 * Y)	0.00373	0.00378	0.00374
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00229	-0.00247	-0.00245
	(!A1 * !A2 * A3 * !B1 * Y)	0.00374	0.00377	0.00374

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00519	-0.00521	-0.00516
	(A1 * A2 * A3 * B1 * !Y)	0.00726	0.00732	0.00728
	(A1 * A2 * !A3 * !B1 * Y)	-0.00476	-0.00501	-0.00502
	(A1 * A2 * !A3 * !B1 * Y)	0.00747	0.00756	0.00749
	(A1 * !A2 * A3 * !B1 * Y)	-0.00450	-0.00487	-0.00483
	(A1 * !A2 * A3 * !B1 * Y)	0.00749	0.00755	0.00749
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00485	-0.00503	-0.00500
	(A1 * !A2 * !A3 * !B1 * Y)	0.00745	0.00756	0.00749
	(!A3 * B1 * !Y)	-0.00493	-0.00504	-0.00502
	(!A3 * B1 * !Y)	0.00748	0.00757	0.00750
	(!A2 * A3 * B1 * !Y)	-0.00452	-0.00488	-0.00484
	(!A2 * A3 * B1 * !Y)	0.00750	0.00756	0.00750
	(!A1 * A2 * A3 * B1 * !Y)	-0.00444	-0.00480	-0.00481
	(!A1 * A2 * A3 * B1 * !Y)	0.00750	0.00756	0.00750
	(!A1 * A2 * A3 * !B1 * Y)	-0.00441	-0.00478	-0.00478
	(!A1 * A2 * A3 * !B1 * Y)	0.00753	0.00755	0.00749
	(!A1 * !A3 * !B1 * Y)	-0.00485	-0.00504	-0.00500
	(!A1 * !A3 * !B1 * Y)	0.00745	0.00756	0.00748
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00452	-0.00486	-0.00481
	(!A1 * !A2 * A3 * !B1 * Y)	0.00748	0.00754	0.00748

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)	0.00164	0.00166	0.00164
	(A1 * A2 * A3 * A4 * !Y)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00176	0.00177	0.00176
	(A1 * A2 * A3 * A4 * !Y)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00348	0.00350	0.00348
	(A1 * A2 * A3 * A4 * !Y)	-0.00336	-0.00337	-0.00334

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)	-0.00144	-0.00145	-0.00161
	(A1 * A2 * A3 * A4 * !Y)	0.00100	0.00099	0.00087
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00136	-0.00137	-0.00170
	(A1 * A2 * A3 * A4 * !Y)	0.00205	0.00203	0.00179
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00272	-0.00275	-0.00336
	(A1 * A2 * A3 * A4 * !Y)	0.00399	0.00396	0.00352

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00281	0.00278	0.00281	0.00275	0.00288	0.81597
sky130_fd_sc_hs__a41o_2	0.00277	0.00284	0.00291	0.00274	0.00291	1.57857
sky130_fd_sc_hs__a41o_4	0.00546	0.00531	0.00547	0.00527	0.00541	2.74915

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	1.85307	3.91243
sky130_fd_sc_hs__a41o_2	0.00000	2.25121	4.00198
sky130_fd_sc_hs__a41o_4	0.00000	4.36082	7.79584

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)	0.20441	0.94173	7.84386
	A2->X (RR)	0.22388	0.94898	7.84007
	A3->X (RR)	0.23734	0.93959	7.74534
	A4->X (RR)	0.24348	0.92362	7.61952
	B1->X (RR)	0.09782	0.77449	7.34957
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.21646	0.88885	7.95435
	A2->X (RR)	0.23880	0.89263	7.93677
	A3->X (RR)	0.25185	0.87791	7.82349
	A4->X (RR)	0.25707	0.85678	7.67588
	B1->X (RR)	0.08968	0.67788	7.38792
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.22695	0.83582	7.93321
	A2->X (RR)	0.25274	0.84512	7.95128
	A3->X (RR)	0.26602	0.81569	7.76176
	A4->X (RR)	0.27266	0.80151	7.61092
	B1->X (RR)	0.08398	0.60428	7.27973

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.21596	0.70876	4.40683
	A2->X (FF)	0.25148	0.75915	4.52142
	A3->X (FF)	0.27673	0.79623	4.63886
	A4->X (FF)	0.30007	0.83168	4.75390
	B1->X (FF)	0.25549	0.81336	4.83070
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.25604	0.74100	4.53577
	A2->X (FF)	0.29569	0.79250	4.65384
	A3->X (FF)	0.31987	0.82525	4.75703
	A4->X (FF)	0.34074	0.85533	4.85598
	B1->X (FF)	0.29821	0.84460	4.96285
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.25978	0.69396	4.31267
	A2->X (FF)	0.29639	0.74284	4.42487
	A3->X (FF)	0.32494	0.78182	4.55857
	A4->X (FF)	0.35194	0.81822	4.67398
	B1->X (FF)	0.30374	0.81135	4.83127

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01152	0.01184	0.02484
	A1	0.00647	0.00679	0.01995
	A2	0.01241	0.01254	0.02419
	A2	0.00650	0.00662	0.01842
	A3	0.01326	0.01331	0.02484
	A3	0.00650	0.00653	0.01822
	A4	0.01415	0.01418	0.02562
	A4	0.00648	0.00650	0.01811
	B1	0.00964	0.01029	0.02865
	B1	0.00405	0.00481	0.02445
sky130_fd_sc_hs__a41o_2	A1	0.01339	0.01372	0.02648
	A1	0.00835	0.00868	0.02164
	A2	0.01431	0.01449	0.02578
	A2	0.00836	0.00854	0.02008
	A3	0.01520	0.01530	0.02649
	A3	0.00836	0.00846	0.01999
	A4	0.01605	0.01612	0.02727
	A4	0.00835	0.00843	0.01994
	B1	0.01132	0.01217	0.03003
	B1	0.00572	0.00657	0.02455

sky130_fd_sc_hs__a41o_4	**A1**	0.02597	0.02633	0.04942
	A1	0.01588	0.01624	0.03982
	A2	0.02767	0.02776	0.04979
	A2	0.01587	0.01596	0.03846
	A3	0.02960	0.02957	0.05170
	A3	0.01584	0.01582	0.03862
	A4	0.03126	0.03123	0.05311
	A4	0.01583	0.01578	0.03835
	B1	0.02122	0.02300	0.05839
	B1	0.01010	0.01187	0.04772

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00326	0.00338	0.01630
	A1	0.00831	0.00842	0.02101
	A2	0.00380	0.00396	0.01593
	A2	0.00969	0.00982	0.02178
	A3	0.00443	0.00458	0.01689
	A3	0.01112	0.01126	0.02328
	A4	0.00490	0.00511	0.01728
	A4	0.01241	0.01262	0.02472
	B1	0.00306	0.00437	0.02338
	B1	0.00977	0.01080	0.02803

sky130_fd_sc_hs__a41o_2	**A1**	0.00564	0.00588	0.01839
	A1	0.01069	0.01093	0.02305
	A2	0.00641	0.00653	0.01830
	A2	0.01234	0.01248	0.02412
	A3	0.00705	0.00713	0.01892
	A3	0.01381	0.01391	0.02562
	A4	0.00746	0.00757	0.01947
	A4	0.01499	0.01509	0.02696
	B1	0.00608	0.00730	0.02548
	B1	0.01230	0.01333	0.03033
sky130_fd_sc_hs__a41o_4	**A1**	0.01101	0.01109	0.03518
	A1	0.02112	0.02120	0.04422
	A2	0.01286	0.01296	0.03643
	A2	0.02460	0.02469	0.04750
	A3	0.01392	0.01393	0.03789
	A3	0.02746	0.02750	0.05067
	A4	0.01550	0.01528	0.03946
	A4	0.03056	0.03041	0.05387
	B1	0.01194	0.01460	0.05066
	B1	0.02418	0.02623	0.05980

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)**	0.00156	0.00135	0.00130
	(A2 * A3 * A4 * B1 * X)	-0.00136	-0.00162	-0.00165
	(A2 * A3 * !A4 * B1 * X)	0.00119	0.00120	0.00119
	(A2 * A3 * !A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(A2 * A3 * !A4 * !B1 * !X)	0.00053	0.00053	0.00045
	(A2 * A3 * !A4 * !B1 * !X)	-0.00173	-0.00175	-0.00191
	(A2 * !A3 * B1 * X)	0.00120	0.00121	0.00121
	(A2 * !A3 * B1 * X)	-0.00167	-0.00169	-0.00168
	(A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00182	-0.00183	-0.00193
	(!A2 * B1 * X)	0.00124	0.00125	0.00124
	(!A2 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A2 * !B1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !X)	-0.00189	-0.00190	-0.00194
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00155	0.00134	0.00129
	(A2 * A3 * A4 * B1 * X)	-0.00136	-0.00163	-0.00166
	(A2 * A3 * !A4 * B1 * X)	0.00118	0.00119	0.00118
	(A2 * A3 * !A4 * B1 * X)	-0.00169	-0.00169	-0.00168
	(A2 * A3 * !A4 * !B1 * !X)	0.00055	0.00055	0.00046
	(A2 * A3 * !A4 * !B1 * !X)	-0.00172	-0.00173	-0.00190
	(A2 * !A3 * B1 * X)	0.00119	0.00121	0.00120
	(A2 * !A3 * B1 * X)	-0.00167	-0.00169	-0.00168
	(A2 * !A3 * !B1 * !X)	0.00052	0.00052	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00179	-0.00180	-0.00191
	(!A2 * B1 * X)	0.00124	0.00124	0.00124
	(!A2 * B1 * X)	-0.00169	-0.00169	-0.00168
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !X)	-0.00187	-0.00188	-0.00192

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00321	0.00279	0.00272
	(A2 * A3 * A4 * B1 * X)	-0.00276	-0.00328	-0.00336
	(A2 * A3 * !A4 * B1 * X)	0.00246	0.00246	0.00246
	(A2 * A3 * !A4 * B1 * X)	-0.00343	-0.00342	-0.00341
	(A2 * A3 * !A4 * !B1 * !X)	0.00119	0.00119	0.00099
	(A2 * A3 * !A4 * !B1 * !X)	-0.00346	-0.00349	-0.00387
	(A2 * !A3 * B1 * X)	0.00249	0.00252	0.00250
	(A2 * !A3 * B1 * X)	-0.00341	-0.00343	-0.00341
	(A2 * !A3 * !B1 * !X)	0.00110	0.00110	0.00097
	(A2 * !A3 * !B1 * !X)	-0.00367	-0.00369	-0.00391
	(!A2 * B1 * X)	0.00259	0.00261	0.00260
	(!A2 * B1 * X)	-0.00341	-0.00343	-0.00341
	(!A2 * !B1 * !X)	0.00110	0.00110	0.00102
	(!A2 * !B1 * !X)	-0.00382	-0.00384	-0.00394

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)**	-0.00125	-0.00125	-0.00124
	(A2 * A3 * A4 * B1 * X)	0.00167	0.00168	0.00168
	(A2 * A3 * !A4 * B1 * X)	-0.00106	-0.00118	-0.00119
	(A2 * A3 * !A4 * B1 * X)	0.00171	0.00175	0.00172
	(A2 * A3 * !A4 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(A2 * A3 * !A4 * !B1 * !X)	0.00196	0.00197	0.00196
	(A2 * !A3 * B1 * X)	-0.00109	-0.00120	-0.00121
	(A2 * !A3 * B1 * X)	0.00171	0.00175	0.00172
	(A2 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(A2 * !A3 * !B1 * !X)	0.00196	0.00197	0.00196
	(!A2 * B1 * X)	-0.00120	-0.00122	-0.00122
	(!A2 * B1 * X)	0.00173	0.00175	0.00172
	(!A2 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !X)	0.00196	0.00198	0.00197
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00124	-0.00124	-0.00123
	(A2 * A3 * A4 * B1 * X)	0.00167	0.00168	0.00169
	(A2 * A3 * !A4 * B1 * X)	-0.00105	-0.00117	-0.00118
	(A2 * A3 * !A4 * B1 * X)	0.00172	0.00174	0.00173
	(A2 * A3 * !A4 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A2 * A3 * !A4 * !B1 * !X)	0.00196	0.00197	0.00196
	(A2 * !A3 * B1 * X)	-0.00109	-0.00118	-0.00120
	(A2 * !A3 * B1 * X)	0.00172	0.00174	0.00173
	(A2 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00196	0.00197	0.00196
	(!A2 * B1 * X)	-0.00119	-0.00121	-0.00121
	(!A2 * B1 * X)	0.00174	0.00174	0.00173
	(!A2 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !X)	0.00196	0.00197	0.00196

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00263	-0.00264	-0.00261
	(A2 * A3 * A4 * B1 * X)	0.00339	0.00343	0.00341
	(A2 * A3 * !A4 * B1 * X)	-0.00218	-0.00246	-0.00246
	(A2 * A3 * !A4 * B1 * X)	0.00350	0.00354	0.00350
	(A2 * A3 * !A4 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * A3 * !A4 * !B1 * !X)	0.00401	0.00403	0.00402
	(A2 * !A3 * B1 * X)	-0.00226	-0.00247	-0.00250
	(A2 * !A3 * B1 * X)	0.00349	0.00350	0.00350
	(A2 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * !B1 * !X)	0.00401	0.00403	0.00402
	(!A2 * B1 * X)	-0.00249	-0.00255	-0.00256
	(!A2 * B1 * X)	0.00348	0.00351	0.00350
	(!A2 * !B1 * !X)	-0.00092	-0.00092	-0.00092
	(!A2 * !B1 * !X)	0.00402	0.00404	0.00403

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)**	0.00158	0.00137	0.00132
	(A1 * A3 * A4 * B1 * X)	-0.00135	-0.00161	-0.00164
	(A1 * A3 * !A4 * B1 * X)	0.00122	0.00123	0.00122
	(A1 * A3 * !A4 * B1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * A3 * !A4 * !B1 * !X)	0.00060	0.00060	0.00060
	(A1 * A3 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00167
	(A1 * !A3 * B1 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * X)	-0.00166	-0.00168	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00169	-0.00167
	(!A1 * A3 * A4 * B1 * X)	0.00127	0.00127	0.00126
	(!A1 * A3 * A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * A4 * !B1 * !X)	0.00125	0.00126	0.00126
	(!A1 * A3 * A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * A3 * !A4 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00167	-0.00169	-0.00168
	(!A1 * !A3 * B1 * X)	0.00080	0.00080	0.00079
	(!A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00077	0.00077	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00169	-0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00160	0.00139	0.00134
	(A1 * A3 * A4 * B1 * X)	-0.00135	-0.00161	-0.00165
	(A1 * A3 * !A4 * B1 * X)	0.00123	0.00124	0.00124
	(A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A3 * !A4 * !B1 * !X)	0.00060	0.00061	0.00062
	(A1 * A3 * !A4 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00064	0.00064	0.00065
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00168	-0.00166
	(!A1 * A3 * A4 * B1 * X)	0.00128	0.00128	0.00128
	(!A1 * A3 * A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * A4 * !B1 * !X)	0.00127	0.00128	0.00128
	(!A1 * A3 * A4 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !A4 * B1 * X)	0.00080	0.00080	0.00080
	(!A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !A3 * B1 * X)	0.00084	0.00084	0.00083
	(!A1 * !A3 * B1 * X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00082	0.00082	0.00081
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00169	-0.00168

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00315	0.00273	0.00265
	(A1 * A3 * A4 * B1 * X)	-0.00275	-0.00323	-0.00331
	(A1 * A3 * !A4 * B1 * X)	0.00241	0.00243	0.00242
	(A1 * A3 * !A4 * B1 * X)	-0.00335	-0.00338	-0.00336
	(A1 * A3 * !A4 * !B1 * !X)	0.00116	0.00117	0.00118
	(A1 * A3 * !A4 * !B1 * !X)	-0.00336	-0.00337	-0.00334
	(A1 * !A3 * B1 * X)	0.00250	0.00252	0.00250
	(A1 * !A3 * B1 * X)	-0.00337	-0.00338	-0.00336
	(A1 * !A3 * !B1 * !X)	0.00117	0.00118	0.00120
	(A1 * !A3 * !B1 * !X)	-0.00337	-0.00338	-0.00334
	(!A1 * A3 * A4 * B1 * X)	0.00253	0.00254	0.00253
	(!A1 * A3 * A4 * B1 * X)	-0.00336	-0.00338	-0.00336
	(!A1 * A3 * A4 * !B1 * !X)	0.00253	0.00254	0.00254
	(!A1 * A3 * A4 * !B1 * !X)	-0.00336	-0.00337	-0.00335
	(!A1 * A3 * !A4 * B1 * X)	0.00154	0.00155	0.00154
	(!A1 * A3 * !A4 * B1 * X)	-0.00337	-0.00339	-0.00337
	(!A1 * A3 * !A4 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00337	-0.00339	-0.00337
	(!A1 * !A3 * B1 * X)	0.00154	0.00154	0.00153
	(!A1 * !A3 * B1 * X)	-0.00337	-0.00338	-0.00337
	(!A1 * !A3 * !B1 * !X)	0.00149	0.00150	0.00149
	(!A1 * !A3 * !B1 * !X)	-0.00338	-0.00340	-0.00338

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)**	-0.00127	-0.00128	-0.00127
	(A1 * A3 * A4 * B1 * X)	0.00166	0.00167	0.00167
	(A1 * A3 * !A4 * B1 * X)	-0.00110	-0.00122	-0.00122
	(A1 * A3 * !A4 * B1 * X)	0.00170	0.00173	0.00171
	(A1 * A3 * !A4 * !B1 * !X)	-0.00053	-0.00054	-0.00055
	(A1 * A3 * !A4 * !B1 * !X)	0.00175	0.00176	0.00172
	(A1 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00124
	(A1 * !A3 * B1 * X)	0.00172	0.00172	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00054	-0.00055	-0.00056
	(A1 * !A3 * !B1 * !X)	0.00175	0.00176	0.00172
	(!A1 * A3 * A4 * B1 * X)	-0.00122	-0.00124	-0.00124
	(!A1 * A3 * A4 * B1 * X)	0.00171	0.00172	0.00171
	(!A1 * A3 * A4 * !B1 * !X)	-0.00110	-0.00122	-0.00124
	(!A1 * A3 * A4 * !B1 * !X)	0.00184	0.00174	0.00171
	(!A1 * A3 * !A4 * B1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * A3 * !A4 * B1 * X)	0.00172	0.00172	0.00171
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00183	0.00180	0.00174
	(!A1 * !A3 * B1 * X)	-0.00080	-0.00080	-0.00079
	(!A1 * !A3 * B1 * X)	0.00170	0.00171	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00178	0.00172

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00128	-0.00129	-0.00128
	(A1 * A3 * A4 * B1 * X)	0.00166	0.00168	0.00168
	(A1 * A3 * !A4 * B1 * X)	-0.00111	-0.00123	-0.00124
	(A1 * A3 * !A4 * B1 * X)	0.00171	0.00174	0.00172
	(A1 * A3 * !A4 * !B1 * !X)	-0.00054	-0.00054	-0.00056
	(A1 * A3 * !A4 * !B1 * !X)	0.00177	0.00178	0.00173
	(A1 * !A3 * B1 * X)	-0.00123	-0.00125	-0.00126
	(A1 * !A3 * B1 * X)	0.00172	0.00172	0.00172
	(A1 * !A3 * !B1 * !X)	-0.00055	-0.00056	-0.00058
	(A1 * !A3 * !B1 * !X)	0.00177	0.00178	0.00174
	(!A1 * A3 * A4 * B1 * X)	-0.00123	-0.00125	-0.00126
	(!A1 * A3 * A4 * B1 * X)	0.00172	0.00172	0.00172
	(!A1 * A3 * A4 * !B1 * !X)	-0.00111	-0.00123	-0.00125
	(!A1 * A3 * A4 * !B1 * !X)	0.00184	0.00174	0.00172
	(!A1 * A3 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * A3 * !A4 * B1 * X)	0.00171	0.00172	0.00172
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * A3 * !A4 * !B1 * !X)	0.00183	0.00181	0.00175
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00084	-0.00083
	(!A1 * !A3 * B1 * X)	0.00171	0.00172	0.00172
	(!A1 * !A3 * !B1 * !X)	-0.00082	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00179	0.00174

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00256	-0.00257	-0.00254
	(A1 * A3 * A4 * B1 * X)	0.00334	0.00338	0.00337
	(A1 * A3 * !A4 * B1 * X)	-0.00218	-0.00240	-0.00242
	(A1 * A3 * !A4 * B1 * X)	0.00344	0.00347	0.00345
	(A1 * A3 * !A4 * !B1 * !X)	-0.00099	-0.00099	-0.00103
	(A1 * A3 * !A4 * !B1 * !X)	0.00358	0.00358	0.00349
	(A1 * !A3 * B1 * X)	-0.00242	-0.00245	-0.00247
	(A1 * !A3 * B1 * X)	0.00346	0.00346	0.00345
	(A1 * !A3 * !B1 * !X)	-0.00101	-0.00102	-0.00106
	(A1 * !A3 * !B1 * !X)	0.00358	0.00359	0.00349
	(!A1 * A3 * A4 * B1 * X)	-0.00244	-0.00248	-0.00250
	(!A1 * A3 * A4 * B1 * X)	0.00346	0.00346	0.00345
	(!A1 * A3 * A4 * !B1 * !X)	-0.00220	-0.00245	-0.00249
	(!A1 * A3 * A4 * !B1 * !X)	0.00371	0.00350	0.00345
	(!A1 * A3 * !A4 * B1 * X)	-0.00154	-0.00155	-0.00154
	(!A1 * A3 * !A4 * B1 * X)	0.00344	0.00347	0.00345
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * !A4 * !B1 * !X)	0.00368	0.00363	0.00350
	(!A1 * !A3 * B1 * X)	-0.00154	-0.00154	-0.00153
	(!A1 * !A3 * B1 * X)	0.00344	0.00347	0.00345
	(!A1 * !A3 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(!A1 * !A3 * !B1 * !X)	0.00359	0.00361	0.00349

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)**	0.00157	0.00135	0.00130
	(A1 * A2 * A4 * B1 * X)	-0.00137	-0.00163	-0.00167
	(A1 * A2 * !A4 * B1 * X)	0.00124	0.00124	0.00124
	(A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00170
	(A1 * A2 * !A4 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * A2 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00164
	(A1 * !A2 * A4 * !B1 * !X)	0.00124	0.00124	0.00124
	(A1 * !A2 * A4 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00171	-0.00171	-0.00170
	(!A2 * A4 * B1 * X)	0.00124	0.00125	0.00124
	(!A2 * A4 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * !A4 * B1 * X)	0.00080	0.00080	0.00079
	(!A2 * !A4 * B1 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * A2 * A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * A2 * A4 * B1 * X)	-0.00169	-0.00170	-0.00170
	(!A1 * A2 * A4 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * A2 * A4 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * A2 * !A4 * B1 * X)	0.00078	0.00078	0.00077
	(!A1 * A2 * !A4 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A1 * A2 * !A4 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * A4 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00170	-0.00172	-0.00171

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00163	0.00141	0.00136
	(A1 * A2 * A4 * B1 * X)	-0.00136	-0.00162	-0.00166
	(A1 * A2 * !A4 * B1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00169	-0.00168
	(A1 * A2 * !A4 * !B1 * !X)	0.00066	0.00066	0.00067
	(A1 * A2 * !A4 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	0.00079	0.00079	0.00079
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00169
	(!A2 * A4 * B1 * X)	0.00130	0.00131	0.00130
	(!A2 * A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A2 * !A4 * B1 * X)	0.00080	0.00081	0.00080
	(!A2 * !A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * A2 * A4 * B1 * X)	0.00126	0.00127	0.00126
	(!A1 * A2 * A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * A2 * A4 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A1 * A2 * A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * A2 * !A4 * B1 * X)	0.00081	0.00081	0.00081
	(!A1 * A2 * !A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * A2 * !A4 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00079	0.00080	0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00169

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00320	0.00281	0.00270
	(A1 * A2 * A4 * B1 * X)	-0.00274	-0.00328	-0.00335
	(A1 * A2 * !A4 * B1 * X)	0.00256	0.00257	0.00257
	(A1 * A2 * !A4 * B1 * X)	-0.00340	-0.00341	-0.00341
	(A1 * A2 * !A4 * !B1 * !X)	0.00129	0.00130	0.00129
	(A1 * A2 * !A4 * !B1 * !X)	-0.00330	-0.00331	-0.00328
	(A1 * !A2 * A4 * !B1 * !X)	0.00256	0.00259	0.00257
	(A1 * !A2 * A4 * !B1 * !X)	-0.00340	-0.00342	-0.00340
	(A1 * !A2 * !A4 * !B1 * !X)	0.00153	0.00153	0.00152
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00342	-0.00343	-0.00341
	(!A2 * A4 * B1 * X)	0.00256	0.00257	0.00256
	(!A2 * A4 * B1 * X)	-0.00341	-0.00341	-0.00340
	(!A2 * !A4 * B1 * X)	0.00156	0.00156	0.00156
	(!A2 * !A4 * B1 * X)	-0.00341	-0.00342	-0.00341
	(!A1 * A2 * A4 * B1 * X)	0.00248	0.00250	0.00249
	(!A1 * A2 * A4 * B1 * X)	-0.00340	-0.00342	-0.00341
	(!A1 * A2 * A4 * !B1 * !X)	0.00248	0.00249	0.00249
	(!A1 * A2 * A4 * !B1 * !X)	-0.00340	-0.00341	-0.00340
	(!A1 * A2 * !A4 * B1 * X)	0.00157	0.00158	0.00156
	(!A1 * A2 * !A4 * B1 * X)	-0.00341	-0.00343	-0.00341
	(!A1 * A2 * !A4 * !B1 * !X)	0.00154	0.00154	0.00154
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00342	-0.00342	-0.00342
	(!A1 * !A2 * A4 * !B1 * !X)	0.00255	0.00258	0.00255
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00341	-0.00343	-0.00341
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00154	0.00155	0.00153
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00342	-0.00343	-0.00341

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)**	-0.00125	-0.00125	-0.00124
	(A1 * A2 * A4 * B1 * X)	0.00169	0.00170	0.00170
	(A1 * A2 * !A4 * B1 * X)	-0.00119	-0.00121	-0.00122
	(A1 * A2 * !A4 * B1 * X)	0.00174	0.00175	0.00174
	(A1 * A2 * !A4 * !B1 * !X)	-0.00055	-0.00055	-0.00056
	(A1 * A2 * !A4 * !B1 * !X)	0.00177	0.00178	0.00175
	(A1 * !A2 * A4 * !B1 * !X)	-0.00115	-0.00122	-0.00123
	(A1 * !A2 * A4 * !B1 * !X)	0.00176	0.00175	0.00173
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	0.00178	0.00179	0.00176
	(!A2 * A4 * B1 * X)	-0.00120	-0.00122	-0.00122
	(!A2 * A4 * B1 * X)	0.00175	0.00176	0.00174
	(!A2 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00079
	(!A2 * !A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * A2 * A4 * B1 * X)	-0.00109	-0.00119	-0.00120
	(!A1 * A2 * A4 * B1 * X)	0.00174	0.00176	0.00174
	(!A1 * A2 * A4 * !B1 * !X)	-0.00106	-0.00120	-0.00120
	(!A1 * A2 * A4 * !B1 * !X)	0.00177	0.00175	0.00173
	(!A1 * A2 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00077
	(!A1 * A2 * !A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * A2 * !A4 * !B1 * !X)	0.00178	0.00180	0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00119	-0.00123	-0.00123
	(!A1 * !A2 * A4 * !B1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00173	0.00174	0.00174

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00131	-0.00131	-0.00130
	(A1 * A2 * A4 * B1 * X)	0.00168	0.00169	0.00169
	(A1 * A2 * !A4 * B1 * X)	-0.00125	-0.00127	-0.00127
	(A1 * A2 * !A4 * B1 * X)	0.00173	0.00173	0.00173
	(A1 * A2 * !A4 * !B1 * !X)	-0.00057	-0.00058	-0.00059
	(A1 * A2 * !A4 * !B1 * !X)	0.00176	0.00177	0.00174
	(A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00127	-0.00127
	(A1 * !A2 * A4 * !B1 * !X)	0.00175	0.00175	0.00173
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !A4 * !B1 * !X)	0.00178	0.00178	0.00176
	(!A2 * A4 * B1 * X)	-0.00125	-0.00128	-0.00128
	(!A2 * A4 * B1 * X)	0.00174	0.00175	0.00173
	(!A2 * !A4 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A2 * !A4 * B1 * X)	0.00172	0.00173	0.00173
	(!A1 * A2 * A4 * B1 * X)	-0.00114	-0.00125	-0.00126
	(!A1 * A2 * A4 * B1 * X)	0.00172	0.00175	0.00173
	(!A1 * A2 * A4 * !B1 * !X)	-0.00111	-0.00125	-0.00126
	(!A1 * A2 * A4 * !B1 * !X)	0.00176	0.00175	0.00173
	(!A1 * A2 * !A4 * B1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !A4 * B1 * X)	0.00174	0.00173	0.00173
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00080	-0.00081	-0.00080
	(!A1 * A2 * !A4 * !B1 * !X)	0.00178	0.00180	0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00124	-0.00128	-0.00128
	(!A1 * !A2 * A4 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00173	0.00174	0.00173

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00261	-0.00262	-0.00259
	(A1 * A2 * A4 * B1 * X)	0.00339	0.00340	0.00341
	(A1 * A2 * !A4 * B1 * X)	-0.00247	-0.00253	-0.00254
	(A1 * A2 * !A4 * B1 * X)	0.00349	0.00352	0.00349
	(A1 * A2 * !A4 * !B1 * !X)	-0.00106	-0.00107	-0.00109
	(A1 * A2 * !A4 * !B1 * !X)	0.00360	0.00362	0.00354
	(A1 * !A2 * A4 * !B1 * !X)	-0.00236	-0.00249	-0.00252
	(A1 * !A2 * A4 * !B1 * !X)	0.00355	0.00350	0.00349
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00153	-0.00153	-0.00152
	(A1 * !A2 * !A4 * !B1 * !X)	0.00363	0.00363	0.00356
	(!A2 * A4 * B1 * X)	-0.00248	-0.00251	-0.00252
	(!A2 * A4 * B1 * X)	0.00351	0.00350	0.00349
	(!A2 * !A4 * B1 * X)	-0.00156	-0.00156	-0.00156
	(!A2 * !A4 * B1 * X)	0.00349	0.00351	0.00350
	(!A1 * A2 * A4 * B1 * X)	-0.00225	-0.00247	-0.00249
	(!A1 * A2 * A4 * B1 * X)	0.00349	0.00353	0.00349
	(!A1 * A2 * A4 * !B1 * !X)	-0.00218	-0.00246	-0.00249
	(!A1 * A2 * A4 * !B1 * !X)	0.00358	0.00354	0.00349
	(!A1 * A2 * !A4 * B1 * X)	-0.00157	-0.00158	-0.00156
	(!A1 * A2 * !A4 * B1 * X)	0.00352	0.00351	0.00349
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00154	-0.00154	-0.00154
	(!A1 * A2 * !A4 * !B1 * !X)	0.00359	0.00365	0.00354
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00243	-0.00250	-0.00252
	(!A1 * !A2 * A4 * !B1 * !X)	0.00351	0.00350	0.00349
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00154	-0.00155	-0.00153
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00350	0.00352	0.00350

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)**	0.00164	0.00141	0.00138
	(A1 * A2 * A3 * B1 * X)	-0.00137	-0.00161	-0.00167
	(A1 * A2 * !A3 * !B1 * !X)	0.00132	0.00134	0.00132
	(A1 * A2 * !A3 * !B1 * !X)	-0.00169	-0.00171	-0.00170
	(A1 * !A2 * A3 * !B1 * !X)	0.00128	0.00129	0.00129
	(A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(A1 * !A2 * !A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A3 * B1 * X)	0.00132	0.00134	0.00133
	(!A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * A3 * B1 * X)	0.00129	0.00130	0.00129
	(!A2 * A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * A3 * B1 * X)	0.00127	0.00129	0.00128
	(!A1 * A2 * A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * A3 * !B1 * !X)	0.00127	0.00129	0.00127
	(!A1 * A2 * A3 * !B1 * !X)	-0.00169	-0.00171	-0.00169
	(!A1 * !A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	0.00128	0.00130	0.00128
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00163	0.00143	0.00137
	(A1 * A2 * A3 * B1 * X)	-0.00136	-0.00163	-0.00167
	(A1 * A2 * !A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(A1 * A2 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * A3 * !B1 * !X)	0.00128	0.00128	0.00128
	(A1 * !A2 * A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !A3 * !B1 * !X)	0.00132	0.00132	0.00131
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A3 * B1 * X)	0.00132	0.00133	0.00131
	(!A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * A3 * B1 * X)	0.00128	0.00129	0.00128
	(!A2 * A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * A3 * B1 * X)	0.00126	0.00128	0.00127
	(!A1 * A2 * A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * A3 * !B1 * !X)	0.00126	0.00128	0.00127
	(!A1 * A2 * A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * A3 * !B1 * !X)	0.00127	0.00129	0.00128
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00313	0.00274	0.00268
	(A1 * A2 * A3 * B1 * X)	-0.00274	-0.00320	-0.00329
	(A1 * A2 * !A3 * !B1 * !X)	0.00253	0.00256	0.00255
	(A1 * A2 * !A3 * !B1 * !X)	-0.00332	-0.00334	-0.00333
	(A1 * !A2 * A3 * !B1 * !X)	0.00246	0.00248	0.00247
	(A1 * !A2 * A3 * !B1 * !X)	-0.00333	-0.00334	-0.00333
	(A1 * !A2 * !A3 * !B1 * !X)	0.00254	0.00255	0.00254
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00334	-0.00334	-0.00333
	(!A3 * B1 * X)	0.00255	0.00256	0.00255
	(!A3 * B1 * X)	-0.00333	-0.00334	-0.00333
	(!A2 * A3 * B1 * X)	0.00246	0.00249	0.00247
	(!A2 * A3 * B1 * X)	-0.00333	-0.00335	-0.00333
	(!A1 * A2 * A3 * B1 * X)	0.00243	0.00247	0.00244
	(!A1 * A2 * A3 * B1 * X)	-0.00332	-0.00335	-0.00333
	(!A1 * A2 * A3 * !B1 * !X)	0.00243	0.00247	0.00244
	(!A1 * A2 * A3 * !B1 * !X)	-0.00332	-0.00335	-0.00333
	(!A1 * !A3 * !B1 * !X)	0.00254	0.00255	0.00254
	(!A1 * !A3 * !B1 * !X)	-0.00334	-0.00334	-0.00333
	(!A1 * !A2 * A3 * !B1 * !X)	0.00246	0.00248	0.00246
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334

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)**	-0.00133	-0.00134	-0.00132
	(A1 * A2 * A3 * B1 * X)	0.00168	0.00170	0.00170
	(A1 * A2 * !A3 * !B1 * !X)	-0.00126	-0.00130	-0.00131
	(A1 * A2 * !A3 * !B1 * !X)	0.00174	0.00174	0.00173
	(A1 * !A2 * A3 * !B1 * !X)	-0.00120	-0.00128	-0.00129
	(A1 * !A2 * A3 * !B1 * !X)	0.00172	0.00174	0.00173
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00128	-0.00131	-0.00131
	(A1 * !A2 * !A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A3 * B1 * X)	-0.00127	-0.00130	-0.00130
	(!A3 * B1 * X)	0.00172	0.00175	0.00173
	(!A2 * A3 * B1 * X)	-0.00120	-0.00127	-0.00129
	(!A2 * A3 * B1 * X)	0.00173	0.00174	0.00173
	(!A1 * A2 * A3 * B1 * X)	-0.00117	-0.00126	-0.00128
	(!A1 * A2 * A3 * B1 * X)	0.00173	0.00174	0.00173
	(!A1 * A2 * A3 * !B1 * !X)	-0.00117	-0.00127	-0.00127
	(!A1 * A2 * A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00131	-0.00131
	(!A1 * !A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00120	-0.00128	-0.00128
	(!A1 * !A2 * A3 * !B1 * !X)	0.00172	0.00173	0.00173

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00132	-0.00133	-0.00131
	(A1 * A2 * A3 * B1 * X)	0.00168	0.00170	0.00170
	(A1 * A2 * !A3 * !B1 * !X)	-0.00123	-0.00129	-0.00129
	(A1 * A2 * !A3 * !B1 * !X)	0.00173	0.00176	0.00174
	(A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00126	-0.00128
	(A1 * !A2 * A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00126	-0.00129	-0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	0.00174	0.00176	0.00173
	(!A3 * B1 * X)	-0.00127	-0.00129	-0.00129
	(!A3 * B1 * X)	0.00173	0.00176	0.00174
	(!A2 * A3 * B1 * X)	-0.00118	-0.00126	-0.00128
	(!A2 * A3 * B1 * X)	0.00173	0.00174	0.00174
	(!A1 * A2 * A3 * B1 * X)	-0.00116	-0.00125	-0.00127
	(!A1 * A2 * A3 * B1 * X)	0.00173	0.00174	0.00174
	(!A1 * A2 * A3 * !B1 * !X)	-0.00115	-0.00125	-0.00127
	(!A1 * A2 * A3 * !B1 * !X)	0.00174	0.00174	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00126	-0.00129	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00126	-0.00128
	(!A1 * !A2 * A3 * !B1 * !X)	0.00173	0.00174	0.00173

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00258	-0.00259	-0.00257
	(A1 * A2 * A3 * B1 * X)	0.00332	0.00333	0.00334
	(A1 * A2 * !A3 * !B1 * !X)	-0.00236	-0.00249	-0.00250
	(A1 * A2 * !A3 * !B1 * !X)	0.00341	0.00345	0.00342
	(A1 * !A2 * A3 * !B1 * !X)	-0.00224	-0.00243	-0.00246
	(A1 * !A2 * A3 * !B1 * !X)	0.00342	0.00345	0.00342
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00240	-0.00250	-0.00251
	(A1 * !A2 * !A3 * !B1 * !X)	0.00340	0.00345	0.00342
	(!A3 * B1 * X)	-0.00244	-0.00251	-0.00251
	(!A3 * B1 * X)	0.00341	0.00345	0.00342
	(!A2 * A3 * B1 * X)	-0.00226	-0.00243	-0.00246
	(!A2 * A3 * B1 * X)	0.00342	0.00345	0.00342
	(!A1 * A2 * A3 * B1 * X)	-0.00221	-0.00241	-0.00244
	(!A1 * A2 * A3 * B1 * X)	0.00342	0.00344	0.00342
	(!A1 * A2 * A3 * !B1 * !X)	-0.00219	-0.00240	-0.00244
	(!A1 * A2 * A3 * !B1 * !X)	0.00344	0.00345	0.00341
	(!A1 * !A3 * !B1 * !X)	-0.00240	-0.00250	-0.00251
	(!A1 * !A3 * !B1 * !X)	0.00340	0.00345	0.00341
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00225	-0.00243	-0.00246
	(!A1 * !A2 * A3 * !B1 * !X)	0.00341	0.00344	0.00341

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)	0.00155	0.00156	0.00155
	(A1 * A2 * A3 * A4 * X)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00156	0.00158	0.00157
	(A1 * A2 * A3 * A4 * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00295	0.00297	0.00295
	(A1 * A2 * A3 * A4 * X)	-0.00161	-0.00162	-0.00160

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)	-0.00133	-0.00134	-0.00150
	(A1 * A2 * A3 * A4 * X)	0.00096	0.00095	0.00083
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00135	-0.00136	-0.00152
	(A1 * A2 * A3 * A4 * X)	0.00097	0.00097	0.00084
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00248	-0.00252	-0.00285
	(A1 * A2 * A3 * A4 * X)	0.00198	0.00200	0.00173

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00265	0.00253	0.82340
sky130_fd_sc_hs__and2b_2	0.00239	0.00295	1.43843
sky130_fd_sc_hs__and2b_4	0.00271	0.00527	3.04611

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	4.06516	6.35737
sky130_fd_sc_hs__and2b_2	0.00000	3.97693	4.91631
sky130_fd_sc_hs__and2b_4	0.00000	6.97128	13.07250

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)	0.19319	0.89064	7.61211
	B->X (RR)	0.11723	0.77178	7.49966
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.20786	0.81320	7.45278
	B->X (RR)	0.12412	0.69239	7.26292
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.20846	0.74364	7.65705
	B->X (RR)	0.12652	0.61356	7.49950

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)	0.16076	0.57673	3.88791
	B->X (FF)	0.12238	0.61373	4.30915
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.17830	0.54333	3.54600
	B->X (FF)	0.13879	0.60945	4.11267
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.18019	0.52606	3.83960
	B->X (FF)	0.14466	0.59014	4.43348

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	0.00605	0.00716	0.02548
	A_N	0.00924	0.01034	0.02886
	B	0.00728	0.00761	0.02254
	B	0.00406	0.00439	0.01936
sky130_fd_sc_hs__and2b_2	A_N	0.00913	0.01051	0.02805
	A_N	0.01201	0.01342	0.03122
	B	0.01017	0.01067	0.02387
	B	0.00636	0.00686	0.02025
sky130_fd_sc_hs__and2b_4	A_N	0.01714	0.01901	0.04011
	A_N	0.02026	0.02216	0.04396
	B	0.01942	0.02051	0.05091
	B	0.01279	0.01389	0.04451

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00984	0.01042	0.02841
	A_N	0.00666	0.00724	0.02509
	B	0.00335	0.00448	0.02125
	B	0.00658	0.00769	0.02414
sky130_fd_sc_hs__and2b_2	A_N	0.01196	0.01283	0.02984
	A_N	0.00908	0.00996	0.02669
	B	0.00535	0.00661	0.02427
	B	0.00916	0.01036	0.02752
sky130_fd_sc_hs__and2b_4	A_N	0.01870	0.02058	0.04224
	A_N	0.01558	0.01733	0.03839
	B	0.01061	0.01324	0.04741
	B	0.01723	0.01977	0.05387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00556	0.00605	0.02309
	(!B * !X)	0.00202	0.00249	0.01954
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00533	0.00588	0.02279
	(!B * !X)	0.00203	0.00256	0.01949
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00674	0.00739	0.02664
	(!B * !X)	0.00293	0.00356	0.02282

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00016	0.00116	0.01849
	(!B * !X)	0.00371	0.00472	0.02204
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00038	0.00135	0.01855
	(!B * !X)	0.00369	0.00468	0.02186
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00066	0.00167	0.02100
	(!B * !X)	0.00449	0.00552	0.02483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00121	0.00121	0.00121
	(A_N * !X)	-0.00155	-0.00155	-0.00154
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00148	0.00148	0.00148
	(A_N * !X)	-0.00177	-0.00177	-0.00177
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00256	0.00257	0.00255
	(A_N * !X)	-0.00315	-0.00316	-0.00314

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00105	-0.00112	-0.00113
	(A_N * !X)	0.00172	0.00167	0.00163
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00131	-0.00139	-0.00139
	(A_N * !X)	0.00196	0.00191	0.00186
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00229	-0.00243	-0.00245
	(A_N * !X)	0.00338	0.00331	0.00325

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00258	0.00252	0.80266
sky130_fd_sc_hs__and2_2	0.00284	0.00311	1.56722
sky130_fd_sc_hs__and2_4	0.00459	0.00507	3.07947

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	2.43804	6.17040
sky130_fd_sc_hs__and2_2	0.00000	2.38307	3.88451
sky130_fd_sc_hs__and2_4	0.00000	5.94110	12.77790

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)	0.10741	0.77844	7.53504
	B->X (RR)	0.11603	0.77648	7.44797
sky130_fd_sc_hs__and2_2	A->X (RR)	0.11310	0.70272	7.56577
	B->X (RR)	0.12175	0.69185	7.46580
sky130_fd_sc_hs__and2_4	A->X (RR)	0.11186	0.62032	7.62023
	B->X (RR)	0.12248	0.61553	7.55560

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.11021	0.57695	4.15192
	B->X (FF)	0.12509	0.61574	4.26791
sky130_fd_sc_hs__and2_2	A->X (FF)	0.11955	0.57950	4.26763
	B->X (FF)	0.13543	0.61441	4.39012
sky130_fd_sc_hs__and2_4	A->X (FF)	0.13176	0.55766	4.33274
	B->X (FF)	0.14511	0.58700	4.41455

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00680	0.00750	0.02541
	A	0.00331	0.00402	0.02204
	B	0.00739	0.00765	0.02175
	B	0.00333	0.00359	0.01772
sky130_fd_sc_hs__and2_2	A	0.00937	0.01021	0.02868
	A	0.00551	0.00638	0.02484
	B	0.01044	0.01086	0.02547
	B	0.00558	0.00601	0.02069
sky130_fd_sc_hs__and2_4	A	0.01747	0.01919	0.05450
	A	0.01142	0.01314	0.04911
	B	0.01951	0.02067	0.05134
	B	0.01138	0.01255	0.04323

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00261	0.00380	0.02085
	A	0.00611	0.00728	0.02408
	B	0.00334	0.00440	0.02079
	B	0.00738	0.00843	0.02451
sky130_fd_sc_hs__and2_2	A	0.00508	0.00659	0.02470
	A	0.00893	0.01036	0.02811
	B	0.00547	0.00682	0.02393
	B	0.01028	0.01163	0.02869
sky130_fd_sc_hs__and2_4	A	0.00970	0.01269	0.04779
	A	0.01579	0.01859	0.05376
	B	0.01034	0.01297	0.04845
	B	0.01841	0.02100	0.05556

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00069	0.00070	0.00067
	(!B * !X)	-0.00162	-0.00164	-0.00167
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00052	0.00052	0.00049
	(!B * !X)	-0.00193	-0.00194	-0.00197
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00079	0.00079	0.00074
	(!B * !X)	-0.00315	-0.00317	-0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00064	-0.00064	-0.00063
	(!B * !X)	0.00169	0.00171	0.00169
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00045	-0.00046	-0.00045
	(!B * !X)	0.00200	0.00201	0.00200
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00065	-0.00066	-0.00065
	(!B * !X)	0.00331	0.00333	0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00104	0.00105	0.00104
	(!A * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00123	0.00123	0.00123
	(!A * !X)	-0.00192	-0.00192	-0.00191
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00245	0.00246	0.00245
	(!A * !X)	-0.00295	-0.00295	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00095	-0.00102	-0.00103
	(!A * !X)	0.00169	0.00164	0.00161
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00110	-0.00119	-0.00120
	(!A * !X)	0.00206	0.00201	0.00196
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00221	-0.00236	-0.00240
	(!A * !X)	0.00320	0.00308	0.00303

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00234	0.00248	0.00247	0.79999
sky130_fd_sc_hs__and3b_2	0.00242	0.00299	0.00287	1.43858
sky130_fd_sc_hs__and3b_4	0.00274	0.00513	0.00527	3.05167

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	3.76182	9.36421
sky130_fd_sc_hs__and3b_2	0.00000	3.93963	5.83996
sky130_fd_sc_hs__and3b_4	0.00000	5.64924	11.45960

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)	0.22174	0.92055	7.60372
	B->X (RR)	0.15918	0.85064	7.73484
	C->X (RR)	0.16667	0.83503	7.58125
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.24300	0.85696	7.48819
	B->X (RR)	0.17072	0.78045	7.60812
	C->X (RR)	0.17834	0.75955	7.39903
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.26201	0.82604	7.80024
	B->X (RR)	0.18989	0.73025	7.93714
	C->X (RR)	0.19716	0.69791	7.73511

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)	0.16890	0.57179	3.72538
	B->X (FF)	0.13776	0.63661	4.19438
	C->X (FF)	0.14555	0.65875	4.28801
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.17936	0.54102	3.49303
	B->X (FF)	0.14367	0.61951	4.05197
	C->X (FF)	0.15974	0.65134	4.17888
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.17405	0.52049	3.81036
	B->X (FF)	0.13558	0.57142	4.24692
	C->X (FF)	0.14402	0.59308	4.36632

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	0.00733	0.00842	0.02668
	A_N	0.00998	0.01108	0.02952
	B	0.00821	0.00849	0.02405
	B	0.00494	0.00520	0.02091
	C	0.00898	0.00910	0.02249
	C	0.00503	0.00516	0.01870
sky130_fd_sc_hs__and3b_2	A_N	0.01037	0.01156	0.02963
	A_N	0.01315	0.01433	0.03249
	B	0.01151	0.01186	0.02787
	B	0.00764	0.00798	0.02433
	C	0.01238	0.01259	0.02475
	C	0.00778	0.00808	0.02040
sky130_fd_sc_hs__and3b_4	A_N	0.01898	0.02048	0.04145
	A_N	0.02176	0.02325	0.04493
	B	0.02129	0.02193	0.05170
	B	0.01439	0.01505	0.04527
	C	0.02298	0.02340	0.05280
	C	0.01447	0.01489	0.04494

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00915	0.00995	0.02828
	A_N	0.00649	0.00726	0.02524
	B	0.00343	0.00451	0.02101
	B	0.00671	0.00776	0.02406
	C	0.00381	0.00473	0.02148
	C	0.00771	0.00860	0.02486
sky130_fd_sc_hs__and3b_2	A_N	0.01172	0.01273	0.03080
	A_N	0.00894	0.00996	0.02760
	B	0.00543	0.00668	0.02383
	B	0.00930	0.01053	0.02770
	C	0.00591	0.00697	0.02417
	C	0.01045	0.01143	0.02790
sky130_fd_sc_hs__and3b_4	A_N	0.01955	0.02141	0.04334
	A_N	0.01678	0.01853	0.03922
	B	0.01141	0.01379	0.04661
	B	0.01831	0.02064	0.05317
	C	0.01216	0.01450	0.04810
	C	0.02055	0.02277	0.05642

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)	0.00476	0.00540	0.02267
	(B * !C * !X)	0.00157	0.00221	0.01948
	(!B * !X)	0.00474	0.00539	0.02266
	(!B * !X)	0.00157	0.00221	0.01948
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00519	0.00575	0.02275
	(B * !C * !X)	0.00188	0.00243	0.01944
	(!B * !X)	0.00517	0.00573	0.02273
	(!B * !X)	0.00188	0.00243	0.01944
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00727	0.00787	0.02704
	(B * !C * !X)	0.00355	0.00414	0.02333
	(!B * !X)	0.00722	0.00782	0.02700
	(!B * !X)	0.00355	0.00414	0.02333

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)	0.00020	0.00125	0.01873
	(B * !C * !X)	0.00346	0.00452	0.02198
	(!B * !X)	0.00017	0.00123	0.01873
	(!B * !X)	0.00336	0.00442	0.02191
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00032	0.00130	0.01854
	(B * !C * !X)	0.00372	0.00470	0.02192
	(!B * !X)	0.00030	0.00128	0.01853
	(!B * !X)	0.00360	0.00459	0.02184
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00060	0.00156	0.02077
	(B * !C * !X)	0.00448	0.00545	0.02461
	(!B * !X)	0.00059	0.00156	0.02080
	(!B * !X)	0.00429	0.00527	0.02448

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)	0.00120	0.00121	0.00121
	(A_N * C * !X)	-0.00143	-0.00144	-0.00143
	(A_N * !C * !X)	0.00083	0.00083	0.00083
	(A_N * !C * !X)	-0.00145	-0.00145	-0.00145
	(!A_N * !C * !X)	0.00049	0.00049	0.00049
	(!A_N * !C * !X)	-0.00164	-0.00165	-0.00165
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00150	0.00151	0.00151
	(A_N * C * !X)	-0.00172	-0.00172	-0.00172
	(A_N * !C * !X)	0.00105	0.00105	0.00104
	(A_N * !C * !X)	-0.00173	-0.00173	-0.00172
	(!A_N * !C * !X)	0.00066	0.00066	0.00065
	(!A_N * !C * !X)	-0.00194	-0.00195	-0.00196
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00233	0.00235	0.00234
	(A_N * C * !X)	-0.00333	-0.00335	-0.00333
	(A_N * !C * !X)	0.00157	0.00158	0.00156
	(A_N * !C * !X)	-0.00338	-0.00339	-0.00337
	(!A_N * !C * !X)	0.00105	0.00105	0.00106
	(!A_N * !C * !X)	-0.00355	-0.00356	-0.00355

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * C * !X)	-0.00104	-0.00112	-0.00114
	(A_N * C * !X)	0.00163	0.00155	0.00152
	(A_N * !C * !X)	-0.00079	-0.00080	-0.00081
	(A_N * !C * !X)	0.00159	0.00159	0.00154
	(!A_N * !C * !X)	-0.00042	-0.00043	-0.00044
	(!A_N * !C * !X)	0.00171	0.00172	0.00170
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00131	-0.00139	-0.00142
	(A_N * C * !X)	0.00194	0.00184	0.00181
	(A_N * !C * !X)	-0.00101	-0.00101	-0.00103
	(A_N * !C * !X)	0.00189	0.00189	0.00183
	(!A_N * !C * !X)	-0.00057	-0.00058	-0.00059
	(!A_N * !C * !X)	0.00203	0.00205	0.00202
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00203	-0.00221	-0.00224
	(A_N * C * !X)	0.00366	0.00348	0.00345
	(A_N * !C * !X)	-0.00157	-0.00158	-0.00156
	(A_N * !C * !X)	0.00359	0.00361	0.00350
	(!A_N * !C * !X)	-0.00089	-0.00090	-0.00093
	(!A_N * !C * !X)	0.00374	0.00375	0.00369

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)	0.00106	0.00106	0.00106
	(A_N * B * !X)	-0.00150	-0.00150	-0.00149
	(A_N * !B * !X)	0.00107	0.00108	0.00107
	(A_N * !B * !X)	-0.00150	-0.00151	-0.00150
	(!A_N * !B * !X)	0.00105	0.00106	0.00105
	(!A_N * !B * !X)	-0.00152	-0.00153	-0.00152
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00132	0.00133	0.00132
	(A_N * B * !X)	-0.00172	-0.00172	-0.00172
	(A_N * !B * !X)	0.00134	0.00135	0.00134
	(A_N * !B * !X)	-0.00172	-0.00173	-0.00172
	(!A_N * !B * !X)	0.00132	0.00134	0.00133
	(!A_N * !B * !X)	-0.00174	-0.00175	-0.00174
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00219	0.00222	0.00220
	(A_N * B * !X)	-0.00344	-0.00346	-0.00344
	(A_N * !B * !X)	0.00222	0.00223	0.00221
	(A_N * !B * !X)	-0.00346	-0.00347	-0.00345
	(!A_N * !B * !X)	0.00222	0.00224	0.00222
	(!A_N * !B * !X)	-0.00346	-0.00348	-0.00346

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)	-0.00092	-0.00099	-0.00100
	(A_N * B * !X)	0.00160	0.00159	0.00157
	(A_N * !B * !X)	-0.00099	-0.00101	-0.00101
	(A_N * !B * !X)	0.00158	0.00159	0.00157
	(!A_N * !B * !X)	-0.00099	-0.00103	-0.00104
	(!A_N * !B * !X)	0.00159	0.00157	0.00155
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00116	-0.00125	-0.00126
	(A_N * B * !X)	0.00183	0.00182	0.00181
	(A_N * !B * !X)	-0.00125	-0.00127	-0.00127
	(A_N * !B * !X)	0.00182	0.00182	0.00181
	(!A_N * !B * !X)	-0.00124	-0.00129	-0.00130
	(!A_N * !B * !X)	0.00183	0.00181	0.00179
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00197	-0.00212	-0.00215
	(A_N * B * !X)	0.00360	0.00359	0.00355
	(A_N * !B * !X)	-0.00209	-0.00215	-0.00216
	(A_N * !B * !X)	0.00354	0.00358	0.00355
	(!A_N * !B * !X)	-0.00205	-0.00216	-0.00216
	(!A_N * !B * !X)	0.00359	0.00358	0.00354

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00265	0.00245	0.00242	0.81999
sky130_fd_sc_hs__and3_2	0.00263	0.00242	0.00245	1.58894
sky130_fd_sc_hs__and3_4	0.00481	0.00467	0.00482	3.04848

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3_1	0.00000	2.17466	9.15698
sky130_fd_sc_hs__and3_2	0.00000	2.80969	9.37317
sky130_fd_sc_hs__and3_4	0.00000	5.55459	18.58030

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)	0.13888	0.83309	7.69161
	B->X (RR)	0.15243	0.83749	7.67015
	C->X (RR)	0.15876	0.82182	7.54864
sky130_fd_sc_hs__and3_2	A->X (RR)	0.15882	0.79177	7.85026
	B->X (RR)	0.17225	0.78953	7.81477
	C->X (RR)	0.17865	0.76580	7.64392
sky130_fd_sc_hs__and3_4	A->X (RR)	0.16239	0.72189	7.90050
	B->X (RR)	0.18054	0.72549	7.88119
	C->X (RR)	0.18824	0.69334	7.67768

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.12072	0.59847	4.16073
	B->X (FF)	0.13592	0.63622	4.26693
	C->X (FF)	0.13982	0.65404	4.34951
sky130_fd_sc_hs__and3_2	A->X (FF)	0.14714	0.62706	4.29242
	B->X (FF)	0.16212	0.65791	4.39405
	C->X (FF)	0.16911	0.67467	4.47687
sky130_fd_sc_hs__and3_4	A->X (FF)	0.13739	0.57098	4.24517
	B->X (FF)	0.15313	0.60359	4.34851
	C->X (FF)	0.16429	0.62742	4.47395

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00766	0.00821	0.02501
	A	0.00398	0.00454	0.02151
	B	0.00806	0.00832	0.02381
	B	0.00402	0.00427	0.01993
	C	0.00881	0.00896	0.02358
	C	0.00398	0.00412	0.01876
sky130_fd_sc_hs__and3_2	A	0.01027	0.01088	0.02703
	A	0.00660	0.00723	0.02368
	B	0.01065	0.01100	0.02589
	B	0.00664	0.00699	0.02220
	C	0.01144	0.01169	0.02461
	C	0.00661	0.00687	0.02014
sky130_fd_sc_hs__and3_4	A	0.01934	0.02058	0.05272
	A	0.01258	0.01383	0.04648
	B	0.02093	0.02169	0.05116
	B	0.01267	0.01347	0.04347
	C	0.02259	0.02313	0.05149
	C	0.01265	0.01319	0.04221

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00249	0.00357	0.02004
	A	0.00616	0.00721	0.02370
	B	0.00340	0.00445	0.02061
	B	0.00743	0.00844	0.02462
	C	0.00377	0.00473	0.02155
	C	0.00854	0.00948	0.02603
sky130_fd_sc_hs__and3_2	A	0.00469	0.00595	0.02262
	A	0.00837	0.00959	0.02594
	B	0.00564	0.00691	0.02372
	B	0.00962	0.01082	0.02702
	C	0.00590	0.00698	0.02317
	C	0.01065	0.01172	0.02780
sky130_fd_sc_hs__and3_4	A	0.00997	0.01255	0.04676
	A	0.01678	0.01922	0.05226
	B	0.01151	0.01386	0.04670
	B	0.01968	0.02199	0.05456
	C	0.01235	0.01470	0.04788
	C	0.02212	0.02428	0.05747

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00076	0.00075	0.00071
	(B * !C * !X)	-0.00156	-0.00156	-0.00165
	(!B * !X)	0.00075	0.00074	0.00072
	(!B * !X)	-0.00162	-0.00162	-0.00166
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00077	0.00077	0.00072
	(B * !C * !X)	-0.00154	-0.00154	-0.00163
	(!B * !X)	0.00077	0.00077	0.00074
	(!B * !X)	-0.00159	-0.00160	-0.00163
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00094	0.00094	0.00082
	(B * !C * !X)	-0.00314	-0.00316	-0.00337
	(!B * !X)	0.00094	0.00094	0.00086
	(!B * !X)	-0.00328	-0.00330	-0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00068	-0.00068	-0.00068
	(B * !C * !X)	0.00168	0.00170	0.00169
	(!B * !X)	-0.00069	-0.00069	-0.00069
	(!B * !X)	0.00168	0.00170	0.00169
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00069	-0.00069	-0.00068
	(B * !C * !X)	0.00167	0.00168	0.00167
	(!B * !X)	-0.00070	-0.00070	-0.00070
	(!B * !X)	0.00167	0.00168	0.00167
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00074	-0.00074	-0.00074
	(B * !C * !X)	0.00346	0.00348	0.00347
	(!B * !X)	-0.00077	-0.00078	-0.00077
	(!B * !X)	0.00347	0.00349	0.00347

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00047	0.00047	0.00047
	(A * !C * !X)	-0.00146	-0.00147	-0.00145
	(!A * C * !X)	0.00102	0.00102	0.00102
	(!A * C * !X)	-0.00147	-0.00147	-0.00146
	(!A * !C * !X)	0.00061	0.00061	0.00060
	(!A * !C * !X)	-0.00147	-0.00147	-0.00146
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00046	0.00046	0.00046
	(A * !C * !X)	-0.00143	-0.00144	-0.00142
	(!A * C * !X)	0.00102	0.00102	0.00102
	(!A * C * !X)	-0.00144	-0.00144	-0.00143
	(!A * !C * !X)	0.00059	0.00059	0.00059
	(!A * !C * !X)	-0.00144	-0.00144	-0.00143
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00108	0.00109	0.00111
	(A * !C * !X)	-0.00285	-0.00285	-0.00282
	(!A * C * !X)	0.00221	0.00223	0.00222
	(!A * C * !X)	-0.00284	-0.00285	-0.00284
	(!A * !C * !X)	0.00138	0.00139	0.00137
	(!A * !C * !X)	-0.00287	-0.00288	-0.00286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00041	-0.00041	-0.00043
	(A * !C * !X)	0.00152	0.00153	0.00150
	(!A * C * !X)	-0.00090	-0.00099	-0.00100
	(!A * C * !X)	0.00159	0.00152	0.00149
	(!A * !C * !X)	-0.00061	-0.00061	-0.00060
	(!A * !C * !X)	0.00156	0.00155	0.00150
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00040	-0.00040	-0.00041
	(A * !C * !X)	0.00153	0.00152	0.00148
	(!A * C * !X)	-0.00089	-0.00098	-0.00099
	(!A * C * !X)	0.00157	0.00150	0.00147
	(!A * !C * !X)	-0.00059	-0.00059	-0.00059
	(!A * !C * !X)	0.00154	0.00153	0.00148
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00093	-0.00094	-0.00098
	(A * !C * !X)	0.00303	0.00304	0.00296
	(!A * C * !X)	-0.00194	-0.00214	-0.00217
	(!A * C * !X)	0.00312	0.00294	0.00292
	(!A * !C * !X)	-0.00138	-0.00139	-0.00137
	(!A * !C * !X)	0.00304	0.00306	0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00105	0.00106	0.00105
	(A * !B * !X)	-0.00150	-0.00151	-0.00150
	(!A * B * !X)	0.00102	0.00102	0.00102
	(!A * B * !X)	-0.00150	-0.00150	-0.00150
	(!A * !B * !X)	0.00104	0.00105	0.00104
	(!A * !B * !X)	-0.00151	-0.00151	-0.00150
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00104	0.00104	0.00104
	(A * !B * !X)	-0.00151	-0.00151	-0.00150
	(!A * B * !X)	0.00100	0.00101	0.00101
	(!A * B * !X)	-0.00150	-0.00150	-0.00150
	(!A * !B * !X)	0.00103	0.00104	0.00103
	(!A * !B * !X)	-0.00151	-0.00151	-0.00150
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00219	0.00222	0.00220
	(A * !B * !X)	-0.00298	-0.00300	-0.00298
	(!A * B * !X)	0.00213	0.00215	0.00214
	(!A * B * !X)	-0.00298	-0.00299	-0.00298
	(!A * !B * !X)	0.00217	0.00220	0.00218
	(!A * !B * !X)	-0.00298	-0.00300	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00099	-0.00103	-0.00103
	(A * !B * !X)	0.00154	0.00154	0.00153
	(!A * B * !X)	-0.00093	-0.00101	-0.00102
	(!A * B * !X)	0.00155	0.00154	0.00153
	(!A * !B * !X)	-0.00101	-0.00103	-0.00103
	(!A * !B * !X)	0.00153	0.00154	0.00152
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00096	-0.00101	-0.00101
	(A * !B * !X)	0.00156	0.00156	0.00154
	(!A * B * !X)	-0.00091	-0.00098	-0.00100
	(!A * B * !X)	0.00158	0.00155	0.00154
	(!A * !B * !X)	-0.00099	-0.00101	-0.00101
	(!A * !B * !X)	0.00155	0.00156	0.00154
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00205	-0.00214	-0.00215
	(A * !B * !X)	0.00309	0.00309	0.00306
	(!A * B * !X)	-0.00193	-0.00210	-0.00213
	(!A * B * !X)	0.00310	0.00309	0.00306
	(!A * !B * !X)	-0.00209	-0.00215	-0.00215
	(!A * !B * !X)	0.00306	0.00309	0.00305

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00239	0.00242	0.00256	0.00250	0.75329
sky130_fd_sc_hs__and4bb_2	0.00242	0.00231	0.00284	0.00289	1.54491
sky130_fd_sc_hs__and4bb_4	0.00266	0.00281	0.00526	0.00510	3.03104

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	5.03679	12.39050
sky130_fd_sc_hs__and4bb_2	0.00000	5.39258	7.76613
sky130_fd_sc_hs__and4bb_4	0.00000	6.44688	15.18450

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)	0.26743	0.99449	7.68801
	B_N->X (FR)	0.28286	1.00763	7.67053
	C->X (RR)	0.21890	0.92722	7.85962
	D->X (RR)	0.22479	0.91516	7.74482
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.26816	0.89067	7.58891
	B_N->X (FR)	0.29747	0.92499	7.63510
	C->X (RR)	0.22863	0.83959	7.81254
	D->X (RR)	0.23714	0.82440	7.63049
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.31611	0.91210	7.92452
	B_N->X (FR)	0.35416	0.95593	7.97960
	C->X (RR)	0.26706	0.80926	8.08035
	D->X (RR)	0.27412	0.79260	7.88214

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)	0.17852	0.58523	3.66140
	B_N->X (RF)	0.18743	0.59701	3.68253
	C->X (FF)	0.15335	0.66910	4.18362
	D->X (FF)	0.16301	0.69113	4.29095
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.18164	0.55775	3.83629
	B_N->X (RF)	0.19946	0.58569	3.91049
	C->X (FF)	0.15970	0.66905	4.47115
	D->X (FF)	0.16967	0.68992	4.57494
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.19151	0.54635	3.85419
	B_N->X (RF)	0.20042	0.56214	3.89428
	C->X (FF)	0.14758	0.60253	4.31255
	D->X (FF)	0.15649	0.62452	4.43145

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	0.00790	0.00894	0.02627
	A_N	0.01062	0.01166	0.02918
	B_N	0.00848	0.00963	0.02736
	B_N	0.01154	0.01269	0.03061
	C	0.00934	0.00956	0.02448
	C	0.00610	0.00631	0.02135
	D	0.01004	0.01022	0.02538
	D	0.00620	0.00638	0.02170
sky130_fd_sc_hs__and4bb_2	A_N	0.01072	0.01184	0.02987
	A_N	0.01332	0.01446	0.03277
	B_N	0.01202	0.01292	0.02994
	B_N	0.01471	0.01560	0.03304
	C	0.01278	0.01279	0.02760
	C	0.00898	0.00899	0.02413
	D	0.01372	0.01361	0.02636
	D	0.00911	0.00899	0.02210
sky130_fd_sc_hs__and4bb_4	A_N	0.02166	0.02278	0.04345
	A_N	0.02405	0.02516	0.04639
	B_N	0.02349	0.02447	0.04443
	B_N	0.02629	0.02725	0.04766
	C	0.02521	0.02515	0.05323
	C	0.01811	0.01805	0.04643
	D	0.02664	0.02648	0.05335
	D	0.01816	0.01802	0.04546

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00979	0.01037	0.02706
	A_N	0.00707	0.00765	0.02434
	B_N	0.01014	0.01099	0.02890
	B_N	0.00708	0.00790	0.02574
	C	0.00438	0.00539	0.02215
	C	0.00762	0.00862	0.02514
	D	0.00480	0.00581	0.02302
	D	0.00856	0.00956	0.02650
sky130_fd_sc_hs__and4bb_2	A_N	0.01164	0.01270	0.03061
	A_N	0.00904	0.01003	0.02770
	B_N	0.01228	0.01323	0.03091
	B_N	0.00959	0.01053	0.02749
	C	0.00624	0.00739	0.02399
	C	0.01003	0.01118	0.02761
	D	0.00666	0.00765	0.02429
	D	0.01122	0.01216	0.02849
sky130_fd_sc_hs__and4bb_4	A_N	0.01961	0.02151	0.04277
	A_N	0.01723	0.01901	0.03952
	B_N	0.02126	0.02298	0.04511
	B_N	0.01846	0.02014	0.04061
	C	0.01194	0.01433	0.04597
	C	0.01898	0.02125	0.05286
	D	0.01313	0.01519	0.04773
	D	0.02145	0.02329	0.05568

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)	0.00477	0.00536	0.02240
	(B_N * !X)	0.00172	0.00229	0.01934
	(!B_N * C * !D * !X)	0.00495	0.00554	0.02258
	(!B_N * C * !D * !X)	0.00188	0.00246	0.01951
	(!B_N * !C * !X)	0.00495	0.00554	0.02258
	(!B_N * !C * !X)	0.00189	0.00247	0.01952
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00491	0.00549	0.02267
	(B_N * !X)	0.00181	0.00238	0.01957
	(!B_N * C * !D * !X)	0.00507	0.00566	0.02283
	(!B_N * C * !D * !X)	0.00196	0.00253	0.01972
	(!B_N * !C * !X)	0.00507	0.00565	0.02283
	(!B_N * !C * !X)	0.00197	0.00254	0.01972
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00693	0.00755	0.02653
	(B_N * !X)	0.00367	0.00428	0.02327
	(!B_N * C * !D * !X)	0.00730	0.00792	0.02690
	(!B_N * C * !D * !X)	0.00400	0.00461	0.02361
	(!B_N * !C * !X)	0.00729	0.00791	0.02689
	(!B_N * !C * !X)	0.00402	0.00462	0.02362

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)	0.00052	0.00153	0.01882
	(B_N * !X)	0.00358	0.00460	0.02188
	(!B_N * C * !D * !X)	0.00036	0.00136	0.01862
	(!B_N * C * !D * !X)	0.00350	0.00452	0.02176
	(!B_N * !C * !X)	0.00033	0.00133	0.01861
	(!B_N * !C * !X)	0.00341	0.00443	0.02169
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00044	0.00144	0.01888
	(B_N * !X)	0.00353	0.00455	0.02198
	(!B_N * C * !D * !X)	0.00029	0.00129	0.01870
	(!B_N * C * !D * !X)	0.00349	0.00450	0.02189
	(!B_N * !C * !X)	0.00026	0.00126	0.01868
	(!B_N * !C * !X)	0.00338	0.00439	0.02181
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00129	0.00226	0.02130
	(B_N * !X)	0.00455	0.00553	0.02456
	(!B_N * C * !D * !X)	0.00101	0.00197	0.02097
	(!B_N * C * !D * !X)	0.00448	0.00545	0.02440
	(!B_N * !C * !X)	0.00093	0.00189	0.02093
	(!B_N * !C * !X)	0.00425	0.00522	0.02423

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)	0.00485	0.00534	0.02229
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00145	0.00193	0.01889
	(!C * !X)	0.00487	0.00543	0.02250
	(!C * !X)	0.00141	0.00197	0.01904
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00496	0.00540	0.02220
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00177	0.00220	0.01902
	(!C * !X)	0.00498	0.00551	0.02246
	(!C * !X)	0.00172	0.00224	0.01919
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00696	0.00733	0.02594
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00328	0.00364	0.02227
	(!C * !X)	0.00702	0.00754	0.02635
	(!C * !X)	0.00322	0.00373	0.02255

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)	0.00104	0.00204	0.01942
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00444	0.00546	0.02281
	(!C * !X)	0.00066	0.00167	0.01907
	(!C * !X)	0.00411	0.00514	0.02253
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00146	0.00245	0.01972
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00465	0.00565	0.02291
	(!C * !X)	0.00100	0.00200	0.01929
	(!C * !X)	0.00426	0.00527	0.02256
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00282	0.00374	0.02275
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00649	0.00742	0.02643
	(!C * !X)	0.00201	0.00294	0.02198
	(!C * !X)	0.00581	0.00675	0.02578

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)**	0.00137	0.00137	0.00137
	(A_N * B_N * D * !X)	-0.00138	-0.00138	-0.00138
	(A_N * B_N * !D * !X)	0.00102	0.00103	0.00102
	(A_N * B_N * !D * !X)	-0.00139	-0.00139	-0.00138
	(A_N * !B_N * D * !X)	0.00105	0.00105	0.00105
	(A_N * !B_N * D * !X)	-0.00171	-0.00171	-0.00171
	(A_N * !B_N * !D * !X)	0.00069	0.00069	0.00068
	(A_N * !B_N * !D * !X)	-0.00183	-0.00183	-0.00183
	(!A_N * B_N * D * !X)	0.00135	0.00136	0.00135
	(!A_N * B_N * D * !X)	-0.00140	-0.00141	-0.00140
	(!A_N * B_N * !D * !X)	0.00099	0.00100	0.00099
	(!A_N * B_N * !D * !X)	-0.00141	-0.00141	-0.00140
	(!A_N * !B_N * !D * !X)	0.00052	0.00053	0.00053
	(!A_N * !B_N * !D * !X)	-0.00172	-0.00173	-0.00172
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00147	0.00147	0.00147
	(A_N * B_N * D * !X)	-0.00164	-0.00165	-0.00164
	(A_N * B_N * !D * !X)	0.00105	0.00106	0.00105
	(A_N * B_N * !D * !X)	-0.00165	-0.00165	-0.00164
	(A_N * !B_N * D * !X)	0.00120	0.00121	0.00121
	(A_N * !B_N * D * !X)	-0.00191	-0.00191	-0.00191
	(A_N * !B_N * !D * !X)	0.00077	0.00077	0.00077
	(A_N * !B_N * !D * !X)	-0.00206	-0.00207	-0.00206
	(!A_N * B_N * D * !X)	0.00145	0.00146	0.00145
	(!A_N * B_N * D * !X)	-0.00166	-0.00167	-0.00166
	(!A_N * B_N * !D * !X)	0.00102	0.00103	0.00102
	(!A_N * B_N * !D * !X)	-0.00167	-0.00167	-0.00167
	(!A_N * !B_N * !D * !X)	0.00059	0.00058	0.00059
	(!A_N * !B_N * !D * !X)	-0.00192	-0.00192	-0.00193

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00240	0.00241	0.00240
	(A_N * B_N * D * !X)	-0.00347	-0.00347	-0.00346
	(A_N * B_N * !D * !X)	0.00163	0.00164	0.00162
	(A_N * B_N * !D * !X)	-0.00348	-0.00350	-0.00348
	(A_N * !B_N * D * !X)	0.00225	0.00227	0.00225
	(A_N * !B_N * D * !X)	-0.00363	-0.00365	-0.00364
	(A_N * !B_N * !D * !X)	0.00147	0.00148	0.00147
	(A_N * !B_N * !D * !X)	-0.00391	-0.00391	-0.00391
	(!A_N * B_N * D * !X)	0.00240	0.00241	0.00240
	(!A_N * B_N * D * !X)	-0.00348	-0.00349	-0.00347
	(!A_N * B_N * !D * !X)	0.00161	0.00161	0.00160
	(!A_N * B_N * !D * !X)	-0.00350	-0.00351	-0.00349
	(!A_N * !B_N * !D * !X)	0.00118	0.00119	0.00119
	(!A_N * !B_N * !D * !X)	-0.00359	-0.00361	-0.00362

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)**	-0.00125	-0.00126	-0.00125
	(A_N * B_N * D * !X)	0.00152	0.00152	0.00151
	(A_N * B_N * !D * !X)	-0.00101	-0.00099	-0.00096
	(A_N * B_N * !D * !X)	0.00153	0.00152	0.00151
	(A_N * !B_N * D * !X)	-0.00089	-0.00099	-0.00100
	(A_N * !B_N * D * !X)	0.00186	0.00180	0.00177
	(A_N * !B_N * !D * !X)	-0.00069	-0.00068	-0.00067
	(A_N * !B_N * !D * !X)	0.00193	0.00197	0.00194
	(!A_N * B_N * D * !X)	-0.00123	-0.00128	-0.00127
	(!A_N * B_N * D * !X)	0.00153	0.00151	0.00149
	(!A_N * B_N * !D * !X)	-0.00099	-0.00098	-0.00097
	(!A_N * B_N * !D * !X)	0.00155	0.00153	0.00150
	(!A_N * !B_N * !D * !X)	-0.00045	-0.00046	-0.00046
	(!A_N * !B_N * !D * !X)	0.00179	0.00181	0.00178
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00133	-0.00135	-0.00134
	(A_N * B_N * D * !X)	0.00179	0.00180	0.00178
	(A_N * B_N * !D * !X)	-0.00103	-0.00103	-0.00099
	(A_N * B_N * !D * !X)	0.00179	0.00180	0.00179
	(A_N * !B_N * D * !X)	-0.00102	-0.00114	-0.00115
	(A_N * !B_N * D * !X)	0.00209	0.00202	0.00198
	(A_N * !B_N * !D * !X)	-0.00077	-0.00077	-0.00076
	(A_N * !B_N * !D * !X)	0.00218	0.00222	0.00218
	(!A_N * B_N * D * !X)	-0.00132	-0.00137	-0.00136
	(!A_N * B_N * D * !X)	0.00181	0.00178	0.00176
	(!A_N * B_N * !D * !X)	-0.00100	-0.00101	-0.00100
	(!A_N * B_N * !D * !X)	0.00181	0.00182	0.00178
	(!A_N * !B_N * !D * !X)	-0.00049	-0.00050	-0.00051
	(!A_N * !B_N * !D * !X)	0.00202	0.00203	0.00201

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00227	-0.00229	-0.00229
	(A_N * B_N * D * !X)	0.00361	0.00360	0.00360
	(A_N * B_N * !D * !X)	-0.00163	-0.00164	-0.00162
	(A_N * B_N * !D * !X)	0.00361	0.00363	0.00362
	(A_N * !B_N * D * !X)	-0.00197	-0.00219	-0.00220
	(A_N * !B_N * D * !X)	0.00390	0.00377	0.00370
	(A_N * !B_N * !D * !X)	-0.00147	-0.00148	-0.00147
	(A_N * !B_N * !D * !X)	0.00404	0.00412	0.00407
	(!A_N * B_N * D * !X)	-0.00221	-0.00229	-0.00230
	(!A_N * B_N * D * !X)	0.00368	0.00360	0.00359
	(!A_N * B_N * !D * !X)	-0.00161	-0.00161	-0.00160
	(!A_N * B_N * !D * !X)	0.00371	0.00372	0.00365
	(!A_N * !B_N * !D * !X)	-0.00099	-0.00100	-0.00101
	(!A_N * !B_N * !D * !X)	0.00382	0.00384	0.00379

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)	0.00124	0.00124	0.00123
	(A_N * B_N * C * !X)	-0.00135	-0.00135	-0.00135
	(A_N * !C * !X)	0.00125	0.00126	0.00125
	(A_N * !C * !X)	-0.00135	-0.00136	-0.00135
	(A_N * !B_N * C * !X)	0.00106	0.00107	0.00105
	(A_N * !B_N * C * !X)	-0.00155	-0.00156	-0.00155
	(!A_N * B_N * C * !X)	0.00122	0.00122	0.00121
	(!A_N * B_N * C * !X)	-0.00138	-0.00137	-0.00137
	(!A_N * B_N * !C * !X)	0.00123	0.00124	0.00123
	(!A_N * B_N * !C * !X)	-0.00138	-0.00138	-0.00137
	(!A_N * !B_N * !C * !X)	0.00107	0.00107	0.00106
	(!A_N * !B_N * !C * !X)	-0.00154	-0.00155	-0.00154

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00131	0.00132	0.00131
	(A_N * B_N * C * !X)	-0.00174	-0.00174	-0.00174
	(A_N * !C * !X)	0.00133	0.00134	0.00133
	(A_N * !C * !X)	-0.00173	-0.00174	-0.00174
	(A_N * !B_N * C * !X)	0.00122	0.00123	0.00122
	(A_N * !B_N * C * !X)	-0.00186	-0.00186	-0.00185
	(!A_N * B_N * C * !X)	0.00129	0.00129	0.00129
	(!A_N * B_N * C * !X)	-0.00176	-0.00176	-0.00176
	(!A_N * B_N * !C * !X)	0.00130	0.00132	0.00131
	(!A_N * B_N * !C * !X)	-0.00176	-0.00177	-0.00176
	(!A_N * !B_N * !C * !X)	0.00123	0.00125	0.00123
	(!A_N * !B_N * !C * !X)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00213	0.00215	0.00214
	(A_N * B_N * C * !X)	-0.00343	-0.00344	-0.00344
	(A_N * !C * !X)	0.00218	0.00220	0.00217
	(A_N * !C * !X)	-0.00344	-0.00345	-0.00344
	(A_N * !B_N * C * !X)	0.00209	0.00212	0.00210
	(A_N * !B_N * C * !X)	-0.00352	-0.00354	-0.00352
	(!A_N * B_N * C * !X)	0.00213	0.00215	0.00213
	(!A_N * B_N * C * !X)	-0.00344	-0.00346	-0.00344
	(!A_N * B_N * !C * !X)	0.00216	0.00218	0.00216
	(!A_N * B_N * !C * !X)	-0.00345	-0.00347	-0.00345
	(!A_N * !B_N * !C * !X)	0.00214	0.00217	0.00216
	(!A_N * !B_N * !C * !X)	-0.00344	-0.00347	-0.00346

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)**	-0.00107	-0.00113	-0.00113
	(A_N * B_N * C * !X)	0.00147	0.00148	0.00148
	(A_N * !C * !X)	-0.00112	-0.00114	-0.00114
	(A_N * !C * !X)	0.00149	0.00149	0.00148
	(A_N * !B_N * C * !X)	-0.00091	-0.00099	-0.00100
	(A_N * !B_N * C * !X)	0.00166	0.00164	0.00162
	(!A_N * B_N * C * !X)	-0.00109	-0.00115	-0.00116
	(!A_N * B_N * C * !X)	0.00146	0.00146	0.00145
	(!A_N * B_N * !C * !X)	-0.00115	-0.00117	-0.00116
	(!A_N * B_N * !C * !X)	0.00146	0.00147	0.00145
	(!A_N * !B_N * !C * !X)	-0.00100	-0.00104	-0.00104
	(!A_N * !B_N * !C * !X)	0.00161	0.00159	0.00158
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00113	-0.00119	-0.00120
	(A_N * B_N * C * !X)	0.00187	0.00188	0.00187
	(A_N * !C * !X)	-0.00119	-0.00121	-0.00121
	(A_N * !C * !X)	0.00188	0.00189	0.00187
	(A_N * !B_N * C * !X)	-0.00105	-0.00114	-0.00116
	(A_N * !B_N * C * !X)	0.00198	0.00195	0.00193
	(!A_N * B_N * C * !X)	-0.00115	-0.00122	-0.00123
	(!A_N * B_N * C * !X)	0.00185	0.00186	0.00185
	(!A_N * B_N * !C * !X)	-0.00121	-0.00123	-0.00123
	(!A_N * B_N * !C * !X)	0.00186	0.00187	0.00185
	(!A_N * !B_N * !C * !X)	-0.00116	-0.00120	-0.00120
	(!A_N * !B_N * !C * !X)	0.00192	0.00191	0.00188

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00193	-0.00205	-0.00207
	(A_N * B_N * C * !X)	0.00356	0.00359	0.00357
	(A_N * !C * !X)	-0.00203	-0.00208	-0.00208
	(A_N * !C * !X)	0.00358	0.00360	0.00357
	(A_N * !B_N * C * !X)	-0.00187	-0.00203	-0.00206
	(A_N * !B_N * C * !X)	0.00369	0.00364	0.00360
	(!A_N * B_N * C * !X)	-0.00193	-0.00206	-0.00208
	(!A_N * B_N * C * !X)	0.00357	0.00358	0.00356
	(!A_N * B_N * !C * !X)	-0.00204	-0.00209	-0.00209
	(!A_N * B_N * !C * !X)	0.00357	0.00359	0.00356
	(!A_N * !B_N * !C * !X)	-0.00200	-0.00209	-0.00210
	(!A_N * !B_N * !C * !X)	0.00361	0.00358	0.00355

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00253	0.00267	0.00257	0.00249	0.79023
sky130_fd_sc_hs__and4b_2	0.00236	0.00288	0.00288	0.00296	1.45517
sky130_fd_sc_hs__and4b_4	0.00261	0.00533	0.00571	0.00531	2.76456

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	3.43501	12.20770
sky130_fd_sc_hs__and4b_2	0.00000	3.81163	7.43411
sky130_fd_sc_hs__and4b_4	0.00000	5.38741	14.86830

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)	0.25013	0.95937	7.59353
	B->X (RR)	0.20016	0.91707	7.91169
	C->X (RR)	0.21041	0.90757	7.82470
	D->X (RR)	0.21939	0.89715	7.64814
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.27895	0.91644	7.64209
	B->X (RR)	0.20985	0.85006	7.87393
	C->X (RR)	0.22301	0.83891	7.77197
	D->X (RR)	0.23065	0.82241	7.55654
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.32976	0.93656	7.92169
	B->X (RR)	0.23456	0.81090	8.06207
	C->X (RR)	0.25898	0.80727	7.91222
	D->X (RR)	0.26253	0.79008	7.80386

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)	0.16879	0.57875	3.77980
	B->X (FF)	0.14047	0.64729	4.18559
	C->X (FF)	0.15094	0.67219	4.29125
	D->X (FF)	0.16198	0.69849	4.40785
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.19077	0.56454	3.60634
	B->X (FF)	0.15327	0.63819	4.11309
	C->X (FF)	0.16643	0.66506	4.21999
	D->X (FF)	0.17454	0.68234	4.31066
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.20848	0.56902	3.62541
	B->X (FF)	0.14793	0.58496	3.96406
	C->X (FF)	0.16145	0.61224	4.08005
	D->X (FF)	0.18183	0.64748	4.22872

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	0.00760	0.00866	0.02668
	A_N	0.01019	0.01125	0.02948
	B	0.00877	0.00883	0.02326
	B	0.00499	0.00505	0.01959
	C	0.00955	0.00955	0.02413
	C	0.00515	0.00515	0.01988
	D	0.01014	0.00998	0.02242
	D	0.00514	0.00497	0.01758
sky130_fd_sc_hs__and4b_2	A_N	0.01065	0.01168	0.02895
	A_N	0.01310	0.01413	0.03179
	B	0.01160	0.01179	0.02665
	B	0.00753	0.00772	0.02287
	C	0.01242	0.01253	0.02749
	C	0.00768	0.00778	0.02308
	D	0.01338	0.01338	0.02493
	D	0.00767	0.00766	0.01923
sky130_fd_sc_hs__and4b_4	A_N	0.02160	0.02274	0.04282
	A_N	0.02439	0.02553	0.04616
	B	0.02326	0.02364	0.05158
	B	0.01576	0.01615	0.04440
	C	0.02543	0.02550	0.05072
	C	0.01618	0.01625	0.04197
	D	0.02646	0.02644	0.05458
	D	0.01622	0.01619	0.04498

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00908	0.00975	0.02789
	A_N	0.00649	0.00716	0.02501
	B	0.00347	0.00439	0.01976
	B	0.00725	0.00816	0.02327
	C	0.00371	0.00465	0.02052
	C	0.00806	0.00898	0.02452
	D	0.00439	0.00515	0.02081
	D	0.00928	0.01004	0.02543
sky130_fd_sc_hs__and4b_2	A_N	0.01214	0.01319	0.02966
	A_N	0.00969	0.01058	0.02713
	B	0.00579	0.00708	0.02382
	B	0.00985	0.01100	0.02726
	C	0.00639	0.00765	0.02454
	C	0.01106	0.01223	0.02882
	D	0.00664	0.00745	0.02367
	D	0.01222	0.01302	0.02914
sky130_fd_sc_hs__and4b_4	A_N	0.02104	0.02259	0.04250
	A_N	0.01824	0.01977	0.03907
	B	0.01084	0.01304	0.04546
	B	0.01830	0.02049	0.05199
	C	0.01189	0.01383	0.04726
	C	0.02101	0.02280	0.05413
	D	0.01337	0.01533	0.04871
	D	0.02335	0.02528	0.05766

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)	0.00487	0.00545	0.02269
	(B * C * !D * !X)	0.00142	0.00200	0.01925
	(B * !C * !X)	0.00487	0.00545	0.02269
	(B * !C * !X)	0.00142	0.00200	0.01925
	(!B * !X)	0.00485	0.00543	0.02267
	(!B * !X)	0.00143	0.00200	0.01925
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00542	0.00597	0.02288
	(B * C * !D * !X)	0.00214	0.00267	0.01959
	(B * !C * !X)	0.00541	0.00596	0.02287
	(B * !C * !X)	0.00214	0.00267	0.01959
	(!B * !X)	0.00539	0.00594	0.02285
	(!B * !X)	0.00214	0.00267	0.01959
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00845	0.00901	0.02768
	(B * C * !D * !X)	0.00445	0.00500	0.02369
	(B * !C * !X)	0.00844	0.00900	0.02767
	(B * !C * !X)	0.00446	0.00500	0.02369
	(!B * !X)	0.00838	0.00894	0.02761
	(!B * !X)	0.00446	0.00500	0.02369

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)	0.00030	0.00131	0.01877
	(B * C * !D * !X)	0.00386	0.00488	0.02230
	(B * !C * !X)	0.00026	0.00126	0.01874
	(B * !C * !X)	0.00377	0.00480	0.02224
	(!B * !X)	0.00026	0.00127	0.01875
	(!B * !X)	0.00369	0.00470	0.02218
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00039	0.00138	0.01852
	(B * C * !D * !X)	0.00381	0.00481	0.02191
	(B * !C * !X)	0.00036	0.00134	0.01851
	(B * !C * !X)	0.00373	0.00471	0.02185
	(!B * !X)	0.00035	0.00135	0.01851
	(!B * !X)	0.00362	0.00463	0.02178
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00078	0.00181	0.02042
	(B * C * !D * !X)	0.00502	0.00605	0.02460
	(B * !C * !X)	0.00074	0.00177	0.02040
	(B * !C * !X)	0.00487	0.00591	0.02450
	(!B * !X)	0.00070	0.00174	0.02041
	(!B * !X)	0.00464	0.00568	0.02435

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)**	0.00125	0.00126	0.00125
	(A_N * C * D * !X)	-0.00157	-0.00158	-0.00157
	(A_N * C * !D * !X)	0.00087	0.00088	0.00087
	(A_N * C * !D * !X)	-0.00158	-0.00159	-0.00158
	(A_N * !C * !X)	0.00086	0.00086	0.00086
	(A_N * !C * !X)	-0.00158	-0.00159	-0.00158
	(!A_N * C * !D * !X)	0.00051	0.00051	0.00051
	(!A_N * C * !D * !X)	-0.00175	-0.00176	-0.00178
	(!A_N * !C * !X)	0.00051	0.00051	0.00051
	(!A_N * !C * !X)	-0.00178	-0.00179	-0.00179
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00144	0.00145	0.00144
	(A_N * C * D * !X)	-0.00167	-0.00168	-0.00167
	(A_N * C * !D * !X)	0.00098	0.00098	0.00097
	(A_N * C * !D * !X)	-0.00168	-0.00169	-0.00168
	(A_N * !C * !X)	0.00101	0.00102	0.00101
	(A_N * !C * !X)	-0.00169	-0.00169	-0.00168
	(!A_N * C * !D * !X)	0.00055	0.00055	0.00056
	(!A_N * C * !D * !X)	-0.00189	-0.00190	-0.00192
	(!A_N * !C * !X)	0.00059	0.00059	0.00059
	(!A_N * !C * !X)	-0.00192	-0.00193	-0.00193
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00287	0.00289	0.00288
	(A_N * C * D * !X)	-0.00323	-0.00324	-0.00323
	(A_N * C * !D * !X)	0.00209	0.00210	0.00209
	(A_N * C * !D * !X)	-0.00324	-0.00326	-0.00324
	(A_N * !C * !X)	0.00216	0.00217	0.00216
	(A_N * !C * !X)	-0.00325	-0.00326	-0.00325
	(!A_N * C * !D * !X)	0.00125	0.00125	0.00125
	(!A_N * C * !D * !X)	-0.00369	-0.00371	-0.00377
	(!A_N * !C * !X)	0.00130	0.00130	0.00130
	(!A_N * !C * !X)	-0.00376	-0.00378	-0.00379

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)	-0.00107	-0.00116	-0.00118
	(A_N * C * D * !X)	0.00177	0.00168	0.00165
	(A_N * C * !D * !X)	-0.00081	-0.00083	-0.00084
	(A_N * C * !D * !X)	0.00176	0.00173	0.00168
	(A_N * !C * !X)	-0.00083	-0.00083	-0.00085
	(A_N * !C * !X)	0.00171	0.00172	0.00167
	(!A_N * C * !D * !X)	-0.00045	-0.00045	-0.00046
	(!A_N * C * !D * !X)	0.00185	0.00187	0.00183
	(!A_N * !C * !X)	-0.00045	-0.00046	-0.00047
	(!A_N * !C * !X)	0.00185	0.00186	0.00184
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00124	-0.00134	-0.00136
	(A_N * C * D * !X)	0.00189	0.00179	0.00177
	(A_N * C * !D * !X)	-0.00091	-0.00094	-0.00094
	(A_N * C * !D * !X)	0.00188	0.00186	0.00180
	(A_N * !C * !X)	-0.00098	-0.00099	-0.00100
	(A_N * !C * !X)	0.00183	0.00184	0.00179
	(!A_N * C * !D * !X)	-0.00049	-0.00049	-0.00051
	(!A_N * C * !D * !X)	0.00201	0.00202	0.00199
	(!A_N * !C * !X)	-0.00050	-0.00051	-0.00052
	(!A_N * !C * !X)	0.00201	0.00203	0.00199

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00257	-0.00277	-0.00279
	(A_N * C * D * !X)	0.00355	0.00340	0.00334
	(A_N * C * !D * !X)	-0.00202	-0.00206	-0.00208
	(A_N * C * !D * !X)	0.00355	0.00350	0.00340
	(A_N * !C * !X)	-0.00213	-0.00215	-0.00216
	(A_N * !C * !X)	0.00349	0.00349	0.00339
	(!A_N * C * !D * !X)	-0.00110	-0.00111	-0.00114
	(!A_N * C * !D * !X)	0.00395	0.00396	0.00391
	(!A_N * !C * !X)	-0.00113	-0.00114	-0.00117
	(!A_N * !C * !X)	0.00396	0.00397	0.00392

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)**	0.00125	0.00126	0.00125
	(A_N * B * D * !X)	-0.00143	-0.00144	-0.00143
	(A_N * B * !D * !X)	0.00091	0.00090	0.00090
	(A_N * B * !D * !X)	-0.00144	-0.00144	-0.00144
	(A_N * !B * D * !X)	0.00126	0.00127	0.00126
	(A_N * !B * D * !X)	-0.00143	-0.00144	-0.00143
	(A_N * !B * !D * !X)	0.00088	0.00089	0.00088
	(A_N * !B * !D * !X)	-0.00144	-0.00145	-0.00144
	(!A_N * B * !D * !X)	0.00074	0.00074	0.00073
	(!A_N * B * !D * !X)	-0.00145	-0.00146	-0.00144
	(!A_N * !B * D * !X)	0.00124	0.00125	0.00124
	(!A_N * !B * D * !X)	-0.00147	-0.00147	-0.00146
	(!A_N * !B * !D * !X)	0.00084	0.00085	0.00084
	(!A_N * !B * !D * !X)	-0.00147	-0.00148	-0.00147

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00123	0.00124	0.00124
	(A_N * B * D * !X)	-0.00165	-0.00166	-0.00166
	(A_N * B * !D * !X)	0.00079	0.00080	0.00079
	(A_N * B * !D * !X)	-0.00166	-0.00168	-0.00167
	(A_N * !B * D * !X)	0.00125	0.00126	0.00125
	(A_N * !B * D * !X)	-0.00167	-0.00167	-0.00166
	(A_N * !B * !D * !X)	0.00075	0.00075	0.00075
	(A_N * !B * !D * !X)	-0.00167	-0.00167	-0.00167
	(!A_N * B * !D * !X)	0.00058	0.00058	0.00059
	(!A_N * B * !D * !X)	-0.00169	-0.00168	-0.00167
	(!A_N * !B * D * !X)	0.00121	0.00123	0.00122
	(!A_N * !B * D * !X)	-0.00170	-0.00171	-0.00170
	(!A_N * !B * !D * !X)	0.00071	0.00071	0.00071
	(!A_N * !B * !D * !X)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00267	0.00267	0.00268
	(A_N * B * D * !X)	-0.00342	-0.00342	-0.00342
	(A_N * B * !D * !X)	0.00193	0.00196	0.00194
	(A_N * B * !D * !X)	-0.00342	-0.00344	-0.00343
	(A_N * !B * D * !X)	0.00269	0.00270	0.00270
	(A_N * !B * D * !X)	-0.00342	-0.00343	-0.00343
	(A_N * !B * !D * !X)	0.00192	0.00193	0.00192
	(A_N * !B * !D * !X)	-0.00343	-0.00344	-0.00343
	(!A_N * B * !D * !X)	0.00159	0.00161	0.00161
	(!A_N * B * !D * !X)	-0.00344	-0.00345	-0.00341
	(!A_N * !B * D * !X)	0.00265	0.00266	0.00266
	(!A_N * !B * D * !X)	-0.00347	-0.00348	-0.00347
	(!A_N * !B * !D * !X)	0.00184	0.00186	0.00184
	(!A_N * !B * !D * !X)	-0.00350	-0.00351	-0.00350

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)	-0.00109	-0.00120	-0.00120
	(A_N * B * D * !X)	0.00155	0.00153	0.00151
	(A_N * B * !D * !X)	-0.00091	-0.00090	-0.00089
	(A_N * B * !D * !X)	0.00157	0.00158	0.00153
	(A_N * !B * D * !X)	-0.00118	-0.00120	-0.00121
	(A_N * !B * D * !X)	0.00150	0.00151	0.00151
	(A_N * !B * !D * !X)	-0.00088	-0.00089	-0.00087
	(A_N * !B * !D * !X)	0.00152	0.00153	0.00152
	(!A_N * B * !D * !X)	-0.00066	-0.00066	-0.00066
	(!A_N * B * !D * !X)	0.00155	0.00155	0.00152
	(!A_N * !B * D * !X)	-0.00115	-0.00121	-0.00122
	(!A_N * !B * D * !X)	0.00154	0.00151	0.00150
	(!A_N * !B * !D * !X)	-0.00084	-0.00085	-0.00084
	(!A_N * !B * !D * !X)	0.00157	0.00156	0.00152
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00105	-0.00117	-0.00118
	(A_N * B * D * !X)	0.00179	0.00177	0.00175
	(A_N * B * !D * !X)	-0.00079	-0.00080	-0.00079
	(A_N * B * !D * !X)	0.00181	0.00183	0.00178
	(A_N * !B * D * !X)	-0.00116	-0.00119	-0.00118
	(A_N * !B * D * !X)	0.00176	0.00177	0.00175
	(A_N * !B * !D * !X)	-0.00075	-0.00075	-0.00074
	(A_N * !B * !D * !X)	0.00176	0.00177	0.00176
	(!A_N * B * !D * !X)	-0.00049	-0.00050	-0.00051
	(!A_N * B * !D * !X)	0.00178	0.00180	0.00177
	(!A_N * !B * D * !X)	-0.00112	-0.00119	-0.00119
	(!A_N * !B * D * !X)	0.00179	0.00177	0.00174
	(!A_N * !B * !D * !X)	-0.00071	-0.00071	-0.00071
	(!A_N * !B * !D * !X)	0.00180	0.00181	0.00177

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00241	-0.00261	-0.00263
	(A_N * B * D * !X)	0.00360	0.00356	0.00352
	(A_N * B * !D * !X)	-0.00193	-0.00196	-0.00194
	(A_N * B * !D * !X)	0.00362	0.00366	0.00357
	(A_N * !B * D * !X)	-0.00256	-0.00263	-0.00264
	(A_N * !B * D * !X)	0.00353	0.00354	0.00352
	(A_N * !B * !D * !X)	-0.00192	-0.00193	-0.00192
	(A_N * !B * !D * !X)	0.00352	0.00355	0.00354
	(!A_N * B * !D * !X)	-0.00142	-0.00143	-0.00145
	(!A_N * B * !D * !X)	0.00365	0.00366	0.00360
	(!A_N * !B * D * !X)	-0.00247	-0.00260	-0.00261
	(!A_N * !B * D * !X)	0.00362	0.00358	0.00355
	(!A_N * !B * !D * !X)	-0.00184	-0.00186	-0.00184
	(!A_N * !B * !D * !X)	0.00367	0.00369	0.00362

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)	0.00104	0.00105	0.00104
	(A_N * B * C * !X)	-0.00155	-0.00155	-0.00154
	(A_N * !C * !X)	0.00107	0.00107	0.00107
	(A_N * !C * !X)	-0.00155	-0.00155	-0.00155
	(A_N * !B * C * !X)	0.00104	0.00104	0.00104
	(A_N * !B * C * !X)	-0.00155	-0.00155	-0.00155
	(!A_N * B * !C * !X)	0.00105	0.00106	0.00105
	(!A_N * B * !C * !X)	-0.00157	-0.00158	-0.00157
	(!A_N * !B * C * !X)	0.00102	0.00102	0.00102
	(!A_N * !B * C * !X)	-0.00157	-0.00157	-0.00157
	(!A_N * !B * !C * !X)	0.00104	0.00105	0.00104
	(!A_N * !B * !C * !X)	-0.00157	-0.00158	-0.00157

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00122	0.00124	0.00123
	(A_N * B * C * !X)	-0.00178	-0.00179	-0.00178
	(A_N * !C * !X)	0.00126	0.00127	0.00126
	(A_N * !C * !X)	-0.00179	-0.00179	-0.00178
	(A_N * !B * C * !X)	0.00122	0.00123	0.00123
	(A_N * !B * C * !X)	-0.00178	-0.00179	-0.00179
	(!A_N * B * !C * !X)	0.00123	0.00123	0.00123
	(!A_N * B * !C * !X)	-0.00183	-0.00183	-0.00182
	(!A_N * !B * C * !X)	0.00119	0.00120	0.00119
	(!A_N * !B * C * !X)	-0.00182	-0.00183	-0.00182
	(!A_N * !B * !C * !X)	0.00122	0.00123	0.00122
	(!A_N * !B * !C * !X)	-0.00183	-0.00183	-0.00182
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00219	0.00219	0.00219
	(A_N * B * C * !X)	-0.00340	-0.00340	-0.00340
	(A_N * !C * !X)	0.00221	0.00224	0.00222
	(A_N * !C * !X)	-0.00340	-0.00342	-0.00341
	(A_N * !B * C * !X)	0.00219	0.00221	0.00219
	(A_N * !B * C * !X)	-0.00341	-0.00342	-0.00341
	(!A_N * B * !C * !X)	0.00218	0.00220	0.00217
	(!A_N * B * !C * !X)	-0.00346	-0.00348	-0.00346
	(!A_N * !B * C * !X)	0.00215	0.00215	0.00214
	(!A_N * !B * C * !X)	-0.00346	-0.00346	-0.00345
	(!A_N * !B * !C * !X)	0.00216	0.00219	0.00217
	(!A_N * !B * !C * !X)	-0.00344	-0.00347	-0.00346

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)**	-0.00090	-0.00098	-0.00099
	(A_N * B * C * !X)	0.00163	0.00163	0.00162
	(A_N * !C * !X)	-0.00099	-0.00101	-0.00101
	(A_N * !C * !X)	0.00163	0.00163	0.00162
	(A_N * !B * C * !X)	-0.00091	-0.00098	-0.00099
	(A_N * !B * C * !X)	0.00162	0.00163	0.00162
	(!A_N * B * !C * !X)	-0.00099	-0.00103	-0.00103
	(!A_N * B * !C * !X)	0.00161	0.00161	0.00160
	(!A_N * !B * C * !X)	-0.00093	-0.00101	-0.00102
	(!A_N * !B * C * !X)	0.00160	0.00161	0.00160
	(!A_N * !B * !C * !X)	-0.00101	-0.00103	-0.00104
	(!A_N * !B * !C * !X)	0.00161	0.00161	0.00160
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00107	-0.00116	-0.00118
	(A_N * B * C * !X)	0.00188	0.00188	0.00187
	(A_N * !C * !X)	-0.00116	-0.00120	-0.00119
	(A_N * !C * !X)	0.00188	0.00190	0.00187
	(A_N * !B * C * !X)	-0.00108	-0.00116	-0.00118
	(A_N * !B * C * !X)	0.00187	0.00188	0.00187
	(!A_N * B * !C * !X)	-0.00115	-0.00120	-0.00120
	(!A_N * B * !C * !X)	0.00188	0.00189	0.00187
	(!A_N * !B * C * !X)	-0.00108	-0.00117	-0.00119
	(!A_N * !B * C * !X)	0.00187	0.00188	0.00187
	(!A_N * !B * !C * !X)	-0.00117	-0.00120	-0.00120
	(!A_N * !B * !C * !X)	0.00187	0.00189	0.00186

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00194	-0.00213	-0.00216
	(A_N * B * C * !X)	0.00353	0.00354	0.00351
	(A_N * !C * !X)	-0.00209	-0.00215	-0.00216
	(A_N * !C * !X)	0.00350	0.00354	0.00351
	(A_N * !B * C * !X)	-0.00198	-0.00214	-0.00217
	(A_N * !B * C * !X)	0.00351	0.00353	0.00351
	(!A_N * B * !C * !X)	-0.00202	-0.00210	-0.00211
	(!A_N * B * !C * !X)	0.00358	0.00358	0.00354
	(!A_N * !B * C * !X)	-0.00194	-0.00211	-0.00214
	(!A_N * !B * C * !X)	0.00356	0.00356	0.00353
	(!A_N * !B * !C * !X)	-0.00206	-0.00213	-0.00213
	(!A_N * !B * !C * !X)	0.00353	0.00356	0.00353

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00269	0.00266	0.00256	0.00259	0.80000
sky130_fd_sc_hs__and4_2	0.00293	0.00300	0.00286	0.00282	1.43744
sky130_fd_sc_hs__and4_4	0.00509	0.00524	0.00572	0.00513	3.04151

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	1.81864	12.00970
sky130_fd_sc_hs__and4_2	0.00000	2.20466	7.23141
sky130_fd_sc_hs__and4_4	0.00000	4.30438	14.47830

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)	0.17896	0.90869	7.95039
	B->X (RR)	0.19590	0.91624	7.93614
	C->X (RR)	0.20588	0.90574	7.85129
	D->X (RR)	0.21572	0.89479	7.67761
sky130_fd_sc_hs__and4_2	A->X (RR)	0.19108	0.85381	7.86134
	B->X (RR)	0.21049	0.85627	7.84120
	C->X (RR)	0.22207	0.84351	7.73599
	D->X (RR)	0.22988	0.82732	7.51596
sky130_fd_sc_hs__and4_4	A->X (RR)	0.20016	0.78711	8.11546
	B->X (RR)	0.22224	0.79416	8.11583
	C->X (RR)	0.24333	0.78796	7.97976
	D->X (RR)	0.24586	0.76864	7.86856

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.12655	0.61051	4.05172
	B->X (FF)	0.13974	0.64256	4.14897
	C->X (FF)	0.15016	0.66829	4.25217
	D->X (FF)	0.16108	0.69099	4.36139
sky130_fd_sc_hs__and4_2	A->X (FF)	0.13365	0.60057	3.93055
	B->X (FF)	0.14954	0.63151	4.04061
	C->X (FF)	0.16063	0.65664	4.14676
	D->X (FF)	0.17562	0.68491	4.27155
sky130_fd_sc_hs__and4_4	A->X (FF)	0.13149	0.55992	4.17896
	B->X (FF)	0.13842	0.57721	4.23220
	C->X (FF)	0.15059	0.60354	4.34725
	D->X (FF)	0.15551	0.62011	4.44254

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00823	0.00865	0.02447
	A	0.00441	0.00484	0.02074
	B	0.00887	0.00905	0.02362
	B	0.00445	0.00462	0.01930
	C	0.00959	0.00969	0.02446
	C	0.00446	0.00455	0.01947
	D	0.01040	0.01035	0.02308
	D	0.00446	0.00440	0.01729
sky130_fd_sc_hs__and4_2	A	0.01120	0.01165	0.02782
	A	0.00693	0.00739	0.02386
	B	0.01210	0.01226	0.02718
	B	0.00705	0.00721	0.02245
	C	0.01284	0.01294	0.02793
	C	0.00704	0.00715	0.02249
	D	0.01378	0.01376	0.02519
	D	0.00707	0.00705	0.01875
sky130_fd_sc_hs__and4_4	A	0.02106	0.02198	0.05266
	A	0.01370	0.01463	0.04553
	B	0.02281	0.02323	0.05165
	B	0.01366	0.01410	0.04274
	C	0.02487	0.02502	0.05175
	C	0.01371	0.01386	0.04095
	D	0.02572	0.02583	0.05497
	D	0.01371	0.01382	0.04354

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00299	0.00400	0.02016
	A	0.00681	0.00777	0.02367
	B	0.00346	0.00443	0.02039
	B	0.00785	0.00881	0.02438
	C	0.00380	0.00485	0.02089
	C	0.00886	0.00988	0.02575
	D	0.00424	0.00503	0.02128
	D	0.01004	0.01082	0.02663
sky130_fd_sc_hs__and4_2	A	0.00502	0.00637	0.02326
	A	0.00929	0.01049	0.02705
	B	0.00557	0.00673	0.02417
	B	0.01059	0.01171	0.02803
	C	0.00619	0.00754	0.02462
	C	0.01189	0.01311	0.02974
	D	0.00663	0.00744	0.02351
	D	0.01317	0.01396	0.03000
sky130_fd_sc_hs__and4_4	A	0.00998	0.01236	0.04542
	A	0.01737	0.01971	0.05215
	B	0.01061	0.01286	0.04511
	B	0.01971	0.02193	0.05381
	C	0.01158	0.01371	0.04638
	C	0.02257	0.02452	0.05659
	D	0.01300	0.01506	0.04860
	D	0.02469	0.02672	0.06017

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)	0.00048	0.00048	0.00042
	(B * C * !D * !X)	-0.00163	-0.00165	-0.00178
	(B * !C * !X)	0.00045	0.00045	0.00041
	(B * !C * !X)	-0.00171	-0.00172	-0.00179
	(!B * !X)	0.00044	0.00044	0.00042
	(!B * !X)	-0.00176	-0.00177	-0.00180
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00060	0.00060	0.00052
	(B * C * !D * !X)	-0.00186	-0.00187	-0.00203
	(B * !C * !X)	0.00056	0.00056	0.00051
	(B * !C * !X)	-0.00194	-0.00195	-0.00205
	(!B * !X)	0.00053	0.00053	0.00051
	(!B * !X)	-0.00202	-0.00203	-0.00206
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00088	0.00088	0.00072
	(B * C * !D * !X)	-0.00345	-0.00347	-0.00376
	(B * !C * !X)	0.00083	0.00083	0.00072
	(B * !C * !X)	-0.00359	-0.00360	-0.00380
	(!B * !X)	0.00077	0.00077	0.00072
	(!B * !X)	-0.00375	-0.00376	-0.00382

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)	-0.00038	-0.00038	-0.00038
	(B * C * !D * !X)	0.00181	0.00183	0.00182
	(B * !C * !X)	-0.00038	-0.00038	-0.00038
	(B * !C * !X)	0.00181	0.00183	0.00182
	(!B * !X)	-0.00039	-0.00039	-0.00039
	(!B * !X)	0.00181	0.00183	0.00182
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00046	-0.00046	-0.00045
	(B * C * !D * !X)	0.00209	0.00210	0.00209
	(B * !C * !X)	-0.00046	-0.00046	-0.00046
	(B * !C * !X)	0.00209	0.00210	0.00209
	(!B * !X)	-0.00047	-0.00047	-0.00046
	(!B * !X)	0.00209	0.00210	0.00209
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00061	-0.00061	-0.00060
	(B * C * !D * !X)	0.00389	0.00390	0.00389
	(B * !C * !X)	-0.00062	-0.00062	-0.00061
	(B * !C * !X)	0.00389	0.00391	0.00389
	(!B * !X)	-0.00064	-0.00064	-0.00064
	(!B * !X)	0.00389	0.00391	0.00389

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)**	0.00049	0.00050	0.00049
	(A * C * !D * !X)	-0.00149	-0.00149	-0.00148
	(A * !C * !X)	0.00049	0.00050	0.00050
	(A * !C * !X)	-0.00148	-0.00149	-0.00148
	(!A * C * D * !X)	0.00106	0.00107	0.00107
	(!A * C * D * !X)	-0.00149	-0.00149	-0.00148
	(!A * C * !D * !X)	0.00062	0.00063	0.00062
	(!A * C * !D * !X)	-0.00149	-0.00149	-0.00148
	(!A * !C * !X)	0.00060	0.00060	0.00060
	(!A * !C * !X)	-0.00149	-0.00149	-0.00149
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00060	0.00060	0.00059
	(A * C * !D * !X)	-0.00178	-0.00178	-0.00177
	(A * !C * !X)	0.00061	0.00061	0.00061
	(A * !C * !X)	-0.00178	-0.00178	-0.00177
	(!A * C * D * !X)	0.00125	0.00126	0.00125
	(!A * C * D * !X)	-0.00178	-0.00178	-0.00177
	(!A * C * !D * !X)	0.00075	0.00075	0.00075
	(!A * C * !D * !X)	-0.00177	-0.00178	-0.00177
	(!A * !C * !X)	0.00075	0.00075	0.00074
	(!A * !C * !X)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00123	0.00124	0.00122
	(A * C * !D * !X)	-0.00336	-0.00337	-0.00335
	(A * !C * !X)	0.00128	0.00128	0.00127
	(A * !C * !X)	-0.00338	-0.00338	-0.00336
	(!A * C * D * !X)	0.00238	0.00241	0.00239
	(!A * C * D * !X)	-0.00335	-0.00337	-0.00335
	(!A * C * !D * !X)	0.00148	0.00150	0.00149
	(!A * C * !D * !X)	-0.00336	-0.00339	-0.00337
	(!A * !C * !X)	0.00153	0.00153	0.00152
	(!A * !C * !X)	-0.00339	-0.00340	-0.00339

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)	-0.00044	-0.00044	-0.00045
	(A * C * !D * !X)	0.00155	0.00155	0.00152
	(A * !C * !X)	-0.00044	-0.00045	-0.00046
	(A * !C * !X)	0.00155	0.00155	0.00152
	(!A * C * D * !X)	-0.00093	-0.00102	-0.00105
	(!A * C * D * !X)	0.00164	0.00154	0.00151
	(!A * C * !D * !X)	-0.00062	-0.00063	-0.00062
	(!A * C * !D * !X)	0.00162	0.00159	0.00154
	(!A * !C * !X)	-0.00060	-0.00060	-0.00060
	(!A * !C * !X)	0.00157	0.00158	0.00152
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00052	-0.00052	-0.00053
	(A * C * !D * !X)	0.00185	0.00186	0.00182
	(A * !C * !X)	-0.00053	-0.00053	-0.00054
	(A * !C * !X)	0.00185	0.00186	0.00182
	(!A * C * D * !X)	-0.00109	-0.00120	-0.00123
	(!A * C * D * !X)	0.00195	0.00185	0.00182
	(!A * C * !D * !X)	-0.00075	-0.00075	-0.00075
	(!A * C * !D * !X)	0.00194	0.00190	0.00184
	(!A * !C * !X)	-0.00075	-0.00075	-0.00074
	(!A * !C * !X)	0.00189	0.00189	0.00183

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00109	-0.00109	-0.00112
	(A * C * !D * !X)	0.00352	0.00351	0.00347
	(A * !C * !X)	-0.00112	-0.00112	-0.00115
	(A * !C * !X)	0.00353	0.00352	0.00347
	(!A * C * D * !X)	-0.00209	-0.00231	-0.00234
	(!A * C * D * !X)	0.00366	0.00350	0.00343
	(!A * C * !D * !X)	-0.00148	-0.00150	-0.00149
	(!A * C * !D * !X)	0.00368	0.00360	0.00350
	(!A * !C * !X)	-0.00153	-0.00153	-0.00152
	(!A * !C * !X)	0.00360	0.00359	0.00350

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)**	0.00058	0.00058	0.00058
	(A * B * !D * !X)	-0.00140	-0.00141	-0.00139
	(A * !B * D * !X)	0.00110	0.00111	0.00111
	(A * !B * D * !X)	-0.00144	-0.00144	-0.00144
	(A * !B * !D * !X)	0.00068	0.00068	0.00068
	(A * !B * !D * !X)	-0.00144	-0.00145	-0.00144
	(!A * B * D * !X)	0.00107	0.00108	0.00107
	(!A * B * D * !X)	-0.00144	-0.00144	-0.00144
	(!A * B * !D * !X)	0.00067	0.00067	0.00067
	(!A * B * !D * !X)	-0.00143	-0.00144	-0.00144
	(!A * !B * D * !X)	0.00110	0.00111	0.00110
	(!A * !B * D * !X)	-0.00144	-0.00145	-0.00144
	(!A * !B * !D * !X)	0.00069	0.00069	0.00068
	(!A * !B * !D * !X)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00064	0.00064	0.00064
	(A * B * !D * !X)	-0.00164	-0.00164	-0.00162
	(A * !B * D * !X)	0.00125	0.00126	0.00125
	(A * !B * D * !X)	-0.00168	-0.00169	-0.00168
	(A * !B * !D * !X)	0.00079	0.00079	0.00078
	(A * !B * !D * !X)	-0.00169	-0.00169	-0.00168
	(!A * B * D * !X)	0.00121	0.00122	0.00121
	(!A * B * D * !X)	-0.00168	-0.00168	-0.00168
	(!A * B * !D * !X)	0.00076	0.00075	0.00075
	(!A * B * !D * !X)	-0.00168	-0.00168	-0.00168
	(!A * !B * D * !X)	0.00125	0.00125	0.00125
	(!A * !B * D * !X)	-0.00169	-0.00169	-0.00168
	(!A * !B * !D * !X)	0.00078	0.00079	0.00078
	(!A * !B * !D * !X)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00158	0.00157	0.00160
	(A * B * !D * !X)	-0.00340	-0.00339	-0.00337
	(A * !B * D * !X)	0.00265	0.00268	0.00266
	(A * !B * D * !X)	-0.00346	-0.00349	-0.00347
	(A * !B * !D * !X)	0.00182	0.00183	0.00182
	(A * !B * !D * !X)	-0.00349	-0.00350	-0.00349
	(!A * B * D * !X)	0.00259	0.00262	0.00260
	(!A * B * D * !X)	-0.00347	-0.00348	-0.00347
	(!A * B * !D * !X)	0.00178	0.00180	0.00178
	(!A * B * !D * !X)	-0.00348	-0.00350	-0.00349
	(!A * !B * D * !X)	0.00264	0.00267	0.00265
	(!A * !B * D * !X)	-0.00346	-0.00349	-0.00348
	(!A * !B * !D * !X)	0.00184	0.00184	0.00184
	(!A * !B * !D * !X)	-0.00349	-0.00351	-0.00349

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)	-0.00051	-0.00051	-0.00052
	(A * B * !D * !X)	0.00149	0.00150	0.00148
	(A * !B * D * !X)	-0.00102	-0.00109	-0.00109
	(A * !B * D * !X)	0.00150	0.00148	0.00147
	(A * !B * !D * !X)	-0.00068	-0.00068	-0.00068
	(A * !B * !D * !X)	0.00151	0.00152	0.00149
	(!A * B * D * !X)	-0.00094	-0.00107	-0.00107
	(!A * B * D * !X)	0.00151	0.00148	0.00146
	(!A * B * !D * !X)	-0.00067	-0.00067	-0.00067
	(!A * B * !D * !X)	0.00152	0.00153	0.00148
	(!A * !B * D * !X)	-0.00106	-0.00109	-0.00109
	(!A * !B * D * !X)	0.00147	0.00148	0.00146
	(!A * !B * !D * !X)	-0.00069	-0.00069	-0.00068
	(!A * !B * !D * !X)	0.00147	0.00148	0.00147
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00054	-0.00055	-0.00056
	(A * B * !D * !X)	0.00175	0.00176	0.00173
	(A * !B * D * !X)	-0.00116	-0.00123	-0.00123
	(A * !B * D * !X)	0.00174	0.00174	0.00172
	(A * !B * !D * !X)	-0.00079	-0.00079	-0.00078
	(A * !B * !D * !X)	0.00176	0.00177	0.00174
	(!A * B * D * !X)	-0.00106	-0.00120	-0.00121
	(!A * B * D * !X)	0.00176	0.00174	0.00172
	(!A * B * !D * !X)	-0.00076	-0.00075	-0.00075
	(!A * B * !D * !X)	0.00177	0.00179	0.00174
	(!A * !B * D * !X)	-0.00119	-0.00123	-0.00123
	(!A * !B * D * !X)	0.00172	0.00173	0.00172
	(!A * !B * !D * !X)	-0.00078	-0.00079	-0.00078
	(!A * !B * !D * !X)	0.00172	0.00173	0.00172

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00142	-0.00143	-0.00145
	(A * B * !D * !X)	0.00363	0.00364	0.00359
	(A * !B * D * !X)	-0.00248	-0.00261	-0.00263
	(A * !B * D * !X)	0.00358	0.00356	0.00355
	(A * !B * !D * !X)	-0.00182	-0.00183	-0.00182
	(A * !B * !D * !X)	0.00366	0.00368	0.00361
	(!A * B * D * !X)	-0.00234	-0.00256	-0.00260
	(!A * B * D * !X)	0.00363	0.00357	0.00354
	(!A * B * !D * !X)	-0.00178	-0.00180	-0.00178
	(!A * B * !D * !X)	0.00365	0.00370	0.00360
	(!A * !B * D * !X)	-0.00254	-0.00262	-0.00263
	(!A * !B * D * !X)	0.00355	0.00356	0.00354
	(!A * !B * !D * !X)	-0.00184	-0.00184	-0.00184
	(!A * !B * !D * !X)	0.00356	0.00358	0.00357

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)	0.00107	0.00109	0.00108
	(A * B * !C * !X)	-0.00157	-0.00159	-0.00158
	(A * !B * C * !X)	0.00104	0.00105	0.00104
	(A * !B * C * !X)	-0.00158	-0.00158	-0.00158
	(A * !B * !C * !X)	0.00106	0.00108	0.00107
	(A * !B * !C * !X)	-0.00157	-0.00159	-0.00158
	(!A * B * C * !X)	0.00104	0.00105	0.00103
	(!A * B * C * !X)	-0.00158	-0.00159	-0.00158
	(!A * !C * !X)	0.00106	0.00108	0.00107
	(!A * !C * !X)	-0.00157	-0.00159	-0.00158
	(!A * !B * C * !X)	0.00104	0.00103	0.00104
	(!A * !B * C * !X)	-0.00158	-0.00158	-0.00158

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00128	0.00129	0.00128
	(A * B * !C * !X)	-0.00173	-0.00174	-0.00173
	(A * !B * C * !X)	0.00124	0.00125	0.00124
	(A * !B * C * !X)	-0.00173	-0.00174	-0.00173
	(A * !B * !C * !X)	0.00128	0.00128	0.00127
	(A * !B * !C * !X)	-0.00174	-0.00174	-0.00173
	(!A * B * C * !X)	0.00122	0.00124	0.00123
	(!A * B * C * !X)	-0.00173	-0.00174	-0.00173
	(!A * !C * !X)	0.00128	0.00129	0.00127
	(!A * !C * !X)	-0.00174	-0.00174	-0.00173
	(!A * !B * C * !X)	0.00124	0.00124	0.00124
	(!A * !B * C * !X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00211	0.00213	0.00211
	(A * B * !C * !X)	-0.00340	-0.00342	-0.00340
	(A * !B * C * !X)	0.00206	0.00207	0.00206
	(A * !B * C * !X)	-0.00340	-0.00341	-0.00340
	(A * !B * !C * !X)	0.00209	0.00212	0.00210
	(A * !B * !C * !X)	-0.00339	-0.00342	-0.00340
	(!A * B * C * !X)	0.00203	0.00203	0.00203
	(!A * B * C * !X)	-0.00340	-0.00340	-0.00340
	(!A * !C * !X)	0.00209	0.00211	0.00209
	(!A * !C * !X)	-0.00339	-0.00342	-0.00340
	(!A * !B * C * !X)	0.00206	0.00207	0.00205
	(!A * !B * C * !X)	-0.00340	-0.00342	-0.00340

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)**	-0.00102	-0.00106	-0.00106
	(A * B * !C * !X)	0.00161	0.00162	0.00160
	(A * !B * C * !X)	-0.00096	-0.00104	-0.00104
	(A * !B * C * !X)	0.00160	0.00161	0.00160
	(A * !B * !C * !X)	-0.00104	-0.00106	-0.00107
	(A * !B * !C * !X)	0.00161	0.00161	0.00160
	(!A * B * C * !X)	-0.00093	-0.00102	-0.00103
	(!A * B * C * !X)	0.00161	0.00161	0.00160
	(!A * !C * !X)	-0.00104	-0.00106	-0.00107
	(!A * !C * !X)	0.00161	0.00161	0.00160
	(!A * !B * C * !X)	-0.00097	-0.00103	-0.00104
	(!A * !B * C * !X)	0.00160	0.00161	0.00160
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00121	-0.00125	-0.00126
	(A * B * !C * !X)	0.00178	0.00178	0.00177
	(A * !B * C * !X)	-0.00114	-0.00122	-0.00124
	(A * !B * C * !X)	0.00176	0.00178	0.00177
	(A * !B * !C * !X)	-0.00123	-0.00125	-0.00126
	(A * !B * !C * !X)	0.00177	0.00178	0.00177
	(!A * B * C * !X)	-0.00111	-0.00121	-0.00123
	(!A * B * C * !X)	0.00177	0.00178	0.00177
	(!A * !C * !X)	-0.00122	-0.00125	-0.00126
	(!A * !C * !X)	0.00177	0.00178	0.00177
	(!A * !B * C * !X)	-0.00114	-0.00123	-0.00124
	(!A * !B * C * !X)	0.00176	0.00178	0.00177

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00194	-0.00204	-0.00205
	(A * B * !C * !X)	0.00347	0.00351	0.00348
	(A * !B * C * !X)	-0.00186	-0.00203	-0.00206
	(A * !B * C * !X)	0.00348	0.00350	0.00347
	(A * !B * !C * !X)	-0.00199	-0.00206	-0.00207
	(A * !B * !C * !X)	0.00346	0.00350	0.00347
	(!A * B * C * !X)	-0.00180	-0.00200	-0.00203
	(!A * B * C * !X)	0.00349	0.00350	0.00347
	(!A * !C * !X)	-0.00198	-0.00205	-0.00206
	(!A * !C * !X)	0.00346	0.00350	0.00347
	(!A * !B * C * !X)	-0.00187	-0.00203	-0.00205
	(!A * !B * C * !X)	0.00347	0.00350	0.00347

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00258	0.79987
sky130_fd_sc_hs__buf_16	0.01717	12.36861
sky130_fd_sc_hs__buf_2	0.00280	1.50808
sky130_fd_sc_hs__buf_4	0.00388	3.08448
sky130_fd_sc_hs__buf_8	0.00878	5.90765
sky130_fd_sc_hs__bufbuf_16	0.00313	12.28367
sky130_fd_sc_hs__bufbuf_8	0.00241	5.95761

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	2.22783	3.32405
sky130_fd_sc_hs__buf_16	0.00000	11.72120	14.36620
sky130_fd_sc_hs__buf_2	0.00000	2.11162	2.30258
sky130_fd_sc_hs__buf_4	0.00000	5.21156	6.90844
sky130_fd_sc_hs__buf_8	0.00000	5.94069	7.24577
sky130_fd_sc_hs__bufbuf_16	0.00000	14.00460	17.17280
sky130_fd_sc_hs__bufbuf_8	0.00000	8.15085	8.33005

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)	0.08803	0.75195	7.44535
sky130_fd_sc_hs__buf_16	A->X (RR)	0.08718	0.45643	7.44397
sky130_fd_sc_hs__buf_2	A->X (RR)	0.09041	0.66555	7.28701
sky130_fd_sc_hs__buf_4	A->X (RR)	0.10803	0.64099	7.83671
sky130_fd_sc_hs__buf_8	A->X (RR)	0.08791	0.51088	7.33444
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.26708	0.65187	7.54688
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.28543	0.68290	7.39516

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.10655	0.56035	3.99273
sky130_fd_sc_hs__buf_16	A->X (FF)	0.12903	0.50356	4.41160
sky130_fd_sc_hs__buf_2	A->X (FF)	0.12367	0.58054	4.10705
sky130_fd_sc_hs__buf_4	A->X (FF)	0.12329	0.53369	4.08151
sky130_fd_sc_hs__buf_8	A->X (FF)	0.13075	0.53845	4.46213
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.32653	0.71163	4.48275
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.28868	0.63152	4.11589

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00625	0.00680	0.02149
	A	0.00296	0.00352	0.01825
sky130_fd_sc_hs__buf_16	A	0.06316	0.06955	0.18132
	A	0.04123	0.04776	0.16011
sky130_fd_sc_hs__buf_2	A	0.00921	0.00997	0.02436
	A	0.00565	0.00640	0.02100
sky130_fd_sc_hs__buf_4	A	0.01515	0.01657	0.04395
	A	0.01020	0.01168	0.03962
sky130_fd_sc_hs__buf_8	A	0.03209	0.03510	0.08909
	A	0.02089	0.02393	0.07859
sky130_fd_sc_hs__bufbuf_16	A	0.07557	0.08063	0.10387
	A	0.07157	0.07692	0.10004
sky130_fd_sc_hs__bufbuf_8	A	0.03788	0.04042	0.05872
	A	0.03479	0.03738	0.05671

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00295	0.00409	0.02025
	A	0.00623	0.00735	0.02345
sky130_fd_sc_hs__buf_16	A	0.04021	0.04893	0.16490
	A	0.06209	0.07078	0.18375
sky130_fd_sc_hs__buf_2	A	0.00501	0.00641	0.02328
	A	0.00859	0.00996	0.02635
sky130_fd_sc_hs__buf_4	A	0.01029	0.01285	0.04194
	A	0.01523	0.01773	0.04571
sky130_fd_sc_hs__buf_8	A	0.01995	0.02472	0.08225
	A	0.03117	0.03590	0.09071
sky130_fd_sc_hs__bufbuf_16	A	0.07027	0.07636	0.10389
	A	0.07429	0.08025	0.10433
sky130_fd_sc_hs__bufbuf_8	A	0.03324	0.03689	0.05652
	A	0.03633	0.03985	0.05819

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00277	0.80379
sky130_fd_sc_hs__clkbuf_16	0.00944	12.48285
sky130_fd_sc_hs__clkbuf_2	0.00278	1.43201
sky130_fd_sc_hs__clkbuf_4	0.00257	3.05417
sky130_fd_sc_hs__clkbuf_8	0.00483	5.95578

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	1.04076	1.04083
sky130_fd_sc_hs__clkbuf_16	0.00000	9.04589	13.17230
sky130_fd_sc_hs__clkbuf_2	0.00000	1.42639	1.74060
sky130_fd_sc_hs__clkbuf_4	0.00000	2.33394	3.33530
sky130_fd_sc_hs__clkbuf_8	0.00000	4.52630	6.58821

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)	0.09127	0.76831	7.60951
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.11829	0.57154	7.99996
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.09938	0.70431	7.48372
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.12623	0.70187	7.91654
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.11860	0.62040	7.81162

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.09963	0.68144	6.01150
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.15090	0.60371	6.64988
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.11631	0.64961	5.71285
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.15354	0.70381	6.45111
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.14711	0.63596	6.39004

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00597	0.00644	0.01973
	A	0.00244	0.00292	0.01636
sky130_fd_sc_hs__clkbuf_16	A	0.04868	0.05187	0.10762
	A	0.03663	0.04010	0.09704
sky130_fd_sc_hs__clkbuf_2	A	0.00817	0.00858	0.02008
	A	0.00474	0.00515	0.01672
sky130_fd_sc_hs__clkbuf_4	A	0.01290	0.01361	0.02643
	A	0.00963	0.01036	0.02370
sky130_fd_sc_hs__clkbuf_8	A	0.02469	0.02630	0.05338
	A	0.01851	0.02026	0.04865

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00238	0.00333	0.01829
	A	0.00591	0.00685	0.02181
sky130_fd_sc_hs__clkbuf_16	A	0.03054	0.03655	0.10074
	A	0.04260	0.04806	0.10802
sky130_fd_sc_hs__clkbuf_2	A	0.00370	0.00470	0.01916
	A	0.00715	0.00811	0.02191
sky130_fd_sc_hs__clkbuf_4	A	0.00780	0.00924	0.02440
	A	0.01106	0.01250	0.02673
sky130_fd_sc_hs__clkbuf_8	A	0.01517	0.01821	0.04834
	A	0.02134	0.02419	0.05372

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00263	0.81526
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00267	0.81198
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00269	0.81241
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00262	0.81107
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00266	0.81153
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00269	0.80964

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	1.98798	2.04989
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	1.14874	1.89726
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	1.14753	1.89727
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	3.94080	3.99749
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	1.41794	2.17484
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	1.39706	2.17244

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)**	0.14902	0.81037	7.27534
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.16495	0.83498	7.27481
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.18766	0.88392	7.38793
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.27075	0.93104	7.36662
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.37605	1.04873	7.50376
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.57530	1.27663	7.79460

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.14812	0.72673	6.23198
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.20936	0.81337	6.41956
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.31000	0.95995	6.68269
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.27061	0.84912	6.31050
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.42923	1.03605	6.62994
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.71880	1.37169	7.08733

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00500	0.00590	0.02265
	A	0.00837	0.00927	0.02617
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00524	0.00596	0.02187
	A	0.00864	0.00937	0.02543
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00579	0.00626	0.02156
	A	0.00923	0.00969	0.02514
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01086	0.01166	0.02834
	A	0.01422	0.01503	0.03177
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01163	0.01223	0.02797
	A	0.01502	0.01563	0.03153
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01362	0.01400	0.02905
	A	0.01706	0.01741	0.03268

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00807	0.00872	0.02532
	A	0.00471	0.00534	0.02177
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00848	0.00906	0.02497
	A	0.00507	0.00565	0.02133
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00984	0.01035	0.02591
	A	0.00641	0.00692	0.02218
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01377	0.01439	0.03082
	A	0.01043	0.01095	0.02723
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01473	0.01519	0.03103
	A	0.01133	0.01180	0.02733
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01783	0.01823	0.03323
	A	0.01439	0.01479	0.02978

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00339	1.02835
sky130_fd_sc_hs__clkinv_16	0.05088	15.52297
sky130_fd_sc_hs__clkinv_2	0.00653	2.04422
sky130_fd_sc_hs__clkinv_4	0.01296	3.98157
sky130_fd_sc_hs__clkinv_8	0.02594	7.64831

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	3.01592	5.83345
sky130_fd_sc_hs__clkinv_16	0.00000	10.42540	19.11600
sky130_fd_sc_hs__clkinv_2	0.00000	1.39038	2.48485
sky130_fd_sc_hs__clkinv_4	0.00000	2.64088	4.77691
sky130_fd_sc_hs__clkinv_8	0.00000	5.35291	9.55381

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)	0.03252	0.75122	9.57332
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.02421	0.43542	9.65523
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.03057	0.69037	10.07180
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.02719	0.59499	9.94305
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.02743	0.51448	9.83176

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.04024	0.85686	11.05910
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.02930	0.50006	10.92940
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.03595	0.74614	11.01380
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.03198	0.65389	10.96330
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.03224	0.57164	10.84340

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00014	0.00039	0.00387
	A	0.00418	0.00460	0.00792
sky130_fd_sc_hs__clkinv_16	A	-0.00948	0.00168	0.03914
	A	0.05530	0.06670	0.10437
sky130_fd_sc_hs__clkinv_2	A	-0.00063	0.00020	0.00505
	A	0.00767	0.00857	0.01357
sky130_fd_sc_hs__clkinv_4	A	-0.00162	0.00049	0.01064
	A	0.01488	0.01705	0.02713
sky130_fd_sc_hs__clkinv_8	A	-0.00300	0.00208	0.02491
	A	0.03004	0.03558	0.05791

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00327	0.00341	0.00547
	A	-0.00105	-0.00070	0.00112
sky130_fd_sc_hs__clkinv_16	A	0.04385	0.05121	0.08216
	A	-0.02087	-0.01378	0.01660
sky130_fd_sc_hs__clkinv_2	A	0.00629	0.00678	0.01066
	A	-0.00205	-0.00137	0.00227
sky130_fd_sc_hs__clkinv_4	A	0.01134	0.01294	0.02090
	A	-0.00513	-0.00370	0.00423
sky130_fd_sc_hs__clkinv_8	A	0.02244	0.02571	0.04428
	A	-0.01057	-0.00732	0.01081

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00158	0.81008
sky130_fd_sc_hs__dlymetal6s4s_1	0.00158	0.80906
sky130_fd_sc_hs__dlymetal6s6s_1	0.00158	0.80779

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	2.19101	3.10475
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	2.19101	3.10475
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	2.19101	3.10475

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)**	0.10240	0.75740	7.05089
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.20764	0.86020	7.04386
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.30180	0.95340	7.12278

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.16928	0.75550	5.01723
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.34029	0.90999	5.05793
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.50145	1.07449	5.21753

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01572	0.01579	0.02727
	A	0.01370	0.01379	0.02531
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01573	0.01595	0.02961
	A	0.01371	0.01394	0.02765
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01575	0.01591	0.02282
	A	0.01374	0.01390	0.02087

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01311	0.01334	0.02159
	A	0.01511	0.01535	0.02312
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01312	0.01355	0.02398
	A	0.01513	0.01556	0.02553
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01314	0.01352	0.02112
	A	0.01514	0.01563	0.02257

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00172	0.00175	0.00554	0.00314	0.80781	0.76453
sky130_fd_sc_hs__dfbbn_2	0.00172	0.00177	0.00553	0.00314	1.57123	1.53572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	10.89650	18.55060
sky130_fd_sc_hs__dfbbn_2	0.00000	11.13890	18.22420

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FR)	0.61236	1.35754	8.26158
	SET_B->Q (FR)	0.28295	1.07037	8.17454
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.69490	1.31819	8.29380
	SET_B->Q (FR)	0.32937	1.02317	8.28263

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FF)	0.62499	1.12384	4.75048
	RESET_B->Q (FF)	0.40257	0.94991	4.77330
	SET_B->Q (RF)	0.24606	0.69305	4.08163
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.68641	1.13068	4.70923
	RESET_B->Q (FF)	0.46318	0.95852	4.75745
	SET_B->Q (RF)	0.30488	0.71449	4.18319

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FR)	0.56158	1.34059	8.26484
	RESET_B->Q_N (FR)	0.34057	1.17398	8.30738
	SET_B->Q_N (RR)	0.18427	0.92304	7.82898
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.57181	1.24642	8.20695
	RESET_B->Q_N (FR)	0.34977	1.07697	8.27080
	SET_B->Q_N (RR)	0.19233	0.83880	7.87208

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FF)	0.50750	1.08429	4.62976
	SET_B->Q_N (FF)	0.19233	0.79734	4.74257
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.55594	1.10905	4.65322
	SET_B->Q_N (FF)	0.21389	0.80080	4.85105

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)	0.01078	0.03165	0.49398
	setup	CLK_N (F)	0.16455	0.11896	-0.37638
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01130	0.03106	0.49658
	setup	CLK_N (F)	0.15603	0.10750	-0.39189

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)	-0.26013	-0.36769	-1.59485
	setup	CLK_N (F)	0.30339	0.39847	1.62812
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.25822	-0.36792	-1.59389
	setup	CLK_N (F)	0.29693	0.39323	1.62611

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)	0.01078	0.03165	0.49398
	setup	CLK_N (F)	0.16455	0.11896	-0.37638
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01130	0.03106	0.49658
	setup	CLK_N (F)	0.15603	0.10750	-0.39189

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)	-0.26013	-0.36769	-1.59485
	setup	CLK_N (F)	0.30339	0.39847	1.62812
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.25822	-0.36792	-1.59389
	setup	CLK_N (F)	0.29693	0.39323	1.62611

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)	0.14996	0.11006	-0.20855
	removal	CLK_N (F)	0.05237	0.07575	0.44511
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.14135	0.10056	-0.22103
	removal	CLK_N (F)	0.04853	0.07682	0.44687

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)	0.14996	0.11006	-0.20855
	removal	CLK_N (F)	0.05237	0.07575	0.44511
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.14135	0.10056	-0.22103
	removal	CLK_N (F)	0.04853	0.07682	0.44687

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 ()	0.37363	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.32487	0.82153	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.39496	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.32487	0.82153	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)	-0.03052	-0.09049	0.45501
	removal	CLK_N (F)	0.05294	0.11254	0.43595
	hold	RESET_B (R)	-0.10504	-0.15781	-0.64224
	setup	RESET_B (R)	0.22129	0.25061	0.87309
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03499	-0.09227	0.77574
	removal	CLK_N (F)	0.05332	0.11254	0.43892
	hold	RESET_B (R)	-0.13927	-0.19802	-0.80475
	setup	RESET_B (R)	0.24105	0.28210	1.00008

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)	-0.03052	-0.09049	0.45501
	removal	CLK_N (F)	0.05294	0.11254	0.43595
	hold	RESET_B (R)	-0.10504	-0.15781	-0.64224
	hold	RESET_B (R)	-0.10519	-0.15896	-0.64304
	setup	RESET_B (R)	0.22129	0.25061	0.85723
	setup	RESET_B (R)	0.17297	0.21370	0.87309
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03499	-0.09227	0.77574
	removal	CLK_N (F)	0.05332	0.11254	0.43892
	hold	RESET_B (R)	-0.14540	-0.21197	-0.82347
	hold	RESET_B (R)	-0.13927	-0.19802	-0.80475
	setup	RESET_B (R)	0.24105	0.28210	1.00008
	setup	RESET_B (R)	0.16989	0.24183	0.97594

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 ()	0.20909	0.82153	16.50020
	min_pulse_width	SET_B ()	0.19081	0.82153	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.24870	0.82153	16.50020
	min_pulse_width	SET_B ()	0.22432	0.82153	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 ()	0.27917	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.27308	0.82153	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.27003	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.27003	0.82153	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 ()	0.26698	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.31573	0.82153	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.30659	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.33706	0.82153	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	0.01214	0.01270	0.02316
	CLK_N	0.01411	0.01470	0.02503
	SET_B	0.01263	0.01334	0.03122
	SET_B	0.01625	0.01696	0.03468
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01510	0.01565	0.02613
	CLK_N	0.01709	0.01766	0.02805
	SET_B	0.01532	0.01617	0.03406
	SET_B	0.01894	0.01980	0.03754

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01339	0.01409	0.02396
	CLK_N	0.01521	0.01590	0.02577
	RESET_B	0.01606	0.01648	0.02243
	RESET_B	0.01708	0.01751	0.02345
	SET_B	0.01672	0.01675	0.03195
	SET_B	0.01309	0.01311	0.02810
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01609	0.01703	0.02697
	CLK_N	0.01789	0.01882	0.02876
	RESET_B	0.01881	0.01947	0.02573
	RESET_B	0.01983	0.02048	0.02657
	SET_B	0.01945	0.01969	0.03488
	SET_B	0.01581	0.01607	0.03090

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01350	0.01420	0.02432
	CLK_N	0.01531	0.01601	0.02605
	RESET_B	0.01613	0.01654	0.02267
	RESET_B	0.01714	0.01757	0.02367
	SET_B	0.01679	0.01681	0.03227
	SET_B	0.01315	0.01317	0.02834
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01621	0.01715	0.02751
	CLK_N	0.01800	0.01893	0.02910
	RESET_B	0.01888	0.01948	0.02597
	RESET_B	0.01989	0.02056	0.02683
	SET_B	0.01952	0.01977	0.03534
	SET_B	0.01588	0.01614	0.03116

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01206	0.01265	0.02288
	CLK_N	0.01403	0.01462	0.02472
	SET_B	0.01255	0.01325	0.03075
	SET_B	0.01616	0.01687	0.03435
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01501	0.01558	0.02600
	CLK_N	0.01701	0.01758	0.02778
	SET_B	0.01523	0.01606	0.03360
	SET_B	0.01885	0.01972	0.03719

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)	0.00919	0.00918	0.01507
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00743	0.00741	0.01329
	(CLK_N * !SET_B * Q * !Q_N)	0.00603	0.00610	0.01123
	(CLK_N * !SET_B * Q * !Q_N)	0.00381	0.00387	0.00900
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00505	0.00512	0.01021
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00286	0.00292	0.00802
	!CLK_N	0.00323	0.00332	0.00893
	!CLK_N	0.00103	0.00111	0.00673
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00923	0.00922	0.01510
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00745	0.00743	0.01331
	(CLK_N * !SET_B * Q * !Q_N)	0.00604	0.00612	0.01125
	(CLK_N * !SET_B * Q * !Q_N)	0.00381	0.00388	0.00902
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00504	0.00511	0.01020
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00284	0.00290	0.00801
	!CLK_N	0.00323	0.00331	0.00895
	!CLK_N	0.00103	0.00111	0.00674

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)	0.00919	0.00930	0.01510
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01097	0.01106	0.01687
	(CLK_N * !SET_B * Q * !Q_N)	0.00270	0.00281	0.00783
	(CLK_N * !SET_B * Q * !Q_N)	0.00492	0.00505	0.01006
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00338	0.00350	0.00861
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00556	0.00571	0.01081
	!CLK_N	0.00154	0.00173	0.00723
	!CLK_N	0.00373	0.00394	0.00942
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00918	0.00926	0.01509
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01096	0.01104	0.01687
	(CLK_N * !SET_B * Q * !Q_N)	0.00263	0.00275	0.00777
	(CLK_N * !SET_B * Q * !Q_N)	0.00485	0.00499	0.01000
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00336	0.00349	0.00861
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00555	0.00570	0.01081
	!CLK_N	0.00152	0.00172	0.00722
	!CLK_N	0.00371	0.00392	0.00942

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)	0.01050	0.01059	0.02203
	(CLK_N * D * SET_B * !Q * Q_N)	0.00830	0.00839	0.01983
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00637	0.00661	0.01775
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00374	0.00398	0.01512
	(!SET_B * Q * !Q_N)	0.00630	0.00656	0.01789
	(!SET_B * Q * !Q_N)	0.00362	0.00387	0.01521
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01054	0.01062	0.02208
	(CLK_N * D * SET_B * !Q * Q_N)	0.00830	0.00838	0.01984
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00637	0.00661	0.01777
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00370	0.00394	0.01511
	(!SET_B * Q * !Q_N)	0.00631	0.00656	0.01791
	(!SET_B * Q * !Q_N)	0.00359	0.00384	0.01520

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)	0.00931	0.00976	0.02160
	(CLK_N * D * SET_B * !Q * Q_N)	0.01152	0.01196	0.02381
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00315	0.00364	0.01499
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00578	0.00628	0.01761
	(!SET_B * Q * !Q_N)	0.00212	0.00267	0.01414
	(!SET_B * Q * !Q_N)	0.00482	0.00538	0.01684
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00936	0.00981	0.02166
	(CLK_N * D * SET_B * !Q * Q_N)	0.01160	0.01205	0.02390
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00319	0.00365	0.01504
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00585	0.00632	0.01770
	(!SET_B * Q * !Q_N)	0.00212	0.00268	0.01415
	(!SET_B * Q * !Q_N)	0.00486	0.00542	0.01688

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)	0.00289	0.00291	0.00290
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00343	-0.00344	-0.00343
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00957	0.00955	0.02375
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00269	0.00263	0.01688
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00285	0.00289	0.00287
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00341	-0.00344	-0.00341
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00957	0.00954	0.02375
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00273	0.00270	0.01694

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)	-0.00261	-0.00272	-0.00273
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00375	0.00367	0.00362
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00134	0.00193	0.01747
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00824	0.00885	0.02438
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00259	-0.00270	-0.00270
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00373	0.00365	0.00360
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00132	0.00187	0.01743
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00812	0.00874	0.02428

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)**	0.01753	0.01797	0.03772
	(D * RESET_B * SET_B * !Q * Q_N)	0.01417	0.01459	0.03435
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01121	0.01160	0.03098
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00742	0.00778	0.02718
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01338	0.01379	0.03348
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00959	0.00999	0.02969
	(!D * SET_B * !Q * Q_N)	0.01077	0.01113	0.03061
	(!D * SET_B * !Q * Q_N)	0.00698	0.00732	0.02682
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01858	0.01883	0.03828
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01436	0.01461	0.03405
	(!D * !SET_B * Q * !Q_N)	0.01192	0.01220	0.03181
	(!D * !SET_B * Q * !Q_N)	0.00815	0.00843	0.02804

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01758	0.01802	0.03777
	(D * RESET_B * SET_B * !Q * Q_N)	0.01421	0.01464	0.03439
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01120	0.01158	0.03096
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00741	0.00777	0.02716
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01340	0.01381	0.03349
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00961	0.01000	0.02970
	(!D * SET_B * !Q * Q_N)	0.01079	0.01116	0.03063
	(!D * SET_B * !Q * Q_N)	0.00700	0.00734	0.02684
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01858	0.01883	0.03827
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01437	0.01462	0.03406
	(!D * !SET_B * Q * !Q_N)	0.01187	0.01215	0.03176
	(!D * !SET_B * Q * !Q_N)	0.00811	0.00838	0.02799

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)	0.00833	0.00922	0.02916
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01211	0.01303	0.03296
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01183	0.01270	0.03230
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01562	0.01650	0.03610
	(!D * SET_B * !Q * Q_N)	0.00922	0.01012	0.02999
	(!D * SET_B * !Q * Q_N)	0.01301	0.01391	0.03378
	(!D * !SET_B * Q * !Q_N)	0.01155	0.01240	0.03267
	(!D * !SET_B * Q * !Q_N)	0.01532	0.01617	0.03645
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00833	0.00923	0.02917
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01212	0.01303	0.03297
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01181	0.01267	0.03228
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01560	0.01647	0.03608
	(!D * SET_B * !Q * Q_N)	0.00922	0.01011	0.02998
	(!D * SET_B * !Q * Q_N)	0.01301	0.01391	0.03378
	(!D * !SET_B * Q * !Q_N)	0.01159	0.01244	0.03270
	(!D * !SET_B * Q * !Q_N)	0.01536	0.01620	0.03649

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK	Q	Q_N
0	1	1	R	0	1
1	1	1	R	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfbbp_1	0.00151	0.00191	0.00636	0.00310	0.80840	0.75470

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	10.66870	18.26400

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RR)	0.59665	1.27973	7.77294
	SET_B->Q (FR)	0.26283	1.04725	8.10765

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.46785	0.90339	4.20242
	RESET_B->Q (FF)	0.38917	0.93051	4.74900
	SET_B->Q (RF)	0.24865	0.68421	4.07426

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)	0.40772	1.11541	7.63991
	RESET_B->Q_N (FR)	0.32885	1.15265	8.20944
	SET_B->Q_N (RR)	0.18863	0.91184	7.74248

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)	0.49473	0.99993	4.07314
	SET_B->Q_N (FF)	0.17701	0.76500	4.60356

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)	-0.06077	-0.10967	-0.18795
	setup	CLK (R)	0.12065	0.14186	0.22860

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)	-0.17143	-0.26257	-1.52168
	setup	CLK (R)	0.28349	0.35157	1.65416

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)	-0.06077	-0.10967	-0.18795
	setup	CLK (R)	0.12065	0.14186	0.22860

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)	-0.17143	-0.26257	-1.52168
	setup	CLK (R)	0.28349	0.35157	1.65416

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)	0.12661	0.13219	0.20383
	removal	CLK (R)	-0.05052	-0.06512	-0.06359

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)	0.12661	0.13219	0.20383
	removal	CLK (R)	-0.05052	-0.06512	-0.06359

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 ()	0.32487	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.33706	0.82153	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)	0.03124	0.00000	1.39697
	removal	CLK (R)	0.08865	0.12252	0.15038
	hold	RESET_B (R)	-0.10788	-0.16806	-0.67156
	setup	RESET_B (R)	0.19719	0.24107	0.91460

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)	0.03124	0.00000	1.39697
	removal	CLK (R)	0.08865	0.12252	0.15038
	hold	RESET_B (R)	-0.10788	-0.16806	-0.67639
	hold	RESET_B (R)	-0.10958	-0.16862	-0.67156
	setup	RESET_B (R)	0.19221	0.23280	0.91460
	setup	RESET_B (R)	0.19719	0.24107	0.88888

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 ()	0.17252	0.82153	16.50020
	min_pulse_width	SET_B ()	0.18471	0.82153	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 ()	0.16643	0.82153	16.50020
	min_pulse_width	CLK ()	0.19995	0.82153	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 ()	0.25175	0.82153	16.50020
	min_pulse_width	CLK ()	0.39800	0.82153	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	0.01430	0.01477	0.02531
	CLK	0.01239	0.01286	0.02301
	SET_B	0.01259	0.01327	0.03141
	SET_B	0.01653	0.01722	0.03514

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01444	0.01488	0.02517
	CLK	0.01235	0.01279	0.02296
	RESET_B	0.01478	0.01518	0.02114
	RESET_B	0.01582	0.01623	0.02219
	SET_B	0.01590	0.01586	0.03115
	SET_B	0.01195	0.01189	0.02699

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01454	0.01499	0.02571
	CLK	0.01245	0.01290	0.02331
	RESET_B	0.01484	0.01524	0.02151
	RESET_B	0.01588	0.01628	0.02245
	SET_B	0.01596	0.01591	0.03149
	SET_B	0.01201	0.01195	0.02724

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01421	0.01469	0.02467
	CLK	0.01231	0.01279	0.02273
	SET_B	0.01250	0.01318	0.03104
	SET_B	0.01643	0.01711	0.03483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00216	0.00240	0.00847
	CLK	0.00023	0.00047	0.00655
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00867	0.00873	0.01484
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00695	0.00701	0.01312
	(!CLK * !SET_B * Q * !Q_N)	0.00513	0.00529	0.01066
	(!CLK * !SET_B * Q * !Q_N)	0.00299	0.00314	0.00851
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00405	0.00421	0.00954
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00192	0.00207	0.00740

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00010	0.00047	0.00641
	CLK	0.00202	0.00240	0.00834
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00697	0.00708	0.01321
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00869	0.00880	0.01492
	(!CLK * !SET_B * Q * !Q_N)	0.00181	0.00196	0.00725
	(!CLK * !SET_B * Q * !Q_N)	0.00397	0.00413	0.00939
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00254	0.00271	0.00810
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00467	0.00485	0.01024

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00586	0.00608	0.01737
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00337	0.00359	0.01488
	(!SET_B * Q * !Q_N)	0.00620	0.00645	0.01794
	(!SET_B * Q * !Q_N)	0.00366	0.00390	0.01540
	(!CLK * D * SET_B * !Q * Q_N)	0.01055	0.01058	0.02215
	(!CLK * D * SET_B * !Q * Q_N)	0.00849	0.00852	0.02008

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)	0.00307	0.00349	0.01496
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00556	0.00597	0.01745
	(!SET_B * Q * !Q_N)	0.00164	0.00213	0.01374
	(!SET_B * Q * !Q_N)	0.00420	0.00469	0.01630
	(!CLK * D * SET_B * !Q * Q_N)	0.00800	0.00843	0.02039
	(!CLK * D * SET_B * !Q * Q_N)	0.01006	0.01049	0.02245

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)	0.00293	0.00295	0.00294
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00424	-0.00426	-0.00425
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00803	0.00799	0.02238
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00031	0.00024	0.01466

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)	-0.00261	-0.00275	-0.00274
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00452	0.00451	0.00446
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00221	0.00269	0.01831
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00990	0.01045	0.02602

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)	0.01281	0.01319	0.03268
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00881	0.00919	0.02868
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01551	0.01579	0.03552
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01172	0.01201	0.03174
	(!D * SET_B * !Q * Q_N)	0.01319	0.01356	0.03313
	(!D * SET_B * !Q * Q_N)	0.00921	0.00957	0.02914
	(!D * !SET_B * Q * !Q_N)	0.01622	0.01666	0.03628
	(!D * !SET_B * Q * !Q_N)	0.01201	0.01243	0.03207

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)	0.01339	0.01409	0.03452
	(D * RESET_B * SET_B * !Q * Q_N)	0.01759	0.01830	0.03873
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00670	0.00752	0.02770
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01070	0.01151	0.03169
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00849	0.00925	0.02971
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01228	0.01304	0.03350
	(!D * SET_B * !Q * Q_N)	0.00675	0.00755	0.02764
	(!D * SET_B * !Q * Q_N)	0.01074	0.01155	0.03164
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01417	0.01508	0.03580
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01797	0.01887	0.03961
	(!D * !SET_B * Q * !Q_N)	0.00896	0.00988	0.03060
	(!D * !SET_B * Q * !Q_N)	0.01318	0.01410	0.03482

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT			OUTPUT	
D	RESET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfrbp_1	0.00179	0.00546	0.00316	0.81861	0.81325
sky130_fd_sc_hs__dfrbp_2	0.00164	0.00519	0.00316	1.61345	1.59248

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	5.85230	9.78648
sky130_fd_sc_hs__dfrbp_2	0.00000	6.61473	9.61801

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)	0.37390	1.05320	7.61689
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.45971	1.03028	7.99386

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.34772	0.78184	3.96948
	RESET_B->Q (FF)	0.50569	1.10872	5.48925
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.39054	0.78006	4.06758
	RESET_B->Q (FF)	0.58459	1.15345	5.71677

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)	0.28647	1.00158	7.59716
	RESET_B->Q_N (FR)	0.44377	1.32259	9.10903
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.27368	0.88412	7.43691
	RESET_B->Q_N (FR)	0.46845	1.25474	9.08029

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)	0.28870	0.80379	4.04157
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.31320	0.81457	4.11906

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)	-0.09576	-0.18832	-0.60656
	setup	CLK (R)	0.22090	0.27281	0.70635
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08707	-0.18583	-0.62988
	setup	CLK (R)	0.23995	0.28871	0.76490

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)	-0.09314	-0.21354	-1.61126
	setup	CLK (R)	0.30073	0.38650	1.86810
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12460	-0.25577	-1.80071
	setup	CLK (R)	0.33583	0.42010	1.97208

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)	-0.09576	-0.18832	-0.60656
	setup	CLK (R)	0.22090	0.27281	0.70635
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08707	-0.18583	-0.62988
	setup	CLK (R)	0.23995	0.28871	0.76490

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)	-0.09314	-0.21354	-1.61126
	setup	CLK (R)	0.30073	0.38650	1.86810
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12460	-0.25577	-1.80071
	setup	CLK (R)	0.33583	0.42010	1.97208

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)	0.24031	0.26544	0.91685
	removal	CLK (R)	-0.16785	-0.22329	-0.87126
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.25505	0.28007	0.94863
	removal	CLK (R)	-0.18426	-0.24121	-0.91347

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)	0.24031	0.26544	0.91685
	removal	CLK (R)	-0.16785	-0.22329	-0.87126
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.25505	0.28007	0.94863
	removal	CLK (R)	-0.18426	-0.24121	-0.91347

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 ()	0.24870	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.20299	0.82153	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.27003	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.22128	0.82153	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 ()	0.20909	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.29440	0.82153	16.50020
	min_pulse_width	CLK ()	0.16034	0.82153	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 ()	0.28831	0.82153	16.50020
	min_pulse_width	CLK ()	0.37058	0.82153	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.30659	0.82153	16.50020
	min_pulse_width	CLK ()	0.37667	0.82153	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	0.01332	0.01368	0.02419
	CLK	0.01132	0.01167	0.02183
sky130_fd_sc_hs__dfrbp_2	CLK	0.01517	0.01554	0.02627
	CLK	0.01318	0.01357	0.02382

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01346	0.01396	0.02401
	CLK	0.01142	0.01190	0.02187
	RESET_B	0.01040	0.01068	0.01859
	RESET_B	0.01414	0.01440	0.02209
sky130_fd_sc_hs__dfrbp_2	CLK	0.01533	0.01615	0.02676
	CLK	0.01335	0.01417	0.02434
	RESET_B	0.01332	0.01393	0.02191
	RESET_B	0.01680	0.01738	0.02507

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01350	0.01400	0.02462
	CLK	0.01145	0.01194	0.02220
	RESET_B	0.01043	0.01072	0.01858
	RESET_B	0.01418	0.01445	0.02225
sky130_fd_sc_hs__dfrbp_2	CLK	0.01538	0.01619	0.02674
	CLK	0.01340	0.01421	0.02455
	RESET_B	0.01337	0.01398	0.02282
	RESET_B	0.01685	0.01743	0.02537

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01327	0.01363	0.02355
	CLK	0.01127	0.01162	0.02152
sky130_fd_sc_hs__dfrbp_2	CLK	0.01512	0.01550	0.02574
	CLK	0.01314	0.01352	0.02353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00332	0.00339	0.00887
	(CLK * RESET_B)	0.00081	0.00087	0.00636
	(CLK * !RESET_B)	0.00040	0.00040	0.00039
	(CLK * !RESET_B)	-0.00106	-0.00106	-0.00108
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00968	0.00983	0.01632
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00705	0.00719	0.01369
	(!CLK * !RESET_B)	0.00040	0.00040	0.00039
	(!CLK * !RESET_B)	-0.00106	-0.00106	-0.00108
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00383	0.00389	0.00924
	(CLK * RESET_B)	0.00164	0.00169	0.00704
	(CLK * !RESET_B)	0.00046	0.00046	0.00045
	(CLK * !RESET_B)	-0.00089	-0.00089	-0.00091
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01188	0.01202	0.01844
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00982	0.00996	0.01638
	(!CLK * !RESET_B)	0.00046	0.00046	0.00045
	(!CLK * !RESET_B)	-0.00089	-0.00089	-0.00091

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00063	0.00074	0.00620
	(CLK * RESET_B)	0.00313	0.00325	0.00872
	(CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(CLK * !RESET_B)	0.00117	0.00118	0.00117
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00628	0.00645	0.01345
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00892	0.00908	0.01608
	(!CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(!CLK * !RESET_B)	0.00117	0.00117	0.00117
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00092	0.00101	0.00636
	(CLK * RESET_B)	0.00312	0.00321	0.00856
	(CLK * !RESET_B)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B)	0.00102	0.00103	0.00102
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00754	0.00766	0.01449
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00961	0.00972	0.01655
	(!CLK * !RESET_B)	-0.00034	-0.00034	-0.00033
	(!CLK * !RESET_B)	0.00102	0.00103	0.00102

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)	0.00608	0.00603	0.01110
	(CLK * D * !Q * Q_N)	-0.00123	-0.00129	0.00378
	(CLK * !D * !Q * Q_N)	0.00285	0.00289	0.00286
	(CLK * !D * !Q * Q_N)	-0.00327	-0.00330	-0.00327
	(!CLK * D * !Q * Q_N)	0.01274	0.01247	0.02063
	(!CLK * D * !Q * Q_N)	0.00532	0.00502	0.01319
	(!CLK * !D * !Q * Q_N)	0.00278	0.00280	0.00279
	(!CLK * !D * !Q * Q_N)	-0.00334	-0.00335	-0.00334
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00684	0.00683	0.01176
	(CLK * D * !Q * Q_N)	-0.00014	-0.00018	0.00477
	(CLK * !D * !Q * Q_N)	0.00314	0.00316	0.00314
	(CLK * !D * !Q * Q_N)	-0.00289	-0.00290	-0.00288
	(!CLK * D * !Q * Q_N)	0.01517	0.01487	0.02288
	(!CLK * D * !Q * Q_N)	0.00833	0.00802	0.01603
	(!CLK * !D * !Q * Q_N)	0.00310	0.00310	0.00309
	(!CLK * !D * !Q * Q_N)	-0.00293	-0.00293	-0.00292

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)	-0.00137	-0.00133	0.00394
	(CLK * D * !Q * Q_N)	0.00595	0.00599	0.01125
	(CLK * !D * !Q * Q_N)	-0.00268	-0.00277	-0.00278
	(CLK * !D * !Q * Q_N)	0.00346	0.00340	0.00338
	(!CLK * D * !Q * Q_N)	0.00472	0.00461	0.01357
	(!CLK * D * !Q * Q_N)	0.01215	0.01206	0.02099
	(!CLK * !D * !Q * Q_N)	-0.00262	-0.00270	-0.00271
	(!CLK * !D * !Q * Q_N)	0.00351	0.00347	0.00344
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00138	-0.00129	0.00391
	(CLK * D * !Q * Q_N)	0.00561	0.00568	0.01087
	(CLK * !D * !Q * Q_N)	-0.00295	-0.00302	-0.00303
	(CLK * !D * !Q * Q_N)	0.00310	0.00303	0.00300
	(!CLK * D * !Q * Q_N)	0.00584	0.00569	0.01442
	(!CLK * D * !Q * Q_N)	0.01268	0.01256	0.02127
	(!CLK * !D * !Q * Q_N)	-0.00292	-0.00298	-0.00299
	(!CLK * !D * !Q * Q_N)	0.00314	0.00307	0.00304

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)	0.01252	0.01285	0.03196
	(D * RESET_B * Q * !Q_N)	0.00847	0.00878	0.02790
	(D * !RESET_B * !Q * Q_N)	0.01272	0.01305	0.03216
	(D * !RESET_B * !Q * Q_N)	0.00866	0.00897	0.02810
	(!D * !Q * Q_N)	0.01272	0.01304	0.03216
	(!D * !Q * Q_N)	0.00866	0.00896	0.02809
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01147	0.01182	0.03103
	(D * RESET_B * Q * !Q_N)	0.00750	0.00784	0.02705
	(D * !RESET_B * !Q * Q_N)	0.01140	0.01174	0.03093
	(D * !RESET_B * !Q * Q_N)	0.00743	0.00776	0.02697
	(!D * !Q * Q_N)	0.01139	0.01174	0.03093
	(!D * !Q * Q_N)	0.00743	0.00776	0.02697

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)	0.00679	0.00772	0.02737
	(D * RESET_B * Q * !Q_N)	0.01085	0.01179	0.03144
	(D * RESET_B * !Q * Q_N)	0.01257	0.01343	0.03363
	(D * RESET_B * !Q * Q_N)	0.01651	0.01736	0.03757
	(D * !RESET_B * !Q * Q_N)	0.00637	0.00728	0.02699
	(D * !RESET_B * !Q * Q_N)	0.01043	0.01134	0.03106
	(!D * RESET_B * Q * !Q_N)	0.01317	0.01421	0.03422
	(!D * RESET_B * Q * !Q_N)	0.01734	0.01837	0.03841
	(!D * !Q * Q_N)	0.00636	0.00727	0.02700
	(!D * !Q * Q_N)	0.01043	0.01133	0.03107
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00685	0.00766	0.02749
	(D * RESET_B * Q * !Q_N)	0.01084	0.01164	0.03145
	(D * RESET_B * !Q * Q_N)	0.01527	0.01597	0.03596
	(D * RESET_B * !Q * Q_N)	0.01934	0.02006	0.04003
	(D * !RESET_B * !Q * Q_N)	0.00681	0.00761	0.02749
	(D * !RESET_B * !Q * Q_N)	0.01077	0.01160	0.03146
	(!D * RESET_B * Q * !Q_N)	0.01435	0.01526	0.03542
	(!D * RESET_B * Q * !Q_N)	0.01821	0.01909	0.03927
	(!D * !Q * Q_N)	0.00681	0.00762	0.02750
	(!D * !Q * Q_N)	0.01077	0.01159	0.03147

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00176	0.00515	0.00303	0.79296

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	5.39342	9.01321

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)	0.39751	1.15656	8.08062

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)	0.31883	0.81919	4.37257
	RESET_B->Q (FF)	0.46368	1.06172	5.33755

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)	0.01790	0.02879	0.38312
	setup	CLK_N (F)	0.13045	0.10900	-0.12227

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)	-0.12590	-0.25635	-1.37170
	setup	CLK_N (F)	0.37073	0.44971	1.67296

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)	0.01790	0.02879	0.38312
	setup	CLK_N (F)	0.13045	0.10900	-0.12227

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)	-0.12590	-0.25635	-1.37170
	setup	CLK_N (F)	0.37073	0.44971	1.67296

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)	0.14540	0.09600	-0.01740
	removal	CLK_N (F)	-0.08031	-0.04565	0.06185

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)	0.14540	0.09600	-0.01740
	removal	CLK_N (F)	-0.08031	-0.04565	0.06185

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 ()	0.18776	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.24870	0.82153	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 ()	0.21823	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.37363	0.82153	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 ()	0.21823	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.19690	0.82153	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	0.02039	0.02172	0.04246
	CLK_N	0.02420	0.02553	0.04638

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01886	0.01991	0.04057
	CLK_N	0.02258	0.02363	0.04400
	RESET_B	0.01845	0.01874	0.03496
	RESET_B	0.02541	0.02569	0.04107

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)	0.00956	0.00973	0.01623
	(CLK_N * RESET_B)	0.00726	0.00742	0.01391
	(CLK_N * !RESET_B)	0.00040	0.00040	0.00039
	(CLK_N * !RESET_B)	-0.00105	-0.00105	-0.00107
	(!CLK_N * RESET_B)	0.00323	0.00329	0.00878
	(!CLK_N * RESET_B)	0.00085	0.00091	0.00640
	(!CLK_N * !RESET_B)	0.00040	0.00040	0.00039
	(!CLK_N * !RESET_B)	-0.00104	-0.00105	-0.00107

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)	0.00723	0.00739	0.01442
	(CLK_N * RESET_B)	0.00954	0.00969	0.01673
	(CLK_N * !RESET_B)	-0.00031	-0.00030	-0.00030
	(CLK_N * !RESET_B)	0.00116	0.00116	0.00115
	(!CLK_N * RESET_B)	0.00070	0.00081	0.00627
	(!CLK_N * RESET_B)	0.00307	0.00319	0.00866
	(!CLK_N * !RESET_B)	-0.00031	-0.00031	-0.00030
	(!CLK_N * !RESET_B)	0.00116	0.00117	0.00115

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)	0.01261	0.01240	0.02053
	(CLK_N * D * !Q)	0.00571	0.00547	0.01362
	(CLK_N * !D * !Q)	0.00300	0.00304	0.00301
	(CLK_N * !D * !Q)	-0.00292	-0.00294	-0.00292
	(!CLK_N * D * !Q)	0.00581	0.00582	0.01087
	(!CLK_N * D * !Q)	-0.00116	-0.00120	0.00389
	(!CLK_N * !D * !Q)	0.00295	0.00295	0.00294
	(!CLK_N * !D * !Q)	-0.00300	-0.00299	-0.00299

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)	0.00555	0.00554	0.01448
	(CLK_N * D * !Q)	0.01245	0.01247	0.02138
	(CLK_N * !D * !Q)	-0.00286	-0.00291	-0.00293
	(CLK_N * !D * !Q)	0.00310	0.00303	0.00301
	(!CLK_N * D * !Q)	-0.00120	-0.00112	0.00415
	(!CLK_N * D * !Q)	0.00577	0.00589	0.01113
	(!CLK_N * !D * !Q)	-0.00278	-0.00284	-0.00286
	(!CLK_N * !D * !Q)	0.00318	0.00310	0.00308

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)	0.01179	0.01210	0.03149
	(D * RESET_B * Q)	0.00802	0.00831	0.02771
	(D * RESET_B * !Q)	0.01826	0.01861	0.03829
	(D * RESET_B * !Q)	0.01456	0.01491	0.03459
	(D * !RESET_B * !Q)	0.01160	0.01192	0.03129
	(D * !RESET_B * !Q)	0.00784	0.00814	0.02751
	(!D * RESET_B * Q)	0.01805	0.01823	0.03781
	(!D * RESET_B * Q)	0.01421	0.01438	0.03396
	(!D * !Q)	0.01160	0.01193	0.03129
	(!D * !Q)	0.00783	0.00814	0.02751

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)	0.00845	0.00918	0.02911
	(D * RESET_B * Q)	0.01222	0.01297	0.03288
	(D * !RESET_B * !Q)	0.00844	0.00916	0.02909
	(D * !RESET_B * !Q)	0.01221	0.01295	0.03287
	(!D * !Q)	0.00841	0.00915	0.02909
	(!D * !Q)	0.01219	0.01293	0.03286

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00176	0.00541	0.00318	0.82645
sky130_fd_sc_hs__dfrtp_2	0.00176	0.00531	0.00316	1.58211
sky130_fd_sc_hs__dfrtp_4	0.00177	0.00550	0.00316	3.19441

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	5.36221	8.87611
sky130_fd_sc_hs__dfrtp_2	0.00000	5.96689	9.10888
sky130_fd_sc_hs__dfrtp_4	0.00000	8.24798	12.45580

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)	0.31262	0.99764	7.58010
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.30978	0.87829	7.40786
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.40285	0.90380	7.70263

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.32846	0.76329	3.98164
	RESET_B->Q (FF)	0.47324	1.07870	5.48695
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.36374	0.76006	3.90865
	RESET_B->Q (FF)	0.50673	1.07240	5.41394
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.36840	0.73453	4.12818
	RESET_B->Q (FF)	0.52524	1.05747	5.64882

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)	-0.10644	-0.20160	-0.64104
	setup	CLK (R)	0.24243	0.29139	0.81107
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.10508	-0.19786	-0.63126
	setup	CLK (R)	0.24027	0.29008	0.80378
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10510	-0.19678	-0.62003
	setup	CLK (R)	0.25130	0.29519	0.76632

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)	-0.09057	-0.21330	-1.49442
	setup	CLK (R)	0.29386	0.37929	1.86714
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08288	-0.20781	-1.48450
	setup	CLK (R)	0.29112	0.37824	1.86076
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09798	-0.21880	-1.58532
	setup	CLK (R)	0.31640	0.39937	1.89318

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)	-0.10644	-0.20160	-0.64104
	setup	CLK (R)	0.24243	0.29139	0.81107
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.10508	-0.19786	-0.63126
	setup	CLK (R)	0.24027	0.29008	0.80378
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10510	-0.19678	-0.62003
	setup	CLK (R)	0.25130	0.29519	0.76632

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)	-0.09057	-0.21330	-1.49442
	setup	CLK (R)	0.29386	0.37929	1.86714
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08288	-0.20781	-1.48450
	setup	CLK (R)	0.29112	0.37824	1.86076
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09798	-0.21880	-1.58532
	setup	CLK (R)	0.31640	0.39937	1.89318

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)	0.26010	0.28091	0.97924
	removal	CLK (R)	-0.17060	-0.22826	-0.88295
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.25667	0.28018	0.97493
	removal	CLK (R)	-0.16814	-0.22287	-0.87814
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.27001	0.28682	0.95622
	removal	CLK (R)	-0.18087	-0.23260	-0.87231

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)	0.26010	0.28091	0.97924
	removal	CLK (R)	-0.17060	-0.22826	-0.88295
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.25667	0.28018	0.97493
	removal	CLK (R)	-0.16814	-0.22287	-0.87814
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.27001	0.28682	0.95622
	removal	CLK (R)	-0.18087	-0.23260	-0.87231

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 ()	0.24565	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.18776	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.24870	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.19690	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.25784	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.19995	0.82153	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 ()	0.15120	0.82153	16.50020
	min_pulse_width	CLK ()	0.12377	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.15729	0.82153	16.50020
	min_pulse_width	CLK ()	0.12987	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.21518	0.82153	16.50020
	min_pulse_width	CLK ()	0.13596	0.82153	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 ()	0.31269	0.82153	16.50020
	min_pulse_width	CLK ()	0.36449	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.30964	0.82153	16.50020
	min_pulse_width	CLK ()	0.36449	0.82153	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.33402	0.82153	16.50020
	min_pulse_width	CLK ()	0.39191	0.82153	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	0.02373	0.02435	0.04453
	CLK	0.01972	0.02035	0.04068
sky130_fd_sc_hs__dfrtp_2	CLK	0.02629	0.02717	0.04737
	CLK	0.02232	0.02318	0.04367
sky130_fd_sc_hs__dfrtp_4	CLK	0.03354	0.03476	0.05508
	CLK	0.02940	0.03063	0.05167

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02505	0.02592	0.04607
	CLK	0.02084	0.02170	0.04160
	RESET_B	0.01855	0.01897	0.03456
	RESET_B	0.02598	0.02639	0.04187
sky130_fd_sc_hs__dfrtp_2	CLK	0.02696	0.02810	0.04889
	CLK	0.02279	0.02392	0.04387
	RESET_B	0.02062	0.02133	0.03845
	RESET_B	0.02793	0.02863	0.04417
sky130_fd_sc_hs__dfrtp_4	CLK	0.03486	0.03665	0.05765
	CLK	0.03052	0.03226	0.05230
	RESET_B	0.02804	0.02934	0.04655
	RESET_B	0.03557	0.03685	0.05253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00328	0.00335	0.00884
	(CLK * RESET_B)	0.00079	0.00085	0.00635
	(CLK * !RESET_B)	0.00039	0.00039	0.00038
	(CLK * !RESET_B)	-0.00104	-0.00105	-0.00106
	(!CLK * RESET_B)	0.00996	0.01011	0.01667
	(!CLK * RESET_B)	0.00732	0.00746	0.01402
	(!CLK * !RESET_B)	0.00039	0.00039	0.00038
	(!CLK * !RESET_B)	-0.00104	-0.00104	-0.00106
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00320	0.00327	0.00878
	(CLK * RESET_B)	0.00074	0.00080	0.00632
	(CLK * !RESET_B)	0.00040	0.00040	0.00039
	(CLK * !RESET_B)	-0.00104	-0.00104	-0.00106
	(!CLK * RESET_B)	0.00954	0.00971	0.01631
	(!CLK * RESET_B)	0.00695	0.00712	0.01372
	(!CLK * !RESET_B)	0.00040	0.00040	0.00039
	(!CLK * !RESET_B)	-0.00104	-0.00104	-0.00106
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00334	0.00340	0.00889
	(CLK * RESET_B)	0.00085	0.00090	0.00640
	(CLK * !RESET_B)	0.00042	0.00042	0.00041
	(CLK * !RESET_B)	-0.00103	-0.00103	-0.00105
	(!CLK * RESET_B)	0.01096	0.01110	0.01753
	(!CLK * RESET_B)	0.00833	0.00846	0.01489
	(!CLK * !RESET_B)	0.00042	0.00042	0.00041
	(!CLK * !RESET_B)	-0.00103	-0.00103	-0.00105

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00061	0.00072	0.00619
	(CLK * RESET_B)	0.00310	0.00322	0.00869
	(CLK * !RESET_B)	-0.00029	-0.00030	-0.00029
	(CLK * !RESET_B)	0.00115	0.00116	0.00114
	(!CLK * RESET_B)	0.00662	0.00679	0.01395
	(!CLK * RESET_B)	0.00926	0.00943	0.01659
	(!CLK * !RESET_B)	-0.00029	-0.00030	-0.00029
	(!CLK * !RESET_B)	0.00115	0.00115	0.00114
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00061	0.00073	0.00621
	(CLK * RESET_B)	0.00307	0.00320	0.00868
	(CLK * !RESET_B)	-0.00029	-0.00029	-0.00028
	(CLK * !RESET_B)	0.00116	0.00117	0.00115
	(!CLK * RESET_B)	0.00663	0.00682	0.01403
	(!CLK * RESET_B)	0.00922	0.00940	0.01662
	(!CLK * !RESET_B)	-0.00029	-0.00029	-0.00028
	(!CLK * !RESET_B)	0.00116	0.00116	0.00115
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00065	0.00076	0.00623
	(CLK * RESET_B)	0.00313	0.00325	0.00872
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B)	0.00117	0.00119	0.00117
	(!CLK * RESET_B)	0.00676	0.00690	0.01400
	(!CLK * RESET_B)	0.00939	0.00953	0.01664
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00117	0.00118	0.00117

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)	0.00606	0.00600	0.01108
	(CLK * D * !Q)	-0.00123	-0.00130	0.00378
	(CLK * !D * !Q)	0.00285	0.00288	0.00285
	(CLK * !D * !Q)	-0.00326	-0.00328	-0.00326
	(!CLK * D * !Q)	0.01307	0.01280	0.02100
	(!CLK * D * !Q)	0.00564	0.00537	0.01355
	(!CLK * !D * !Q)	0.00276	0.00276	0.00275
	(!CLK * !D * !Q)	-0.00337	-0.00337	-0.00336
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00594	0.00590	0.01098
	(CLK * D * !Q)	-0.00125	-0.00131	0.00379
	(CLK * !D * !Q)	0.00283	0.00286	0.00284
	(CLK * !D * !Q)	-0.00320	-0.00323	-0.00321
	(!CLK * D * !Q)	0.01258	0.01237	0.02060
	(!CLK * D * !Q)	0.00530	0.00504	0.01330
	(!CLK * !D * !Q)	0.00275	0.00274	0.00274
	(!CLK * !D * !Q)	-0.00331	-0.00329	-0.00330
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00624	0.00619	0.01126
	(CLK * D * !Q)	-0.00115	-0.00122	0.00386
	(CLK * !D * !Q)	0.00303	0.00306	0.00304
	(CLK * !D * !Q)	-0.00319	-0.00321	-0.00319
	(!CLK * D * !Q)	0.01398	0.01369	0.02180
	(!CLK * D * !Q)	0.00645	0.00615	0.01426
	(!CLK * !D * !Q)	0.00280	0.00280	0.00279
	(!CLK * !D * !Q)	-0.00344	-0.00344	-0.00343

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)	-0.00138	-0.00135	0.00393
	(CLK * D * !Q)	0.00592	0.00596	0.01122
	(CLK * !D * !Q)	-0.00267	-0.00276	-0.00277
	(CLK * !D * !Q)	0.00343	0.00339	0.00335
	(!CLK * D * !Q)	0.00493	0.00484	0.01392
	(!CLK * D * !Q)	0.01238	0.01230	0.02136
	(!CLK * !D * !Q)	-0.00258	-0.00266	-0.00267
	(!CLK * !D * !Q)	0.00352	0.00348	0.00345
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00135	-0.00129	0.00399
	(CLK * D * !Q)	0.00585	0.00592	0.01116
	(CLK * !D * !Q)	-0.00265	-0.00273	-0.00274
	(CLK * !D * !Q)	0.00340	0.00334	0.00332
	(!CLK * D * !Q)	0.00495	0.00491	0.01404
	(!CLK * D * !Q)	0.01227	0.01225	0.02135
	(!CLK * !D * !Q)	-0.00257	-0.00264	-0.00265
	(!CLK * !D * !Q)	0.00347	0.00342	0.00341
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00151	-0.00147	0.00380
	(CLK * D * !Q)	0.00589	0.00593	0.01120
	(CLK * !D * !Q)	-0.00282	-0.00290	-0.00291
	(CLK * !D * !Q)	0.00341	0.00335	0.00333
	(!CLK * D * !Q)	0.00520	0.00507	0.01407
	(!CLK * D * !Q)	0.01274	0.01260	0.02162
	(!CLK * !D * !Q)	-0.00258	-0.00266	-0.00267
	(!CLK * !D * !Q)	0.00364	0.00360	0.00357

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)	0.01293	0.01323	0.03230
	(D * RESET_B * Q)	0.00882	0.00910	0.02819
	(D * !RESET_B * !Q)	0.01328	0.01359	0.03265
	(D * !RESET_B * !Q)	0.00917	0.00946	0.02853
	(!D * !Q)	0.01328	0.01358	0.03266
	(!D * !Q)	0.00917	0.00945	0.02854
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01284	0.01315	0.03222
	(D * RESET_B * Q)	0.00876	0.00904	0.02814
	(D * !RESET_B * !Q)	0.01320	0.01351	0.03259
	(D * !RESET_B * !Q)	0.00911	0.00940	0.02849
	(!D * !Q)	0.01320	0.01351	0.03258
	(!D * !Q)	0.00911	0.00939	0.02848
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01354	0.01383	0.03276
	(D * RESET_B * Q)	0.00930	0.00959	0.02852
	(D * !RESET_B * !Q)	0.01379	0.01408	0.03302
	(D * !RESET_B * !Q)	0.00955	0.00984	0.02878
	(!D * !Q)	0.01379	0.01408	0.03301
	(!D * !Q)	0.00955	0.00983	0.02877

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)**	0.00683	0.00774	0.02738
	(D * RESET_B * Q)	0.01094	0.01185	0.03150
	(D * RESET_B * !Q)	0.01294	0.01378	0.03396
	(D * RESET_B * !Q)	0.01691	0.01775	0.03793
	(D * !RESET_B * !Q)	0.00634	0.00723	0.02691
	(D * !RESET_B * !Q)	0.01045	0.01134	0.03103
	(!D * RESET_B * Q)	0.01356	0.01457	0.03456
	(!D * RESET_B * Q)	0.01781	0.01882	0.03884
	(!D * !Q)	0.00633	0.00723	0.02692
	(!D * !Q)	0.01045	0.01133	0.03104
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00685	0.00776	0.02740
	(D * RESET_B * Q)	0.01094	0.01185	0.03150
	(D * RESET_B * !Q)	0.01261	0.01346	0.03366
	(D * RESET_B * !Q)	0.01658	0.01743	0.03762
	(D * !RESET_B * !Q)	0.00636	0.00726	0.02695
	(D * !RESET_B * !Q)	0.01046	0.01135	0.03105
	(!D * RESET_B * Q)	0.01358	0.01460	0.03459
	(!D * RESET_B * Q)	0.01779	0.01881	0.03882
	(!D * !Q)	0.00636	0.00726	0.02695
	(!D * !Q)	0.01046	0.01135	0.03105
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00712	0.00792	0.02755
	(D * RESET_B * Q)	0.01135	0.01217	0.03179
	(D * RESET_B * !Q)	0.01429	0.01511	0.03511
	(D * RESET_B * !Q)	0.01837	0.01921	0.03921
	(D * !RESET_B * !Q)	0.00671	0.00760	0.02717
	(D * !RESET_B * !Q)	0.01094	0.01186	0.03141
	(!D * RESET_B * Q)	0.01385	0.01477	0.03482
	(!D * RESET_B * Q)	0.01823	0.01915	0.03921
	(!D * !Q)	0.00670	0.00760	0.02718
	(!D * !Q)	0.01093	0.01185	0.03143

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00174	0.00325	0.00313	0.79201	0.77323
sky130_fd_sc_hs__dfsbp_2	0.00174	0.00328	0.00314	1.60979	1.56384

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	5.77226	6.55184
sky130_fd_sc_hs__dfsbp_2	0.00000	5.92451	6.26035

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)	0.41759	1.09549	7.59948
	SET_B->Q (FR)	0.45236	1.33292	9.29097
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.50249	1.05500	7.67951
	SET_B->Q (FR)	0.55955	1.31471	9.55340

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.40244	0.83004	3.93768
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.45646	0.83802	4.05071

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)	0.33861	1.06537	7.67936
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.34189	0.95567	7.56656

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)	0.32269	0.84422	4.01355
	SET_B->Q_N (FF)	0.34455	1.08329	5.76222
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.35749	0.85309	4.09522
	SET_B->Q_N (FF)	0.39259	1.11361	6.03592

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)	-0.07756	-0.16867	-0.56694
	setup	CLK (R)	0.16068	0.22109	0.60050
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07890	-0.16563	-0.55346
	setup	CLK (R)	0.14857	0.21146	0.57855

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)	-0.08584	-0.20743	-1.58578
	setup	CLK (R)	0.33006	0.41639	1.97865
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.09730	-0.22010	-1.66772
	setup	CLK (R)	0.32121	0.40780	1.96618

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)	-0.07756	-0.16867	-0.56694
	setup	CLK (R)	0.16068	0.22109	0.60050
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07890	-0.16563	-0.55346
	setup	CLK (R)	0.14857	0.21146	0.57855

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)	-0.08584	-0.20743	-1.58578
	setup	CLK (R)	0.33006	0.41639	1.97865
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.09730	-0.22010	-1.66772
	setup	CLK (R)	0.32121	0.40780	1.96618

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)	-0.14678	-0.21584	-0.79808
	removal	CLK (R)	0.18558	0.24674	0.83528
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.14814	-0.21333	-0.79474
	removal	CLK (R)	0.18636	0.24902	0.82366

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)	-0.14678	-0.21584	-0.79808
	removal	CLK (R)	0.18558	0.24674	0.83528
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.14814	-0.21333	-0.79474
	removal	CLK (R)	0.18636	0.24902	0.82366

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 ()	0.33402	0.82153	16.50020
	min_pulse_width	SET_B ()	0.34925	0.82153	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.36144	0.82153	16.50020
	min_pulse_width	SET_B ()	0.43870	0.88886	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 ()	0.24870	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.32183	0.82153	16.50020
	min_pulse_width	CLK ()	0.19995	0.82153	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 ()	0.26089	0.82153	16.50020
	min_pulse_width	CLK ()	0.43152	0.82153	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.25175	0.82153	16.50020
	min_pulse_width	CLK ()	0.41933	0.82153	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	0.01375	0.01406	0.02452
	CLK	0.01176	0.01207	0.02219
	SET_B	0.01284	0.01296	0.01776
	SET_B	0.01470	0.01483	0.01927
sky130_fd_sc_hs__dfsbp_2	CLK	0.01647	0.01672	0.02771
	CLK	0.01445	0.01472	0.02498
	SET_B	0.01506	0.01550	0.02101
	SET_B	0.01289	0.01276	0.01891

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01424	0.01467	0.02443
	CLK	0.01235	0.01276	0.02243
sky130_fd_sc_hs__dfsbp_2	CLK	0.01674	0.01741	0.02746
	CLK	0.01481	0.01547	0.02524

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01428	0.01471	0.02495
	CLK	0.01239	0.01280	0.02273
sky130_fd_sc_hs__dfsbp_2	CLK	0.01679	0.01746	0.02805
	CLK	0.01486	0.01552	0.02562

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01369	0.01401	0.02399
	CLK	0.01170	0.01202	0.02188
	SET_B	0.01278	0.01291	0.01748
	SET_B	0.01464	0.01477	0.01911
sky130_fd_sc_hs__dfsbp_2	CLK	0.01641	0.01667	0.02695
	CLK	0.01440	0.01467	0.02462
	SET_B	0.01080	0.01067	0.01666
	SET_B	0.01284	0.01271	0.01867

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00297	0.00309	0.00892
	CLK	0.00074	0.00085	0.00669
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00893	0.00897	0.01413
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00648	0.00652	0.01167
	(!CLK * !SET_B * Q * !Q_N)	0.00705	0.00712	0.01204
	(!CLK * !SET_B * Q * !Q_N)	0.00450	0.00457	0.00949
sky130_fd_sc_hs__dfsbp_2	CLK	0.00296	0.00308	0.00891
	CLK	0.00072	0.00083	0.00668
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00884	0.00889	0.01406
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00631	0.00635	0.01152
	(!CLK * !SET_B * Q * !Q_N)	0.00703	0.00711	0.01204
	(!CLK * !SET_B * Q * !Q_N)	0.00442	0.00449	0.00942

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00042	0.00065	0.00636
	CLK	0.00264	0.00288	0.00859
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00651	0.00657	0.01207
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00895	0.00903	0.01453
	(!CLK * !SET_B * Q * !Q_N)	0.00381	0.00394	0.00881
	(!CLK * !SET_B * Q * !Q_N)	0.00637	0.00650	0.01136
sky130_fd_sc_hs__dfsbp_2	CLK	0.00041	0.00064	0.00636
	CLK	0.00264	0.00288	0.00860
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00625	0.00632	0.01183
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00878	0.00886	0.01437
	(!CLK * !SET_B * Q * !Q_N)	0.00367	0.00381	0.00869
	(!CLK * !SET_B * Q * !Q_N)	0.00630	0.00643	0.01131

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)	0.00217	0.00216	0.00217
	(CLK * Q * !Q_N)	-0.00184	-0.00183	-0.00184
	(!CLK * D * Q * !Q_N)	0.00237	0.00240	0.00238
	(!CLK * D * Q * !Q_N)	-0.00163	-0.00164	-0.00163
	(!CLK * !D * Q * !Q_N)	0.00458	0.00462	0.00969
	(!CLK * !D * Q * !Q_N)	0.00041	0.00044	0.00551
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00220	0.00221	0.00220
	(CLK * Q * !Q_N)	-0.00179	-0.00179	-0.00179
	(!CLK * D * Q * !Q_N)	0.00235	0.00236	0.00235
	(!CLK * D * Q * !Q_N)	-0.00163	-0.00163	-0.00163
	(!CLK * !D * Q * !Q_N)	0.00439	0.00445	0.00954
	(!CLK * !D * Q * !Q_N)	0.00029	0.00031	0.00541

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)	-0.00203	-0.00207	-0.00206
	(CLK * Q * !Q_N)	0.00200	0.00198	0.00195
	(!CLK * D * Q * !Q_N)	-0.00223	-0.00227	-0.00227
	(!CLK * D * Q * !Q_N)	0.00181	0.00177	0.00175
	(!CLK * !D * Q * !Q_N)	-0.00005	0.00014	0.00543
	(!CLK * !D * Q * !Q_N)	0.00411	0.00433	0.00960
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00206	-0.00210	-0.00209
	(CLK * Q * !Q_N)	0.00195	0.00192	0.00190
	(!CLK * D * Q * !Q_N)	-0.00221	-0.00226	-0.00225
	(!CLK * D * Q * !Q_N)	0.00180	0.00177	0.00174
	(!CLK * !D * Q * !Q_N)	-0.00002	0.00019	0.00549
	(!CLK * !D * Q * !Q_N)	0.00410	0.00433	0.00962

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)	0.01333	0.01360	0.03263
	(D * Q * !Q_N)	0.00943	0.00969	0.02873
	(!D * SET_B * !Q * Q_N)	0.01296	0.01323	0.03227
	(!D * SET_B * !Q * Q_N)	0.00907	0.00932	0.02838
	(!D * !SET_B * Q * !Q_N)	0.02313	0.02357	0.04303
	(!D * !SET_B * Q * !Q_N)	0.01891	0.01935	0.03882
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01318	0.01346	0.03250
	(D * Q * !Q_N)	0.00922	0.00948	0.02855
	(!D * SET_B * !Q * Q_N)	0.01291	0.01318	0.03225
	(!D * SET_B * !Q * Q_N)	0.00896	0.00921	0.02829
	(!D * !SET_B * Q * !Q_N)	0.02279	0.02324	0.04273
	(!D * !SET_B * Q * !Q_N)	0.01846	0.01889	0.03839

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)	0.01309	0.01384	0.03393
	(D * SET_B * !Q * Q_N)	0.01676	0.01752	0.03761
	(D * Q * !Q_N)	0.00752	0.00833	0.02803
	(D * Q * !Q_N)	0.01141	0.01224	0.03193
	(!D * SET_B * Q * !Q_N)	0.01483	0.01576	0.03599
	(!D * SET_B * Q * !Q_N)	0.01895	0.01988	0.04012
	(!D * SET_B * !Q * Q_N)	0.00764	0.00847	0.02824
	(!D * SET_B * !Q * Q_N)	0.01154	0.01238	0.03214
	(!D * !SET_B * Q * !Q_N)	0.01213	0.01306	0.03329
	(!D * !SET_B * Q * !Q_N)	0.01635	0.01728	0.03751
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01288	0.01363	0.03376
	(D * SET_B * !Q * Q_N)	0.01654	0.01730	0.03742
	(D * Q * !Q_N)	0.00741	0.00822	0.02794
	(D * Q * !Q_N)	0.01136	0.01219	0.03191
	(!D * SET_B * Q * !Q_N)	0.01443	0.01536	0.03561
	(!D * SET_B * Q * !Q_N)	0.01869	0.01961	0.03988
	(!D * SET_B * !Q * Q_N)	0.00747	0.00830	0.02809
	(!D * SET_B * !Q * Q_N)	0.01143	0.01227	0.03205
	(!D * !SET_B * Q * !Q_N)	0.01184	0.01277	0.03302
	(!D * !SET_B * Q * !Q_N)	0.01619	0.01711	0.03737

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00174	0.00339	0.00311	0.81262
sky130_fd_sc_hs__dfstp_2	0.00174	0.00317	0.00314	1.61146
sky130_fd_sc_hs__dfstp_4	0.00173	0.00321	0.00315	3.07687

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	5.05676	5.67003
sky130_fd_sc_hs__dfstp_2	0.00000	4.68817	5.63705
sky130_fd_sc_hs__dfstp_4	0.00000	8.27886	9.29175

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)	0.34086	1.01836	7.51023
	SET_B->Q (FR)	0.36555	1.23485	8.99307
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.35739	0.92685	7.55860
	SET_B->Q (FR)	0.38749	1.15281	9.09016
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.42088	0.91362	7.60935
	SET_B->Q (FR)	0.45333	1.14557	9.22160

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.37092	0.79937	3.98574
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.39253	0.78147	4.01149
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.40826	0.76063	3.97329

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)	-0.07770	-0.16749	-0.55667
	setup	CLK (R)	0.15751	0.21787	0.60528
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08075	-0.16745	-0.56868
	setup	CLK (R)	0.15935	0.22080	0.61731
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07945	-0.16642	-0.54874
	setup	CLK (R)	0.14782	0.20984	0.58061

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)	-0.07801	-0.20041	-1.47756
	setup	CLK (R)	0.32233	0.40654	1.95974
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08214	-0.20411	-1.51513
	setup	CLK (R)	0.32505	0.40895	1.97597
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.08816	-0.21354	-1.57791
	setup	CLK (R)	0.31361	0.40355	1.95007

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)	-0.07770	-0.16749	-0.55667
	setup	CLK (R)	0.15751	0.21787	0.60528
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08075	-0.16745	-0.56868
	setup	CLK (R)	0.15935	0.22080	0.61731
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07945	-0.16642	-0.54874
	setup	CLK (R)	0.14782	0.20984	0.58061

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)	-0.07801	-0.20041	-1.47756
	setup	CLK (R)	0.32233	0.40654	1.95974
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08214	-0.20411	-1.51513
	setup	CLK (R)	0.32505	0.40895	1.97597
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.08816	-0.21354	-1.57791
	setup	CLK (R)	0.31361	0.40355	1.95007

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)	-0.14117	-0.21755	-0.79230
	removal	CLK (R)	0.18237	0.24323	0.87462
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.14836	-0.22129	-0.79609
	removal	CLK (R)	0.18344	0.24674	0.85713
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.14395	-0.21298	-0.77869
	removal	CLK (R)	0.17888	0.24057	0.81683

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)	-0.14117	-0.21755	-0.79230
	removal	CLK (R)	0.18237	0.24323	0.87462
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.14836	-0.22129	-0.79609
	removal	CLK (R)	0.18344	0.24674	0.85713
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.14395	-0.21298	-0.77869
	removal	CLK (R)	0.17888	0.24057	0.81683

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 ()	0.29745	0.82153	16.50020
	min_pulse_width	SET_B ()	0.26393	0.82153	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.31269	0.82153	16.50020
	min_pulse_width	SET_B ()	0.28222	0.82153	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.32183	0.82153	16.50020
	min_pulse_width	SET_B ()	0.32183	0.82153	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 ()	0.17862	0.82153	16.50020
	min_pulse_width	CLK ()	0.14510	0.82153	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.19081	0.82153	16.50020
	min_pulse_width	CLK ()	0.15424	0.82153	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.23346	0.82153	16.50020
	min_pulse_width	CLK ()	0.16338	0.82153	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 ()	0.25784	0.82153	16.50020
	min_pulse_width	CLK ()	0.41628	0.82153	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.26089	0.82153	16.50020
	min_pulse_width	CLK ()	0.41933	0.82153	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.24870	0.82153	16.50020
	min_pulse_width	CLK ()	0.41019	0.82153	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	0.02353	0.02396	0.04406
	CLK	0.01971	0.02012	0.04035
	SET_B	0.02187	0.02172	0.03038
	SET_B	0.02587	0.02569	0.03441
sky130_fd_sc_hs__dfstp_2	CLK	0.02666	0.02737	0.04753
	CLK	0.02267	0.02338	0.04379
	SET_B	0.02506	0.02522	0.03392
	SET_B	0.02872	0.02885	0.03784
sky130_fd_sc_hs__dfstp_4	CLK	0.03342	0.03443	0.05480
	CLK	0.02936	0.03040	0.05148
	SET_B	0.03139	0.03213	0.04113
	SET_B	0.03507	0.03579	0.04511

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02540	0.02599	0.04543
	CLK	0.02140	0.02197	0.04124
sky130_fd_sc_hs__dfstp_2	CLK	0.02799	0.02896	0.04857
	CLK	0.02411	0.02504	0.04434
sky130_fd_sc_hs__dfstp_4	CLK	0.03466	0.03636	0.05674
	CLK	0.03076	0.03245	0.05196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00297	0.00309	0.00890
	CLK	0.00075	0.00085	0.00668
	(!CLK * SET_B)	0.00883	0.00888	0.01404
	(!CLK * SET_B)	0.00639	0.00643	0.01160
	(!CLK * !SET_B * Q)	0.00700	0.00708	0.01200
	(!CLK * !SET_B * Q)	0.00444	0.00452	0.00945
sky130_fd_sc_hs__dfstp_2	CLK	0.00298	0.00310	0.00891
	CLK	0.00075	0.00085	0.00668
	(!CLK * SET_B)	0.00882	0.00886	0.01402
	(!CLK * SET_B)	0.00637	0.00641	0.01156
	(!CLK * !SET_B * Q)	0.00699	0.00706	0.01197
	(!CLK * !SET_B * Q)	0.00442	0.00449	0.00940
sky130_fd_sc_hs__dfstp_4	CLK	0.00301	0.00313	0.00894
	CLK	0.00079	0.00090	0.00672
	(!CLK * SET_B)	0.00883	0.00887	0.01404
	(!CLK * SET_B)	0.00636	0.00640	0.01157
	(!CLK * !SET_B * Q)	0.00695	0.00703	0.01197
	(!CLK * !SET_B * Q)	0.00439	0.00447	0.00940

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00049	0.00073	0.00642
	CLK	0.00272	0.00295	0.00864
	(!CLK * SET_B)	0.00625	0.00632	0.01183
	(!CLK * SET_B)	0.00870	0.00877	0.01428
	(!CLK * !SET_B * Q)	0.00369	0.00382	0.00870
	(!CLK * !SET_B * Q)	0.00625	0.00639	0.01126
sky130_fd_sc_hs__dfstp_2	CLK	0.00048	0.00071	0.00640
	CLK	0.00271	0.00293	0.00863
	(!CLK * SET_B)	0.00644	0.00652	0.01201
	(!CLK * SET_B)	0.00890	0.00897	0.01446
	(!CLK * !SET_B * Q)	0.00388	0.00402	0.00888
	(!CLK * !SET_B * Q)	0.00646	0.00659	0.01145
sky130_fd_sc_hs__dfstp_4	CLK	0.00054	0.00077	0.00646
	CLK	0.00276	0.00299	0.00868
	(!CLK * SET_B)	0.00620	0.00628	0.01178
	(!CLK * SET_B)	0.00867	0.00874	0.01425
	(!CLK * !SET_B * Q)	0.00370	0.00383	0.00872
	(!CLK * !SET_B * Q)	0.00627	0.00641	0.01129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00208	0.00208	0.00207
	(CLK * Q)	-0.00201	-0.00201	-0.00201
	(!CLK * D * Q)	0.00223	0.00225	0.00224
	(!CLK * D * Q)	-0.00183	-0.00184	-0.00184
	(!CLK * !D * Q)	0.00435	0.00440	0.00948
	(!CLK * !D * Q)	0.00011	0.00012	0.00522
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00201	0.00202	0.00202
	(CLK * Q)	-0.00185	-0.00186	-0.00186
	(!CLK * D * Q)	0.00218	0.00221	0.00219
	(!CLK * D * Q)	-0.00169	-0.00170	-0.00169
	(!CLK * !D * Q)	0.00432	0.00435	0.00943
	(!CLK * !D * Q)	0.00025	0.00027	0.00536
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00217	0.00216	0.00217
	(CLK * Q)	-0.00177	-0.00177	-0.00177
	(!CLK * D * Q)	0.00231	0.00235	0.00232
	(!CLK * D * Q)	-0.00161	-0.00163	-0.00162
	(!CLK * !D * Q)	0.00438	0.00442	0.00950
	(!CLK * !D * Q)	0.00027	0.00029	0.00539

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00195	-0.00198	-0.00198
	(CLK * Q)	0.00216	0.00214	0.00211
	(!CLK * D * Q)	-0.00211	-0.00215	-0.00215
	(!CLK * D * Q)	0.00200	0.00197	0.00194
	(!CLK * !D * Q)	0.00005	0.00024	0.00554
	(!CLK * !D * Q)	0.00431	0.00451	0.00980
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00191	-0.00195	-0.00195
	(CLK * Q)	0.00199	0.00197	0.00194
	(!CLK * D * Q)	-0.00208	-0.00212	-0.00211
	(!CLK * D * Q)	0.00183	0.00180	0.00177
	(!CLK * !D * Q)	0.00011	0.00030	0.00560
	(!CLK * !D * Q)	0.00417	0.00438	0.00966
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00199	-0.00202	-0.00202
	(CLK * Q)	0.00199	0.00196	0.00194
	(!CLK * D * Q)	-0.00213	-0.00217	-0.00217
	(!CLK * D * Q)	0.00185	0.00181	0.00179
	(!CLK * !D * Q)	0.00011	0.00031	0.00561
	(!CLK * !D * Q)	0.00422	0.00444	0.00971

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01318	0.01344	0.03248
	(D * Q)	0.00927	0.00952	0.02856
	(!D * SET_B * !Q)	0.01294	0.01321	0.03224
	(!D * SET_B * !Q)	0.00902	0.00927	0.02833
	(!D * !SET_B * Q)	0.02258	0.02302	0.04252
	(!D * !SET_B * Q)	0.01833	0.01877	0.03826
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01334	0.01360	0.03265
	(D * Q)	0.00940	0.00965	0.02870
	(!D * SET_B * !Q)	0.01300	0.01327	0.03231
	(!D * SET_B * !Q)	0.00906	0.00930	0.02837
	(!D * !SET_B * Q)	0.02285	0.02327	0.04275
	(!D * !SET_B * Q)	0.01856	0.01898	0.03846
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01324	0.01351	0.03255
	(D * Q)	0.00927	0.00952	0.02858
	(!D * SET_B * !Q)	0.01302	0.01328	0.03234
	(!D * SET_B * !Q)	0.00904	0.00929	0.02836
	(!D * !SET_B * Q)	0.02252	0.02295	0.04246
	(!D * !SET_B * Q)	0.01820	0.01864	0.03814

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)**	0.01302	0.01376	0.03389
	(D * SET_B * !Q)	0.01673	0.01749	0.03760
	(D * Q)	0.00754	0.00835	0.02806
	(D * Q)	0.01146	0.01228	0.03199
	(!D * SET_B * Q)	0.01443	0.01535	0.03560
	(!D * SET_B * Q)	0.01856	0.01948	0.03974
	(!D * SET_B * !Q)	0.00755	0.00837	0.02815
	(!D * SET_B * !Q)	0.01147	0.01230	0.03207
	(!D * !SET_B * Q)	0.01185	0.01277	0.03303
	(!D * !SET_B * Q)	0.01611	0.01703	0.03727
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01295	0.01370	0.03382
	(D * SET_B * !Q)	0.01669	0.01744	0.03755
	(D * Q)	0.00741	0.00822	0.02794
	(D * Q)	0.01136	0.01218	0.03189
	(!D * SET_B * Q)	0.01455	0.01547	0.03572
	(!D * SET_B * Q)	0.01872	0.01963	0.03990
	(!D * SET_B * !Q)	0.00756	0.00838	0.02817
	(!D * SET_B * !Q)	0.01151	0.01235	0.03212
	(!D * !SET_B * Q)	0.01198	0.01290	0.03315
	(!D * !SET_B * Q)	0.01627	0.01720	0.03745
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01292	0.01367	0.03380
	(D * SET_B * !Q)	0.01665	0.01741	0.03754
	(D * Q)	0.00749	0.00830	0.02802
	(D * Q)	0.01147	0.01229	0.03201
	(!D * SET_B * Q)	0.01426	0.01519	0.03545
	(!D * SET_B * Q)	0.01848	0.01940	0.03968
	(!D * SET_B * !Q)	0.00747	0.00830	0.02809
	(!D * SET_B * !Q)	0.01145	0.01229	0.03206
	(!D * !SET_B * Q)	0.01176	0.01268	0.03295
	(!D * !SET_B * Q)	0.01609	0.01701	0.03727

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00177	0.00313	0.79847	0.79089
sky130_fd_sc_hs__dfxbp_2	0.00172	0.00314	1.43923	1.58803

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	7.99603	10.98570
sky130_fd_sc_hs__dfxbp_2	0.00000	10.39070	16.00390

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)	0.32471	1.01500	7.56362
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.38157	0.97364	7.46905

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.36252	0.81901	4.04681
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.35799	0.75237	3.68715

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)	0.42640	1.11241	7.60100
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.45059	1.02005	7.58768

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)	0.38658	0.81292	3.94218
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.47966	0.86450	4.10765

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)	-0.03587	-0.08319	-0.15158
	setup	CLK (R)	0.12836	0.15958	0.32033
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02953	-0.07254	-0.10766
	setup	CLK (R)	0.11358	0.14482	0.24654

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)	-0.06125	-0.16542	-1.29390
	setup	CLK (R)	0.22995	0.30916	1.61604
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.05921	-0.15340	-1.32116
	setup	CLK (R)	0.22399	0.30142	1.57839

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 ()	0.15120	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.20299	0.82153	16.50020
	min_pulse_width	CLK ()	0.13596	0.82153	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 ()	0.24565	0.82153	16.50020
	min_pulse_width	CLK ()	0.33706	0.82153	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.23346	0.82153	16.50020
	min_pulse_width	CLK ()	0.33402	0.82153	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	0.01323	0.01352	0.02401
	CLK	0.01137	0.01165	0.02191
sky130_fd_sc_hs__dfxbp_2	CLK	0.01633	0.01694	0.02758
	CLK	0.01445	0.01506	0.02540

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01357	0.01404	0.02445
	CLK	0.01171	0.01218	0.02237
sky130_fd_sc_hs__dfxbp_2	CLK	0.01686	0.01767	0.02801
	CLK	0.01498	0.01578	0.02601

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01363	0.01411	0.02479
	CLK	0.01177	0.01225	0.02259
sky130_fd_sc_hs__dfxbp_2	CLK	0.01693	0.01775	0.02888
	CLK	0.01505	0.01585	0.02638

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01319	0.01346	0.02363
	CLK	0.01133	0.01161	0.02166
sky130_fd_sc_hs__dfxbp_2	CLK	0.01627	0.01687	0.02704
	CLK	0.01438	0.01500	0.02500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00219	0.00239	0.00838
	CLK	-0.00008	0.00011	0.00611
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00796	0.00811	0.01462
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00570	0.00584	0.01235
sky130_fd_sc_hs__dfxbp_2	CLK	0.00209	0.00230	0.00832
	CLK	-0.00012	0.00009	0.00612
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00789	0.00805	0.01458
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00569	0.00583	0.01238

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00001	0.00032	0.00623
	CLK	0.00226	0.00258	0.00849
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00488	0.00508	0.01174
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00715	0.00735	0.01401
sky130_fd_sc_hs__dfxbp_2	CLK	0.00003	0.00037	0.00629
	CLK	0.00223	0.00259	0.00850
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00458	0.00479	0.01146
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00678	0.00699	0.01367

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)	0.01193	0.01225	0.03157
	(D * Q * !Q_N)	0.00821	0.00851	0.02784
	(!D * !Q * Q_N)	0.01205	0.01238	0.03171
	(!D * !Q * Q_N)	0.00834	0.00864	0.02799
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01204	0.01235	0.03164
	(D * Q * !Q_N)	0.00827	0.00858	0.02786
	(!D * !Q * Q_N)	0.01200	0.01233	0.03161
	(!D * !Q * Q_N)	0.00823	0.00853	0.02784

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)	0.00863	0.00938	0.02930
	(D * Q * !Q_N)	0.01236	0.01310	0.03302
	(D * !Q * Q_N)	0.01398	0.01460	0.03519
	(D * !Q * Q_N)	0.01770	0.01833	0.03892
	(!D * Q * !Q_N)	0.01459	0.01544	0.03592
	(!D * Q * !Q_N)	0.01832	0.01916	0.03965
	(!D * !Q * Q_N)	0.00836	0.00911	0.02909
	(!D * !Q * Q_N)	0.01209	0.01284	0.03280
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00866	0.00939	0.02930
	(D * Q * !Q_N)	0.01243	0.01317	0.03307
	(D * !Q * Q_N)	0.01410	0.01472	0.03527
	(D * !Q * Q_N)	0.01788	0.01850	0.03904
	(!D * Q * !Q_N)	0.01418	0.01503	0.03550
	(!D * Q * !Q_N)	0.01796	0.01880	0.03928
	(!D * !Q * Q_N)	0.00847	0.00920	0.02916
	(!D * !Q * Q_N)	0.01224	0.01298	0.03293

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00173	0.00313	0.80673
sky130_fd_sc_hs__dfxtp_2	0.00178	0.00313	1.60371
sky130_fd_sc_hs__dfxtp_4	0.00177	0.00314	3.04512

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	6.33409	11.07060
sky130_fd_sc_hs__dfxtp_2	0.00000	6.15785	9.98387
sky130_fd_sc_hs__dfxtp_4	0.00000	9.21505	14.58190

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)**	0.29448	0.98737	7.59364
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.31417	0.89222	7.53259
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.37367	0.87644	7.58968

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.34710	0.79783	4.05640
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.35706	0.76394	4.04815
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.37182	0.74131	4.04493

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)	-0.03687	-0.08077	-0.14484
	setup	CLK (R)	0.13478	0.16061	0.32439
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03417	-0.07919	-0.13239
	setup	CLK (R)	0.12827	0.15403	0.30810
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03270	-0.07496	-0.11328
	setup	CLK (R)	0.12157	0.14841	0.27783

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)	-0.06561	-0.17440	-1.31868
	setup	CLK (R)	0.23995	0.31869	1.64134
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.05685	-0.15828	-1.26879
	setup	CLK (R)	0.22642	0.30362	1.58668
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.05797	-0.15200	-1.28329
	setup	CLK (R)	0.22216	0.30043	1.57253

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 ()	0.13901	0.82153	16.50020
	min_pulse_width	CLK ()	0.12682	0.82153	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.15120	0.82153	16.50020
	min_pulse_width	CLK ()	0.12987	0.82153	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.19385	0.82153	16.50020
	min_pulse_width	CLK ()	0.13901	0.82153	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 ()	0.25479	0.82153	16.50020
	min_pulse_width	CLK ()	0.34316	0.82153	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.24565	0.82153	16.50020
	min_pulse_width	CLK ()	0.33402	0.82153	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.24260	0.82153	16.50020
	min_pulse_width	CLK ()	0.34011	0.82153	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	0.02049	0.02087	0.04129
	CLK	0.01673	0.01711	0.03769
sky130_fd_sc_hs__dfxtp_2	CLK	0.02327	0.02387	0.04431
	CLK	0.01948	0.02010	0.04080
sky130_fd_sc_hs__dfxtp_4	CLK	0.02959	0.03053	0.05101
	CLK	0.02584	0.02679	0.04779

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02122	0.02197	0.04278
	CLK	0.01746	0.01820	0.03847
sky130_fd_sc_hs__dfxtp_2	CLK	0.02366	0.02475	0.04569
	CLK	0.01987	0.02096	0.04123
sky130_fd_sc_hs__dfxtp_4	CLK	0.03029	0.03219	0.05353
	CLK	0.02654	0.02834	0.04876

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00201	0.00221	0.00818
	CLK	-0.00020	-0.00002	0.00596
	!CLK	0.00782	0.00797	0.01448
	!CLK	0.00561	0.00575	0.01226
sky130_fd_sc_hs__dfxtp_2	CLK	0.00214	0.00234	0.00836
	CLK	-0.00013	0.00007	0.00608
	!CLK	0.00773	0.00788	0.01441
	!CLK	0.00547	0.00560	0.01214
sky130_fd_sc_hs__dfxtp_4	CLK	0.00206	0.00227	0.00829
	CLK	-0.00021	0.00001	0.00604
	!CLK	0.00777	0.00792	0.01446
	!CLK	0.00551	0.00565	0.01220

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00034	0.00066	0.00651
	CLK	0.00255	0.00288	0.00872
	!CLK	0.00523	0.00543	0.01215
	!CLK	0.00745	0.00765	0.01436
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00006	0.00027	0.00619
	CLK	0.00221	0.00255	0.00846
	!CLK	0.00494	0.00514	0.01181
	!CLK	0.00721	0.00741	0.01408
sky130_fd_sc_hs__dfxtp_4	CLK	0.00003	0.00037	0.00630
	CLK	0.00229	0.00263	0.00856
	!CLK	0.00490	0.00510	0.01176
	!CLK	0.00716	0.00736	0.01402

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01196	0.01228	0.03153
	(D * Q)	0.00820	0.00850	0.02776
	(!D * !Q)	0.01223	0.01255	0.03182
	(!D * !Q)	0.00847	0.00877	0.02805
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01200	0.01232	0.03159
	(D * Q)	0.00821	0.00851	0.02779
	(!D * !Q)	0.01219	0.01251	0.03179
	(!D * !Q)	0.00841	0.00871	0.02801
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01195	0.01227	0.03152
	(D * Q)	0.00821	0.00851	0.02777
	(!D * !Q)	0.01213	0.01245	0.03171
	(!D * !Q)	0.00839	0.00869	0.02796

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00898	0.00970	0.02960
	(D * Q)	0.01274	0.01348	0.03337
	(D * !Q)	0.01423	0.01483	0.03538
	(D * !Q)	0.01799	0.01859	0.03914
	(!D * Q)	0.01488	0.01571	0.03618
	(!D * Q)	0.01864	0.01948	0.03994
	(!D * !Q)	0.00852	0.00924	0.02919
	(!D * !Q)	0.01228	0.01301	0.03296
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00880	0.00952	0.02943
	(D * Q)	0.01258	0.01331	0.03322
	(D * !Q)	0.01391	0.01452	0.03509
	(D * !Q)	0.01769	0.01832	0.03888
	(!D * Q)	0.01479	0.01562	0.03610
	(!D * Q)	0.01857	0.01939	0.03990
	(!D * !Q)	0.00844	0.00916	0.02912
	(!D * !Q)	0.01222	0.01296	0.03292
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00917	0.00989	0.02975
	(D * Q)	0.01291	0.01363	0.03349
	(D * !Q)	0.01430	0.01489	0.03541
	(D * !Q)	0.01804	0.01864	0.03915
	(!D * Q)	0.01515	0.01597	0.03641
	(!D * Q)	0.01889	0.01972	0.04015
	(!D * !Q)	0.00877	0.00948	0.02939
	(!D * !Q)	0.01251	0.01324	0.03315

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00274	0.00467	0.82314
sky130_fd_sc_hs__dlclkp_2	0.00273	0.00505	1.60709
sky130_fd_sc_hs__dlclkp_4	0.00271	0.00529	3.20269

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	7.51097	11.65810
sky130_fd_sc_hs__dlclkp_2	0.00000	7.24481	9.39632
sky130_fd_sc_hs__dlclkp_4	0.00000	7.93430	8.29955

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)**	0.11744	0.77149	7.52471
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.12240	0.68144	7.44288
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.16713	0.70174	7.85860

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.12405	0.61016	4.28403
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.13503	0.61345	4.43921
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.18578	0.68880	4.80440

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)	-0.06221	-0.12252	-0.69012
	setup	CLK (R)	0.20904	0.25459	1.11268
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.06184	-0.11991	-0.69775
	setup	CLK (R)	0.22114	0.25581	1.13575
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.06257	-0.11991	-0.67597
	setup	CLK (R)	0.21355	0.23430	1.00609

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)	-0.07515	-0.10219	-0.55588
	setup	CLK (R)	0.15978	0.20368	0.68700
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.07457	-0.09656	-0.53954
	setup	CLK (R)	0.15045	0.18373	0.62753
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.07468	-0.09783	-0.53531
	setup	CLK (R)	0.11520	0.13181	0.62603

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 ()	0.08721	0.82153	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.09635	0.82153	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.13901	0.82153	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 ()	0.29136	0.82153	16.50020
	min_pulse_width	CLK ()	0.24565	0.82153	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.30659	0.82153	16.50020
	min_pulse_width	CLK ()	0.24870	0.82153	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.24565	0.82153	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	0.01518	0.01629	0.05395
	CLK	0.00922	0.01033	0.04799
sky130_fd_sc_hs__dlclkp_2	CLK	0.01826	0.01951	0.05753
	CLK	0.01181	0.01307	0.05134
sky130_fd_sc_hs__dlclkp_4	CLK	0.02411	0.02536	0.06142
	CLK	0.01748	0.01874	0.05536

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01675	0.01905	0.05613
	CLK	0.02282	0.02508	0.06190
sky130_fd_sc_hs__dlclkp_2	CLK	0.01958	0.02202	0.06014
	CLK	0.02612	0.02853	0.06605
sky130_fd_sc_hs__dlclkp_4	CLK	0.02575	0.02840	0.06420
	CLK	0.03236	0.03497	0.07071

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00178	0.00152	0.00146
	CLK	-0.00133	-0.00160	-0.00164
	(!CLK * !GCLK)	0.01083	0.01090	0.02410
	(!CLK * !GCLK)	0.00752	0.00756	0.02078
sky130_fd_sc_hs__dlclkp_2	CLK	0.00125	0.00125	0.00125
	CLK	-0.00185	-0.00185	-0.00185
	(!CLK * !GCLK)	0.01095	0.01102	0.02417
	(!CLK * !GCLK)	0.00766	0.00771	0.02086
sky130_fd_sc_hs__dlclkp_4	CLK	0.00123	0.00123	0.00123
	CLK	-0.00183	-0.00183	-0.00183
	(!CLK * !GCLK)	0.01074	0.01081	0.02394
	(!CLK * !GCLK)	0.00761	0.00766	0.02080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00124	-0.00126	-0.00125
	CLK	0.00186	0.00188	0.00186
	(!CLK * !GCLK)	0.00745	0.00755	0.02102
	(!CLK * !GCLK)	0.01079	0.01090	0.02435
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00104	-0.00112	-0.00113
	CLK	0.00205	0.00201	0.00197
	(!CLK * !GCLK)	0.00780	0.00790	0.02135
	(!CLK * !GCLK)	0.01112	0.01122	0.02465
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00100	-0.00107	-0.00108
	CLK	0.00206	0.00202	0.00198
	(!CLK * !GCLK)	0.00833	0.00843	0.02186
	(!CLK * !GCLK)	0.01149	0.01159	0.02501

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00926	0.00990	0.03078
	(!GATE * !GCLK)	0.00351	0.00416	0.02505
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00973	0.01032	0.03115
	(!GATE * !GCLK)	0.00359	0.00413	0.02497
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00971	0.01026	0.03094
	(!GATE * !GCLK)	0.00330	0.00384	0.02454

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01279	0.01387	0.03743
	(GATE * !GCLK)	0.01850	0.01960	0.04311
	(!GATE * !GCLK)	0.00451	0.00564	0.02693
	(!GATE * !GCLK)	0.01025	0.01140	0.03268
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01314	0.01421	0.03812
	(GATE * !GCLK)	0.01933	0.02039	0.04430
	(!GATE * !GCLK)	0.00471	0.00581	0.02709
	(!GATE * !GCLK)	0.01089	0.01200	0.03329
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01280	0.01385	0.03732
	(GATE * !GCLK)	0.01933	0.02039	0.04384
	(!GATE * !GCLK)	0.00447	0.00556	0.02663
	(!GATE * !GCLK)	0.01088	0.01200	0.03305

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00242	0.00268	0.00300	0.80431	0.81686
sky130_fd_sc_hs__dlrbn_2	0.00243	0.00268	0.00311	1.44784	1.58029

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	9.79489	12.71250
sky130_fd_sc_hs__dlrbn_2	0.00000	9.86517	12.39320

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)	0.40924	1.07870	7.63211
	GATE_N->Q (-R)	0.47985	1.22971	8.19305
	RESET_B->Q (RR)	0.14983	0.84094	7.61991
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.41865	0.99790	7.48473
	GATE_N->Q (-R)	0.49316	1.15422	8.07111
	RESET_B->Q (RR)	0.16084	0.77901	7.55733

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.33010	0.79061	4.11784
	GATE_N->Q (-F)	0.35086	0.86363	4.50948
	RESET_B->Q (FF)	0.14874	0.68848	4.44079
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.35906	0.78036	3.89567
	GATE_N->Q (-F)	0.38001	0.85481	4.28718
	RESET_B->Q (FF)	0.17284	0.69890	4.37082

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)	0.40021	1.09745	7.80662
	GATE_N->Q_N (-R)	0.42115	1.17105	8.19726
	RESET_B->Q_N (FR)	0.22088	0.98057	7.94458
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.46123	1.04657	7.91478
	GATE_N->Q_N (-R)	0.48258	1.12043	8.30435
	RESET_B->Q_N (FR)	0.27806	0.95770	8.19759

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)	0.47243	0.87417	4.07324
	GATE_N->Q_N (-F)	0.54305	1.02555	4.63343
	RESET_B->Q_N (RF)	0.21252	0.63052	3.88312
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.53441	0.90778	4.31688
	GATE_N->Q_N (-F)	0.60917	1.06423	4.90212
	RESET_B->Q_N (RF)	0.27544	0.68528	4.26032

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 ()**	0.16948	0.82153	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.21213	0.82153	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	0.01124	0.01168	0.02079
	D	0.00964	0.01008	0.01886
	GATE_N	0.01149	0.01217	0.02290
	GATE_N	0.01303	0.01374	0.02431
	RESET_B	0.00743	0.00770	0.01541
	RESET_B	0.00552	0.00574	0.01322
sky130_fd_sc_hs__dlrbn_2	D	0.01363	0.01433	0.02320
	D	0.01205	0.01277	0.02150
	GATE_N	0.01388	0.01488	0.02589
	GATE_N	0.01541	0.01641	0.02704
	RESET_B	0.01002	0.01052	0.01760
	RESET_B	0.00806	0.00856	0.01527

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00879	0.00950	0.01832
	D	0.01039	0.01110	0.01988
	GATE_N	0.01053	0.01132	0.02216
	GATE_N	0.01226	0.01305	0.02389
	RESET_B	0.00771	0.00811	0.01579
	RESET_B	0.00951	0.00990	0.01754
sky130_fd_sc_hs__dlrbn_2	D	0.01139	0.01243	0.02141
	D	0.01297	0.01401	0.02282
	GATE_N	0.01313	0.01420	0.02520
	GATE_N	0.01484	0.01592	0.02677
	RESET_B	0.01021	0.01086	0.01850
	RESET_B	0.01205	0.01267	0.02024

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00886	0.00957	0.01891
	D	0.01046	0.01117	0.02012
	GATE_N	0.01060	0.01135	0.02252
	GATE_N	0.01232	0.01308	0.02412
	RESET_B	0.00779	0.00819	0.01638
	RESET_B	0.00960	0.00998	0.01784
sky130_fd_sc_hs__dlrbn_2	D	0.01146	0.01251	0.02209
	D	0.01304	0.01409	0.02312
	GATE_N	0.01320	0.01427	0.02526
	GATE_N	0.01490	0.01598	0.02694
	RESET_B	0.01030	0.01094	0.01889
	RESET_B	0.01214	0.01276	0.02049

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01118	0.01160	0.02042
	D	0.00957	0.01000	0.01861
	GATE_N	0.01142	0.01208	0.02253
	GATE_N	0.01296	0.01368	0.02407
	RESET_B	0.00737	0.00761	0.01499
	RESET_B	0.00546	0.00567	0.01300
sky130_fd_sc_hs__dlrbn_2	D	0.01356	0.01424	0.02281
	D	0.01198	0.01269	0.02121
	GATE_N	0.01381	0.01482	0.02578
	GATE_N	0.01534	0.01634	0.02681
	RESET_B	0.00995	0.01049	0.01691
	RESET_B	0.00799	0.00850	0.01494

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)	0.00495	0.00543	0.02233
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00193	0.00240	0.01932
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00917	0.00957	0.02670
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00634	0.00673	0.02386
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)	0.00493	0.00540	0.02218
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00194	0.00240	0.01918
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00868	0.00908	0.02611
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00587	0.00626	0.02329

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)	0.00146	0.00251	0.01978
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00447	0.00553	0.02278
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00692	0.00777	0.02540
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00977	0.01063	0.02824
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)	0.00140	0.00245	0.01957
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00439	0.00545	0.02257
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00707	0.00792	0.02542
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00990	0.01076	0.02824

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)	0.00856	0.00909	0.02974
	(D * RESET_B * Q * !Q_N)	0.00528	0.00581	0.02647
	(D * !RESET_B * !Q * Q_N)	0.01345	0.01394	0.03445
	(D * !RESET_B * !Q * Q_N)	0.01001	0.01049	0.03101
	(!D * !Q * Q_N)	0.00897	0.00953	0.03012
	(!D * !Q * Q_N)	0.00570	0.00624	0.02685
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00858	0.00911	0.02962
	(D * RESET_B * Q * !Q_N)	0.00534	0.00584	0.02637
	(D * !RESET_B * !Q * Q_N)	0.01360	0.01408	0.03444
	(D * !RESET_B * !Q * Q_N)	0.01019	0.01066	0.03102
	(!D * !Q * Q_N)	0.00889	0.00942	0.02989
	(!D * !Q * Q_N)	0.00565	0.00616	0.02664

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)	0.00671	0.00783	0.02893
	(D * RESET_B * Q * !Q_N)	0.00998	0.01111	0.03220
	(D * !RESET_B * !Q * Q_N)	0.00952	0.01062	0.03147
	(D * !RESET_B * !Q * Q_N)	0.01297	0.01408	0.03492
	(!D * !Q * Q_N)	0.00597	0.00713	0.02828
	(!D * !Q * Q_N)	0.00924	0.01041	0.03156
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00662	0.00774	0.02866
	(D * RESET_B * Q * !Q_N)	0.00987	0.01100	0.03191
	(D * !RESET_B * !Q * Q_N)	0.00906	0.01017	0.03083
	(D * !RESET_B * !Q * Q_N)	0.01250	0.01360	0.03426
	(!D * !Q * Q_N)	0.00597	0.00712	0.02810
	(!D * !Q * Q_N)	0.00922	0.01038	0.03135

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)	0.00147	0.00148	0.00147
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00156	0.00155	0.00156
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00189	-0.00188	-0.00188

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)	-0.00116	-0.00124	-0.00125
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00219	0.00214	0.00209
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00125	-0.00133	-0.00134
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00220	0.00216	0.00211

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00225	0.00258	0.00309	0.79808	0.80006
sky130_fd_sc_hs__dlrbp_2	0.00226	0.00257	0.00310	1.58759	1.61908

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	9.79547	12.75050
sky130_fd_sc_hs__dlrbp_2	0.00000	9.85107	12.38680

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)	0.39745	1.06082	7.56092
	GATE->Q (-R)	0.35501	1.02259	7.41706
	RESET_B->Q (RR)	0.15229	0.84445	7.60254
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.41084	0.97202	7.52620
	GATE->Q (-R)	0.36556	0.92863	7.37060
	RESET_B->Q (RR)	0.16117	0.76734	7.67694

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.32652	0.78117	4.08606
	GATE->Q (-F)	0.35018	0.76916	3.75078
	RESET_B->Q (FF)	0.15113	0.69351	4.43724
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.35620	0.78478	4.19677
	GATE->Q (-F)	0.37886	0.76980	3.85315
	RESET_B->Q (FF)	0.16824	0.70207	4.66534

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)	0.39937	1.09347	7.78106
	GATE->Q_N (-R)	0.42318	1.08145	7.44686
	RESET_B->Q_N (FR)	0.22619	0.99187	7.94435
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.45616	1.02796	7.80299
	GATE->Q_N (-R)	0.47918	1.01245	7.45983
	RESET_B->Q_N (FR)	0.26824	0.93786	8.07497

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)	0.46241	0.85628	3.96015
	GATE->Q_N (-F)	0.42003	0.81770	3.81313
	RESET_B->Q_N (RF)	0.21685	0.63291	3.82186
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.51749	0.86806	4.09893
	GATE->Q_N (-F)	0.47241	0.82465	3.94082
	RESET_B->Q_N (RF)	0.26663	0.65929	4.09384

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 ()**	0.16948	0.82153	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.20299	0.82153	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	0.01068	0.01113	0.02005
	D	0.00917	0.00961	0.01830
	GATE	0.01216	0.01259	0.02369
	GATE	0.01046	0.01088	0.02178
	RESET_B	0.00747	0.00771	0.01542
	RESET_B	0.00550	0.00570	0.01315
sky130_fd_sc_hs__dlrbp_2	D	0.01340	0.01413	0.02343
	D	0.01190	0.01263	0.02147
	GATE	0.01483	0.01555	0.02700
	GATE	0.01313	0.01386	0.02492
	RESET_B	0.01011	0.01062	0.01891
	RESET_B	0.00814	0.00865	0.01636

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00910	0.00983	0.01880
	D	0.01061	0.01133	0.02013
	GATE	0.01233	0.01295	0.02355
	GATE	0.01086	0.01148	0.02188
	RESET_B	0.00782	0.00827	0.01608
	RESET_B	0.00967	0.01011	0.01772
sky130_fd_sc_hs__dlrbp_2	D	0.01170	0.01273	0.02167
	D	0.01320	0.01423	0.02301
	GATE	0.01490	0.01584	0.02656
	GATE	0.01341	0.01435	0.02484
	RESET_B	0.01035	0.01103	0.01901
	RESET_B	0.01220	0.01283	0.02079

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00917	0.00989	0.01916
	D	0.01067	0.01140	0.02030
	GATE	0.01240	0.01302	0.02388
	GATE	0.01092	0.01154	0.02219
	RESET_B	0.00790	0.00835	0.01644
	RESET_B	0.00976	0.01020	0.01798
sky130_fd_sc_hs__dlrbp_2	D	0.01176	0.01279	0.02261
	D	0.01327	0.01430	0.02339
	GATE	0.01497	0.01589	0.02713
	GATE	0.01348	0.01440	0.02519
	RESET_B	0.01043	0.01109	0.01969
	RESET_B	0.01228	0.01291	0.02109

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01061	0.01103	0.01969
	D	0.00910	0.00953	0.01808
	GATE	0.01209	0.01251	0.02332
	GATE	0.01039	0.01081	0.02148
	RESET_B	0.00741	0.00763	0.01509
	RESET_B	0.00544	0.00564	0.01297
sky130_fd_sc_hs__dlrbp_2	D	0.01333	0.01406	0.02288
	D	0.01182	0.01256	0.02113
	GATE	0.01476	0.01549	0.02636
	GATE	0.01306	0.01379	0.02454
	RESET_B	0.01004	0.01055	0.01831
	RESET_B	0.00806	0.00858	0.01610

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)	0.00799	0.00844	0.02552
	(GATE * !RESET_B * !Q * Q_N)	0.00539	0.00583	0.02291
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00479	0.00531	0.02216
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00202	0.00252	0.01937
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00805	0.00850	0.02556
	(GATE * !RESET_B * !Q * Q_N)	0.00545	0.00588	0.02295
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00481	0.00532	0.02214
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00200	0.00250	0.01934

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)	0.00719	0.00814	0.02561
	(GATE * !RESET_B * !Q * Q_N)	0.00981	0.01075	0.02822
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00115	0.00223	0.01942
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00395	0.00503	0.02221
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00726	0.00820	0.02567
	(GATE * !RESET_B * !Q * Q_N)	0.00989	0.01083	0.02828
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00124	0.00231	0.01949
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00406	0.00514	0.02230

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)	0.00901	0.00958	0.03013
	(D * RESET_B * Q * !Q_N)	0.00584	0.00639	0.02695
	(D * !RESET_B * !Q * Q_N)	0.01059	0.01107	0.03244
	(D * !RESET_B * !Q * Q_N)	0.00760	0.00807	0.02945
	(!D * !Q * Q_N)	0.00884	0.00942	0.02996
	(!D * !Q * Q_N)	0.00568	0.00623	0.02678
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00901	0.00959	0.03016
	(D * RESET_B * Q * !Q_N)	0.00582	0.00638	0.02696
	(D * !RESET_B * !Q * Q_N)	0.01054	0.01104	0.03243
	(D * !RESET_B * !Q * Q_N)	0.00755	0.00804	0.02943
	(!D * !Q * Q_N)	0.00880	0.00938	0.02994
	(!D * !Q * Q_N)	0.00561	0.00618	0.02675

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)	0.00544	0.00660	0.02747
	(D * RESET_B * Q * !Q_N)	0.00862	0.00979	0.03064
	(D * !RESET_B * !Q * Q_N)	0.00936	0.01045	0.03235
	(D * !RESET_B * !Q * Q_N)	0.01237	0.01346	0.03536
	(!D * !Q * Q_N)	0.00532	0.00649	0.02746
	(!D * !Q * Q_N)	0.00850	0.00967	0.03064
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00540	0.00655	0.02744
	(D * RESET_B * Q * !Q_N)	0.00859	0.00974	0.03062
	(D * !RESET_B * !Q * Q_N)	0.00928	0.01036	0.03227
	(D * !RESET_B * !Q * Q_N)	0.01229	0.01336	0.03527
	(!D * !Q * Q_N)	0.00531	0.00646	0.02746
	(!D * !Q * Q_N)	0.00851	0.00966	0.03065

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)	0.00150	0.00150	0.00150
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00191	-0.00191	-0.00190
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00151	0.00151	0.00151
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00191	-0.00191	-0.00190

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)	-0.00119	-0.00126	-0.00127
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00223	0.00218	0.00214
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00121	-0.00128	-0.00129
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00223	0.00218	0.00213

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00224	0.00260	0.00293	0.80934
sky130_fd_sc_hs__dlrtn_2	0.00226	0.00258	0.00305	1.59276
sky130_fd_sc_hs__dlrtn_4	0.00226	0.00259	0.00489	3.03194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	7.65135	10.41150
sky130_fd_sc_hs__dlrtn_2	0.00000	7.66781	10.11890
sky130_fd_sc_hs__dlrtn_4	0.00000	12.11090	19.47250

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)	0.37722	1.03325	7.51193
	GATE_N->Q (-R)	0.43471	1.16391	8.01902
	RESET_B->Q (RR)	0.13165	0.79395	7.44237
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.39304	0.94876	7.55834
	GATE_N->Q (-R)	0.45033	1.07965	8.06417
	RESET_B->Q (RR)	0.14061	0.72116	7.55806
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.42943	0.90592	7.56380
	GATE_N->Q (-R)	0.48777	1.03919	8.06931
	RESET_B->Q (RR)	0.14716	0.64853	7.59748

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.30512	0.75413	4.09462
	GATE_N->Q (-F)	0.31691	0.81438	4.44487
	RESET_B->Q (FF)	0.13105	0.64231	4.32577
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.32239	0.72936	4.06047
	GATE_N->Q (-F)	0.33374	0.78908	4.41006
	RESET_B->Q (FF)	0.14678	0.64187	4.42981
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.34346	0.71822	4.12759
	GATE_N->Q (-F)	0.35962	0.78760	4.50754
	RESET_B->Q (FF)	0.15570	0.61525	4.46526

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 ()**	0.14815	0.82153	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.17862	0.82153	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.20604	0.82153	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	0.01586	0.01649	0.03386
	D	0.01289	0.01351	0.03091
	GATE_N	0.01620	0.01740	0.03847
	GATE_N	0.01919	0.02040	0.04157
	RESET_B	0.00951	0.00976	0.02535
	RESET_B	0.00577	0.00602	0.02165
sky130_fd_sc_hs__dlrtn_2	D	0.01827	0.01916	0.03658
	D	0.01531	0.01621	0.03389
	GATE_N	0.01865	0.02015	0.04135
	GATE_N	0.02165	0.02315	0.04454
	RESET_B	0.01183	0.01228	0.02620
	RESET_B	0.00795	0.00841	0.02256
sky130_fd_sc_hs__dlrtn_4	D	0.02645	0.02785	0.04563
	D	0.02331	0.02472	0.04305
	GATE_N	0.02688	0.02888	0.05037
	GATE_N	0.02971	0.03168	0.05355
	RESET_B	0.02088	0.02195	0.05164
	RESET_B	0.01465	0.01573	0.04608

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01270	0.01388	0.03210
	D	0.01568	0.01685	0.03453
	GATE_N	0.01510	0.01639	0.03841
	GATE_N	0.01852	0.01980	0.04164
	RESET_B	0.01002	0.01086	0.02664
	RESET_B	0.01355	0.01434	0.02976
sky130_fd_sc_hs__dlrtn_2	D	0.01526	0.01684	0.03552
	D	0.01822	0.01979	0.03746
	GATE_N	0.01775	0.01945	0.04136
	GATE_N	0.02109	0.02278	0.04469
	RESET_B	0.01251	0.01345	0.02881
	RESET_B	0.01616	0.01699	0.03172
sky130_fd_sc_hs__dlrtn_4	D	0.02179	0.02410	0.04300
	D	0.02492	0.02716	0.04503
	GATE_N	0.02434	0.02665	0.04905
	GATE_N	0.02788	0.03023	0.05232
	RESET_B	0.01956	0.02143	0.05212
	RESET_B	0.02551	0.02731	0.05709

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)	0.00466	0.00517	0.02204
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00189	0.00239	0.01928
	(!GATE_N * !RESET_B * !Q)	0.00782	0.00826	0.02538
	(!GATE_N * !RESET_B * !Q)	0.00525	0.00567	0.02280
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00468	0.00518	0.02205
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00189	0.00238	0.01927
	(!GATE_N * !RESET_B * !Q)	0.00785	0.00829	0.02541
	(!GATE_N * !RESET_B * !Q)	0.00526	0.00568	0.02281
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00475	0.00526	0.02217
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00198	0.00248	0.01939
	(!GATE_N * !RESET_B * !Q)	0.00828	0.00873	0.02581
	(!GATE_N * !RESET_B * !Q)	0.00571	0.00614	0.02322

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)	0.00151	0.00258	0.01983
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00428	0.00536	0.02259
	(!GATE_N * !RESET_B * !Q)	0.00751	0.00846	0.02600
	(!GATE_N * !RESET_B * !Q)	0.01011	0.01106	0.02859
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00148	0.00255	0.01980
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00427	0.00535	0.02258
	(!GATE_N * !RESET_B * !Q)	0.00760	0.00854	0.02608
	(!GATE_N * !RESET_B * !Q)	0.01022	0.01117	0.02869
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00153	0.00260	0.01986
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00431	0.00539	0.02265
	(!GATE_N * !RESET_B * !Q)	0.00871	0.00966	0.02718
	(!GATE_N * !RESET_B * !Q)	0.01131	0.01226	0.02978

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)	0.00840	0.00898	0.02975
	(D * RESET_B * Q)	0.00519	0.00576	0.02654
	(D * !RESET_B * !Q)	0.01324	0.01379	0.03442
	(D * !RESET_B * !Q)	0.00987	0.01040	0.03104
	(!D * !Q)	0.00827	0.00887	0.02959
	(!D * !Q)	0.00506	0.00565	0.02638
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00836	0.00895	0.02972
	(D * RESET_B * Q)	0.00519	0.00576	0.02654
	(D * !RESET_B * !Q)	0.01333	0.01387	0.03453
	(D * !RESET_B * !Q)	0.00998	0.01051	0.03119
	(!D * !Q)	0.00824	0.00884	0.02956
	(!D * !Q)	0.00506	0.00565	0.02638
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00852	0.00909	0.02984
	(D * RESET_B * Q)	0.00533	0.00589	0.02665
	(D * !RESET_B * !Q)	0.01448	0.01502	0.03570
	(D * !RESET_B * !Q)	0.01111	0.01165	0.03233
	(!D * !Q)	0.00827	0.00886	0.02957
	(!D * !Q)	0.00508	0.00566	0.02638

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)	0.00572	0.00679	0.02802
	(D * RESET_B * Q)	0.00893	0.01001	0.03123
	(D * !RESET_B * !Q)	0.00801	0.00914	0.03005
	(D * !RESET_B * !Q)	0.01140	0.01253	0.03343
	(!D * !Q)	0.00546	0.00656	0.02785
	(!D * !Q)	0.00866	0.00977	0.03106
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00577	0.00692	0.02809
	(D * RESET_B * Q)	0.00894	0.01011	0.03127
	(D * !RESET_B * !Q)	0.00810	0.00923	0.03015
	(D * !RESET_B * !Q)	0.01146	0.01260	0.03351
	(!D * !Q)	0.00556	0.00672	0.02796
	(!D * !Q)	0.00873	0.00991	0.03115
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00592	0.00698	0.02819
	(D * RESET_B * Q)	0.00910	0.01018	0.03138
	(D * !RESET_B * !Q)	0.00856	0.00970	0.03061
	(D * !RESET_B * !Q)	0.01195	0.01309	0.03400
	(!D * !Q)	0.00566	0.00675	0.02802
	(!D * !Q)	0.00884	0.00993	0.03121

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)	0.00146	0.00147	0.00146
	(D * GATE_N * !Q) + (!D * !Q)	-0.00176	-0.00176	-0.00175
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00150	0.00150	0.00150
	(D * GATE_N * !Q) + (!D * !Q)	-0.00190	-0.00190	-0.00190
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00243	0.00247	0.00245
	(D * GATE_N * !Q) + (!D * !Q)	-0.00289	-0.00292	-0.00290

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)	-0.00121	-0.00128	-0.00129
	(D * GATE_N * !Q) + (!D * !Q)	0.00203	0.00196	0.00193
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00124	-0.00131	-0.00132
	(D * GATE_N * !Q) + (!D * !Q)	0.00218	0.00213	0.00209
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00209	-0.00223	-0.00225
	(D * GATE_N * !Q) + (!D * !Q)	0.00330	0.00319	0.00313

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00240	0.00262	0.00299	0.81432
sky130_fd_sc_hs__dlrtp_2	0.00237	0.00257	0.00311	1.59016
sky130_fd_sc_hs__dlrtp_4	0.00236	0.00256	0.00468	3.04420

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	7.67334	10.49660
sky130_fd_sc_hs__dlrtp_2	0.00000	7.67761	10.09380
sky130_fd_sc_hs__dlrtp_4	0.00000	12.09610	19.47970

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)	0.37427	1.02951	7.52910
	GATE->Q (-R)	0.33144	0.99025	7.38320
	RESET_B->Q (RR)	0.13167	0.79503	7.47815
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.39295	0.94577	7.50781
	GATE->Q (-R)	0.34908	0.90304	7.35535
	RESET_B->Q (RR)	0.14035	0.71928	7.53947
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.42789	0.90320	7.55400
	GATE->Q (-R)	0.38779	0.86668	7.42686
	RESET_B->Q (RR)	0.14698	0.64820	7.60788

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.31333	0.77158	4.23268
	GATE->Q (-F)	0.33659	0.76005	3.90671
	RESET_B->Q (FF)	0.13101	0.64741	4.41514
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.33347	0.74747	4.15683
	GATE->Q (-F)	0.35313	0.72832	3.80815
	RESET_B->Q (FF)	0.14361	0.63927	4.46280
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.35176	0.72933	4.16235
	GATE->Q (-F)	0.36984	0.71123	3.82028
	RESET_B->Q (FF)	0.15463	0.61426	4.47459

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 ()**	0.14510	0.82153	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.17557	0.82153	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.20299	0.82153	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	0.01595	0.01651	0.03371
	D	0.01268	0.01323	0.03046
	GATE	0.01909	0.01962	0.04121
	GATE	0.01562	0.01615	0.03778
	RESET_B	0.00917	0.00937	0.02472
	RESET_B	0.00537	0.00556	0.02094
sky130_fd_sc_hs__dlrtp_2	D	0.01877	0.01960	0.03688
	D	0.01549	0.01633	0.03370
	GATE	0.02163	0.02249	0.04418
	GATE	0.01818	0.01904	0.04090
	RESET_B	0.01186	0.01227	0.02687
	RESET_B	0.00789	0.00832	0.02294
sky130_fd_sc_hs__dlrtp_4	D	0.02672	0.02809	0.04567
	D	0.02338	0.02477	0.04241
	GATE	0.02952	0.03094	0.05285
	GATE	0.02602	0.02745	0.04988
	RESET_B	0.02070	0.02178	0.05221
	RESET_B	0.01474	0.01584	0.04693

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01239	0.01356	0.03122
	D	0.01567	0.01683	0.03436
	GATE	0.01920	0.02017	0.04124
	GATE	0.01614	0.01712	0.03792
	RESET_B	0.01000	0.01073	0.02650
	RESET_B	0.01354	0.01425	0.02968
sky130_fd_sc_hs__dlrtp_2	D	0.01475	0.01635	0.03445
	D	0.01803	0.01959	0.03711
	GATE	0.02123	0.02263	0.04386
	GATE	0.01825	0.01964	0.04049
	RESET_B	0.01225	0.01335	0.02890
	RESET_B	0.01598	0.01698	0.03182
sky130_fd_sc_hs__dlrtp_4	D	0.02155	0.02378	0.04219
	D	0.02488	0.02710	0.04481
	GATE	0.02782	0.03000	0.05256
	GATE	0.02491	0.02698	0.04805
	RESET_B	0.01952	0.02147	0.05239
	RESET_B	0.02522	0.02706	0.05711

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)	0.00828	0.00869	0.02572
	(GATE * !RESET_B * !Q)	0.00542	0.00582	0.02286
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00503	0.00550	0.02232
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00196	0.00242	0.01925
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00839	0.00879	0.02580
	(GATE * !RESET_B * !Q)	0.00553	0.00592	0.02294
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00505	0.00551	0.02230
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00200	0.00245	0.01926
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00867	0.00907	0.02600
	(GATE * !RESET_B * !Q)	0.00582	0.00621	0.02314
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00511	0.00558	0.02232
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00207	0.00253	0.01929

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)	0.00704	0.00788	0.02540
	(GATE * !RESET_B * !Q)	0.00991	0.01076	0.02828
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00115	0.00213	0.01935
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00421	0.00521	0.02242
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00723	0.00809	0.02559
	(GATE * !RESET_B * !Q)	0.01011	0.01096	0.02845
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00119	0.00216	0.01937
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00424	0.00522	0.02242
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00829	0.00916	0.02659
	(GATE * !RESET_B * !Q)	0.01117	0.01204	0.02947
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00123	0.00221	0.01938
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00427	0.00525	0.02242

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)	0.00943	0.00999	0.03050
	(D * RESET_B * Q)	0.00617	0.00671	0.02723
	(D * !RESET_B * !Q)	0.01104	0.01151	0.03282
	(D * !RESET_B * !Q)	0.00798	0.00844	0.02976
	(!D * !Q)	0.00911	0.00968	0.03017
	(!D * !Q)	0.00585	0.00641	0.02690
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00918	0.00975	0.03028
	(D * RESET_B * Q)	0.00596	0.00652	0.02706
	(D * !RESET_B * !Q)	0.01086	0.01133	0.03269
	(D * !RESET_B * !Q)	0.00783	0.00830	0.02966
	(!D * !Q)	0.00886	0.00944	0.02996
	(!D * !Q)	0.00565	0.00621	0.02674
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00914	0.00971	0.03019
	(D * RESET_B * Q)	0.00593	0.00648	0.02697
	(D * !RESET_B * !Q)	0.01113	0.01158	0.03279
	(D * !RESET_B * !Q)	0.00811	0.00856	0.02975
	(!D * !Q)	0.00879	0.00938	0.02983
	(!D * !Q)	0.00558	0.00615	0.02662

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)	0.00541	0.00656	0.02740
	(D * RESET_B * Q)	0.00866	0.00983	0.03067
	(D * !RESET_B * !Q)	0.00927	0.01035	0.03226
	(D * !RESET_B * !Q)	0.01233	0.01343	0.03534
	(!D * !Q)	0.00536	0.00654	0.02748
	(!D * !Q)	0.00864	0.00980	0.03074
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00542	0.00656	0.02743
	(D * RESET_B * Q)	0.00865	0.00979	0.03065
	(D * !RESET_B * !Q)	0.00948	0.01053	0.03247
	(D * !RESET_B * !Q)	0.01253	0.01357	0.03550
	(!D * !Q)	0.00543	0.00658	0.02755
	(!D * !Q)	0.00866	0.00980	0.03077
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00545	0.00660	0.02744
	(D * RESET_B * Q)	0.00867	0.00982	0.03065
	(D * !RESET_B * !Q)	0.01057	0.01160	0.03341
	(D * !RESET_B * !Q)	0.01362	0.01466	0.03646
	(!D * !Q)	0.00532	0.00648	0.02742
	(!D * !Q)	0.00854	0.00970	0.03063

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)	0.00146	0.00146	0.00146
	(D * !GATE * !Q) + (!D * !Q)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00148	0.00148	0.00148
	(D * !GATE * !Q) + (!D * !Q)	-0.00194	-0.00194	-0.00193
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00239	0.00240	0.00239
	(D * !GATE * !Q) + (!D * !Q)	-0.00279	-0.00280	-0.00278

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)	-0.00120	-0.00129	-0.00129
	(D * !GATE * !Q) + (!D * !Q)	0.00206	0.00202	0.00197
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00121	-0.00129	-0.00130
	(D * !GATE * !Q) + (!D * !Q)	0.00222	0.00216	0.00212
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00203	-0.00217	-0.00218
	(D * !GATE * !Q) + (!D * !Q)	0.00317	0.00306	0.00301

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00239	0.00262	0.80234	0.80811
sky130_fd_sc_hs__dlxbn_2	0.00227	0.00260	1.44163	1.58276

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	9.13063	12.75630
sky130_fd_sc_hs__dlxbn_2	0.00000	9.49527	12.44390

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)	0.36990	1.03543	7.59368
	GATE_N->Q (-R)	0.42906	1.16909	8.10459
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.37880	0.94242	7.40070
	GATE_N->Q (-R)	0.43751	1.07431	7.90765

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.32583	0.78918	4.19970
	GATE_N->Q (-F)	0.33891	0.85099	4.55637
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.34257	0.75555	3.86895
	GATE_N->Q (-F)	0.35633	0.81822	4.22610

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)	0.39841	1.11761	8.12422
	GATE_N->Q_N (-R)	0.41168	1.17915	8.47852
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.44213	1.02416	7.90268
	GATE_N->Q_N (-R)	0.45624	1.08683	8.25843

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)	0.43178	0.83919	4.13403
	GATE_N->Q_N (-F)	0.49087	0.97281	4.64489
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.48207	0.85471	4.26749
	GATE_N->Q_N (-F)	0.54082	0.98733	4.77208

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01068	0.01126	0.02043
	D	0.00921	0.00979	0.01860
	GATE_N	0.01080	0.01169	0.02253
	GATE_N	0.01242	0.01332	0.02394
sky130_fd_sc_hs__dlxbn_2	D	0.01324	0.01418	0.02349
	D	0.01184	0.01277	0.02171
	GATE_N	0.01338	0.01455	0.02601
	GATE_N	0.01499	0.01623	0.02703

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00920	0.00999	0.01893
	D	0.01067	0.01146	0.02029
	GATE_N	0.01055	0.01141	0.02228
	GATE_N	0.01217	0.01303	0.02387
sky130_fd_sc_hs__dlxbn_2	D	0.01170	0.01280	0.02163
	D	0.01310	0.01421	0.02303
	GATE_N	0.01303	0.01418	0.02534
	GATE_N	0.01464	0.01580	0.02674

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00927	0.01006	0.01920
	D	0.01074	0.01153	0.02050
	GATE_N	0.01062	0.01147	0.02259
	GATE_N	0.01224	0.01310	0.02410
sky130_fd_sc_hs__dlxbn_2	D	0.01176	0.01288	0.02261
	D	0.01317	0.01429	0.02342
	GATE_N	0.01310	0.01425	0.02550
	GATE_N	0.01471	0.01586	0.02693

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01062	0.01120	0.01992
	D	0.00915	0.00973	0.01833
	GATE_N	0.01074	0.01163	0.02207
	GATE_N	0.01236	0.01325	0.02368
sky130_fd_sc_hs__dlxbn_2	D	0.01318	0.01410	0.02292
	D	0.01177	0.01270	0.02133
	GATE_N	0.01332	0.01449	0.02557
	GATE_N	0.01493	0.01617	0.02671

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)	0.00489	0.00538	0.02227
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00195	0.00243	0.01933
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00481	0.00532	0.02220
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00199	0.00249	0.01939

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)	0.00131	0.00230	0.01962
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00426	0.00526	0.02257
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00136	0.00243	0.01969
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00418	0.00525	0.02251

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)	0.00870	0.00925	0.03000
	(D * Q * !Q_N)	0.00546	0.00599	0.02675
	(!D * !Q * Q_N)	0.00853	0.00910	0.02979
	(!D * !Q * Q_N)	0.00529	0.00584	0.02655
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00867	0.00923	0.02996
	(D * Q * !Q_N)	0.00545	0.00598	0.02675
	(!D * !Q * Q_N)	0.00849	0.00907	0.02976
	(!D * !Q * Q_N)	0.00526	0.00582	0.02653

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)	0.00580	0.00688	0.02808
	(D * Q * !Q_N)	0.00904	0.01013	0.03132
	(!D * !Q * Q_N)	0.00566	0.00675	0.02802
	(!D * !Q * Q_N)	0.00890	0.01000	0.03127
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00578	0.00685	0.02805
	(D * Q * !Q_N)	0.00901	0.01009	0.03128
	(!D * !Q * Q_N)	0.00562	0.00671	0.02797
	(!D * !Q * Q_N)	0.00885	0.00995	0.03121

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00237	0.00263	0.79809	0.80881

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	9.07744	12.70980

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)	0.36220	1.02533	7.52999
	GATE->Q (-R)	0.31886	0.98336	7.37462

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.33218	0.79864	4.20566
	GATE->Q (-F)	0.34789	0.77524	3.84813

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)	0.40540	1.12628	8.15084
	GATE->Q_N (-R)	0.42127	1.10273	7.79314

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)	0.42428	0.83117	4.11114
	GATE->Q_N (-F)	0.38085	0.78902	3.95319

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01066	0.01127	0.02021
	D	0.00920	0.00980	0.01849
	GATE	0.01202	0.01261	0.02378
	GATE	0.01040	0.01099	0.02193

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00905	0.00984	0.01864
	D	0.01051	0.01130	0.02004
	GATE	0.01221	0.01291	0.02338
	GATE	0.01058	0.01128	0.02168

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00912	0.00990	0.01894
	D	0.01057	0.01136	0.02026
	GATE	0.01228	0.01297	0.02399
	GATE	0.01065	0.01134	0.02200

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01060	0.01118	0.01991
	D	0.00914	0.00972	0.01829
	GATE	0.01196	0.01255	0.02345
	GATE	0.01034	0.01093	0.02171

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)	0.00500	0.00548	0.02227
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00207	0.00255	0.01935

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)	0.00119	0.00226	0.01939
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00411	0.00519	0.02231

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)	0.00890	0.00948	0.03004
	(D * Q * !Q_N)	0.00565	0.00622	0.02679
	(!D * !Q * Q_N)	0.00878	0.00937	0.02992
	(!D * !Q * Q_N)	0.00554	0.00611	0.02667

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)	0.00530	0.00645	0.02732
	(D * Q * !Q_N)	0.00855	0.00970	0.03057
	(!D * !Q * Q_N)	0.00515	0.00630	0.02727
	(!D * !Q * Q_N)	0.00840	0.00954	0.03052

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00237	0.00266	0.81090
sky130_fd_sc_hs__dlxtn_2	0.00242	0.00265	1.53977
sky130_fd_sc_hs__dlxtn_4	0.00241	0.00264	3.05890

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	7.31771	9.39069
sky130_fd_sc_hs__dlxtn_2	0.00000	7.33189	10.07220
sky130_fd_sc_hs__dlxtn_4	0.00000	10.99080	13.69150

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)	0.34790	1.00454	7.51186
	GATE_N->Q (-R)	0.40814	1.14104	8.03190
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.35156	0.89358	7.32668
	GATE_N->Q (-R)	0.40878	1.02477	7.83374
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.39224	0.85665	7.55651
	GATE_N->Q (-R)	0.44797	0.98801	8.05463

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.29922	0.74908	4.08681
	GATE_N->Q (-F)	0.31577	0.81599	4.45109
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.31691	0.72221	3.98310
	GATE_N->Q (-F)	0.33099	0.78568	4.34009
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.34232	0.72145	4.20815
	GATE_N->Q (-F)	0.36042	0.79163	4.59284

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01523	0.01596	0.03333
	D	0.01219	0.01293	0.03032
	GATE_N	0.01540	0.01671	0.03775
	GATE_N	0.01871	0.02003	0.04117
sky130_fd_sc_hs__dlxtn_2	D	0.01789	0.01886	0.03632
	D	0.01479	0.01578	0.03344
	GATE_N	0.01798	0.01960	0.04075
	GATE_N	0.02128	0.02291	0.04446
sky130_fd_sc_hs__dlxtn_4	D	0.02565	0.02696	0.04446
	D	0.02256	0.02389	0.04140
	GATE_N	0.02560	0.02769	0.04893
	GATE_N	0.02889	0.03099	0.05259

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01254	0.01370	0.03186
	D	0.01558	0.01673	0.03438
	GATE_N	0.01515	0.01642	0.03849
	GATE_N	0.01846	0.01973	0.04157
sky130_fd_sc_hs__dlxtn_2	D	0.01481	0.01630	0.03479
	D	0.01790	0.01939	0.03706
	GATE_N	0.01741	0.01904	0.04142
	GATE_N	0.02070	0.02231	0.04418
sky130_fd_sc_hs__dlxtn_4	D	0.02161	0.02388	0.04278
	D	0.02470	0.02696	0.04472
	GATE_N	0.02424	0.02649	0.04982
	GATE_N	0.02754	0.02978	0.05198

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00489	0.00536	0.02217
	GATE_N	0.00186	0.00231	0.01913
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00490	0.00537	0.02218
	GATE_N	0.00181	0.00226	0.01909
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00496	0.00542	0.02223
	GATE_N	0.00187	0.00231	0.01914

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00157	0.00256	0.01980
	GATE_N	0.00461	0.00560	0.02284
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00155	0.00251	0.01978
	GATE_N	0.00464	0.00562	0.02287
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00162	0.00258	0.01984
	GATE_N	0.00471	0.00568	0.02293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00902	0.00955	0.03019
	(D * Q)	0.00570	0.00623	0.02688
	(!D * !Q)	0.00880	0.00936	0.02994
	(!D * !Q)	0.00548	0.00603	0.02663
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00880	0.00936	0.03005
	(D * Q)	0.00551	0.00606	0.02675
	(!D * !Q)	0.00857	0.00914	0.02978
	(!D * !Q)	0.00527	0.00584	0.02648
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00892	0.00946	0.03013
	(D * Q)	0.00562	0.00615	0.02683
	(!D * !Q)	0.00865	0.00921	0.02982
	(!D * !Q)	0.00535	0.00590	0.02652

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00583	0.00687	0.02801
	(D * Q)	0.00914	0.01020	0.03133
	(!D * !Q)	0.00569	0.00674	0.02794
	(!D * !Q)	0.00900	0.01007	0.03126
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00576	0.00682	0.02798
	(D * Q)	0.00905	0.01013	0.03127
	(!D * !Q)	0.00565	0.00674	0.02795
	(!D * !Q)	0.00895	0.01004	0.03125
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00586	0.00690	0.02805
	(D * Q)	0.00915	0.01021	0.03134
	(!D * !Q)	0.00572	0.00679	0.02799
	(!D * !Q)	0.00901	0.01008	0.03129

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00233	0.00270	0.79822

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	6.98876	9.48699

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)	0.40180	1.05837	7.59229
	GATE->Q (-R)	0.32846	0.98879	7.43457

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.31954	0.77252	4.17602
	GATE->Q (-F)	0.33506	0.75636	3.85774

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01654	0.01726	0.03446
	D	0.01342	0.01414	0.03152
	GATE	0.01964	0.02023	0.03882
	GATE	0.01620	0.01680	0.03550

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01421	0.01539	0.03327
	D	0.01733	0.01850	0.03614
	GATE	0.02055	0.02151	0.04195
	GATE	0.01740	0.01837	0.03858

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00461	0.00517	0.02223
	!GATE	0.00164	0.00219	0.01925

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00148	0.00242	0.01963
	!GATE	0.00446	0.00541	0.02260

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00965	0.01025	0.03093
	(D * Q)	0.00636	0.00694	0.02763
	(!D * !Q)	0.00917	0.00977	0.03043
	(!D * !Q)	0.00587	0.00646	0.02713

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00468	0.00582	0.02701
	(D * Q)	0.00797	0.00913	0.03030
	(!D * !Q)	0.00497	0.00615	0.02734
	(!D * !Q)	0.00826	0.00945	0.03064

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00179	0.80542
sky130_fd_sc_hs__dlygate4sd2_1	0.00180	0.80686
sky130_fd_sc_hs__dlygate4sd3_1	0.00182	0.80446

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	1.09516	1.40492
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.99948	1.31170
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.97941	1.30929

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)**	0.23942	0.89051	7.06075
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.30862	0.96905	7.21875
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.48813	1.17322	7.54637

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.31637	0.87993	5.02562
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.38917	0.97213	5.14381
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.55149	1.18802	5.49870

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01137	0.01137	0.01732
	A	0.00909	0.00910	0.01510
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01174	0.01175	0.01737
	A	0.00945	0.00946	0.01517
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01325	0.01323	0.01847
	A	0.01093	0.01091	0.01629

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00861	0.00891	0.01515
	A	0.01089	0.01118	0.01704
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00903	0.00925	0.01511
	A	0.01133	0.01154	0.01696
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01090	0.01090	0.01625
	A	0.01323	0.01322	0.01819

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00242	0.00458	0.39802
sky130_fd_sc_hs__ebufn_2	0.00267	0.00614	0.70224
sky130_fd_sc_hs__ebufn_4	0.00295	0.00953	1.38231
sky130_fd_sc_hs__ebufn_8	0.00570	0.01596	2.51640

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	3.98636	6.17137
sky130_fd_sc_hs__ebufn_2	0.00000	2.89879	3.81833
sky130_fd_sc_hs__ebufn_4	0.00000	2.39688	3.84444
sky130_fd_sc_hs__ebufn_8	0.00000	3.92150	7.24785

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)	0.12018	0.92833	7.41420
	TE_B->Z (RR)	0.04409	0.42640	4.68884
	TE_B->Z (FR)	0.08983	1.00308	9.76581
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.11053	0.82079	7.47362
	TE_B->Z (RR)	0.04725	0.42737	4.68980
	TE_B->Z (FR)	0.08559	0.86984	9.70797
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.12277	0.74377	7.52486
	TE_B->Z (RR)	0.05925	0.42985	4.69232
	TE_B->Z (FR)	0.08053	0.73123	9.57876
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.12575	0.66096	7.54111
	TE_B->Z (RR)	0.09414	0.43546	4.69790
	TE_B->Z (FR)	0.08724	0.63269	9.43546

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.12496	0.60290	3.61803
	TE_B->Z (RF)	0.04361	0.42645	4.68885
	TE_B->Z (FF)	0.10009	0.53099	3.42373
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.13770	0.60859	3.71934
	TE_B->Z (RF)	0.04690	0.42742	4.68983
	TE_B->Z (FF)	0.10454	0.50414	3.44483
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.18727	0.68663	4.18539
	TE_B->Z (RF)	0.05866	0.43001	4.69237
	TE_B->Z (FF)	0.12612	0.53864	3.77752
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.18177	0.64506	4.27350
	TE_B->Z (RF)	0.09325	0.43582	4.69800
	TE_B->Z (FF)	0.17645	0.61962	4.19502

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00651	0.00724	0.02439
	A	0.00335	0.00408	0.02129
	TE_B	0.00313	0.00424	0.02191
	TE_B	0.00891	0.01005	0.02762
sky130_fd_sc_hs__ebufn_2	A	0.00933	0.01039	0.02955
	A	0.00591	0.00696	0.02616
	TE_B	0.00584	0.00699	0.02673
	TE_B	0.01357	0.01471	0.03447
sky130_fd_sc_hs__ebufn_4	A	0.01509	0.01651	0.03511
	A	0.01128	0.01271	0.03138
	TE_B	0.01159	0.01255	0.03193
	TE_B	0.02365	0.02465	0.04406
sky130_fd_sc_hs__ebufn_8	A	0.02921	0.03222	0.07021
	A	0.02178	0.02482	0.06287
	TE_B	0.02361	0.02431	0.04288
	TE_B	0.04389	0.04456	0.06336

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00316	0.00439	0.02168
	A	0.00631	0.00752	0.02482
	TE_B	0.00326	0.00448	0.02211
	TE_B	0.00896	0.01016	0.02770
sky130_fd_sc_hs__ebufn_2	A	0.00557	0.00723	0.02637
	A	0.00899	0.01056	0.02962
	TE_B	0.00625	0.00749	0.02714
	TE_B	0.01367	0.01491	0.03448
sky130_fd_sc_hs__ebufn_4	A	0.01067	0.01268	0.03221
	A	0.01448	0.01637	0.03529
	TE_B	0.01227	0.01337	0.03276
	TE_B	0.02390	0.02493	0.04418
sky130_fd_sc_hs__ebufn_8	A	0.02101	0.02481	0.06334
	A	0.02842	0.03203	0.07029
	TE_B	0.02486	0.02563	0.04451
	TE_B	0.04430	0.04500	0.06346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00419	0.00481	0.02190
	(TE_B * Z)	0.00099	0.00160	0.01870
	(TE_B * !Z)	0.00405	0.00466	0.02173
	(TE_B * !Z)	0.00087	0.00147	0.01854
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00589	0.00651	0.02555
	(TE_B * Z)	0.00233	0.00293	0.02199
	(TE_B * !Z)	0.00551	0.00609	0.02507
	(TE_B * !Z)	0.00198	0.00256	0.02155
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00869	0.00914	0.02751
	(TE_B * Z)	0.00472	0.00514	0.02353
	(TE_B * !Z)	0.00804	0.00843	0.02668
	(TE_B * !Z)	0.00411	0.00450	0.02277
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01612	0.01712	0.05442
	(TE_B * Z)	0.00838	0.00937	0.04669
	(TE_B * !Z)	0.01480	0.01576	0.05279
	(TE_B * !Z)	0.00717	0.00809	0.04515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00068	0.00175	0.01909
	(TE_B * Z)	0.00390	0.00497	0.02231
	(TE_B * !Z)	0.00074	0.00184	0.01924
	(TE_B * !Z)	0.00392	0.00502	0.02242
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00134	0.00245	0.02148
	(TE_B * Z)	0.00493	0.00607	0.02509
	(TE_B * !Z)	0.00157	0.00264	0.02193
	(TE_B * !Z)	0.00508	0.00616	0.02544
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00243	0.00326	0.02183
	(TE_B * Z)	0.00648	0.00734	0.02594
	(TE_B * !Z)	0.00285	0.00376	0.02256
	(TE_B * !Z)	0.00676	0.00766	0.02647
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00413	0.00596	0.04358
	(TE_B * Z)	0.01206	0.01391	0.05156
	(TE_B * !Z)	0.00501	0.00693	0.04503
	(TE_B * !Z)	0.01260	0.01456	0.05263

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00352	0.00399	0.02116
	(A * Z)	-0.00215	-0.00173	0.01547
	(!A * !Z)	0.00357	0.00404	0.02118
	(!A * !Z)	-0.00210	-0.00165	0.01549
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00396	0.00431	0.02346
	(A * Z)	-0.00348	-0.00319	0.01601
	(!A * !Z)	0.00422	0.00438	0.02359
	(!A * !Z)	-0.00325	-0.00312	0.01611
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00506	0.00480	0.02331
	(A * Z)	-0.00650	-0.00683	0.01165
	(!A * !Z)	0.00537	0.00493	0.02345
	(!A * !Z)	-0.00623	-0.00674	0.01185
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00707	0.00598	0.02295
	(A * Z)	-0.01227	-0.01351	0.00346
	(!A * !Z)	0.00742	0.00618	0.02316
	(!A * !Z)	-0.01197	-0.01333	0.00370

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00091	0.00212	0.01964
	(A * Z)	0.00661	0.00784	0.02534
	(!A * !Z)	0.00090	0.00209	0.01961
	(!A * !Z)	0.00660	0.00779	0.02531
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00204	0.00328	0.02288
	(A * Z)	0.00951	0.01077	0.03033
	(!A * !Z)	0.00204	0.00327	0.02284
	(!A * !Z)	0.00950	0.01077	0.03032
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00419	0.00521	0.02457
	(A * Z)	0.01582	0.01682	0.03622
	(!A * !Z)	0.00434	0.00534	0.02463
	(!A * !Z)	0.01592	0.01701	0.03625
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00857	0.00941	0.02794
	(A * Z)	0.02794	0.02892	0.04742
	(!A * !Z)	0.00902	0.00979	0.02827
	(!A * !Z)	0.02838	0.02928	0.04774

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00182	0.00365	0.00309	0.81057	0.82033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	8.00410	11.61490

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)	0.30781	1.00535	7.49476

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.29186	0.79910	4.09940

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)	0.42100	1.09641	7.67604

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)	0.41840	0.86610	4.08053

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)	-0.16992	-0.27548	-0.84548
	setup	CLK (R)	0.22171	0.30474	0.86755

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.56131	-0.64654	-2.62559
	setup	CLK (R)	0.74110	0.78309	2.80069

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)	-0.16992	-0.27548	-0.84548
	setup	CLK (R)	0.22171	0.30474	0.86755

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.56131	-0.64654	-2.62559
	setup	CLK (R)	0.74110	0.78309	2.80069

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)	-0.01200	0.00348	0.36711
	setup	CLK (R)	0.79532	0.78149	0.89618

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)	-0.26740	-0.36315	-1.06624
	setup	CLK (R)	0.62956	0.68443	2.37350

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)	-0.01200	0.00348	0.36711
	hold	CLK (R)	-0.26638	-0.29966	-0.44014
	setup	CLK (R)	0.21834	0.27277	0.77643
	setup	CLK (R)	0.79532	0.78149	0.89618

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.58181	-0.65704	-2.34971
	hold	CLK (R)	-0.26740	-0.36315	-1.06624
	setup	CLK (R)	0.62956	0.68443	2.37350
	setup	CLK (R)	0.29102	0.37682	1.07524

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 ()	0.13901	0.82153	16.50020
	min_pulse_width	CLK ()	0.22737	0.82153	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 ()	0.24870	0.82153	16.50020
	min_pulse_width	CLK ()	0.48636	0.82153	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	0.01435	0.01476	0.02511
	CLK	0.01247	0.01288	0.02296

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01420	0.01448	0.02469
	CLK	0.01218	0.01248	0.02256

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01428	0.01457	0.02521
	CLK	0.01226	0.01256	0.02284

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01430	0.01470	0.02478
	CLK	0.01242	0.01282	0.02270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00482	0.00480	0.00908
	(CLK * DE)	0.00233	0.00231	0.00660
	(CLK * !DE)	0.00042	0.00041	0.00040
	(CLK * !DE)	-0.00116	-0.00117	-0.00119
	(!CLK * DE * Q * !Q_N)	0.01197	0.01204	0.01752
	(!CLK * DE * Q * !Q_N)	0.00951	0.00959	0.01507
	(!CLK * DE * !Q * Q_N)	0.01141	0.01148	0.01690
	(!CLK * DE * !Q * Q_N)	0.00892	0.00900	0.01442
	(!CLK * !DE)	0.00041	0.00041	0.00040
	(!CLK * !DE)	-0.00117	-0.00117	-0.00119

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00212	0.00209	0.00650
	(CLK * DE)	0.00461	0.00457	0.00898
	(CLK * !DE)	-0.00024	-0.00025	-0.00024
	(CLK * !DE)	0.00133	0.00135	0.00133
	(!CLK * DE * Q * !Q_N)	0.00954	0.00949	0.01559
	(!CLK * DE * Q * !Q_N)	0.01200	0.01194	0.01804
	(!CLK * DE * !Q * Q_N)	0.01008	0.01006	0.01637
	(!CLK * DE * !Q * Q_N)	0.01256	0.01254	0.01885
	(!CLK * !DE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE)	0.00133	0.00134	0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00834	0.00864	0.02475
	CLK	0.00272	0.00300	0.01912
	(!CLK * D * Q * !Q_N)	0.00461	0.00495	0.01695
	(!CLK * D * Q * !Q_N)	-0.00001	0.00031	0.01232
	(!CLK * D * !Q * Q_N)	0.01492	0.01528	0.03211
	(!CLK * D * !Q * Q_N)	0.00931	0.00964	0.02649
	(!CLK * !D * Q * !Q_N)	0.01508	0.01538	0.02742
	(!CLK * !D * Q * !Q_N)	0.01138	0.01167	0.02372
	(!CLK * !D * !Q * Q_N)	0.00465	0.00495	0.01703
	(!CLK * !D * !Q * Q_N)	0.00005	0.00034	0.01244

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00294	0.00350	0.01990
	CLK	0.00858	0.00912	0.02552
	(!CLK * D * Q * !Q_N)	0.00006	0.00068	0.01290
	(!CLK * D * Q * !Q_N)	0.00468	0.00531	0.01752
	(!CLK * D * !Q * Q_N)	0.01079	0.01134	0.02901
	(!CLK * D * !Q * Q_N)	0.01643	0.01699	0.03463
	(!CLK * !D * Q * !Q_N)	0.01181	0.01242	0.02456
	(!CLK * !D * Q * !Q_N)	0.01550	0.01612	0.02828
	(!CLK * !D * !Q * Q_N)	0.00005	0.00067	0.01289
	(!CLK * !D * !Q * Q_N)	0.00464	0.00528	0.01750

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)	0.01338	0.01372	0.03309
	(D * Q * !Q_N)	0.00949	0.00982	0.02919
	(D * !DE * !Q * Q_N)	0.01324	0.01356	0.03298
	(D * !DE * !Q * Q_N)	0.00934	0.00965	0.02908
	(!D * !Q * Q_N)	0.01326	0.01358	0.03300
	(!D * !Q * Q_N)	0.00937	0.00968	0.02911
	(!D * !DE * Q * !Q_N)	0.01336	0.01370	0.03306
	(!D * !DE * Q * !Q_N)	0.00946	0.00979	0.02917

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)	0.00677	0.00753	0.02749
	(D * Q * !Q_N)	0.01066	0.01144	0.03138
	(D * DE * !Q * Q_N)	0.01371	0.01444	0.03461
	(D * DE * !Q * Q_N)	0.01759	0.01833	0.03851
	(D * !DE * !Q * Q_N)	0.00721	0.00802	0.02781
	(D * !DE * !Q * Q_N)	0.01109	0.01192	0.03171
	(!D * DE * Q * !Q_N)	0.01544	0.01627	0.03650
	(!D * DE * Q * !Q_N)	0.01932	0.02015	0.04040
	(!D * !Q * Q_N)	0.00723	0.00804	0.02784
	(!D * !Q * Q_N)	0.01112	0.01195	0.03174
	(!D * !DE * Q * !Q_N)	0.00675	0.00751	0.02746
	(!D * !DE * Q * !Q_N)	0.01063	0.01141	0.03135

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00186	0.00351	0.00303	0.81076

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	7.90761	12.48130

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)	0.29074	0.98195	7.46379

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.26519	0.75058	3.96753

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)	-0.16698	-0.27229	-0.84046
	setup	CLK (R)	0.21558	0.30331	0.87021

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.55634	-0.64323	-2.60865
	setup	CLK (R)	0.74040	0.77917	2.82773

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)	-0.01235	0.00348	0.36206
	setup	CLK (R)	0.79133	0.77439	0.94722

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)	-0.26523	-0.36008	-1.07864
	setup	CLK (R)	0.62351	0.67748	2.36528

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)	-0.01235	0.00348	0.36206
	hold	CLK (R)	-0.25771	-0.29083	-0.42860
	setup	CLK (R)	0.21108	0.27277	0.77820
	setup	CLK (R)	0.79133	0.77439	0.94722

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.58212	-0.65040	-2.34051
	hold	CLK (R)	-0.26523	-0.36008	-1.07864
	setup	CLK (R)	0.62351	0.67748	2.36528
	setup	CLK (R)	0.28847	0.37727	1.08538

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 ()	0.12987	0.82153	16.50020
	min_pulse_width	CLK ()	0.19690	0.82153	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 ()	0.24260	0.82153	16.50020
	min_pulse_width	CLK ()	0.49855	0.82153	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	0.02418	0.02488	0.04499
	CLK	0.02047	0.02118	0.04143

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02339	0.02393	0.04440
	CLK	0.01946	0.02000	0.04018

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00469	0.00466	0.00897
	(CLK * DE)	0.00218	0.00215	0.00647
	(CLK * !DE)	0.00041	0.00041	0.00040
	(CLK * !DE)	-0.00119	-0.00119	-0.00121
	(!CLK * DE * Q)	0.01178	0.01185	0.01735
	(!CLK * DE * Q)	0.00930	0.00937	0.01487
	(!CLK * DE * !Q)	0.01120	0.01127	0.01673
	(!CLK * DE * !Q)	0.00869	0.00877	0.01423
	(!CLK * !DE)	0.00041	0.00041	0.00039
	(!CLK * !DE)	-0.00119	-0.00119	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00205	0.00202	0.00644
	(CLK * DE)	0.00456	0.00452	0.00895
	(CLK * !DE)	-0.00023	-0.00023	-0.00023
	(CLK * !DE)	0.00137	0.00139	0.00137
	(!CLK * DE * Q)	0.00915	0.00912	0.01524
	(!CLK * DE * Q)	0.01163	0.01160	0.01771
	(!CLK * DE * !Q)	0.00974	0.00973	0.01606
	(!CLK * DE * !Q)	0.01224	0.01223	0.01856
	(!CLK * !DE)	-0.00023	-0.00023	-0.00023
	(!CLK * !DE)	0.00137	0.00138	0.00137

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00808	0.00839	0.02456
	CLK	0.00262	0.00294	0.01910
	(!CLK * D * Q)	0.00447	0.00479	0.01687
	(!CLK * D * Q)	0.00001	0.00031	0.01241
	(!CLK * D * !Q)	0.01459	0.01497	0.03184
	(!CLK * D * !Q)	0.00914	0.00950	0.02639
	(!CLK * !D * Q)	0.01456	0.01488	0.02698
	(!CLK * !D * Q)	0.01103	0.01135	0.02345
	(!CLK * !D * !Q)	0.00454	0.00491	0.01697
	(!CLK * !D * !Q)	0.00012	0.00047	0.01254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00288	0.00344	0.01988
	CLK	0.00835	0.00892	0.02532
	(!CLK * D * Q)	0.00008	0.00071	0.01294
	(!CLK * D * Q)	0.00452	0.00516	0.01739
	(!CLK * D * !Q)	0.01048	0.01103	0.02870
	(!CLK * D * !Q)	0.01594	0.01651	0.03415
	(!CLK * !D * Q)	0.01163	0.01225	0.02441
	(!CLK * !D * Q)	0.01514	0.01577	0.02793
	(!CLK * !D * !Q)	0.00007	0.00070	0.01293
	(!CLK * !D * !Q)	0.00449	0.00514	0.01737

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01286	0.01321	0.03267
	(D * Q)	0.00904	0.00938	0.02885
	(D * !DE * !Q)	0.01312	0.01344	0.03298
	(D * !DE * !Q)	0.00930	0.00962	0.02916
	(!D * !Q)	0.01314	0.01346	0.03301
	(!D * !Q)	0.00933	0.00965	0.02918
	(!D * !DE * Q)	0.01283	0.01319	0.03265
	(!D * !DE * Q)	0.00901	0.00936	0.02882

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00677	0.00755	0.02754
	(D * Q)	0.01058	0.01138	0.03136
	(D * DE * !Q)	0.01328	0.01403	0.03426
	(D * DE * !Q)	0.01709	0.01785	0.03809
	(D * !DE * !Q)	0.00682	0.00759	0.02748
	(D * !DE * !Q)	0.01063	0.01142	0.03130
	(!D * DE * Q)	0.01514	0.01599	0.03622
	(!D * DE * Q)	0.01895	0.01980	0.04004
	(!D * !Q)	0.00685	0.00762	0.02750
	(!D * !Q)	0.01066	0.01144	0.03132
	(!D * !DE * Q)	0.00675	0.00752	0.02751
	(!D * !DE * Q)	0.01056	0.01135	0.03133

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00300	0.00339	0.39603
sky130_fd_sc_hs__einvn_2	0.00566	0.00518	0.73861
sky130_fd_sc_hs__einvn_4	0.01129	0.00948	1.43305
sky130_fd_sc_hs__einvn_8	0.02260	0.01590	2.59029

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	2.47686	3.34694
sky130_fd_sc_hs__einvn_2	0.00000	2.70615	3.47617
sky130_fd_sc_hs__einvn_4	0.00000	1.78414	3.51437
sky130_fd_sc_hs__einvn_8	0.00000	2.83154	6.70555

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)	0.07508	1.02182	10.23060
	TE_B->Z (RR)	0.04488	0.42598	4.68842
	TE_B->Z (FR)	0.08709	1.00097	9.73458
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.05122	0.86075	10.15610
	TE_B->Z (RR)	0.05744	0.42816	4.69061
	TE_B->Z (FR)	0.07620	0.84766	9.64546
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.04760	0.74457	10.16420
	TE_B->Z (RR)	0.06018	0.42992	4.69240
	TE_B->Z (FR)	0.07239	0.71759	9.52855
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.04902	0.65290	9.99716
	TE_B->Z (RR)	0.09214	0.43799	4.70043
	TE_B->Z (FR)	0.08124	0.61540	9.21527

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.03868	0.60697	6.17051
	TE_B->Z (RF)	0.04419	0.42599	4.68843
	TE_B->Z (FF)	0.10156	0.55371	3.50674
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.03075	0.53230	6.21480
	TE_B->Z (RF)	0.05668	0.42825	4.69064
	TE_B->Z (FF)	0.11547	0.55768	3.72745
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.02960	0.46672	6.24230
	TE_B->Z (RF)	0.05934	0.43008	4.69246
	TE_B->Z (FF)	0.11578	0.51476	3.76157
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.03181	0.42576	6.36473
	TE_B->Z (RF)	0.09085	0.43848	4.70059
	TE_B->Z (FF)	0.15975	0.58531	4.12880

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00030	0.00006	0.00442
	A	0.00343	0.00378	0.00816
	TE_B	0.00199	0.00274	0.01530
	TE_B	0.00765	0.00842	0.02096
sky130_fd_sc_hs__einvn_2	A	-0.00155	-0.00049	0.00806
	A	0.00567	0.00672	0.01531
	TE_B	0.00298	0.00367	0.01611
	TE_B	0.01230	0.01301	0.02545
sky130_fd_sc_hs__einvn_4	A	-0.00309	-0.00055	0.01594
	A	0.01129	0.01370	0.03040
	TE_B	0.00606	0.00710	0.02679
	TE_B	0.02360	0.02471	0.04444
sky130_fd_sc_hs__einvn_8	A	-0.00586	-0.00113	0.03246
	A	0.02305	0.02775	0.06123
	TE_B	0.01251	0.01331	0.03226
	TE_B	0.04379	0.04467	0.06397

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00342	0.00368	0.00657
	A	-0.00028	-0.00005	0.00286
	TE_B	0.00362	0.00438	0.01660
	TE_B	0.00666	0.00742	0.01957
sky130_fd_sc_hs__einvn_2	A	0.00559	0.00645	0.01211
	A	-0.00159	-0.00085	0.00492
	TE_B	0.00603	0.00678	0.01908
	TE_B	0.01023	0.01095	0.02325
sky130_fd_sc_hs__einvn_4	A	0.01128	0.01295	0.02489
	A	-0.00307	-0.00151	0.00991
	TE_B	0.01237	0.01345	0.03318
	TE_B	0.01949	0.02054	0.04009
sky130_fd_sc_hs__einvn_8	A	0.02253	0.02513	0.04917
	A	-0.00631	-0.00366	0.02001
	TE_B	0.02490	0.02592	0.04514
	TE_B	0.03506	0.03597	0.05469

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00078	0.00079	0.00078
	(TE_B * Z)	-0.00128	-0.00128	-0.00128
	(TE_B * !Z)	0.00085	0.00085	0.00085
	(TE_B * !Z)	-0.00107	-0.00108	-0.00107
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00147	0.00147	0.00140
	(TE_B * Z)	-0.00250	-0.00249	-0.00249
	(TE_B * !Z)	0.00169	0.00171	0.00169
	(TE_B * !Z)	-0.00196	-0.00199	-0.00196
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00267	0.00266	0.00254
	(TE_B * Z)	-0.00492	-0.00495	-0.00488
	(TE_B * !Z)	0.00307	0.00307	0.00305
	(TE_B * !Z)	-0.00409	-0.00408	-0.00405
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00511	0.00513	0.00488
	(TE_B * Z)	-0.00961	-0.00975	-0.00962
	(TE_B * !Z)	0.00593	0.00600	0.00596
	(TE_B * !Z)	-0.00801	-0.00811	-0.00805

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00071	-0.00071	-0.00071
	(TE_B * Z)	0.00128	0.00128	0.00128
	(TE_B * !Z)	-0.00085	-0.00085	-0.00085
	(TE_B * !Z)	0.00114	0.00115	0.00114
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00133	-0.00132	-0.00132
	(TE_B * Z)	0.00250	0.00249	0.00249
	(TE_B * !Z)	-0.00158	-0.00163	-0.00169
	(TE_B * !Z)	0.00214	0.00212	0.00204
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00249	-0.00250	-0.00247
	(TE_B * Z)	0.00492	0.00495	0.00488
	(TE_B * !Z)	-0.00305	-0.00307	-0.00305
	(TE_B * !Z)	0.00428	0.00424	0.00410
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00478	-0.00485	-0.00479
	(TE_B * Z)	0.00961	0.00975	0.00962
	(TE_B * !Z)	-0.00593	-0.00600	-0.00596
	(TE_B * !Z)	0.00835	0.00839	0.00810

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00257	0.00285	0.01517
	(A * !Z)	-0.00158	-0.00140	0.01093
	(!A * Z)	0.00240	0.00278	0.01513
	(!A * Z)	-0.00163	-0.00141	0.01093
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00317	0.00312	0.01504
	(A * !Z)	-0.00324	-0.00346	0.00849
	(!A * Z)	0.00277	0.00301	0.01494
	(!A * Z)	-0.00336	-0.00340	0.00852
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00540	0.00510	0.02390
	(A * !Z)	-0.00617	-0.00682	0.01204
	(!A * Z)	0.00459	0.00482	0.02369
	(!A * Z)	-0.00644	-0.00674	0.01207
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00689	0.00581	0.02320
	(A * !Z)	-0.01217	-0.01401	0.00344
	(!A * Z)	0.00535	0.00519	0.02279
	(!A * Z)	-0.01269	-0.01390	0.00349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00127	0.00208	0.01462
	(A * !Z)	0.00552	0.00632	0.01886
	(!A * Z)	0.00129	0.00214	0.01466
	(!A * Z)	0.00544	0.00629	0.01881
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00209	0.00280	0.01512
	(A * !Z)	0.00866	0.00938	0.02172
	(!A * Z)	0.00221	0.00292	0.01528
	(!A * Z)	0.00854	0.00926	0.02163
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00417	0.00520	0.02477
	(A * !Z)	0.01607	0.01715	0.03667
	(!A * Z)	0.00438	0.00541	0.02505
	(!A * Z)	0.01581	0.01682	0.03651
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00879	0.00965	0.02845
	(A * !Z)	0.02852	0.02934	0.04827
	(!A * Z)	0.00901	0.00993	0.02883
	(!A * Z)	0.02782	0.02880	0.04771

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00299	0.00280	0.36504
sky130_fd_sc_hs__einvp_2	0.00558	0.00441	0.74959
sky130_fd_sc_hs__einvp_4	0.01129	0.00805	1.43666
sky130_fd_sc_hs__einvp_8	0.02262	0.01259	2.57602

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.66985	1.91022
sky130_fd_sc_hs__einvp_2	0.00000	1.70819	4.73264
sky130_fd_sc_hs__einvp_4	0.00000	1.61831	4.08315
sky130_fd_sc_hs__einvp_8	0.00000	2.65114	7.25977

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)	0.07904	1.03430	10.11320
	TE->Z (FR)	0.14587	0.46852	4.68819
	TE->Z (RR)	0.12491	0.91682	6.75969
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.05022	0.85340	10.14220
	TE->Z (FR)	0.13027	0.42723	4.68932
	TE->Z (RR)	0.12564	0.79930	7.25735
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.04780	0.74416	10.15860
	TE->Z (FR)	0.14532	0.42947	4.69123
	TE->Z (RR)	0.12481	0.69207	7.27879
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.04920	0.65504	10.02960
	TE->Z (FR)	0.24457	0.57188	4.69721
	TE->Z (RR)	0.15580	0.68690	7.40238

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.03915	0.59176	5.90070
	TE->Z (FF)	0.14855	0.47004	4.68817
	TE->Z (RF)	0.03876	0.53677	5.24968
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.03032	0.52446	6.14058
	TE->Z (FF)	0.13247	0.42715	4.68926
	TE->Z (RF)	0.03459	0.47392	5.43581
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.02993	0.46938	6.28184
	TE->Z (FF)	0.14683	0.42933	4.69111
	TE->Z (RF)	0.03560	0.41155	5.40051
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.03215	0.43273	6.46463
	TE->Z (FF)	0.24671	0.57721	4.69684
	TE->Z (RF)	0.04140	0.35880	5.26685

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00046	-0.00008	0.00484
	A	0.00332	0.00370	0.00863
	TE	0.00614	0.00626	0.01178
	TE	0.00418	0.00429	0.00984
sky130_fd_sc_hs__einvp_2	A	-0.00145	-0.00030	0.00822
	A	0.00565	0.00667	0.01537
	TE	0.00982	0.01021	0.02231
	TE	0.00732	0.00770	0.01986
sky130_fd_sc_hs__einvp_4	A	-0.00290	-0.00049	0.01619
	A	0.01151	0.01375	0.03064
	TE	0.01873	0.01929	0.03818
	TE	0.01477	0.01533	0.03424
sky130_fd_sc_hs__einvp_8	A	-0.00577	-0.00117	0.03145
	A	0.02315	0.02772	0.06023
	TE	0.03300	0.03322	0.05101
	TE	0.02958	0.02984	0.04797

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00352	0.00377	0.00677
	A	-0.00024	0.00001	0.00295
	TE	0.00774	0.00784	0.01385
	TE	0.00299	0.00308	0.00882
sky130_fd_sc_hs__einvp_2	A	0.00568	0.00650	0.01221
	A	-0.00141	-0.00067	0.00511
	TE	0.01255	0.01292	0.02574
	TE	0.00475	0.00511	0.01712
sky130_fd_sc_hs__einvp_4	A	0.01115	0.01286	0.02421
	A	-0.00320	-0.00160	0.00984
	TE	0.02415	0.02462	0.04412
	TE	0.00938	0.00984	0.02874
sky130_fd_sc_hs__einvp_8	A	0.02240	0.02508	0.05072
	A	-0.00640	-0.00370	0.01935
	TE	0.04383	0.04416	0.06339
	TE	0.01860	0.01885	0.03649

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00065	0.00066	0.00065
	(!TE * Z)	-0.00126	-0.00128	-0.00127
	(!TE * !Z)	0.00073	0.00074	0.00073
	(!TE * !Z)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00123	0.00122	0.00117
	(!TE * Z)	-0.00260	-0.00265	-0.00261
	(!TE * !Z)	0.00141	0.00143	0.00141
	(!TE * !Z)	-0.00209	-0.00213	-0.00210
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00233	0.00234	0.00223
	(!TE * Z)	-0.00516	-0.00523	-0.00516
	(!TE * !Z)	0.00275	0.00279	0.00276
	(!TE * !Z)	-0.00418	-0.00424	-0.00419
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00455	0.00457	0.00439
	(!TE * Z)	-0.00994	-0.01009	-0.00996
	(!TE * !Z)	0.00542	0.00545	0.00538
	(!TE * !Z)	-0.00819	-0.00822	-0.00811

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00064	-0.00065	-0.00064
	(!TE * Z)	0.00126	0.00128	0.00127
	(!TE * !Z)	-0.00073	-0.00074	-0.00073
	(!TE * !Z)	0.00113	0.00113	0.00112
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00114	-0.00116	-0.00115
	(!TE * Z)	0.00260	0.00265	0.00261
	(!TE * !Z)	-0.00134	-0.00138	-0.00141
	(!TE * !Z)	0.00225	0.00224	0.00214
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00221	-0.00224	-0.00221
	(!TE * Z)	0.00516	0.00523	0.00516
	(!TE * !Z)	-0.00272	-0.00278	-0.00276
	(!TE * !Z)	0.00444	0.00443	0.00425
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00434	-0.00441	-0.00435
	(!TE * Z)	0.00994	0.01009	0.00996
	(!TE * !Z)	-0.00542	-0.00545	-0.00538
	(!TE * !Z)	0.00849	0.00850	0.00818

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00548	0.00559	0.01134
	(A * !Z)	0.00217	0.00226	0.00802
	(!A * Z)	0.00540	0.00550	0.01124
	(!A * Z)	0.00200	0.00210	0.00784
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00870	0.00908	0.02111
	(A * !Z)	0.00350	0.00386	0.01591
	(!A * Z)	0.00857	0.00897	0.02092
	(!A * Z)	0.00321	0.00357	0.01553
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01655	0.01714	0.03596
	(A * !Z)	0.00712	0.00770	0.02651
	(!A * Z)	0.01631	0.01691	0.03556
	(!A * Z)	0.00650	0.00706	0.02573
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02861	0.02893	0.04673
	(A * !Z)	0.01431	0.01459	0.03237
	(!A * Z)	0.02833	0.02865	0.04620
	(!A * Z)	0.01330	0.01355	0.03109

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00087	-0.00082	0.00468
	(A * !Z)	0.00239	0.00251	0.00798
	(!A * Z)	-0.00096	-0.00088	0.00465
	(!A * Z)	0.00241	0.00251	0.00800
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00232	-0.00207	0.00985
	(A * !Z)	0.00279	0.00315	0.01500
	(!A * Z)	-0.00262	-0.00222	0.00975
	(!A * Z)	0.00274	0.00314	0.01504
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00429	-0.00409	0.01456
	(A * !Z)	0.00496	0.00533	0.02386
	(!A * Z)	-0.00479	-0.00439	0.01439
	(!A * Z)	0.00492	0.00535	0.02397
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00818	-0.00852	0.00869
	(A * !Z)	0.00574	0.00591	0.02293
	(!A * Z)	-0.00898	-0.00907	0.00838
	(!A * Z)	0.00588	0.00593	0.02314

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00307	0.00736	0.00540	0.36027	0.81045

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	18.46850	20.19500

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)	0.27443	1.07081	5.70245
	B->COUT (RR)	0.24816	0.95425	5.50139
	CIN->COUT (FR)	0.11348	0.90116	8.26436

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.35982	0.98929	4.34371
	B->COUT (FF)	0.29772	0.87986	4.10653
	CIN->COUT (RF)	0.07340	0.61662	5.61208

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)	-	0.43500	1.25098	8.56702
	B->SUM (-R)	-	0.39029	1.17356	8.38639
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.15827	0.88906	7.76425
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.23919	0.96258	7.81086

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)	-	0.48460	1.08358	5.02442
	B->SUM (-F)	-	0.38546	0.94243	4.68334
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.23336	0.85214	4.97427
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.23543	0.68673	3.90275

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01468	0.01499	0.02449
	A	0.01283	0.01315	0.02266
	B	0.01536	0.01615	0.03628
	B	0.01085	0.01164	0.03274
	CIN	0.00644	0.00733	0.02085
	CIN	0.00989	0.01078	0.02432

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01251	0.01292	0.02301
	A	0.01436	0.01476	0.02486
	B	0.01108	0.01224	0.03428
	B	0.01555	0.01673	0.03876
	CIN	0.01011	0.01063	0.02433
	CIN	0.00665	0.00719	0.02074

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02867	0.02916	0.04846
	A	-	0.02498	0.02548	0.04487
	B	-	0.02879	0.03205	0.07652
	B	-	0.01982	0.02308	0.06759
	CIN	(A * B) + (!A * !B)	0.00957	0.01185	0.05197
	CIN	(A * B) + (!A * !B)	0.01649	0.01876	0.05911
	CIN	(A * !B) + (!A * B)	0.01020	0.01077	0.02403
	CIN	(A * !B) + (!A * B)	0.00674	0.00733	0.02058

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02381	0.02466	0.04496
	A	-	0.02749	0.02848	0.04859
	B	-	0.02004	0.02373	0.06974
	B	-	0.02940	0.03307	0.07844
	CIN	(A * B) + (!A * !B)	0.01768	0.01923	0.05909
	CIN	(A * B) + (!A * !B)	0.01079	0.01232	0.05197
	CIN	(A * !B) + (!A * B)	0.00633	0.00720	0.01946
	CIN	(A * !B) + (!A * B)	0.00978	0.01065	0.02272

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00305	0.00945	0.00543	0.36715	0.79149

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	18.31910	20.64310

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)	0.36294	1.13778	6.11018
	B->COUT_N (FR)	0.25641	1.02083	8.52322
	CI->COUT_N (FR)	0.10432	0.89194	8.26067

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)	0.30406	0.80698	3.62259
	B->COUT_N (RF)	0.20630	0.71618	5.84487
	CI->COUT_N (RF)	0.06974	0.60841	5.67223

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)	-	0.39185	1.20535	8.34766
	B->SUM (-R)	-	0.31924	1.08860	8.04731
	CI->SUM (RR)	(A * B) + (!A * !B)	0.15188	0.87774	7.66151
	CI->SUM (FR)	(A * !B) + (!A * B)	0.23564	0.96441	7.80952

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)	-	0.44942	1.03533	4.87115
	B->SUM (-F)	-	0.33208	0.85761	4.41812
	CI->SUM (FF)	(A * B) + (!A * !B)	0.22691	0.82103	4.82058
	CI->SUM (RF)	(A * !B) + (!A * B)	0.24768	0.69052	3.87006

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	0.01186	0.01210	0.02214
	A	0.01376	0.01399	0.02406
	B	0.00884	0.01082	0.04234
	B	0.01474	0.01673	0.04831
	CI	0.00627	0.00713	0.02086
	CI	0.00974	0.01060	0.02438

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01351	0.01339	0.02286
	A	0.01163	0.01149	0.02098
	B	0.01426	0.01542	0.04432
	B	0.00833	0.00946	0.03826
	CI	0.01019	0.01063	0.02464
	CI	0.00673	0.00716	0.02107

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02543	0.02590	0.04539
	A	-	0.02167	0.02213	0.04176
	B	-	0.02885	0.03637	0.09969
	B	-	0.01702	0.02453	0.08781
	CI	(A * B) + (!A * !B)	0.01763	0.01906	0.05880
	CI	(A * B) + (!A * !B)	0.01068	0.01213	0.05200
	CI	(A * !B) + (!A * B)	0.00627	0.00707	0.01998
	CI	(A * !B) + (!A * B)	0.00974	0.01053	0.02359

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02269	0.02383	0.04413
	A	-	0.02646	0.02759	0.04783
	B	-	0.01799	0.02586	0.09069
	B	-	0.02984	0.03770	0.10236
	CI	(A * B) + (!A * !B)	0.01074	0.01307	0.05308
	CI	(A * B) + (!A * !B)	0.01768	0.01999	0.05983
	CI	(A * !B) + (!A * B)	0.01018	0.01063	0.02423
	CI	(A * !B) + (!A * B)	0.00671	0.00715	0.02063

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00511	0.00742	0.00269	0.72959	0.79177
sky130_fd_sc_hs__fah_2	0.00515	0.00840	0.00283	1.44598	1.55440
sky130_fd_sc_hs__fah_4	0.00507	0.00766	0.00271	2.71618	3.06225

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	18.52690	21.37560
sky130_fd_sc_hs__fah_2	0.00000	19.39350	22.39260
sky130_fd_sc_hs__fah_4	0.00000	21.28020	24.07820

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)	0.41364	1.12855	7.77039
	B->COUT (RR)	0.33293	1.09752	7.94767
	CI->COUT (RR)	0.20303	1.00737	8.19354
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.42909	1.02571	7.51381
	B->COUT (RR)	0.32916	0.98364	7.93162
	CI->COUT (RR)	0.19285	0.86884	7.85535
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.42349	0.96104	7.75087
	B->COUT (RR)	0.35458	0.94738	8.13088
	CI->COUT (RR)	0.23322	0.86868	8.36326

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.41416	0.91240	4.23965
	B->COUT (FF)	0.38792	0.95915	4.89413
	CI->COUT (FF)	0.28566	0.91647	4.92446
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.45248	0.93891	4.17233
	B->COUT (FF)	0.42668	0.97089	5.00178
	CI->COUT (FF)	0.29629	0.89970	4.79705
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.51536	1.01101	4.35368
	B->COUT (FF)	0.46817	1.02160	5.31169
	CI->COUT (FF)	0.36024	0.96614	5.20212

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)	-	0.41752	1.23605	8.55133
	B->SUM (-R)	-	0.37413	1.17398	8.47836
	CI->SUM (RR)	(A * B) + (!A * !B)	0.20147	0.96869	7.93049
	CI->SUM (FR)	(A * !B) + (!A * B)	0.37368	1.22020	8.63225
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.41625	1.10922	8.21939
	B->SUM (-R)	-	0.39675	1.08216	8.26266
	CI->SUM (RR)	(A * B) + (!A * !B)	0.19368	0.86503	7.95883
	CI->SUM (FR)	(A * !B) + (!A * B)	0.36524	1.08555	8.32038
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.45321	1.08031	8.52836
	B->SUM (-R)	-	0.41284	1.03879	8.53422
	CI->SUM (RR)	(A * B) + (!A * !B)	0.24562	0.87432	8.19231
	CI->SUM (FR)	(A * !B) + (!A * B)	0.46087	1.16084	8.92114

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)	-	0.38174	0.94916	4.61430
	B->SUM (-F)	-	0.40612	0.99315	4.98402
	CI->SUM (FF)	(A * B) + (!A * !B)	0.28044	0.91739	4.95819
	CI->SUM (RF)	(A * !B) + (!A * B)	0.36404	0.94197	4.70834
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.46841	0.95733	4.36976
	B->SUM (-F)	-	0.43447	0.98253	4.73377
	CI->SUM (FF)	(A * B) + (!A * !B)	0.30332	0.90275	4.98494
	CI->SUM (RF)	(A * !B) + (!A * B)	0.34403	0.86344	4.40897
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.52637	1.02866	4.74203
	B->SUM (-F)	-	0.49211	1.06594	6.84244
	CI->SUM (FF)	(A * B) + (!A * !B)	0.36950	0.98130	5.37782
	CI->SUM (RF)	(A * !B) + (!A * B)	0.49899	1.07217	5.16728

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01857	0.01916	0.03918
	A	0.01539	0.01599	0.03578
	B	0.01583	0.01693	0.03893
	B	0.01202	0.01274	0.03405
	CI	0.01172	0.01212	0.02099
	CI	0.01019	0.01060	0.01935
sky130_fd_sc_hs__fah_2	A	0.02117	0.02174	0.04170
	A	0.01783	0.01841	0.03794
	B	0.01914	0.02009	0.04154
	B	0.01402	0.01497	0.03603
	CI	0.01273	0.01298	0.02249
	CI	0.01093	0.01120	0.02014
sky130_fd_sc_hs__fah_4	A	0.02632	0.02577	0.04711
	A	0.02288	0.02264	0.04303
	B	0.02416	0.02411	0.04663
	B	0.01947	0.01947	0.04155
	CI	0.02040	0.01983	0.03354
	CI	0.01881	0.01835	0.02775

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01530	0.01643	0.03699
	A	0.01835	0.01949	0.03994
	B	0.01229	0.01387	0.03600
	B	0.01667	0.01828	0.04036
	CI	0.00969	0.01023	0.01959
	CI	0.01122	0.01177	0.02098
sky130_fd_sc_hs__fah_2	A	0.01759	0.01878	0.03895
	A	0.02094	0.02215	0.04215
	B	0.01346	0.01492	0.03666
	B	0.01858	0.02008	0.04178
	CI	0.01096	0.01142	0.02078
	CI	0.01275	0.01322	0.02239
sky130_fd_sc_hs__fah_4	A	0.02233	0.02276	0.04377
	A	0.02542	0.02588	0.04636
	B	0.01987	0.02064	0.04401
	B	0.02449	0.02529	0.04794
	CI	0.01817	0.01765	0.02772
	CI	0.01975	0.01923	0.02858

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03273	0.03337	0.07112
	A	-	0.02626	0.02690	0.06466
	B	-	0.02890	0.03259	0.08279
	B	-	0.01978	0.02346	0.07376
	CI	(A * B) + (!A * !B)	0.01620	0.01655	0.03254
	CI	(A * B) + (!A * !B)	0.01277	0.01312	0.02923
	CI	(A * !B) + (!A * B)	0.00981	0.01034	0.01984
	CI	(A * !B) + (!A * B)	0.01133	0.01186	0.02123
sky130_fd_sc_hs__fah_2	A	-	0.03520	0.03570	0.07340
	A	-	0.02851	0.02900	0.06703
	B	-	0.03196	0.03608	0.08421
	B	-	0.02170	0.02581	0.07424
	CI	(A * B) + (!A * !B)	0.01686	0.01771	0.03620
	CI	(A * B) + (!A * !B)	0.01325	0.01410	0.03254
	CI	(A * !B) + (!A * B)	0.01108	0.01155	0.02085
	CI	(A * !B) + (!A * B)	0.01288	0.01335	0.02264
sky130_fd_sc_hs__fah_4	A	-	0.03793	0.03869	0.07762
	A	-	0.03145	0.03223	0.07187
	B	-	0.03587	0.04092	0.09662
	B	-	0.02632	0.03140	0.08743
	CI	(A * B) + (!A * !B)	0.02432	0.02476	0.04131
	CI	(A * B) + (!A * !B)	0.02087	0.02130	0.03801
	CI	(A * !B) + (!A * B)	0.01831	0.01776	0.02825
	CI	(A * !B) + (!A * B)	0.01989	0.01935	0.02882

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02386	0.02598	0.06418
	A	-	0.03059	0.03270	0.07087
	B	-	0.02062	0.02525	0.07889
	B	-	0.03002	0.03462	0.08716
	CI	(A * B) + (!A * !B)	0.01172	0.01240	0.03071
	CI	(A * B) + (!A * !B)	0.01514	0.01586	0.03384
	CI	(A * !B) + (!A * B)	0.01159	0.01200	0.02090
	CI	(A * !B) + (!A * B)	0.01006	0.01048	0.01905
sky130_fd_sc_hs__fah_2	A	-	0.02725	0.02896	0.06705
	A	-	0.03397	0.03570	0.07375
	B	-	0.02099	0.02545	0.07065
	B	-	0.03126	0.03576	0.08087
	CI	(A * B) + (!A * !B)	0.01388	0.01452	0.03511
	CI	(A * B) + (!A * !B)	0.01748	0.01820	0.03738
	CI	(A * !B) + (!A * B)	0.01259	0.01285	0.02178
	CI	(A * !B) + (!A * B)	0.01079	0.01107	0.01969
sky130_fd_sc_hs__fah_4	A	-	0.03148	0.03218	0.07083
	A	-	0.03807	0.03888	0.07736
	B	-	0.02993	0.03523	0.17977
	B	-	0.03957	0.04499	0.18921
	CI	(A * B) + (!A * !B)	0.02138	0.02011	0.04022
	CI	(A * B) + (!A * !B)	0.02484	0.02355	0.04179
	CI	(A * !B) + (!A * B)	0.02025	0.01981	0.02873
	CI	(A * !B) + (!A * B)	0.01867	0.01823	0.02680

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.01070	0.01045	0.00761	0.81075	0.81700
sky130_fd_sc_hs__fa_2	0.01136	0.01083	0.00811	1.44625	1.54105
sky130_fd_sc_hs__fa_4	0.01133	0.01106	0.00797	3.05824	3.04999

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	4.30067	5.42196
sky130_fd_sc_hs__fa_2	0.00000	5.22626	6.28930
sky130_fd_sc_hs__fa_4	0.00000	7.36750	8.36984

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)	0.18040	0.90903	7.72415
	B->COUT (RR)	0.19699	0.95028	7.82513
	CIN->COUT (RR)	0.16062	0.91025	7.78926
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.18377	0.81624	7.60573
	B->COUT (RR)	0.19035	0.85582	7.71427
	CIN->COUT (RR)	0.17102	0.84083	7.69897
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.23974	0.82161	7.95235
	B->COUT (RR)	0.22094	0.85022	8.06965
	CIN->COUT (RR)	0.21289	0.84395	8.05988

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.32031	0.88159	4.91997
	B->COUT (FF)	0.32873	0.91636	5.01968
	CIN->COUT (FF)	0.25575	0.87675	4.99441
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.37802	0.91908	4.95324
	B->COUT (FF)	0.37991	0.95153	5.08651
	CIN->COUT (FF)	0.33965	0.92114	5.03138
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.50660	1.05932	5.55770
	B->COUT (FF)	0.47161	1.04836	5.68171
	CIN->COUT (FF)	0.46209	1.04819	5.69163

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.46014	1.19158	8.29402
	B->SUM (-R)	0.46581	1.22406	8.39460
	CIN->SUM (-R)	0.43695	1.19391	8.28188
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.57471	1.21570	8.58021
	B->SUM (-R)	0.57376	1.24521	8.70897
	CIN->SUM (-R)	0.55045	1.21638	8.61645
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.83126	1.38780	8.97925
	B->SUM (-R)	0.76797	1.36528	9.09491
	CIN->SUM (-R)	0.78399	1.37148	9.07626

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.37209	0.88459	4.83125
	B->SUM (-F)	0.35936	0.90539	5.03196
	CIN->SUM (-F)	0.30674	0.87435	5.00650
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.46743	0.97190	5.00141
	B->SUM (-F)	0.46708	1.00495	5.24916
	CIN->SUM (-F)	0.41798	0.97853	5.26127
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.63844	1.14445	5.51565
	B->SUM (-F)	0.58947	1.13425	5.77083
	CIN->SUM (-F)	0.56237	1.12083	5.84013

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01090	0.01094	0.01780
	A	0.00411	0.00414	0.01059
	B	0.01065	0.01066	0.01812
	B	0.00432	0.00434	0.01139
	CIN	0.00904	0.00922	0.01772
	CIN	0.00499	0.00517	0.01331
sky130_fd_sc_hs__fa_2	A	0.01415	0.01385	0.02086
	A	0.00675	0.00647	0.01296
	B	0.01383	0.01355	0.02136
	B	0.00712	0.00686	0.01406
	CIN	0.01235	0.01217	0.02094
	CIN	0.00780	0.00767	0.01592
sky130_fd_sc_hs__fa_4	A	0.02081	0.02004	0.02754
	A	0.01308	0.01233	0.01878
	B	0.02092	0.02009	0.02801
	B	0.01449	0.01370	0.02078
	CIN	0.01887	0.01825	0.02708
	CIN	0.01459	0.01400	0.02189

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00446	0.00459	0.01126
	A	0.01125	0.01134	0.01771
	B	0.00510	0.00530	0.01339
	B	0.01155	0.01174	0.01956
	CIN	0.00602	0.00633	0.01459
	CIN	0.01010	0.01040	0.01840
sky130_fd_sc_hs__fa_2	A	0.00723	0.00706	0.01411
	A	0.01455	0.01435	0.02102
	B	0.00788	0.00780	0.01626
	B	0.01469	0.01461	0.02270
	CIN	0.00884	0.00882	0.01733
	CIN	0.01344	0.01338	0.02154
sky130_fd_sc_hs__fa_4	A	0.01444	0.01320	0.02028
	A	0.02215	0.02091	0.02741
	B	0.01509	0.01389	0.02267
	B	0.02160	0.02038	0.02852
	CIN	0.01645	0.01514	0.02374
	CIN	0.02079	0.01945	0.02733

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01574	0.01581	0.02586
	A	0.01131	0.01141	0.01781
	B	0.01413	0.01397	0.02525
	B	0.01161	0.01180	0.01965
	CIN	0.01247	0.01219	0.02438
	CIN	0.01014	0.01044	0.01851
sky130_fd_sc_hs__fa_2	A	0.01891	0.01933	0.03055
	A	0.01462	0.01442	0.02106
	B	0.01762	0.01774	0.02961
	B	0.01476	0.01468	0.02290
	CIN	0.01598	0.01592	0.02882
	CIN	0.01348	0.01342	0.02163
sky130_fd_sc_hs__fa_4	A	0.02470	0.02525	0.03511
	A	0.02254	0.02130	0.02768
	B	0.02417	0.02384	0.03492
	B	0.02169	0.02047	0.02871
	CIN	0.02178	0.02151	0.03366
	CIN	0.02086	0.01951	0.02757

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01085	0.01089	0.01738
	A	0.01548	0.01566	0.02692
	B	0.01061	0.01062	0.01755
	B	0.01598	0.01612	0.02690
	CIN	0.00338	0.00350	0.01732
	CIN	0.01280	0.01304	0.02627
sky130_fd_sc_hs__fa_2	A	0.01409	0.01381	0.02046
	A	0.01878	0.01891	0.03120
	B	0.01378	0.01351	0.02057
	B	0.01922	0.01882	0.02989
	CIN	0.00692	0.00647	0.02151
	CIN	0.01662	0.01628	0.03006
sky130_fd_sc_hs__fa_4	A	0.01120	0.01013	0.02365
	A	0.02732	0.02625	0.03785
	B	0.01356	0.01037	0.02096
	B	0.02730	0.02413	0.03439
	CIN	0.01504	0.01221	0.02499
	CIN	0.02476	0.02194	0.03475

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00510	0.00484	0.79187	0.75451
sky130_fd_sc_hs__ha_2	0.00520	0.00541	1.43077	1.49022
sky130_fd_sc_hs__ha_4	0.00979	0.00893	2.77391	3.04511

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	5.39232	7.38266
sky130_fd_sc_hs__ha_2	0.00000	5.23136	5.93988
sky130_fd_sc_hs__ha_4	0.00000	12.85610	16.61720

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)	0.13974	0.83516	7.57201
	B->COUT (RR)	0.13369	0.84996	7.68684
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.14875	0.76409	7.51078
	B->COUT (RR)	0.14357	0.78596	7.60136
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.16736	0.70122	7.65451
	B->COUT (RR)	0.14844	0.71071	7.75207

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.15640	0.69598	4.40350
	B->COUT (FF)	0.14148	0.66315	4.30550
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.17677	0.70203	4.38017
	B->COUT (FF)	0.16482	0.67629	4.28768
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.19944	0.67938	4.40499
	B->COUT (FF)	0.17442	0.63845	4.30158

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	0.14287	0.84264	7.54185
	A->SUM (FR)	B	0.25677	1.02558	7.91854
	B->SUM (RR)	!A	0.12235	0.80213	7.43164
	B->SUM (FR)	A	0.26079	1.01258	7.80370
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.15208	0.74776	7.40666
	A->SUM (FR)	B	0.32326	1.00206	8.01280
	B->SUM (RR)	!A	0.13624	0.71841	7.32392
	B->SUM (FR)	A	0.32481	0.98969	7.90808
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.16678	0.69721	7.73606
	A->SUM (FR)	B	0.35368	0.94392	8.19740
	B->SUM (RR)	!A	0.14531	0.65615	7.62869
	B->SUM (FR)	A	0.34482	0.92339	8.07559

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	0.21544	0.70147	4.30626
	A->SUM (RF)	B	0.21439	0.63401	3.72548
	B->SUM (FF)	!A	0.19231	0.70075	4.33849
	B->SUM (RF)	A	0.20919	0.64786	3.80723
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.28758	0.78498	4.69431
	A->SUM (RF)	B	0.26503	0.66326	3.92643
	B->SUM (FF)	!A	0.26483	0.79670	4.76258
	B->SUM (RF)	A	0.26101	0.68489	4.01639
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.28554	0.73833	4.78424
	A->SUM (RF)	B	0.30482	0.67685	4.16734
	B->SUM (FF)	!A	0.25650	0.74023	4.84373
	B->SUM (RF)	A	0.28679	0.68576	4.26623

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00743	0.00767	0.01537
	A	0.00373	0.00395	0.01142
	B	0.00703	0.00737	0.01707
	B	0.00413	0.00444	0.01391
sky130_fd_sc_hs__ha_2	A	0.01025	0.01065	0.01987
	A	0.00648	0.00686	0.01577
	B	0.01001	0.01046	0.02015
	B	0.00678	0.00724	0.01682
sky130_fd_sc_hs__ha_4	A	0.01926	0.02033	0.03653
	A	0.01241	0.01342	0.02878
	B	0.01821	0.01954	0.03879
	B	0.01305	0.01425	0.03286

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00397	0.00459	0.01332
	A	0.00765	0.00828	0.01692
	B	0.00482	0.00531	0.01429
	B	0.00766	0.00815	0.01704
sky130_fd_sc_hs__ha_2	A	0.00727	0.00797	0.01745
	A	0.01102	0.01171	0.02117
	B	0.00777	0.00823	0.01773
	B	0.01094	0.01139	0.02074
sky130_fd_sc_hs__ha_4	A	0.01327	0.01470	0.03281
	A	0.02010	0.02147	0.03929
	B	0.01484	0.01623	0.03469
	B	0.01985	0.02120	0.03930

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	0.00401	0.00463	0.01373
	A	B	0.00770	0.00832	0.01717
	A	!B	0.01107	0.01137	0.02375
	A	!B	0.00384	0.00414	0.01654
	B	A	0.00486	0.00537	0.01477
	B	A	0.00770	0.00819	0.01731
	B	!A	0.00835	0.00869	0.02346
	B	!A	0.00284	0.00317	0.01798
sky130_fd_sc_hs__ha_2	A	B	0.00731	0.00800	0.01821
	A	B	0.01107	0.01176	0.02153
	A	!B	0.01426	0.01471	0.02708
	A	!B	0.00702	0.00748	0.01996
	B	A	0.00781	0.00830	0.01846
	B	A	0.01098	0.01144	0.02106
	B	!A	0.01203	0.01253	0.02699
	B	!A	0.00598	0.00650	0.02113
sky130_fd_sc_hs__ha_4	A	B	0.01338	0.01481	0.03318
	A	B	0.02022	0.02160	0.03960
	A	!B	0.02862	0.02938	0.05294
	A	!B	0.01380	0.01459	0.03872
	B	A	0.01495	0.01640	0.03549
	B	A	0.01994	0.02131	0.03974
	B	!A	0.02304	0.02393	0.05160
	B	!A	0.01193	0.01286	0.04111

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	0.00738	0.00763	0.01492
	A	B	0.00369	0.00390	0.01122
	A	!B	0.00243	0.00278	0.01596
	A	!B	0.00957	0.00992	0.02268
	B	A	0.00698	0.00733	0.01657
	B	A	0.00408	0.00441	0.01369
	B	!A	0.00336	0.00440	0.02030
	B	!A	0.00903	0.01005	0.02559
sky130_fd_sc_hs__ha_2	A	B	0.01021	0.01064	0.01956
	A	B	0.00645	0.00683	0.01554
	A	!B	0.00529	0.00550	0.01845
	A	!B	0.01245	0.01267	0.02553
	B	A	0.00997	0.01049	0.01983
	B	A	0.00675	0.00721	0.01657
	B	!A	0.00585	0.00666	0.02309
	B	!A	0.01207	0.01289	0.02865
sky130_fd_sc_hs__ha_4	A	B	0.01917	0.02029	0.03492
	A	B	0.01232	0.01336	0.02807
	A	!B	0.01049	0.01097	0.03671
	A	!B	0.02513	0.02562	0.04985
	B	A	0.01812	0.01933	0.03700
	B	A	0.01295	0.01416	0.03204
	B	!A	0.01250	0.01396	0.04493
	B	!A	0.02407	0.02554	0.05560

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00877	12.46935
sky130_fd_sc_hs__bufinv_8	0.00300	5.30784
sky130_fd_sc_hs__inv_1	0.00304	0.77626
sky130_fd_sc_hs__inv_16	0.04629	11.95801
sky130_fd_sc_hs__inv_2	0.00562	1.52929
sky130_fd_sc_hs__inv_4	0.01134	2.92601
sky130_fd_sc_hs__inv_8	0.02247	5.77203

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	13.39400	16.84140
sky130_fd_sc_hs__bufinv_8	0.00000	6.56733	8.15055
sky130_fd_sc_hs__inv_1	0.00000	0.61128	0.89255
sky130_fd_sc_hs__inv_16	0.00000	8.52095	12.74260
sky130_fd_sc_hs__inv_2	0.00000	1.06486	1.59232
sky130_fd_sc_hs__inv_4	0.00000	2.13406	3.18462
sky130_fd_sc_hs__inv_8	0.00000	4.25943	6.36924

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)	0.19688	0.61746	7.85132
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.25279	0.77894	7.93209
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.04248	0.87628	10.53090
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.02915	0.51031	10.52490
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.03283	0.75561	10.48540
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.03079	0.66780	10.47160
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.03001	0.58295	10.43270

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.18248	0.46507	3.78002
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.21585	0.55950	3.66052
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.02694	0.58474	6.92880
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.02103	0.33654	6.92486
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.02253	0.50257	6.87639
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.02164	0.44343	6.90867
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.02148	0.38732	6.88957

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.06115	0.06810	0.13248
	A	0.07234	0.07961	0.14619
sky130_fd_sc_hs__bufinv_8	A	0.03203	0.03449	0.05739
	A	0.03584	0.03835	0.06228
sky130_fd_sc_hs__inv_1	A	-0.00058	-0.00007	0.00351
	A	0.00329	0.00380	0.00750
sky130_fd_sc_hs__inv_16	A	-0.01341	0.00006	0.05482
	A	0.04553	0.05929	0.11552
sky130_fd_sc_hs__inv_2	A	-0.00159	-0.00046	0.00679
	A	0.00557	0.00641	0.01420
sky130_fd_sc_hs__inv_4	A	-0.00315	-0.00062	0.01361
	A	0.01130	0.01389	0.02850
sky130_fd_sc_hs__inv_8	A	-0.00625	-0.00007	0.03004
	A	0.02235	0.02867	0.05954

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.07161	0.07770	0.14428
	A	0.06042	0.06639	0.12983
sky130_fd_sc_hs__bufinv_8	A	0.03464	0.03680	0.05792
	A	0.03083	0.03296	0.05347
sky130_fd_sc_hs__inv_1	A	0.00340	0.00373	0.00613
	A	-0.00047	-0.00023	0.00219
sky130_fd_sc_hs__inv_16	A	0.04416	0.05180	0.09233
	A	-0.01473	-0.00735	0.03119
sky130_fd_sc_hs__inv_2	A	0.00545	0.00628	0.01168
	A	-0.00170	-0.00090	0.00381
sky130_fd_sc_hs__inv_4	A	0.01101	0.01276	0.02223
	A	-0.00343	-0.00178	0.00778
sky130_fd_sc_hs__inv_8	A	0.02152	0.02524	0.04607
	A	-0.00709	-0.00355	0.01745

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00558	0.00525	0.00545	0.81132
sky130_fd_sc_hs__maj3_2	0.00592	0.00566	0.00579	1.59547
sky130_fd_sc_hs__maj3_4	0.01087	0.01031	0.01070	3.06279

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	2.07996	3.91519
sky130_fd_sc_hs__maj3_2	0.00000	2.54037	4.12311
sky130_fd_sc_hs__maj3_4	0.00000	4.96538	8.08848

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)	0.17167	0.88766	7.68308
	B->X (RR)	0.16053	0.89210	7.68399
	C->X (RR)	0.17622	0.92290	7.78162
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.17776	0.79203	7.61162
	B->X (RR)	0.15592	0.79376	7.62128
	C->X (RR)	0.17229	0.82288	7.71577
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.17361	0.71322	7.73699
	B->X (RR)	0.15841	0.72698	7.75860
	C->X (RR)	0.17144	0.74458	7.82227

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.25627	0.81391	4.79972
	B->X (FF)	0.22467	0.82311	4.81138
	C->X (FF)	0.26889	0.83261	4.84471
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.30804	0.84664	4.93580
	B->X (FF)	0.27502	0.85639	5.00325
	C->X (FF)	0.33209	0.88286	5.03968
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.28725	0.77691	4.89524
	B->X (FF)	0.24262	0.76950	4.94531
	C->X (FF)	0.30023	0.80256	4.95996

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01480	0.01476	0.02550
	A	0.00446	0.00442	0.01532
	B	0.01245	0.01213	0.02649
	B	0.00440	0.00409	0.01854
	C	0.01443	0.01423	0.02695
	C	0.00530	0.00509	0.01794
sky130_fd_sc_hs__maj3_2	A	0.01778	0.01791	0.02917
	A	0.00674	0.00687	0.01849
	B	0.01476	0.01487	0.02912
	B	0.00607	0.00621	0.02077
	C	0.01780	0.01780	0.03082
	C	0.00807	0.00808	0.02140
sky130_fd_sc_hs__maj3_4	A	0.03332	0.03331	0.05624
	A	0.01361	0.01362	0.03722
	B	0.02638	0.02664	0.05646
	B	0.01111	0.01139	0.04175
	C	0.03317	0.03314	0.05798
	C	0.01547	0.01544	0.04082

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00238	0.00247	0.01493
	A	0.01266	0.01275	0.02500
	B	0.00366	0.00394	0.01924
	B	0.01124	0.01167	0.02640
	C	0.00401	0.00440	0.01961
	C	0.01279	0.01317	0.02820
sky130_fd_sc_hs__maj3_2	A	0.00560	0.00547	0.01986
	A	0.01657	0.01648	0.02920
	B	0.00598	0.00603	0.02249
	B	0.01464	0.01470	0.03052
	C	0.00690	0.00702	0.02339
	C	0.01649	0.01671	0.03217
sky130_fd_sc_hs__maj3_4	A	0.01043	0.01030	0.03636
	A	0.03004	0.02998	0.05429
	B	0.01104	0.01145	0.04386
	B	0.02651	0.02696	0.05770
	C	0.01318	0.01364	0.04459
	C	0.03022	0.03068	0.06002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00365	0.00314	0.00301
	(B * C * X)	-0.00253	-0.00308	-0.00316
	(!B * !C * !X)	0.00270	0.00272	0.00270
	(!B * !C * !X)	-0.00342	-0.00344	-0.00341
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00357	0.00306	0.00294
	(B * C * X)	-0.00297	-0.00351	-0.00359
	(!B * !C * !X)	0.00251	0.00254	0.00251
	(!B * !C * !X)	-0.00393	-0.00395	-0.00392
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00668	0.00563	0.00538
	(B * C * X)	-0.00514	-0.00626	-0.00642
	(!B * !C * !X)	0.00472	0.00478	0.00475
	(!B * !C * !X)	-0.00691	-0.00695	-0.00692

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00292	-0.00294	-0.00292
	(B * C * X)	0.00323	0.00327	0.00326
	(!B * !C * !X)	-0.00249	-0.00264	-0.00268
	(!B * !C * !X)	0.00361	0.00351	0.00346
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00284	-0.00285	-0.00283
	(B * C * X)	0.00366	0.00369	0.00368
	(!B * !C * !X)	-0.00228	-0.00245	-0.00248
	(!B * !C * !X)	0.00417	0.00407	0.00399
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00518	-0.00521	-0.00517
	(B * C * X)	0.00656	0.00663	0.00661
	(!B * !C * !X)	-0.00432	-0.00462	-0.00470
	(!B * !C * !X)	0.00729	0.00713	0.00703

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00249	0.00254	0.00250
	(A * C * X)	-0.00151	-0.00155	-0.00152
	(!A * !C * !X)	0.00071	0.00071	0.00068
	(!A * !C * !X)	-0.00376	-0.00378	-0.00384
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00297	0.00299	0.00297
	(A * C * X)	-0.00149	-0.00148	-0.00146
	(!A * !C * !X)	0.00089	0.00088	0.00083
	(!A * !C * !X)	-0.00383	-0.00383	-0.00390
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00492	0.00500	0.00494
	(A * C * X)	-0.00305	-0.00311	-0.00306
	(!A * !C * !X)	0.00166	0.00167	0.00154
	(!A * !C * !X)	-0.00727	-0.00732	-0.00750

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00238	-0.00240	-0.00247
	(A * C * X)	0.00163	0.00164	0.00157
	(!A * !C * !X)	-0.00064	-0.00064	-0.00063
	(!A * !C * !X)	0.00388	0.00389	0.00387
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00283	-0.00285	-0.00293
	(A * C * X)	0.00158	0.00159	0.00151
	(!A * !C * !X)	-0.00077	-0.00078	-0.00077
	(!A * !C * !X)	0.00394	0.00396	0.00395
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00464	-0.00468	-0.00487
	(A * C * X)	0.00331	0.00333	0.00315
	(!A * !C * !X)	-0.00141	-0.00143	-0.00141
	(!A * !C * !X)	0.00757	0.00763	0.00759

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00292	0.00265	0.00259
	(A * B * X)	-0.00207	-0.00232	-0.00236
	(!A * !B * !X)	0.00140	0.00141	0.00138
	(!A * !B * !X)	-0.00376	-0.00376	-0.00379
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00334	0.00305	0.00300
	(A * B * X)	-0.00203	-0.00228	-0.00233
	(!A * !B * !X)	0.00172	0.00172	0.00170
	(!A * !B * !X)	-0.00371	-0.00371	-0.00374
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00582	0.00529	0.00515
	(A * B * X)	-0.00407	-0.00464	-0.00470
	(!A * !B * !X)	0.00313	0.00317	0.00309
	(!A * !B * !X)	-0.00711	-0.00717	-0.00722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00248	-0.00250	-0.00253
	(A * B * X)	0.00246	0.00248	0.00243
	(!A * !B * !X)	-0.00125	-0.00134	-0.00135
	(!A * !B * !X)	0.00390	0.00387	0.00383
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00289	-0.00291	-0.00294
	(A * B * X)	0.00243	0.00245	0.00240
	(!A * !B * !X)	-0.00155	-0.00165	-0.00165
	(!A * !B * !X)	0.00387	0.00384	0.00379
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00491	-0.00494	-0.00502
	(A * B * X)	0.00489	0.00493	0.00484
	(!A * !B * !X)	-0.00282	-0.00298	-0.00300
	(!A * !B * !X)	0.00744	0.00738	0.00732

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00303	0.00288	0.00529	0.37369
sky130_fd_sc_hs__mux2i_2	0.00572	0.00602	0.00863	0.65444
sky130_fd_sc_hs__mux2i_4	0.01132	0.01129	0.01511	1.16943

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	2.52195	4.47417
sky130_fd_sc_hs__mux2i_2	0.00000	2.87570	4.58955
sky130_fd_sc_hs__mux2i_4	0.00000	6.45023	11.26310

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)	-	0.12996	1.08155	10.22770
	A1->Y (FR)	-	0.11629	1.06358	10.22100
	S->Y (RR)	(A0 * !A1)	0.19285	1.01018	7.36424
	S->Y (FR)	(!A0 * A1)	0.15124	1.07215	9.74292
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.13993	0.96157	10.17740
	A1->Y (FR)	-	0.12970	0.92881	9.87552
	S->Y (RR)	(A0 * !A1)	0.20534	0.88814	7.03206
	S->Y (FR)	(!A0 * A1)	0.15868	0.93006	9.50937
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.12648	0.82168	9.81273
	A1->Y (FR)	-	0.12515	0.83221	10.01840
	S->Y (RR)	(A0 * !A1)	0.22982	0.86681	7.62736
	S->Y (FR)	(!A0 * A1)	0.14761	0.78362	9.05886

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)	-	0.05827	0.63307	6.07417
	A1->Y (RF)	-	0.06003	0.65145	6.26296
	S->Y (FF)	(A0 * !A1)	0.14796	0.61033	3.42267
	S->Y (RF)	(!A0 * A1)	0.06810	0.59384	5.52786
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.06787	0.59815	6.26784
	A1->Y (RF)	-	0.06547	0.58593	6.16515
	S->Y (FF)	(A0 * !A1)	0.17693	0.63485	3.72049
	S->Y (RF)	(!A0 * A1)	0.07123	0.51303	5.24730
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.06168	0.51809	6.02740
	A1->Y (RF)	-	0.06813	0.54776	6.36148
	S->Y (FF)	(A0 * !A1)	0.18012	0.58257	3.38275
	S->Y (RF)	(!A0 * A1)	0.07318	0.45239	5.12755

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	-	0.00141	0.00167	0.00604
	A0	-	0.00651	0.00676	0.01115
	A1	-	0.00107	0.00135	0.00566
	A1	-	0.00580	0.00591	0.01039
	S	(A0 * !A1)	0.00879	0.00933	0.02643
	S	(A0 * !A1)	0.00470	0.00520	0.02237
	S	(!A0 * A1)	0.00215	0.00306	0.02368
	S	(!A0 * A1)	0.01150	0.01240	0.03301
sky130_fd_sc_hs__mux2i_2	A0	-	0.00285	0.00316	0.01166
	A0	-	0.01276	0.01309	0.02158
	A1	-	0.00266	0.00300	0.01171
	A1	-	0.01251	0.01286	0.02155
	S	(A0 * !A1)	0.01500	0.01536	0.03273
	S	(A0 * !A1)	0.00982	0.01016	0.02753
	S	(!A0 * A1)	0.00481	0.00554	0.03113
	S	(!A0 * A1)	0.02089	0.02164	0.04723
sky130_fd_sc_hs__mux2i_4	A0	-	0.00351	0.00459	0.02179
	A0	-	0.02319	0.02430	0.04146
	A1	-	0.00370	0.00476	0.02100
	A1	-	0.02246	0.02355	0.03977
	S	(A0 * !A1)	0.02583	0.02641	0.05503
	S	(A0 * !A1)	0.01774	0.01851	0.04714
	S	(!A0 * A1)	0.00768	0.00888	0.05196
	S	(!A0 * A1)	0.03696	0.03817	0.08141

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00685	0.00701	0.01012
	A0	-	0.00172	0.00187	0.00475
	A1	-	0.00670	0.00689	0.00978
	A1	-	0.00163	0.00179	0.00462
	S	(A0 * !A1)	0.00583	0.00677	0.02414
	S	(A0 * !A1)	0.00992	0.01085	0.02816
	S	(!A0 * A1)	0.01236	0.01281	0.03292
	S	(!A0 * A1)	0.00298	0.00341	0.02315
sky130_fd_sc_hs__mux2i_2	A0	-	0.01398	0.01426	0.01995
	A0	-	0.00408	0.00431	0.00992
	A1	-	0.01354	0.01380	0.01991
	A1	-	0.00306	0.00332	0.00909
	S	(A0 * !A1)	0.01218	0.01300	0.03074
	S	(A0 * !A1)	0.01729	0.01811	0.03588
	S	(!A0 * A1)	0.02208	0.02238	0.04737
	S	(!A0 * A1)	0.00594	0.00619	0.03064
sky130_fd_sc_hs__mux2i_4	A0	-	0.02592	0.02664	0.03824
	A0	-	0.00616	0.00678	0.01835
	A1	-	0.02590	0.02647	0.03850
	A1	-	0.00580	0.00633	0.01745
	S	(A0 * !A1)	0.02294	0.02426	0.05428
	S	(A0 * !A1)	0.03077	0.03210	0.06203
	S	(!A0 * A1)	0.04102	0.04119	0.08159
	S	(!A0 * A1)	0.01169	0.01182	0.05216

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00165	0.00166	0.00165
	(A1 * S * !Y)	-0.00086	-0.00086	-0.00085
	(!A1 * S * Y)	0.00074	0.00073	0.00070
	(!A1 * S * Y)	-0.00204	-0.00208	-0.00213
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00298	0.00299	0.00297
	(A1 * S * !Y)	-0.00162	-0.00162	-0.00161
	(!A1 * S * Y)	0.00113	0.00112	0.00103
	(!A1 * S * Y)	-0.00404	-0.00408	-0.00421
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00580	0.00583	0.00582
	(A1 * S * !Y)	-0.00329	-0.00331	-0.00328
	(!A1 * S * Y)	0.00215	0.00216	0.00200
	(!A1 * S * Y)	-0.00810	-0.00823	-0.00845

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00149	-0.00150	-0.00158
	(A1 * S * !Y)	0.00102	0.00101	0.00095
	(!A1 * S * Y)	-0.00063	-0.00064	-0.00063
	(!A1 * S * Y)	0.00214	0.00216	0.00215
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00276	-0.00280	-0.00293
	(A1 * S * !Y)	0.00178	0.00179	0.00170
	(!A1 * S * Y)	-0.00095	-0.00097	-0.00095
	(!A1 * S * Y)	0.00420	0.00425	0.00421
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00536	-0.00544	-0.00568
	(A1 * S * !Y)	0.00370	0.00371	0.00352
	(!A1 * S * Y)	-0.00181	-0.00181	-0.00180
	(!A1 * S * Y)	0.00846	0.00847	0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00147	0.00147	0.00147
	(A0 * !S * !Y)	-0.00089	-0.00089	-0.00089
	(!A0 * !S * Y)	0.00060	0.00060	0.00055
	(!A0 * !S * Y)	-0.00204	-0.00206	-0.00214
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00305	0.00307	0.00306
	(A0 * !S * !Y)	-0.00180	-0.00181	-0.00180
	(!A0 * !S * Y)	0.00120	0.00120	0.00112
	(!A0 * !S * Y)	-0.00414	-0.00418	-0.00431
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00566	0.00569	0.00566
	(A0 * !S * !Y)	-0.00339	-0.00339	-0.00336
	(!A0 * !S * Y)	0.00191	0.00193	0.00177
	(!A0 * !S * Y)	-0.00815	-0.00827	-0.00851

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00132	-0.00136	-0.00147
	(A0 * !S * !Y)	0.00103	0.00101	0.00093
	(!A0 * !S * Y)	-0.00051	-0.00052	-0.00051
	(!A0 * !S * Y)	0.00213	0.00215	0.00214
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00283	-0.00290	-0.00306
	(A0 * !S * !Y)	0.00200	0.00201	0.00188
	(!A0 * !S * Y)	-0.00106	-0.00108	-0.00106
	(!A0 * !S * Y)	0.00429	0.00435	0.00431
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00523	-0.00539	-0.00566
	(A0 * !S * !Y)	0.00371	0.00372	0.00350
	(!A0 * !S * Y)	-0.00168	-0.00169	-0.00166
	(!A0 * !S * Y)	0.00852	0.00859	0.00851

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00660	0.00706	0.02387
	(A0 * A1 * !Y)	0.00003	0.00045	0.01729
	(!A0 * !A1 * Y)	0.00652	0.00698	0.02384
	(!A0 * !A1 * Y)	-0.00005	0.00039	0.01727
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01060	0.01044	0.02905
	(A0 * A1 * !Y)	0.00026	0.00005	0.01869
	(!A0 * !A1 * Y)	0.00997	0.01034	0.02892
	(!A0 * !A1 * Y)	-0.00033	-0.00000	0.01863
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01886	0.01833	0.04670
	(A0 * A1 * !Y)	0.00080	0.00020	0.02860
	(!A0 * !A1 * Y)	0.01770	0.01802	0.04649
	(!A0 * !A1 * Y)	-0.00027	0.00004	0.02852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00007	0.00079	0.01800
	(A0 * A1 * !Y)	0.00649	0.00739	0.02458
	(!A0 * !A1 * Y)	-0.00028	0.00066	0.01799
	(!A0 * !A1 * Y)	0.00628	0.00727	0.02457
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00002	0.00068	0.01945
	(A0 * A1 * !Y)	0.01026	0.01103	0.02979
	(!A0 * !A1 * Y)	-0.00026	0.00044	0.01936
	(!A0 * !A1 * Y)	0.01003	0.01079	0.02972
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00048	0.00159	0.03103
	(A0 * A1 * !Y)	0.01844	0.01955	0.04909
	(!A0 * !A1 * Y)	-0.00002	0.00102	0.03087
	(!A0 * !A1 * Y)	0.01790	0.01910	0.04893

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00291	0.00337	0.00487	0.81800
sky130_fd_sc_hs__mux2_2	0.00270	0.00303	0.00569	1.44077
sky130_fd_sc_hs__mux2_4	0.00518	0.00520	0.00866	2.74845

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	3.62258	6.00291
sky130_fd_sc_hs__mux2_2	0.00000	4.12750	6.29725
sky130_fd_sc_hs__mux2_4	0.00000	6.12805	8.23386

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)	-	0.12967	0.83105	7.51285
	A1->X (RR)	-	0.12524	0.82332	7.50025
	S->X (RR)	(!A0 * A1)	0.13367	0.81432	7.44489
	S->X (FR)	(A0 * !A1)	0.23438	0.94089	7.67517
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.14965	0.79061	7.50895
	A1->X (RR)	-	0.14728	0.78210	7.47117
	S->X (RR)	(!A0 * A1)	0.15070	0.75619	7.41494
	S->X (FR)	(A0 * !A1)	0.24909	0.85823	7.49096
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.18626	0.77321	7.69735
	A1->X (RR)	-	0.18843	0.77853	7.75105
	S->X (RR)	(!A0 * A1)	0.19307	0.73217	7.58956
	S->X (FR)	(A0 * !A1)	0.30837	0.89233	7.80187

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)	-	0.20227	0.78093	4.83557
	A1->X (FF)	-	0.20004	0.78083	4.88488
	S->X (FF)	(!A0 * A1)	0.25071	0.77418	4.80462
	S->X (RF)	(A0 * !A1)	0.29751	0.74824	4.09831
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.25033	0.81189	4.72152
	A1->X (FF)	-	0.25598	0.82583	4.77253
	S->X (FF)	(!A0 * A1)	0.30417	0.79524	4.56465
	S->X (RF)	(A0 * !A1)	0.36157	0.77395	3.76165
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.28732	0.80509	4.64178
	A1->X (FF)	-	0.28926	0.81108	4.65038
	S->X (FF)	(!A0 * A1)	0.33175	0.77541	4.42687
	S->X (RF)	(A0 * !A1)	0.38419	0.78271	3.73115

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	-	0.00963	0.00994	0.02528
	A0	-	0.00466	0.00498	0.02034
	A1	-	0.01010	0.01049	0.02483
	A1	-	0.00473	0.00513	0.01952
	S	(A0 * !A1)	0.00899	0.00978	0.02726
	S	(A0 * !A1)	0.01230	0.01310	0.03077
	S	(!A0 * A1)	0.01545	0.01620	0.04543
	S	(!A0 * A1)	0.00659	0.00734	0.03668
sky130_fd_sc_hs__mux2_2	A0	-	0.01256	0.01317	0.02803
	A0	-	0.00764	0.00828	0.02319
	A1	-	0.01115	0.01183	0.02723
	A1	-	0.00620	0.00689	0.02255
	S	(A0 * !A1)	0.01162	0.01306	0.03007
	S	(A0 * !A1)	0.01564	0.01704	0.03439
	S	(!A0 * A1)	0.01865	0.01937	0.04477
	S	(!A0 * A1)	0.00909	0.00982	0.03532
sky130_fd_sc_hs__mux2_4	A0	-	0.02143	0.02243	0.04791
	A0	-	0.01245	0.01382	0.03961
	A1	-	0.02402	0.02474	0.05171
	A1	-	0.01227	0.01361	0.04184
	S	(A0 * !A1)	0.02192	0.02352	0.04292
	S	(A0 * !A1)	0.02766	0.02926	0.04948
	S	(!A0 * A1)	0.03305	0.03370	0.06953
	S	(!A0 * A1)	0.01769	0.01836	0.05465

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00352	0.00445	0.02089
	A0	-	0.00850	0.00942	0.02468
	A1	-	0.00479	0.00551	0.02237
	A1	-	0.00897	0.00981	0.02584
	S	(A0 * !A1)	0.01284	0.01328	0.03052
	S	(A0 * !A1)	0.00952	0.00996	0.02687
	S	(!A0 * A1)	0.00500	0.00628	0.03719
	S	(!A0 * A1)	0.01385	0.01511	0.04503
sky130_fd_sc_hs__mux2_2	A0	-	0.00600	0.00667	0.02240
	A0	-	0.01093	0.01156	0.02703
	A1	-	0.00610	0.00669	0.02279
	A1	-	0.01125	0.01184	0.02738
	S	(A0 * !A1)	0.01511	0.01567	0.03170
	S	(A0 * !A1)	0.01110	0.01162	0.02767
	S	(!A0 * A1)	0.00717	0.00794	0.03688
	S	(!A0 * A1)	0.01673	0.01758	0.04604
sky130_fd_sc_hs__mux2_4	A0	-	0.01412	0.01474	0.04333
	A0	-	0.02308	0.02370	0.05121
	A1	-	0.01461	0.01525	0.04359
	A1	-	0.02377	0.02437	0.05223
	S	(A0 * !A1)	0.02789	0.02833	0.04764
	S	(A0 * !A1)	0.02204	0.02253	0.04081
	S	(!A0 * A1)	0.01669	0.01676	0.05717
	S	(!A0 * A1)	0.03195	0.03207	0.07226

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00156	0.00156	0.00156
	(A1 * S * X)	-0.00070	-0.00070	-0.00070
	(!A1 * S * !X)	0.00066	0.00065	0.00060
	(!A1 * S * !X)	-0.00181	-0.00183	-0.00190
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00148	0.00149	0.00149
	(A1 * S * X)	-0.00076	-0.00076	-0.00075
	(!A1 * S * !X)	0.00073	0.00073	0.00066
	(!A1 * S * !X)	-0.00170	-0.00172	-0.00182
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00262	0.00266	0.00263
	(A1 * S * X)	-0.00151	-0.00155	-0.00152
	(!A1 * S * !X)	0.00107	0.00107	0.00099
	(!A1 * S * !X)	-0.00364	-0.00368	-0.00378

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00138	-0.00141	-0.00147
	(A1 * S * X)	0.00086	0.00087	0.00081
	(!A1 * S * !X)	-0.00051	-0.00051	-0.00050
	(!A1 * S * !X)	0.00196	0.00196	0.00196
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00127	-0.00130	-0.00139
	(A1 * S * X)	0.00094	0.00095	0.00087
	(!A1 * S * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * S * !X)	0.00189	0.00189	0.00189
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00237	-0.00239	-0.00252
	(A1 * S * X)	0.00177	0.00176	0.00167
	(!A1 * S * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * S * !X)	0.00382	0.00384	0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00169	0.00170	0.00169
	(A0 * !S * X)	-0.00087	-0.00087	-0.00087
	(!A0 * !S * !X)	0.00055	0.00055	0.00053
	(!A0 * !S * !X)	-0.00217	-0.00218	-0.00222
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00157	0.00159	0.00158
	(A0 * !S * X)	-0.00075	-0.00076	-0.00075
	(!A0 * !S * !X)	0.00051	0.00050	0.00048
	(!A0 * !S * !X)	-0.00197	-0.00198	-0.00203
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00261	0.00264	0.00261
	(A0 * !S * X)	-0.00154	-0.00156	-0.00153
	(!A0 * !S * !X)	0.00089	0.00088	0.00082
	(!A0 * !S * !X)	-0.00378	-0.00379	-0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00159	-0.00161	-0.00166
	(A0 * !S * X)	0.00097	0.00097	0.00092
	(!A0 * !S * !X)	-0.00049	-0.00050	-0.00049
	(!A0 * !S * !X)	0.00223	0.00226	0.00223
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00144	-0.00146	-0.00154
	(A0 * !S * X)	0.00089	0.00089	0.00082
	(!A0 * !S * !X)	-0.00044	-0.00044	-0.00043
	(!A0 * !S * !X)	0.00206	0.00206	0.00205
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00236	-0.00242	-0.00256
	(A0 * !S * X)	0.00175	0.00175	0.00165
	(!A0 * !S * !X)	-0.00071	-0.00072	-0.00071
	(!A0 * !S * !X)	0.00395	0.00397	0.00396

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00673	0.00693	0.02366
	(A0 * A1 * X)	0.00077	0.00094	0.01767
	(!A0 * !A1 * !X)	0.00661	0.00707	0.02380
	(!A0 * !A1 * !X)	0.00068	0.00112	0.01785
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00683	0.00703	0.02384
	(A0 * A1 * X)	0.00015	0.00031	0.01715
	(!A0 * !A1 * !X)	0.00633	0.00676	0.02356
	(!A0 * !A1 * !X)	-0.00034	0.00009	0.01690
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01077	0.01070	0.02913
	(A0 * A1 * X)	0.00049	0.00037	0.01886
	(!A0 * !A1 * !X)	0.01039	0.01074	0.02911
	(!A0 * !A1 * !X)	0.00015	0.00044	0.01884

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00024	0.00117	0.01819
	(A0 * A1 * X)	0.00622	0.00715	0.02416
	(!A0 * !A1 * !X)	-0.00010	0.00081	0.01792
	(!A0 * !A1 * !X)	0.00584	0.00680	0.02389
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00026	0.00064	0.01770
	(A0 * A1 * X)	0.00643	0.00732	0.02438
	(!A0 * !A1 * !X)	-0.00021	0.00069	0.01784
	(!A0 * !A1 * !X)	0.00645	0.00738	0.02451
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00012	0.00077	0.01938
	(A0 * A1 * X)	0.01039	0.01107	0.02966
	(!A0 * !A1 * !X)	-0.00033	0.00034	0.01915
	(!A0 * !A1 * !X)	0.00990	0.01063	0.02940

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00254	0.00265	0.00264	0.00290	0.00885	0.00567	0.78681
sky130_fd_sc_hs__mux4_2	0.00287	0.00272	0.00283	0.00276	0.00999	0.00586	1.57851
sky130_fd_sc_hs__mux4_4	0.00506	0.00488	0.00506	0.00507	0.01407	0.00877	3.04600

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	6.42844	9.90360
sky130_fd_sc_hs__mux4_2	0.00000	6.95780	10.67400
sky130_fd_sc_hs__mux4_4	0.00000	10.69870	15.91660

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)	0.23619	0.97670	7.84313
	A1->X (RR)	0.23652	0.97843	7.83271
	A2->X (RR)	0.24154	0.98777	7.87320
	A3->X (RR)	0.23712	0.98147	7.85576
	S0->X (-R)	0.35102	1.12529	7.97238
	S1->X (-R)	0.19260	0.90563	7.57912
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.25024	0.89316	7.82118
	A1->X (RR)	0.24151	0.88913	7.82395
	A2->X (RR)	0.23476	0.87257	7.78045
	A3->X (RR)	0.22582	0.86564	7.77481
	S0->X (-R)	0.34022	1.01437	7.92737
	S1->X (-R)	0.20286	0.82737	7.57373
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.27680	0.84434	8.00433
	A1->X (RR)	0.27832	0.84906	8.01309
	A2->X (RR)	0.27921	0.85014	8.00219
	A3->X (RR)	0.26782	0.84447	8.00365
	S0->X (-R)	0.43710	1.08041	8.38527
	S1->X (-R)	0.23771	0.84208	7.91755

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.37474	0.95467	4.88288
	A1->X (FF)	0.39175	0.97412	4.92916
	A2->X (FF)	0.40792	0.99813	4.98321
	A3->X (FF)	0.40920	0.99631	4.97938
	S0->X (-F)	0.37463	0.99337	5.03022
	S1->X (-F)	0.18665	0.73827	4.53491
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.48028	1.06641	5.32584
	A1->X (FF)	0.47587	1.06116	5.30945
	A2->X (FF)	0.46948	1.04776	5.27946
	A3->X (FF)	0.45742	1.03362	5.24770
	S0->X (-F)	0.44622	1.06511	5.41338
	S1->X (-F)	0.24644	0.81408	4.91166
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.46610	0.99064	5.24575
	A1->X (FF)	0.46128	0.98538	5.22822
	A2->X (FF)	0.49812	1.02135	5.28776
	A3->X (FF)	0.48273	1.00576	5.26425
	S0->X (-F)	0.45579	1.03430	5.47406
	S1->X (-F)	0.26925	0.80642	5.03434

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01524	0.01549	0.02698
	A0	0.00932	0.00957	0.02121
	A1	0.01383	0.01404	0.02535
	A1	0.00809	0.00831	0.01977
	A2	0.01379	0.01404	0.02532
	A2	0.00814	0.00839	0.01981
	A3	0.01276	0.01297	0.02430
	A3	0.00702	0.00723	0.01871
	S0	0.02409	0.02545	0.07543
	S0	0.01018	0.01153	0.06163
	S1	0.01128	0.01252	0.04343
	S1	0.01171	0.01418	0.04522
sky130_fd_sc_hs__mux4_2	A0	0.01864	0.01897	0.03060
	A0	0.01208	0.01241	0.02440
	A1	0.01746	0.01784	0.02962
	A1	0.01107	0.01145	0.02358
	A2	0.01641	0.01677	0.02841
	A2	0.01029	0.01066	0.02266
	A3	0.01551	0.01593	0.02779
	A3	0.00960	0.01002	0.02224
	S0	0.02872	0.03016	0.08146
	S0	0.01431	0.01572	0.06734
	S1	0.01393	0.01531	0.04671
	S1	0.01468	0.01724	0.04831

sky130_fd_sc_hs__mux4_4	**A0**	0.03470	0.03516	0.05758
	A0	0.02308	0.02354	0.04634
	A1	0.03196	0.03240	0.05493
	A1	0.02081	0.02124	0.04414
	A2	0.03191	0.03234	0.05454
	A2	0.02076	0.02120	0.04377
	A3	0.03008	0.03055	0.05290
	A3	0.01911	0.01958	0.04229
	S0	0.04883	0.05082	0.12742
	S0	0.02658	0.02858	0.10538
	S1	0.02508	0.02645	0.06871
	S1	0.02655	0.03005	0.07095

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00520	0.00531	0.01740
	A0	0.01112	0.01125	0.02325
	A1	0.00680	0.00688	0.01895
	A1	0.01252	0.01262	0.02448
	A2	0.00772	0.00775	0.01991
	A2	0.01337	0.01344	0.02523
	A3	0.00879	0.00877	0.02102
	A3	0.01451	0.01455	0.02639
	S0	0.00873	0.01110	0.06195
	S0	0.02240	0.02481	0.07530
	S1	0.01129	0.01305	0.04328
	S1	0.01018	0.01213	0.04431

sky130_fd_sc_hs__mux4_2	**A0**	0.01045	0.00967	0.02316
	A0	0.01699	0.01621	0.02843
	A1	0.01164	0.01087	0.02436
	A1	0.01799	0.01722	0.02942
	A2	0.01140	0.01055	0.02338
	A2	0.01751	0.01676	0.02897
	A3	0.01221	0.01141	0.02515
	A3	0.01807	0.01740	0.02974
	S0	0.01262	0.01405	0.06701
	S0	0.02699	0.02840	0.08013
	S1	0.00698	0.00831	0.04145
	S1	0.01443	0.01576	0.04832
sky130_fd_sc_hs__mux4_4	**A0**	0.01917	0.01754	0.04087
	A0	0.03078	0.02912	0.05243
	A1	0.02218	0.02059	0.04401
	A1	0.03327	0.03170	0.05496
	A2	0.02230	0.02022	0.04623
	A2	0.03344	0.03149	0.05458
	A3	0.02445	0.02245	0.04879
	A3	0.03532	0.03356	0.05681
	S0	0.02319	0.02463	0.10521
	S0	0.04489	0.04631	0.12425
	S1	0.01433	0.01480	0.06020
	S1	0.02548	0.02629	0.06969

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)**	0.00802	0.00812	0.02042
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00334	0.00343	0.01575
	(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)	0.00162	0.00135	0.00129
	(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)	-0.00123	-0.00152	-0.00156
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00883	0.00890	0.02166
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00353	0.00358	0.01637
	(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)	0.00174	0.00148	0.00142
	(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)	-0.00121	-0.00148	-0.00153
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01498	0.01520	0.03962
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00580	0.00597	0.03046
	(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)	0.00309	0.00256	0.00239
	(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)	-0.00256	-0.00315	-0.00326

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)	0.00146	0.00160	0.01433
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00613	0.00629	0.01900
	(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)	-0.00113	-0.00115	-0.00114
	(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)	0.00170	0.00172	0.00171
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00232	0.00244	0.01559
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00762	0.00776	0.02089
	(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)	-0.00125	-0.00127	-0.00127
	(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	0.00170	0.00169

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00321	0.00350	0.02877
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01241	0.01271	0.03794
	(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)	-0.00216	-0.00219	-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)	0.00347	0.00350	0.00349

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)**	0.00659	0.00666	0.01886
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00213	0.00217	0.01438
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00148	0.00123	0.00116
	(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)	-0.00139	-0.00168	-0.00173

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00764	0.00775	0.02052
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00254	0.00263	0.01540
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00159	0.00132	0.00126
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00134	-0.00162	-0.00166
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01224	0.01244	0.03699
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00356	0.00374	0.02833
	(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)	0.00295	0.00242	0.00226
	(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)	-0.00253	-0.00317	-0.00325

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)**	0.00301	0.00314	0.01568
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00749	0.00764	0.02014
	(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)	-0.00102	-0.00105	-0.00105
	(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)	0.00185	0.00187	0.00186
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00352	0.00362	0.01682
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00863	0.00876	0.02191
	(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)	-0.00113	-0.00115	-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)	0.00178	0.00181	0.00179
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00625	0.00654	0.03180
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01493	0.01523	0.04043
	(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)	-0.00203	-0.00208	-0.00208
	(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)	0.00344	0.00347	0.00346

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)	0.00169	0.00142	0.00135
	(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)	-0.00119	-0.00147	-0.00152
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00822	0.00830	0.02035
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00352	0.00360	0.01567
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)	0.00187	0.00162	0.00155
	(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)	-0.00120	-0.00148	-0.00153
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00838	0.00844	0.02112
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00331	0.00336	0.01607

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)**	0.00313	0.00260	0.00247
	(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)	-0.00245	-0.00302	-0.00312
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01513	0.01529	0.03956
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00583	0.00599	0.03030

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)**	-0.00120	-0.00121	-0.00121
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00166	0.00167	0.00167
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00225	0.00239	0.01486
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00694	0.00710	0.01954

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)**	-0.00139	-0.00141	-0.00140
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00168	0.00169	0.00168
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00238	0.00250	0.01558
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00746	0.00758	0.02064
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)**	-0.00224	-0.00227	-0.00226
	(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)	0.00332	0.00335	0.00334
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00314	0.00344	0.02848
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01244	0.01276	0.03776

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)**	0.00717	0.00720	0.01934
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00241	0.00243	0.01459
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00182	0.00156	0.00149
	(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)	-0.00136	-0.00163	-0.00168
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00746	0.00757	0.02036
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00263	0.00273	0.01553
	(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)	0.00167	0.00140	0.00134
	(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)	-0.00129	-0.00157	-0.00161
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01329	0.01343	0.03783
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00428	0.00438	0.02880
	(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)	0.00306	0.00250	0.00238
	(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)	-0.00246	-0.00304	-0.00315

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)	0.00331	0.00341	0.01594
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00808	0.00818	0.02068
	(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)	-0.00136	-0.00138	-0.00137
	(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)	0.00180	0.00183	0.00181
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00322	0.00334	0.01658
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00806	0.00819	0.02138
	(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)	-0.00121	-0.00122	-0.00123
	(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)	0.00174	0.00174	0.00175

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00553	0.00574	0.03089
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01458	0.01483	0.03987
	(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	-0.00221	-0.00221
	(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)	0.00335	0.00337	0.00336

Passive power(pJ) for S0 rising (conditional):

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

sky130_fd_sc_hs__mux4_1	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00848	0.00889	0.02762
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00094	-0.00057	0.01817
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01292	0.01327	0.03263
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00485	0.00515	0.02460
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01233	0.01318	0.04776
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00134	0.00214	0.03674
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00895	0.00941	0.02810
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00072	-0.00030	0.01839
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01218	0.01279	0.03216
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00407	0.00465	0.02408
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01216	0.01278	0.03222
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00376	0.00437	0.02385
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01191	0.01283	0.04751
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00090	0.00177	0.03648
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01281	0.01373	0.04845
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00159	0.00244	0.03717
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01284	0.01319	0.03257
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00448	0.00480	0.02422
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01325	0.01411	0.04864
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00195	0.00276	0.03729

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00943	0.00987	0.02869
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00009	0.00049	0.01937
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01366	0.01382	0.03332
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00592	0.00603	0.02566
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01326	0.01420	0.04952
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00221	0.00311	0.03846
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00949	0.00996	0.02883
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00001	0.00043	0.01931
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01414	0.01418	0.03350
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00673	0.00671	0.02612
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01386	0.01389	0.03331
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00626	0.00627	0.02575
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01335	0.01424	0.04971
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00199	0.00281	0.03833
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01372	0.01456	0.05012
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00222	0.00307	0.03860
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01312	0.01326	0.03288
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00523	0.00535	0.02503
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01426	0.01517	0.05057
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00305	0.00392	0.03933

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01327	0.01368	0.03187
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00013	0.00023	0.01851
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02090	0.02065	0.04017
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01024	0.00998	0.02967
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02010	0.02123	0.06936
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00359	0.00464	0.05282
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01368	0.01415	0.03236
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00011	0.00034	0.01854
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02121	0.02138	0.04074
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01011	0.01031	0.02979
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02083	0.02104	0.04058
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00931	0.00955	0.02917
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01936	0.02080	0.06968
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00305	0.00446	0.05340
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02041	0.02191	0.07085
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00384	0.00524	0.05415
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02097	0.02071	0.04029
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00981	0.00951	0.02916
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02176	0.02288	0.07108
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00473	0.00578	0.05394

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)**	0.00073	0.00156	0.02065
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01013	0.01101	0.03010
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00649	0.00748	0.02720
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01457	0.01558	0.03516
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00266	0.00433	0.03941
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01365	0.01536	0.05045
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00052	0.00133	0.02033
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01021	0.01106	0.03003
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00619	0.00726	0.02709
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01431	0.01540	0.03505
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00644	0.00748	0.02712
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01487	0.01593	0.03536
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00185	0.00358	0.03874
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01286	0.01464	0.04977
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00115	0.00287	0.03795
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01242	0.01419	0.04924
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00684	0.00777	0.02740
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01524	0.01619	0.03565
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00196	0.00361	0.03865
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01329	0.01499	0.04998

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00069	0.00020	0.01948
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00858	0.00956	0.02883
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00513	0.00609	0.02603
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01287	0.01386	0.03360
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00138	0.00307	0.03901
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01239	0.01414	0.05008
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00054	0.00035	0.01951
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00896	0.00983	0.02904
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00567	0.00662	0.02660
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01309	0.01406	0.03382
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00618	0.00706	0.02690
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01380	0.01472	0.03434
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00093	0.00257	0.03867
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01226	0.01398	0.05006
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00077	0.00236	0.03837
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01227	0.01389	0.04991
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00588	0.00678	0.02662
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01379	0.01474	0.03434
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00056	0.00217	0.03808
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01179	0.01343	0.04933

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00098	-0.00013	0.01875
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01235	0.01325	0.03216
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01025	0.01097	0.03121
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02089	0.02166	0.04144
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00176	0.00400	0.05296
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01824	0.02055	0.06951
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00084	-0.00005	0.01868
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01296	0.01382	0.03257
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00933	0.01036	0.03062
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02041	0.02147	0.04135
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01026	0.01120	0.03104
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02187	0.02282	0.04225
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00149	0.00395	0.05409
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01772	0.02025	0.07039
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00084	0.00325	0.05327
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01751	0.01999	0.06998
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01080	0.01140	0.03143
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02204	0.02266	0.04221
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00055	0.00280	0.05159
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01765	0.01995	0.06872

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)	0.00565	0.00650	0.02611
	(A1 * A3 * S0 * X)	-0.00035	0.00048	0.02010
	(A0 * A2 * !S0 * X)	0.00564	0.00649	0.02609
	(A0 * A2 * !S0 * X)	-0.00036	0.00047	0.02009
	(!A1 * !A3 * S0 * !X)	0.00600	0.00682	0.02647
	(!A1 * !A3 * S0 * !X)	-0.00030	0.00049	0.02016
	(!A0 * !A2 * !S0 * !X)	0.00599	0.00680	0.02646
	(!A0 * !A2 * !S0 * !X)	-0.00032	0.00047	0.02015
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00596	0.00677	0.02631
	(A1 * A3 * S0 * X)	-0.00028	0.00049	0.02005
	(A0 * A2 * !S0 * X)	0.00595	0.00676	0.02630
	(A0 * A2 * !S0 * X)	-0.00029	0.00048	0.02004
	(!A1 * !A3 * S0 * !X)	0.00610	0.00694	0.02651
	(!A1 * !A3 * S0 * !X)	-0.00037	0.00044	0.02002
	(!A0 * !A2 * !S0 * !X)	0.00609	0.00692	0.02650
	(!A0 * !A2 * !S0 * !X)	-0.00038	0.00043	0.02001
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00860	0.00916	0.02844
	(A1 * A3 * S0 * X)	-0.00021	0.00026	0.01958
	(A0 * A2 * !S0 * X)	0.00859	0.00915	0.02843
	(A0 * A2 * !S0 * X)	-0.00021	0.00026	0.01957
	(!A1 * !A3 * S0 * !X)	0.00893	0.00959	0.02880
	(!A1 * !A3 * S0 * !X)	-0.00055	0.00012	0.01933
	(!A0 * !A2 * !S0 * !X)	0.00892	0.00959	0.02879
	(!A0 * !A2 * !S0 * !X)	-0.00056	0.00012	0.01932

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)	-0.00059	0.00070	0.02054
	(A1 * A3 * S0 * X)	0.00540	0.00671	0.02653
	(A0 * A2 * !S0 * X)	-0.00060	0.00069	0.02053
	(A0 * A2 * !S0 * X)	0.00539	0.00670	0.02651
	(!A1 * !A3 * S0 * !X)	-0.00063	0.00055	0.02028
	(!A1 * !A3 * S0 * !X)	0.00566	0.00688	0.02660
	(!A0 * !A2 * !S0 * !X)	-0.00065	0.00053	0.02027
	(!A0 * !A2 * !S0 * !X)	0.00564	0.00686	0.02659
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00063	0.00065	0.02040
	(A1 * A3 * S0 * X)	0.00562	0.00692	0.02667
	(A0 * A2 * !S0 * X)	-0.00064	0.00064	0.02039
	(A0 * A2 * !S0 * X)	0.00561	0.00691	0.02666
	(!A1 * !A3 * S0 * !X)	-0.00056	0.00060	0.02030
	(!A1 * !A3 * S0 * !X)	0.00593	0.00711	0.02680
	(!A0 * !A2 * !S0 * !X)	-0.00057	0.00059	0.02029
	(!A0 * !A2 * !S0 * !X)	0.00592	0.00710	0.02679
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00095	0.00007	0.01974
	(A1 * A3 * S0 * X)	0.00788	0.00895	0.02859
	(A0 * A2 * !S0 * X)	-0.00096	0.00006	0.01974
	(A0 * A2 * !S0 * X)	0.00787	0.00894	0.02859
	(!A1 * !A3 * S0 * !X)	-0.00065	0.00032	0.01970
	(!A1 * !A3 * S0 * !X)	0.00880	0.00981	0.02917
	(!A0 * !A2 * !S0 * !X)	-0.00065	0.00030	0.01970
	(!A0 * !A2 * !S0 * !X)	0.00879	0.00977	0.02917

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00243	0.00296	0.76048
sky130_fd_sc_hs__nand2b_2	0.00276	0.00564	1.37846
sky130_fd_sc_hs__nand2b_4	0.00410	0.00845	1.57477

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	2.23502	3.35554
sky130_fd_sc_hs__nand2b_2	0.00000	2.22997	3.51293
sky130_fd_sc_hs__nand2b_4	0.00000	4.65288	6.93783

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)	0.09700	0.77275	7.51129
	B->Y (FR)	0.05747	0.89641	10.52510
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.09428	0.65304	6.86375
	B->Y (FR)	0.05310	0.78141	10.31180
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.11542	0.69291	7.47072
	B->Y (FR)	0.07240	0.80207	10.61010

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)	0.12500	0.71868	5.91299
	B->Y (RF)	0.04902	0.69874	8.17344
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.13250	0.68496	5.98447
	B->Y (RF)	0.04821	0.59899	7.95851
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.10563	0.49091	3.70402
	B->Y (RF)	0.04192	0.43217	5.75879

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	0.00680	0.00749	0.02474
	A_N	0.00364	0.00434	0.02170
	B	0.00039	0.00078	0.00400
	B	0.00405	0.00445	0.00776
sky130_fd_sc_hs__nand2b_2	A_N	0.00904	0.00998	0.02655
	A_N	0.00573	0.00669	0.02325
	B	0.00048	0.00139	0.00789
	B	0.00764	0.00857	0.01504
sky130_fd_sc_hs__nand2b_4	A_N	0.01209	0.01363	0.04259
	A_N	0.00728	0.00883	0.03803
	B	0.00056	0.00189	0.01244
	B	0.01129	0.01265	0.02338

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00349	0.00469	0.02186
	A_N	0.00664	0.00784	0.02489
	B	0.00460	0.00467	0.00666
	B	0.00093	0.00098	0.00291
sky130_fd_sc_hs__nand2b_2	A_N	0.00604	0.00731	0.02605
	A_N	0.00934	0.01061	0.02932
	B	0.00884	0.00899	0.01332
	B	0.00163	0.00179	0.00571
sky130_fd_sc_hs__nand2b_4	A_N	0.01024	0.01226	0.04340
	A_N	0.01506	0.01704	0.04782
	B	0.01521	0.01555	0.02146
	B	0.00444	0.00468	0.01069

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00538	0.00595	0.02310
	(!B * Y)	0.00204	0.00260	0.01975
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00764	0.00819	0.02712
	(!B * Y)	0.00390	0.00444	0.02338
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00933	0.01024	0.04052
	(!B * Y)	0.00382	0.00471	0.03500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00019	0.00119	0.01859
	(!B * Y)	0.00355	0.00456	0.02195
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00083	0.00175	0.02077
	(!B * Y)	0.00460	0.00553	0.02453
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00143	0.00322	0.03396
	(!B * Y)	0.00700	0.00884	0.03952

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00157	0.00156	0.00157
	(A_N * Y)	-0.00178	-0.00177	-0.00177
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00267	0.00269	0.00268
	(A_N * Y)	-0.00368	-0.00370	-0.00368
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00539	0.00545	0.00541
	(A_N * Y)	-0.00381	-0.00383	-0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00141	-0.00150	-0.00151
	(A_N * Y)	0.00193	0.00189	0.00184
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00246	-0.00263	-0.00265
	(A_N * Y)	0.00388	0.00380	0.00373
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00487	-0.00523	-0.00529
	(A_N * Y)	0.00433	0.00407	0.00395

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00297	0.00289	0.78051
sky130_fd_sc_hs__nand2_2	0.00571	0.00566	1.51361
sky130_fd_sc_hs__nand2_4	0.00852	0.00826	1.53739
sky130_fd_sc_hs__nand2_8	0.01634	0.01634	2.85964

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.61577	1.59231
sky130_fd_sc_hs__nand2_2	0.00000	1.19472	3.18461
sky130_fd_sc_hs__nand2_4	0.00000	1.63710	3.44125
sky130_fd_sc_hs__nand2_8	0.00000	3.06107	6.38308

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)	0.04511	0.87937	10.55790
	B->Y (FR)	0.05550	0.88988	10.56920
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.03900	0.76509	10.49280
	B->Y (FR)	0.05237	0.77680	10.46680
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.05577	0.78642	10.61460
	B->Y (FR)	0.08269	0.81104	10.60040
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.04428	0.67666	10.28230
	B->Y (FR)	0.06921	0.69333	10.03620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.03910	0.75008	8.92729
	B->Y (RF)	0.04500	0.70265	8.30742
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.03603	0.67582	9.26707
	B->Y (RF)	0.04588	0.62764	8.61598
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.03248	0.49003	6.61165
	B->Y (RF)	0.04122	0.43716	5.77917
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.02795	0.43210	6.73024
	B->Y (RF)	0.03687	0.36845	5.63901

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00036	0.00011	0.00326
	A	0.00350	0.00396	0.00722
	B	0.00014	0.00053	0.00369
	B	0.00481	0.00521	0.00847
sky130_fd_sc_hs__nand2_2	A	-0.00119	-0.00006	0.00601
	A	0.00629	0.00741	0.01369
	B	0.00059	0.00144	0.00751
	B	0.00986	0.01071	0.01700
sky130_fd_sc_hs__nand2_4	A	-0.00227	-0.00075	0.00988
	A	0.00888	0.01038	0.02121
	B	0.00096	0.00216	0.01278
	B	0.01563	0.01684	0.02760
sky130_fd_sc_hs__nand2_8	A	-0.00533	-0.00187	0.02244
	A	0.01635	0.01970	0.04402
	B	0.00079	0.00325	0.02530
	B	0.02974	0.03224	0.05447

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00358	0.00366	0.00594
	A	-0.00026	-0.00010	0.00199
	B	0.00449	0.00458	0.00645
	B	-0.00021	-0.00015	0.00175
sky130_fd_sc_hs__nand2_2	A	0.00703	0.00755	0.01169
	A	-0.00043	0.00012	0.00412
	B	0.00903	0.00921	0.01296
	B	-0.00032	-0.00020	0.00353
sky130_fd_sc_hs__nand2_4	A	0.01293	0.01359	0.02084
	A	0.00184	0.00237	0.00900
	B	0.01678	0.01698	0.02305
	B	0.00201	0.00215	0.00821
sky130_fd_sc_hs__nand2_8	A	0.02040	0.02243	0.03651
	A	-0.00118	0.00085	0.01486
	B	0.02846	0.02914	0.04184
	B	-0.00074	-0.00015	0.01264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00050	0.00051	0.00048
	(!B * Y)	-0.00213	-0.00215	-0.00217
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00097	0.00097	0.00090
	(!B * Y)	-0.00414	-0.00417	-0.00427
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00190	0.00190	0.00176
	(!B * Y)	-0.00485	-0.00488	-0.00508
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00374	0.00369	0.00348
	(!B * Y)	-0.00936	-0.00933	-0.00982

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00047	-0.00047	-0.00047
	(!B * Y)	0.00218	0.00220	0.00218
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00086	-0.00087	-0.00085
	(!B * Y)	0.00430	0.00435	0.00429
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00167	-0.00171	-0.00168
	(!B * Y)	0.00509	0.00519	0.00511
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00332	-0.00339	-0.00333
	(!B * Y)	0.00983	0.01003	0.00988

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00131	0.00131	0.00131
	(!A * Y)	-0.00189	-0.00188	-0.00188
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00251	0.00255	0.00252
	(!A * Y)	-0.00369	-0.00371	-0.00369
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00502	0.00505	0.00502
	(!A * Y)	-0.00384	-0.00385	-0.00382
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01003	0.01000	0.01003
	(!A * Y)	-0.00768	-0.00766	-0.00765

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00120	-0.00129	-0.00131
	(!A * Y)	0.00198	0.00194	0.00190
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00232	-0.00251	-0.00252
	(!A * Y)	0.00387	0.00379	0.00372
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00458	-0.00498	-0.00502
	(!A * Y)	0.00423	0.00398	0.00388
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00922	-0.00995	-0.01003
	(!A * Y)	0.00850	0.00798	0.00775

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00229	0.00298	0.00290	0.72972
sky130_fd_sc_hs__nand3b_2	0.00273	0.00568	0.00565	1.28119
sky130_fd_sc_hs__nand3b_4	0.00390	0.00803	0.00810	1.41218

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	2.19109	3.36207
sky130_fd_sc_hs__nand3b_2	0.00000	2.11974	5.11675
sky130_fd_sc_hs__nand3b_4	0.00000	4.51541	6.91382

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)	0.10033	0.73626	6.90236
	B->Y (FR)	0.06589	0.89107	10.26800
	C->Y (FR)	0.07247	0.88996	10.17100
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.10067	0.62846	6.22650
	B->Y (FR)	0.05716	0.74572	9.50152
	C->Y (FR)	0.06536	0.75764	9.56986
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.12282	0.70427	7.25522
	B->Y (FR)	0.07822	0.79026	10.10130
	C->Y (FR)	0.10281	0.83181	10.35000

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)	0.14205	0.88077	7.86550
	B->Y (RF)	0.07642	0.87702	10.11950
	C->Y (RF)	0.08214	0.83609	9.54378
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.15517	0.83024	7.98221
	B->Y (RF)	0.07494	0.76277	10.00030
	C->Y (RF)	0.08054	0.70956	9.27398
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.12865	0.65635	6.16805
	B->Y (RF)	0.07353	0.65123	8.52722
	C->Y (RF)	0.08031	0.55465	7.20746

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	0.00660	0.00733	0.02455
	A_N	0.00383	0.00456	0.02178
	B	0.00069	0.00102	0.00403
	B	0.00445	0.00478	0.00786
	C	0.00113	0.00145	0.00448
	C	0.00552	0.00584	0.00894
sky130_fd_sc_hs__nand3b_2	A_N	0.00937	0.01030	0.02924
	A_N	0.00626	0.00722	0.02627
	B	0.00103	0.00172	0.00795
	B	0.00859	0.00912	0.01538
	C	0.00197	0.00269	0.00888
	C	0.01119	0.01152	0.01806
sky130_fd_sc_hs__nand3b_4	A_N	0.01250	0.01423	0.04422
	A_N	0.00776	0.00948	0.03960
	B	0.00131	0.00189	0.01158
	B	0.01186	0.01241	0.02222
	C	0.00310	0.00391	0.01347
	C	0.01738	0.01818	0.02788

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00453	0.00568	0.02315
	A_N	0.00730	0.00845	0.02582
	B	0.00556	0.00555	0.00724
	B	0.00180	0.00179	0.00348
	C	0.00638	0.00638	0.00822
	C	0.00194	0.00191	0.00373
sky130_fd_sc_hs__nand3b_2	A_N	0.00809	0.00940	0.02824
	A_N	0.01121	0.01252	0.03123
	B	0.01050	0.01042	0.01403
	B	0.00292	0.00291	0.00645
	C	0.01229	0.01228	0.01629
	C	0.00295	0.00288	0.00679
sky130_fd_sc_hs__nand3b_4	A_N	0.01098	0.01300	0.04322
	A_N	0.01575	0.01774	0.04785
	B	0.01541	0.01546	0.02039
	B	0.00484	0.00491	0.00969
	C	0.01999	0.02008	0.02576
	C	0.00547	0.00547	0.01114

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)	0.00514	0.00574	0.02296
	(B * !C * Y)	0.00199	0.00260	0.01982
	(!B * Y)	0.00511	0.00572	0.02294
	(!B * Y)	0.00201	0.00260	0.01982
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00794	0.00849	0.02739
	(B * !C * Y)	0.00395	0.00449	0.02340
	(!B * Y)	0.00782	0.00837	0.02728
	(!B * Y)	0.00395	0.00450	0.02341
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00943	0.01035	0.04023
	(B * !C * Y)	0.00376	0.00466	0.03456
	(!B * Y)	0.00926	0.01018	0.04008
	(!B * Y)	0.00372	0.00463	0.03455

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)	0.00034	0.00142	0.01882
	(B * !C * Y)	0.00358	0.00466	0.02203
	(!B * Y)	0.00034	0.00143	0.01883
	(!B * Y)	0.00348	0.00457	0.02196
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00079	0.00170	0.02067
	(B * !C * Y)	0.00493	0.00586	0.02477
	(!B * Y)	0.00089	0.00180	0.02078
	(!B * Y)	0.00477	0.00571	0.02466
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00157	0.00334	0.03363
	(B * !C * Y)	0.00760	0.00940	0.03958
	(!B * Y)	0.00168	0.00335	0.03383
	(!B * Y)	0.00726	0.00896	0.03941

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)	0.00146	0.00147	0.00146
	(A_N * C * Y)	-0.00182	-0.00183	-0.00182
	(A_N * !C * Y)	0.00100	0.00101	0.00100
	(A_N * !C * Y)	-0.00182	-0.00183	-0.00182
	(!A_N * !C * Y)	0.00054	0.00054	0.00055
	(!A_N * !C * Y)	-0.00211	-0.00212	-0.00211
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00268	0.00269	0.00269
	(A_N * C * Y)	-0.00378	-0.00378	-0.00377
	(A_N * !C * Y)	0.00181	0.00183	0.00181
	(A_N * !C * Y)	-0.00378	-0.00381	-0.00379
	(!A_N * !C * Y)	0.00117	0.00117	0.00120
	(!A_N * !C * Y)	-0.00403	-0.00404	-0.00401
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00546	0.00547	0.00547
	(A_N * C * Y)	-0.00365	-0.00364	-0.00363
	(A_N * !C * Y)	0.00328	0.00331	0.00328
	(A_N * !C * Y)	-0.00400	-0.00402	-0.00400
	(!A_N * !C * Y)	0.00214	0.00217	0.00224
	(!A_N * !C * Y)	-0.00432	-0.00435	-0.00432

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)	-0.00130	-0.00139	-0.00140
	(A_N * C * Y)	0.00200	0.00192	0.00189
	(A_N * !C * Y)	-0.00100	-0.00101	-0.00100
	(A_N * !C * Y)	0.00194	0.00196	0.00190
	(!A_N * !C * Y)	-0.00049	-0.00050	-0.00051
	(!A_N * !C * Y)	0.00217	0.00218	0.00215
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00244	-0.00262	-0.00265
	(A_N * C * Y)	0.00403	0.00385	0.00383
	(A_N * !C * Y)	-0.00181	-0.00183	-0.00181
	(A_N * !C * Y)	0.00395	0.00398	0.00387
	(!A_N * !C * Y)	-0.00105	-0.00106	-0.00111
	(!A_N * !C * Y)	0.00417	0.00419	0.00410
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00472	-0.00528	-0.00535
	(A_N * C * Y)	0.00436	0.00388	0.00378
	(A_N * !C * Y)	-0.00328	-0.00331	-0.00328
	(A_N * !C * Y)	0.00440	0.00440	0.00419
	(!A_N * !C * Y)	-0.00205	-0.00204	-0.00211
	(!A_N * !C * Y)	0.00458	0.00456	0.00444

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)	0.00127	0.00128	0.00127
	(A_N * B * Y)	-0.00180	-0.00180	-0.00179
	(A_N * !B * Y)	0.00128	0.00129	0.00128
	(A_N * !B * Y)	-0.00180	-0.00181	-0.00180
	(!A_N * !B * Y)	0.00122	0.00123	0.00122
	(!A_N * !B * Y)	-0.00187	-0.00188	-0.00187
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00270	0.00271	0.00270
	(A_N * B * Y)	-0.00365	-0.00366	-0.00365
	(A_N * !B * Y)	0.00271	0.00274	0.00271
	(A_N * !B * Y)	-0.00367	-0.00368	-0.00366
	(!A_N * !B * Y)	0.00241	0.00243	0.00241
	(!A_N * !B * Y)	-0.00395	-0.00397	-0.00396
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00517	0.00519	0.00518
	(A_N * B * Y)	-0.00369	-0.00370	-0.00369
	(A_N * !B * Y)	0.00517	0.00524	0.00518
	(A_N * !B * Y)	-0.00374	-0.00377	-0.00375
	(!A_N * !B * Y)	0.00476	0.00482	0.00477
	(!A_N * !B * Y)	-0.00417	-0.00419	-0.00417

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)	-0.00114	-0.00122	-0.00124
	(A_N * B * Y)	0.00188	0.00187	0.00186
	(A_N * !B * Y)	-0.00121	-0.00124	-0.00124
	(A_N * !B * Y)	0.00186	0.00189	0.00186
	(!A_N * !B * Y)	-0.00115	-0.00121	-0.00121
	(!A_N * !B * Y)	0.00192	0.00192	0.00189
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00253	-0.00268	-0.00270
	(A_N * B * Y)	0.00373	0.00373	0.00370
	(A_N * !B * Y)	-0.00262	-0.00271	-0.00271
	(A_N * !B * Y)	0.00368	0.00374	0.00370
	(!A_N * !B * Y)	-0.00231	-0.00242	-0.00241
	(!A_N * !B * Y)	0.00402	0.00403	0.00398
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00482	-0.00513	-0.00518
	(A_N * B * Y)	0.00395	0.00387	0.00381
	(A_N * !B * Y)	-0.00497	-0.00516	-0.00518
	(A_N * !B * Y)	0.00391	0.00389	0.00384
	(!A_N * !B * Y)	-0.00450	-0.00481	-0.00477
	(!A_N * !B * Y)	0.00431	0.00425	0.00418

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00301	0.00305	0.00297	0.72093
sky130_fd_sc_hs__nand3_2	0.00567	0.00611	0.00562	1.31465
sky130_fd_sc_hs__nand3_4	0.00827	0.00815	0.00818	1.54852

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.56709	2.48483
sky130_fd_sc_hs__nand3_2	0.00000	1.05244	4.77753
sky130_fd_sc_hs__nand3_4	0.00000	1.42134	4.84885

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)	0.05420	0.86190	10.07240
	B->Y (FR)	0.06621	0.87783	10.07180
	C->Y (FR)	0.07334	0.88712	10.09660
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.04825	0.78967	10.48080
	B->Y (FR)	0.05849	0.75613	9.73685
	C->Y (FR)	0.06692	0.77080	9.77449
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.05423	0.78505	10.65360
	B->Y (FR)	0.08176	0.80833	10.59390
	C->Y (FR)	0.09743	0.82165	10.50320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.06101	0.89575	10.49270
	B->Y (RF)	0.07464	0.87352	10.04530
	C->Y (RF)	0.07950	0.83178	9.47471
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.04919	0.76626	10.31550
	B->Y (RF)	0.06738	0.74801	9.90112
	C->Y (RF)	0.07482	0.70804	9.30855
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.03736	0.58261	7.96583
	B->Y (RF)	0.05446	0.55064	7.37036
	C->Y (RF)	0.06054	0.50122	6.64359

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00024	0.00017	0.00328
	A	0.00385	0.00401	0.00744
	B	0.00046	0.00078	0.00381
	B	0.00537	0.00569	0.00878
	C	0.00082	0.00112	0.00417
	C	0.00661	0.00691	0.01002
sky130_fd_sc_hs__nand3_2	A	-0.00109	-0.00009	0.00584
	A	0.00669	0.00769	0.01376
	B	0.00075	0.00145	0.00757
	B	0.01055	0.01102	0.01734
	C	0.00209	0.00281	0.00915
	C	0.01338	0.01412	0.02041
sky130_fd_sc_hs__nand3_4	A	-0.00228	-0.00066	0.00899
	A	0.00898	0.01057	0.02041
	B	0.00108	0.00183	0.01172
	B	0.01581	0.01660	0.02664
	C	0.00303	0.00403	0.01383
	C	0.02147	0.02250	0.03234

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00497	0.00517	0.00714
	A	0.00088	0.00109	0.00302
	B	0.00587	0.00584	0.00755
	B	0.00093	0.00092	0.00261
	C	0.00677	0.00675	0.00862
	C	0.00089	0.00086	0.00270
sky130_fd_sc_hs__nand3_2	A	0.00849	0.00888	0.01286
	A	0.00072	0.00111	0.00503
	B	0.01049	0.01049	0.01408
	B	0.00063	0.00062	0.00419
	C	0.01220	0.01219	0.01627
	C	0.00069	0.00064	0.00460
sky130_fd_sc_hs__nand3_4	A	0.01250	0.01301	0.01944
	A	0.00130	0.00174	0.00769
	B	0.01630	0.01643	0.02159
	B	0.00145	0.00152	0.00672
	C	0.02004	0.02008	0.02623
	C	0.00127	0.00128	0.00684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00050	0.00050	0.00045
	(B * !C * Y)	-0.00206	-0.00207	-0.00217
	(!B * Y)	0.00050	0.00050	0.00047
	(!B * Y)	-0.00213	-0.00214	-0.00218
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00101	0.00100	0.00086
	(B * !C * Y)	-0.00384	-0.00384	-0.00410
	(!B * Y)	0.00100	0.00100	0.00093
	(!B * Y)	-0.00400	-0.00403	-0.00412
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00183	0.00184	0.00161
	(B * !C * Y)	-0.00439	-0.00445	-0.00491
	(!B * Y)	0.00185	0.00185	0.00171
	(!B * Y)	-0.00475	-0.00478	-0.00497

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00044	-0.00044	-0.00044
	(B * !C * Y)	0.00218	0.00220	0.00219
	(!B * Y)	-0.00045	-0.00045	-0.00045
	(!B * Y)	0.00218	0.00220	0.00219
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00083	-0.00083	-0.00083
	(B * !C * Y)	0.00416	0.00417	0.00414
	(!B * Y)	-0.00088	-0.00089	-0.00088
	(!B * Y)	0.00413	0.00417	0.00414
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00157	-0.00159	-0.00157
	(B * !C * Y)	0.00498	0.00506	0.00499
	(!B * Y)	-0.00163	-0.00166	-0.00163
	(!B * Y)	0.00499	0.00508	0.00500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00061	0.00061	0.00062
	(A * !C * Y)	-0.00188	-0.00189	-0.00187
	(!A * C * Y)	0.00127	0.00128	0.00127
	(!A * C * Y)	-0.00188	-0.00189	-0.00188
	(!A * !C * Y)	0.00076	0.00076	0.00076
	(!A * !C * Y)	-0.00188	-0.00189	-0.00188
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00121	0.00123	0.00124
	(A * !C * Y)	-0.00393	-0.00395	-0.00390
	(!A * C * Y)	0.00250	0.00252	0.00251
	(!A * C * Y)	-0.00390	-0.00392	-0.00390
	(!A * !C * Y)	0.00158	0.00159	0.00158
	(!A * !C * Y)	-0.00393	-0.00396	-0.00394
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00221	0.00222	0.00225
	(A * !C * Y)	-0.00387	-0.00387	-0.00381
	(!A * C * Y)	0.00496	0.00500	0.00498
	(!A * C * Y)	-0.00385	-0.00386	-0.00384
	(!A * !C * Y)	0.00284	0.00284	0.00282
	(!A * !C * Y)	-0.00391	-0.00392	-0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00056	-0.00057	-0.00058
	(A * !C * Y)	0.00194	0.00195	0.00191
	(!A * C * Y)	-0.00116	-0.00126	-0.00127
	(!A * C * Y)	0.00201	0.00193	0.00189
	(!A * !C * Y)	-0.00076	-0.00076	-0.00076
	(!A * !C * Y)	0.00195	0.00197	0.00191
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00112	-0.00112	-0.00116
	(A * !C * Y)	0.00409	0.00409	0.00399
	(!A * C * Y)	-0.00229	-0.00250	-0.00251
	(!A * C * Y)	0.00414	0.00400	0.00393
	(!A * !C * Y)	-0.00158	-0.00159	-0.00158
	(!A * !C * Y)	0.00408	0.00410	0.00399
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00202	-0.00204	-0.00211
	(A * !C * Y)	0.00413	0.00415	0.00397
	(!A * C * Y)	-0.00447	-0.00493	-0.00498
	(!A * C * Y)	0.00437	0.00398	0.00389
	(!A * !C * Y)	-0.00284	-0.00284	-0.00282
	(!A * !C * Y)	0.00417	0.00420	0.00398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00135	0.00135	0.00135
	(A * !B * Y)	-0.00190	-0.00189	-0.00189
	(!A * B * Y)	0.00131	0.00132	0.00131
	(!A * B * Y)	-0.00189	-0.00190	-0.00189
	(!A * !B * Y)	0.00134	0.00135	0.00134
	(!A * !B * Y)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00246	0.00250	0.00248
	(A * !B * Y)	-0.00372	-0.00375	-0.00373
	(!A * B * Y)	0.00242	0.00243	0.00242
	(!A * B * Y)	-0.00373	-0.00374	-0.00372
	(!A * !B * Y)	0.00246	0.00248	0.00247
	(!A * !B * Y)	-0.00373	-0.00375	-0.00374
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00502	0.00504	0.00504
	(A * !B * Y)	-0.00389	-0.00390	-0.00390
	(!A * B * Y)	0.00486	0.00490	0.00488
	(!A * B * Y)	-0.00389	-0.00391	-0.00389
	(!A * !B * Y)	0.00499	0.00506	0.00501
	(!A * !B * Y)	-0.00390	-0.00393	-0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00128	-0.00135	-0.00135
	(A * !B * Y)	0.00191	0.00193	0.00191
	(!A * B * Y)	-0.00122	-0.00132	-0.00131
	(!A * B * Y)	0.00193	0.00192	0.00190
	(!A * !B * Y)	-0.00132	-0.00135	-0.00134
	(!A * !B * Y)	0.00191	0.00193	0.00191
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00237	-0.00249	-0.00248
	(A * !B * Y)	0.00376	0.00379	0.00375
	(!A * B * Y)	-0.00224	-0.00243	-0.00242
	(!A * B * Y)	0.00379	0.00379	0.00375
	(!A * !B * Y)	-0.00240	-0.00248	-0.00247
	(!A * !B * Y)	0.00373	0.00378	0.00375
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00479	-0.00504	-0.00504
	(A * !B * Y)	0.00398	0.00398	0.00394
	(!A * B * Y)	-0.00451	-0.00490	-0.00488
	(!A * B * Y)	0.00406	0.00398	0.00393
	(!A * !B * Y)	-0.00488	-0.00506	-0.00501
	(!A * !B * Y)	0.00391	0.00397	0.00393

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00231	0.00225	0.00304	0.00307	0.53734
sky130_fd_sc_hs__nand4bb_2	0.00268	0.00264	0.00575	0.00568	0.93574
sky130_fd_sc_hs__nand4bb_4	0.00378	0.00389	0.01121	0.01124	1.65530

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	3.65588	6.16889
sky130_fd_sc_hs__nand4bb_2	0.00000	3.01473	7.03129
sky130_fd_sc_hs__nand4bb_4	0.00000	7.86217	13.41270

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)	0.11248	0.68967	5.56702
	B_N->Y (RR)	0.12703	0.70483	5.56673
	C->Y (FR)	0.08467	0.83235	8.67846
	D->Y (FR)	0.09300	0.84523	8.69788
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.10669	0.58181	4.87701
	B_N->Y (RR)	0.12279	0.58843	4.71484
	C->Y (FR)	0.06948	0.70145	8.05220
	D->Y (FR)	0.07700	0.71712	8.09676
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.13002	0.57098	4.82655
	B_N->Y (RR)	0.14987	0.59479	4.89279
	C->Y (FR)	0.06695	0.62020	7.77838
	D->Y (FR)	0.07391	0.63664	7.81864

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)	0.16983	0.96630	7.84775
	B_N->Y (FF)	0.19373	0.99286	7.86111
	C->Y (RF)	0.12998	0.94640	9.58074
	D->Y (RF)	0.13845	0.92407	9.14397
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.17802	0.90130	8.01609
	B_N->Y (FF)	0.21842	0.94871	8.06575
	C->Y (RF)	0.12598	0.80666	9.34704
	D->Y (RF)	0.13331	0.78947	8.91322
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.18077	0.78824	7.55981
	B_N->Y (FF)	0.21327	0.82471	7.58949
	C->Y (RF)	0.12757	0.69281	9.06775
	D->Y (RF)	0.13438	0.66921	8.56582

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	0.00674	0.00741	0.02468
	A_N	0.00432	0.00499	0.02244
	B_N	0.00739	0.00798	0.02521
	B_N	0.00504	0.00563	0.02304
	C	0.00127	0.00151	0.00496
	C	0.00535	0.00558	0.00909
	D	0.00182	0.00198	0.00557
	D	0.00663	0.00679	0.01043
sky130_fd_sc_hs__nand4bb_2	A_N	0.00962	0.01052	0.02948
	A_N	0.00699	0.00790	0.02687
	B_N	0.01198	0.01259	0.03140
	B_N	0.00942	0.01005	0.02889
	C	0.00221	0.00276	0.00989
	C	0.00967	0.01025	0.01744
	D	0.00359	0.00393	0.01125
	D	0.01276	0.01315	0.02037
sky130_fd_sc_hs__nand4bb_4	A_N	0.01625	0.01765	0.04694
	A_N	0.01278	0.01419	0.04428
	B_N	0.01993	0.02085	0.05025
	B_N	0.01633	0.01733	0.04666
	C	0.00363	0.00473	0.02157
	C	0.01839	0.01951	0.03685
	D	0.00593	0.00686	0.02394
	D	0.02412	0.02507	0.04270

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00569	0.00677	0.02448
	A_N	0.00811	0.00921	0.02683
	B_N	0.00690	0.00797	0.02566
	B_N	0.00925	0.01033	0.02793
	C	0.00795	0.00786	0.00980
	C	0.00388	0.00377	0.00570
	D	0.00886	0.00873	0.01088
	D	0.00398	0.00386	0.00594
sky130_fd_sc_hs__nand4bb_2	A_N	0.00958	0.01076	0.03005
	A_N	0.01222	0.01341	0.03259
	B_N	0.01181	0.01299	0.03218
	B_N	0.01437	0.01555	0.03466
	C	0.01399	0.01379	0.01799
	C	0.00647	0.00625	0.01039
	D	0.01578	0.01554	0.01994
	D	0.00643	0.00621	0.01054
sky130_fd_sc_hs__nand4bb_4	A_N	0.01918	0.02109	0.05225
	A_N	0.02265	0.02455	0.05539
	B_N	0.02294	0.02481	0.05562
	B_N	0.02651	0.02840	0.05915
	C	0.02749	0.02707	0.03772
	C	0.01264	0.01215	0.02256
	D	0.03116	0.03067	0.04194
	D	0.01259	0.01206	0.02323

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)	0.00487	0.00550	0.02264
	(B_N * Y)	0.00186	0.00247	0.01962
	(!B_N * C * !D * Y)	0.00527	0.00590	0.02304
	(!B_N * C * !D * Y)	0.00224	0.00286	0.02001
	(!B_N * !C * Y)	0.00527	0.00590	0.02304
	(!B_N * !C * Y)	0.00225	0.00287	0.02001
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00738	0.00794	0.02675
	(B_N * Y)	0.00403	0.00459	0.02341
	(!B_N * C * !D * Y)	0.00788	0.00845	0.02724
	(!B_N * C * !D * Y)	0.00450	0.00505	0.02387
	(!B_N * !C * Y)	0.00787	0.00844	0.02723
	(!B_N * !C * Y)	0.00451	0.00507	0.02388
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01228	0.01301	0.04220
	(B_N * Y)	0.00743	0.00815	0.03733
	(!B_N * C * !D * Y)	0.01294	0.01368	0.04285
	(!B_N * C * !D * Y)	0.00799	0.00871	0.03792
	(!B_N * !C * Y)	0.01292	0.01365	0.04284
	(!B_N * !C * Y)	0.00803	0.00875	0.03794

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)	0.00053	0.00155	0.01893
	(B_N * Y)	0.00354	0.00457	0.02195
	(!B_N * C * !D * Y)	0.00015	0.00116	0.01852
	(!B_N * C * !D * Y)	0.00327	0.00430	0.02163
	(!B_N * !C * Y)	0.00011	0.00113	0.01850
	(!B_N * !C * Y)	0.00315	0.00419	0.02154
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00127	0.00231	0.02103
	(B_N * Y)	0.00462	0.00566	0.02438
	(!B_N * C * !D * Y)	0.00087	0.00192	0.02058
	(!B_N * C * !D * Y)	0.00445	0.00550	0.02411
	(!B_N * !C * Y)	0.00079	0.00171	0.02054
	(!B_N * !C * Y)	0.00420	0.00511	0.02393
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00247	0.00404	0.03387
	(B_N * Y)	0.00733	0.00891	0.03873
	(!B_N * C * !D * Y)	0.00198	0.00355	0.03327
	(!B_N * C * !D * Y)	0.00733	0.00891	0.03854
	(!B_N * !C * Y)	0.00185	0.00343	0.03320
	(!B_N * !C * Y)	0.00683	0.00843	0.03818

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)	0.00486	0.00536	0.02225
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00192	0.00242	0.01932
	(!C * Y)	0.00488	0.00547	0.02250
	(!C * Y)	0.00187	0.00247	0.01949
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00723	0.00761	0.02598
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00395	0.00432	0.02271
	(!C * Y)	0.00731	0.00784	0.02640
	(!C * Y)	0.00390	0.00443	0.02299
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01226	0.01267	0.04097
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00729	0.00768	0.03598
	(!C * Y)	0.01254	0.01316	0.04189
	(!C * Y)	0.00728	0.00788	0.03661

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)	0.00123	0.00231	0.01958
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00417	0.00526	0.02251
	(!C * Y)	0.00078	0.00187	0.01916
	(!C * Y)	0.00379	0.00489	0.02216
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00269	0.00370	0.02234
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00596	0.00697	0.02562
	(!C * Y)	0.00185	0.00287	0.02155
	(!C * Y)	0.00527	0.00630	0.02496
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00492	0.00646	0.03619
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00990	0.01145	0.04117
	(!C * Y)	0.00320	0.00476	0.03453
	(!C * Y)	0.00847	0.01003	0.03981

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)**	0.00142	0.00143	0.00142
	(A_N * B_N * D * Y)	-0.00188	-0.00189	-0.00188
	(A_N * B_N * !D * Y)	0.00100	0.00101	0.00100
	(A_N * B_N * !D * Y)	-0.00188	-0.00190	-0.00189
	(A_N * !B_N * D * Y)	0.00120	0.00122	0.00121
	(A_N * !B_N * D * Y)	-0.00210	-0.00211	-0.00210
	(A_N * !B_N * !D * Y)	0.00078	0.00078	0.00077
	(A_N * !B_N * !D * Y)	-0.00225	-0.00226	-0.00225
	(!A_N * B_N * D * Y)	0.00140	0.00141	0.00140
	(!A_N * B_N * D * Y)	-0.00190	-0.00191	-0.00190
	(!A_N * B_N * !D * Y)	0.00098	0.00099	0.00098
	(!A_N * B_N * !D * Y)	-0.00191	-0.00192	-0.00191
	(!A_N * !B_N * !D * Y)	0.00059	0.00059	0.00060
	(!A_N * !B_N * !D * Y)	-0.00212	-0.00212	-0.00212
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00262	0.00263	0.00263
	(A_N * B_N * D * Y)	-0.00376	-0.00376	-0.00376
	(A_N * B_N * !D * Y)	0.00173	0.00174	0.00173
	(A_N * B_N * !D * Y)	-0.00376	-0.00378	-0.00376
	(A_N * !B_N * D * Y)	0.00252	0.00254	0.00253
	(A_N * !B_N * D * Y)	-0.00389	-0.00390	-0.00389
	(A_N * !B_N * !D * Y)	0.00164	0.00165	0.00165
	(A_N * !B_N * !D * Y)	-0.00416	-0.00418	-0.00417
	(!A_N * B_N * D * Y)	0.00262	0.00264	0.00263
	(!A_N * B_N * D * Y)	-0.00376	-0.00378	-0.00376
	(!A_N * B_N * !D * Y)	0.00172	0.00172	0.00171
	(!A_N * B_N * !D * Y)	-0.00379	-0.00380	-0.00378
	(!A_N * !B_N * !D * Y)	0.00128	0.00129	0.00130
	(!A_N * !B_N * !D * Y)	-0.00382	-0.00383	-0.00384

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00527	0.00530	0.00528
	(A_N * B_N * D * Y)	-0.00733	-0.00736	-0.00734
	(A_N * B_N * !D * Y)	0.00346	0.00345	0.00345
	(A_N * B_N * !D * Y)	-0.00736	-0.00735	-0.00734
	(A_N * !B_N * D * Y)	0.00499	0.00502	0.00500
	(A_N * !B_N * D * Y)	-0.00768	-0.00770	-0.00768
	(A_N * !B_N * !D * Y)	0.00315	0.00316	0.00315
	(A_N * !B_N * !D * Y)	-0.00824	-0.00827	-0.00826
	(!A_N * B_N * D * Y)	0.00526	0.00528	0.00526
	(!A_N * B_N * D * Y)	-0.00739	-0.00740	-0.00737
	(!A_N * B_N * !D * Y)	0.00337	0.00341	0.00338
	(!A_N * B_N * !D * Y)	-0.00739	-0.00744	-0.00740
	(!A_N * !B_N * !D * Y)	0.00242	0.00244	0.00248
	(!A_N * !B_N * !D * Y)	-0.00760	-0.00764	-0.00764

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)**	-0.00131	-0.00133	-0.00132
	(A_N * B_N * D * Y)	0.00200	0.00201	0.00199
	(A_N * B_N * !D * Y)	-0.00100	-0.00101	-0.00098
	(A_N * B_N * !D * Y)	0.00200	0.00201	0.00200
	(A_N * !B_N * D * Y)	-0.00105	-0.00116	-0.00117
	(A_N * !B_N * D * Y)	0.00225	0.00219	0.00215
	(A_N * !B_N * !D * Y)	-0.00078	-0.00078	-0.00077
	(A_N * !B_N * !D * Y)	0.00234	0.00238	0.00234
	(!A_N * B_N * D * Y)	-0.00130	-0.00135	-0.00135
	(!A_N * B_N * D * Y)	0.00202	0.00199	0.00197
	(!A_N * B_N * !D * Y)	-0.00098	-0.00099	-0.00098
	(!A_N * B_N * !D * Y)	0.00202	0.00203	0.00199
	(!A_N * !B_N * !D * Y)	-0.00052	-0.00053	-0.00054
	(!A_N * !B_N * !D * Y)	0.00218	0.00220	0.00217
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00255	-0.00257	-0.00258
	(A_N * B_N * D * Y)	0.00385	0.00384	0.00383
	(A_N * B_N * !D * Y)	-0.00173	-0.00174	-0.00173
	(A_N * B_N * !D * Y)	0.00384	0.00386	0.00385
	(A_N * !B_N * D * Y)	-0.00230	-0.00252	-0.00253
	(A_N * !B_N * D * Y)	0.00410	0.00397	0.00390
	(A_N * !B_N * !D * Y)	-0.00164	-0.00165	-0.00165
	(A_N * !B_N * !D * Y)	0.00425	0.00436	0.00428
	(!A_N * B_N * D * Y)	-0.00250	-0.00257	-0.00259
	(!A_N * B_N * D * Y)	0.00391	0.00384	0.00383
	(!A_N * B_N * !D * Y)	-0.00172	-0.00172	-0.00171
	(!A_N * B_N * !D * Y)	0.00394	0.00395	0.00388
	(!A_N * !B_N * !D * Y)	-0.00113	-0.00114	-0.00115
	(!A_N * !B_N * !D * Y)	0.00401	0.00403	0.00398

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00505	-0.00511	-0.00511
	(A_N * B_N * D * Y)	0.00760	0.00761	0.00757
	(A_N * B_N * !D * Y)	-0.00346	-0.00345	-0.00345
	(A_N * B_N * !D * Y)	0.00760	0.00763	0.00760
	(A_N * !B_N * D * Y)	-0.00448	-0.00495	-0.00499
	(A_N * !B_N * D * Y)	0.00820	0.00788	0.00773
	(A_N * !B_N * !D * Y)	-0.00315	-0.00316	-0.00315
	(A_N * !B_N * !D * Y)	0.00849	0.00873	0.00853
	(!A_N * B_N * D * Y)	-0.00493	-0.00513	-0.00515
	(!A_N * B_N * D * Y)	0.00774	0.00760	0.00753
	(!A_N * B_N * !D * Y)	-0.00337	-0.00341	-0.00338
	(!A_N * B_N * !D * Y)	0.00778	0.00781	0.00765
	(!A_N * !B_N * !D * Y)	-0.00218	-0.00220	-0.00223
	(!A_N * !B_N * !D * Y)	0.00794	0.00799	0.00788

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)	0.00124	0.00125	0.00124
	(A_N * B_N * C * Y)	-0.00197	-0.00197	-0.00197
	(A_N * !C * Y)	0.00126	0.00127	0.00126
	(A_N * !C * Y)	-0.00196	-0.00197	-0.00197
	(A_N * !B_N * C * Y)	0.00119	0.00122	0.00120
	(A_N * !B_N * C * Y)	-0.00202	-0.00205	-0.00203
	(!A_N * B_N * C * Y)	0.00122	0.00123	0.00122
	(!A_N * B_N * C * Y)	-0.00199	-0.00200	-0.00199
	(!A_N * B_N * !C * Y)	0.00123	0.00125	0.00124
	(!A_N * B_N * !C * Y)	-0.00198	-0.00200	-0.00199
	(!A_N * !B_N * !C * Y)	0.00121	0.00123	0.00122
	(!A_N * !B_N * !C * Y)	-0.00201	-0.00202	-0.00201

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00253	0.00254	0.00253
	(A_N * B_N * C * Y)	-0.00368	-0.00369	-0.00368
	(A_N * !C * Y)	0.00256	0.00258	0.00257
	(A_N * !C * Y)	-0.00368	-0.00369	-0.00368
	(A_N * !B_N * C * Y)	0.00247	0.00251	0.00248
	(A_N * !B_N * C * Y)	-0.00378	-0.00381	-0.00378
	(!A_N * B_N * C * Y)	0.00252	0.00254	0.00252
	(!A_N * B_N * C * Y)	-0.00369	-0.00370	-0.00369
	(!A_N * B_N * !C * Y)	0.00256	0.00257	0.00256
	(!A_N * B_N * !C * Y)	-0.00369	-0.00370	-0.00369
	(!A_N * !B_N * !C * Y)	0.00256	0.00257	0.00255
	(!A_N * !B_N * !C * Y)	-0.00370	-0.00371	-0.00370
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00507	0.00510	0.00507
	(A_N * B_N * C * Y)	-0.00730	-0.00732	-0.00729
	(A_N * !C * Y)	0.00515	0.00518	0.00516
	(A_N * !C * Y)	-0.00729	-0.00731	-0.00730
	(A_N * !B_N * C * Y)	0.00494	0.00501	0.00495
	(A_N * !B_N * C * Y)	-0.00752	-0.00758	-0.00752
	(!A_N * B_N * C * Y)	0.00503	0.00507	0.00503
	(!A_N * B_N * C * Y)	-0.00734	-0.00737	-0.00733
	(!A_N * B_N * !C * Y)	0.00509	0.00515	0.00510
	(!A_N * B_N * !C * Y)	-0.00733	-0.00738	-0.00734
	(!A_N * !B_N * !C * Y)	0.00506	0.00512	0.00508
	(!A_N * !B_N * !C * Y)	-0.00737	-0.00741	-0.00738

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)**	-0.00109	-0.00115	-0.00116
	(A_N * B_N * C * Y)	0.00208	0.00209	0.00208
	(A_N * !C * Y)	-0.00115	-0.00117	-0.00117
	(A_N * !C * Y)	0.00209	0.00210	0.00208
	(A_N * !B_N * C * Y)	-0.00107	-0.00116	-0.00118
	(A_N * !B_N * C * Y)	0.00213	0.00211	0.00208
	(!A_N * B_N * C * Y)	-0.00111	-0.00118	-0.00119
	(!A_N * B_N * C * Y)	0.00206	0.00207	0.00206
	(!A_N * B_N * !C * Y)	-0.00117	-0.00119	-0.00120
	(!A_N * B_N * !C * Y)	0.00207	0.00207	0.00206
	(!A_N * !B_N * !C * Y)	-0.00116	-0.00121	-0.00122
	(!A_N * !B_N * !C * Y)	0.00205	0.00206	0.00203
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00235	-0.00250	-0.00253
	(A_N * B_N * C * Y)	0.00375	0.00379	0.00375
	(A_N * !C * Y)	-0.00248	-0.00254	-0.00254
	(A_N * !C * Y)	0.00377	0.00379	0.00376
	(A_N * !B_N * C * Y)	-0.00228	-0.00248	-0.00248
	(A_N * !B_N * C * Y)	0.00392	0.00385	0.00380
	(!A_N * B_N * C * Y)	-0.00235	-0.00251	-0.00252
	(!A_N * B_N * C * Y)	0.00376	0.00378	0.00375
	(!A_N * B_N * !C * Y)	-0.00247	-0.00255	-0.00255
	(!A_N * B_N * !C * Y)	0.00373	0.00378	0.00375
	(!A_N * !B_N * !C * Y)	-0.00243	-0.00255	-0.00255
	(!A_N * !B_N * !C * Y)	0.00378	0.00378	0.00374

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00464	-0.00494	-0.00499
	(A_N * B_N * C * Y)	0.00753	0.00759	0.00753
	(A_N * !C * Y)	-0.00487	-0.00502	-0.00502
	(A_N * !C * Y)	0.00750	0.00760	0.00753
	(A_N * !B_N * C * Y)	-0.00452	-0.00490	-0.00495
	(A_N * !B_N * C * Y)	0.00784	0.00770	0.00760
	(!A_N * B_N * C * Y)	-0.00467	-0.00498	-0.00503
	(!A_N * B_N * C * Y)	0.00753	0.00756	0.00749
	(!A_N * B_N * !C * Y)	-0.00491	-0.00506	-0.00506
	(!A_N * B_N * !C * Y)	0.00746	0.00756	0.00748
	(!A_N * !B_N * !C * Y)	-0.00483	-0.00508	-0.00508
	(!A_N * !B_N * !C * Y)	0.00753	0.00754	0.00744

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00227	0.00299	0.00299	0.00290	0.54498
sky130_fd_sc_hs__nand4b_2	0.00287	0.00590	0.00574	0.00573	0.94276
sky130_fd_sc_hs__nand4b_4	0.00404	0.00824	0.00839	0.00806	1.52006

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	2.11782	3.41568
sky130_fd_sc_hs__nand4b_2	0.00000	1.93220	6.69741
sky130_fd_sc_hs__nand4b_4	0.00000	4.34789	6.90847

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)	0.10501	0.66091	5.27984
	B->Y (FR)	0.06900	0.81851	8.72759
	C->Y (FR)	0.07893	0.82985	8.73797
	D->Y (FR)	0.08236	0.83141	8.67087
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.10538	0.56595	4.66003
	B->Y (FR)	0.06146	0.68922	8.06300
	C->Y (FR)	0.07141	0.70714	8.14385
	D->Y (FR)	0.07747	0.71684	8.12808
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.12912	0.69925	7.31109
	B->Y (FR)	0.08529	0.80420	10.38290
	C->Y (FR)	0.10595	0.82646	10.40890
	D->Y (FR)	0.12270	0.85164	10.51050

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)	0.16222	0.96526	7.88523
	B->Y (RF)	0.10102	0.95866	10.09340
	C->Y (RF)	0.11456	0.93399	9.61876
	D->Y (RF)	0.11925	0.90768	9.18005
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.16971	0.88660	7.97879
	B->Y (RF)	0.10405	0.83919	9.99416
	C->Y (RF)	0.11802	0.80057	9.35048
	D->Y (RF)	0.12610	0.78391	8.91881
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.13169	0.67431	6.74245
	B->Y (RF)	0.08433	0.67871	9.02404
	C->Y (RF)	0.09900	0.64389	8.39848
	D->Y (RF)	0.10565	0.61975	7.88662

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	0.00664	0.00734	0.02438
	A_N	0.00408	0.00479	0.02192
	B	0.00071	0.00102	0.00442
	B	0.00466	0.00499	0.00844
	C	0.00132	0.00156	0.00500
	C	0.00593	0.00618	0.00965
	D	0.00172	0.00192	0.00547
	D	0.00708	0.00729	0.01086
sky130_fd_sc_hs__nand4b_2	A_N	0.00966	0.01049	0.02773
	A_N	0.00712	0.00798	0.02533
	B	0.00073	0.00127	0.00846
	B	0.00888	0.00944	0.01665
	C	0.00208	0.00262	0.00972
	C	0.01168	0.01225	0.01950
	D	0.00337	0.00393	0.01105
	D	0.01472	0.01534	0.02256
sky130_fd_sc_hs__nand4b_4	A_N	0.01244	0.01395	0.04292
	A_N	0.00867	0.01019	0.03935
	B	0.00106	0.00162	0.01081
	B	0.01244	0.01299	0.02234
	C	0.00333	0.00361	0.01277
	C	0.01812	0.01843	0.02773
	D	0.00565	0.00603	0.01516
	D	0.02359	0.02377	0.03324

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00517	0.00626	0.02344
	A_N	0.00772	0.00883	0.02592
	B	0.00602	0.00597	0.00783
	B	0.00205	0.00199	0.00387
	C	0.00686	0.00679	0.00870
	C	0.00220	0.00212	0.00402
	D	0.00766	0.00758	0.00968
	D	0.00218	0.00210	0.00415
sky130_fd_sc_hs__nand4b_2	A_N	0.00935	0.01047	0.02969
	A_N	0.01188	0.01301	0.03214
	B	0.01209	0.01195	0.01586
	B	0.00389	0.00375	0.00766
	C	0.01379	0.01359	0.01777
	C	0.00405	0.00383	0.00794
	D	0.01565	0.01541	0.01978
	D	0.00400	0.00377	0.00809
sky130_fd_sc_hs__nand4b_4	A_N	0.01394	0.01587	0.04697
	A_N	0.01771	0.01951	0.05048
	B	0.01853	0.01849	0.02317
	B	0.00717	0.00713	0.01178
	C	0.02225	0.02212	0.02700
	C	0.00722	0.00707	0.01197
	D	0.02573	0.02566	0.03113
	D	0.00727	0.00711	0.01224

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)	0.00520	0.00579	0.02288
	(B * C * !D * Y)	0.00207	0.00263	0.01974
	(B * !C * Y)	0.00520	0.00578	0.02287
	(B * !C * Y)	0.00207	0.00264	0.01973
	(!B * Y)	0.00517	0.00574	0.02285
	(!B * Y)	0.00207	0.00265	0.01974
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00790	0.00845	0.02747
	(B * C * !D * Y)	0.00397	0.00450	0.02354
	(B * !C * Y)	0.00789	0.00843	0.02746
	(B * !C * Y)	0.00397	0.00450	0.02354
	(!B * Y)	0.00785	0.00839	0.02742
	(!B * Y)	0.00398	0.00451	0.02354
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00935	0.01027	0.04054
	(B * C * !D * Y)	0.00378	0.00469	0.03498
	(B * !C * Y)	0.00932	0.01025	0.04052
	(B * !C * Y)	0.00378	0.00469	0.03498
	(!B * Y)	0.00924	0.01017	0.04043
	(!B * Y)	0.00380	0.00470	0.03498

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)	0.00057	0.00162	0.01890
	(B * C * !D * Y)	0.00386	0.00491	0.02215
	(B * !C * Y)	0.00055	0.00161	0.01889
	(B * !C * Y)	0.00378	0.00483	0.02209
	(!B * Y)	0.00055	0.00161	0.01890
	(!B * Y)	0.00367	0.00474	0.02202
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00075	0.00163	0.02067
	(B * C * !D * Y)	0.00497	0.00586	0.02482
	(B * !C * Y)	0.00067	0.00156	0.02063
	(B * !C * Y)	0.00476	0.00565	0.02468
	(!B * Y)	0.00062	0.00151	0.02063
	(!B * Y)	0.00453	0.00542	0.02452
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00151	0.00328	0.03388
	(B * C * !D * Y)	0.00766	0.00942	0.03989
	(B * !C * Y)	0.00138	0.00316	0.03381
	(B * !C * Y)	0.00726	0.00903	0.03962
	(!B * Y)	0.00132	0.00311	0.03383
	(!B * Y)	0.00682	0.00860	0.03931

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)**	0.00144	0.00145	0.00145
	(A_N * C * D * Y)	-0.00183	-0.00183	-0.00183
	(A_N * C * !D * Y)	0.00098	0.00099	0.00098
	(A_N * C * !D * Y)	-0.00183	-0.00184	-0.00183
	(A_N * !C * Y)	0.00102	0.00102	0.00101
	(A_N * !C * Y)	-0.00184	-0.00184	-0.00183
	(!A_N * C * !D * Y)	0.00053	0.00054	0.00054
	(!A_N * C * !D * Y)	-0.00206	-0.00207	-0.00209
	(!A_N * !C * Y)	0.00057	0.00057	0.00057
	(!A_N * !C * Y)	-0.00210	-0.00210	-0.00210
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00263	0.00264	0.00263
	(A_N * C * D * Y)	-0.00389	-0.00390	-0.00388
	(A_N * C * !D * Y)	0.00174	0.00174	0.00174
	(A_N * C * !D * Y)	-0.00391	-0.00391	-0.00390
	(A_N * !C * Y)	0.00180	0.00182	0.00180
	(A_N * !C * Y)	-0.00391	-0.00394	-0.00392
	(!A_N * C * !D * Y)	0.00113	0.00113	0.00115
	(!A_N * C * !D * Y)	-0.00401	-0.00402	-0.00411
	(!A_N * !C * Y)	0.00119	0.00121	0.00121
	(!A_N * !C * Y)	-0.00410	-0.00413	-0.00413
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00506	0.00508	0.00507
	(A_N * C * D * Y)	-0.00398	-0.00399	-0.00396
	(A_N * C * !D * Y)	0.00318	0.00319	0.00318
	(A_N * C * !D * Y)	-0.00401	-0.00402	-0.00400
	(A_N * !C * Y)	0.00327	0.00331	0.00328
	(A_N * !C * Y)	-0.00402	-0.00406	-0.00403
	(!A_N * C * !D * Y)	0.00213	0.00214	0.00215
	(!A_N * C * !D * Y)	-0.00416	-0.00419	-0.00433
	(!A_N * !C * Y)	0.00224	0.00225	0.00225
	(!A_N * !C * Y)	-0.00434	-0.00435	-0.00437

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)	-0.00127	-0.00137	-0.00139
	(A_N * C * D * Y)	0.00202	0.00192	0.00190
	(A_N * C * !D * Y)	-0.00094	-0.00097	-0.00097
	(A_N * C * !D * Y)	0.00200	0.00198	0.00192
	(A_N * !C * Y)	-0.00101	-0.00102	-0.00101
	(A_N * !C * Y)	0.00195	0.00197	0.00191
	(!A_N * C * !D * Y)	-0.00050	-0.00050	-0.00052
	(!A_N * C * !D * Y)	0.00216	0.00217	0.00214
	(!A_N * !C * Y)	-0.00051	-0.00052	-0.00053
	(!A_N * !C * Y)	0.00216	0.00217	0.00214
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00234	-0.00257	-0.00260
	(A_N * C * D * Y)	0.00419	0.00400	0.00394
	(A_N * C * !D * Y)	-0.00174	-0.00174	-0.00174
	(A_N * C * !D * Y)	0.00418	0.00412	0.00400
	(A_N * !C * Y)	-0.00180	-0.00182	-0.00180
	(A_N * !C * Y)	0.00408	0.00412	0.00400
	(!A_N * C * !D * Y)	-0.00103	-0.00104	-0.00108
	(!A_N * C * !D * Y)	0.00426	0.00429	0.00421
	(!A_N * !C * Y)	-0.00108	-0.00108	-0.00112
	(!A_N * !C * Y)	0.00429	0.00430	0.00422

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00441	-0.00489	-0.00496
	(A_N * C * D * Y)	0.00465	0.00421	0.00412
	(A_N * C * !D * Y)	-0.00316	-0.00319	-0.00318
	(A_N * C * !D * Y)	0.00462	0.00448	0.00424
	(A_N * !C * Y)	-0.00327	-0.00331	-0.00328
	(A_N * !C * Y)	0.00443	0.00444	0.00422
	(!A_N * C * !D * Y)	-0.00196	-0.00197	-0.00203
	(!A_N * C * !D * Y)	0.00460	0.00462	0.00450
	(!A_N * !C * Y)	-0.00202	-0.00204	-0.00211
	(!A_N * !C * Y)	0.00460	0.00463	0.00451

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)**	0.00125	0.00126	0.00125
	(A_N * B * D * Y)	-0.00182	-0.00183	-0.00183
	(A_N * B * !D * Y)	0.00081	0.00081	0.00081
	(A_N * B * !D * Y)	-0.00183	-0.00183	-0.00183
	(A_N * !B * D * Y)	0.00127	0.00128	0.00127
	(A_N * !B * D * Y)	-0.00184	-0.00184	-0.00183
	(A_N * !B * !D * Y)	0.00077	0.00077	0.00077
	(A_N * !B * !D * Y)	-0.00183	-0.00183	-0.00183
	(!A_N * B * !D * Y)	0.00057	0.00057	0.00057
	(!A_N * B * !D * Y)	-0.00189	-0.00189	-0.00187
	(!A_N * !B * D * Y)	0.00121	0.00121	0.00121
	(!A_N * !B * D * Y)	-0.00190	-0.00191	-0.00190
	(!A_N * !B * !D * Y)	0.00069	0.00069	0.00069
	(!A_N * !B * !D * Y)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00248	0.00251	0.00249
	(A_N * B * D * Y)	-0.00374	-0.00376	-0.00375
	(A_N * B * !D * Y)	0.00161	0.00161	0.00161
	(A_N * B * !D * Y)	-0.00377	-0.00377	-0.00377
	(A_N * !B * D * Y)	0.00252	0.00253	0.00253
	(A_N * !B * D * Y)	-0.00375	-0.00375	-0.00375
	(A_N * !B * !D * Y)	0.00157	0.00158	0.00157
	(A_N * !B * !D * Y)	-0.00376	-0.00378	-0.00376
	(!A_N * B * !D * Y)	0.00124	0.00125	0.00127
	(!A_N * B * !D * Y)	-0.00370	-0.00372	-0.00368
	(!A_N * !B * D * Y)	0.00252	0.00254	0.00253
	(!A_N * !B * D * Y)	-0.00376	-0.00377	-0.00376
	(!A_N * !B * !D * Y)	0.00154	0.00155	0.00153
	(!A_N * !B * !D * Y)	-0.00378	-0.00379	-0.00377
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00502	0.00507	0.00505
	(A_N * B * D * Y)	-0.00395	-0.00397	-0.00395
	(A_N * B * !D * Y)	0.00314	0.00314	0.00313
	(A_N * B * !D * Y)	-0.00399	-0.00399	-0.00399
	(A_N * !B * D * Y)	0.00510	0.00513	0.00511
	(A_N * !B * D * Y)	-0.00397	-0.00398	-0.00397
	(A_N * !B * !D * Y)	0.00300	0.00303	0.00300
	(A_N * !B * !D * Y)	-0.00397	-0.00399	-0.00397
	(!A_N * B * !D * Y)	0.00241	0.00243	0.00247
	(!A_N * B * !D * Y)	-0.00391	-0.00392	-0.00387
	(!A_N * !B * D * Y)	0.00508	0.00512	0.00509
	(!A_N * !B * D * Y)	-0.00400	-0.00402	-0.00400
	(!A_N * !B * !D * Y)	0.00293	0.00294	0.00292
	(!A_N * !B * !D * Y)	-0.00403	-0.00404	-0.00402

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)	-0.00109	-0.00121	-0.00122
	(A_N * B * D * Y)	0.00193	0.00192	0.00189
	(A_N * B * !D * Y)	-0.00081	-0.00081	-0.00081
	(A_N * B * !D * Y)	0.00195	0.00197	0.00191
	(A_N * !B * D * Y)	-0.00120	-0.00123	-0.00123
	(A_N * !B * D * Y)	0.00190	0.00191	0.00189
	(A_N * !B * !D * Y)	-0.00077	-0.00077	-0.00077
	(A_N * !B * !D * Y)	0.00189	0.00191	0.00190
	(!A_N * B * !D * Y)	-0.00051	-0.00051	-0.00052
	(!A_N * B * !D * Y)	0.00196	0.00197	0.00194
	(!A_N * !B * D * Y)	-0.00114	-0.00120	-0.00120
	(!A_N * !B * D * Y)	0.00196	0.00194	0.00191
	(!A_N * !B * !D * Y)	-0.00069	-0.00069	-0.00069
	(!A_N * !B * !D * Y)	0.00196	0.00198	0.00194
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00226	-0.00249	-0.00249
	(A_N * B * D * Y)	0.00387	0.00385	0.00380
	(A_N * B * !D * Y)	-0.00161	-0.00161	-0.00161
	(A_N * B * !D * Y)	0.00390	0.00396	0.00386
	(A_N * !B * D * Y)	-0.00245	-0.00251	-0.00253
	(A_N * !B * D * Y)	0.00381	0.00380	0.00380
	(A_N * !B * !D * Y)	-0.00157	-0.00158	-0.00157
	(A_N * !B * !D * Y)	0.00380	0.00383	0.00381
	(!A_N * B * !D * Y)	-0.00111	-0.00112	-0.00114
	(!A_N * B * !D * Y)	0.00389	0.00391	0.00384
	(!A_N * !B * D * Y)	-0.00238	-0.00251	-0.00253
	(!A_N * !B * D * Y)	0.00388	0.00380	0.00379
	(!A_N * !B * !D * Y)	-0.00154	-0.00155	-0.00153
	(!A_N * !B * !D * Y)	0.00390	0.00392	0.00385

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00448	-0.00495	-0.00504
	(A_N * B * D * Y)	0.00429	0.00410	0.00409
	(A_N * B * !D * Y)	-0.00314	-0.00314	-0.00313
	(A_N * B * !D * Y)	0.00432	0.00442	0.00420
	(A_N * !B * D * Y)	-0.00493	-0.00505	-0.00507
	(A_N * !B * D * Y)	0.00411	0.00411	0.00409
	(A_N * !B * !D * Y)	-0.00300	-0.00303	-0.00300
	(A_N * !B * !D * Y)	0.00412	0.00414	0.00411
	(!A_N * B * !D * Y)	-0.00217	-0.00219	-0.00223
	(!A_N * B * !D * Y)	0.00425	0.00427	0.00414
	(!A_N * !B * D * Y)	-0.00478	-0.00507	-0.00509
	(!A_N * !B * D * Y)	0.00427	0.00409	0.00405
	(!A_N * !B * !D * Y)	-0.00293	-0.00294	-0.00292
	(!A_N * !B * !D * Y)	0.00430	0.00431	0.00416

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)	0.00124	0.00126	0.00125
	(A_N * B * C * Y)	-0.00179	-0.00180	-0.00179
	(A_N * !C * Y)	0.00128	0.00129	0.00128
	(A_N * !C * Y)	-0.00180	-0.00180	-0.00179
	(A_N * !B * C * Y)	0.00124	0.00125	0.00124
	(A_N * !B * C * Y)	-0.00179	-0.00180	-0.00179
	(!A_N * B * !C * Y)	0.00122	0.00123	0.00121
	(!A_N * B * !C * Y)	-0.00187	-0.00187	-0.00186
	(!A_N * !B * C * Y)	0.00117	0.00118	0.00117
	(!A_N * !B * C * Y)	-0.00186	-0.00187	-0.00186
	(!A_N * !B * !C * Y)	0.00121	0.00122	0.00121
	(!A_N * !B * !C * Y)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00247	0.00251	0.00248
	(A_N * B * C * Y)	-0.00372	-0.00375	-0.00373
	(A_N * !C * Y)	0.00255	0.00256	0.00255
	(A_N * !C * Y)	-0.00373	-0.00374	-0.00373
	(A_N * !B * C * Y)	0.00248	0.00249	0.00248
	(A_N * !B * C * Y)	-0.00373	-0.00374	-0.00373
	(!A_N * B * !C * Y)	0.00255	0.00257	0.00255
	(!A_N * B * !C * Y)	-0.00374	-0.00376	-0.00374
	(!A_N * !B * C * Y)	0.00247	0.00249	0.00248
	(!A_N * !B * C * Y)	-0.00374	-0.00375	-0.00374
	(!A_N * !B * !C * Y)	0.00254	0.00255	0.00254
	(!A_N * !B * !C * Y)	-0.00375	-0.00375	-0.00374
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00491	0.00498	0.00493
	(A_N * B * C * Y)	-0.00368	-0.00370	-0.00368
	(A_N * !C * Y)	0.00507	0.00508	0.00506
	(A_N * !C * Y)	-0.00369	-0.00370	-0.00368
	(A_N * !B * C * Y)	0.00491	0.00493	0.00492
	(A_N * !B * C * Y)	-0.00369	-0.00369	-0.00369
	(!A_N * B * !C * Y)	0.00504	0.00508	0.00504
	(!A_N * B * !C * Y)	-0.00373	-0.00374	-0.00372
	(!A_N * !B * C * Y)	0.00488	0.00492	0.00488
	(!A_N * !B * C * Y)	-0.00373	-0.00374	-0.00372
	(!A_N * !B * !C * Y)	0.00502	0.00504	0.00501
	(!A_N * !B * !C * Y)	-0.00374	-0.00374	-0.00373

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)**	-0.00111	-0.00120	-0.00122
	(A_N * B * C * Y)	0.00186	0.00187	0.00186
	(A_N * !C * Y)	-0.00120	-0.00124	-0.00124
	(A_N * !C * Y)	0.00186	0.00188	0.00186
	(A_N * !B * C * Y)	-0.00112	-0.00121	-0.00122
	(A_N * !B * C * Y)	0.00185	0.00187	0.00186
	(!A_N * B * !C * Y)	-0.00115	-0.00121	-0.00121
	(!A_N * B * !C * Y)	0.00188	0.00191	0.00188
	(!A_N * !B * C * Y)	-0.00109	-0.00118	-0.00117
	(!A_N * !B * C * Y)	0.00188	0.00189	0.00188
	(!A_N * !B * !C * Y)	-0.00118	-0.00121	-0.00121
	(!A_N * !B * !C * Y)	0.00188	0.00191	0.00188
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00227	-0.00248	-0.00248
	(A_N * B * C * Y)	0.00380	0.00382	0.00378
	(A_N * !C * Y)	-0.00246	-0.00255	-0.00255
	(A_N * !C * Y)	0.00377	0.00381	0.00377
	(A_N * !B * C * Y)	-0.00231	-0.00249	-0.00248
	(A_N * !B * C * Y)	0.00377	0.00381	0.00377
	(!A_N * B * !C * Y)	-0.00243	-0.00255	-0.00255
	(!A_N * B * !C * Y)	0.00376	0.00381	0.00377
	(!A_N * !B * C * Y)	-0.00230	-0.00249	-0.00248
	(!A_N * !B * C * Y)	0.00378	0.00380	0.00377
	(!A_N * !B * !C * Y)	-0.00247	-0.00255	-0.00254
	(!A_N * !B * !C * Y)	0.00375	0.00380	0.00376

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00448	-0.00489	-0.00493
	(A_N * B * C * Y)	0.00387	0.00386	0.00381
	(A_N * !C * Y)	-0.00484	-0.00502	-0.00503
	(A_N * !C * Y)	0.00380	0.00385	0.00381
	(A_N * !B * C * Y)	-0.00453	-0.00491	-0.00492
	(A_N * !B * C * Y)	0.00381	0.00385	0.00381
	(!A_N * B * !C * Y)	-0.00480	-0.00504	-0.00504
	(!A_N * B * !C * Y)	0.00379	0.00381	0.00377
	(!A_N * !B * C * Y)	-0.00455	-0.00492	-0.00488
	(!A_N * !B * C * Y)	0.00381	0.00381	0.00377
	(!A_N * !B * !C * Y)	-0.00488	-0.00504	-0.00501
	(!A_N * !B * !C * Y)	0.00376	0.00380	0.00376

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00293	0.00307	0.00303	0.00303	0.55027
sky130_fd_sc_hs__nand4_2	0.00572	0.00576	0.00581	0.00564	0.93170
sky130_fd_sc_hs__nand4_4	0.00839	0.00819	0.00819	0.00838	1.48631

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.47698	3.19147
sky130_fd_sc_hs__nand4_2	0.00000	0.87839	6.37737
sky130_fd_sc_hs__nand4_4	0.00000	1.30660	6.54762

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)	0.05727	0.80156	8.66566
	B->Y (FR)	0.07235	0.82360	8.77704
	C->Y (FR)	0.08147	0.83236	8.78981
	D->Y (FR)	0.08537	0.83485	8.71644
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.04817	0.67469	8.05703
	B->Y (FR)	0.06194	0.68710	8.02468
	C->Y (FR)	0.07060	0.70061	8.04591
	D->Y (FR)	0.07661	0.71587	8.08699
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.06210	0.77532	10.24360
	B->Y (FR)	0.08895	0.79939	10.22190
	C->Y (FR)	0.11148	0.83425	10.42470
	D->Y (FR)	0.12742	0.85494	10.44470

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.07836	0.96487	10.40880
	B->Y (RF)	0.10144	0.95703	10.07650
	C->Y (RF)	0.11383	0.93068	9.60209
	D->Y (RF)	0.11988	0.90511	9.15855
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.06926	0.83588	10.26390
	B->Y (RF)	0.09840	0.83587	9.94868
	C->Y (RF)	0.11262	0.79768	9.30736
	D->Y (RF)	0.11988	0.77854	8.86997
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.05147	0.68328	9.26314
	B->Y (RF)	0.07857	0.67175	8.87255
	C->Y (RF)	0.09348	0.63659	8.24159
	D->Y (RF)	0.10067	0.61232	7.73143

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00007	0.00025	0.00371
	A	0.00431	0.00465	0.00815
	B	0.00068	0.00097	0.00434
	B	0.00591	0.00620	0.00958
	C	0.00133	0.00156	0.00497
	C	0.00730	0.00736	0.01100
	D	0.00171	0.00188	0.00542
	D	0.00850	0.00854	0.01227
sky130_fd_sc_hs__nand4_2	A	-0.00098	0.00007	0.00707
	A	0.00720	0.00824	0.01529
	B	0.00089	0.00156	0.00866
	B	0.01087	0.01154	0.01880
	C	0.00196	0.00249	0.00970
	C	0.01372	0.01433	0.02152
	D	0.00336	0.00370	0.01109
	D	0.01673	0.01712	0.02468
sky130_fd_sc_hs__nand4_4	A	-0.00192	-0.00045	0.00862
	A	0.00985	0.01130	0.02054
	B	0.00129	0.00189	0.01124
	B	0.01657	0.01716	0.02660
	C	0.00356	0.00387	0.01326
	C	0.02220	0.02250	0.03200
	D	0.00598	0.00626	0.01569
	D	0.02826	0.02820	0.03806

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00543	0.00548	0.00772
	A	0.00104	0.00109	0.00332
	B	0.00636	0.00630	0.00813
	B	0.00111	0.00105	0.00288
	C	0.00716	0.00708	0.00903
	C	0.00113	0.00103	0.00297
	D	0.00805	0.00795	0.01008
	D	0.00109	0.00098	0.00305
sky130_fd_sc_hs__nand4_2	A	0.00996	0.01019	0.01480
	A	0.00178	0.00201	0.00658
	B	0.01190	0.01176	0.01566
	B	0.00187	0.00170	0.00560
	C	0.01384	0.01364	0.01781
	C	0.00185	0.00163	0.00572
	D	0.01554	0.01534	0.01973
	D	0.00181	0.00157	0.00594
sky130_fd_sc_hs__nand4_4	A	0.01524	0.01550	0.02120
	A	0.00348	0.00375	0.00934
	B	0.01895	0.01917	0.02367
	B	0.00362	0.00356	0.00824
	C	0.02261	0.02246	0.02739
	C	0.00364	0.00348	0.00836
	D	0.02635	0.02624	0.03176
	D	0.00345	0.00327	0.00842

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)	0.00058	0.00058	0.00049
	(B * C * !D * Y)	-0.00193	-0.00194	-0.00210
	(B * !C * Y)	0.00055	0.00055	0.00049
	(B * !C * Y)	-0.00200	-0.00200	-0.00211
	(!B * Y)	0.00054	0.00054	0.00051
	(!B * Y)	-0.00208	-0.00209	-0.00213
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00107	0.00108	0.00087
	(B * C * !D * Y)	-0.00376	-0.00381	-0.00419
	(B * !C * Y)	0.00097	0.00097	0.00085
	(B * !C * Y)	-0.00396	-0.00399	-0.00424
	(!B * Y)	0.00098	0.00099	0.00090
	(!B * Y)	-0.00412	-0.00417	-0.00427
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00208	0.00207	0.00171
	(B * C * !D * Y)	-0.00412	-0.00416	-0.00489
	(B * !C * Y)	0.00190	0.00189	0.00167
	(B * !C * Y)	-0.00450	-0.00452	-0.00497
	(!B * Y)	0.00189	0.00189	0.00176
	(!B * Y)	-0.00481	-0.00485	-0.00503

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)	-0.00047	-0.00048	-0.00047
	(B * C * !D * Y)	0.00213	0.00215	0.00213
	(B * !C * Y)	-0.00048	-0.00048	-0.00047
	(B * !C * Y)	0.00213	0.00215	0.00213
	(!B * Y)	-0.00048	-0.00049	-0.00049
	(!B * Y)	0.00212	0.00215	0.00214
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00081	-0.00083	-0.00082
	(B * C * !D * Y)	0.00426	0.00431	0.00429
	(B * !C * Y)	-0.00082	-0.00083	-0.00083
	(B * !C * Y)	0.00426	0.00431	0.00429
	(!B * Y)	-0.00085	-0.00087	-0.00086
	(!B * Y)	0.00426	0.00432	0.00429
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00162	-0.00164	-0.00162
	(B * C * !D * Y)	0.00503	0.00512	0.00505
	(B * !C * Y)	-0.00162	-0.00165	-0.00163
	(B * !C * Y)	0.00503	0.00512	0.00505
	(!B * Y)	-0.00168	-0.00172	-0.00169
	(!B * Y)	0.00504	0.00514	0.00506

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)**	0.00055	0.00055	0.00056
	(A * C * !D * Y)	-0.00195	-0.00195	-0.00193
	(A * !C * Y)	0.00058	0.00059	0.00059
	(A * !C * Y)	-0.00195	-0.00196	-0.00194
	(!A * C * D * Y)	0.00121	0.00121	0.00121
	(!A * C * D * Y)	-0.00194	-0.00194	-0.00194
	(!A * C * !D * Y)	0.00072	0.00072	0.00072
	(!A * C * !D * Y)	-0.00195	-0.00196	-0.00195
	(!A * !C * Y)	0.00075	0.00075	0.00074
	(!A * !C * Y)	-0.00196	-0.00196	-0.00195
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00115	0.00115	0.00118
	(A * C * !D * Y)	-0.00373	-0.00375	-0.00371
	(A * !C * Y)	0.00116	0.00116	0.00119
	(A * !C * Y)	-0.00375	-0.00376	-0.00371
	(!A * C * D * Y)	0.00253	0.00253	0.00254
	(!A * C * D * Y)	-0.00374	-0.00374	-0.00373
	(!A * C * !D * Y)	0.00152	0.00153	0.00152
	(!A * C * !D * Y)	-0.00375	-0.00377	-0.00375
	(!A * !C * Y)	0.00149	0.00151	0.00149
	(!A * !C * Y)	-0.00376	-0.00378	-0.00376
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00221	0.00222	0.00225
	(A * C * !D * Y)	-0.00386	-0.00389	-0.00384
	(A * !C * Y)	0.00225	0.00227	0.00229
	(A * !C * Y)	-0.00389	-0.00390	-0.00384
	(!A * C * D * Y)	0.00499	0.00499	0.00502
	(!A * C * D * Y)	-0.00388	-0.00388	-0.00387
	(!A * C * !D * Y)	0.00289	0.00291	0.00289
	(!A * C * !D * Y)	-0.00390	-0.00392	-0.00390
	(!A * !C * Y)	0.00286	0.00287	0.00285
	(!A * !C * Y)	-0.00393	-0.00394	-0.00392

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)	-0.00051	-0.00052	-0.00053
	(A * C * !D * Y)	0.00201	0.00202	0.00197
	(A * !C * Y)	-0.00053	-0.00053	-0.00055
	(A * !C * Y)	0.00201	0.00202	0.00197
	(!A * C * D * Y)	-0.00109	-0.00120	-0.00121
	(!A * C * D * Y)	0.00207	0.00198	0.00196
	(!A * C * !D * Y)	-0.00072	-0.00072	-0.00072
	(!A * C * !D * Y)	0.00206	0.00204	0.00199
	(!A * !C * Y)	-0.00075	-0.00075	-0.00074
	(!A * !C * Y)	0.00202	0.00203	0.00198
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00104	-0.00105	-0.00109
	(A * C * !D * Y)	0.00389	0.00391	0.00381
	(A * !C * Y)	-0.00106	-0.00107	-0.00111
	(A * !C * Y)	0.00389	0.00391	0.00381
	(!A * C * D * Y)	-0.00225	-0.00251	-0.00254
	(!A * C * D * Y)	0.00401	0.00381	0.00376
	(!A * C * !D * Y)	-0.00152	-0.00153	-0.00152
	(!A * C * !D * Y)	0.00399	0.00394	0.00382
	(!A * !C * Y)	-0.00149	-0.00151	-0.00149
	(!A * !C * Y)	0.00390	0.00392	0.00381

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00203	-0.00204	-0.00211
	(A * C * !D * Y)	0.00415	0.00416	0.00399
	(A * !C * Y)	-0.00207	-0.00209	-0.00216
	(A * !C * Y)	0.00416	0.00417	0.00399
	(!A * C * D * Y)	-0.00441	-0.00495	-0.00502
	(!A * C * D * Y)	0.00446	0.00402	0.00392
	(!A * C * !D * Y)	-0.00289	-0.00291	-0.00289
	(!A * C * !D * Y)	0.00442	0.00428	0.00404
	(!A * !C * Y)	-0.00286	-0.00287	-0.00285
	(!A * !C * Y)	0.00420	0.00423	0.00401

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4_1	**(A * B * !D * Y)**	0.00057	0.00057	0.00058
	(A * B * !D * Y)	-0.00188	-0.00188	-0.00186
	(A * !B * D * Y)	0.00120	0.00121	0.00120
	(A * !B * D * Y)	-0.00192	-0.00193	-0.00192
	(A * !B * !D * Y)	0.00069	0.00070	0.00070
	(A * !B * !D * Y)	-0.00192	-0.00194	-0.00192
	(!A * B * D * Y)	0.00116	0.00117	0.00117
	(!A * B * D * Y)	-0.00191	-0.00192	-0.00191
	(!A * B * !D * Y)	0.00070	0.00070	0.00070
	(!A * B * !D * Y)	-0.00192	-0.00193	-0.00192
	(!A * !B * D * Y)	0.00120	0.00120	0.00120
	(!A * !B * D * Y)	-0.00192	-0.00192	-0.00192
	(!A * !B * !D * Y)	0.00071	0.00071	0.00070
	(!A * !B * !D * Y)	-0.00192	-0.00193	-0.00193

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00128	0.00129	0.00128
	(A * B * !D * Y)	-0.00363	-0.00365	-0.00360
	(A * !B * D * Y)	0.00252	0.00256	0.00254
	(A * !B * D * Y)	-0.00372	-0.00376	-0.00374
	(A * !B * !D * Y)	0.00150	0.00151	0.00150
	(A * !B * !D * Y)	-0.00374	-0.00376	-0.00374
	(!A * B * D * Y)	0.00245	0.00247	0.00246
	(!A * B * D * Y)	-0.00373	-0.00375	-0.00374
	(!A * B * !D * Y)	0.00154	0.00155	0.00154
	(!A * B * !D * Y)	-0.00375	-0.00377	-0.00375
	(!A * !B * D * Y)	0.00252	0.00254	0.00252
	(!A * !B * D * Y)	-0.00374	-0.00376	-0.00374
	(!A * !B * !D * Y)	0.00151	0.00153	0.00152
	(!A * !B * !D * Y)	-0.00373	-0.00376	-0.00375
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00237	0.00238	0.00237
	(A * B * !D * Y)	-0.00364	-0.00365	-0.00359
	(A * !B * D * Y)	0.00490	0.00496	0.00492
	(A * !B * D * Y)	-0.00384	-0.00386	-0.00384
	(A * !B * !D * Y)	0.00283	0.00283	0.00281
	(A * !B * !D * Y)	-0.00386	-0.00387	-0.00385
	(!A * B * D * Y)	0.00472	0.00478	0.00476
	(!A * B * D * Y)	-0.00382	-0.00386	-0.00383
	(!A * B * !D * Y)	0.00285	0.00286	0.00284
	(!A * B * !D * Y)	-0.00386	-0.00388	-0.00386
	(!A * !B * D * Y)	0.00488	0.00493	0.00489
	(!A * !B * D * Y)	-0.00385	-0.00387	-0.00385
	(!A * !B * !D * Y)	0.00285	0.00287	0.00284
	(!A * !B * !D * Y)	-0.00386	-0.00388	-0.00386

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)	-0.00051	-0.00052	-0.00053
	(A * B * !D * Y)	0.00196	0.00198	0.00195
	(A * !B * D * Y)	-0.00114	-0.00121	-0.00120
	(A * !B * D * Y)	0.00195	0.00195	0.00193
	(A * !B * !D * Y)	-0.00069	-0.00070	-0.00070
	(A * !B * !D * Y)	0.00198	0.00199	0.00196
	(!A * B * D * Y)	-0.00105	-0.00117	-0.00117
	(!A * B * D * Y)	0.00196	0.00195	0.00193
	(!A * B * !D * Y)	-0.00070	-0.00070	-0.00070
	(!A * B * !D * Y)	0.00198	0.00200	0.00195
	(!A * !B * D * Y)	-0.00117	-0.00120	-0.00120
	(!A * !B * D * Y)	0.00193	0.00195	0.00193
	(!A * !B * !D * Y)	-0.00071	-0.00071	-0.00070
	(!A * !B * !D * Y)	0.00193	0.00195	0.00194
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00110	-0.00111	-0.00113
	(A * B * !D * Y)	0.00388	0.00390	0.00381
	(A * !B * D * Y)	-0.00240	-0.00253	-0.00254
	(A * !B * D * Y)	0.00382	0.00378	0.00376
	(A * !B * !D * Y)	-0.00150	-0.00151	-0.00150
	(A * !B * !D * Y)	0.00390	0.00390	0.00383
	(!A * B * D * Y)	-0.00221	-0.00247	-0.00246
	(!A * B * D * Y)	0.00386	0.00382	0.00376
	(!A * B * !D * Y)	-0.00154	-0.00155	-0.00154
	(!A * B * !D * Y)	0.00386	0.00392	0.00381
	(!A * !B * D * Y)	-0.00247	-0.00254	-0.00252
	(!A * !B * D * Y)	0.00377	0.00377	0.00376
	(!A * !B * !D * Y)	-0.00151	-0.00153	-0.00152
	(!A * !B * !D * Y)	0.00377	0.00379	0.00377

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00206	-0.00208	-0.00211
	(A * B * !D * Y)	0.00409	0.00410	0.00397
	(A * !B * D * Y)	-0.00461	-0.00490	-0.00492
	(A * !B * D * Y)	0.00400	0.00390	0.00388
	(A * !B * !D * Y)	-0.00283	-0.00283	-0.00281
	(A * !B * !D * Y)	0.00415	0.00414	0.00401
	(!A * B * D * Y)	-0.00422	-0.00478	-0.00476
	(!A * B * D * Y)	0.00408	0.00388	0.00388
	(!A * B * !D * Y)	-0.00285	-0.00286	-0.00284
	(!A * B * !D * Y)	0.00410	0.00419	0.00397
	(!A * !B * D * Y)	-0.00477	-0.00493	-0.00489
	(!A * !B * D * Y)	0.00389	0.00390	0.00387
	(!A * !B * !D * Y)	-0.00285	-0.00287	-0.00284
	(!A * !B * !D * Y)	0.00390	0.00392	0.00390

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)	0.00122	0.00123	0.00122
	(A * B * !C * Y)	-0.00199	-0.00200	-0.00198
	(A * !B * C * Y)	0.00117	0.00119	0.00118
	(A * !B * C * Y)	-0.00198	-0.00199	-0.00199
	(A * !B * !C * Y)	0.00121	0.00122	0.00121
	(A * !B * !C * Y)	-0.00199	-0.00199	-0.00198
	(!A * B * C * Y)	0.00116	0.00118	0.00117
	(!A * B * C * Y)	-0.00198	-0.00200	-0.00198
	(!A * !C * Y)	0.00121	0.00121	0.00121
	(!A * !C * Y)	-0.00199	-0.00199	-0.00199
	(!A * !B * C * Y)	0.00117	0.00118	0.00117
	(!A * !B * C * Y)	-0.00198	-0.00199	-0.00199

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00256	0.00257	0.00256
	(A * B * !C * Y)	-0.00370	-0.00371	-0.00370
	(A * !B * C * Y)	0.00246	0.00248	0.00246
	(A * !B * C * Y)	-0.00370	-0.00372	-0.00370
	(A * !B * !C * Y)	0.00255	0.00257	0.00255
	(A * !B * !C * Y)	-0.00369	-0.00371	-0.00370
	(!A * B * C * Y)	0.00243	0.00246	0.00244
	(!A * B * C * Y)	-0.00369	-0.00372	-0.00370
	(!A * !C * Y)	0.00255	0.00256	0.00255
	(!A * !C * Y)	-0.00369	-0.00371	-0.00370
	(!A * !B * C * Y)	0.00246	0.00246	0.00246
	(!A * !B * C * Y)	-0.00370	-0.00371	-0.00370
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00517	0.00520	0.00515
	(A * B * !C * Y)	-0.00393	-0.00394	-0.00391
	(A * !B * C * Y)	0.00492	0.00497	0.00494
	(A * !B * C * Y)	-0.00390	-0.00393	-0.00392
	(A * !B * !C * Y)	0.00508	0.00517	0.00512
	(A * !B * !C * Y)	-0.00390	-0.00394	-0.00392
	(!A * B * C * Y)	0.00490	0.00494	0.00489
	(!A * B * C * Y)	-0.00392	-0.00394	-0.00391
	(!A * !C * Y)	0.00509	0.00517	0.00512
	(!A * !C * Y)	-0.00391	-0.00394	-0.00392
	(!A * !B * C * Y)	0.00492	0.00497	0.00493
	(!A * !B * C * Y)	-0.00392	-0.00394	-0.00392

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)**	-0.00116	-0.00122	-0.00122
	(A * B * !C * Y)	0.00199	0.00202	0.00200
	(A * !B * C * Y)	-0.00110	-0.00119	-0.00118
	(A * !B * C * Y)	0.00199	0.00201	0.00200
	(A * !B * !C * Y)	-0.00119	-0.00122	-0.00121
	(A * !B * !C * Y)	0.00200	0.00202	0.00199
	(!A * B * C * Y)	-0.00108	-0.00118	-0.00117
	(!A * B * C * Y)	0.00200	0.00201	0.00199
	(!A * !C * Y)	-0.00119	-0.00121	-0.00121
	(!A * !C * Y)	0.00200	0.00202	0.00199
	(!A * !B * C * Y)	-0.00111	-0.00118	-0.00117
	(!A * !B * C * Y)	0.00199	0.00200	0.00199
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00244	-0.00256	-0.00256
	(A * B * !C * Y)	0.00371	0.00376	0.00372
	(A * !B * C * Y)	-0.00230	-0.00248	-0.00246
	(A * !B * C * Y)	0.00372	0.00375	0.00372
	(A * !B * !C * Y)	-0.00247	-0.00257	-0.00255
	(A * !B * !C * Y)	0.00369	0.00376	0.00372
	(!A * B * C * Y)	-0.00225	-0.00246	-0.00244
	(!A * B * C * Y)	0.00375	0.00375	0.00372
	(!A * !C * Y)	-0.00247	-0.00256	-0.00255
	(!A * !C * Y)	0.00369	0.00375	0.00372
	(!A * !B * C * Y)	-0.00231	-0.00246	-0.00246
	(!A * !B * C * Y)	0.00372	0.00375	0.00372

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00493	-0.00515	-0.00515
	(A * B * !C * Y)	0.00398	0.00399	0.00395
	(A * !B * C * Y)	-0.00461	-0.00497	-0.00494
	(A * !B * C * Y)	0.00395	0.00398	0.00395
	(A * !B * !C * Y)	-0.00502	-0.00517	-0.00512
	(A * !B * !C * Y)	0.00397	0.00398	0.00394
	(!A * B * C * Y)	-0.00450	-0.00494	-0.00489
	(!A * B * C * Y)	0.00400	0.00399	0.00394
	(!A * !C * Y)	-0.00502	-0.00517	-0.00512
	(!A * !C * Y)	0.00397	0.00398	0.00394
	(!A * !B * C * Y)	-0.00464	-0.00497	-0.00493
	(!A * !B * C * Y)	0.00394	0.00398	0.00394

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00292	0.00232	0.39782
sky130_fd_sc_hs__nor2b_2	0.00576	0.00272	0.75550
sky130_fd_sc_hs__nor2b_4	0.00963	0.00395	1.45911

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	2.18599	3.60392
sky130_fd_sc_hs__nor2b_2	0.00000	2.10127	2.95689
sky130_fd_sc_hs__nor2b_4	0.00000	4.81530	7.86560

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)	0.10377	1.01890	9.86530
	B_N->Y (RR)	0.12538	0.93113	7.40906
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.09915	0.87700	9.92066
	B_N->Y (RR)	0.11388	0.80551	7.52434
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.07850	0.72213	9.61294
	B_N->Y (RR)	0.11276	0.70734	7.65400

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.03349	0.49225	4.91473
	B_N->Y (FF)	0.11060	0.49001	2.53727
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.02984	0.43496	4.85210
	B_N->Y (FF)	0.12069	0.50570	2.61634
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.04410	0.54352	6.88053
	B_N->Y (FF)	0.12769	0.54754	3.83270

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00113	0.00115	0.00458
	A	0.00480	0.00484	0.00825
	B_N	0.00658	0.00720	0.02371
	B_N	0.00366	0.00427	0.02080
sky130_fd_sc_hs__nor2b_2	A	0.00221	0.00228	0.00915
	A	0.00959	0.00945	0.01653
	B_N	0.00966	0.01043	0.02976
	B_N	0.00671	0.00747	0.02683
sky130_fd_sc_hs__nor2b_4	A	0.00388	0.00405	0.01165
	A	0.01610	0.01632	0.02391
	B_N	0.01467	0.01584	0.04525
	B_N	0.01028	0.01146	0.04116

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00455	0.00474	0.00830
	A	0.00088	0.00107	0.00444
	B_N	0.00355	0.00473	0.02199
	B_N	0.00648	0.00765	0.02491
sky130_fd_sc_hs__nor2b_2	A	0.00884	0.00913	0.01641
	A	0.00152	0.00176	0.00861
	B_N	0.00602	0.00752	0.02593
	B_N	0.00898	0.01047	0.02887
sky130_fd_sc_hs__nor2b_4	A	0.01409	0.01443	0.02255
	A	0.00191	0.00215	0.01039
	B_N	0.00883	0.01136	0.04256
	B_N	0.01325	0.01570	0.04630

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00165	0.00137	0.00133
	(!B_N * !Y)	-0.00172	-0.00199	-0.00204
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00342	0.00281	0.00270
	(!B_N * !Y)	-0.00304	-0.00370	-0.00378
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00466	0.00349	0.00329
	(!B_N * !Y)	-0.00623	-0.00739	-0.00756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00130	-0.00130	-0.00129
	(!B_N * !Y)	0.00206	0.00208	0.00207
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00264	-0.00266	-0.00263
	(!B_N * !Y)	0.00380	0.00386	0.00384
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00318	-0.00320	-0.00317
	(!B_N * !Y)	0.00761	0.00767	0.00767

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00390	0.00447	0.02162
	(A * !Y)	0.00073	0.00128	0.01844
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00515	0.00568	0.02470
	(A * !Y)	0.00153	0.00205	0.02108
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00799	0.00874	0.03858
	(A * !Y)	0.00255	0.00331	0.03313

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00137	0.00245	0.02001
	(A * !Y)	0.00454	0.00562	0.02318
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00273	0.00379	0.02325
	(A * !Y)	0.00634	0.00740	0.02686
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00332	0.00509	0.03601
	(A * !Y)	0.00876	0.01052	0.04142

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00293	0.00301	0.39581
sky130_fd_sc_hs__nor2_2	0.00472	0.00452	0.72928
sky130_fd_sc_hs__nor2_4	0.00905	0.00902	1.41149
sky130_fd_sc_hs__nor2_8	0.01769	0.01782	2.67407

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.55921	0.89250
sky130_fd_sc_hs__nor2_2	0.00000	0.91706	1.59220
sky130_fd_sc_hs__nor2_4	0.00000	1.82019	3.19128
sky130_fd_sc_hs__nor2_8	0.00000	3.50595	6.37555

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)	0.10031	1.01483	9.82667
	B->Y (FR)	0.07856	1.01939	10.24320
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.07979	0.85223	9.64211
	B->Y (FR)	0.04899	0.84890	10.05470
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.07978	0.73164	9.60435
	B->Y (FR)	0.04887	0.74307	10.09520
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.07766	0.62365	9.51668
	B->Y (FR)	0.05255	0.65669	10.16710

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.03394	0.49152	4.89873
	B->Y (RF)	0.02917	0.47928	4.87993
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.04588	0.60589	6.76072
	B->Y (RF)	0.03275	0.58137	6.73758
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.04535	0.53614	6.69513
	B->Y (RF)	0.03173	0.50590	6.63132
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.04262	0.47231	6.54873
	B->Y (RF)	0.03955	0.44925	6.52924

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00031	-0.00029	0.00315
	A	0.00469	0.00472	0.00815
	B	-0.00043	0.00000	0.00481
	B	0.00359	0.00387	0.00886
sky130_fd_sc_hs__nor2_2	A	-0.00068	-0.00063	0.00320
	A	0.00773	0.00780	0.01164
	B	-0.00054	0.00018	0.00581
	B	0.00541	0.00598	0.01176
sky130_fd_sc_hs__nor2_4	A	0.00042	0.00048	0.00830
	A	0.01676	0.01690	0.02473
	B	-0.00010	0.00119	0.01261
	B	0.01196	0.01324	0.02462
sky130_fd_sc_hs__nor2_8	A	-0.00003	0.00029	0.01627
	A	0.03224	0.03267	0.04872
	B	-0.00123	0.00251	0.02501
	B	0.02257	0.02638	0.04897

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00575	0.00591	0.00948
	A	0.00077	0.00093	0.00432
	B	0.00386	0.00417	0.00766
	B	-0.00016	0.00013	0.00343
sky130_fd_sc_hs__nor2_2	A	0.00995	0.01004	0.01463
	A	0.00157	0.00158	0.00582
	B	0.00455	0.00515	0.00976
	B	-0.00138	-0.00085	0.00333
sky130_fd_sc_hs__nor2_4	A	0.01897	0.01916	0.02894
	A	0.00266	0.00280	0.01127
	B	0.00905	0.01014	0.02033
	B	-0.00296	-0.00188	0.00662
sky130_fd_sc_hs__nor2_8	A	0.03611	0.03651	0.05730
	A	0.00408	0.00439	0.02188
	B	0.01798	0.02023	0.03998
	B	-0.00586	-0.00364	0.01392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00175	0.00147	0.00142
	(B * !Y)	-0.00149	-0.00177	-0.00182
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00250	0.00188	0.00177
	(B * !Y)	-0.00289	-0.00356	-0.00365
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00441	0.00312	0.00289
	(B * !Y)	-0.00579	-0.00714	-0.00733
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00842	0.00601	0.00557
	(B * !Y)	-0.01163	-0.01424	-0.01460

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00140	-0.00140	-0.00139
	(B * !Y)	0.00183	0.00184	0.00184
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00173	-0.00174	-0.00172
	(B * !Y)	0.00367	0.00370	0.00368
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00280	-0.00279	-0.00277
	(B * !Y)	0.00738	0.00739	0.00742
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00539	-0.00542	-0.00534
	(B * !Y)	0.01468	0.01486	0.01476

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00160	0.00161	0.00160
	(A * !Y)	-0.00083	-0.00083	-0.00082
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00177	0.00179	0.00178
	(A * !Y)	-0.00166	-0.00168	-0.00167
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00361	0.00360	0.00358
	(A * !Y)	-0.00334	-0.00333	-0.00330
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00705	0.00708	0.00706
	(A * !Y)	-0.00656	-0.00657	-0.00655

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00155	-0.00155	-0.00159
	(A * !Y)	0.00088	0.00087	0.00084
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00160	-0.00162	-0.00176
	(A * !Y)	0.00183	0.00183	0.00172
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00326	-0.00329	-0.00355
	(A * !Y)	0.00359	0.00360	0.00339
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00648	-0.00654	-0.00700
	(A * !Y)	0.00706	0.00708	0.00670

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00288	0.00300	0.00226	0.26061
sky130_fd_sc_hs__nor3b_2	0.00565	0.00564	0.00271	0.48991
sky130_fd_sc_hs__nor3b_4	0.01134	0.01127	0.00387	0.87975

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	2.10750	3.87013
sky130_fd_sc_hs__nor3b_2	0.00000	1.94400	3.38738
sky130_fd_sc_hs__nor3b_4	0.00000	4.84600	9.07873

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)	0.19552	1.17622	9.27845
	B->Y (FR)	0.17645	1.18994	9.83002
	C_N->Y (RR)	0.16564	1.08434	7.45413
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.18318	0.99908	9.19054
	B->Y (FR)	0.16137	1.01556	9.86154
	C_N->Y (RR)	0.14007	0.91859	7.50766
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.18516	0.85720	8.94104
	B->Y (FR)	0.16404	0.87434	9.66335
	C_N->Y (RR)	0.17013	0.86870	7.82242

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.03564	0.45363	3.95013
	B->Y (RF)	0.03774	0.45227	3.99301
	C_N->Y (FF)	0.11431	0.45658	1.99414
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.02982	0.39596	3.81725
	B->Y (RF)	0.03103	0.38317	3.78477
	C_N->Y (FF)	0.12323	0.47515	2.06634
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.02888	0.35385	3.71072
	B->Y (RF)	0.03036	0.34078	3.68105
	C_N->Y (FF)	0.13734	0.47283	1.91117

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00195	0.00185	0.00560
	A	0.00663	0.00656	0.01033
	B	0.00179	0.00173	0.00556
	B	0.00568	0.00563	0.00944
	C_N	0.00707	0.00765	0.02417
	C_N	0.00454	0.00512	0.02168
sky130_fd_sc_hs__nor3b_2	A	0.00303	0.00288	0.01034
	A	0.01286	0.01273	0.02023
	B	0.00303	0.00297	0.01051
	B	0.01071	0.01065	0.01818
	C_N	0.01042	0.01111	0.03050
	C_N	0.00798	0.00866	0.02811
sky130_fd_sc_hs__nor3b_4	A	0.00579	0.00551	0.02100
	A	0.02551	0.02524	0.04075
	B	0.00594	0.00584	0.02142
	B	0.02148	0.02111	0.03695
	C_N	0.01885	0.01995	0.04934
	C_N	0.01585	0.01695	0.04649

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00661	0.00666	0.01070
	A	0.00196	0.00200	0.00602
	B	0.00493	0.00502	0.00894
	B	0.00105	0.00114	0.00504
	C_N	0.00382	0.00499	0.02223
	C_N	0.00634	0.00750	0.02474
sky130_fd_sc_hs__nor3b_2	A	0.01337	0.01344	0.02153
	A	0.00363	0.00369	0.01183
	B	0.00936	0.00961	0.01748
	B	0.00173	0.00191	0.00978
	C_N	0.00664	0.00803	0.02663
	C_N	0.00909	0.01048	0.02908
sky130_fd_sc_hs__nor3b_4	A	0.02628	0.02639	0.04278
	A	0.00673	0.00679	0.02325
	B	0.01846	0.01887	0.03477
	B	0.00300	0.00336	0.01919
	C_N	0.01432	0.01646	0.04705
	C_N	0.01733	0.01946	0.05005

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)	0.00158	0.00137	0.00136
	(B * C_N * !Y)	-0.00152	-0.00173	-0.00175
	(B * !C_N * !Y)	0.00128	0.00127	0.00127
	(B * !C_N * !Y)	-0.00180	-0.00183	-0.00183
	(!B * !C_N * !Y)	0.00145	0.00131	0.00128
	(!B * !C_N * !Y)	-0.00155	-0.00179	-0.00180
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00314	0.00273	0.00270
	(B * C_N * !Y)	-0.00320	-0.00363	-0.00367
	(B * !C_N * !Y)	0.00270	0.00267	0.00267
	(B * !C_N * !Y)	-0.00360	-0.00368	-0.00367
	(!B * !C_N * !Y)	0.00299	0.00272	0.00268
	(!B * !C_N * !Y)	-0.00316	-0.00358	-0.00361
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00668	0.00583	0.00576
	(B * C_N * !Y)	-0.00610	-0.00700	-0.00705
	(B * !C_N * !Y)	0.00538	0.00533	0.00530
	(B * !C_N * !Y)	-0.00734	-0.00747	-0.00744
	(!B * !C_N * !Y)	0.00595	0.00540	0.00532
	(!B * !C_N * !Y)	-0.00643	-0.00728	-0.00733

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)	-0.00128	-0.00128	-0.00128
	(B * C_N * !Y)	0.00181	0.00182	0.00182
	(B * !C_N * !Y)	-0.00126	-0.00126	-0.00126
	(B * !C_N * !Y)	0.00183	0.00183	0.00183
	(!B * !C_N * !Y)	-0.00125	-0.00125	-0.00124
	(!B * !C_N * !Y)	0.00179	0.00179	0.00180
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00261	-0.00263	-0.00262
	(B * C_N * !Y)	0.00370	0.00373	0.00372
	(B * !C_N * !Y)	-0.00264	-0.00266	-0.00265
	(B * !C_N * !Y)	0.00365	0.00368	0.00367
	(!B * !C_N * !Y)	-0.00263	-0.00264	-0.00262
	(!B * !C_N * !Y)	0.00359	0.00360	0.00361
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00555	-0.00558	-0.00557
	(B * C_N * !Y)	0.00712	0.00719	0.00718
	(B * !C_N * !Y)	-0.00527	-0.00529	-0.00527
	(B * !C_N * !Y)	0.00741	0.00747	0.00744
	(!B * !C_N * !Y)	-0.00523	-0.00524	-0.00520
	(!B * !C_N * !Y)	0.00731	0.00733	0.00733

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)	0.00160	0.00160	0.00158
	(A * C_N * !Y)	-0.00086	-0.00086	-0.00087
	(A * !C_N * !Y)	0.00144	0.00146	0.00137
	(A * !C_N * !Y)	-0.00143	-0.00144	-0.00144
	(!A * !C_N * !Y)	0.00174	0.00138	0.00133
	(!A * !C_N * !Y)	-0.00156	-0.00194	-0.00197
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00283	0.00284	0.00279
	(A * C_N * !Y)	-0.00184	-0.00185	-0.00187
	(A * !C_N * !Y)	0.00294	0.00299	0.00279
	(A * !C_N * !Y)	-0.00266	-0.00267	-0.00266
	(!A * !C_N * !Y)	0.00355	0.00276	0.00266
	(!A * !C_N * !Y)	-0.00288	-0.00368	-0.00375
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00578	0.00579	0.00569
	(A * C_N * !Y)	-0.00361	-0.00363	-0.00370
	(A * !C_N * !Y)	0.00594	0.00596	0.00557
	(A * !C_N * !Y)	-0.00526	-0.00529	-0.00526
	(!A * !C_N * !Y)	0.00719	0.00559	0.00534
	(!A * !C_N * !Y)	-0.00572	-0.00733	-0.00748

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)	-0.00149	-0.00149	-0.00149
	(A * C_N * !Y)	0.00097	0.00096	0.00097
	(A * !C_N * !Y)	-0.00131	-0.00131	-0.00131
	(A * !C_N * !Y)	0.00143	0.00144	0.00144
	(!A * !C_N * !Y)	-0.00130	-0.00130	-0.00129
	(!A * !C_N * !Y)	0.00200	0.00201	0.00200
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00267	-0.00267	-0.00267
	(A * C_N * !Y)	0.00199	0.00199	0.00200
	(A * !C_N * !Y)	-0.00266	-0.00267	-0.00266
	(A * !C_N * !Y)	0.00266	0.00268	0.00266
	(!A * !C_N * !Y)	-0.00260	-0.00261	-0.00259
	(!A * !C_N * !Y)	0.00378	0.00381	0.00380
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00543	-0.00546	-0.00543
	(A * C_N * !Y)	0.00391	0.00393	0.00398
	(A * !C_N * !Y)	-0.00530	-0.00533	-0.00531
	(A * !C_N * !Y)	0.00526	0.00529	0.00526
	(!A * !C_N * !Y)	-0.00524	-0.00523	-0.00520
	(!A * !C_N * !Y)	0.00756	0.00756	0.00760

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00384	0.00441	0.02153
	(B * !Y)	0.00080	0.00135	0.01848
	(A * !B * !Y)	0.00394	0.00450	0.02159
	(A * !B * !Y)	0.00083	0.00138	0.01849
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00511	0.00565	0.02468
	(B * !Y)	0.00155	0.00206	0.02112
	(A * !B * !Y)	0.00534	0.00587	0.02484
	(A * !B * !Y)	0.00163	0.00215	0.02116
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00831	0.00888	0.03783
	(B * !Y)	0.00288	0.00346	0.03241
	(A * !B * !Y)	0.00872	0.00929	0.03810
	(A * !B * !Y)	0.00303	0.00359	0.03246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00142	0.00255	0.02002
	(B * !Y)	0.00446	0.00559	0.02306
	(A * !B * !Y)	0.00142	0.00255	0.02002
	(A * !B * !Y)	0.00447	0.00561	0.02308
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00269	0.00376	0.02324
	(B * !Y)	0.00626	0.00732	0.02680
	(A * !B * !Y)	0.00269	0.00376	0.02324
	(A * !B * !Y)	0.00628	0.00735	0.02682
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00637	0.00808	0.03846
	(B * !Y)	0.01176	0.01350	0.04386
	(A * !B * !Y)	0.00638	0.00809	0.03846
	(A * !B * !Y)	0.01182	0.01356	0.04391

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00298	0.00321	0.00306	0.25985
sky130_fd_sc_hs__nor3_2	0.00467	0.00488	0.00457	0.49936
sky130_fd_sc_hs__nor3_4	0.01016	0.01003	0.00971	0.86174

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.48764	0.89106
sky130_fd_sc_hs__nor3_2	0.00000	0.81425	1.59901
sky130_fd_sc_hs__nor3_4	0.00000	1.54127	3.24474

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)	0.19836	1.17213	9.21455
	B->Y (FR)	0.18179	1.18696	9.76942
	C->Y (FR)	0.12716	1.15576	9.99539
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.15433	0.96718	9.09725
	B->Y (FR)	0.13272	0.97409	9.63043
	C->Y (FR)	0.06718	0.92719	9.85090
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.16613	0.84371	8.74440
	B->Y (FR)	0.13766	0.84056	9.32590
	C->Y (FR)	0.07219	0.80644	9.62997

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.03697	0.45415	3.94189
	B->Y (RF)	0.03955	0.45218	3.97417
	C->Y (RF)	0.03317	0.43713	3.96036
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.05278	0.57005	5.60731
	B->Y (RF)	0.05185	0.55115	5.56123
	C->Y (RF)	0.03632	0.52519	5.53232
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.04517	0.50003	5.24342
	B->Y (RF)	0.04843	0.48516	5.26122
	C->Y (RF)	0.04290	0.46031	5.23069

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00027	0.00016	0.00395
	A	0.00677	0.00668	0.01050
	B	0.00032	0.00024	0.00410
	B	0.00584	0.00576	0.00957
	C	0.00023	0.00055	0.00593
	C	0.00472	0.00506	0.01043
sky130_fd_sc_hs__nor3_2	A	0.00016	0.00008	0.00415
	A	0.01086	0.01082	0.01493
	B	0.00041	0.00037	0.00468
	B	0.00910	0.00907	0.01337
	C	0.00034	0.00091	0.00754
	C	0.00661	0.00718	0.01381
sky130_fd_sc_hs__nor3_4	A	-0.00002	-0.00023	0.00843
	A	0.02272	0.02256	0.03128
	B	0.00002	-0.00010	0.00957
	B	0.01804	0.01794	0.02769
	C	-0.00063	0.00058	0.01501
	C	0.01338	0.01459	0.02904

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00838	0.00842	0.01246
	A	0.00192	0.00196	0.00598
	B	0.00655	0.00664	0.01057
	B	0.00107	0.00113	0.00504
	C	0.00439	0.00471	0.00850
	C	-0.00010	0.00020	0.00397
sky130_fd_sc_hs__nor3_2	A	0.01436	0.01439	0.01922
	A	0.00378	0.00377	0.00867
	B	0.01047	0.01060	0.01572
	B	0.00185	0.00193	0.00676
	C	0.00499	0.00559	0.01078
	C	-0.00125	-0.00073	0.00418
sky130_fd_sc_hs__nor3_4	A	0.03032	0.02980	0.04028
	A	0.00780	0.00717	0.01739
	B	0.02137	0.02127	0.03225
	B	0.00346	0.00330	0.01385
	C	0.01139	0.01250	0.02372
	C	-0.00260	-0.00155	0.00917

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00147	0.00145	0.00145
	(B * C * !Y)	-0.00175	-0.00180	-0.00180
	(B * !C * !Y)	0.00167	0.00147	0.00146
	(B * !C * !Y)	-0.00157	-0.00178	-0.00180
	(!B * C * !Y)	0.00163	0.00149	0.00145
	(!B * C * !Y)	-0.00150	-0.00175	-0.00176
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00173	0.00169	0.00169
	(B * C * !Y)	-0.00345	-0.00353	-0.00355
	(B * !C * !Y)	0.00212	0.00173	0.00171
	(B * !C * !Y)	-0.00308	-0.00352	-0.00356
	(!B * C * !Y)	0.00205	0.00174	0.00170
	(!B * C * !Y)	-0.00294	-0.00345	-0.00345
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00336	0.00325	0.00323
	(B * C * !Y)	-0.00729	-0.00759	-0.00753
	(B * !C * !Y)	0.00444	0.00337	0.00329
	(B * !C * !Y)	-0.00631	-0.00748	-0.00756
	(!B * C * !Y)	0.00423	0.00337	0.00325
	(!B * C * !Y)	-0.00608	-0.00731	-0.00733

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00144	-0.00145	-0.00144
	(B * C * !Y)	0.00180	0.00181	0.00180
	(B * !C * !Y)	-0.00143	-0.00144	-0.00143
	(B * !C * !Y)	0.00181	0.00183	0.00182
	(!B * C * !Y)	-0.00143	-0.00143	-0.00142
	(!B * C * !Y)	0.00174	0.00175	0.00176
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00167	-0.00167	-0.00168
	(B * C * !Y)	0.00353	0.00353	0.00355
	(B * !C * !Y)	-0.00166	-0.00168	-0.00166
	(B * !C * !Y)	0.00355	0.00360	0.00358
	(!B * C * !Y)	-0.00166	-0.00167	-0.00165
	(!B * C * !Y)	0.00343	0.00346	0.00345
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00320	-0.00323	-0.00321
	(B * C * !Y)	0.00748	0.00760	0.00753
	(B * !C * !Y)	-0.00315	-0.00318	-0.00316
	(B * !C * !Y)	0.00755	0.00764	0.00762
	(!B * C * !Y)	-0.00317	-0.00317	-0.00313
	(!B * C * !Y)	0.00729	0.00734	0.00733

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00162	0.00163	0.00154
	(A * C * !Y)	-0.00116	-0.00117	-0.00116
	(A * !C * !Y)	0.00153	0.00153	0.00151
	(A * !C * !Y)	-0.00087	-0.00087	-0.00088
	(!A * C * !Y)	0.00192	0.00156	0.00150
	(!A * C * !Y)	-0.00133	-0.00171	-0.00175
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00180	0.00182	0.00162
	(A * C * !Y)	-0.00254	-0.00253	-0.00256
	(A * !C * !Y)	0.00163	0.00163	0.00153
	(A * !C * !Y)	-0.00189	-0.00189	-0.00195
	(!A * C * !Y)	0.00245	0.00162	0.00149
	(!A * C * !Y)	-0.00282	-0.00366	-0.00376
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00408	0.00411	0.00372
	(A * C * !Y)	-0.00476	-0.00481	-0.00484
	(A * !C * !Y)	0.00366	0.00365	0.00353
	(A * !C * !Y)	-0.00355	-0.00353	-0.00358
	(!A * C * !Y)	0.00521	0.00371	0.00350
	(!A * C * !Y)	-0.00534	-0.00694	-0.00709

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00148	-0.00149	-0.00149
	(A * C * !Y)	0.00116	0.00117	0.00116
	(A * !C * !Y)	-0.00148	-0.00148	-0.00147
	(A * !C * !Y)	0.00092	0.00092	0.00092
	(!A * C * !Y)	-0.00148	-0.00148	-0.00147
	(!A * C * !Y)	0.00177	0.00177	0.00177
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00149	-0.00150	-0.00149
	(A * C * !Y)	0.00254	0.00257	0.00256
	(A * !C * !Y)	-0.00146	-0.00146	-0.00143
	(A * !C * !Y)	0.00204	0.00203	0.00205
	(!A * C * !Y)	-0.00144	-0.00145	-0.00142
	(!A * C * !Y)	0.00377	0.00380	0.00379
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00345	-0.00346	-0.00345
	(A * C * !Y)	0.00485	0.00487	0.00484
	(A * !C * !Y)	-0.00339	-0.00341	-0.00336
	(A * !C * !Y)	0.00373	0.00375	0.00377
	(!A * C * !Y)	-0.00339	-0.00341	-0.00337
	(!A * C * !Y)	0.00709	0.00717	0.00717

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00157	0.00158	0.00158
	(B * !Y)	-0.00083	-0.00083	-0.00082
	(A * !B * !Y)	0.00157	0.00158	0.00158
	(A * !B * !Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00176	0.00176	0.00176
	(B * !Y)	-0.00166	-0.00166	-0.00165
	(A * !B * !Y)	0.00176	0.00177	0.00176
	(A * !B * !Y)	-0.00165	-0.00166	-0.00164
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00393	0.00396	0.00395
	(B * !Y)	-0.00338	-0.00341	-0.00340
	(A * !B * !Y)	0.00394	0.00396	0.00395
	(A * !B * !Y)	-0.00335	-0.00337	-0.00337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00152	-0.00152	-0.00157
	(B * !Y)	0.00088	0.00088	0.00084
	(A * !B * !Y)	-0.00144	-0.00144	-0.00155
	(A * !B * !Y)	0.00092	0.00092	0.00084
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00158	-0.00159	-0.00174
	(B * !Y)	0.00182	0.00180	0.00170
	(A * !B * !Y)	-0.00138	-0.00140	-0.00170
	(A * !B * !Y)	0.00189	0.00190	0.00170
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00364	-0.00367	-0.00392
	(B * !Y)	0.00366	0.00367	0.00348
	(A * !B * !Y)	-0.00319	-0.00323	-0.00383
	(A * !B * !Y)	0.00386	0.00387	0.00347

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00301	0.00309	0.00239	0.00236	0.19473
sky130_fd_sc_hs__nor4bb_2	0.00565	0.00590	0.00280	0.00267	0.35069
sky130_fd_sc_hs__nor4bb_4	0.01116	0.01183	0.00392	0.00382	0.67335

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	3.63801	7.09328
sky130_fd_sc_hs__nor4bb_2	0.00000	2.89108	5.68288
sky130_fd_sc_hs__nor4bb_4	0.00000	7.55197	16.02940

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)	0.32170	1.37469	8.98401
	B->Y (FR)	0.30423	1.36719	9.40220
	C_N->Y (RR)	0.30520	1.33101	7.64145
	D_N->Y (RR)	0.19761	1.21025	7.50693
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.31523	1.19993	8.85460
	B->Y (FR)	0.29127	1.17210	9.25156
	C_N->Y (RR)	0.28933	1.15918	7.65609
	D_N->Y (RR)	0.17167	1.03104	7.52305
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.31546	1.03634	8.81217
	B->Y (FR)	0.29203	1.02162	9.24717
	C_N->Y (RR)	0.29455	1.04809	7.97063
	D_N->Y (RR)	0.18824	0.93431	7.86859

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.03722	0.43477	3.41069
	B->Y (RF)	0.03860	0.42635	3.37321
	C_N->Y (FF)	0.14091	0.47515	1.78255
	D_N->Y (FF)	0.11815	0.43844	1.68745
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.03120	0.37783	3.21833
	B->Y (RF)	0.03289	0.37218	3.21282
	C_N->Y (FF)	0.14561	0.48596	1.88966
	D_N->Y (FF)	0.12523	0.46090	1.84414
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.03190	0.35584	3.31096
	B->Y (RF)	0.03272	0.34210	3.22324
	C_N->Y (FF)	0.15150	0.46769	1.66618
	D_N->Y (FF)	0.13922	0.45657	1.66291

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00358	0.00344	0.00713
	A	0.00861	0.00846	0.01218
	B	0.00355	0.00340	0.00721
	B	0.00767	0.00752	0.01134
	C_N	0.00951	0.00995	0.02642
	C_N	0.00692	0.00735	0.02385
	D_N	0.00775	0.00831	0.02565
	D_N	0.00542	0.00598	0.02334
sky130_fd_sc_hs__nor4bb_2	A	0.00649	0.00623	0.01335
	A	0.01637	0.01617	0.02327
	B	0.00646	0.00619	0.01375
	B	0.01438	0.01415	0.02174
	C_N	0.01420	0.01475	0.03395
	C_N	0.01181	0.01233	0.03161
	D_N	0.01164	0.01231	0.03183
	D_N	0.00949	0.01014	0.02972
sky130_fd_sc_hs__nor4bb_4	A	0.01342	0.01289	0.02758
	A	0.03264	0.03200	0.04687
	B	0.01321	0.01269	0.02782
	B	0.02900	0.02843	0.04371
	C_N	0.02617	0.02687	0.05601
	C_N	0.02331	0.02401	0.05322
	D_N	0.02097	0.02200	0.05205
	D_N	0.01829	0.01932	0.04948

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00802	0.00796	0.01229
	A	0.00303	0.00298	0.00733
	B	0.00630	0.00630	0.01055
	B	0.00219	0.00218	0.00644
	C_N	0.00576	0.00676	0.02379
	C_N	0.00835	0.00934	0.02638
	D_N	0.00407	0.00525	0.02231
	D_N	0.00639	0.00757	0.02464
sky130_fd_sc_hs__nor4bb_2	A	0.01612	0.01592	0.02458
	A	0.00634	0.00612	0.01485
	B	0.01166	0.01177	0.02031
	B	0.00377	0.00381	0.01238
	C_N	0.01050	0.01147	0.03071
	C_N	0.01290	0.01387	0.03310
	D_N	0.00701	0.00839	0.02787
	D_N	0.00916	0.01054	0.03001
sky130_fd_sc_hs__nor4bb_4	A	0.03094	0.03060	0.04831
	A	0.01197	0.01159	0.02938
	B	0.02356	0.02366	0.04110
	B	0.00789	0.00787	0.02540
	C_N	0.01928	0.02100	0.05034
	C_N	0.02213	0.02386	0.05319
	D_N	0.01450	0.01679	0.04755
	D_N	0.01717	0.01947	0.05023

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)**	0.00169	0.00156	0.00155
	(B * C_N * D_N * !Y)	-0.00158	-0.00172	-0.00173
	(B * !D_N * !Y)	0.00157	0.00152	0.00152
	(B * !D_N * !Y)	-0.00170	-0.00175	-0.00176
	(B * !C_N * D_N * !Y)	0.00142	0.00141	0.00141
	(B * !C_N * D_N * !Y)	-0.00184	-0.00186	-0.00187
	(!B * C_N * !D_N * !Y)	0.00167	0.00159	0.00155
	(!B * C_N * !D_N * !Y)	-0.00152	-0.00170	-0.00173
	(!B * !C_N * D_N * !Y)	0.00146	0.00143	0.00141
	(!B * !C_N * D_N * !Y)	-0.00169	-0.00184	-0.00185
	(!B * !C_N * !D_N * !Y)	0.00138	0.00140	0.00139
	(!B * !C_N * !D_N * !Y)	-0.00174	-0.00185	-0.00184
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00296	0.00271	0.00268
	(B * C_N * D_N * !Y)	-0.00331	-0.00363	-0.00365
	(B * !D_N * !Y)	0.00274	0.00268	0.00266
	(B * !D_N * !Y)	-0.00351	-0.00366	-0.00367
	(B * !C_N * D_N * !Y)	0.00266	0.00268	0.00266
	(B * !C_N * D_N * !Y)	-0.00358	-0.00366	-0.00367
	(!B * C_N * !D_N * !Y)	0.00300	0.00281	0.00272
	(!B * C_N * !D_N * !Y)	-0.00315	-0.00352	-0.00352
	(!B * !C_N * D_N * !Y)	0.00278	0.00269	0.00267
	(!B * !C_N * D_N * !Y)	-0.00328	-0.00357	-0.00357
	(!B * !C_N * !D_N * !Y)	0.00265	0.00266	0.00265
	(!B * !C_N * !D_N * !Y)	-0.00334	-0.00356	-0.00354

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00593	0.00533	0.00527
	(B * C_N * D_N * !Y)	-0.00632	-0.00698	-0.00702
	(B * !D_N * !Y)	0.00544	0.00524	0.00521
	(B * !D_N * !Y)	-0.00680	-0.00706	-0.00709
	(B * !C_N * D_N * !Y)	0.00523	0.00522	0.00519
	(B * !C_N * D_N * !Y)	-0.00696	-0.00709	-0.00711
	(!B * C_N * !D_N * !Y)	0.00590	0.00543	0.00530
	(!B * C_N * !D_N * !Y)	-0.00605	-0.00677	-0.00682
	(!B * !C_N * D_N * !Y)	0.00542	0.00525	0.00521
	(!B * !C_N * D_N * !Y)	-0.00634	-0.00692	-0.00693
	(!B * !C_N * !D_N * !Y)	0.00515	0.00517	0.00514
	(!B * !C_N * !D_N * !Y)	-0.00651	-0.00689	-0.00685

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)**	-0.00143	-0.00143	-0.00143
	(B * C_N * D_N * !Y)	0.00184	0.00185	0.00184
	(B * !D_N * !Y)	-0.00145	-0.00146	-0.00145
	(B * !D_N * !Y)	0.00181	0.00181	0.00181
	(B * !C_N * D_N * !Y)	-0.00134	-0.00135	-0.00135
	(B * !C_N * D_N * !Y)	0.00191	0.00193	0.00192
	(!B * C_N * !D_N * !Y)	-0.00150	-0.00151	-0.00150
	(!B * C_N * !D_N * !Y)	0.00173	0.00174	0.00174
	(!B * !C_N * D_N * !Y)	-0.00134	-0.00135	-0.00134
	(!B * !C_N * D_N * !Y)	0.00187	0.00188	0.00187
	(!B * !C_N * !D_N * !Y)	-0.00137	-0.00138	-0.00137
	(!B * !C_N * !D_N * !Y)	0.00183	0.00185	0.00184

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00259	-0.00259	-0.00259
	(B * C_N * D_N * !Y)	0.00370	0.00370	0.00371
	(B * !D_N * !Y)	-0.00261	-0.00262	-0.00261
	(B * !D_N * !Y)	0.00367	0.00370	0.00367
	(B * !C_N * D_N * !Y)	-0.00261	-0.00262	-0.00261
	(B * !C_N * D_N * !Y)	0.00367	0.00370	0.00367
	(!B * C_N * !D_N * !Y)	-0.00272	-0.00273	-0.00271
	(!B * C_N * !D_N * !Y)	0.00351	0.00354	0.00352
	(!B * !C_N * D_N * !Y)	-0.00260	-0.00261	-0.00260
	(!B * !C_N * D_N * !Y)	0.00357	0.00358	0.00357
	(!B * !C_N * !D_N * !Y)	-0.00262	-0.00263	-0.00262
	(!B * !C_N * !D_N * !Y)	0.00353	0.00356	0.00354
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00499	-0.00503	-0.00500
	(B * C_N * D_N * !Y)	0.00718	0.00727	0.00723
	(B * !D_N * !Y)	-0.00505	-0.00511	-0.00507
	(B * !D_N * !Y)	0.00709	0.00721	0.00714
	(B * !C_N * D_N * !Y)	-0.00503	-0.00509	-0.00506
	(B * !C_N * D_N * !Y)	0.00710	0.00722	0.00715
	(!B * C_N * !D_N * !Y)	-0.00529	-0.00531	-0.00527
	(!B * C_N * !D_N * !Y)	0.00681	0.00686	0.00682
	(!B * !C_N * D_N * !Y)	-0.00506	-0.00507	-0.00505
	(!B * !C_N * D_N * !Y)	0.00693	0.00696	0.00693
	(!B * !C_N * !D_N * !Y)	-0.00511	-0.00513	-0.00511
	(!B * !C_N * !D_N * !Y)	0.00685	0.00689	0.00685

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)**	0.00168	0.00168	0.00166
	(A * C_N * D_N * !Y)	-0.00085	-0.00085	-0.00085
	(A * C_N * !D_N * !Y)	0.00197	0.00207	0.00197
	(A * C_N * !D_N * !Y)	-0.00122	-0.00116	-0.00121
	(A * !C_N * D_N * !Y)	0.00158	0.00159	0.00151
	(A * !C_N * D_N * !Y)	-0.00140	-0.00140	-0.00141
	(A * !C_N * !D_N * !Y)	0.00152	0.00153	0.00149
	(A * !C_N * !D_N * !Y)	-0.00139	-0.00141	-0.00139
	(!A * C_N * !D_N * !Y)	0.00198	0.00170	0.00164
	(!A * C_N * !D_N * !Y)	-0.00139	-0.00168	-0.00171
	(!A * !C_N * D_N * !Y)	0.00177	0.00150	0.00147
	(!A * !C_N * D_N * !Y)	-0.00158	-0.00187	-0.00188
	(!A * !C_N * !D_N * !Y)	0.00147	0.00145	0.00144
	(!A * !C_N * !D_N * !Y)	-0.00187	-0.00192	-0.00191
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00294	0.00295	0.00292
	(A * C_N * D_N * !Y)	-0.00193	-0.00193	-0.00194
	(A * C_N * !D_N * !Y)	0.00352	0.00374	0.00354
	(A * C_N * !D_N * !Y)	-0.00263	-0.00259	-0.00262
	(A * !C_N * D_N * !Y)	0.00310	0.00307	0.00289
	(A * !C_N * D_N * !Y)	-0.00274	-0.00276	-0.00275
	(A * !C_N * !D_N * !Y)	0.00295	0.00295	0.00286
	(A * !C_N * !D_N * !Y)	-0.00274	-0.00277	-0.00276
	(!A * C_N * !D_N * !Y)	0.00346	0.00301	0.00290
	(!A * C_N * !D_N * !Y)	-0.00307	-0.00362	-0.00365
	(!A * !C_N * D_N * !Y)	0.00338	0.00284	0.00279
	(!A * !C_N * D_N * !Y)	-0.00325	-0.00379	-0.00380
	(!A * !C_N * !D_N * !Y)	0.00284	0.00278	0.00276
	(!A * !C_N * !D_N * !Y)	-0.00377	-0.00384	-0.00383

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00579	0.00584	0.00571
	(A * C_N * D_N * !Y)	-0.00369	-0.00374	-0.00379
	(A * C_N * !D_N * !Y)	0.00701	0.00734	0.00696
	(A * C_N * !D_N * !Y)	-0.00510	-0.00493	-0.00512
	(A * !C_N * D_N * !Y)	0.00591	0.00598	0.00557
	(A * !C_N * D_N * !Y)	-0.00545	-0.00547	-0.00548
	(A * !C_N * !D_N * !Y)	0.00565	0.00572	0.00550
	(A * !C_N * !D_N * !Y)	-0.00550	-0.00555	-0.00550
	(!A * C_N * !D_N * !Y)	0.00706	0.00588	0.00561
	(!A * C_N * !D_N * !Y)	-0.00586	-0.00714	-0.00725
	(!A * !C_N * D_N * !Y)	0.00672	0.00552	0.00540
	(!A * !C_N * D_N * !Y)	-0.00614	-0.00749	-0.00753
	(!A * !C_N * !D_N * !Y)	0.00542	0.00535	0.00530
	(!A * !C_N * !D_N * !Y)	-0.00739	-0.00764	-0.00759

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)**	-0.00149	-0.00149	-0.00149
	(A * C_N * D_N * !Y)	0.00102	0.00102	0.00103
	(A * C_N * !D_N * !Y)	-0.00179	-0.00180	-0.00179
	(A * C_N * !D_N * !Y)	0.00122	0.00123	0.00122
	(A * !C_N * D_N * !Y)	-0.00141	-0.00142	-0.00141
	(A * !C_N * D_N * !Y)	0.00141	0.00142	0.00141
	(A * !C_N * !D_N * !Y)	-0.00143	-0.00144	-0.00143
	(A * !C_N * !D_N * !Y)	0.00139	0.00141	0.00139
	(!A * C_N * !D_N * !Y)	-0.00162	-0.00163	-0.00162
	(!A * C_N * !D_N * !Y)	0.00172	0.00173	0.00173
	(!A * !C_N * D_N * !Y)	-0.00139	-0.00139	-0.00139
	(!A * !C_N * D_N * !Y)	0.00195	0.00196	0.00196
	(!A * !C_N * !D_N * !Y)	-0.00143	-0.00143	-0.00143
	(!A * !C_N * !D_N * !Y)	0.00191	0.00193	0.00191
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00266	-0.00268	-0.00269
	(A * C_N * D_N * !Y)	0.00218	0.00219	0.00218
	(A * C_N * !D_N * !Y)	-0.00325	-0.00325	-0.00325
	(A * C_N * !D_N * !Y)	0.00263	0.00262	0.00262
	(A * !C_N * D_N * !Y)	-0.00272	-0.00274	-0.00273
	(A * !C_N * D_N * !Y)	0.00274	0.00276	0.00275
	(A * !C_N * !D_N * !Y)	-0.00272	-0.00275	-0.00274
	(A * !C_N * !D_N * !Y)	0.00274	0.00277	0.00276
	(!A * C_N * !D_N * !Y)	-0.00294	-0.00296	-0.00290
	(!A * C_N * !D_N * !Y)	0.00363	0.00365	0.00365
	(!A * !C_N * D_N * !Y)	-0.00271	-0.00271	-0.00269
	(!A * !C_N * D_N * !Y)	0.00388	0.00389	0.00388
	(!A * !C_N * !D_N * !Y)	-0.00273	-0.00275	-0.00273
	(!A * !C_N * !D_N * !Y)	0.00382	0.00386	0.00383

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00520	-0.00525	-0.00519
	(A * C_N * D_N * !Y)	0.00425	0.00431	0.00433
	(A * C_N * !D_N * !Y)	-0.00633	-0.00638	-0.00635
	(A * C_N * !D_N * !Y)	0.00510	0.00516	0.00512
	(A * !C_N * D_N * !Y)	-0.00524	-0.00527	-0.00524
	(A * !C_N * D_N * !Y)	0.00549	0.00553	0.00548
	(A * !C_N * !D_N * !Y)	-0.00526	-0.00530	-0.00526
	(A * !C_N * !D_N * !Y)	0.00550	0.00555	0.00550
	(!A * C_N * !D_N * !Y)	-0.00570	-0.00572	-0.00561
	(!A * C_N * !D_N * !Y)	0.00720	0.00724	0.00725
	(!A * !C_N * D_N * !Y)	-0.00515	-0.00518	-0.00514
	(!A * !C_N * D_N * !Y)	0.00771	0.00776	0.00774
	(!A * !C_N * !D_N * !Y)	-0.00525	-0.00530	-0.00526
	(!A * !C_N * !D_N * !Y)	0.00757	0.00765	0.00759

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00442	0.00488	0.02174
	(B * !Y)	0.00113	0.00159	0.01845
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00451	0.00497	0.02178
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00113	0.00159	0.01842
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00515	0.00568	0.02465
	(B * !Y)	0.00154	0.00205	0.02105
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00539	0.00591	0.02477
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00160	0.00210	0.02102
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00830	0.00890	0.03807
	(B * !Y)	0.00312	0.00370	0.03290
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00862	0.00920	0.03825
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00312	0.00369	0.03280

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00185	0.00287	0.02016
	(B * !Y)	0.00515	0.00616	0.02345
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00186	0.00288	0.02016
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00517	0.00618	0.02347
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00323	0.00427	0.02365
	(B * !Y)	0.00682	0.00786	0.02724
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00325	0.00429	0.02366
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00686	0.00791	0.02728
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00581	0.00757	0.03791
	(B * !Y)	0.01095	0.01271	0.04303
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00581	0.00758	0.03791
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01100	0.01277	0.04307

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)	0.00395	0.00447	0.02154
	(B * C_N * !Y)	0.00093	0.00144	0.01852
	(A * !B * C_N * !Y)	0.00407	0.00459	0.02163
	(A * !B * C_N * !Y)	0.00100	0.00150	0.01857
	(!C_N * !Y)	0.00416	0.00469	0.02178
	(!C_N * !Y)	0.00115	0.00166	0.01877
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00501	0.00558	0.02455
	(B * C_N * !Y)	0.00167	0.00222	0.02122
	(A * !B * C_N * !Y)	0.00536	0.00591	0.02480
	(A * !B * C_N * !Y)	0.00187	0.00241	0.02134
	(!C_N * !Y)	0.00525	0.00581	0.02483
	(!C_N * !Y)	0.00193	0.00248	0.02152
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00782	0.00843	0.03736
	(B * C_N * !Y)	0.00288	0.00348	0.03244
	(A * !B * C_N * !Y)	0.00838	0.00898	0.03774
	(A * !B * C_N * !Y)	0.00321	0.00380	0.03264
	(!C_N * !Y)	0.00815	0.00877	0.03782
	(!C_N * !Y)	0.00329	0.00389	0.03295

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)	0.00163	0.00272	0.02022
	(B * C_N * !Y)	0.00465	0.00574	0.02324
	(A * !B * C_N * !Y)	0.00163	0.00272	0.02022
	(A * !B * C_N * !Y)	0.00465	0.00575	0.02324
	(!C_N * !Y)	0.00131	0.00240	0.01990
	(!C_N * !Y)	0.00432	0.00542	0.02291
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00294	0.00411	0.02350
	(B * C_N * !Y)	0.00627	0.00744	0.02682
	(A * !B * C_N * !Y)	0.00293	0.00411	0.02351
	(A * !B * C_N * !Y)	0.00628	0.00745	0.02683
	(!C_N * !Y)	0.00256	0.00373	0.02312
	(!C_N * !Y)	0.00588	0.00705	0.02644
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00671	0.00852	0.03894
	(B * C_N * !Y)	0.01161	0.01341	0.04382
	(A * !B * C_N * !Y)	0.00671	0.00852	0.03895
	(A * !B * C_N * !Y)	0.01162	0.01343	0.04383
	(!C_N * !Y)	0.00597	0.00776	0.03820
	(!C_N * !Y)	0.01085	0.01265	0.04307

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00292	0.00302	0.00301	0.00229	0.19408
sky130_fd_sc_hs__nor4b_2	0.00575	0.00582	0.00585	0.00271	0.34961
sky130_fd_sc_hs__nor4b_4	0.01129	0.01135	0.01151	0.00410	0.65378

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	2.02527	4.06883
sky130_fd_sc_hs__nor4b_2	0.00000	1.82996	3.95805
sky130_fd_sc_hs__nor4b_4	0.00000	4.53724	10.16550

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)	0.30929	1.36003	8.94011
	B->Y (FR)	0.29024	1.35097	9.35798
	C->Y (FR)	0.23991	1.32656	9.79623
	D_N->Y (RR)	0.20260	1.21303	7.48971
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.31708	1.19933	8.82983
	B->Y (FR)	0.29254	1.17314	9.22655
	C->Y (FR)	0.23997	1.15583	9.81562
	D_N->Y (RR)	0.17536	1.03042	7.48573
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.31209	1.02966	8.64991
	B->Y (FR)	0.28809	1.00994	9.09077
	C->Y (FR)	0.23249	0.98887	9.68009
	D_N->Y (RR)	0.19215	0.93463	7.78029

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.03765	0.43873	3.44773
	B->Y (RF)	0.03965	0.43267	3.42834
	C->Y (RF)	0.03960	0.42149	3.40474
	D_N->Y (FF)	0.11846	0.44119	1.72895
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.03150	0.37733	3.20949
	B->Y (RF)	0.03318	0.37195	3.20441
	C->Y (RF)	0.03612	0.36405	3.21289
	D_N->Y (FF)	0.12856	0.46329	1.81986
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.03127	0.34456	3.18688
	B->Y (RF)	0.03218	0.33587	3.15142
	C->Y (RF)	0.03281	0.31645	3.06647
	D_N->Y (FF)	0.13623	0.44800	1.61894

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00210	0.00196	0.00560
	A	0.00807	0.00795	0.01159
	B	0.00209	0.00196	0.00573
	B	0.00711	0.00698	0.01077
	C	0.00192	0.00182	0.00585
	C	0.00611	0.00603	0.01002
	D_N	0.00737	0.00790	0.02460
	D_N	0.00505	0.00558	0.02228
sky130_fd_sc_hs__nor4b_2	A	0.00387	0.00360	0.01083
	A	0.01662	0.01639	0.02362
	B	0.00391	0.00363	0.01126
	B	0.01452	0.01428	0.02194
	C	0.00380	0.00361	0.01159
	C	0.01244	0.01226	0.02022
	D_N	0.01132	0.01192	0.03134
	D_N	0.00965	0.01024	0.02972
sky130_fd_sc_hs__nor4b_4	A	0.00764	0.00707	0.02184
	A	0.03284	0.03227	0.04703
	B	0.00768	0.00712	0.02269
	B	0.02864	0.02815	0.04380
	C	0.00743	0.00712	0.02328
	C	0.02451	0.02424	0.04037
	D_N	0.02003	0.02093	0.05091
	D_N	0.01853	0.01940	0.04951

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00903	0.00899	0.01327
	A	0.00313	0.00308	0.00739
	B	0.00726	0.00726	0.01147
	B	0.00227	0.00228	0.00649
	C	0.00535	0.00553	0.00966
	C	0.00117	0.00133	0.00546
	D_N	0.00427	0.00547	0.02271
	D_N	0.00659	0.00779	0.02503
sky130_fd_sc_hs__nor4b_2	A	0.01879	0.01857	0.02722
	A	0.00622	0.00598	0.01472
	B	0.01438	0.01441	0.02291
	B	0.00383	0.00384	0.01238
	C	0.01040	0.01071	0.01893
	C	0.00178	0.00208	0.01032
	D_N	0.00766	0.00901	0.02770
	D_N	0.00932	0.01067	0.02936
sky130_fd_sc_hs__nor4b_4	A	0.03655	0.03619	0.05345
	A	0.01173	0.01131	0.02878
	B	0.02815	0.02814	0.04524
	B	0.00731	0.00723	0.02445
	C	0.02003	0.02062	0.03732
	C	0.00298	0.00352	0.02026
	D_N	0.01537	0.01752	0.04741
	D_N	0.01689	0.01904	0.04892

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)**	0.00137	0.00136	0.00136
	(B * C * D_N * !Y)	-0.00171	-0.00175	-0.00176
	(B * !D_N * !Y)	0.00129	0.00128	0.00128
	(B * !D_N * !Y)	-0.00179	-0.00183	-0.00183
	(B * !C * D_N * !Y)	0.00149	0.00137	0.00137
	(B * !C * D_N * !Y)	-0.00159	-0.00174	-0.00175
	(!B * C * D_N * !Y)	0.00142	0.00138	0.00136
	(!B * C * D_N * !Y)	-0.00154	-0.00171	-0.00173
	(!B * C * !D_N * !Y)	0.00128	0.00130	0.00128
	(!B * C * !D_N * !Y)	-0.00165	-0.00177	-0.00176
	(!B * !C * !D_N * !Y)	0.00135	0.00131	0.00129
	(!B * !C * !D_N * !Y)	-0.00159	-0.00176	-0.00176
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00271	0.00272	0.00271
	(B * C * D_N * !Y)	-0.00358	-0.00369	-0.00370
	(B * !D_N * !Y)	0.00269	0.00271	0.00269
	(B * !D_N * !Y)	-0.00360	-0.00371	-0.00369
	(B * !C * D_N * !Y)	0.00294	0.00274	0.00272
	(B * !C * D_N * !Y)	-0.00335	-0.00367	-0.00370
	(!B * C * D_N * !Y)	0.00282	0.00273	0.00271
	(!B * C * D_N * !Y)	-0.00325	-0.00358	-0.00357
	(!B * C * !D_N * !Y)	0.00269	0.00270	0.00269
	(!B * C * !D_N * !Y)	-0.00333	-0.00356	-0.00354
	(!B * !C * !D_N * !Y)	0.00285	0.00276	0.00270
	(!B * !C * !D_N * !Y)	-0.00319	-0.00355	-0.00354

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00532	0.00534	0.00531
	(B * C * D_N * !Y)	-0.00705	-0.00727	-0.00730
	(B * !D_N * !Y)	0.00525	0.00529	0.00525
	(B * !D_N * !Y)	-0.00712	-0.00731	-0.00728
	(B * !C * D_N * !Y)	0.00582	0.00537	0.00533
	(B * !C * D_N * !Y)	-0.00656	-0.00724	-0.00728
	(!B * C * D_N * !Y)	0.00555	0.00535	0.00532
	(!B * C * D_N * !Y)	-0.00640	-0.00706	-0.00707
	(!B * C * !D_N * !Y)	0.00526	0.00527	0.00525
	(!B * C * !D_N * !Y)	-0.00658	-0.00704	-0.00699
	(!B * !C * !D_N * !Y)	0.00557	0.00539	0.00528
	(!B * !C * !D_N * !Y)	-0.00631	-0.00702	-0.00698

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)**	-0.00130	-0.00131	-0.00130
	(B * C * D_N * !Y)	0.00180	0.00181	0.00180
	(B * !D_N * !Y)	-0.00127	-0.00128	-0.00127
	(B * !D_N * !Y)	0.00183	0.00184	0.00183
	(B * !C * D_N * !Y)	-0.00129	-0.00130	-0.00130
	(B * !C * D_N * !Y)	0.00180	0.00182	0.00181
	(!B * C * D_N * !Y)	-0.00130	-0.00130	-0.00130
	(!B * C * D_N * !Y)	0.00174	0.00175	0.00174
	(!B * C * !D_N * !Y)	-0.00127	-0.00128	-0.00127
	(!B * C * !D_N * !Y)	0.00176	0.00177	0.00176
	(!B * !C * !D_N * !Y)	-0.00126	-0.00127	-0.00126
	(!B * !C * !D_N * !Y)	0.00175	0.00176	0.00176

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00265	-0.00267	-0.00266
	(B * C * D_N * !Y)	0.00368	0.00372	0.00370
	(B * !D_N * !Y)	-0.00267	-0.00269	-0.00268
	(B * !D_N * !Y)	0.00367	0.00372	0.00369
	(B * !C * D_N * !Y)	-0.00265	-0.00266	-0.00265
	(B * !C * D_N * !Y)	0.00372	0.00373	0.00372
	(!B * C * D_N * !Y)	-0.00265	-0.00266	-0.00265
	(!B * C * D_N * !Y)	0.00356	0.00358	0.00357
	(!B * C * !D_N * !Y)	-0.00267	-0.00268	-0.00268
	(!B * C * !D_N * !Y)	0.00353	0.00356	0.00354
	(!B * !C * !D_N * !Y)	-0.00266	-0.00267	-0.00265
	(!B * !C * !D_N * !Y)	0.00353	0.00355	0.00354
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00517	-0.00519	-0.00518
	(B * C * D_N * !Y)	0.00730	0.00735	0.00733
	(B * !D_N * !Y)	-0.00522	-0.00524	-0.00523
	(B * !D_N * !Y)	0.00727	0.00731	0.00728
	(B * !C * D_N * !Y)	-0.00516	-0.00519	-0.00516
	(B * !C * D_N * !Y)	0.00736	0.00741	0.00738
	(!B * C * D_N * !Y)	-0.00517	-0.00518	-0.00516
	(!B * C * D_N * !Y)	0.00707	0.00709	0.00707
	(!B * C * !D_N * !Y)	-0.00523	-0.00525	-0.00523
	(!B * C * !D_N * !Y)	0.00700	0.00704	0.00699
	(!B * !C * !D_N * !Y)	-0.00520	-0.00523	-0.00518
	(!B * !C * !D_N * !Y)	0.00696	0.00702	0.00698

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)**	0.00150	0.00152	0.00144
	(A * C * D_N * !Y)	-0.00118	-0.00118	-0.00120
	(A * C * !D_N * !Y)	0.00139	0.00140	0.00136
	(A * C * !D_N * !Y)	-0.00125	-0.00126	-0.00125
	(A * !C * D_N * !Y)	0.00142	0.00143	0.00141
	(A * !C * D_N * !Y)	-0.00088	-0.00088	-0.00088
	(A * !C * !D_N * !Y)	0.00145	0.00154	0.00140
	(A * !C * !D_N * !Y)	-0.00125	-0.00124	-0.00124
	(!A * C * D_N * !Y)	0.00171	0.00142	0.00140
	(!A * C * D_N * !Y)	-0.00141	-0.00172	-0.00173
	(!A * C * !D_N * !Y)	0.00135	0.00133	0.00132
	(!A * C * !D_N * !Y)	-0.00175	-0.00181	-0.00181
	(!A * !C * !D_N * !Y)	0.00158	0.00135	0.00132
	(!A * !C * !D_N * !Y)	-0.00146	-0.00175	-0.00176
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00308	0.00305	0.00287
	(A * C * D_N * !Y)	-0.00256	-0.00256	-0.00257
	(A * C * !D_N * !Y)	0.00293	0.00293	0.00284
	(A * C * !D_N * !Y)	-0.00259	-0.00261	-0.00259
	(A * !C * D_N * !Y)	0.00282	0.00283	0.00279
	(A * !C * D_N * !Y)	-0.00191	-0.00192	-0.00192
	(A * !C * !D_N * !Y)	0.00299	0.00321	0.00294
	(A * !C * !D_N * !Y)	-0.00257	-0.00256	-0.00257
	(!A * C * D_N * !Y)	0.00337	0.00282	0.00277
	(!A * C * D_N * !Y)	-0.00310	-0.00367	-0.00369
	(!A * C * !D_N * !Y)	0.00282	0.00276	0.00274
	(!A * C * !D_N * !Y)	-0.00361	-0.00370	-0.00369
	(!A * !C * !D_N * !Y)	0.00316	0.00281	0.00275
	(!A * !C * !D_N * !Y)	-0.00305	-0.00359	-0.00360

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00598	0.00594	0.00560
	(A * C * D_N * !Y)	-0.00505	-0.00502	-0.00505
	(A * C * !D_N * !Y)	0.00575	0.00573	0.00554
	(A * C * !D_N * !Y)	-0.00506	-0.00509	-0.00507
	(A * !C * D_N * !Y)	0.00556	0.00554	0.00546
	(A * !C * D_N * !Y)	-0.00378	-0.00376	-0.00377
	(A * !C * !D_N * !Y)	0.00591	0.00629	0.00574
	(A * !C * !D_N * !Y)	-0.00500	-0.00501	-0.00501
	(!A * C * D_N * !Y)	0.00670	0.00554	0.00544
	(!A * C * D_N * !Y)	-0.00604	-0.00725	-0.00729
	(!A * C * !D_N * !Y)	0.00553	0.00540	0.00535
	(!A * C * !D_N * !Y)	-0.00714	-0.00736	-0.00731
	(!A * !C * !D_N * !Y)	0.00627	0.00550	0.00537
	(!A * !C * !D_N * !Y)	-0.00595	-0.00713	-0.00713

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)**	-0.00134	-0.00135	-0.00134
	(A * C * D_N * !Y)	0.00120	0.00121	0.00120
	(A * C * !D_N * !Y)	-0.00131	-0.00131	-0.00131
	(A * C * !D_N * !Y)	0.00125	0.00126	0.00125
	(A * !C * D_N * !Y)	-0.00128	-0.00129	-0.00128
	(A * !C * D_N * !Y)	0.00099	0.00100	0.00100
	(A * !C * !D_N * !Y)	-0.00131	-0.00131	-0.00130
	(A * !C * !D_N * !Y)	0.00125	0.00125	0.00124
	(!A * C * D_N * !Y)	-0.00132	-0.00132	-0.00132
	(!A * C * D_N * !Y)	0.00180	0.00180	0.00180
	(!A * C * !D_N * !Y)	-0.00131	-0.00131	-0.00131
	(!A * C * !D_N * !Y)	0.00180	0.00181	0.00181
	(!A * !C * !D_N * !Y)	-0.00129	-0.00130	-0.00129
	(!A * !C * !D_N * !Y)	0.00175	0.00176	0.00176
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00271	-0.00273	-0.00272
	(A * C * D_N * !Y)	0.00257	0.00258	0.00257
	(A * C * !D_N * !Y)	-0.00272	-0.00274	-0.00273
	(A * C * !D_N * !Y)	0.00259	0.00261	0.00259
	(A * !C * D_N * !Y)	-0.00258	-0.00259	-0.00258
	(A * !C * D_N * !Y)	0.00213	0.00214	0.00214
	(A * !C * !D_N * !Y)	-0.00275	-0.00274	-0.00275
	(A * !C * !D_N * !Y)	0.00257	0.00256	0.00257
	(!A * C * D_N * !Y)	-0.00269	-0.00270	-0.00268
	(!A * C * D_N * !Y)	0.00373	0.00375	0.00374
	(!A * C * !D_N * !Y)	-0.00272	-0.00273	-0.00272
	(!A * C * !D_N * !Y)	0.00368	0.00370	0.00369
	(!A * !C * !D_N * !Y)	-0.00270	-0.00272	-0.00269
	(!A * !C * !D_N * !Y)	0.00357	0.00360	0.00360

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00530	-0.00529	-0.00528
	(A * C * D_N * !Y)	0.00509	0.00507	0.00505
	(A * C * !D_N * !Y)	-0.00532	-0.00534	-0.00533
	(A * C * !D_N * !Y)	0.00506	0.00509	0.00507
	(A * !C * D_N * !Y)	-0.00503	-0.00505	-0.00502
	(A * !C * D_N * !Y)	0.00418	0.00420	0.00420
	(A * !C * !D_N * !Y)	-0.00535	-0.00537	-0.00535
	(A * !C * !D_N * !Y)	0.00500	0.00502	0.00501
	(!A * C * D_N * !Y)	-0.00522	-0.00524	-0.00521
	(!A * C * D_N * !Y)	0.00743	0.00746	0.00745
	(!A * C * !D_N * !Y)	-0.00531	-0.00535	-0.00532
	(!A * C * !D_N * !Y)	0.00730	0.00736	0.00731
	(!A * !C * !D_N * !Y)	-0.00528	-0.00530	-0.00524
	(!A * !C * !D_N * !Y)	0.00708	0.00713	0.00713

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)	0.00160	0.00161	0.00159
	(B * D_N * !Y)	-0.00086	-0.00087	-0.00087
	(B * !D_N * !Y)	0.00147	0.00148	0.00139
	(B * !D_N * !Y)	-0.00145	-0.00145	-0.00146
	(A * !B * D_N * !Y)	0.00161	0.00161	0.00159
	(A * !B * D_N * !Y)	-0.00085	-0.00085	-0.00086
	(A * !B * !D_N * !Y)	0.00163	0.00153	0.00142
	(A * !B * !D_N * !Y)	-0.00127	-0.00139	-0.00143
	(!A * !B * !D_N * !Y)	0.00176	0.00139	0.00133
	(!A * !B * !D_N * !Y)	-0.00157	-0.00194	-0.00198

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00302	0.00303	0.00299
	(B * D_N * !Y)	-0.00180	-0.00180	-0.00182
	(B * !D_N * !Y)	0.00313	0.00315	0.00296
	(B * !D_N * !Y)	-0.00268	-0.00267	-0.00268
	(A * !B * D_N * !Y)	0.00303	0.00304	0.00300
	(A * !B * D_N * !Y)	-0.00176	-0.00177	-0.00180
	(A * !B * !D_N * !Y)	0.00347	0.00321	0.00298
	(A * !B * !D_N * !Y)	-0.00231	-0.00257	-0.00265
	(!A * !B * !D_N * !Y)	0.00371	0.00292	0.00279
	(!A * !B * !D_N * !Y)	-0.00284	-0.00364	-0.00373
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00601	0.00598	0.00589
	(B * D_N * !Y)	-0.00359	-0.00357	-0.00361
	(B * !D_N * !Y)	0.00634	0.00635	0.00596
	(B * !D_N * !Y)	-0.00512	-0.00513	-0.00513
	(A * !B * D_N * !Y)	0.00603	0.00601	0.00591
	(A * !B * D_N * !Y)	-0.00352	-0.00351	-0.00356
	(A * !B * !D_N * !Y)	0.00706	0.00637	0.00602
	(A * !B * !D_N * !Y)	-0.00439	-0.00481	-0.00506
	(!A * !B * !D_N * !Y)	0.00747	0.00593	0.00564
	(!A * !B * !D_N * !Y)	-0.00541	-0.00708	-0.00726

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)**	-0.00150	-0.00150	-0.00151
	(B * D_N * !Y)	0.00097	0.00096	0.00097
	(B * !D_N * !Y)	-0.00130	-0.00131	-0.00131
	(B * !D_N * !Y)	0.00145	0.00147	0.00146
	(A * !B * D_N * !Y)	-0.00143	-0.00143	-0.00150
	(A * !B * D_N * !Y)	0.00098	0.00098	0.00095
	(A * !B * !D_N * !Y)	-0.00130	-0.00131	-0.00130
	(A * !B * !D_N * !Y)	0.00143	0.00144	0.00143
	(!A * !B * !D_N * !Y)	-0.00130	-0.00130	-0.00129
	(!A * !B * !D_N * !Y)	0.00200	0.00201	0.00201
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00285	-0.00288	-0.00288
	(B * D_N * !Y)	0.00192	0.00194	0.00195
	(B * !D_N * !Y)	-0.00280	-0.00282	-0.00280
	(B * !D_N * !Y)	0.00268	0.00270	0.00268
	(A * !B * D_N * !Y)	-0.00266	-0.00269	-0.00286
	(A * !B * D_N * !Y)	0.00199	0.00200	0.00191
	(A * !B * !D_N * !Y)	-0.00278	-0.00277	-0.00277
	(A * !B * !D_N * !Y)	0.00266	0.00264	0.00265
	(!A * !B * !D_N * !Y)	-0.00274	-0.00274	-0.00272
	(!A * !B * !D_N * !Y)	0.00376	0.00377	0.00378
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00560	-0.00564	-0.00565
	(B * D_N * !Y)	0.00385	0.00389	0.00389
	(B * !D_N * !Y)	-0.00564	-0.00568	-0.00565
	(B * !D_N * !Y)	0.00512	0.00517	0.00513
	(A * !B * D_N * !Y)	-0.00523	-0.00529	-0.00562
	(A * !B * D_N * !Y)	0.00396	0.00397	0.00380
	(A * !B * !D_N * !Y)	-0.00559	-0.00562	-0.00560
	(A * !B * !D_N * !Y)	0.00504	0.00506	0.00506
	(!A * !B * !D_N * !Y)	-0.00553	-0.00556	-0.00551
	(!A * !B * !D_N * !Y)	0.00731	0.00737	0.00737

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00397	0.00452	0.02157
	(C * !Y)	0.00081	0.00135	0.01841
	(B * !C * !Y)	0.00407	0.00462	0.02164
	(B * !C * !Y)	0.00084	0.00138	0.01843
	(A * !B * !C * !Y)	0.00419	0.00474	0.02172
	(A * !B * !C * !Y)	0.00091	0.00144	0.01846
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00516	0.00569	0.02472
	(C * !Y)	0.00152	0.00204	0.02108
	(B * !C * !Y)	0.00539	0.00591	0.02488
	(B * !C * !Y)	0.00162	0.00214	0.02113
	(A * !B * !C * !Y)	0.00572	0.00624	0.02511
	(A * !B * !C * !Y)	0.00182	0.00233	0.02126
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00798	0.00857	0.03782
	(C * !Y)	0.00257	0.00314	0.03241
	(B * !C * !Y)	0.00844	0.00902	0.03813
	(B * !C * !Y)	0.00278	0.00334	0.03252
	(A * !B * !C * !Y)	0.00906	0.00962	0.03855
	(A * !B * !C * !Y)	0.00314	0.00369	0.03275

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00137	0.00244	0.01992
	(C * !Y)	0.00452	0.00559	0.02308
	(B * !C * !Y)	0.00137	0.00244	0.01992
	(B * !C * !Y)	0.00453	0.00560	0.02308
	(A * !B * !C * !Y)	0.00137	0.00244	0.01991
	(A * !B * !C * !Y)	0.00454	0.00561	0.02308
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00269	0.00375	0.02322
	(C * !Y)	0.00633	0.00738	0.02684
	(B * !C * !Y)	0.00269	0.00374	0.02322
	(B * !C * !Y)	0.00634	0.00740	0.02686
	(A * !B * !C * !Y)	0.00269	0.00375	0.02322
	(A * !B * !C * !Y)	0.00635	0.00741	0.02687
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00555	0.00732	0.03786
	(C * !Y)	0.01094	0.01270	0.04324
	(B * !C * !Y)	0.00555	0.00732	0.03786
	(B * !C * !Y)	0.01097	0.01273	0.04327
	(A * !B * !C * !Y)	0.00555	0.00732	0.03786
	(A * !B * !C * !Y)	0.01099	0.01275	0.04328

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00286	0.00302	0.00301	0.00305	0.19544
sky130_fd_sc_hs__nor4_2	0.00449	0.00510	0.00506	0.00477	0.36119
sky130_fd_sc_hs__nor4_4	0.00889	0.00926	0.00905	0.00921	0.66100

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.41908	1.07481
sky130_fd_sc_hs__nor4_2	0.00000	0.63631	1.59544
sky130_fd_sc_hs__nor4_4	0.00000	1.31632	3.19075

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)	0.30210	1.35285	8.94396
	B->Y (FR)	0.28495	1.34607	9.36233
	C->Y (FR)	0.23464	1.32117	9.80359
	D->Y (FR)	0.15238	1.25909	9.91550
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.25174	1.12627	8.71591
	B->Y (FR)	0.22832	1.11005	9.11071
	C->Y (FR)	0.16793	1.06925	9.54849
	D->Y (FR)	0.08046	0.99086	9.61329
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.27523	0.99357	8.48023
	B->Y (FR)	0.25291	0.97522	8.93017
	C->Y (FR)	0.19615	0.94941	9.47585
	D->Y (FR)	0.09773	0.87023	9.61514

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.03624	0.43216	3.40537
	B->Y (RF)	0.03951	0.43317	3.44204
	C->Y (RF)	0.04000	0.42268	3.42472
	D->Y (RF)	0.03378	0.40390	3.38521
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.05080	0.54152	4.78727
	B->Y (RF)	0.05703	0.54240	4.83841
	C->Y (RF)	0.05482	0.52175	4.80004
	D->Y (RF)	0.04034	0.48630	4.68167
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.05243	0.48902	4.58199
	B->Y (RF)	0.05644	0.47826	4.57569
	C->Y (RF)	0.05627	0.46368	4.59330
	D->Y (RF)	0.04072	0.43016	4.54607

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00048	0.00035	0.00403
	A	0.00797	0.00786	0.01154
	B	0.00059	0.00045	0.00421
	B	0.00706	0.00693	0.01070
	C	0.00058	0.00049	0.00451
	C	0.00604	0.00594	0.00995
	D	0.00050	0.00078	0.00640
	D	0.00504	0.00534	0.01095
sky130_fd_sc_hs__nor4_2	A	0.00054	0.00043	0.00437
	A	0.01342	0.01334	0.01738
	B	0.00025	0.00014	0.00435
	B	0.01166	0.01157	0.01582
	C	0.00049	0.00040	0.00521
	C	0.00955	0.00943	0.01426
	D	0.00021	0.00072	0.00795
	D	0.00714	0.00767	0.01489
sky130_fd_sc_hs__nor4_4	A	0.00385	0.00356	0.01180
	A	0.03008	0.02984	0.03809
	B	0.00395	0.00362	0.01250
	B	0.02614	0.02586	0.03472
	C	0.00403	0.00381	0.01352
	C	0.02186	0.02166	0.03139
	D	0.00375	0.00477	0.01912
	D	0.01743	0.01832	0.03281

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01038	0.01035	0.01469
	A	0.00299	0.00295	0.00733
	B	0.00856	0.00856	0.01276
	B	0.00213	0.00213	0.00637
	C	0.00645	0.00663	0.01074
	C	0.00103	0.00118	0.00532
	D	0.00432	0.00473	0.00875
	D	-0.00021	0.00018	0.00420
sky130_fd_sc_hs__nor4_2	A	0.01860	0.01842	0.02388
	A	0.00592	0.00573	0.01112
	B	0.01518	0.01500	0.02049
	B	0.00391	0.00368	0.00910
	C	0.01024	0.01034	0.01583
	C	0.00125	0.00134	0.00674
	D	0.00565	0.00621	0.01164
	D	-0.00128	-0.00074	0.00470
sky130_fd_sc_hs__nor4_4	A	0.03739	0.03677	0.04824
	A	0.01159	0.01101	0.02227
	B	0.02911	0.02876	0.03981
	B	0.00717	0.00680	0.01794
	C	0.02065	0.02085	0.03203
	C	0.00295	0.00309	0.01401
	D	0.01117	0.01229	0.02305
	D	-0.00251	-0.00137	0.00934

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00138	0.00138	0.00137
	(B * D * !Y)	-0.00178	-0.00182	-0.00181
	(B * C * !D * !Y)	0.00138	0.00138	0.00137
	(B * C * !D * !Y)	-0.00178	-0.00181	-0.00181
	(B * !C * !D * !Y)	0.00148	0.00138	0.00138
	(B * !C * !D * !Y)	-0.00166	-0.00181	-0.00182
	(!B * C * D * !Y)	0.00138	0.00137	0.00137
	(!B * C * D * !Y)	-0.00164	-0.00176	-0.00174
	(!B * C * !D * !Y)	0.00141	0.00138	0.00138
	(!B * C * !D * !Y)	-0.00161	-0.00176	-0.00175
	(!B * !C * D * !Y)	0.00144	0.00140	0.00138
	(!B * !C * D * !Y)	-0.00157	-0.00174	-0.00173
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00138	0.00137	0.00137
	(B * D * !Y)	-0.00346	-0.00355	-0.00354
	(B * C * !D * !Y)	0.00138	0.00138	0.00137
	(B * C * !D * !Y)	-0.00345	-0.00355	-0.00354
	(B * !C * !D * !Y)	0.00161	0.00139	0.00138
	(B * !C * !D * !Y)	-0.00319	-0.00353	-0.00355
	(!B * C * D * !Y)	0.00138	0.00138	0.00137
	(!B * C * D * !Y)	-0.00318	-0.00339	-0.00338
	(!B * C * !D * !Y)	0.00147	0.00139	0.00138
	(!B * C * !D * !Y)	-0.00310	-0.00341	-0.00340
	(!B * !C * D * !Y)	0.00153	0.00141	0.00138
	(!B * !C * D * !Y)	-0.00299	-0.00336	-0.00335

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00287	0.00286	0.00285
	(B * D * !Y)	-0.00709	-0.00727	-0.00723
	(B * C * !D * !Y)	0.00288	0.00287	0.00286
	(B * C * !D * !Y)	-0.00707	-0.00726	-0.00723
	(B * !C * !D * !Y)	0.00331	0.00289	0.00288
	(B * !C * !D * !Y)	-0.00658	-0.00723	-0.00728
	(!B * C * D * !Y)	0.00286	0.00287	0.00285
	(!B * C * D * !Y)	-0.00651	-0.00698	-0.00693
	(!B * C * !D * !Y)	0.00303	0.00289	0.00287
	(!B * C * !D * !Y)	-0.00638	-0.00699	-0.00697
	(!B * !C * D * !Y)	0.00317	0.00292	0.00288
	(!B * !C * D * !Y)	-0.00618	-0.00691	-0.00687

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00137	-0.00137	-0.00137
	(B * D * !Y)	0.00181	0.00183	0.00181
	(B * C * !D * !Y)	-0.00137	-0.00137	-0.00137
	(B * C * !D * !Y)	0.00181	0.00183	0.00181
	(B * !C * !D * !Y)	-0.00136	-0.00137	-0.00137
	(B * !C * !D * !Y)	0.00182	0.00183	0.00182
	(!B * C * D * !Y)	-0.00136	-0.00137	-0.00137
	(!B * C * D * !Y)	0.00174	0.00176	0.00174
	(!B * C * !D * !Y)	-0.00136	-0.00137	-0.00136
	(!B * C * !D * !Y)	0.00174	0.00176	0.00175
	(!B * !C * D * !Y)	-0.00136	-0.00136	-0.00135
	(!B * !C * D * !Y)	0.00172	0.00174	0.00173

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00136	-0.00137	-0.00136
	(B * D * !Y)	0.00352	0.00355	0.00354
	(B * C * !D * !Y)	-0.00136	-0.00137	-0.00136
	(B * C * !D * !Y)	0.00352	0.00355	0.00354
	(B * !C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(B * !C * !D * !Y)	0.00355	0.00356	0.00356
	(!B * C * D * !Y)	-0.00137	-0.00137	-0.00137
	(!B * C * D * !Y)	0.00337	0.00339	0.00338
	(!B * C * !D * !Y)	-0.00136	-0.00137	-0.00136
	(!B * C * !D * !Y)	0.00338	0.00341	0.00340
	(!B * !C * D * !Y)	-0.00134	-0.00135	-0.00134
	(!B * !C * D * !Y)	0.00333	0.00336	0.00335
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00283	-0.00286	-0.00284
	(B * D * !Y)	0.00719	0.00730	0.00723
	(B * C * !D * !Y)	-0.00282	-0.00285	-0.00284
	(B * C * !D * !Y)	0.00718	0.00730	0.00723
	(B * !C * !D * !Y)	-0.00283	-0.00284	-0.00283
	(B * !C * !D * !Y)	0.00725	0.00731	0.00728
	(!B * C * D * !Y)	-0.00283	-0.00285	-0.00284
	(!B * C * D * !Y)	0.00690	0.00698	0.00693
	(!B * C * !D * !Y)	-0.00282	-0.00284	-0.00283
	(!B * C * !D * !Y)	0.00694	0.00699	0.00697
	(!B * !C * D * !Y)	-0.00280	-0.00282	-0.00279
	(!B * !C * D * !Y)	0.00682	0.00691	0.00687

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)**	0.00140	0.00141	0.00137
	(A * C * D * !Y)	-0.00126	-0.00126	-0.00126
	(A * C * !D * !Y)	0.00142	0.00144	0.00136
	(A * C * !D * !Y)	-0.00124	-0.00125	-0.00124
	(A * !C * D * !Y)	0.00146	0.00155	0.00141
	(A * !C * D * !Y)	-0.00123	-0.00121	-0.00122
	(A * !C * !D * !Y)	0.00135	0.00135	0.00133
	(A * !C * !D * !Y)	-0.00095	-0.00096	-0.00096
	(!A * C * D * !Y)	0.00136	0.00133	0.00132
	(!A * C * D * !Y)	-0.00174	-0.00182	-0.00181
	(!A * C * !D * !Y)	0.00163	0.00135	0.00134
	(!A * C * !D * !Y)	-0.00149	-0.00181	-0.00182
	(!A * !C * D * !Y)	0.00159	0.00136	0.00133
	(!A * !C * D * !Y)	-0.00144	-0.00175	-0.00176
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00191	0.00191	0.00183
	(A * C * D * !Y)	-0.00258	-0.00260	-0.00258
	(A * C * !D * !Y)	0.00200	0.00201	0.00182
	(A * C * !D * !Y)	-0.00255	-0.00257	-0.00255
	(A * !C * D * !Y)	0.00203	0.00217	0.00190
	(A * !C * D * !Y)	-0.00249	-0.00244	-0.00249
	(A * !C * !D * !Y)	0.00182	0.00181	0.00176
	(A * !C * !D * !Y)	-0.00191	-0.00191	-0.00194
	(!A * C * D * !Y)	0.00180	0.00173	0.00171
	(!A * C * D * !Y)	-0.00355	-0.00369	-0.00368
	(!A * C * !D * !Y)	0.00238	0.00177	0.00174
	(!A * C * !D * !Y)	-0.00303	-0.00368	-0.00371
	(!A * !C * D * !Y)	0.00227	0.00178	0.00172
	(!A * !C * D * !Y)	-0.00287	-0.00356	-0.00356

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00334	0.00334	0.00315
	(A * C * D * !Y)	-0.00512	-0.00511	-0.00509
	(A * C * !D * !Y)	0.00352	0.00351	0.00316
	(A * C * !D * !Y)	-0.00506	-0.00505	-0.00503
	(A * !C * D * !Y)	0.00348	0.00385	0.00333
	(A * !C * D * !Y)	-0.00493	-0.00488	-0.00494
	(A * !C * !D * !Y)	0.00307	0.00308	0.00301
	(A * !C * !D * !Y)	-0.00385	-0.00386	-0.00388
	(!A * C * D * !Y)	0.00314	0.00298	0.00295
	(!A * C * D * !Y)	-0.00711	-0.00746	-0.00740
	(!A * C * !D * !Y)	0.00423	0.00306	0.00300
	(!A * C * !D * !Y)	-0.00612	-0.00738	-0.00743
	(!A * !C * D * !Y)	0.00398	0.00308	0.00297
	(!A * !C * D * !Y)	-0.00594	-0.00713	-0.00713

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)**	-0.00131	-0.00132	-0.00132
	(A * C * D * !Y)	0.00126	0.00126	0.00126
	(A * C * !D * !Y)	-0.00131	-0.00132	-0.00132
	(A * C * !D * !Y)	0.00124	0.00125	0.00124
	(A * !C * D * !Y)	-0.00131	-0.00132	-0.00131
	(A * !C * D * !Y)	0.00123	0.00123	0.00122
	(A * !C * !D * !Y)	-0.00125	-0.00126	-0.00124
	(A * !C * !D * !Y)	0.00102	0.00103	0.00103
	(!A * C * D * !Y)	-0.00131	-0.00132	-0.00132
	(!A * C * D * !Y)	0.00181	0.00182	0.00181
	(!A * C * !D * !Y)	-0.00130	-0.00130	-0.00130
	(!A * C * !D * !Y)	0.00183	0.00184	0.00184
	(!A * !C * D * !Y)	-0.00130	-0.00131	-0.00129
	(!A * !C * D * !Y)	0.00174	0.00175	0.00176
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00173	-0.00173	-0.00173
	(A * C * D * !Y)	0.00258	0.00260	0.00258
	(A * C * !D * !Y)	-0.00172	-0.00173	-0.00172
	(A * C * !D * !Y)	0.00255	0.00257	0.00255
	(A * !C * D * !Y)	-0.00171	-0.00171	-0.00171
	(A * !C * D * !Y)	0.00249	0.00250	0.00249
	(A * !C * !D * !Y)	-0.00158	-0.00158	-0.00155
	(A * !C * !D * !Y)	0.00209	0.00210	0.00211
	(!A * C * D * !Y)	-0.00170	-0.00171	-0.00171
	(!A * C * D * !Y)	0.00367	0.00369	0.00368
	(!A * C * !D * !Y)	-0.00167	-0.00167	-0.00166
	(!A * C * !D * !Y)	0.00372	0.00374	0.00373
	(!A * !C * D * !Y)	-0.00168	-0.00168	-0.00165
	(!A * !C * D * !Y)	0.00353	0.00356	0.00356

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00294	-0.00294	-0.00293
	(A * C * D * !Y)	0.00512	0.00511	0.00509
	(A * C * !D * !Y)	-0.00294	-0.00294	-0.00293
	(A * C * !D * !Y)	0.00506	0.00505	0.00503
	(A * !C * D * !Y)	-0.00295	-0.00297	-0.00295
	(A * !C * D * !Y)	0.00493	0.00497	0.00494
	(A * !C * !D * !Y)	-0.00266	-0.00267	-0.00262
	(A * !C * !D * !Y)	0.00417	0.00419	0.00420
	(!A * C * D * !Y)	-0.00292	-0.00295	-0.00293
	(!A * C * D * !Y)	0.00737	0.00746	0.00740
	(!A * C * !D * !Y)	-0.00289	-0.00290	-0.00288
	(!A * C * !D * !Y)	0.00746	0.00750	0.00748
	(!A * !C * D * !Y)	-0.00290	-0.00290	-0.00285
	(!A * !C * D * !Y)	0.00710	0.00713	0.00713

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00150	0.00151	0.00141
	(B * D * !Y)	-0.00119	-0.00120	-0.00121
	(B * !D * !Y)	0.00137	0.00137	0.00135
	(B * !D * !Y)	-0.00089	-0.00090	-0.00091
	(A * !B * D * !Y)	0.00166	0.00155	0.00144
	(A * !B * D * !Y)	-0.00104	-0.00115	-0.00118
	(A * !B * !D * !Y)	0.00138	0.00138	0.00135
	(A * !B * !D * !Y)	-0.00088	-0.00088	-0.00090
	(!A * !B * D * !Y)	0.00179	0.00141	0.00135
	(!A * !B * D * !Y)	-0.00134	-0.00173	-0.00177

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00209	0.00205	0.00186
	(B * D * !Y)	-0.00238	-0.00243	-0.00245
	(B * !D * !Y)	0.00177	0.00177	0.00172
	(B * !D * !Y)	-0.00182	-0.00182	-0.00184
	(A * !B * D * !Y)	0.00238	0.00210	0.00190
	(A * !B * D * !Y)	-0.00210	-0.00235	-0.00241
	(A * !B * !D * !Y)	0.00178	0.00178	0.00172
	(A * !B * !D * !Y)	-0.00179	-0.00180	-0.00183
	(!A * !B * D * !Y)	0.00258	0.00182	0.00170
	(!A * !B * D * !Y)	-0.00277	-0.00352	-0.00361
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00348	0.00352	0.00314
	(B * D * !Y)	-0.00488	-0.00488	-0.00493
	(B * !D * !Y)	0.00300	0.00301	0.00289
	(B * !D * !Y)	-0.00366	-0.00369	-0.00376
	(A * !B * D * !Y)	0.00429	0.00367	0.00324
	(A * !B * D * !Y)	-0.00419	-0.00473	-0.00487
	(A * !B * !D * !Y)	0.00303	0.00304	0.00290
	(A * !B * !D * !Y)	-0.00361	-0.00364	-0.00371
	(!A * !B * D * !Y)	0.00479	0.00311	0.00285
	(!A * !B * D * !Y)	-0.00541	-0.00709	-0.00730

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00133	-0.00133	-0.00133
	(B * D * !Y)	0.00122	0.00122	0.00121
	(B * !D * !Y)	-0.00133	-0.00132	-0.00131
	(B * !D * !Y)	0.00095	0.00095	0.00095
	(A * !B * D * !Y)	-0.00132	-0.00133	-0.00132
	(A * !B * D * !Y)	0.00119	0.00119	0.00119
	(A * !B * !D * !Y)	-0.00127	-0.00127	-0.00132
	(A * !B * !D * !Y)	0.00096	0.00096	0.00093
	(!A * !B * D * !Y)	-0.00132	-0.00132	-0.00131
	(!A * !B * D * !Y)	0.00178	0.00178	0.00179
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00169	-0.00171	-0.00170
	(B * D * !Y)	0.00244	0.00246	0.00245
	(B * !D * !Y)	-0.00167	-0.00167	-0.00165
	(B * !D * !Y)	0.00193	0.00192	0.00192
	(A * !B * D * !Y)	-0.00168	-0.00168	-0.00167
	(A * !B * D * !Y)	0.00242	0.00242	0.00241
	(A * !B * !D * !Y)	-0.00149	-0.00152	-0.00165
	(A * !B * !D * !Y)	0.00198	0.00199	0.00189
	(!A * !B * D * !Y)	-0.00165	-0.00165	-0.00164
	(!A * !B * D * !Y)	0.00364	0.00364	0.00365
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00285	-0.00285	-0.00284
	(B * D * !Y)	0.00495	0.00494	0.00493
	(B * !D * !Y)	-0.00278	-0.00278	-0.00273
	(B * !D * !Y)	0.00391	0.00390	0.00394
	(A * !B * D * !Y)	-0.00280	-0.00282	-0.00280
	(A * !B * D * !Y)	0.00486	0.00490	0.00487
	(A * !B * !D * !Y)	-0.00255	-0.00258	-0.00273
	(A * !B * !D * !Y)	0.00395	0.00394	0.00385
	(!A * !B * D * !Y)	-0.00275	-0.00277	-0.00272
	(!A * !B * D * !Y)	0.00731	0.00738	0.00737

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00155	0.00156	0.00156
	(C * !Y)	-0.00084	-0.00084	-0.00084
	(B * !C * !Y)	0.00156	0.00156	0.00156
	(B * !C * !Y)	-0.00084	-0.00083	-0.00083
	(A * !B * !C * !Y)	0.00156	0.00156	0.00156
	(A * !B * !C * !Y)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00189	0.00192	0.00190
	(C * !Y)	-0.00165	-0.00168	-0.00166
	(B * !C * !Y)	0.00189	0.00193	0.00190
	(B * !C * !Y)	-0.00164	-0.00167	-0.00164
	(A * !B * !C * !Y)	0.00189	0.00193	0.00190
	(A * !B * !C * !Y)	-0.00163	-0.00166	-0.00164
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00359	0.00359	0.00358
	(C * !Y)	-0.00332	-0.00332	-0.00331
	(B * !C * !Y)	0.00361	0.00359	0.00358
	(B * !C * !Y)	-0.00333	-0.00330	-0.00328
	(A * !B * !C * !Y)	0.00358	0.00360	0.00358
	(A * !B * !C * !Y)	-0.00329	-0.00331	-0.00328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00150	-0.00150	-0.00155
	(C * !Y)	0.00090	0.00089	0.00086
	(B * !C * !Y)	-0.00140	-0.00141	-0.00153
	(B * !C * !Y)	0.00095	0.00094	0.00085
	(A * !B * !C * !Y)	-0.00128	-0.00129	-0.00150
	(A * !B * !C * !Y)	0.00102	0.00101	0.00087
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00177	-0.00179	-0.00189
	(C * !Y)	0.00177	0.00178	0.00169
	(B * !C * !Y)	-0.00154	-0.00156	-0.00184
	(B * !C * !Y)	0.00190	0.00190	0.00169
	(A * !B * !C * !Y)	-0.00126	-0.00129	-0.00177
	(A * !B * !C * !Y)	0.00206	0.00206	0.00173
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00331	-0.00332	-0.00356
	(C * !Y)	0.00358	0.00356	0.00338
	(B * !C * !Y)	-0.00290	-0.00291	-0.00347
	(B * !C * !Y)	0.00379	0.00376	0.00339
	(A * !B * !C * !Y)	-0.00228	-0.00232	-0.00331
	(A * !B * !C * !Y)	0.00415	0.00412	0.00348

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00288	0.00300	0.00291	0.00309	0.00302	0.39197
sky130_fd_sc_hs__o2111ai_2	0.00560	0.00564	0.00583	0.00570	0.00567	0.71695
sky130_fd_sc_hs__o2111ai_4	0.01117	0.01127	0.00835	0.00842	0.00835	1.26373

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.59725	3.18797
sky130_fd_sc_hs__o2111ai_2	0.00000	1.02551	6.36895
sky130_fd_sc_hs__o2111ai_4	0.00000	1.56381	8.27010

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)	0.19846	1.12145	9.86695
	A2->Y (FR)	0.17833	1.12968	10.27220
	B1->Y (FR)	0.08070	0.75443	7.34719
	C1->Y (FR)	0.07183	0.74375	7.34008
	D1->Y (FR)	0.06023	0.73323	7.32135
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.19596	0.97641	9.68619
	A2->Y (FR)	0.16673	0.97442	10.11230
	B1->Y (FR)	0.07407	0.66317	7.10390
	C1->Y (FR)	0.06437	0.64753	7.08285
	D1->Y (FR)	0.04931	0.62804	7.04833
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.20019	0.86064	9.42267
	A2->Y (FR)	0.16675	0.86135	9.91455
	B1->Y (FR)	0.12991	0.83676	9.87367
	C1->Y (FR)	0.10211	0.79078	9.52869
	D1->Y (FR)	0.07586	0.78141	9.80263

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.15319	0.85283	7.34255
	A2->Y (RF)	0.12536	0.81075	7.20625
	B1->Y (RF)	0.14445	0.87339	7.83340
	C1->Y (RF)	0.13152	0.89729	8.30883
	D1->Y (RF)	0.11142	0.90649	8.63225
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.16130	0.76370	7.40129
	A2->Y (RF)	0.12500	0.71539	7.27091
	B1->Y (RF)	0.15128	0.78164	7.89434
	C1->Y (RF)	0.13550	0.81764	8.52993
	D1->Y (RF)	0.10501	0.81680	8.83975
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.15202	0.63809	6.87896
	A2->Y (RF)	0.12199	0.60821	6.99705
	B1->Y (RF)	0.10355	0.62620	7.56783
	C1->Y (RF)	0.08833	0.65976	8.18094
	D1->Y (RF)	0.05814	0.66346	8.54930

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00240	0.00232	0.00503
	A1	0.01033	0.01024	0.01293
	A2	0.00243	0.00250	0.00631
	A2	0.00932	0.00938	0.01318
	B1	0.00135	0.00170	0.00620
	B1	0.00817	0.00846	0.01290
	C1	0.00070	0.00107	0.00552
	C1	0.00680	0.00717	0.01154
	D1	0.00020	0.00051	0.00504
	D1	0.00545	0.00575	0.01023
sky130_fd_sc_hs__o2111ai_2	A1	0.00392	0.00370	0.00893
	A1	0.01982	0.01965	0.02477
	A2	0.00395	0.00430	0.01156
	A2	0.01766	0.01801	0.02515
	B1	0.00187	0.00260	0.01151
	B1	0.01585	0.01633	0.02533
	C1	0.00075	0.00153	0.01032
	C1	0.01289	0.01366	0.02237
	D1	-0.00119	-0.00012	0.00861
	D1	0.00918	0.01023	0.01899

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00696	0.00651	0.01743
	A1	0.03815	0.03757	0.04857
	A2	0.00686	0.00762	0.02215
	A2	0.03398	0.03454	0.04917
	B1	0.00327	0.00383	0.01442
	B1	0.02694	0.02698	0.03756
	C1	0.00115	0.00175	0.01242
	C1	0.02144	0.02202	0.03210
	D1	-0.00205	-0.00070	0.00962
	D1	0.01455	0.01589	0.02592

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01017	0.01004	0.01235
	A1	0.00209	0.00196	0.00423
	A2	0.00823	0.00814	0.01046
	A2	0.00120	0.00109	0.00333
	B1	0.00908	0.00896	0.01139
	B1	0.00106	0.00097	0.00354
	C1	0.00831	0.00822	0.01054
	C1	0.00105	0.00098	0.00348
	D1	0.00738	0.00738	0.01012
	D1	0.00099	0.00103	0.00393

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02102	0.02067	0.02517
	A1	0.00483	0.00445	0.00898
	A2	0.01615	0.01597	0.02051
	A2	0.00214	0.00192	0.00645
	B1	0.01890	0.01862	0.02357
	B1	0.00184	0.00162	0.00685
	C1	0.01704	0.01682	0.02145
	C1	0.00188	0.00173	0.00663
	D1	0.01509	0.01518	0.02059
	D1	0.00176	0.00193	0.00769
sky130_fd_sc_hs__o2111ai_4	**A1**	0.04039	0.03947	0.04953
	A1	0.00865	0.00771	0.01728
	A2	0.03056	0.03008	0.03992
	A2	0.00277	0.00230	0.01192
	B1	0.03475	0.03452	0.03993
	B1	0.01091	0.01067	0.01595
	C1	0.03124	0.03109	0.03656
	C1	0.01097	0.01082	0.01594
	D1	0.02735	0.02769	0.03358
	D1	0.01088	0.01120	0.01709

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * C1 * D1 * !Y)**	0.00173	0.00145	0.00140
	(A2 * B1 * C1 * D1 * !Y)	-0.00147	-0.00175	-0.00180
	(A2 * B1 * C1 * !D1 * Y)	0.00138	0.00137	0.00137
	(A2 * B1 * C1 * !D1 * Y)	-0.00181	-0.00182	-0.00182
	(A2 * B1 * !C1 * Y)	0.00138	0.00137	0.00137
	(A2 * B1 * !C1 * Y)	-0.00181	-0.00182	-0.00182
	(A2 * !B1 * Y)	0.00138	0.00137	0.00137
	(A2 * !B1 * Y)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * C1 * !D1 * Y)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * !C1 * D1 * Y)	0.00128	0.00128	0.00127
	(!A2 * B1 * !C1 * D1 * Y)	-0.00185	-0.00185	-0.00184
	(!A2 * B1 * !C1 * !D1 * Y)	0.00127	0.00128	0.00127
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00185	-0.00185	-0.00184
	(!A2 * !B1 * C1 * D1 * Y)	0.00130	0.00131	0.00130
	(!A2 * !B1 * C1 * D1 * Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !D1 * Y)	0.00129	0.00131	0.00130
	(!A2 * !B1 * !D1 * Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * D1 * Y)	0.00129	0.00131	0.00130
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00345	0.00283	0.00272
	(A2 * B1 * C1 * D1 * !Y)	-0.00288	-0.00355	-0.00363
	(A2 * B1 * C1 * !D1 * Y)	0.00266	0.00268	0.00266
	(A2 * B1 * C1 * !D1 * Y)	-0.00363	-0.00369	-0.00366
	(A2 * B1 * !C1 * Y)	0.00266	0.00268	0.00266
	(A2 * B1 * !C1 * Y)	-0.00363	-0.00368	-0.00366
	(A2 * !B1 * Y)	0.00266	0.00268	0.00266
	(A2 * !B1 * Y)	-0.00363	-0.00368	-0.00366
	(!A2 * B1 * C1 * !D1 * Y)	0.00243	0.00246	0.00243
	(!A2 * B1 * C1 * !D1 * Y)	-0.00372	-0.00374	-0.00372
	(!A2 * B1 * !C1 * D1 * Y)	0.00246	0.00247	0.00246
	(!A2 * B1 * !C1 * D1 * Y)	-0.00372	-0.00373	-0.00372
	(!A2 * B1 * !C1 * !D1 * Y)	0.00245	0.00247	0.00246
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00373	-0.00374	-0.00373
	(!A2 * !B1 * C1 * D1 * Y)	0.00250	0.00253	0.00251
	(!A2 * !B1 * C1 * D1 * Y)	-0.00371	-0.00373	-0.00372
	(!A2 * !B1 * !D1 * Y)	0.00249	0.00252	0.00251
	(!A2 * !B1 * !D1 * Y)	-0.00372	-0.00374	-0.00373
	(!A2 * !B1 * !C1 * D1 * Y)	0.00250	0.00252	0.00251
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00371	-0.00374	-0.00372

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00693	0.00566	0.00548
	(A2 * B1 * C1 * D1 * !Y)	-0.00562	-0.00696	-0.00710
	(A2 * B1 * C1 * !D1 * Y)	0.00522	0.00522	0.00521
	(A2 * B1 * C1 * !D1 * Y)	-0.00727	-0.00736	-0.00733
	(A2 * B1 * !C1 * Y)	0.00522	0.00522	0.00521
	(A2 * B1 * !C1 * Y)	-0.00727	-0.00735	-0.00733
	(A2 * !B1 * Y)	0.00523	0.00523	0.00521
	(A2 * !B1 * Y)	-0.00727	-0.00735	-0.00733
	(!A2 * B1 * C1 * !D1 * Y)	0.00474	0.00474	0.00472
	(!A2 * B1 * C1 * !D1 * Y)	-0.00745	-0.00744	-0.00742
	(!A2 * B1 * !C1 * D1 * Y)	0.00480	0.00482	0.00478
	(!A2 * B1 * !C1 * D1 * Y)	-0.00745	-0.00745	-0.00742
	(!A2 * B1 * !C1 * !D1 * Y)	0.00479	0.00481	0.00477
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00746	-0.00746	-0.00743
	(!A2 * !B1 * C1 * D1 * Y)	0.00489	0.00493	0.00491
	(!A2 * !B1 * C1 * D1 * Y)	-0.00741	-0.00744	-0.00742
	(!A2 * !B1 * !D1 * Y)	0.00487	0.00493	0.00489
	(!A2 * !B1 * !D1 * Y)	-0.00742	-0.00747	-0.00743
	(!A2 * !B1 * !C1 * D1 * Y)	0.00487	0.00493	0.00489
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00742	-0.00746	-0.00743

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)**	-0.00134	-0.00135	-0.00133
	(A2 * B1 * C1 * D1 * !Y)	0.00185	0.00188	0.00186
	(A2 * B1 * C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * C1 * !D1 * Y)	0.00182	0.00183	0.00182
	(A2 * B1 * !C1 * Y)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * !C1 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * Y)	-0.00136	-0.00137	-0.00136
	(A2 * !B1 * Y)	0.00182	0.00183	0.00182
	(!A2 * B1 * C1 * !D1 * Y)	-0.00116	-0.00127	-0.00126
	(!A2 * B1 * C1 * !D1 * Y)	0.00186	0.00187	0.00185
	(!A2 * B1 * !C1 * D1 * Y)	-0.00119	-0.00128	-0.00127
	(!A2 * B1 * !C1 * D1 * Y)	0.00185	0.00187	0.00186
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00119	-0.00128	-0.00127
	(!A2 * B1 * !C1 * !D1 * Y)	0.00185	0.00187	0.00185
	(!A2 * !B1 * C1 * D1 * Y)	-0.00125	-0.00131	-0.00130
	(!A2 * !B1 * C1 * D1 * Y)	0.00186	0.00187	0.00186
	(!A2 * !B1 * !D1 * Y)	-0.00126	-0.00131	-0.00130
	(!A2 * !B1 * !D1 * Y)	0.00185	0.00187	0.00185
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00126	-0.00131	-0.00130
	(!A2 * !B1 * !C1 * D1 * Y)	0.00185	0.00187	0.00185

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00259	-0.00260	-0.00257
	(A2 * B1 * C1 * D1 * !Y)	0.00374	0.00377	0.00375
	(A2 * B1 * C1 * !D1 * Y)	-0.00265	-0.00266	-0.00264
	(A2 * B1 * C1 * !D1 * Y)	0.00367	0.00369	0.00366
	(A2 * B1 * !C1 * Y)	-0.00265	-0.00265	-0.00264
	(A2 * B1 * !C1 * Y)	0.00367	0.00369	0.00366
	(A2 * !B1 * Y)	-0.00263	-0.00265	-0.00264
	(A2 * !B1 * Y)	0.00364	0.00369	0.00366
	(!A2 * B1 * C1 * !D1 * Y)	-0.00224	-0.00246	-0.00243
	(!A2 * B1 * C1 * !D1 * Y)	0.00376	0.00378	0.00374
	(!A2 * B1 * !C1 * D1 * Y)	-0.00228	-0.00247	-0.00246
	(!A2 * B1 * !C1 * D1 * Y)	0.00374	0.00378	0.00374
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00229	-0.00247	-0.00246
	(!A2 * B1 * !C1 * !D1 * Y)	0.00374	0.00378	0.00374
	(!A2 * !B1 * C1 * D1 * Y)	-0.00239	-0.00253	-0.00251
	(!A2 * !B1 * C1 * D1 * Y)	0.00373	0.00378	0.00375
	(!A2 * !B1 * !D1 * Y)	-0.00241	-0.00252	-0.00251
	(!A2 * !B1 * !D1 * Y)	0.00373	0.00378	0.00374
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00241	-0.00252	-0.00251
	(!A2 * !B1 * !C1 * D1 * Y)	0.00373	0.00378	0.00374

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00530	-0.00532	-0.00527
	(A2 * B1 * C1 * D1 * !Y)	0.00720	0.00727	0.00725
	(A2 * B1 * C1 * !D1 * Y)	-0.00518	-0.00520	-0.00518
	(A2 * B1 * C1 * !D1 * Y)	0.00733	0.00737	0.00733
	(A2 * B1 * !C1 * Y)	-0.00518	-0.00519	-0.00518
	(A2 * B1 * !C1 * Y)	0.00733	0.00736	0.00733
	(A2 * !B1 * Y)	-0.00518	-0.00519	-0.00517
	(A2 * !B1 * Y)	0.00733	0.00737	0.00733
	(!A2 * B1 * C1 * !D1 * Y)	-0.00434	-0.00474	-0.00472
	(!A2 * B1 * C1 * !D1 * Y)	0.00751	0.00752	0.00746
	(!A2 * B1 * !C1 * D1 * Y)	-0.00444	-0.00482	-0.00478
	(!A2 * B1 * !C1 * D1 * Y)	0.00747	0.00752	0.00747
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00446	-0.00481	-0.00477
	(!A2 * B1 * !C1 * !D1 * Y)	0.00746	0.00752	0.00746
	(!A2 * !B1 * C1 * D1 * Y)	-0.00469	-0.00493	-0.00491
	(!A2 * !B1 * C1 * D1 * Y)	0.00750	0.00753	0.00747
	(!A2 * !B1 * !D1 * Y)	-0.00474	-0.00493	-0.00489
	(!A2 * !B1 * !D1 * Y)	0.00749	0.00752	0.00746
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00475	-0.00493	-0.00489
	(!A2 * !B1 * !C1 * D1 * Y)	0.00749	0.00753	0.00746

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)**	0.00152	0.00153	0.00152
	(A1 * B1 * C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * C1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A1 * B1 * C1 * !D1 * Y)	-0.00178	-0.00181	-0.00180
	(A1 * B1 * !C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * B1 * !C1 * D1 * Y)	-0.00178	-0.00181	-0.00180
	(A1 * B1 * !C1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A1 * B1 * !C1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(A1 * !B1 * C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * C1 * D1 * Y)	-0.00178	-0.00179	-0.00180
	(A1 * !B1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(A1 * !B1 * !C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * !C1 * D1 * Y)	-0.00179	-0.00180	-0.00180
	(!A1 * B1 * C1 * !D1 * Y)	0.00122	0.00122	0.00122
	(!A1 * B1 * C1 * !D1 * Y)	-0.00182	-0.00182	-0.00182
	(!A1 * B1 * !C1 * D1 * Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !C1 * D1 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * B1 * !C1 * !D1 * Y)	0.00124	0.00124	0.00124
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * !B1 * C1 * D1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !B1 * C1 * D1 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * !B1 * !D1 * Y)	0.00127	0.00127	0.00127
	(!A1 * !B1 * !D1 * Y)	-0.00183	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * D1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00296	0.00298	0.00296
	(A1 * B1 * C1 * D1 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * B1 * C1 * !D1 * Y)	0.00262	0.00263	0.00260
	(A1 * B1 * C1 * !D1 * Y)	-0.00360	-0.00363	-0.00361
	(A1 * B1 * !C1 * D1 * Y)	0.00262	0.00263	0.00260
	(A1 * B1 * !C1 * D1 * Y)	-0.00360	-0.00363	-0.00361
	(A1 * B1 * !C1 * !D1 * Y)	0.00262	0.00262	0.00260
	(A1 * B1 * !C1 * !D1 * Y)	-0.00360	-0.00364	-0.00361
	(A1 * !B1 * C1 * D1 * Y)	0.00263	0.00263	0.00261
	(A1 * !B1 * C1 * D1 * Y)	-0.00360	-0.00364	-0.00361
	(A1 * !B1 * !D1 * Y)	0.00261	0.00262	0.00260
	(A1 * !B1 * !D1 * Y)	-0.00360	-0.00364	-0.00362
	(A1 * !B1 * !C1 * D1 * Y)	0.00261	0.00262	0.00260
	(A1 * !B1 * !C1 * D1 * Y)	-0.00360	-0.00364	-0.00362
	(!A1 * B1 * C1 * !D1 * Y)	0.00237	0.00238	0.00238
	(!A1 * B1 * C1 * !D1 * Y)	-0.00367	-0.00369	-0.00368
	(!A1 * B1 * !C1 * D1 * Y)	0.00240	0.00242	0.00241
	(!A1 * B1 * !C1 * D1 * Y)	-0.00368	-0.00369	-0.00368
	(!A1 * B1 * !C1 * !D1 * Y)	0.00239	0.00241	0.00240
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00368	-0.00369	-0.00368
	(!A1 * !B1 * C1 * D1 * Y)	0.00246	0.00248	0.00246
	(!A1 * !B1 * C1 * D1 * Y)	-0.00368	-0.00370	-0.00368
	(!A1 * !B1 * !D1 * Y)	0.00245	0.00247	0.00245
	(!A1 * !B1 * !D1 * Y)	-0.00368	-0.00370	-0.00368
	(!A1 * !B1 * !C1 * D1 * Y)	0.00245	0.00247	0.00245
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00368	-0.00369	-0.00368

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00606	0.00610	0.00606
	(A1 * B1 * C1 * D1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * B1 * C1 * !D1 * Y)	0.00534	0.00534	0.00529
	(A1 * B1 * C1 * !D1 * Y)	-0.00729	-0.00733	-0.00728
	(A1 * B1 * !C1 * D1 * Y)	0.00534	0.00534	0.00529
	(A1 * B1 * !C1 * D1 * Y)	-0.00729	-0.00733	-0.00729
	(A1 * B1 * !C1 * !D1 * Y)	0.00533	0.00533	0.00529
	(A1 * B1 * !C1 * !D1 * Y)	-0.00729	-0.00732	-0.00730
	(A1 * !B1 * C1 * D1 * Y)	0.00535	0.00534	0.00530
	(A1 * !B1 * C1 * D1 * Y)	-0.00728	-0.00733	-0.00729
	(A1 * !B1 * !D1 * Y)	0.00534	0.00533	0.00529
	(A1 * !B1 * !D1 * Y)	-0.00728	-0.00733	-0.00730
	(A1 * !B1 * !C1 * D1 * Y)	0.00534	0.00534	0.00529
	(A1 * !B1 * !C1 * D1 * Y)	-0.00729	-0.00733	-0.00730
	(!A1 * B1 * C1 * !D1 * Y)	0.00479	0.00484	0.00481
	(!A1 * B1 * C1 * !D1 * Y)	-0.00741	-0.00745	-0.00742
	(!A1 * B1 * !C1 * D1 * Y)	0.00485	0.00490	0.00485
	(!A1 * B1 * !C1 * D1 * Y)	-0.00742	-0.00746	-0.00742
	(!A1 * B1 * !C1 * !D1 * Y)	0.00484	0.00488	0.00484
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00743	-0.00746	-0.00743
	(!A1 * !B1 * C1 * D1 * Y)	0.00497	0.00505	0.00498
	(!A1 * !B1 * C1 * D1 * Y)	-0.00741	-0.00748	-0.00742
	(!A1 * !B1 * !D1 * Y)	0.00500	0.00499	0.00497
	(!A1 * !B1 * !D1 * Y)	-0.00746	-0.00745	-0.00743
	(!A1 * !B1 * !C1 * D1 * Y)	0.00497	0.00499	0.00497
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00743	-0.00745	-0.00743

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)**	-0.00142	-0.00143	-0.00147
	(A1 * B1 * C1 * D1 * !Y)	0.00090	0.00089	0.00086
	(A1 * B1 * C1 * !D1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * C1 * !D1 * Y)	0.00180	0.00181	0.00180
	(A1 * B1 * !C1 * D1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * !C1 * D1 * Y)	0.00179	0.00181	0.00180
	(A1 * B1 * !C1 * !D1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * !C1 * !D1 * Y)	0.00179	0.00180	0.00180
	(A1 * !B1 * C1 * D1 * Y)	-0.00133	-0.00133	-0.00133
	(A1 * !B1 * C1 * D1 * Y)	0.00179	0.00179	0.00180
	(A1 * !B1 * !D1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !D1 * Y)	0.00179	0.00180	0.00180
	(A1 * !B1 * !C1 * D1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !C1 * D1 * Y)	0.00179	0.00180	0.00180
	(!A1 * B1 * C1 * !D1 * Y)	-0.00112	-0.00122	-0.00122
	(!A1 * B1 * C1 * !D1 * Y)	0.00184	0.00184	0.00183
	(!A1 * B1 * !C1 * D1 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * B1 * !C1 * D1 * Y)	0.00183	0.00184	0.00183
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00116	-0.00124	-0.00124
	(!A1 * B1 * !C1 * !D1 * Y)	0.00182	0.00184	0.00183
	(!A1 * !B1 * C1 * D1 * Y)	-0.00122	-0.00128	-0.00127
	(!A1 * !B1 * C1 * D1 * Y)	0.00183	0.00185	0.00184
	(!A1 * !B1 * !D1 * Y)	-0.00123	-0.00127	-0.00127
	(!A1 * !B1 * !D1 * Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00123	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * D1 * Y)	0.00183	0.00185	0.00183

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00271	-0.00273	-0.00286
	(A1 * B1 * C1 * D1 * !Y)	0.00188	0.00188	0.00176
	(A1 * B1 * C1 * !D1 * Y)	-0.00258	-0.00260	-0.00259
	(A1 * B1 * C1 * !D1 * Y)	0.00360	0.00363	0.00361
	(A1 * B1 * !C1 * D1 * Y)	-0.00258	-0.00260	-0.00259
	(A1 * B1 * !C1 * D1 * Y)	0.00360	0.00363	0.00361
	(A1 * B1 * !C1 * !D1 * Y)	-0.00258	-0.00260	-0.00259
	(A1 * B1 * !C1 * !D1 * Y)	0.00360	0.00364	0.00361
	(A1 * !B1 * C1 * D1 * Y)	-0.00258	-0.00260	-0.00258
	(A1 * !B1 * C1 * D1 * Y)	0.00360	0.00364	0.00361
	(A1 * !B1 * !D1 * Y)	-0.00259	-0.00260	-0.00259
	(A1 * !B1 * !D1 * Y)	0.00361	0.00364	0.00362
	(A1 * !B1 * !C1 * D1 * Y)	-0.00259	-0.00260	-0.00259
	(A1 * !B1 * !C1 * D1 * Y)	0.00361	0.00364	0.00362
	(!A1 * B1 * C1 * !D1 * Y)	-0.00218	-0.00238	-0.00238
	(!A1 * B1 * C1 * !D1 * Y)	0.00371	0.00373	0.00370
	(!A1 * B1 * !C1 * D1 * Y)	-0.00223	-0.00242	-0.00241
	(!A1 * B1 * !C1 * D1 * Y)	0.00369	0.00373	0.00370
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00223	-0.00241	-0.00240
	(!A1 * B1 * !C1 * !D1 * Y)	0.00369	0.00373	0.00370
	(!A1 * !B1 * C1 * D1 * Y)	-0.00235	-0.00247	-0.00246
	(!A1 * !B1 * C1 * D1 * Y)	0.00371	0.00373	0.00370
	(!A1 * !B1 * !D1 * Y)	-0.00237	-0.00247	-0.00245
	(!A1 * !B1 * !D1 * Y)	0.00371	0.00373	0.00370
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00237	-0.00247	-0.00245
	(!A1 * !B1 * !C1 * D1 * Y)	0.00371	0.00373	0.00370

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00562	-0.00565	-0.00593
	(A1 * B1 * C1 * D1 * !Y)	0.00375	0.00374	0.00348
	(A1 * B1 * C1 * !D1 * Y)	-0.00527	-0.00529	-0.00526
	(A1 * B1 * C1 * !D1 * Y)	0.00729	0.00733	0.00728
	(A1 * B1 * !C1 * D1 * Y)	-0.00527	-0.00529	-0.00526
	(A1 * B1 * !C1 * D1 * Y)	0.00730	0.00733	0.00729
	(A1 * B1 * !C1 * !D1 * Y)	-0.00528	-0.00528	-0.00527
	(A1 * B1 * !C1 * !D1 * Y)	0.00731	0.00732	0.00730
	(A1 * !B1 * C1 * D1 * Y)	-0.00526	-0.00529	-0.00526
	(A1 * !B1 * C1 * D1 * Y)	0.00728	0.00733	0.00729
	(A1 * !B1 * !D1 * Y)	-0.00526	-0.00529	-0.00527
	(A1 * !B1 * !D1 * Y)	0.00728	0.00733	0.00730
	(A1 * !B1 * !C1 * D1 * Y)	-0.00526	-0.00528	-0.00526
	(A1 * !B1 * !C1 * D1 * Y)	0.00729	0.00733	0.00730
	(!A1 * B1 * C1 * !D1 * Y)	-0.00443	-0.00484	-0.00481
	(!A1 * B1 * C1 * !D1 * Y)	0.00749	0.00752	0.00746
	(!A1 * B1 * !C1 * D1 * Y)	-0.00452	-0.00490	-0.00485
	(!A1 * B1 * !C1 * D1 * Y)	0.00745	0.00752	0.00746
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00453	-0.00488	-0.00484
	(!A1 * B1 * !C1 * !D1 * Y)	0.00744	0.00751	0.00746
	(!A1 * !B1 * C1 * D1 * Y)	-0.00477	-0.00503	-0.00498
	(!A1 * !B1 * C1 * D1 * Y)	0.00749	0.00753	0.00747
	(!A1 * !B1 * !D1 * Y)	-0.00482	-0.00499	-0.00497
	(!A1 * !B1 * !D1 * Y)	0.00748	0.00751	0.00746
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00483	-0.00499	-0.00497
	(!A1 * !B1 * !C1 * D1 * Y)	0.00748	0.00752	0.00746

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)**	0.00119	0.00121	0.00120
	(A2 * C1 * !D1 * Y)	-0.00183	-0.00184	-0.00184
	(A2 * !C1 * D1 * Y)	0.00124	0.00125	0.00124
	(A2 * !C1 * D1 * Y)	-0.00184	-0.00185	-0.00184
	(A2 * !C1 * !D1 * Y)	0.00123	0.00124	0.00123
	(A2 * !C1 * !D1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * C1 * !D1 * Y)	0.00119	0.00121	0.00120
	(A1 * !A2 * C1 * !D1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !C1 * D1 * Y)	0.00124	0.00125	0.00124
	(A1 * !A2 * !C1 * D1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !C1 * !D1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !A2 * C1 * D1 * Y)	0.00064	0.00063	0.00063
	(!A1 * !A2 * C1 * D1 * Y)	-0.00179	-0.00179	-0.00178
	(!A1 * !A2 * C1 * !D1 * Y)	0.00074	0.00075	0.00075
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00183	-0.00185	-0.00184
	(!A1 * !A2 * !C1 * D1 * Y)	0.00078	0.00079	0.00079
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00079	0.00080	0.00079
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00254	0.00255	0.00255
	(A2 * C1 * !D1 * Y)	-0.00380	-0.00380	-0.00379
	(A2 * !C1 * D1 * Y)	0.00262	0.00264	0.00262
	(A2 * !C1 * D1 * Y)	-0.00381	-0.00382	-0.00380
	(A2 * !C1 * !D1 * Y)	0.00261	0.00262	0.00261
	(A2 * !C1 * !D1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * !A2 * C1 * !D1 * Y)	0.00253	0.00256	0.00254
	(A1 * !A2 * C1 * !D1 * Y)	-0.00380	-0.00381	-0.00379
	(A1 * !A2 * !C1 * D1 * Y)	0.00260	0.00263	0.00262
	(A1 * !A2 * !C1 * D1 * Y)	-0.00379	-0.00382	-0.00380
	(A1 * !A2 * !C1 * !D1 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00380	-0.00382	-0.00380
	(!A1 * !A2 * C1 * D1 * Y)	0.00132	0.00133	0.00134
	(!A1 * !A2 * C1 * D1 * Y)	-0.00368	-0.00370	-0.00365
	(!A1 * !A2 * C1 * !D1 * Y)	0.00160	0.00162	0.00160
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00380	-0.00382	-0.00380
	(!A1 * !A2 * !C1 * D1 * Y)	0.00162	0.00164	0.00162
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00380	-0.00382	-0.00380
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00380	-0.00382	-0.00380

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00489	0.00492	0.00489
	(A2 * C1 * !D1 * Y)	-0.00394	-0.00395	-0.00393
	(A2 * !C1 * D1 * Y)	0.00505	0.00504	0.00504
	(A2 * !C1 * D1 * Y)	-0.00395	-0.00394	-0.00394
	(A2 * !C1 * !D1 * Y)	0.00502	0.00505	0.00502
	(A2 * !C1 * !D1 * Y)	-0.00395	-0.00396	-0.00395
	(A1 * !A2 * C1 * !D1 * Y)	0.00485	0.00490	0.00488
	(A1 * !A2 * C1 * !D1 * Y)	-0.00393	-0.00395	-0.00393
	(A1 * !A2 * !C1 * D1 * Y)	0.00504	0.00507	0.00504
	(A1 * !A2 * !C1 * D1 * Y)	-0.00395	-0.00396	-0.00394
	(A1 * !A2 * !C1 * !D1 * Y)	0.00502	0.00505	0.00501
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00395	-0.00396	-0.00395
	(!A1 * !A2 * C1 * D1 * Y)	0.00245	0.00246	0.00247
	(!A1 * !A2 * C1 * D1 * Y)	-0.00372	-0.00373	-0.00368
	(!A1 * !A2 * C1 * !D1 * Y)	0.00295	0.00296	0.00294
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00396	-0.00398	-0.00396
	(!A1 * !A2 * !C1 * D1 * Y)	0.00301	0.00303	0.00300
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00395	-0.00397	-0.00395
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00302	0.00306	0.00303
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00394	-0.00397	-0.00395

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)**	-0.00109	-0.00121	-0.00120
	(A2 * C1 * !D1 * Y)	0.00188	0.00187	0.00185
	(A2 * !C1 * D1 * Y)	-0.00118	-0.00124	-0.00124
	(A2 * !C1 * D1 * Y)	0.00187	0.00187	0.00185
	(A2 * !C1 * !D1 * Y)	-0.00121	-0.00124	-0.00123
	(A2 * !C1 * !D1 * Y)	0.00186	0.00187	0.00185
	(A1 * !A2 * C1 * !D1 * Y)	-0.00108	-0.00121	-0.00120
	(A1 * !A2 * C1 * !D1 * Y)	0.00191	0.00188	0.00185
	(A1 * !A2 * !C1 * D1 * Y)	-0.00117	-0.00124	-0.00124
	(A1 * !A2 * !C1 * D1 * Y)	0.00188	0.00187	0.00185
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00120	-0.00124	-0.00123
	(A1 * !A2 * !C1 * !D1 * Y)	0.00186	0.00187	0.00185
	(!A1 * !A2 * C1 * D1 * Y)	-0.00055	-0.00055	-0.00056
	(!A1 * !A2 * C1 * D1 * Y)	0.00190	0.00191	0.00187
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00074	-0.00075	-0.00075
	(!A1 * !A2 * C1 * !D1 * Y)	0.00190	0.00191	0.00187
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00078	-0.00079	-0.00079
	(!A1 * !A2 * !C1 * D1 * Y)	0.00191	0.00190	0.00187
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00187	0.00186	0.00185

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00234	-0.00255	-0.00255
	(A2 * C1 * !D1 * Y)	0.00387	0.00387	0.00382
	(A2 * !C1 * D1 * Y)	-0.00249	-0.00262	-0.00262
	(A2 * !C1 * D1 * Y)	0.00382	0.00386	0.00382
	(A2 * !C1 * !D1 * Y)	-0.00254	-0.00262	-0.00261
	(A2 * !C1 * !D1 * Y)	0.00380	0.00386	0.00382
	(A1 * !A2 * C1 * !D1 * Y)	-0.00230	-0.00255	-0.00254
	(A1 * !A2 * C1 * !D1 * Y)	0.00389	0.00381	0.00382
	(A1 * !A2 * !C1 * D1 * Y)	-0.00248	-0.00261	-0.00262
	(A1 * !A2 * !C1 * D1 * Y)	0.00386	0.00384	0.00382
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00255	-0.00262	-0.00260
	(A1 * !A2 * !C1 * !D1 * Y)	0.00383	0.00384	0.00382
	(!A1 * !A2 * C1 * D1 * Y)	-0.00116	-0.00118	-0.00120
	(!A1 * !A2 * C1 * D1 * Y)	0.00392	0.00394	0.00387
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00160	-0.00162	-0.00160
	(!A1 * !A2 * C1 * !D1 * Y)	0.00390	0.00394	0.00385
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00162	-0.00164	-0.00162
	(!A1 * !A2 * !C1 * D1 * Y)	0.00393	0.00393	0.00386
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00382	0.00384	0.00382

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00444	-0.00492	-0.00489
	(A2 * C1 * !D1 * Y)	0.00414	0.00403	0.00397
	(A2 * !C1 * D1 * Y)	-0.00475	-0.00502	-0.00504
	(A2 * !C1 * D1 * Y)	0.00403	0.00398	0.00398
	(A2 * !C1 * !D1 * Y)	-0.00488	-0.00504	-0.00502
	(A2 * !C1 * !D1 * Y)	0.00396	0.00397	0.00397
	(A1 * !A2 * C1 * !D1 * Y)	-0.00437	-0.00490	-0.00488
	(A1 * !A2 * C1 * !D1 * Y)	0.00415	0.00399	0.00397
	(A1 * !A2 * !C1 * D1 * Y)	-0.00472	-0.00502	-0.00504
	(A1 * !A2 * !C1 * D1 * Y)	0.00404	0.00399	0.00398
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00487	-0.00504	-0.00501
	(A1 * !A2 * !C1 * !D1 * Y)	0.00396	0.00398	0.00397
	(!A1 * !A2 * C1 * D1 * Y)	-0.00218	-0.00217	-0.00221
	(!A1 * !A2 * C1 * D1 * Y)	0.00421	0.00420	0.00407
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00295	-0.00296	-0.00294
	(!A1 * !A2 * C1 * !D1 * Y)	0.00419	0.00424	0.00406
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00301	-0.00303	-0.00300
	(!A1 * !A2 * !C1 * D1 * Y)	0.00422	0.00420	0.00407
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00302	-0.00306	-0.00303
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00399	0.00401	0.00398

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)**	0.00128	0.00127	0.00128
	(A2 * B1 * !D1 * Y)	-0.00190	-0.00189	-0.00189
	(A2 * !B1 * D1 * Y)	0.00062	0.00063	0.00062
	(A2 * !B1 * D1 * Y)	-0.00190	-0.00190	-0.00188
	(A2 * !B1 * !D1 * Y)	0.00076	0.00076	0.00075
	(A2 * !B1 * !D1 * Y)	-0.00190	-0.00190	-0.00189
	(A1 * !A2 * B1 * !D1 * Y)	0.00127	0.00129	0.00128
	(A1 * !A2 * B1 * !D1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * D1 * Y)	0.00062	0.00063	0.00062
	(!A2 * !B1 * D1 * Y)	-0.00190	-0.00190	-0.00188
	(!A2 * !B1 * !D1 * Y)	0.00076	0.00076	0.00075
	(!A2 * !B1 * !D1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * B1 * D1 * Y)	0.00062	0.00062	0.00060
	(!A1 * !A2 * B1 * D1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * B1 * !D1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00249	0.00251	0.00250
	(A2 * B1 * !D1 * Y)	-0.00371	-0.00372	-0.00370
	(A2 * !B1 * D1 * Y)	0.00123	0.00124	0.00124
	(A2 * !B1 * D1 * Y)	-0.00372	-0.00373	-0.00368
	(A2 * !B1 * !D1 * Y)	0.00158	0.00158	0.00157
	(A2 * !B1 * !D1 * Y)	-0.00373	-0.00374	-0.00372
	(A1 * !A2 * B1 * !D1 * Y)	0.00249	0.00250	0.00250
	(A1 * !A2 * B1 * !D1 * Y)	-0.00371	-0.00372	-0.00370
	(!A2 * !B1 * D1 * Y)	0.00123	0.00124	0.00124
	(!A2 * !B1 * D1 * Y)	-0.00372	-0.00373	-0.00368
	(!A2 * !B1 * !D1 * Y)	0.00158	0.00158	0.00157
	(!A2 * !B1 * !D1 * Y)	-0.00373	-0.00374	-0.00372
	(!A1 * !A2 * B1 * D1 * Y)	0.00118	0.00118	0.00119
	(!A1 * !A2 * B1 * D1 * Y)	-0.00370	-0.00371	-0.00368
	(!A1 * !A2 * B1 * !D1 * Y)	0.00155	0.00155	0.00154
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00372	-0.00373	-0.00371

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00497	0.00501	0.00499
	(A2 * B1 * !D1 * Y)	-0.00388	-0.00389	-0.00387
	(A2 * !B1 * D1 * Y)	0.00232	0.00233	0.00232
	(A2 * !B1 * D1 * Y)	-0.00389	-0.00390	-0.00385
	(A2 * !B1 * !D1 * Y)	0.00291	0.00292	0.00290
	(A2 * !B1 * !D1 * Y)	-0.00393	-0.00395	-0.00392
	(A1 * !A2 * B1 * !D1 * Y)	0.00496	0.00499	0.00499
	(A1 * !A2 * B1 * !D1 * Y)	-0.00387	-0.00389	-0.00387
	(!A2 * !B1 * D1 * Y)	0.00232	0.00232	0.00232
	(!A2 * !B1 * D1 * Y)	-0.00389	-0.00390	-0.00385
	(!A2 * !B1 * !D1 * Y)	0.00292	0.00292	0.00290
	(!A2 * !B1 * !D1 * Y)	-0.00393	-0.00394	-0.00392
	(!A1 * !A2 * B1 * D1 * Y)	0.00224	0.00225	0.00225
	(!A1 * !A2 * B1 * D1 * Y)	-0.00387	-0.00389	-0.00385
	(!A1 * !A2 * B1 * !D1 * Y)	0.00293	0.00295	0.00292
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00390	-0.00392	-0.00390

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)**	-0.00114	-0.00125	-0.00128
	(A2 * B1 * !D1 * Y)	0.00204	0.00194	0.00191
	(A2 * !B1 * D1 * Y)	-0.00057	-0.00057	-0.00059
	(A2 * !B1 * D1 * Y)	0.00194	0.00196	0.00191
	(A2 * !B1 * !D1 * Y)	-0.00076	-0.00076	-0.00075
	(A2 * !B1 * !D1 * Y)	0.00198	0.00198	0.00192
	(A1 * !A2 * B1 * !D1 * Y)	-0.00114	-0.00125	-0.00128
	(A1 * !A2 * B1 * !D1 * Y)	0.00205	0.00194	0.00191
	(!A2 * !B1 * D1 * Y)	-0.00057	-0.00057	-0.00059
	(!A2 * !B1 * D1 * Y)	0.00194	0.00196	0.00191
	(!A2 * !B1 * !D1 * Y)	-0.00076	-0.00076	-0.00075
	(!A2 * !B1 * !D1 * Y)	0.00198	0.00198	0.00192
	(!A1 * !A2 * B1 * D1 * Y)	-0.00054	-0.00055	-0.00056
	(!A1 * !A2 * B1 * D1 * Y)	0.00195	0.00196	0.00191
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * B1 * !D1 * Y)	0.00204	0.00199	0.00193

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00223	-0.00247	-0.00250
	(A2 * B1 * !D1 * Y)	0.00399	0.00378	0.00374
	(A2 * !B1 * D1 * Y)	-0.00111	-0.00112	-0.00116
	(A2 * !B1 * D1 * Y)	0.00386	0.00388	0.00377
	(A2 * !B1 * !D1 * Y)	-0.00158	-0.00158	-0.00157
	(A2 * !B1 * !D1 * Y)	0.00387	0.00389	0.00377
	(A1 * !A2 * B1 * !D1 * Y)	-0.00221	-0.00247	-0.00250
	(A1 * !A2 * B1 * !D1 * Y)	0.00398	0.00379	0.00374
	(!A2 * !B1 * D1 * Y)	-0.00111	-0.00112	-0.00116
	(!A2 * !B1 * D1 * Y)	0.00386	0.00388	0.00377
	(!A2 * !B1 * !D1 * Y)	-0.00158	-0.00158	-0.00157
	(!A2 * !B1 * !D1 * Y)	0.00387	0.00389	0.00377
	(!A1 * !A2 * B1 * D1 * Y)	-0.00107	-0.00108	-0.00112
	(!A1 * !A2 * B1 * D1 * Y)	0.00386	0.00388	0.00377
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00155	-0.00155	-0.00154
	(!A1 * !A2 * B1 * !D1 * Y)	0.00397	0.00390	0.00378

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00440	-0.00492	-0.00499
	(A2 * B1 * !D1 * Y)	0.00450	0.00403	0.00392
	(A2 * !B1 * D1 * Y)	-0.00209	-0.00212	-0.00219
	(A2 * !B1 * D1 * Y)	0.00416	0.00418	0.00399
	(A2 * !B1 * !D1 * Y)	-0.00291	-0.00292	-0.00290
	(A2 * !B1 * !D1 * Y)	0.00426	0.00424	0.00401
	(A1 * !A2 * B1 * !D1 * Y)	-0.00438	-0.00492	-0.00499
	(A1 * !A2 * B1 * !D1 * Y)	0.00451	0.00404	0.00392
	(!A2 * !B1 * D1 * Y)	-0.00210	-0.00212	-0.00219
	(!A2 * !B1 * D1 * Y)	0.00417	0.00418	0.00399
	(!A2 * !B1 * !D1 * Y)	-0.00292	-0.00292	-0.00290
	(!A2 * !B1 * !D1 * Y)	0.00426	0.00424	0.00401
	(!A1 * !A2 * B1 * D1 * Y)	-0.00203	-0.00205	-0.00212
	(!A1 * !A2 * B1 * D1 * Y)	0.00416	0.00418	0.00399
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00293	-0.00295	-0.00292
	(!A1 * !A2 * B1 * !D1 * Y)	0.00448	0.00427	0.00403

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00047	0.00047	0.00044
	(A2 * !C1 * Y)	-0.00214	-0.00215	-0.00217
	(A2 * !B1 * C1 * Y)	0.00049	0.00049	0.00044
	(A2 * !B1 * C1 * Y)	-0.00206	-0.00206	-0.00216
	(!A2 * !C1 * Y)	0.00047	0.00047	0.00044
	(!A2 * !C1 * Y)	-0.00214	-0.00215	-0.00217
	(!A2 * !B1 * C1 * Y)	0.00049	0.00049	0.00044
	(!A2 * !B1 * C1 * Y)	-0.00206	-0.00206	-0.00216
	(!A1 * !A2 * B1 * C1 * Y)	0.00057	0.00057	0.00046
	(!A1 * !A2 * B1 * C1 * Y)	-0.00192	-0.00193	-0.00213

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00107	0.00108	0.00100
	(A2 * !C1 * Y)	-0.00407	-0.00411	-0.00420
	(A2 * !B1 * C1 * Y)	0.00111	0.00110	0.00097
	(A2 * !B1 * C1 * Y)	-0.00390	-0.00392	-0.00418
	(!A2 * !C1 * Y)	0.00107	0.00106	0.00100
	(!A2 * !C1 * Y)	-0.00407	-0.00407	-0.00420
	(!A2 * !B1 * C1 * Y)	0.00111	0.00111	0.00097
	(!A2 * !B1 * C1 * Y)	-0.00390	-0.00393	-0.00418
	(!A1 * !A2 * B1 * C1 * Y)	0.00122	0.00121	0.00099
	(!A1 * !A2 * B1 * C1 * Y)	-0.00364	-0.00365	-0.00412
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00191	0.00191	0.00178
	(A2 * !C1 * Y)	-0.00474	-0.00477	-0.00496
	(A2 * !B1 * C1 * Y)	0.00198	0.00197	0.00174
	(A2 * !B1 * C1 * Y)	-0.00442	-0.00444	-0.00490
	(!A2 * !C1 * Y)	0.00190	0.00191	0.00178
	(!A2 * !C1 * Y)	-0.00471	-0.00476	-0.00496
	(!A2 * !B1 * C1 * Y)	0.00197	0.00198	0.00174
	(!A2 * !B1 * C1 * Y)	-0.00440	-0.00446	-0.00490
	(!A1 * !A2 * B1 * C1 * Y)	0.00219	0.00220	0.00179
	(!A1 * !A2 * B1 * C1 * Y)	-0.00387	-0.00394	-0.00478

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00042	-0.00043	-0.00043
	(A2 * !C1 * Y)	0.00217	0.00220	0.00219
	(A2 * !B1 * C1 * Y)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * C1 * Y)	0.00217	0.00220	0.00218
	(!A2 * !C1 * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * !C1 * Y)	0.00218	0.00220	0.00219
	(!A2 * !B1 * C1 * Y)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * C1 * Y)	0.00218	0.00220	0.00218
	(!A1 * !A2 * B1 * C1 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * B1 * C1 * Y)	0.00218	0.00220	0.00218
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00096	-0.00096	-0.00096
	(A2 * !C1 * Y)	0.00424	0.00426	0.00423
	(A2 * !B1 * C1 * Y)	-0.00094	-0.00094	-0.00093
	(A2 * !B1 * C1 * Y)	0.00424	0.00425	0.00422
	(!A2 * !C1 * Y)	-0.00097	-0.00096	-0.00096
	(!A2 * !C1 * Y)	0.00424	0.00426	0.00423
	(!A2 * !B1 * C1 * Y)	-0.00094	-0.00093	-0.00093
	(!A2 * !B1 * C1 * Y)	0.00424	0.00425	0.00422
	(!A1 * !A2 * B1 * C1 * Y)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * B1 * C1 * Y)	0.00424	0.00428	0.00422
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00171	-0.00174	-0.00171
	(A2 * !C1 * Y)	0.00497	0.00506	0.00499
	(A2 * !B1 * C1 * Y)	-0.00166	-0.00169	-0.00166
	(A2 * !B1 * C1 * Y)	0.00496	0.00504	0.00498
	(!A2 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(!A2 * !C1 * Y)	0.00498	0.00501	0.00499
	(!A2 * !B1 * C1 * Y)	-0.00167	-0.00167	-0.00166
	(!A2 * !B1 * C1 * Y)	0.00497	0.00500	0.00498
	(!A1 * !A2 * B1 * C1 * Y)	-0.00165	-0.00166	-0.00164
	(!A1 * !A2 * B1 * C1 * Y)	0.00496	0.00501	0.00498

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00276	0.00282	0.00259	0.00280	0.00281	0.79362
sky130_fd_sc_hs__o2111a_2	0.00278	0.00278	0.00275	0.00284	0.00294	1.61494
sky130_fd_sc_hs__o2111a_4	0.00533	0.00571	0.00483	0.00497	0.00501	3.05069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	2.01148	10.78010
sky130_fd_sc_hs__o2111a_2	0.00000	2.33098	7.25467
sky130_fd_sc_hs__o2111a_4	0.00000	5.31205	22.13820

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)	0.23544	0.92539	7.60285
	A2->X (RR)	0.20573	0.88444	7.52172
	B1->X (RR)	0.22519	0.93346	7.80483
	C1->X (RR)	0.21379	0.94429	7.89255
	D1->X (RR)	0.19495	0.93745	7.85456
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.26123	0.86878	7.72286
	A2->X (RR)	0.23141	0.82877	7.64763
	B1->X (RR)	0.25267	0.88074	7.97888
	C1->X (RR)	0.24019	0.89641	8.09103
	D1->X (RR)	0.21922	0.89407	8.09658
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.28614	0.81102	7.69737
	A2->X (RR)	0.25738	0.77931	7.63246
	B1->X (RR)	0.27604	0.82861	7.96931
	C1->X (RR)	0.26297	0.85654	8.13727
	D1->X (RR)	0.23327	0.84410	8.14286

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.28689	0.81810	4.68142
	A2->X (FF)	0.26728	0.82972	4.74731
	B1->X (FF)	0.16781	0.72521	4.48863
	C1->X (FF)	0.15337	0.69790	4.38351
	D1->X (FF)	0.13133	0.65540	4.27340
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.33819	0.86143	5.01113
	A2->X (FF)	0.31851	0.87664	5.10905
	B1->X (FF)	0.16311	0.69441	4.61494
	C1->X (FF)	0.15176	0.67103	4.51981
	D1->X (FF)	0.13328	0.63659	4.41169
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.38143	0.85508	5.04083
	A2->X (FF)	0.36307	0.88989	5.24284
	B1->X (FF)	0.20908	0.72756	4.83514
	C1->X (FF)	0.19427	0.70089	4.71441
	D1->X (FF)	0.17058	0.66201	4.60237

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01275	0.01282	0.02423
	A1	0.00505	0.00511	0.01668
	A2	0.01099	0.01100	0.02463
	A2	0.00425	0.00426	0.01792
	B1	0.01160	0.01172	0.02655
	B1	0.00428	0.00453	0.02078
	C1	0.01083	0.01099	0.02575
	C1	0.00427	0.00457	0.02074
	D1	0.01001	0.01037	0.02448
	D1	0.00423	0.00477	0.02003
sky130_fd_sc_hs__o2111a_2	A1	0.01567	0.01577	0.02680
	A1	0.00796	0.00806	0.01945
	A2	0.01380	0.01391	0.02689
	A2	0.00713	0.00723	0.02056
	B1	0.01456	0.01466	0.02914
	B1	0.00810	0.00819	0.02285
	C1	0.01373	0.01387	0.02826
	C1	0.00692	0.00732	0.02309
	D1	0.01293	0.01328	0.02804
	D1	0.00686	0.00748	0.02358

sky130_fd_sc_hs__o2111a_4	**A1**	0.03249	0.03226	0.05228
	A1	0.01683	0.01659	0.03728
	A2	0.02913	0.02894	0.05130
	A2	0.01513	0.01493	0.03796
	B1	0.03021	0.03006	0.05702
	B1	0.01742	0.01726	0.04460
	C1	0.02858	0.02848	0.05478
	C1	0.01743	0.01733	0.04385
	D1	0.02667	0.02710	0.05607
	D1	0.01488	0.01594	0.04783

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00496	0.00525	0.01801
	A1	0.01248	0.01275	0.02527
	A2	0.00501	0.00572	0.02112
	A2	0.01157	0.01227	0.02761
	B1	0.00401	0.00498	0.02253
	B1	0.01018	0.01113	0.02834
	C1	0.00352	0.00450	0.02154
	C1	0.00897	0.00995	0.02688
	D1	0.00294	0.00385	0.02130
	D1	0.00766	0.00856	0.02551

sky130_fd_sc_hs__o2111a_2	**A1**	0.00777	0.00784	0.02087
	A1	0.01528	0.01535	0.02756
	A2	0.00781	0.00820	0.02443
	A2	0.01429	0.01475	0.02992
	B1	0.00636	0.00758	0.02480
	B1	0.01274	0.01392	0.03101
	C1	0.00583	0.00697	0.02416
	C1	0.01145	0.01258	0.02942
	D1	0.00509	0.00627	0.02359
	D1	0.01001	0.01112	0.02808
sky130_fd_sc_hs__o2111a_4	**A1**	0.01553	0.01500	0.03963
	A1	0.03079	0.03036	0.05357
	A2	0.01555	0.01562	0.04631
	A2	0.02918	0.02921	0.05708
	B1	0.01292	0.01475	0.04869
	B1	0.02553	0.02732	0.05978
	C1	0.01184	0.01368	0.04553
	C1	0.02290	0.02462	0.05617
	D1	0.00990	0.01208	0.04463
	D1	0.01925	0.02134	0.05326

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)**	0.00179	0.00155	0.00148
	(A2 * B1 * C1 * D1 * X)	-0.00125	-0.00153	-0.00156
	(A2 * B1 * C1 * !D1 * !X)	0.00139	0.00140	0.00139
	(A2 * B1 * C1 * !D1 * !X)	-0.00164	-0.00166	-0.00166
	(A2 * B1 * !C1 * !X)	0.00139	0.00141	0.00139
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00166
	(A2 * !B1 * !X)	0.00139	0.00141	0.00139
	(A2 * !B1 * !X)	-0.00164	-0.00166	-0.00166
	(!A2 * B1 * C1 * !D1 * !X)	0.00127	0.00128	0.00127
	(!A2 * B1 * C1 * !D1 * !X)	-0.00167	-0.00168	-0.00166
	(!A2 * B1 * !C1 * D1 * !X)	0.00129	0.00129	0.00128
	(!A2 * B1 * !C1 * D1 * !X)	-0.00167	-0.00167	-0.00167
	(!A2 * B1 * !C1 * !D1 * !X)	0.00128	0.00129	0.00128
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00167	-0.00167	-0.00167
	(!A2 * !B1 * C1 * D1 * !X)	0.00132	0.00133	0.00132
	(!A2 * !B1 * C1 * D1 * !X)	-0.00167	-0.00167	-0.00167
	(!A2 * !B1 * !D1 * !X)	0.00132	0.00133	0.00131
	(!A2 * !B1 * !D1 * !X)	-0.00167	-0.00168	-0.00167
	(!A2 * !B1 * !C1 * D1 * !X)	0.00132	0.00133	0.00131
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00167	-0.00168	-0.00167

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00181	0.00157	0.00150
	(A2 * B1 * C1 * D1 * X)	-0.00127	-0.00154	-0.00158
	(A2 * B1 * C1 * !D1 * !X)	0.00145	0.00144	0.00145
	(A2 * B1 * C1 * !D1 * !X)	-0.00162	-0.00162	-0.00163
	(A2 * B1 * !C1 * !X)	0.00145	0.00144	0.00145
	(A2 * B1 * !C1 * !X)	-0.00162	-0.00162	-0.00163
	(A2 * !B1 * !X)	0.00145	0.00144	0.00145
	(A2 * !B1 * !X)	-0.00162	-0.00162	-0.00163
	(!A2 * B1 * C1 * !D1 * !X)	0.00133	0.00135	0.00133
	(!A2 * B1 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !C1 * D1 * !X)	0.00135	0.00135	0.00135
	(!A2 * B1 * !C1 * D1 * !X)	-0.00165	-0.00165	-0.00165
	(!A2 * B1 * !C1 * !D1 * !X)	0.00135	0.00135	0.00134
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00165	-0.00165	-0.00165
	(!A2 * !B1 * C1 * D1 * !X)	0.00138	0.00138	0.00138
	(!A2 * !B1 * C1 * D1 * !X)	-0.00165	-0.00165	-0.00165
	(!A2 * !B1 * !D1 * !X)	0.00138	0.00139	0.00137
	(!A2 * !B1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * D1 * !X)	0.00138	0.00139	0.00137
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00362	0.00308	0.00295
	(A2 * B1 * C1 * D1 * X)	-0.00239	-0.00297	-0.00306
	(A2 * B1 * C1 * !D1 * !X)	0.00260	0.00260	0.00259
	(A2 * B1 * C1 * !D1 * !X)	-0.00341	-0.00342	-0.00343
	(A2 * B1 * !C1 * !X)	0.00260	0.00260	0.00259
	(A2 * B1 * !C1 * !X)	-0.00341	-0.00342	-0.00343
	(A2 * !B1 * !X)	0.00260	0.00260	0.00259
	(A2 * !B1 * !X)	-0.00340	-0.00342	-0.00343
	(!A2 * B1 * C1 * !D1 * !X)	0.00238	0.00241	0.00238
	(!A2 * B1 * C1 * !D1 * !X)	-0.00346	-0.00347	-0.00345
	(!A2 * B1 * !C1 * D1 * !X)	0.00240	0.00241	0.00240
	(!A2 * B1 * !C1 * D1 * !X)	-0.00346	-0.00346	-0.00345
	(!A2 * B1 * !C1 * !D1 * !X)	0.00240	0.00240	0.00240
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00346	-0.00346	-0.00346
	(!A2 * !B1 * C1 * D1 * !X)	0.00245	0.00247	0.00246
	(!A2 * !B1 * C1 * D1 * !X)	-0.00345	-0.00346	-0.00345
	(!A2 * !B1 * !D1 * !X)	0.00244	0.00246	0.00245
	(!A2 * !B1 * !D1 * !X)	-0.00345	-0.00347	-0.00346
	(!A2 * !B1 * !C1 * D1 * !X)	0.00244	0.00246	0.00245
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00345	-0.00346	-0.00346

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)**	-0.00128	-0.00129	-0.00128
	(A2 * B1 * C1 * D1 * X)	0.00176	0.00178	0.00177
	(A2 * B1 * C1 * !D1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * C1 * !D1 * !X)	0.00166	0.00168	0.00167
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * !C1 * !X)	0.00166	0.00167	0.00167
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * !B1 * !X)	0.00166	0.00168	0.00167
	(!A2 * B1 * C1 * !D1 * !X)	-0.00115	-0.00127	-0.00127
	(!A2 * B1 * C1 * !D1 * !X)	0.00170	0.00170	0.00169
	(!A2 * B1 * !C1 * D1 * !X)	-0.00118	-0.00128	-0.00128
	(!A2 * B1 * !C1 * D1 * !X)	0.00169	0.00170	0.00169
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00129	-0.00128
	(!A2 * B1 * !C1 * !D1 * !X)	0.00169	0.00170	0.00169
	(!A2 * !B1 * C1 * D1 * !X)	-0.00125	-0.00131	-0.00132
	(!A2 * !B1 * C1 * D1 * !X)	0.00170	0.00171	0.00169
	(!A2 * !B1 * !D1 * !X)	-0.00126	-0.00131	-0.00131
	(!A2 * !B1 * !D1 * !X)	0.00170	0.00171	0.00169
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00127	-0.00131	-0.00131
	(!A2 * !B1 * !C1 * D1 * !X)	0.00170	0.00171	0.00169

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00135	-0.00136	-0.00135
	(A2 * B1 * C1 * D1 * X)	0.00171	0.00173	0.00172
	(A2 * B1 * C1 * !D1 * !X)	-0.00140	-0.00142	-0.00141
	(A2 * B1 * C1 * !D1 * !X)	0.00165	0.00167	0.00166
	(A2 * B1 * !C1 * !X)	-0.00140	-0.00141	-0.00141
	(A2 * B1 * !C1 * !X)	0.00165	0.00167	0.00166
	(A2 * !B1 * !X)	-0.00140	-0.00141	-0.00141
	(A2 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A2 * B1 * C1 * !D1 * !X)	-0.00121	-0.00132	-0.00133
	(!A2 * B1 * C1 * !D1 * !X)	0.00169	0.00169	0.00168
	(!A2 * B1 * !C1 * D1 * !X)	-0.00124	-0.00133	-0.00135
	(!A2 * B1 * !C1 * D1 * !X)	0.00168	0.00169	0.00168
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00124	-0.00133	-0.00134
	(!A2 * B1 * !C1 * !D1 * !X)	0.00168	0.00169	0.00168
	(!A2 * !B1 * C1 * D1 * !X)	-0.00130	-0.00136	-0.00137
	(!A2 * !B1 * C1 * D1 * !X)	0.00169	0.00170	0.00168
	(!A2 * !B1 * !D1 * !X)	-0.00131	-0.00136	-0.00137
	(!A2 * !B1 * !D1 * !X)	0.00168	0.00170	0.00168
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00131	-0.00136	-0.00137
	(!A2 * !B1 * !C1 * D1 * !X)	0.00168	0.00170	0.00168

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00254	-0.00255	-0.00253
	(A2 * B1 * C1 * D1 * X)	0.00345	0.00348	0.00347
	(A2 * B1 * C1 * !D1 * !X)	-0.00251	-0.00253	-0.00252
	(A2 * B1 * C1 * !D1 * !X)	0.00345	0.00350	0.00347
	(A2 * B1 * !C1 * !X)	-0.00251	-0.00253	-0.00251
	(A2 * B1 * !C1 * !X)	0.00345	0.00350	0.00347
	(A2 * !B1 * !X)	-0.00251	-0.00253	-0.00251
	(A2 * !B1 * !X)	0.00345	0.00351	0.00347
	(!A2 * B1 * C1 * !D1 * !X)	-0.00216	-0.00235	-0.00238
	(!A2 * B1 * C1 * !D1 * !X)	0.00355	0.00356	0.00353
	(!A2 * B1 * !C1 * D1 * !X)	-0.00219	-0.00237	-0.00240
	(!A2 * B1 * !C1 * D1 * !X)	0.00353	0.00356	0.00353
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00219	-0.00237	-0.00240
	(!A2 * B1 * !C1 * !D1 * !X)	0.00353	0.00355	0.00353
	(!A2 * !B1 * C1 * D1 * !X)	-0.00228	-0.00241	-0.00243
	(!A2 * !B1 * C1 * D1 * !X)	0.00352	0.00356	0.00353
	(!A2 * !B1 * !D1 * !X)	-0.00230	-0.00242	-0.00243
	(!A2 * !B1 * !D1 * !X)	0.00351	0.00356	0.00353
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00230	-0.00242	-0.00243
	(!A2 * !B1 * !C1 * D1 * !X)	0.00351	0.00356	0.00353

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)**	0.00152	0.00153	0.00152
	(A1 * B1 * C1 * D1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * C1 * !D1 * !X)	0.00131	0.00133	0.00132
	(A1 * B1 * C1 * !D1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * B1 * !C1 * D1 * !X)	0.00132	0.00133	0.00132
	(A1 * B1 * !C1 * D1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * B1 * !C1 * !D1 * !X)	0.00132	0.00133	0.00132
	(A1 * B1 * !C1 * !D1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * !B1 * C1 * D1 * !X)	0.00132	0.00133	0.00132
	(A1 * !B1 * C1 * D1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * !B1 * !D1 * !X)	0.00132	0.00133	0.00132
	(A1 * !B1 * !D1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * !B1 * !C1 * D1 * !X)	0.00132	0.00133	0.00132
	(A1 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00163	-0.00163
	(!A1 * B1 * C1 * !D1 * !X)	0.00120	0.00121	0.00121
	(!A1 * B1 * C1 * !D1 * !X)	-0.00164	-0.00164	-0.00164
	(!A1 * B1 * !C1 * D1 * !X)	0.00122	0.00123	0.00122
	(!A1 * B1 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !C1 * !D1 * !X)	0.00121	0.00122	0.00122
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * C1 * D1 * !X)	0.00125	0.00127	0.00125
	(!A1 * !B1 * C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !D1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !C1 * D1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00149	0.00149	0.00149
	(A1 * B1 * C1 * D1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * B1 * C1 * !D1 * !X)	0.00133	0.00134	0.00133
	(A1 * B1 * C1 * !D1 * !X)	-0.00158	-0.00159	-0.00159
	(A1 * B1 * !C1 * D1 * !X)	0.00133	0.00134	0.00133
	(A1 * B1 * !C1 * D1 * !X)	-0.00158	-0.00159	-0.00159
	(A1 * B1 * !C1 * !D1 * !X)	0.00133	0.00134	0.00133
	(A1 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00159	-0.00160
	(A1 * !B1 * C1 * D1 * !X)	0.00133	0.00134	0.00133
	(A1 * !B1 * C1 * D1 * !X)	-0.00158	-0.00159	-0.00159
	(A1 * !B1 * !D1 * !X)	0.00133	0.00134	0.00133
	(A1 * !B1 * !D1 * !X)	-0.00158	-0.00159	-0.00160
	(A1 * !B1 * !C1 * D1 * !X)	0.00133	0.00134	0.00133
	(A1 * !B1 * !C1 * D1 * !X)	-0.00158	-0.00159	-0.00159
	(!A1 * B1 * C1 * !D1 * !X)	0.00122	0.00122	0.00123
	(!A1 * B1 * C1 * !D1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * B1 * !C1 * D1 * !X)	0.00124	0.00124	0.00124
	(!A1 * B1 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00161
	(!A1 * B1 * !C1 * !D1 * !X)	0.00123	0.00124	0.00123
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * !B1 * C1 * D1 * !X)	0.00127	0.00127	0.00127
	(!A1 * !B1 * C1 * D1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * !B1 * !D1 * !X)	0.00127	0.00127	0.00126
	(!A1 * !B1 * !D1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * !B1 * !C1 * D1 * !X)	0.00127	0.00127	0.00126
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00161	-0.00161

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00332	0.00334	0.00333
	(A1 * B1 * C1 * D1 * X)	-0.00137	-0.00138	-0.00137
	(A1 * B1 * C1 * !D1 * !X)	0.00271	0.00274	0.00271
	(A1 * B1 * C1 * !D1 * !X)	-0.00341	-0.00345	-0.00345
	(A1 * B1 * !C1 * D1 * !X)	0.00271	0.00274	0.00272
	(A1 * B1 * !C1 * D1 * !X)	-0.00341	-0.00345	-0.00345
	(A1 * B1 * !C1 * !D1 * !X)	0.00271	0.00273	0.00271
	(A1 * B1 * !C1 * !D1 * !X)	-0.00341	-0.00345	-0.00346
	(A1 * !B1 * C1 * D1 * !X)	0.00271	0.00274	0.00272
	(A1 * !B1 * C1 * D1 * !X)	-0.00340	-0.00345	-0.00345
	(A1 * !B1 * !D1 * !X)	0.00271	0.00273	0.00271
	(A1 * !B1 * !D1 * !X)	-0.00341	-0.00345	-0.00346
	(A1 * !B1 * !C1 * D1 * !X)	0.00271	0.00274	0.00271
	(A1 * !B1 * !C1 * D1 * !X)	-0.00341	-0.00345	-0.00345
	(!A1 * B1 * C1 * !D1 * !X)	0.00246	0.00248	0.00246
	(!A1 * B1 * C1 * !D1 * !X)	-0.00347	-0.00349	-0.00347
	(!A1 * B1 * !C1 * D1 * !X)	0.00248	0.00251	0.00249
	(!A1 * B1 * !C1 * D1 * !X)	-0.00348	-0.00349	-0.00348
	(!A1 * B1 * !C1 * !D1 * !X)	0.00248	0.00250	0.00248
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00348	-0.00349	-0.00348
	(!A1 * !B1 * C1 * D1 * !X)	0.00257	0.00256	0.00256
	(!A1 * !B1 * C1 * D1 * !X)	-0.00349	-0.00348	-0.00348
	(!A1 * !B1 * !D1 * !X)	0.00256	0.00255	0.00255
	(!A1 * !B1 * !D1 * !X)	-0.00349	-0.00348	-0.00348
	(!A1 * !B1 * !C1 * D1 * !X)	0.00257	0.00256	0.00255
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00349	-0.00348	-0.00348

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)**	-0.00131	-0.00131	-0.00136
	(A1 * B1 * C1 * D1 * X)	0.00091	0.00090	0.00087
	(A1 * B1 * C1 * !D1 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * B1 * C1 * !D1 * !X)	0.00163	0.00165	0.00164
	(A1 * B1 * !C1 * D1 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * B1 * !C1 * D1 * !X)	0.00163	0.00165	0.00164
	(A1 * B1 * !C1 * !D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * B1 * !C1 * !D1 * !X)	0.00163	0.00164	0.00164
	(A1 * !B1 * C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * C1 * D1 * !X)	0.00164	0.00165	0.00164
	(A1 * !B1 * !D1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !B1 * !D1 * !X)	0.00164	0.00164	0.00164
	(A1 * !B1 * !C1 * D1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !B1 * !C1 * D1 * !X)	0.00164	0.00164	0.00164
	(!A1 * B1 * C1 * !D1 * !X)	-0.00109	-0.00120	-0.00121
	(!A1 * B1 * C1 * !D1 * !X)	0.00167	0.00168	0.00167
	(!A1 * B1 * !C1 * D1 * !X)	-0.00112	-0.00122	-0.00122
	(!A1 * B1 * !C1 * D1 * !X)	0.00166	0.00168	0.00167
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00113	-0.00122	-0.00122
	(!A1 * B1 * !C1 * !D1 * !X)	0.00166	0.00168	0.00167
	(!A1 * !B1 * C1 * D1 * !X)	-0.00119	-0.00125	-0.00125
	(!A1 * !B1 * C1 * D1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !D1 * !X)	-0.00120	-0.00125	-0.00125
	(!A1 * !B1 * !D1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00120	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * D1 * !X)	0.00167	0.00168	0.00167

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00134	-0.00134	-0.00138
	(A1 * B1 * C1 * D1 * X)	0.00085	0.00085	0.00082
	(A1 * B1 * C1 * !D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * C1 * !D1 * !X)	0.00161	0.00162	0.00161
	(A1 * B1 * !C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !C1 * D1 * !X)	0.00161	0.00162	0.00161
	(A1 * B1 * !C1 * !D1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * B1 * !C1 * !D1 * !X)	0.00161	0.00162	0.00161
	(A1 * !B1 * C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * C1 * D1 * !X)	0.00161	0.00162	0.00161
	(A1 * !B1 * !D1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !B1 * !D1 * !X)	0.00161	0.00162	0.00161
	(A1 * !B1 * !C1 * D1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !B1 * !C1 * D1 * !X)	0.00161	0.00162	0.00161
	(!A1 * B1 * C1 * !D1 * !X)	-0.00110	-0.00121	-0.00123
	(!A1 * B1 * C1 * !D1 * !X)	0.00165	0.00165	0.00164
	(!A1 * B1 * !C1 * D1 * !X)	-0.00113	-0.00122	-0.00124
	(!A1 * B1 * !C1 * D1 * !X)	0.00164	0.00165	0.00164
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00113	-0.00123	-0.00123
	(!A1 * B1 * !C1 * !D1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !B1 * C1 * D1 * !X)	-0.00119	-0.00125	-0.00126
	(!A1 * !B1 * C1 * D1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !D1 * !X)	-0.00120	-0.00125	-0.00126
	(!A1 * !B1 * !D1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00120	-0.00125	-0.00126
	(!A1 * !B1 * !C1 * D1 * !X)	0.00164	0.00165	0.00164

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00288	-0.00288	-0.00298
	(A1 * B1 * C1 * D1 * X)	0.00182	0.00182	0.00174
	(A1 * B1 * C1 * !D1 * !X)	-0.00264	-0.00266	-0.00264
	(A1 * B1 * C1 * !D1 * !X)	0.00347	0.00349	0.00348
	(A1 * B1 * !C1 * D1 * !X)	-0.00263	-0.00266	-0.00264
	(A1 * B1 * !C1 * D1 * !X)	0.00347	0.00349	0.00348
	(A1 * B1 * !C1 * !D1 * !X)	-0.00263	-0.00266	-0.00265
	(A1 * B1 * !C1 * !D1 * !X)	0.00346	0.00349	0.00348
	(A1 * !B1 * C1 * D1 * !X)	-0.00263	-0.00265	-0.00264
	(A1 * !B1 * C1 * D1 * !X)	0.00346	0.00349	0.00348
	(A1 * !B1 * !D1 * !X)	-0.00263	-0.00266	-0.00265
	(A1 * !B1 * !D1 * !X)	0.00346	0.00349	0.00348
	(A1 * !B1 * !C1 * D1 * !X)	-0.00263	-0.00265	-0.00264
	(A1 * !B1 * !C1 * D1 * !X)	0.00346	0.00349	0.00348
	(!A1 * B1 * C1 * !D1 * !X)	-0.00221	-0.00245	-0.00246
	(!A1 * B1 * C1 * !D1 * !X)	0.00357	0.00357	0.00355
	(!A1 * B1 * !C1 * D1 * !X)	-0.00226	-0.00247	-0.00249
	(!A1 * B1 * !C1 * D1 * !X)	0.00355	0.00357	0.00355
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00226	-0.00247	-0.00248
	(!A1 * B1 * !C1 * !D1 * !X)	0.00355	0.00357	0.00355
	(!A1 * !B1 * C1 * D1 * !X)	-0.00240	-0.00253	-0.00254
	(!A1 * !B1 * C1 * D1 * !X)	0.00357	0.00357	0.00355
	(!A1 * !B1 * !D1 * !X)	-0.00243	-0.00253	-0.00254
	(!A1 * !B1 * !D1 * !X)	0.00356	0.00357	0.00355
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00243	-0.00253	-0.00254
	(!A1 * !B1 * !C1 * D1 * !X)	0.00356	0.00357	0.00355

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)**	0.00117	0.00118	0.00118
	(A2 * C1 * !D1 * !X)	-0.00142	-0.00142	-0.00142
	(A2 * !C1 * D1 * !X)	0.00122	0.00122	0.00122
	(A2 * !C1 * D1 * !X)	-0.00142	-0.00142	-0.00142
	(A2 * !C1 * !D1 * !X)	0.00121	0.00123	0.00122
	(A2 * !C1 * !D1 * !X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * C1 * !D1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * C1 * !D1 * !X)	-0.00142	-0.00142	-0.00142
	(A1 * !A2 * !C1 * D1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !C1 * D1 * !X)	-0.00142	-0.00142	-0.00142
	(A1 * !A2 * !C1 * !D1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00143	-0.00143	-0.00142
	(!A1 * !A2 * C1 * D1 * !X)	0.00062	0.00062	0.00061
	(!A1 * !A2 * C1 * D1 * !X)	-0.00138	-0.00138	-0.00137
	(!A1 * !A2 * C1 * !D1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00142	-0.00143	-0.00142
	(!A1 * !A2 * !C1 * D1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00142	-0.00143	-0.00142
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00142	-0.00143	-0.00142

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00122	0.00123	0.00122
	(A2 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(A2 * !C1 * D1 * !X)	0.00125	0.00126	0.00126
	(A2 * !C1 * D1 * !X)	-0.00164	-0.00164	-0.00164
	(A2 * !C1 * !D1 * !X)	0.00125	0.00126	0.00125
	(A2 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(A1 * !A2 * C1 * !D1 * !X)	-0.00164	-0.00164	-0.00164
	(A1 * !A2 * !C1 * D1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !C1 * !D1 * !X)	0.00125	0.00126	0.00125
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * C1 * D1 * !X)	0.00067	0.00067	0.00066
	(!A1 * !A2 * C1 * D1 * !X)	-0.00159	-0.00159	-0.00158
	(!A1 * !A2 * C1 * !D1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !C1 * D1 * !X)	0.00081	0.00081	0.00080
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00239	0.00242	0.00241
	(A2 * C1 * !D1 * !X)	-0.00279	-0.00280	-0.00279
	(A2 * !C1 * D1 * !X)	0.00245	0.00249	0.00247
	(A2 * !C1 * D1 * !X)	-0.00278	-0.00280	-0.00279
	(A2 * !C1 * !D1 * !X)	0.00245	0.00248	0.00246
	(A2 * !C1 * !D1 * !X)	-0.00279	-0.00281	-0.00279
	(A1 * !A2 * C1 * !D1 * !X)	0.00239	0.00241	0.00240
	(A1 * !A2 * C1 * !D1 * !X)	-0.00279	-0.00280	-0.00279
	(A1 * !A2 * !C1 * D1 * !X)	0.00247	0.00249	0.00247
	(A1 * !A2 * !C1 * D1 * !X)	-0.00280	-0.00280	-0.00279
	(A1 * !A2 * !C1 * !D1 * !X)	0.00246	0.00247	0.00246
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00280	-0.00280	-0.00279
	(!A1 * !A2 * C1 * D1 * !X)	0.00123	0.00125	0.00124
	(!A1 * !A2 * C1 * D1 * !X)	-0.00266	-0.00268	-0.00265
	(!A1 * !A2 * C1 * !D1 * !X)	0.00150	0.00151	0.00150
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00280	-0.00280	-0.00280
	(!A1 * !A2 * !C1 * D1 * !X)	0.00148	0.00150	0.00149
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00280	-0.00282	-0.00280
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00150	0.00152	0.00150
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00280	-0.00282	-0.00280

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)**	-0.00105	-0.00118	-0.00118
	(A2 * C1 * !D1 * !X)	0.00148	0.00146	0.00144
	(A2 * !C1 * D1 * !X)	-0.00114	-0.00120	-0.00121
	(A2 * !C1 * D1 * !X)	0.00147	0.00146	0.00145
	(A2 * !C1 * !D1 * !X)	-0.00117	-0.00121	-0.00121
	(A2 * !C1 * !D1 * !X)	0.00145	0.00146	0.00144
	(A1 * !A2 * C1 * !D1 * !X)	-0.00103	-0.00118	-0.00118
	(A1 * !A2 * C1 * !D1 * !X)	0.00149	0.00146	0.00144
	(A1 * !A2 * !C1 * D1 * !X)	-0.00113	-0.00120	-0.00121
	(A1 * !A2 * !C1 * D1 * !X)	0.00148	0.00145	0.00145
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00117	-0.00120	-0.00121
	(A1 * !A2 * !C1 * !D1 * !X)	0.00145	0.00144	0.00144
	(!A1 * !A2 * C1 * D1 * !X)	-0.00051	-0.00052	-0.00053
	(!A1 * !A2 * C1 * D1 * !X)	0.00150	0.00150	0.00146
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * C1 * !D1 * !X)	0.00150	0.00151	0.00146
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * !C1 * D1 * !X)	0.00152	0.00150	0.00147
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00146	0.00145	0.00145

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00108	-0.00120	-0.00122
	(A2 * C1 * !D1 * !X)	0.00171	0.00170	0.00168
	(A2 * !C1 * D1 * !X)	-0.00117	-0.00123	-0.00123
	(A2 * !C1 * D1 * !X)	0.00170	0.00169	0.00168
	(A2 * !C1 * !D1 * !X)	-0.00120	-0.00123	-0.00123
	(A2 * !C1 * !D1 * !X)	0.00168	0.00169	0.00168
	(A1 * !A2 * C1 * !D1 * !X)	-0.00108	-0.00121	-0.00122
	(A1 * !A2 * C1 * !D1 * !X)	0.00173	0.00170	0.00168
	(A1 * !A2 * !C1 * D1 * !X)	-0.00116	-0.00122	-0.00123
	(A1 * !A2 * !C1 * D1 * !X)	0.00170	0.00168	0.00168
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00120	-0.00123	-0.00123
	(A1 * !A2 * !C1 * !D1 * !X)	0.00168	0.00167	0.00168
	(!A1 * !A2 * C1 * D1 * !X)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * C1 * D1 * !X)	0.00173	0.00174	0.00170
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * C1 * !D1 * !X)	0.00173	0.00173	0.00169
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00081	-0.00081	-0.00080
	(!A1 * !A2 * !C1 * D1 * !X)	0.00174	0.00173	0.00170
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00169	0.00169	0.00168

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00215	-0.00238	-0.00241
	(A2 * C1 * !D1 * !X)	0.00292	0.00290	0.00286
	(A2 * !C1 * D1 * !X)	-0.00229	-0.00242	-0.00243
	(A2 * !C1 * D1 * !X)	0.00288	0.00290	0.00287
	(A2 * !C1 * !D1 * !X)	-0.00234	-0.00243	-0.00243
	(A2 * !C1 * !D1 * !X)	0.00286	0.00289	0.00286
	(A1 * !A2 * C1 * !D1 * !X)	-0.00211	-0.00238	-0.00240
	(A1 * !A2 * C1 * !D1 * !X)	0.00294	0.00290	0.00286
	(A1 * !A2 * !C1 * D1 * !X)	-0.00229	-0.00241	-0.00243
	(A1 * !A2 * !C1 * D1 * !X)	0.00291	0.00288	0.00287
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00235	-0.00242	-0.00243
	(A1 * !A2 * !C1 * !D1 * !X)	0.00287	0.00287	0.00286
	(!A1 * !A2 * C1 * D1 * !X)	-0.00100	-0.00101	-0.00103
	(!A1 * !A2 * C1 * D1 * !X)	0.00298	0.00298	0.00292
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00150	-0.00151	-0.00150
	(!A1 * !A2 * C1 * !D1 * !X)	0.00295	0.00299	0.00291
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00148	-0.00150	-0.00149
	(!A1 * !A2 * !C1 * D1 * !X)	0.00300	0.00297	0.00291
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00150	-0.00152	-0.00150
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00289	0.00289	0.00288

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)**	0.00122	0.00123	0.00123
	(A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * D1 * !X)	0.00056	0.00056	0.00056
	(A2 * !B1 * D1 * !X)	-0.00150	-0.00150	-0.00149
	(A2 * !B1 * !D1 * !X)	0.00068	0.00068	0.00067
	(A2 * !B1 * !D1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * B1 * !D1 * !X)	0.00122	0.00123	0.00123
	(A1 * !A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00149
	(!A2 * !B1 * D1 * !X)	0.00056	0.00056	0.00056
	(!A2 * !B1 * D1 * !X)	-0.00150	-0.00150	-0.00149
	(!A2 * !B1 * !D1 * !X)	0.00068	0.00068	0.00067
	(!A2 * !B1 * !D1 * !X)	-0.00150	-0.00150	-0.00150
	(!A1 * !A2 * B1 * D1 * !X)	0.00058	0.00058	0.00056
	(!A1 * !A2 * B1 * D1 * !X)	-0.00149	-0.00149	-0.00149
	(!A1 * !A2 * B1 * !D1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00149

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00123	0.00124	0.00124
	(A2 * B1 * !D1 * !X)	-0.00168	-0.00169	-0.00168
	(A2 * !B1 * D1 * !X)	0.00059	0.00060	0.00060
	(A2 * !B1 * D1 * !X)	-0.00169	-0.00169	-0.00167
	(A2 * !B1 * !D1 * !X)	0.00075	0.00075	0.00075
	(A2 * !B1 * !D1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * B1 * !D1 * !X)	0.00123	0.00124	0.00124
	(A1 * !A2 * B1 * !D1 * !X)	-0.00168	-0.00169	-0.00168
	(!A2 * !B1 * D1 * !X)	0.00059	0.00060	0.00060
	(!A2 * !B1 * D1 * !X)	-0.00169	-0.00169	-0.00167
	(!A2 * !B1 * !D1 * !X)	0.00075	0.00075	0.00075
	(!A2 * !B1 * !D1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * B1 * D1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A2 * B1 * D1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * !A2 * B1 * !D1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00253	0.00256	0.00254
	(A2 * B1 * !D1 * !X)	-0.00284	-0.00286	-0.00284
	(A2 * !B1 * D1 * !X)	0.00122	0.00122	0.00124
	(A2 * !B1 * D1 * !X)	-0.00286	-0.00286	-0.00282
	(A2 * !B1 * !D1 * !X)	0.00155	0.00157	0.00155
	(A2 * !B1 * !D1 * !X)	-0.00286	-0.00289	-0.00287
	(A1 * !A2 * B1 * !D1 * !X)	0.00253	0.00254	0.00254
	(A1 * !A2 * B1 * !D1 * !X)	-0.00285	-0.00286	-0.00284
	(!A2 * !B1 * D1 * !X)	0.00122	0.00122	0.00124
	(!A2 * !B1 * D1 * !X)	-0.00286	-0.00286	-0.00282
	(!A2 * !B1 * !D1 * !X)	0.00155	0.00157	0.00155
	(!A2 * !B1 * !D1 * !X)	-0.00286	-0.00288	-0.00287
	(!A1 * !A2 * B1 * D1 * !X)	0.00119	0.00119	0.00121
	(!A1 * !A2 * B1 * D1 * !X)	-0.00283	-0.00284	-0.00282
	(!A1 * !A2 * B1 * !D1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00286	-0.00287	-0.00286

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)**	-0.00108	-0.00119	-0.00121
	(A2 * B1 * !D1 * !X)	0.00166	0.00156	0.00152
	(A2 * !B1 * D1 * !X)	-0.00050	-0.00050	-0.00051
	(A2 * !B1 * D1 * !X)	0.00156	0.00157	0.00153
	(A2 * !B1 * !D1 * !X)	-0.00068	-0.00068	-0.00067
	(A2 * !B1 * !D1 * !X)	0.00159	0.00159	0.00153
	(A1 * !A2 * B1 * !D1 * !X)	-0.00108	-0.00119	-0.00121
	(A1 * !A2 * B1 * !D1 * !X)	0.00166	0.00156	0.00152
	(!A2 * !B1 * D1 * !X)	-0.00050	-0.00050	-0.00051
	(!A2 * !B1 * D1 * !X)	0.00156	0.00157	0.00153
	(!A2 * !B1 * !D1 * !X)	-0.00068	-0.00068	-0.00067
	(!A2 * !B1 * !D1 * !X)	0.00159	0.00159	0.00153
	(!A1 * !A2 * B1 * D1 * !X)	-0.00049	-0.00050	-0.00050
	(!A1 * !A2 * B1 * D1 * !X)	0.00156	0.00157	0.00153
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * B1 * !D1 * !X)	0.00166	0.00161	0.00155

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00109	-0.00120	-0.00121
	(A2 * B1 * !D1 * !X)	0.00184	0.00175	0.00173
	(A2 * !B1 * D1 * !X)	-0.00053	-0.00052	-0.00054
	(A2 * !B1 * D1 * !X)	0.00179	0.00178	0.00174
	(A2 * !B1 * !D1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !D1 * !X)	0.00179	0.00180	0.00174
	(A1 * !A2 * B1 * !D1 * !X)	-0.00108	-0.00119	-0.00121
	(A1 * !A2 * B1 * !D1 * !X)	0.00185	0.00175	0.00173
	(!A2 * !B1 * D1 * !X)	-0.00051	-0.00052	-0.00054
	(!A2 * !B1 * D1 * !X)	0.00177	0.00178	0.00174
	(!A2 * !B1 * !D1 * !X)	-0.00075	-0.00075	-0.00075
	(!A2 * !B1 * !D1 * !X)	0.00179	0.00180	0.00174
	(!A1 * !A2 * B1 * D1 * !X)	-0.00052	-0.00051	-0.00053
	(!A1 * !A2 * B1 * D1 * !X)	0.00179	0.00178	0.00174
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	0.00184	0.00180	0.00175

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00223	-0.00246	-0.00250
	(A2 * B1 * !D1 * !X)	0.00316	0.00297	0.00293
	(A2 * !B1 * D1 * !X)	-0.00106	-0.00107	-0.00111
	(A2 * !B1 * D1 * !X)	0.00306	0.00307	0.00297
	(A2 * !B1 * !D1 * !X)	-0.00155	-0.00157	-0.00155
	(A2 * !B1 * !D1 * !X)	0.00306	0.00308	0.00297
	(A1 * !A2 * B1 * !D1 * !X)	-0.00221	-0.00246	-0.00250
	(A1 * !A2 * B1 * !D1 * !X)	0.00316	0.00297	0.00293
	(!A2 * !B1 * D1 * !X)	-0.00105	-0.00106	-0.00111
	(!A2 * !B1 * D1 * !X)	0.00305	0.00306	0.00297
	(!A2 * !B1 * !D1 * !X)	-0.00155	-0.00157	-0.00155
	(!A2 * !B1 * !D1 * !X)	0.00306	0.00308	0.00297
	(!A1 * !A2 * B1 * D1 * !X)	-0.00102	-0.00103	-0.00107
	(!A1 * !A2 * B1 * D1 * !X)	0.00306	0.00307	0.00297
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * B1 * !D1 * !X)	0.00315	0.00308	0.00298

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00048	0.00049	0.00046
	(A2 * !C1 * !X)	-0.00175	-0.00176	-0.00179
	(A2 * !B1 * C1 * !X)	0.00050	0.00050	0.00045
	(A2 * !B1 * C1 * !X)	-0.00169	-0.00170	-0.00179
	(!A2 * !C1 * !X)	0.00048	0.00049	0.00046
	(!A2 * !C1 * !X)	-0.00175	-0.00176	-0.00179
	(!A2 * !B1 * C1 * !X)	0.00050	0.00050	0.00045
	(!A2 * !B1 * C1 * !X)	-0.00169	-0.00170	-0.00179
	(!A1 * !A2 * B1 * C1 * !X)	0.00058	0.00058	0.00048
	(!A1 * !A2 * B1 * C1 * !X)	-0.00155	-0.00156	-0.00176

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00052	0.00052	0.00049
	(A2 * !C1 * !X)	-0.00198	-0.00199	-0.00203
	(A2 * !B1 * C1 * !X)	0.00053	0.00053	0.00047
	(A2 * !B1 * C1 * !X)	-0.00191	-0.00192	-0.00202
	(!A2 * !C1 * !X)	0.00052	0.00052	0.00049
	(!A2 * !C1 * !X)	-0.00198	-0.00199	-0.00203
	(!A2 * !B1 * C1 * !X)	0.00053	0.00053	0.00047
	(!A2 * !B1 * C1 * !X)	-0.00191	-0.00192	-0.00202
	(!A1 * !A2 * B1 * C1 * !X)	0.00061	0.00061	0.00050
	(!A1 * !A2 * B1 * C1 * !X)	-0.00177	-0.00178	-0.00199
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00108	0.00109	0.00101
	(A2 * !C1 * !X)	-0.00322	-0.00326	-0.00337
	(A2 * !B1 * C1 * !X)	0.00108	0.00108	0.00096
	(A2 * !B1 * C1 * !X)	-0.00307	-0.00309	-0.00334
	(!A2 * !C1 * !X)	0.00108	0.00109	0.00101
	(!A2 * !C1 * !X)	-0.00322	-0.00326	-0.00337
	(!A2 * !B1 * C1 * !X)	0.00108	0.00109	0.00095
	(!A2 * !B1 * C1 * !X)	-0.00307	-0.00311	-0.00334
	(!A1 * !A2 * B1 * C1 * !X)	0.00121	0.00121	0.00098
	(!A1 * !A2 * B1 * C1 * !X)	-0.00281	-0.00284	-0.00328

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00043	-0.00044	-0.00043
	(A2 * !C1 * !X)	0.00181	0.00183	0.00182
	(A2 * !B1 * C1 * !X)	-0.00042	-0.00043	-0.00042
	(A2 * !B1 * C1 * !X)	0.00181	0.00183	0.00182
	(!A2 * !C1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !C1 * !X)	0.00181	0.00183	0.00182
	(!A2 * !B1 * C1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * C1 * !X)	0.00181	0.00182	0.00181
	(!A1 * !A2 * B1 * C1 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * C1 * !X)	0.00181	0.00182	0.00182
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00044	-0.00045	-0.00044
	(A2 * !C1 * !X)	0.00205	0.00208	0.00207
	(A2 * !B1 * C1 * !X)	-0.00043	-0.00044	-0.00043
	(A2 * !B1 * C1 * !X)	0.00205	0.00207	0.00206
	(!A2 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !C1 * !X)	0.00205	0.00207	0.00207
	(!A2 * !B1 * C1 * !X)	-0.00044	-0.00043	-0.00043
	(!A2 * !B1 * C1 * !X)	0.00208	0.00207	0.00206
	(!A1 * !A2 * B1 * C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * B1 * C1 * !X)	0.00205	0.00207	0.00206
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00091	-0.00092	-0.00091
	(A2 * !C1 * !X)	0.00345	0.00347	0.00345
	(A2 * !B1 * C1 * !X)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * C1 * !X)	0.00344	0.00346	0.00344
	(!A2 * !C1 * !X)	-0.00091	-0.00092	-0.00091
	(!A2 * !C1 * !X)	0.00345	0.00346	0.00345
	(!A2 * !B1 * C1 * !X)	-0.00087	-0.00088	-0.00087
	(!A2 * !B1 * C1 * !X)	0.00344	0.00346	0.00344
	(!A1 * !A2 * B1 * C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * B1 * C1 * !X)	0.00344	0.00346	0.00344

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00289	0.00300	0.00305	0.00298	0.39145
sky130_fd_sc_hs__o211ai_2	0.00564	0.00576	0.00576	0.00563	0.72338
sky130_fd_sc_hs__o211ai_4	0.01113	0.01139	0.00805	0.00828	1.35271

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.73819	2.52213
sky130_fd_sc_hs__o211ai_2	0.00000	1.24960	4.77675
sky130_fd_sc_hs__o211ai_4	0.00000	1.83341	6.38829

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)	0.18070	1.09786	9.84214
	A2->Y (FR)	0.16028	1.10421	10.24900
	B1->Y (FR)	0.07371	0.75145	7.40406
	C1->Y (FR)	0.06034	0.73878	7.38753
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.16562	0.94260	9.71490
	A2->Y (FR)	0.13692	0.94502	10.14190
	B1->Y (FR)	0.06044	0.64516	7.11700
	C1->Y (FR)	0.04427	0.62326	7.06031
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.15486	0.80855	9.49116
	A2->Y (FR)	0.12749	0.82158	10.01140
	B1->Y (FR)	0.08954	0.79567	9.93112
	C1->Y (FR)	0.05892	0.76106	9.80495

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.11181	0.71871	6.42939
	A2->Y (RF)	0.09127	0.68530	6.31091
	B1->Y (RF)	0.10349	0.75816	7.08405
	C1->Y (RF)	0.08794	0.78206	7.53938
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.10389	0.61547	6.27068
	A2->Y (RF)	0.08135	0.58610	6.23845
	B1->Y (RF)	0.09565	0.67156	7.08472
	C1->Y (RF)	0.07466	0.69144	7.54228
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.10155	0.54730	6.36912
	A2->Y (RF)	0.07437	0.50465	6.19794
	B1->Y (RF)	0.08514	0.59055	7.12353
	C1->Y (RF)	0.06650	0.62213	7.75467

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00187	0.00181	0.00473
	A1	0.00883	0.00876	0.01166
	A2	0.00190	0.00211	0.00615
	A2	0.00782	0.00802	0.01208
	B1	0.00082	0.00108	0.00608
	B1	0.00677	0.00714	0.01185
	C1	0.00016	0.00046	0.00540
	C1	0.00521	0.00552	0.01028
sky130_fd_sc_hs__o211ai_2	A1	0.00239	0.00226	0.00802
	A1	0.01642	0.01631	0.02200
	A2	0.00240	0.00270	0.01082
	A2	0.01426	0.01457	0.02264
	B1	0.00079	0.00174	0.01144
	B1	0.01274	0.01360	0.02305
	C1	-0.00121	-0.00003	0.00962
	C1	0.00883	0.00999	0.01953
sky130_fd_sc_hs__o211ai_4	A1	0.00459	0.00426	0.01570
	A1	0.03195	0.03169	0.04307
	A2	0.00456	0.00522	0.02092
	A2	0.02766	0.02836	0.04395
	B1	0.00097	0.00196	0.01296
	B1	0.02040	0.02117	0.03162
	C1	-0.00242	-0.00110	0.01002
	C1	0.01347	0.01477	0.02534

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00917	0.00908	0.01149
	A1	0.00214	0.00203	0.00447
	A2	0.00724	0.00717	0.00972
	A2	0.00123	0.00117	0.00355
	B1	0.00817	0.00802	0.01068
	B1	0.00111	0.00106	0.00381
	C1	0.00723	0.00725	0.01025
	C1	0.00108	0.00116	0.00430
sky130_fd_sc_hs__o211ai_2	A1	0.01795	0.01762	0.02282
	A1	0.00375	0.00343	0.00847
	A2	0.01306	0.01298	0.01821
	A2	0.00102	0.00094	0.00593
	B1	0.01566	0.01549	0.02081
	B1	0.00071	0.00067	0.00624
	C1	0.01362	0.01377	0.01989
	C1	0.00062	0.00092	0.00731
sky130_fd_sc_hs__o211ai_4	A1	0.03285	0.03220	0.04247
	A1	0.00517	0.00448	0.01460
	A2	0.02335	0.02319	0.03377
	A2	-0.00017	-0.00031	0.00983
	B1	0.02692	0.02686	0.03269
	B1	0.00760	0.00756	0.01294
	C1	0.02326	0.02380	0.03003
	C1	0.00751	0.00806	0.01394

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)**	0.00173	0.00144	0.00140
	(A2 * B1 * C1 * !Y)	-0.00147	-0.00174	-0.00179
	(A2 * B1 * !C1 * Y)	0.00138	0.00138	0.00138
	(A2 * B1 * !C1 * Y)	-0.00180	-0.00180	-0.00181
	(A2 * !B1 * Y)	0.00138	0.00138	0.00138
	(A2 * !B1 * Y)	-0.00180	-0.00180	-0.00181
	(!A2 * B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A2 * B1 * !C1 * Y)	-0.00183	-0.00183	-0.00183
	(!A2 * !B1 * C1 * Y)	0.00130	0.00132	0.00131
	(!A2 * !B1 * C1 * Y)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * !C1 * Y)	0.00130	0.00132	0.00130
	(!A2 * !B1 * !C1 * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00349	0.00285	0.00274
	(A2 * B1 * C1 * !Y)	-0.00289	-0.00357	-0.00367
	(A2 * B1 * !C1 * Y)	0.00269	0.00271	0.00269
	(A2 * B1 * !C1 * Y)	-0.00365	-0.00370	-0.00368
	(A2 * !B1 * Y)	0.00269	0.00271	0.00270
	(A2 * !B1 * Y)	-0.00365	-0.00370	-0.00369
	(!A2 * B1 * !C1 * Y)	0.00251	0.00251	0.00251
	(!A2 * B1 * !C1 * Y)	-0.00375	-0.00376	-0.00375
	(!A2 * !B1 * C1 * Y)	0.00254	0.00256	0.00255
	(!A2 * !B1 * C1 * Y)	-0.00374	-0.00376	-0.00375
	(!A2 * !B1 * !C1 * Y)	0.00253	0.00256	0.00254
	(!A2 * !B1 * !C1 * Y)	-0.00374	-0.00377	-0.00375

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00683	0.00557	0.00534
	(A2 * B1 * C1 * !Y)	-0.00578	-0.00712	-0.00731
	(A2 * B1 * !C1 * Y)	0.00528	0.00531	0.00528
	(A2 * B1 * !C1 * Y)	-0.00726	-0.00731	-0.00731
	(A2 * !B1 * Y)	0.00528	0.00531	0.00528
	(A2 * !B1 * Y)	-0.00726	-0.00735	-0.00731
	(!A2 * B1 * !C1 * Y)	0.00487	0.00489	0.00486
	(!A2 * B1 * !C1 * Y)	-0.00745	-0.00746	-0.00743
	(!A2 * !B1 * C1 * Y)	0.00497	0.00502	0.00498
	(!A2 * !B1 * C1 * Y)	-0.00744	-0.00748	-0.00744
	(!A2 * !B1 * !C1 * Y)	0.00495	0.00499	0.00495
	(!A2 * !B1 * !C1 * Y)	-0.00743	-0.00748	-0.00745

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)**	-0.00134	-0.00134	-0.00134
	(A2 * B1 * C1 * !Y)	0.00184	0.00183	0.00185
	(A2 * B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137
	(A2 * B1 * !C1 * Y)	0.00181	0.00182	0.00181
	(A2 * !B1 * Y)	-0.00137	-0.00138	-0.00137
	(A2 * !B1 * Y)	0.00181	0.00182	0.00181
	(!A2 * B1 * !C1 * Y)	-0.00119	-0.00129	-0.00128
	(!A2 * B1 * !C1 * Y)	0.00186	0.00186	0.00184
	(!A2 * !B1 * C1 * Y)	-0.00126	-0.00132	-0.00131
	(!A2 * !B1 * C1 * Y)	0.00185	0.00186	0.00184
	(!A2 * !B1 * !C1 * Y)	-0.00127	-0.00132	-0.00130
	(!A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00184

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00263	-0.00265	-0.00262
	(A2 * B1 * C1 * !Y)	0.00374	0.00378	0.00376
	(A2 * B1 * !C1 * Y)	-0.00268	-0.00269	-0.00268
	(A2 * B1 * !C1 * Y)	0.00369	0.00370	0.00368
	(A2 * !B1 * Y)	-0.00268	-0.00269	-0.00268
	(A2 * !B1 * Y)	0.00369	0.00370	0.00369
	(!A2 * B1 * !C1 * Y)	-0.00234	-0.00251	-0.00251
	(!A2 * B1 * !C1 * Y)	0.00380	0.00380	0.00377
	(!A2 * !B1 * C1 * Y)	-0.00246	-0.00256	-0.00255
	(!A2 * !B1 * C1 * Y)	0.00379	0.00381	0.00377
	(!A2 * !B1 * !C1 * Y)	-0.00248	-0.00256	-0.00254
	(!A2 * !B1 * !C1 * Y)	0.00378	0.00380	0.00377
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00518	-0.00519	-0.00516
	(A2 * B1 * C1 * !Y)	0.00741	0.00744	0.00744
	(A2 * B1 * !C1 * Y)	-0.00525	-0.00525	-0.00525
	(A2 * B1 * !C1 * Y)	0.00729	0.00731	0.00731
	(A2 * !B1 * Y)	-0.00523	-0.00528	-0.00525
	(A2 * !B1 * Y)	0.00727	0.00738	0.00731
	(!A2 * B1 * !C1 * Y)	-0.00449	-0.00489	-0.00486
	(!A2 * B1 * !C1 * Y)	0.00757	0.00756	0.00748
	(!A2 * !B1 * C1 * Y)	-0.00472	-0.00502	-0.00498
	(!A2 * !B1 * C1 * Y)	0.00745	0.00756	0.00749
	(!A2 * !B1 * !C1 * Y)	-0.00478	-0.00499	-0.00495
	(!A2 * !B1 * !C1 * Y)	0.00743	0.00755	0.00748

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)**	0.00150	0.00151	0.00150
	(A1 * B1 * C1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * B1 * !C1 * Y)	0.00134	0.00136	0.00135
	(A1 * B1 * !C1 * Y)	-0.00180	-0.00183	-0.00181
	(A1 * !B1 * C1 * Y)	0.00134	0.00136	0.00135
	(A1 * !B1 * C1 * Y)	-0.00180	-0.00181	-0.00181
	(A1 * !B1 * !C1 * Y)	0.00134	0.00135	0.00135
	(A1 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A1 * B1 * !C1 * Y)	0.00124	0.00125	0.00125
	(!A1 * B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * !B1 * C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00184
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00309	0.00311	0.00310
	(A1 * B1 * C1 * !Y)	-0.00162	-0.00164	-0.00163
	(A1 * B1 * !C1 * Y)	0.00270	0.00273	0.00270
	(A1 * B1 * !C1 * Y)	-0.00361	-0.00365	-0.00364
	(A1 * !B1 * C1 * Y)	0.00271	0.00273	0.00271
	(A1 * !B1 * C1 * Y)	-0.00362	-0.00365	-0.00364
	(A1 * !B1 * !C1 * Y)	0.00273	0.00272	0.00270
	(A1 * !B1 * !C1 * Y)	-0.00364	-0.00367	-0.00364
	(!A1 * B1 * !C1 * Y)	0.00251	0.00251	0.00250
	(!A1 * B1 * !C1 * Y)	-0.00373	-0.00372	-0.00371
	(!A1 * !B1 * C1 * Y)	0.00254	0.00255	0.00255
	(!A1 * !B1 * C1 * Y)	-0.00371	-0.00372	-0.00371
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00255	0.00254
	(!A1 * !B1 * !C1 * Y)	-0.00373	-0.00373	-0.00372

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00601	0.00607	0.00603
	(A1 * B1 * C1 * !Y)	-0.00332	-0.00335	-0.00332
	(A1 * B1 * !C1 * Y)	0.00528	0.00533	0.00528
	(A1 * B1 * !C1 * Y)	-0.00728	-0.00735	-0.00730
	(A1 * !B1 * C1 * Y)	0.00528	0.00533	0.00528
	(A1 * !B1 * C1 * Y)	-0.00728	-0.00735	-0.00730
	(A1 * !B1 * !C1 * Y)	0.00531	0.00532	0.00528
	(A1 * !B1 * !C1 * Y)	-0.00727	-0.00734	-0.00731
	(!A1 * B1 * !C1 * Y)	0.00482	0.00486	0.00486
	(!A1 * B1 * !C1 * Y)	-0.00743	-0.00747	-0.00745
	(!A1 * !B1 * C1 * Y)	0.00496	0.00501	0.00497
	(!A1 * !B1 * C1 * Y)	-0.00746	-0.00750	-0.00746
	(!A1 * !B1 * !C1 * Y)	0.00497	0.00497	0.00494
	(!A1 * !B1 * !C1 * Y)	-0.00750	-0.00749	-0.00747

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)**	-0.00142	-0.00142	-0.00147
	(A1 * B1 * C1 * !Y)	0.00092	0.00092	0.00088
	(A1 * B1 * !C1 * Y)	-0.00134	-0.00135	-0.00134
	(A1 * B1 * !C1 * Y)	0.00182	0.00183	0.00181
	(A1 * !B1 * C1 * Y)	-0.00133	-0.00134	-0.00134
	(A1 * !B1 * C1 * Y)	0.00181	0.00181	0.00181
	(A1 * !B1 * !C1 * Y)	-0.00134	-0.00134	-0.00134
	(A1 * !B1 * !C1 * Y)	0.00182	0.00182	0.00181
	(!A1 * B1 * !C1 * Y)	-0.00115	-0.00125	-0.00125
	(!A1 * B1 * !C1 * Y)	0.00187	0.00187	0.00185
	(!A1 * !B1 * C1 * Y)	-0.00123	-0.00128	-0.00128
	(!A1 * !B1 * C1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !B1 * !C1 * Y)	-0.00124	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00186	0.00187	0.00185
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00287	-0.00288	-0.00302
	(A1 * B1 * C1 * !Y)	0.00185	0.00184	0.00173
	(A1 * B1 * !C1 * Y)	-0.00267	-0.00270	-0.00269
	(A1 * B1 * !C1 * Y)	0.00361	0.00365	0.00364
	(A1 * !B1 * C1 * Y)	-0.00268	-0.00269	-0.00269
	(A1 * !B1 * C1 * Y)	0.00363	0.00365	0.00364
	(A1 * !B1 * !C1 * Y)	-0.00269	-0.00271	-0.00269
	(A1 * !B1 * !C1 * Y)	0.00364	0.00367	0.00364
	(!A1 * B1 * !C1 * Y)	-0.00232	-0.00251	-0.00250
	(!A1 * B1 * !C1 * Y)	0.00376	0.00376	0.00373
	(!A1 * !B1 * C1 * Y)	-0.00246	-0.00255	-0.00255
	(!A1 * !B1 * C1 * Y)	0.00375	0.00376	0.00373
	(!A1 * !B1 * !C1 * Y)	-0.00248	-0.00255	-0.00254
	(!A1 * !B1 * !C1 * Y)	0.00374	0.00376	0.00373

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00566	-0.00569	-0.00593
	(A1 * B1 * C1 * !Y)	0.00368	0.00367	0.00346
	(A1 * B1 * !C1 * Y)	-0.00526	-0.00528	-0.00525
	(A1 * B1 * !C1 * Y)	0.00731	0.00735	0.00730
	(A1 * !B1 * C1 * Y)	-0.00525	-0.00528	-0.00525
	(A1 * !B1 * C1 * Y)	0.00730	0.00735	0.00730
	(A1 * !B1 * !C1 * Y)	-0.00523	-0.00527	-0.00525
	(A1 * !B1 * !C1 * Y)	0.00727	0.00734	0.00731
	(!A1 * B1 * !C1 * Y)	-0.00447	-0.00486	-0.00486
	(!A1 * B1 * !C1 * Y)	0.00758	0.00757	0.00750
	(!A1 * !B1 * C1 * Y)	-0.00476	-0.00501	-0.00497
	(!A1 * !B1 * C1 * Y)	0.00754	0.00757	0.00751
	(!A1 * !B1 * !C1 * Y)	-0.00482	-0.00497	-0.00494
	(!A1 * !B1 * !C1 * Y)	0.00752	0.00755	0.00750

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00126	0.00127	0.00126
	(A2 * !C1 * Y)	-0.00192	-0.00192	-0.00191
	(A1 * !A2 * !C1 * Y)	0.00125	0.00126	0.00126
	(A1 * !A2 * !C1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * C1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A2 * C1 * Y)	-0.00192	-0.00193	-0.00191
	(!A1 * !A2 * !C1 * Y)	0.00080	0.00081	0.00081
	(!A1 * !A2 * !C1 * Y)	-0.00191	-0.00193	-0.00192
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00251	0.00253	0.00252
	(A2 * !C1 * Y)	-0.00377	-0.00378	-0.00376
	(A1 * !A2 * !C1 * Y)	0.00251	0.00252	0.00251
	(A1 * !A2 * !C1 * Y)	-0.00377	-0.00377	-0.00376
	(!A1 * !A2 * C1 * Y)	0.00115	0.00118	0.00120
	(!A1 * !A2 * C1 * Y)	-0.00375	-0.00379	-0.00374
	(!A1 * !A2 * !C1 * Y)	0.00156	0.00156	0.00155
	(!A1 * !A2 * !C1 * Y)	-0.00380	-0.00381	-0.00379
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00496	0.00499	0.00498
	(A2 * !C1 * Y)	-0.00377	-0.00378	-0.00376
	(A1 * !A2 * !C1 * Y)	0.00495	0.00498	0.00498
	(A1 * !A2 * !C1 * Y)	-0.00376	-0.00377	-0.00376
	(!A1 * !A2 * C1 * Y)	0.00228	0.00229	0.00232
	(!A1 * !A2 * C1 * Y)	-0.00377	-0.00378	-0.00372
	(!A1 * !A2 * !C1 * Y)	0.00297	0.00300	0.00298
	(!A1 * !A2 * !C1 * Y)	-0.00378	-0.00381	-0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00115	-0.00125	-0.00126
	(A2 * !C1 * Y)	0.00203	0.00197	0.00193
	(A1 * !A2 * !C1 * Y)	-0.00114	-0.00123	-0.00126
	(A1 * !A2 * !C1 * Y)	0.00205	0.00194	0.00193
	(!A1 * !A2 * C1 * Y)	-0.00056	-0.00056	-0.00058
	(!A1 * !A2 * C1 * Y)	0.00198	0.00199	0.00194
	(!A1 * !A2 * !C1 * Y)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * !C1 * Y)	0.00202	0.00201	0.00195
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00229	-0.00250	-0.00252
	(A2 * !C1 * Y)	0.00400	0.00386	0.00379
	(A1 * !A2 * !C1 * Y)	-0.00226	-0.00249	-0.00251
	(A1 * !A2 * !C1 * Y)	0.00402	0.00384	0.00379
	(!A1 * !A2 * C1 * Y)	-0.00105	-0.00106	-0.00111
	(!A1 * !A2 * C1 * Y)	0.00394	0.00396	0.00384
	(!A1 * !A2 * !C1 * Y)	-0.00156	-0.00156	-0.00155
	(!A1 * !A2 * !C1 * Y)	0.00396	0.00396	0.00384
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00453	-0.00495	-0.00498
	(A2 * !C1 * Y)	0.00423	0.00391	0.00381
	(A1 * !A2 * !C1 * Y)	-0.00445	-0.00492	-0.00498
	(A1 * !A2 * !C1 * Y)	0.00429	0.00389	0.00381
	(!A1 * !A2 * C1 * Y)	-0.00206	-0.00208	-0.00215
	(!A1 * !A2 * C1 * Y)	0.00406	0.00407	0.00389
	(!A1 * !A2 * !C1 * Y)	-0.00297	-0.00300	-0.00298
	(!A1 * !A2 * !C1 * Y)	0.00416	0.00413	0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00050	0.00050	0.00047
	(A2 * !B1 * Y)	-0.00211	-0.00212	-0.00215
	(!A2 * !B1 * Y)	0.00050	0.00050	0.00047
	(!A2 * !B1 * Y)	-0.00211	-0.00212	-0.00215
	(!A1 * !A2 * B1 * Y)	0.00055	0.00055	0.00047
	(!A1 * !A2 * B1 * Y)	-0.00199	-0.00200	-0.00213
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00104	0.00105	0.00096
	(A2 * !B1 * Y)	-0.00407	-0.00411	-0.00422
	(!A2 * !B1 * Y)	0.00104	0.00105	0.00096
	(!A2 * !B1 * Y)	-0.00407	-0.00411	-0.00422
	(!A1 * !A2 * B1 * Y)	0.00109	0.00108	0.00092
	(!A1 * !A2 * B1 * Y)	-0.00385	-0.00386	-0.00417
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00199	0.00199	0.00184
	(A2 * !B1 * Y)	-0.00464	-0.00467	-0.00487
	(!A2 * !B1 * Y)	0.00197	0.00199	0.00184
	(!A2 * !B1 * Y)	-0.00461	-0.00467	-0.00487
	(!A1 * !A2 * B1 * Y)	0.00207	0.00209	0.00178
	(!A1 * !A2 * B1 * Y)	-0.00414	-0.00420	-0.00478

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00044	-0.00045	-0.00044
	(A2 * !B1 * Y)	0.00215	0.00218	0.00217
	(!A2 * !B1 * Y)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * Y)	0.00216	0.00218	0.00217
	(!A1 * !A2 * B1 * Y)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * B1 * Y)	0.00215	0.00218	0.00216
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00093	-0.00093	-0.00092
	(A2 * !B1 * Y)	0.00426	0.00427	0.00424
	(!A2 * !B1 * Y)	-0.00093	-0.00093	-0.00092
	(!A2 * !B1 * Y)	0.00426	0.00427	0.00424
	(!A1 * !A2 * B1 * Y)	-0.00089	-0.00089	-0.00088
	(!A1 * !A2 * B1 * Y)	0.00425	0.00430	0.00424
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00177	-0.00179	-0.00177
	(A2 * !B1 * Y)	0.00490	0.00498	0.00490
	(!A2 * !B1 * Y)	-0.00179	-0.00178	-0.00176
	(!A2 * !B1 * Y)	0.00493	0.00493	0.00490
	(!A1 * !A2 * B1 * Y)	-0.00171	-0.00170	-0.00169
	(!A1 * !A2 * B1 * Y)	0.00492	0.00493	0.00489

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00276	0.00295	0.00273	0.00269	0.83234
sky130_fd_sc_hs__o211a_2	0.00293	0.00292	0.00292	0.00285	1.62827
sky130_fd_sc_hs__o211a_4	0.00531	0.00507	0.00517	0.00460	3.03992

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	1.86681	5.43848
sky130_fd_sc_hs__o211a_2	0.00000	2.46281	5.64593
sky130_fd_sc_hs__o211a_4	0.00000	5.73157	16.09480

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)	0.20761	0.90247	7.67838
	A2->X (RR)	0.18090	0.86380	7.59230
	B1->X (RR)	0.19639	0.91637	7.94062
	C1->X (RR)	0.18162	0.91916	7.97293
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.20793	0.80566	7.66799
	A2->X (RR)	0.17993	0.76749	7.58138
	B1->X (RR)	0.19832	0.83248	7.95417
	C1->X (RR)	0.18376	0.83884	7.99487
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.20915	0.73340	7.72707
	A2->X (RR)	0.18738	0.69668	7.64398
	B1->X (RR)	0.19713	0.75070	7.91346
	C1->X (RR)	0.18072	0.75192	7.94413

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.26561	0.79272	4.70673
	A2->X (FF)	0.24560	0.80212	4.76328
	B1->X (FF)	0.12877	0.65463	4.34605
	C1->X (FF)	0.11677	0.62764	4.27102
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.31185	0.82439	4.95169
	A2->X (FF)	0.28999	0.83913	5.04147
	B1->X (FF)	0.15062	0.67031	4.58162
	C1->X (FF)	0.13682	0.64477	4.49850
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.28789	0.74488	4.74235
	A2->X (FF)	0.26369	0.75115	4.80338
	B1->X (FF)	0.15789	0.63725	4.52943
	C1->X (FF)	0.15472	0.63064	4.51753

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01170	0.01178	0.02267
	A1	0.00507	0.00514	0.01621
	A2	0.01027	0.01033	0.02321
	A2	0.00430	0.00436	0.01740
	B1	0.01070	0.01087	0.02587
	B1	0.00410	0.00442	0.02089
	C1	0.00992	0.01036	0.02670
	C1	0.00407	0.00468	0.02250
sky130_fd_sc_hs__o211a_2	A1	0.01452	0.01475	0.02572
	A1	0.00752	0.00775	0.01907
	A2	0.01266	0.01293	0.02570
	A2	0.00664	0.00691	0.02003
	B1	0.01347	0.01377	0.02910
	B1	0.00645	0.00700	0.02395
	C1	0.01261	0.01313	0.02973
	C1	0.00643	0.00729	0.02546
sky130_fd_sc_hs__o211a_4	A1	0.02717	0.02764	0.05032
	A1	0.01449	0.01500	0.03832
	A2	0.02315	0.02362	0.05031
	A2	0.01263	0.01311	0.03981
	B1	0.02540	0.02599	0.05326
	B1	0.01500	0.01561	0.04337
	C1	0.02333	0.02430	0.05541
	C1	0.01263	0.01410	0.04800

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00471	0.00490	0.01694
	A1	0.01123	0.01144	0.02344
	A2	0.00438	0.00512	0.01999
	A2	0.01024	0.01098	0.02570
	B1	0.00365	0.00473	0.02248
	B1	0.00922	0.01018	0.02707
	C1	0.00319	0.00425	0.02252
	C1	0.00803	0.00900	0.02638
sky130_fd_sc_hs__o211a_2	A1	0.00699	0.00705	0.01969
	A1	0.01387	0.01397	0.02633
	A2	0.00702	0.00753	0.02384
	A2	0.01293	0.01346	0.02873
	B1	0.00581	0.00701	0.02468
	B1	0.01165	0.01284	0.03039
	C1	0.00527	0.00653	0.02489
	C1	0.01031	0.01152	0.02931
sky130_fd_sc_hs__o211a_4	A1	0.01327	0.01374	0.04059
	A1	0.02573	0.02620	0.05035
	A2	0.01359	0.01492	0.04672
	A2	0.02389	0.02521	0.05504
	B1	0.01065	0.01275	0.04615
	B1	0.02098	0.02306	0.05620
	C1	0.01028	0.01262	0.04594
	C1	0.01857	0.02084	0.05417

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o211a_1	**(A2 * B1 * C1 * X)**	0.00168	0.00144	0.00137
	(A2 * B1 * C1 * X)	-0.00129	-0.00156	-0.00160
	(A2 * B1 * !C1 * !X)	0.00118	0.00119	0.00117
	(A2 * B1 * !C1 * !X)	-0.00178	-0.00180	-0.00180
	(A2 * !B1 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !X)	-0.00178	-0.00180	-0.00180
	(!A2 * B1 * !C1 * !X)	0.00109	0.00111	0.00109
	(!A2 * B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !X)	0.00112	0.00113	0.00112
	(!A2 * !B1 * C1 * !X)	-0.00182	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * !X)	0.00112	0.00112	0.00111
	(!A2 * !B1 * !C1 * !X)	-0.00182	-0.00182	-0.00181
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00185	0.00161	0.00154
	(A2 * B1 * C1 * X)	-0.00124	-0.00152	-0.00156
	(A2 * B1 * !C1 * !X)	0.00130	0.00132	0.00130
	(A2 * B1 * !C1 * !X)	-0.00178	-0.00180	-0.00180
	(A2 * !B1 * !X)	0.00130	0.00132	0.00130
	(A2 * !B1 * !X)	-0.00178	-0.00180	-0.00180
	(!A2 * B1 * !C1 * !X)	0.00121	0.00121	0.00121
	(!A2 * B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !X)	0.00124	0.00124	0.00124
	(!A2 * !B1 * C1 * !X)	-0.00182	-0.00182	-0.00182
	(!A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00340	0.00287	0.00275
	(A2 * B1 * C1 * X)	-0.00250	-0.00307	-0.00316
	(A2 * B1 * !C1 * !X)	0.00260	0.00262	0.00260
	(A2 * B1 * !C1 * !X)	-0.00326	-0.00330	-0.00331
	(A2 * !B1 * !X)	0.00260	0.00262	0.00260
	(A2 * !B1 * !X)	-0.00326	-0.00330	-0.00331
	(!A2 * B1 * !C1 * !X)	0.00244	0.00245	0.00244
	(!A2 * B1 * !C1 * !X)	-0.00333	-0.00334	-0.00333
	(!A2 * !B1 * C1 * !X)	0.00248	0.00250	0.00249
	(!A2 * !B1 * C1 * !X)	-0.00333	-0.00334	-0.00333
	(!A2 * !B1 * !C1 * !X)	0.00248	0.00249	0.00248
	(!A2 * !B1 * !C1 * !X)	-0.00334	-0.00334	-0.00334

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)**	-0.00126	-0.00127	-0.00126
	(A2 * B1 * C1 * X)	0.00170	0.00172	0.00171
	(A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * B1 * !C1 * !X)	0.00180	0.00182	0.00180
	(A2 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * !X)	0.00180	0.00182	0.00180
	(!A2 * B1 * !C1 * !X)	-0.00099	-0.00108	-0.00109
	(!A2 * B1 * !C1 * !X)	0.00185	0.00185	0.00183
	(!A2 * !B1 * C1 * !X)	-0.00105	-0.00110	-0.00111
	(!A2 * !B1 * C1 * !X)	0.00184	0.00185	0.00184
	(!A2 * !B1 * !C1 * !X)	-0.00106	-0.00111	-0.00111
	(!A2 * !B1 * !C1 * !X)	0.00184	0.00185	0.00184

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00143	-0.00143	-0.00142
	(A2 * B1 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * !C1 * !X)	0.00182	0.00183	0.00182
	(A2 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(A2 * !B1 * !X)	0.00181	0.00183	0.00182
	(!A2 * B1 * !C1 * !X)	-0.00109	-0.00119	-0.00121
	(!A2 * B1 * !C1 * !X)	0.00187	0.00186	0.00185
	(!A2 * !B1 * C1 * !X)	-0.00116	-0.00122	-0.00122
	(!A2 * !B1 * C1 * !X)	0.00187	0.00187	0.00185
	(!A2 * !B1 * !C1 * !X)	-0.00117	-0.00122	-0.00123
	(!A2 * !B1 * !C1 * !X)	0.00186	0.00187	0.00185
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00244	-0.00246	-0.00244
	(A2 * B1 * C1 * X)	0.00344	0.00347	0.00346
	(A2 * B1 * !C1 * !X)	-0.00252	-0.00254	-0.00253
	(A2 * B1 * !C1 * !X)	0.00332	0.00336	0.00334
	(A2 * !B1 * !X)	-0.00252	-0.00254	-0.00253
	(A2 * !B1 * !X)	0.00332	0.00336	0.00334
	(!A2 * B1 * !C1 * !X)	-0.00222	-0.00240	-0.00243
	(!A2 * B1 * !C1 * !X)	0.00344	0.00342	0.00341
	(!A2 * !B1 * C1 * !X)	-0.00233	-0.00244	-0.00246
	(!A2 * !B1 * C1 * !X)	0.00342	0.00342	0.00341
	(!A2 * !B1 * !C1 * !X)	-0.00236	-0.00244	-0.00246
	(!A2 * !B1 * !C1 * !X)	0.00341	0.00342	0.00340

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)**	0.00173	0.00173	0.00172
	(A1 * B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * B1 * !C1 * !X)	0.00153	0.00154	0.00152
	(A1 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00166
	(A1 * !B1 * C1 * !X)	0.00153	0.00154	0.00152
	(A1 * !B1 * C1 * !X)	-0.00164	-0.00166	-0.00166
	(A1 * !B1 * !C1 * !X)	0.00152	0.00153	0.00152
	(A1 * !B1 * !C1 * !X)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !C1 * !X)	0.00144	0.00144	0.00143
	(!A1 * B1 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !B1 * C1 * !X)	0.00145	0.00146	0.00146
	(!A1 * !B1 * C1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * !B1 * !C1 * !X)	0.00145	0.00146	0.00145
	(!A1 * !B1 * !C1 * !X)	-0.00167	-0.00168	-0.00168
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00154	0.00155	0.00154
	(A1 * B1 * C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * B1 * !C1 * !X)	0.00127	0.00129	0.00128
	(A1 * B1 * !C1 * !X)	-0.00170	-0.00172	-0.00172
	(A1 * !B1 * C1 * !X)	0.00127	0.00129	0.00128
	(A1 * !B1 * C1 * !X)	-0.00169	-0.00172	-0.00172
	(A1 * !B1 * !C1 * !X)	0.00127	0.00129	0.00128
	(A1 * !B1 * !C1 * !X)	-0.00170	-0.00172	-0.00172
	(!A1 * B1 * !C1 * !X)	0.00119	0.00119	0.00119
	(!A1 * B1 * !C1 * !X)	-0.00173	-0.00173	-0.00173
	(!A1 * !B1 * C1 * !X)	0.00122	0.00122	0.00122
	(!A1 * !B1 * C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00174	-0.00174

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00264	0.00265	0.00265
	(A1 * B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(A1 * B1 * !C1 * !X)	0.00223	0.00225	0.00223
	(A1 * B1 * !C1 * !X)	-0.00328	-0.00332	-0.00332
	(A1 * !B1 * C1 * !X)	0.00223	0.00225	0.00223
	(A1 * !B1 * C1 * !X)	-0.00328	-0.00332	-0.00332
	(A1 * !B1 * !C1 * !X)	0.00223	0.00225	0.00223
	(A1 * !B1 * !C1 * !X)	-0.00328	-0.00332	-0.00332
	(!A1 * B1 * !C1 * !X)	0.00206	0.00208	0.00207
	(!A1 * B1 * !C1 * !X)	-0.00335	-0.00336	-0.00334
	(!A1 * !B1 * C1 * !X)	0.00212	0.00213	0.00212
	(!A1 * !B1 * C1 * !X)	-0.00335	-0.00336	-0.00335
	(!A1 * !B1 * !C1 * !X)	0.00211	0.00212	0.00210
	(!A1 * !B1 * !C1 * !X)	-0.00335	-0.00336	-0.00335

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)**	-0.00161	-0.00161	-0.00165
	(A1 * B1 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * B1 * !C1 * !X)	0.00166	0.00168	0.00166
	(A1 * !B1 * C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * !B1 * C1 * !X)	0.00166	0.00168	0.00167
	(A1 * !B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !B1 * !C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * B1 * !C1 * !X)	-0.00133	-0.00143	-0.00143
	(!A1 * B1 * !C1 * !X)	0.00172	0.00172	0.00170
	(!A1 * !B1 * C1 * !X)	-0.00140	-0.00145	-0.00146
	(!A1 * !B1 * C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !B1 * !C1 * !X)	-0.00141	-0.00146	-0.00145
	(!A1 * !B1 * !C1 * !X)	0.00170	0.00171	0.00170
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00142	-0.00142	-0.00146
	(A1 * B1 * C1 * X)	0.00085	0.00084	0.00081
	(A1 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00124
	(A1 * B1 * !C1 * !X)	0.00173	0.00174	0.00173
	(A1 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00124
	(A1 * !B1 * C1 * !X)	0.00173	0.00175	0.00173
	(A1 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !B1 * !C1 * !X)	0.00173	0.00173	0.00173
	(!A1 * B1 * !C1 * !X)	-0.00107	-0.00117	-0.00119
	(!A1 * B1 * !C1 * !X)	0.00179	0.00178	0.00177
	(!A1 * !B1 * C1 * !X)	-0.00114	-0.00120	-0.00121
	(!A1 * !B1 * C1 * !X)	0.00178	0.00178	0.00177
	(!A1 * !B1 * !C1 * !X)	-0.00115	-0.00120	-0.00121
	(!A1 * !B1 * !C1 * !X)	0.00178	0.00178	0.00177

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00230	-0.00230	-0.00240
	(A1 * B1 * C1 * X)	0.00178	0.00177	0.00169
	(A1 * B1 * !C1 * !X)	-0.00217	-0.00218	-0.00216
	(A1 * B1 * !C1 * !X)	0.00335	0.00336	0.00334
	(A1 * !B1 * C1 * !X)	-0.00216	-0.00218	-0.00216
	(A1 * !B1 * C1 * !X)	0.00335	0.00336	0.00335
	(A1 * !B1 * !C1 * !X)	-0.00217	-0.00218	-0.00217
	(A1 * !B1 * !C1 * !X)	0.00335	0.00337	0.00335
	(!A1 * B1 * !C1 * !X)	-0.00185	-0.00203	-0.00206
	(!A1 * B1 * !C1 * !X)	0.00346	0.00344	0.00342
	(!A1 * !B1 * C1 * !X)	-0.00195	-0.00207	-0.00209
	(!A1 * !B1 * C1 * !X)	0.00343	0.00344	0.00342
	(!A1 * !B1 * !C1 * !X)	-0.00198	-0.00208	-0.00209
	(!A1 * !B1 * !C1 * !X)	0.00342	0.00344	0.00342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00102	0.00104	0.00103
	(A2 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !C1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !C1 * !X)	-0.00185	-0.00185	-0.00184
	(!A1 * !A2 * C1 * !X)	0.00052	0.00052	0.00051
	(!A1 * !A2 * C1 * !X)	-0.00186	-0.00187	-0.00185
	(!A1 * !A2 * !C1 * !X)	0.00068	0.00068	0.00067
	(!A1 * !A2 * !C1 * !X)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00121	0.00122	0.00122
	(A2 * !C1 * !X)	-0.00174	-0.00175	-0.00174
	(A1 * !A2 * !C1 * !X)	0.00121	0.00122	0.00122
	(A1 * !A2 * !C1 * !X)	-0.00174	-0.00175	-0.00174
	(!A1 * !A2 * C1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * C1 * !X)	-0.00177	-0.00178	-0.00175
	(!A1 * !A2 * !C1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !C1 * !X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00258	0.00262	0.00260
	(A2 * !C1 * !X)	-0.00294	-0.00296	-0.00294
	(A1 * !A2 * !C1 * !X)	0.00258	0.00262	0.00259
	(A1 * !A2 * !C1 * !X)	-0.00294	-0.00296	-0.00294
	(!A1 * !A2 * C1 * !X)	0.00150	0.00151	0.00148
	(!A1 * !A2 * C1 * !X)	-0.00295	-0.00296	-0.00294
	(!A1 * !A2 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !C1 * !X)	-0.00297	-0.00298	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00092	-0.00101	-0.00101
	(A2 * !C1 * !X)	0.00197	0.00191	0.00187
	(A1 * !A2 * !C1 * !X)	-0.00091	-0.00101	-0.00101
	(A1 * !A2 * !C1 * !X)	0.00198	0.00192	0.00187
	(!A1 * !A2 * C1 * !X)	-0.00043	-0.00044	-0.00045
	(!A1 * !A2 * C1 * !X)	0.00192	0.00193	0.00189
	(!A1 * !A2 * !C1 * !X)	-0.00068	-0.00068	-0.00067
	(!A1 * !A2 * !C1 * !X)	0.00199	0.00196	0.00191
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00108	-0.00118	-0.00119
	(A2 * !C1 * !X)	0.00190	0.00182	0.00179
	(A1 * !A2 * !C1 * !X)	-0.00106	-0.00117	-0.00119
	(A1 * !A2 * !C1 * !X)	0.00191	0.00181	0.00178
	(!A1 * !A2 * C1 * !X)	-0.00049	-0.00050	-0.00051
	(!A1 * !A2 * C1 * !X)	0.00184	0.00185	0.00181
	(!A1 * !A2 * !C1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !C1 * !X)	0.00191	0.00189	0.00183
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00235	-0.00250	-0.00254
	(A2 * !C1 * !X)	0.00320	0.00306	0.00302
	(A1 * !A2 * !C1 * !X)	-0.00233	-0.00250	-0.00254
	(A1 * !A2 * !C1 * !X)	0.00322	0.00307	0.00302
	(!A1 * !A2 * C1 * !X)	-0.00132	-0.00132	-0.00135
	(!A1 * !A2 * C1 * !X)	0.00312	0.00312	0.00306
	(!A1 * !A2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !C1 * !X)	0.00320	0.00318	0.00308

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(A2 * !B1 * !X)	-0.00198	-0.00199	-0.00202
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00198	-0.00199	-0.00202
	(!A1 * !A2 * B1 * !X)	0.00049	0.00049	0.00040
	(!A1 * !A2 * B1 * !X)	-0.00185	-0.00186	-0.00200
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00051	0.00051	0.00049
	(A2 * !B1 * !X)	-0.00191	-0.00192	-0.00195
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00049
	(!A2 * !B1 * !X)	-0.00191	-0.00192	-0.00195
	(!A1 * !A2 * B1 * !X)	0.00058	0.00058	0.00050
	(!A1 * !A2 * B1 * !X)	-0.00180	-0.00181	-0.00194
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00078	0.00078	0.00073
	(A2 * !B1 * !X)	-0.00319	-0.00320	-0.00327
	(!A2 * !B1 * !X)	0.00078	0.00078	0.00073
	(!A2 * !B1 * !X)	-0.00319	-0.00320	-0.00327
	(!A1 * !A2 * B1 * !X)	0.00089	0.00089	0.00074
	(!A1 * !A2 * B1 * !X)	-0.00295	-0.00296	-0.00322

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !B1 * !X)	0.00203	0.00205	0.00204
	(!A2 * !B1 * !X)	-0.00035	-0.00036	-0.00036
	(!A2 * !B1 * !X)	0.00203	0.00205	0.00204
	(!A1 * !A2 * B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * !X)	0.00203	0.00205	0.00204
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00044	-0.00045	-0.00045
	(A2 * !B1 * !X)	0.00197	0.00199	0.00199
	(!A2 * !B1 * !X)	-0.00046	-0.00045	-0.00045
	(!A2 * !B1 * !X)	0.00200	0.00199	0.00199
	(!A1 * !A2 * B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * !X)	0.00198	0.00199	0.00198
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(A2 * !B1 * !X)	0.00333	0.00335	0.00334
	(!A2 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(!A2 * !B1 * !X)	0.00333	0.00335	0.00334
	(!A1 * !A2 * B1 * !X)	-0.00062	-0.00062	-0.00061
	(!A1 * !A2 * B1 * !X)	0.00333	0.00334	0.00333

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00302	0.00310	0.00303	0.39712
sky130_fd_sc_hs__o21ai_2	0.00611	0.00569	0.00562	0.74632
sky130_fd_sc_hs__o21ai_4	0.01094	0.01125	0.00820	1.36092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.72937	1.62062
sky130_fd_sc_hs__o21ai_2	0.00000	1.35409	3.19141
sky130_fd_sc_hs__o21ai_4	0.00000	2.11334	4.78354

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)	0.14576	1.06134	9.90112
	A2->Y (FR)	0.12442	1.06737	10.30910
	B1->Y (FR)	0.05178	0.72726	7.36361
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.12747	0.89387	9.67869
	A2->Y (FR)	0.09958	0.89725	10.07710
	B1->Y (FR)	0.03911	0.62945	7.24619
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.12370	0.77491	9.55715
	A2->Y (FR)	0.09684	0.79754	10.16020
	B1->Y (FR)	0.05548	0.78368	10.29240

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.06930	0.60081	5.68211
	A2->Y (RF)	0.05617	0.57629	5.59707
	B1->Y (RF)	0.05868	0.65529	6.43154
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.05816	0.51061	5.48999
	A2->Y (RF)	0.04746	0.49501	5.52005
	B1->Y (RF)	0.03466	0.54551	6.30722
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.05630	0.44945	5.40324
	A2->Y (RF)	0.04456	0.42718	5.38904
	B1->Y (RF)	0.04136	0.49193	6.16583

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00085	0.00079	0.00389
	A1	0.00710	0.00693	0.01013
	A2	0.00090	0.00106	0.00548
	A2	0.00605	0.00599	0.01065
	B1	-0.00018	0.00021	0.00560
	B1	0.00499	0.00535	0.01051
sky130_fd_sc_hs__o21ai_2	A1	0.00113	0.00102	0.00731
	A1	0.01312	0.01299	0.01928
	A2	0.00112	0.00163	0.01038
	A2	0.01072	0.01122	0.01993
	B1	-0.00146	-0.00014	0.01040
	B1	0.00811	0.00942	0.01991
sky130_fd_sc_hs__o21ai_4	A1	0.00180	0.00166	0.01454
	A1	0.02508	0.02492	0.03785
	A2	0.00153	0.00278	0.01985
	A2	0.02071	0.02198	0.03904
	B1	-0.00270	-0.00090	0.01120
	B1	0.01272	0.01437	0.02596

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00753	0.00747	0.01021
	A1	0.00125	0.00118	0.00382
	A2	0.00552	0.00556	0.00850
	A2	0.00033	0.00034	0.00293
	B1	0.00633	0.00644	0.00997
	B1	0.00009	0.00024	0.00375
sky130_fd_sc_hs__o21ai_2	A1	0.01410	0.01397	0.02001
	A1	0.00205	0.00184	0.00719
	A2	0.00946	0.00957	0.01539
	A2	-0.00023	-0.00012	0.00516
	B1	0.01151	0.01186	0.01850
	B1	-0.00058	-0.00009	0.00704
sky130_fd_sc_hs__o21ai_4	A1	0.02679	0.02655	0.03820
	A1	0.00341	0.00309	0.01419
	A2	0.01766	0.01803	0.02944
	A2	-0.00171	-0.00135	0.00963
	B1	0.02098	0.02169	0.02908
	B1	0.00035	0.00102	0.00856

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00186	0.00158	0.00153
	(A2 * B1 * !Y)	-0.00146	-0.00173	-0.00178
	(A2 * !B1 * Y)	0.00141	0.00140	0.00140
	(A2 * !B1 * Y)	-0.00189	-0.00190	-0.00190
	(!A2 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A2 * !B1 * Y)	-0.00192	-0.00193	-0.00193
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00359	0.00298	0.00286
	(A2 * B1 * !Y)	-0.00291	-0.00352	-0.00361
	(A2 * !B1 * Y)	0.00270	0.00269	0.00268
	(A2 * !B1 * Y)	-0.00376	-0.00379	-0.00377
	(!A2 * !B1 * Y)	0.00254	0.00256	0.00255
	(!A2 * !B1 * Y)	-0.00382	-0.00384	-0.00382
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00667	0.00546	0.00523
	(A2 * B1 * !Y)	-0.00576	-0.00705	-0.00724
	(A2 * !B1 * Y)	0.00518	0.00521	0.00519
	(A2 * !B1 * Y)	-0.00718	-0.00727	-0.00723
	(!A2 * !B1 * Y)	0.00490	0.00495	0.00492
	(!A2 * !B1 * Y)	-0.00736	-0.00739	-0.00735

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00149	-0.00150	-0.00149
	(A2 * B1 * !Y)	0.00181	0.00182	0.00182
	(A2 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(A2 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A2 * !B1 * Y)	-0.00125	-0.00134	-0.00133
	(!A2 * !B1 * Y)	0.00201	0.00197	0.00194
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00279	-0.00279	-0.00278
	(A2 * B1 * !Y)	0.00367	0.00369	0.00368
	(A2 * !B1 * Y)	-0.00266	-0.00268	-0.00266
	(A2 * !B1 * Y)	0.00376	0.00381	0.00377
	(!A2 * !B1 * Y)	-0.00237	-0.00255	-0.00255
	(!A2 * !B1 * Y)	0.00395	0.00390	0.00385
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00512	-0.00512	-0.00509
	(A2 * B1 * !Y)	0.00731	0.00733	0.00734
	(A2 * !B1 * Y)	-0.00513	-0.00519	-0.00516
	(A2 * !B1 * Y)	0.00718	0.00730	0.00723
	(!A2 * !B1 * Y)	-0.00459	-0.00493	-0.00492
	(!A2 * !B1 * Y)	0.00767	0.00751	0.00740

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00157	0.00159	0.00158
	(A1 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !B1 * Y)	0.00129	0.00129	0.00128
	(A1 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * Y)	0.00121	0.00122	0.00122
	(!A1 * !B1 * Y)	-0.00196	-0.00197	-0.00196
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00286	0.00288	0.00287
	(A1 * B1 * !Y)	-0.00164	-0.00165	-0.00164
	(A1 * !B1 * Y)	0.00262	0.00263	0.00260
	(A1 * !B1 * Y)	-0.00352	-0.00355	-0.00353
	(!A1 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * !B1 * Y)	-0.00359	-0.00361	-0.00359
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00601	0.00606	0.00603
	(A1 * B1 * !Y)	-0.00333	-0.00335	-0.00332
	(A1 * !B1 * Y)	0.00526	0.00532	0.00526
	(A1 * !B1 * Y)	-0.00729	-0.00734	-0.00731
	(!A1 * !B1 * Y)	0.00498	0.00503	0.00499
	(!A1 * !B1 * Y)	-0.00747	-0.00751	-0.00746

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00151	-0.00152	-0.00156
	(A1 * B1 * !Y)	0.00088	0.00088	0.00084
	(A1 * !B1 * Y)	-0.00127	-0.00127	-0.00127
	(A1 * !B1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !B1 * Y)	-0.00114	-0.00121	-0.00122
	(!A1 * !B1 * Y)	0.00202	0.00199	0.00197
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00271	-0.00272	-0.00282
	(A1 * B1 * !Y)	0.00179	0.00179	0.00170
	(A1 * !B1 * Y)	-0.00259	-0.00260	-0.00259
	(A1 * !B1 * Y)	0.00352	0.00355	0.00353
	(!A1 * !B1 * Y)	-0.00232	-0.00247	-0.00247
	(!A1 * !B1 * Y)	0.00373	0.00366	0.00361
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00566	-0.00572	-0.00596
	(A1 * B1 * !Y)	0.00361	0.00364	0.00343
	(A1 * !B1 * Y)	-0.00522	-0.00526	-0.00523
	(A1 * !B1 * Y)	0.00729	0.00734	0.00731
	(!A1 * !B1 * Y)	-0.00465	-0.00500	-0.00499
	(!A1 * !B1 * Y)	0.00778	0.00762	0.00752

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00053	0.00054	0.00049
	(!A1 * !A2 * Y)	-0.00213	-0.00215	-0.00222
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00110	0.00109	0.00099
	(!A1 * !A2 * Y)	-0.00396	-0.00396	-0.00414
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00192	0.00193	0.00175
	(!A1 * !A2 * Y)	-0.00447	-0.00452	-0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * Y)	0.00224	0.00227	0.00224
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00094	-0.00096	-0.00094
	(!A1 * !A2 * Y)	0.00416	0.00424	0.00418
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00166	-0.00168	-0.00165
	(!A1 * !A2 * Y)	0.00486	0.00493	0.00486

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00258	0.00260	0.00255	0.81414
sky130_fd_sc_hs__o21a_2	0.00281	0.00277	0.00287	1.59510
sky130_fd_sc_hs__o21a_4	0.00537	0.00498	0.00474	3.08208

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	2.35946	4.93859
sky130_fd_sc_hs__o21a_2	0.00000	2.42085	3.90085
sky130_fd_sc_hs__o21a_4	0.00000	5.66946	10.26590

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)	0.13724	0.82112	7.50827
	A2->X (RR)	0.11883	0.78231	7.40241
	B1->X (RR)	0.12697	0.82602	7.60071
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.14184	0.73361	7.51388
	A2->X (RR)	0.12615	0.70323	7.42564
	B1->X (RR)	0.13182	0.74695	7.65412
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.14872	0.66570	7.60806
	A2->X (RR)	0.13275	0.63134	7.52493
	B1->X (RR)	0.13389	0.67292	7.68853

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.21325	0.70435	4.45017
	A2->X (FF)	0.19070	0.70424	4.47936
	B1->X (FF)	0.11505	0.62048	4.29894
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.27282	0.76214	4.73486
	A2->X (FF)	0.25234	0.77643	4.80904
	B1->X (FF)	0.12520	0.61240	4.37581
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.26039	0.70401	4.68527
	A2->X (FF)	0.23380	0.70624	4.73404
	B1->X (FF)	0.13836	0.60285	4.51314

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00943	0.00972	0.02209
	A1	0.00414	0.00443	0.01684
	A2	0.00754	0.00785	0.02259
	A2	0.00322	0.00353	0.01833
	B1	0.00851	0.00906	0.02496
	B1	0.00328	0.00403	0.02121
sky130_fd_sc_hs__o21a_2	A1	0.01239	0.01292	0.02549
	A1	0.00664	0.00718	0.01981
	A2	0.01057	0.01111	0.02586
	A2	0.00587	0.00642	0.02142
	B1	0.01130	0.01204	0.02845
	B1	0.00568	0.00663	0.02428
sky130_fd_sc_hs__o21a_4	A1	0.02413	0.02500	0.04916
	A1	0.01329	0.01420	0.03902
	A2	0.02003	0.02099	0.04940
	A2	0.01140	0.01242	0.04089
	B1	0.02176	0.02313	0.05342
	B1	0.01134	0.01315	0.04554

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00378	0.00433	0.01716
	A1	0.00903	0.00943	0.02218
	A2	0.00382	0.00482	0.02057
	A2	0.00808	0.00908	0.02459
	B1	0.00289	0.00409	0.02303
	B1	0.00703	0.00816	0.02604
sky130_fd_sc_hs__o21a_2	A1	0.00652	0.00692	0.02005
	A1	0.01221	0.01261	0.02568
	A2	0.00663	0.00749	0.02373
	A2	0.01128	0.01213	0.02814
	B1	0.00524	0.00654	0.02508
	B1	0.00980	0.01109	0.02962
sky130_fd_sc_hs__o21a_4	A1	0.01202	0.01284	0.04068
	A1	0.02275	0.02350	0.04842
	A2	0.01236	0.01417	0.04654
	A2	0.02088	0.02262	0.05318
	B1	0.01001	0.01273	0.04701
	B1	0.01808	0.02057	0.05505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00157	0.00131	0.00125
	(A2 * B1 * X)	-0.00131	-0.00159	-0.00163
	(A2 * !B1 * !X)	0.00121	0.00123	0.00121
	(A2 * !B1 * !X)	-0.00165	-0.00167	-0.00166
	(!A2 * !B1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !B1 * !X)	-0.00168	-0.00167	-0.00167
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00180	0.00156	0.00148
	(A2 * B1 * X)	-0.00130	-0.00157	-0.00161
	(A2 * !B1 * !X)	0.00146	0.00146	0.00146
	(A2 * !B1 * !X)	-0.00162	-0.00163	-0.00163
	(!A2 * !B1 * !X)	0.00140	0.00139	0.00140
	(!A2 * !B1 * !X)	-0.00165	-0.00164	-0.00164
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00341	0.00288	0.00276
	(A2 * B1 * X)	-0.00248	-0.00305	-0.00314
	(A2 * !B1 * !X)	0.00262	0.00264	0.00262
	(A2 * !B1 * !X)	-0.00323	-0.00327	-0.00327
	(!A2 * !B1 * !X)	0.00251	0.00252	0.00251
	(!A2 * !B1 * !X)	-0.00329	-0.00331	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00115	-0.00115	-0.00115
	(A2 * B1 * X)	0.00172	0.00171	0.00173
	(A2 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(A2 * !B1 * !X)	0.00168	0.00168	0.00167
	(!A2 * !B1 * !X)	-0.00106	-0.00113	-0.00115
	(!A2 * !B1 * !X)	0.00176	0.00172	0.00170
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00140	-0.00141	-0.00140
	(A2 * B1 * X)	0.00169	0.00171	0.00169
	(A2 * !B1 * !X)	-0.00142	-0.00143	-0.00143
	(A2 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A2 * !B1 * !X)	-0.00128	-0.00137	-0.00138
	(!A2 * !B1 * !X)	0.00174	0.00171	0.00168
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00255	-0.00256	-0.00255
	(A2 * B1 * X)	0.00331	0.00334	0.00334
	(A2 * !B1 * !X)	-0.00254	-0.00257	-0.00256
	(A2 * !B1 * !X)	0.00329	0.00332	0.00331
	(!A2 * !B1 * !X)	-0.00231	-0.00245	-0.00248
	(!A2 * !B1 * !X)	0.00347	0.00340	0.00337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00127	0.00127	0.00127
	(A1 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !X)	0.00116	0.00116	0.00115
	(A1 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !B1 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00145	0.00146	0.00146
	(A1 * B1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !B1 * !X)	0.00132	0.00133	0.00132
	(A1 * !B1 * !X)	-0.00158	-0.00160	-0.00160
	(!A1 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !B1 * !X)	-0.00161	-0.00161	-0.00161
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00253	0.00254	0.00254
	(A1 * B1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * !B1 * !X)	0.00220	0.00223	0.00221
	(A1 * !B1 * !X)	-0.00321	-0.00325	-0.00326
	(!A1 * !B1 * !X)	0.00210	0.00212	0.00210
	(!A1 * !B1 * !X)	-0.00328	-0.00330	-0.00328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00116	-0.00115	-0.00120
	(A1 * B1 * X)	0.00089	0.00088	0.00085
	(A1 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A1 * !B1 * !X)	-0.00100	-0.00108	-0.00109
	(!A1 * !B1 * !X)	0.00172	0.00168	0.00166
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00136	-0.00137	-0.00141
	(A1 * B1 * X)	0.00082	0.00082	0.00079
	(A1 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !B1 * !X)	-0.00115	-0.00123	-0.00124
	(!A1 * !B1 * !X)	0.00170	0.00167	0.00165
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00229	-0.00229	-0.00240
	(A1 * B1 * X)	0.00171	0.00170	0.00162
	(A1 * !B1 * !X)	-0.00214	-0.00216	-0.00214
	(A1 * !B1 * !X)	0.00328	0.00329	0.00328
	(!A1 * !B1 * !X)	-0.00189	-0.00204	-0.00207
	(!A1 * !B1 * !X)	0.00345	0.00339	0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00050	0.00050	0.00046
	(!A1 * !A2 * !X)	-0.00166	-0.00167	-0.00173
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00056	0.00056	0.00051
	(!A1 * !A2 * !X)	-0.00189	-0.00191	-0.00199
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00088	0.00088	0.00078
	(!A1 * !A2 * !X)	-0.00320	-0.00322	-0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !X)	0.00176	0.00178	0.00176
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !X)	0.00202	0.00204	0.00203
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00068	-0.00068	-0.00068
	(!A1 * !A2 * !X)	0.00344	0.00346	0.00345

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00288	0.00317	0.00244	0.39395
sky130_fd_sc_hs__o21bai_2	0.00608	0.00562	0.00273	0.75037
sky130_fd_sc_hs__o21bai_4	0.01105	0.01119	0.00376	1.39281

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	2.30525	3.32299
sky130_fd_sc_hs__o21bai_2	0.00000	2.39154	3.51283
sky130_fd_sc_hs__o21bai_4	0.00000	5.28416	6.92368

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)	0.13656	1.05419	9.84608
	A2->Y (FR)	0.11721	1.05965	10.25940
	B1_N->Y (RR)	0.09528	0.57642	3.96860
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.12487	0.89030	9.68005
	A2->Y (FR)	0.09808	0.89517	10.08140
	B1_N->Y (RR)	0.09545	0.53258	3.98009
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.12576	0.78022	9.61614
	A2->Y (FR)	0.09784	0.79539	10.14670
	B1_N->Y (RR)	0.12635	0.71606	7.43960

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.06935	0.59886	5.67086
	A2->Y (RF)	0.05659	0.57653	5.60026
	B1_N->Y (FF)	0.13773	0.61775	3.68757
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.06422	0.51419	5.51589
	A2->Y (RF)	0.05239	0.49906	5.54747
	B1_N->Y (FF)	0.13299	0.60152	3.87615
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.07280	0.46699	5.59366
	A2->Y (RF)	0.05329	0.43617	5.47334
	B1_N->Y (FF)	0.13588	0.52407	3.71263

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00080	0.00076	0.00388
	A1	0.00573	0.00569	0.00880
	A2	0.00078	0.00105	0.00541
	A2	0.00486	0.00503	0.00950
	B1_N	0.00638	0.00702	0.02296
	B1_N	0.00453	0.00518	0.02115
sky130_fd_sc_hs__o21bai_2	A1	0.00109	0.00101	0.00731
	A1	0.01100	0.01092	0.01721
	A2	0.00111	0.00188	0.01039
	A2	0.00851	0.00925	0.01774
	B1_N	0.00895	0.00981	0.02712
	B1_N	0.00785	0.00876	0.02607
sky130_fd_sc_hs__o21bai_4	A1	0.00202	0.00191	0.01426
	A1	0.02135	0.02122	0.03363
	A2	0.00187	0.00351	0.02022
	A2	0.01692	0.01859	0.03530
	B1_N	0.01186	0.01340	0.04400
	B1_N	0.01214	0.01377	0.04448

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00703	0.00697	0.00977
	A1	0.00209	0.00204	0.00467
	A2	0.00509	0.00513	0.00790
	A2	0.00099	0.00102	0.00361
	B1_N	0.00562	0.00667	0.02397
	B1_N	0.00753	0.00858	0.02587
sky130_fd_sc_hs__o21bai_2	A1	0.01402	0.01390	0.01988
	A1	0.00410	0.00390	0.00923
	A2	0.00943	0.00960	0.01482
	A2	0.00200	0.00211	0.00740
	B1_N	0.01095	0.01219	0.03098
	B1_N	0.01212	0.01324	0.03215
sky130_fd_sc_hs__o21bai_4	A1	0.02808	0.02769	0.03868
	A1	0.00869	0.00833	0.01926
	A2	0.01873	0.01898	0.03074
	A2	0.00357	0.00384	0.01464
	B1_N	0.02177	0.02354	0.05512
	B1_N	0.02173	0.02345	0.05451

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)	0.00140	0.00139	0.00140
	(A2 * B1_N * Y)	-0.00177	-0.00178	-0.00179
	(A2 * !B1_N * !Y)	0.00171	0.00143	0.00139
	(A2 * !B1_N * !Y)	-0.00147	-0.00175	-0.00180
	(!A2 * B1_N * Y)	0.00134	0.00135	0.00135
	(!A2 * B1_N * Y)	-0.00180	-0.00181	-0.00181
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00284	0.00283	0.00282
	(A2 * B1_N * Y)	-0.00373	-0.00374	-0.00376
	(A2 * !B1_N * !Y)	0.00359	0.00298	0.00287
	(A2 * !B1_N * !Y)	-0.00301	-0.00361	-0.00370
	(!A2 * B1_N * Y)	0.00273	0.00275	0.00274
	(!A2 * B1_N * Y)	-0.00378	-0.00379	-0.00378
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00534	0.00533	0.00531
	(A2 * B1_N * Y)	-0.00724	-0.00729	-0.00731
	(A2 * !B1_N * !Y)	0.00682	0.00553	0.00531
	(A2 * !B1_N * !Y)	-0.00583	-0.00711	-0.00730
	(!A2 * B1_N * Y)	0.00512	0.00515	0.00514
	(!A2 * B1_N * Y)	-0.00737	-0.00739	-0.00736

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)	-0.00134	-0.00134	-0.00134
	(A2 * B1_N * Y)	0.00183	0.00184	0.00183
	(A2 * !B1_N * !Y)	-0.00134	-0.00135	-0.00134
	(A2 * !B1_N * !Y)	0.00183	0.00184	0.00184
	(!A2 * B1_N * Y)	-0.00123	-0.00130	-0.00131
	(!A2 * B1_N * Y)	0.00194	0.00190	0.00187
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00277	-0.00279	-0.00278
	(A2 * B1_N * Y)	0.00374	0.00380	0.00376
	(A2 * !B1_N * !Y)	-0.00278	-0.00280	-0.00278
	(A2 * !B1_N * !Y)	0.00373	0.00378	0.00377
	(!A2 * B1_N * Y)	-0.00254	-0.00271	-0.00272
	(!A2 * B1_N * Y)	0.00393	0.00389	0.00384
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00516	-0.00520	-0.00518
	(A2 * B1_N * Y)	0.00732	0.00742	0.00735
	(A2 * !B1_N * !Y)	-0.00515	-0.00518	-0.00515
	(A2 * !B1_N * !Y)	0.00734	0.00740	0.00742
	(!A2 * B1_N * Y)	-0.00469	-0.00503	-0.00506
	(!A2 * B1_N * Y)	0.00773	0.00763	0.00752

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)	0.00143	0.00144	0.00143
	(A1 * B1_N * Y)	-0.00192	-0.00193	-0.00193
	(A1 * !B1_N * !Y)	0.00160	0.00161	0.00161
	(A1 * !B1_N * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * B1_N * Y)	0.00138	0.00139	0.00138
	(!A1 * B1_N * Y)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00260	0.00261	0.00258
	(A1 * B1_N * Y)	-0.00352	-0.00355	-0.00354
	(A1 * !B1_N * !Y)	0.00283	0.00285	0.00284
	(A1 * !B1_N * !Y)	-0.00163	-0.00164	-0.00163
	(!A1 * B1_N * Y)	0.00250	0.00252	0.00251
	(!A1 * B1_N * Y)	-0.00358	-0.00359	-0.00357
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00522	0.00532	0.00526
	(A1 * B1_N * Y)	-0.00718	-0.00733	-0.00734
	(A1 * !B1_N * !Y)	0.00593	0.00597	0.00593
	(A1 * !B1_N * !Y)	-0.00336	-0.00337	-0.00334
	(!A1 * B1_N * Y)	0.00512	0.00514	0.00510
	(!A1 * B1_N * Y)	-0.00742	-0.00743	-0.00738

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)	-0.00137	-0.00138	-0.00137
	(A1 * B1_N * Y)	0.00197	0.00198	0.00197
	(A1 * !B1_N * !Y)	-0.00152	-0.00154	-0.00158
	(A1 * !B1_N * !Y)	0.00098	0.00099	0.00095
	(!A1 * B1_N * Y)	-0.00126	-0.00133	-0.00134
	(!A1 * B1_N * Y)	0.00208	0.00204	0.00201
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00253	-0.00255	-0.00254
	(A1 * B1_N * Y)	0.00354	0.00357	0.00354
	(A1 * !B1_N * !Y)	-0.00266	-0.00269	-0.00279
	(A1 * !B1_N * !Y)	0.00177	0.00179	0.00170
	(!A1 * B1_N * Y)	-0.00234	-0.00247	-0.00248
	(!A1 * B1_N * Y)	0.00374	0.00368	0.00363
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00513	-0.00514	-0.00513
	(A1 * B1_N * Y)	0.00733	0.00734	0.00734
	(A1 * !B1_N * !Y)	-0.00557	-0.00563	-0.00585
	(A1 * !B1_N * !Y)	0.00365	0.00367	0.00346
	(!A1 * B1_N * Y)	-0.00466	-0.00499	-0.00502
	(!A1 * B1_N * Y)	0.00774	0.00764	0.00754

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)	0.00521	0.00578	0.02299
	(!A1 * !A2 * Y)	0.00196	0.00252	0.01973
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00771	0.00827	0.02726
	(!A1 * !A2 * Y)	0.00396	0.00451	0.02351
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00922	0.01019	0.04050
	(!A1 * !A2 * Y)	0.00405	0.00500	0.03533

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)	0.00031	0.00130	0.01876
	(!A1 * !A2 * Y)	0.00359	0.00460	0.02204
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00082	0.00175	0.02082
	(!A1 * !A2 * Y)	0.00463	0.00556	0.02460
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00154	0.00335	0.03410
	(!A1 * !A2 * Y)	0.00682	0.00867	0.03936

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00262	0.00276	0.00224	0.75413
sky130_fd_sc_hs__o21ba_2	0.00273	0.00285	0.00238	1.47302
sky130_fd_sc_hs__o21ba_4	0.00544	0.00518	0.00295	2.80158

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	3.51406	4.23609
sky130_fd_sc_hs__o21ba_2	0.00000	3.99530	4.91414
sky130_fd_sc_hs__o21ba_4	0.00000	6.27687	10.58720

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)	0.15114	0.84972	7.54214
	A2->X (RR)	0.13326	0.81376	7.44568
	B1_N->X (FR)	0.22517	0.94186	7.63462
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.14916	0.73522	7.33872
	A2->X (RR)	0.13151	0.70330	7.24464
	B1_N->X (FR)	0.22790	0.83321	7.46673
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.15841	0.67581	7.51460
	A2->X (RR)	0.14322	0.64248	7.43320
	B1_N->X (FR)	0.24328	0.80146	7.77249

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.22237	0.71177	4.26873
	A2->X (FF)	0.20352	0.71741	4.30845
	B1_N->X (RF)	0.15927	0.56759	3.55663
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.26794	0.75268	4.57683
	A2->X (FF)	0.24796	0.76636	4.64778
	B1_N->X (RF)	0.17633	0.55879	3.68120
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.25955	0.69633	4.40087
	A2->X (FF)	0.23327	0.69922	4.45018
	B1_N->X (RF)	0.18669	0.53772	3.51970

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00990	0.01017	0.02249
	A1	0.00542	0.00570	0.01803
	A2	0.00821	0.00848	0.02313
	A2	0.00453	0.00480	0.01949
	B1_N	0.00901	0.01010	0.02800
	B1_N	0.01080	0.01191	0.02996
sky130_fd_sc_hs__o21ba_2	A1	0.01236	0.01287	0.02551
	A1	0.00774	0.00826	0.02109
	A2	0.01058	0.01111	0.02592
	A2	0.00679	0.00734	0.02235
	B1_N	0.01124	0.01252	0.02991
	B1_N	0.01322	0.01450	0.03219
sky130_fd_sc_hs__o21ba_4	A1	0.02407	0.02490	0.04906
	A1	0.01493	0.01578	0.04010
	A2	0.02002	0.02090	0.04933
	A2	0.01309	0.01400	0.04262
	B1_N	0.02138	0.02306	0.04347
	B1_N	0.02297	0.02470	0.04580

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00381	0.00423	0.01733
	A1	0.00825	0.00867	0.02139
	A2	0.00381	0.00478	0.02067
	A2	0.00746	0.00842	0.02387
	B1_N	0.00930	0.00996	0.02727
	B1_N	0.00755	0.00820	0.02527
sky130_fd_sc_hs__o21ba_2	A1	0.00615	0.00652	0.02018
	A1	0.01073	0.01109	0.02421
	A2	0.00616	0.00702	0.02354
	A2	0.00991	0.01078	0.02679
	B1_N	0.01185	0.01264	0.02923
	B1_N	0.00987	0.01057	0.02725
sky130_fd_sc_hs__o21ba_4	A1	0.01183	0.01241	0.03826
	A1	0.02090	0.02149	0.04637
	A2	0.01209	0.01385	0.04500
	A2	0.01895	0.02055	0.05109
	B1_N	0.01987	0.02127	0.04111
	B1_N	0.01829	0.01961	0.03953

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)	0.00123	0.00123	0.00123
	(A2 * B1_N * !X)	-0.00163	-0.00164	-0.00165
	(A2 * !B1_N * X)	0.00154	0.00130	0.00123
	(A2 * !B1_N * X)	-0.00133	-0.00161	-0.00165
	(!A2 * B1_N * !X)	0.00119	0.00120	0.00119
	(!A2 * B1_N * !X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00141	0.00143	0.00141
	(A2 * B1_N * !X)	-0.00159	-0.00161	-0.00161
	(A2 * !B1_N * X)	0.00173	0.00148	0.00141
	(A2 * !B1_N * X)	-0.00129	-0.00157	-0.00161
	(!A2 * B1_N * !X)	0.00137	0.00138	0.00137
	(!A2 * B1_N * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00268	0.00270	0.00269
	(A2 * B1_N * !X)	-0.00327	-0.00331	-0.00331
	(A2 * !B1_N * X)	0.00342	0.00288	0.00276
	(A2 * !B1_N * X)	-0.00258	-0.00316	-0.00324
	(!A2 * B1_N * !X)	0.00260	0.00262	0.00261
	(!A2 * B1_N * !X)	-0.00334	-0.00336	-0.00334

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)	-0.00115	-0.00116	-0.00115
	(A2 * B1_N * !X)	0.00170	0.00172	0.00171
	(A2 * !B1_N * X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1_N * X)	0.00172	0.00174	0.00173
	(!A2 * B1_N * !X)	-0.00105	-0.00112	-0.00113
	(!A2 * B1_N * !X)	0.00179	0.00176	0.00174
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00132	-0.00133	-0.00132
	(A2 * B1_N * !X)	0.00167	0.00169	0.00168
	(A2 * !B1_N * X)	-0.00133	-0.00133	-0.00132
	(A2 * !B1_N * X)	0.00168	0.00170	0.00169
	(!A2 * B1_N * !X)	-0.00121	-0.00128	-0.00129
	(!A2 * B1_N * !X)	0.00178	0.00173	0.00171
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00259	-0.00261	-0.00260
	(A2 * B1_N * !X)	0.00334	0.00338	0.00336
	(A2 * !B1_N * X)	-0.00254	-0.00256	-0.00254
	(A2 * !B1_N * X)	0.00342	0.00346	0.00345
	(!A2 * B1_N * !X)	-0.00240	-0.00253	-0.00255
	(!A2 * B1_N * !X)	0.00354	0.00347	0.00343

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)	0.00131	0.00130	0.00129
	(A1 * B1_N * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !B1_N * X)	0.00135	0.00135	0.00135
	(A1 * !B1_N * X)	-0.00086	-0.00087	-0.00087
	(!A1 * B1_N * !X)	0.00125	0.00126	0.00125
	(!A1 * B1_N * !X)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00143	0.00145	0.00144
	(A1 * B1_N * !X)	-0.00160	-0.00163	-0.00163
	(A1 * !B1_N * X)	0.00152	0.00153	0.00153
	(A1 * !B1_N * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1_N * !X)	0.00140	0.00141	0.00140
	(!A1 * B1_N * !X)	-0.00164	-0.00164	-0.00163
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00229	0.00231	0.00229
	(A1 * B1_N * !X)	-0.00329	-0.00333	-0.00333
	(A1 * !B1_N * X)	0.00260	0.00261	0.00260
	(A1 * !B1_N * X)	-0.00154	-0.00154	-0.00154
	(!A1 * B1_N * !X)	0.00220	0.00221	0.00220
	(!A1 * B1_N * !X)	-0.00337	-0.00337	-0.00336

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)	-0.00121	-0.00123	-0.00121
	(A1 * B1_N * !X)	0.00171	0.00173	0.00172
	(A1 * !B1_N * X)	-0.00126	-0.00126	-0.00130
	(A1 * !B1_N * X)	0.00096	0.00095	0.00092
	(!A1 * B1_N * !X)	-0.00111	-0.00118	-0.00119
	(!A1 * B1_N * !X)	0.00180	0.00177	0.00175
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00135	-0.00137	-0.00135
	(A1 * B1_N * !X)	0.00170	0.00171	0.00170
	(A1 * !B1_N * X)	-0.00143	-0.00143	-0.00148
	(A1 * !B1_N * X)	0.00091	0.00091	0.00087
	(!A1 * B1_N * !X)	-0.00125	-0.00132	-0.00132
	(!A1 * B1_N * !X)	0.00179	0.00175	0.00173
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00221	-0.00221	-0.00220
	(A1 * B1_N * !X)	0.00338	0.00338	0.00337
	(A1 * !B1_N * X)	-0.00235	-0.00235	-0.00246
	(A1 * !B1_N * X)	0.00179	0.00178	0.00170
	(!A1 * B1_N * !X)	-0.00199	-0.00213	-0.00214
	(!A1 * B1_N * !X)	0.00358	0.00350	0.00345

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)	0.00482	0.00545	0.02252
	(!A1 * !A2 * !X)	0.00179	0.00240	0.01948
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00524	0.00581	0.02276
	(!A1 * !A2 * !X)	0.00206	0.00261	0.01957
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00740	0.00801	0.02714
	(!A1 * !A2 * !X)	0.00340	0.00401	0.02314

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)	0.00042	0.00150	0.01873
	(!A1 * !A2 * !X)	0.00348	0.00458	0.02178
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00034	0.00134	0.01855
	(!A1 * !A2 * !X)	0.00357	0.00456	0.02176
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00061	0.00159	0.02074
	(!A1 * !A2 * !X)	0.00466	0.00565	0.02477

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00297	0.00313	0.00309	0.00301	0.00305	0.38764
sky130_fd_sc_hs__o221ai_2	0.00608	0.00559	0.00636	0.00560	0.00565	0.73216
sky130_fd_sc_hs__o221ai_4	0.01161	0.01110	0.01174	0.01107	0.01127	1.39150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.83869	2.50133
sky130_fd_sc_hs__o221ai_2	0.00000	1.50193	4.77872
sky130_fd_sc_hs__o221ai_4	0.00000	2.94540	9.56357

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)	0.20580	1.12574	9.81937
	A2->Y (FR)	0.18422	1.13039	10.23000
	B1->Y (FR)	0.15993	1.06621	9.71420
	B2->Y (FR)	0.13709	1.06885	10.12500
	C1->Y (FR)	0.05744	0.72580	7.24891
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.18359	0.95319	9.63548
	A2->Y (FR)	0.15726	0.95559	10.03620
	B1->Y (FR)	0.14424	0.90266	9.56722
	B2->Y (FR)	0.11600	0.90453	9.96252
	C1->Y (FR)	0.04487	0.62627	7.09797
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.17229	0.82332	9.44546
	A2->Y (FR)	0.14692	0.83430	9.93155
	B1->Y (FR)	0.14175	0.79229	9.60401
	B2->Y (FR)	0.11335	0.80267	10.07590
	C1->Y (FR)	0.04507	0.55830	7.11333

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.14394	0.76341	6.48295
	A2->Y (RF)	0.12319	0.73755	6.43255
	B1->Y (RF)	0.13123	0.79646	7.14962
	B2->Y (RF)	0.10843	0.76483	7.04653
	C1->Y (RF)	0.11029	0.81657	7.71007
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.10919	0.63049	6.36764
	A2->Y (RF)	0.08949	0.60851	6.39966
	B1->Y (RF)	0.09637	0.66447	7.03069
	B2->Y (RF)	0.07646	0.65272	7.17879
	C1->Y (RF)	0.04964	0.67183	7.70574
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.11488	0.56901	6.51709
	A2->Y (RF)	0.09125	0.53981	6.52341
	B1->Y (RF)	0.10265	0.61246	7.30540
	B2->Y (RF)	0.07833	0.58411	7.33863
	C1->Y (RF)	0.05195	0.61288	8.00231

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00252	0.00241	0.00535
	A1	0.01110	0.01099	0.01381
	A2	0.00260	0.00274	0.00687
	A2	0.01014	0.01028	0.01421
	B1	0.00096	0.00086	0.00387
	B1	0.00841	0.00831	0.01119
	B2	0.00098	0.00111	0.00537
	B2	0.00728	0.00745	0.01144
	C1	-0.00033	0.00001	0.00515
	C1	0.00612	0.00646	0.01133
sky130_fd_sc_hs__o221ai_2	A1	0.00408	0.00384	0.00982
	A1	0.02071	0.02051	0.02627
	A2	0.00413	0.00460	0.01269
	A2	0.01834	0.01881	0.02662
	B1	0.00127	0.00105	0.00711
	B1	0.01593	0.01567	0.02155
	B2	0.00137	0.00195	0.01000
	B2	0.01348	0.01404	0.02181
	C1	-0.00138	-0.00017	0.00981
	C1	0.01081	0.01197	0.02121

sky130_fd_sc_hs__o221ai_4	**A1**	0.00696	0.00653	0.01789
	A1	0.03988	0.03954	0.05055
	A2	0.00713	0.00815	0.02311
	A2	0.03536	0.03646	0.05079
	B1	0.00197	0.00160	0.01466
	B1	0.03077	0.03040	0.04298
	B2	0.00194	0.00325	0.01980
	B2	0.02622	0.02731	0.04336
	C1	-0.00256	-0.00004	0.02395
	C1	0.02171	0.02462	0.04620

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01191	0.01176	0.01417
	A1	0.00304	0.00293	0.00526
	A2	0.00982	0.00972	0.01202
	A2	0.00199	0.00188	0.00418
	B1	0.01052	0.01041	0.01282
	B1	0.00307	0.00296	0.00523
	B2	0.00852	0.00844	0.01074
	B2	0.00096	0.00093	0.00335
	C1	0.00951	0.00964	0.01245
	C1	0.00075	0.00084	0.00412

sky130_fd_sc_hs__o221ai_2	**A1**	0.02255	0.02227	0.02721
	A1	0.00539	0.00505	0.00981
	A2	0.01812	0.01796	0.02271
	A2	0.00335	0.00319	0.00793
	B1	0.02009	0.01980	0.02472
	B1	0.00545	0.00517	0.00975
	B2	0.01548	0.01537	0.01988
	B2	0.00087	0.00085	0.00565
	C1	0.01750	0.01763	0.02365
	C1	0.00047	0.00082	0.00747
sky130_fd_sc_hs__o221ai_4	**A1**	0.04470	0.04403	0.05435
	A1	0.01071	0.01007	0.02003
	A2	0.03600	0.03557	0.04587
	A2	0.00660	0.00609	0.01604
	B1	0.03958	0.03914	0.04957
	B1	0.01080	0.01030	0.02066
	B2	0.03106	0.03085	0.04103
	B2	0.00178	0.00173	0.01277
	C1	0.03470	0.03547	0.05045
	C1	0.00085	0.00220	0.01814

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

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

	(A2 * B2 * C1 * !Y)	0.00179	0.00153	0.00147
	(A2 * B2 * C1 * !Y)	-0.00150	-0.00180	-0.00183
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00146	0.00148	0.00146
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00182	-0.00185	-0.00184
	(A2 * B1 * !B2 * C1 * !Y)	0.00180	0.00154	0.00147
	(A2 * B1 * !B2 * C1 * !Y)	-0.00150	-0.00180	-0.00183
	(A2 * !B1 * !B2 * Y)	0.00146	0.00148	0.00146
sky130_fd_sc_hs__o221ai_1	**(A2 * !B1 * !B2 * Y)**	-0.00182	-0.00185	-0.00184
	(!A2 * B2 * !C1 * Y)	0.00133	0.00135	0.00134
	(!A2 * B2 * !C1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * B1 * !B2 * !C1 * Y)	0.00135	0.00137	0.00135
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * !B2 * C1 * Y)	0.00138	0.00138	0.00137
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00187	-0.00187	-0.00186

	(A2 * B2 * C1 * !Y)	0.00354	0.00293	0.00282
	(A2 * B2 * C1 * !Y)	-0.00295	-0.00356	-0.00365
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00271	0.00270	0.00269
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00375	-0.00377	-0.00375
	(A2 * B1 * !B2 * C1 * !Y)	0.00355	0.00294	0.00282
	(A2 * B1 * !B2 * C1 * !Y)	-0.00295	-0.00355	-0.00364
	(A2 * !B1 * !B2 * Y)	0.00271	0.00271	0.00270
sky130_fd_sc_hs__o221ai_2	**(A2 * !B1 * !B2 * Y)**	-0.00374	-0.00376	-0.00376
	(!A2 * B2 * !C1 * Y)	0.00245	0.00248	0.00245
	(!A2 * B2 * !C1 * Y)	-0.00382	-0.00384	-0.00381
	(!A2 * B1 * !B2 * !C1 * Y)	0.00248	0.00248	0.00248
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00381	-0.00381	-0.00381
	(!A2 * !B1 * !B2 * C1 * Y)	0.00252	0.00256	0.00254
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00379	-0.00383	-0.00381
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00251	0.00255	0.00253
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00380	-0.00384	-0.00382

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00701	0.00578	0.00554
	(A2 * B2 * C1 * !Y)	-0.00580	-0.00703	-0.00721
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00547	0.00547	0.00544
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00724	-0.00731	-0.00726
	(A2 * B1 * !B2 * C1 * !Y)	0.00703	0.00580	0.00556
	(A2 * B1 * !B2 * C1 * !Y)	-0.00578	-0.00701	-0.00720
	(A2 * !B1 * !B2 * Y)	0.00549	0.00548	0.00545
	(A2 * !B1 * !B2 * Y)	-0.00725	-0.00729	-0.00727
	(!A2 * B2 * !C1 * Y)	0.00495	0.00491	0.00494
	(!A2 * B2 * !C1 * Y)	-0.00740	-0.00736	-0.00738
	(!A2 * B1 * !B2 * !C1 * Y)	0.00501	0.00501	0.00500
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00740	-0.00740	-0.00738
	(!A2 * !B1 * !B2 * C1 * Y)	0.00512	0.00514	0.00513
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00738	-0.00739	-0.00738
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00509	0.00513	0.00510
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00738	-0.00741	-0.00739

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)**	-0.00143	-0.00143	-0.00142
	(A2 * B2 * C1 * !Y)	0.00186	0.00187	0.00187
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00145	-0.00145	-0.00145
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00183	0.00185	0.00184
	(A2 * B1 * !B2 * C1 * !Y)	-0.00142	-0.00143	-0.00142
	(A2 * B1 * !B2 * C1 * !Y)	0.00186	0.00188	0.00187
	(A2 * !B1 * !B2 * Y)	-0.00145	-0.00145	-0.00145
	(A2 * !B1 * !B2 * Y)	0.00184	0.00185	0.00184
	(!A2 * B2 * !C1 * Y)	-0.00124	-0.00135	-0.00134
	(!A2 * B2 * !C1 * Y)	0.00189	0.00188	0.00187
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00125	-0.00136	-0.00135
	(!A2 * B1 * !B2 * !C1 * Y)	0.00188	0.00188	0.00187
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00130	-0.00138	-0.00137
	(!A2 * !B1 * !B2 * C1 * Y)	0.00188	0.00189	0.00188
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00131	-0.00138	-0.00137
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00187	0.00188	0.00187

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00274	-0.00274	-0.00273
	(A2 * B2 * C1 * !Y)	0.00371	0.00373	0.00372
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00267	-0.00269	-0.00268
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00375	0.00379	0.00375
	(A2 * B1 * !B2 * C1 * !Y)	-0.00272	-0.00274	-0.00272
	(A2 * B1 * !B2 * C1 * !Y)	0.00369	0.00374	0.00373
	(A2 * !B1 * !B2 * Y)	-0.00266	-0.00269	-0.00267
	(A2 * !B1 * !B2 * Y)	0.00374	0.00380	0.00376
	(!A2 * B2 * !C1 * Y)	-0.00225	-0.00248	-0.00245
	(!A2 * B2 * !C1 * Y)	0.00384	0.00387	0.00383
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00230	-0.00248	-0.00248
	(!A2 * B1 * !B2 * !C1 * Y)	0.00386	0.00386	0.00383
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00239	-0.00255	-0.00254
	(!A2 * !B1 * !B2 * C1 * Y)	0.00385	0.00387	0.00384
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00242	-0.00255	-0.00253
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00383	0.00386	0.00383

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00537	-0.00540	-0.00536
	(A2 * B2 * C1 * !Y)	0.00730	0.00737	0.00736
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00540	-0.00545	-0.00541
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00724	0.00734	0.00726
	(A2 * B1 * !B2 * C1 * !Y)	-0.00536	-0.00538	-0.00535
	(A2 * B1 * !B2 * C1 * !Y)	0.00732	0.00738	0.00737
	(A2 * !B1 * !B2 * Y)	-0.00540	-0.00544	-0.00540
	(A2 * !B1 * !B2 * Y)	0.00725	0.00735	0.00727
	(!A2 * B2 * !C1 * Y)	-0.00452	-0.00491	-0.00494
	(!A2 * B2 * !C1 * Y)	0.00747	0.00750	0.00743
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00462	-0.00501	-0.00500
	(!A2 * B1 * !B2 * !C1 * Y)	0.00749	0.00750	0.00743
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00481	-0.00514	-0.00513
	(!A2 * !B1 * !B2 * C1 * Y)	0.00747	0.00750	0.00744
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00489	-0.00513	-0.00510
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00743	0.00749	0.00742

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)**	0.00154	0.00156	0.00155
	(A1 * B2 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * B2 * !C1 * Y)	0.00134	0.00134	0.00132
	(A1 * B2 * !C1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * B1 * !B2 * C1 * !Y)	0.00155	0.00156	0.00155
	(A1 * B1 * !B2 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !B2 * !C1 * Y)	0.00132	0.00134	0.00132
	(A1 * B1 * !B2 * !C1 * Y)	-0.00192	-0.00195	-0.00194
	(A1 * !B1 * !B2 * C1 * Y)	0.00134	0.00134	0.00133
	(A1 * !B1 * !B2 * C1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !B1 * !B2 * !C1 * Y)	0.00133	0.00133	0.00132
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00193	-0.00193	-0.00194
	(!A1 * B2 * !C1 * Y)	0.00120	0.00122	0.00121
	(!A1 * B2 * !C1 * Y)	-0.00196	-0.00197	-0.00197
	(!A1 * B1 * !B2 * !C1 * Y)	0.00122	0.00123	0.00123
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !B1 * !B2 * C1 * Y)	0.00124	0.00124	0.00125
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00197	-0.00196	-0.00197
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00197	-0.00198	-0.00197

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00282	0.00283	0.00282
	(A1 * B2 * C1 * !Y)	-0.00163	-0.00163	-0.00163
	(A1 * B2 * !C1 * Y)	0.00254	0.00258	0.00255
	(A1 * B2 * !C1 * Y)	-0.00350	-0.00354	-0.00352
	(A1 * B1 * !B2 * C1 * !Y)	0.00283	0.00284	0.00283
	(A1 * B1 * !B2 * C1 * !Y)	-0.00162	-0.00163	-0.00162
	(A1 * B1 * !B2 * !C1 * Y)	0.00255	0.00258	0.00255
	(A1 * B1 * !B2 * !C1 * Y)	-0.00351	-0.00355	-0.00352
	(A1 * !B1 * !B2 * C1 * Y)	0.00255	0.00259	0.00256
	(A1 * !B1 * !B2 * C1 * Y)	-0.00349	-0.00354	-0.00352
	(A1 * !B1 * !B2 * !C1 * Y)	0.00255	0.00258	0.00255
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00351	-0.00355	-0.00352
	(!A1 * B2 * !C1 * Y)	0.00233	0.00234	0.00234
	(!A1 * B2 * !C1 * Y)	-0.00358	-0.00360	-0.00359
	(!A1 * B1 * !B2 * !C1 * Y)	0.00236	0.00238	0.00236
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00359	-0.00360	-0.00359
	(!A1 * !B1 * !B2 * C1 * Y)	0.00241	0.00243	0.00242
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00359	-0.00360	-0.00359
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00241	0.00241	0.00241
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00360	-0.00360	-0.00359

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00570	0.00573	0.00571
	(A1 * B2 * C1 * !Y)	-0.00325	-0.00327	-0.00325
	(A1 * B2 * !C1 * Y)	0.00502	0.00503	0.00499
	(A1 * B2 * !C1 * Y)	-0.00719	-0.00725	-0.00721
	(A1 * B1 * !B2 * C1 * !Y)	0.00571	0.00575	0.00572
	(A1 * B1 * !B2 * C1 * !Y)	-0.00324	-0.00326	-0.00323
	(A1 * B1 * !B2 * !C1 * Y)	0.00497	0.00503	0.00499
	(A1 * B1 * !B2 * !C1 * Y)	-0.00717	-0.00726	-0.00721
	(A1 * !B1 * !B2 * C1 * Y)	0.00498	0.00505	0.00500
	(A1 * !B1 * !B2 * C1 * Y)	-0.00716	-0.00725	-0.00721
	(A1 * !B1 * !B2 * !C1 * Y)	0.00497	0.00503	0.00498
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00718	-0.00726	-0.00722
	(!A1 * B2 * !C1 * Y)	0.00454	0.00457	0.00455
	(!A1 * B2 * !C1 * Y)	-0.00735	-0.00737	-0.00735
	(!A1 * B1 * !B2 * !C1 * Y)	0.00460	0.00464	0.00460
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00735	-0.00739	-0.00735
	(!A1 * !B1 * !B2 * C1 * Y)	0.00473	0.00473	0.00472
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00738	-0.00737	-0.00735
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00472	0.00472	0.00469
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00738	-0.00738	-0.00736

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)**	-0.00147	-0.00147	-0.00152
	(A1 * B2 * C1 * !Y)	0.00098	0.00098	0.00093
	(A1 * B2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * B2 * !C1 * Y)	0.00194	0.00195	0.00194
	(A1 * B1 * !B2 * C1 * !Y)	-0.00147	-0.00147	-0.00152
	(A1 * B1 * !B2 * C1 * !Y)	0.00099	0.00098	0.00094
	(A1 * B1 * !B2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * !B2 * !C1 * Y)	0.00195	0.00195	0.00194
	(A1 * !B1 * !B2 * C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !B1 * !B2 * C1 * Y)	0.00194	0.00195	0.00194
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00131	-0.00131	-0.00132
	(A1 * !B1 * !B2 * !C1 * Y)	0.00193	0.00193	0.00194
	(!A1 * B2 * !C1 * Y)	-0.00112	-0.00122	-0.00121
	(!A1 * B2 * !C1 * Y)	0.00199	0.00199	0.00198
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00114	-0.00123	-0.00123
	(!A1 * B1 * !B2 * !C1 * Y)	0.00198	0.00199	0.00198
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00117	-0.00124	-0.00125
	(!A1 * !B1 * !B2 * C1 * Y)	0.00198	0.00199	0.00198
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00119	-0.00125	-0.00124
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00198	0.00199	0.00198

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00266	-0.00268	-0.00278
	(A1 * B2 * C1 * !Y)	0.00178	0.00178	0.00169
	(A1 * B2 * !C1 * Y)	-0.00253	-0.00255	-0.00254
	(A1 * B2 * !C1 * Y)	0.00351	0.00354	0.00352
	(A1 * B1 * !B2 * C1 * !Y)	-0.00266	-0.00267	-0.00277
	(A1 * B1 * !B2 * C1 * !Y)	0.00179	0.00179	0.00170
	(A1 * B1 * !B2 * !C1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * B1 * !B2 * !C1 * Y)	0.00352	0.00355	0.00352
	(A1 * !B1 * !B2 * C1 * Y)	-0.00253	-0.00255	-0.00253
	(A1 * !B1 * !B2 * C1 * Y)	0.00352	0.00354	0.00352
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !B1 * !B2 * !C1 * Y)	0.00352	0.00355	0.00352
	(!A1 * B2 * !C1 * Y)	-0.00214	-0.00234	-0.00234
	(!A1 * B2 * !C1 * Y)	0.00361	0.00364	0.00361
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00218	-0.00238	-0.00236
	(!A1 * B1 * !B2 * !C1 * Y)	0.00362	0.00364	0.00361
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00227	-0.00242	-0.00242
	(!A1 * !B1 * !B2 * C1 * Y)	0.00362	0.00364	0.00362
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00230	-0.00241	-0.00241
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00360	0.00363	0.00361

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00538	-0.00541	-0.00561
	(A1 * B2 * C1 * !Y)	0.00356	0.00356	0.00338
	(A1 * B2 * !C1 * Y)	-0.00495	-0.00498	-0.00496
	(A1 * B2 * !C1 * Y)	0.00719	0.00725	0.00721
	(A1 * B1 * !B2 * C1 * !Y)	-0.00537	-0.00540	-0.00560
	(A1 * B1 * !B2 * C1 * !Y)	0.00358	0.00357	0.00339
	(A1 * B1 * !B2 * !C1 * Y)	-0.00495	-0.00498	-0.00496
	(A1 * B1 * !B2 * !C1 * Y)	0.00720	0.00726	0.00721
	(A1 * !B1 * !B2 * C1 * Y)	-0.00494	-0.00497	-0.00495
	(A1 * !B1 * !B2 * C1 * Y)	0.00720	0.00725	0.00721
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00496	-0.00499	-0.00496
	(A1 * !B1 * !B2 * !C1 * Y)	0.00721	0.00726	0.00722
	(!A1 * B2 * !C1 * Y)	-0.00417	-0.00457	-0.00455
	(!A1 * B2 * !C1 * Y)	0.00741	0.00744	0.00739
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00426	-0.00464	-0.00460
	(!A1 * B1 * !B2 * !C1 * Y)	0.00742	0.00745	0.00739
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00442	-0.00473	-0.00472
	(!A1 * !B1 * !B2 * C1 * Y)	0.00741	0.00745	0.00741
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00448	-0.00472	-0.00469
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00738	0.00744	0.00739

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)**	0.00185	0.00158	0.00154
	(A2 * B2 * C1 * !Y)	-0.00147	-0.00174	-0.00179
	(A2 * !B2 * !C1 * Y)	0.00133	0.00133	0.00133
	(A2 * !B2 * !C1 * Y)	-0.00196	-0.00196	-0.00195
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00138	0.00138	0.00138
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00192	-0.00193	-0.00193
	(A1 * !A2 * B2 * C1 * !Y)	0.00186	0.00158	0.00154
	(A1 * !A2 * B2 * C1 * !Y)	-0.00146	-0.00174	-0.00179
	(A1 * !A2 * !B2 * !C1 * Y)	0.00133	0.00133	0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00196	-0.00195	-0.00195
	(!A1 * !A2 * B2 * C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A2 * B2 * C1 * Y)	-0.00193	-0.00194	-0.00195
	(!A1 * !A2 * B2 * !C1 * Y)	0.00085	0.00085	0.00085
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00193	-0.00194	-0.00195
	(!A1 * !A2 * !B2 * C1 * Y)	0.00069	0.00070	0.00070
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00193	-0.00195	-0.00193
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00196	-0.00197	-0.00196

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00370	0.00311	0.00301
	(A2 * B2 * C1 * !Y)	-0.00288	-0.00347	-0.00355
	(A2 * !B2 * !C1 * Y)	0.00255	0.00257	0.00257
	(A2 * !B2 * !C1 * Y)	-0.00387	-0.00389	-0.00388
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00272	0.00271	0.00271
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00383	-0.00385	-0.00383
	(A1 * !A2 * B2 * C1 * !Y)	0.00370	0.00311	0.00301
	(A1 * !A2 * B2 * C1 * !Y)	-0.00286	-0.00346	-0.00355
	(A1 * !A2 * !B2 * !C1 * Y)	0.00256	0.00257	0.00257
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00389	-0.00389	-0.00388
	(!A1 * !A2 * B2 * C1 * Y)	0.00120	0.00119	0.00119
	(!A1 * !A2 * B2 * C1 * Y)	-0.00381	-0.00384	-0.00386
	(!A1 * !A2 * B2 * !C1 * Y)	0.00158	0.00158	0.00157
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00382	-0.00385	-0.00386
	(!A1 * !A2 * !B2 * C1 * Y)	0.00127	0.00128	0.00128
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00387	-0.00389	-0.00384
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00168	0.00169	0.00167
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00389	-0.00391	-0.00389

	(A2 * B2 * C1 * !Y)	0.00706	0.00585	0.00565
	(A2 * B2 * C1 * !Y)	-0.00569	-0.00691	-0.00708
	(A2 * !B2 * !C1 * Y)	0.00494	0.00500	0.00497
	(A2 * !B2 * !C1 * Y)	-0.00752	-0.00757	-0.00753
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00526	0.00526	0.00525
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00740	-0.00743	-0.00743
	(A1 * !A2 * B2 * C1 * !Y)	0.00708	0.00586	0.00566
	(A1 * !A2 * B2 * C1 * !Y)	-0.00568	-0.00690	-0.00707
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00494	0.00499	0.00497
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00752	-0.00757	-0.00753
	(!A1 * !A2 * B2 * C1 * Y)	0.00224	0.00224	0.00223
	(!A1 * !A2 * B2 * C1 * Y)	-0.00742	-0.00747	-0.00749
	(!A1 * !A2 * B2 * !C1 * Y)	0.00297	0.00295	0.00294
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00742	-0.00747	-0.00750
	(!A1 * !A2 * !B2 * C1 * Y)	0.00239	0.00239	0.00240
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00753	-0.00752	-0.00746
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00314	0.00316	0.00313
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00757	-0.00760	-0.00755

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)**	-0.00149	-0.00150	-0.00149
	(A2 * B2 * C1 * !Y)	0.00182	0.00184	0.00183
	(A2 * !B2 * !C1 * Y)	-0.00123	-0.00133	-0.00133
	(A2 * !B2 * !C1 * Y)	0.00202	0.00200	0.00197
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00138	-0.00138	-0.00138
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00193	0.00194	0.00193
	(A1 * !A2 * B2 * C1 * !Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * B2 * C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00122	-0.00133	-0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	0.00203	0.00200	0.00197
	(!A1 * !A2 * B2 * C1 * Y)	-0.00058	-0.00059	-0.00062
	(!A1 * !A2 * B2 * C1 * Y)	0.00204	0.00205	0.00198
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * B2 * !C1 * Y)	0.00199	0.00200	0.00195
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00061	-0.00061	-0.00064
	(!A1 * !A2 * !B2 * C1 * Y)	0.00205	0.00205	0.00200
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00204	0.00204	0.00199

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00293	-0.00293	-0.00292
	(A2 * B2 * C1 * !Y)	0.00363	0.00362	0.00363
	(A2 * !B2 * !C1 * Y)	-0.00236	-0.00257	-0.00257
	(A2 * !B2 * !C1 * Y)	0.00407	0.00397	0.00391
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00269	-0.00271	-0.00269
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00383	0.00387	0.00383
	(A1 * !A2 * B2 * C1 * !Y)	-0.00293	-0.00292	-0.00291
	(A1 * !A2 * B2 * C1 * !Y)	0.00364	0.00362	0.00364
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00233	-0.00257	-0.00257
	(A1 * !A2 * !B2 * !C1 * Y)	0.00407	0.00397	0.00391
	(!A1 * !A2 * B2 * C1 * Y)	-0.00105	-0.00106	-0.00113
	(!A1 * !A2 * B2 * C1 * Y)	0.00405	0.00407	0.00392
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00158	-0.00158	-0.00157
	(!A1 * !A2 * B2 * !C1 * Y)	0.00396	0.00398	0.00387
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00110	-0.00111	-0.00117
	(!A1 * !A2 * !B2 * C1 * Y)	0.00407	0.00410	0.00397
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00168	-0.00169	-0.00167
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00406	0.00407	0.00395

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00548	-0.00552	-0.00547
	(A2 * B2 * C1 * !Y)	0.00717	0.00728	0.00722
	(A2 * !B2 * !C1 * Y)	-0.00451	-0.00496	-0.00497
	(A2 * !B2 * !C1 * Y)	0.00790	0.00763	0.00758
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00521	-0.00522	-0.00522
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00740	0.00743	0.00743
	(A1 * !A2 * B2 * C1 * !Y)	-0.00547	-0.00550	-0.00546
	(A1 * !A2 * B2 * C1 * !Y)	0.00718	0.00726	0.00724
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00446	-0.00495	-0.00497
	(A1 * !A2 * !B2 * !C1 * Y)	0.00791	0.00765	0.00758
	(!A1 * !A2 * B2 * C1 * Y)	-0.00197	-0.00200	-0.00212
	(!A1 * !A2 * B2 * C1 * Y)	0.00785	0.00791	0.00759
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00297	-0.00295	-0.00294
	(!A1 * !A2 * B2 * !C1 * Y)	0.00770	0.00783	0.00752
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00208	-0.00211	-0.00219
	(!A1 * !A2 * !B2 * C1 * Y)	0.00789	0.00795	0.00770
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00314	-0.00316	-0.00313
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00793	0.00800	0.00768

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)**	0.00151	0.00152	0.00152
	(A2 * B1 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(A2 * B1 * !C1 * Y)	0.00133	0.00133	0.00132
	(A2 * B1 * !C1 * Y)	-0.00183	-0.00184	-0.00183
	(A2 * !B1 * !C1 * Y)	0.00127	0.00127	0.00127
	(A2 * !B1 * !C1 * Y)	-0.00186	-0.00186	-0.00185
	(A1 * !A2 * B1 * C1 * !Y)	0.00151	0.00153	0.00152
	(A1 * !A2 * B1 * C1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B1 * !C1 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * !C1 * Y)	-0.00182	-0.00184	-0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	0.00126	0.00127	0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00186	-0.00186	-0.00185
	(!A1 * !A2 * B1 * C1 * Y)	0.00061	0.00060	0.00060
	(!A1 * !A2 * B1 * C1 * Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !A2 * B1 * !C1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00182	-0.00185	-0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	0.00065	0.00064	0.00065
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00184	-0.00183	-0.00183
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00281	0.00283	0.00281
	(A2 * B1 * C1 * !Y)	-0.00162	-0.00163	-0.00162
	(A2 * B1 * !C1 * Y)	0.00252	0.00255	0.00253
	(A2 * B1 * !C1 * Y)	-0.00350	-0.00351	-0.00352
	(A2 * !B1 * !C1 * Y)	0.00240	0.00242	0.00241
	(A2 * !B1 * !C1 * Y)	-0.00358	-0.00360	-0.00358
	(A1 * !A2 * B1 * C1 * !Y)	0.00281	0.00283	0.00282
	(A1 * !A2 * B1 * C1 * !Y)	-0.00162	-0.00163	-0.00161
	(A1 * !A2 * B1 * !C1 * Y)	0.00252	0.00255	0.00253
	(A1 * !A2 * B1 * !C1 * Y)	-0.00350	-0.00352	-0.00352
	(A1 * !A2 * !B1 * !C1 * Y)	0.00239	0.00242	0.00240
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * !A2 * B1 * C1 * Y)	0.00107	0.00108	0.00108
	(!A1 * !A2 * B1 * C1 * Y)	-0.00349	-0.00355	-0.00356
	(!A1 * !A2 * B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00351	-0.00356	-0.00356
	(!A1 * !A2 * !B1 * C1 * Y)	0.00115	0.00116	0.00117
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00354	-0.00356	-0.00353
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00154	0.00155	0.00155
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00358	-0.00359	-0.00359

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00570	0.00576	0.00573
	(A2 * B1 * C1 * !Y)	-0.00323	-0.00327	-0.00324
	(A2 * B1 * !C1 * Y)	0.00516	0.00517	0.00513
	(A2 * B1 * !C1 * Y)	-0.00707	-0.00715	-0.00709
	(A2 * !B1 * !C1 * Y)	0.00487	0.00489	0.00486
	(A2 * !B1 * !C1 * Y)	-0.00724	-0.00725	-0.00721
	(A1 * !A2 * B1 * C1 * !Y)	0.00572	0.00580	0.00574
	(A1 * !A2 * B1 * C1 * !Y)	-0.00322	-0.00328	-0.00322
	(A1 * !A2 * B1 * !C1 * Y)	0.00510	0.00517	0.00513
	(A1 * !A2 * B1 * !C1 * Y)	-0.00704	-0.00711	-0.00709
	(A1 * !A2 * !B1 * !C1 * Y)	0.00485	0.00489	0.00486
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00722	-0.00725	-0.00721
	(!A1 * !A2 * B1 * C1 * Y)	0.00218	0.00217	0.00215
	(!A1 * !A2 * B1 * C1 * Y)	-0.00711	-0.00715	-0.00717
	(!A1 * !A2 * B1 * !C1 * Y)	0.00285	0.00289	0.00287
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00705	-0.00717	-0.00717
	(!A1 * !A2 * !B1 * C1 * Y)	0.00230	0.00232	0.00232
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00716	-0.00720	-0.00713
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00304	0.00305	0.00305
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00722	-0.00723	-0.00723

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)**	-0.00144	-0.00145	-0.00149
	(A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00085
	(A2 * B1 * !C1 * Y)	-0.00132	-0.00132	-0.00131
	(A2 * B1 * !C1 * Y)	0.00183	0.00184	0.00183
	(A2 * !B1 * !C1 * Y)	-0.00118	-0.00127	-0.00127
	(A2 * !B1 * !C1 * Y)	0.00192	0.00189	0.00187
	(A1 * !A2 * B1 * C1 * !Y)	-0.00144	-0.00145	-0.00149
	(A1 * !A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00085
	(A1 * !A2 * B1 * !C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * B1 * !C1 * Y)	0.00183	0.00184	0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00117	-0.00127	-0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	0.00192	0.00189	0.00187
	(!A1 * !A2 * B1 * C1 * Y)	-0.00053	-0.00054	-0.00057
	(!A1 * !A2 * B1 * C1 * Y)	0.00192	0.00193	0.00187
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * B1 * !C1 * Y)	0.00189	0.00189	0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00056	-0.00056	-0.00058
	(!A1 * !A2 * !B1 * C1 * Y)	0.00194	0.00194	0.00190
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00085	-0.00086	-0.00085
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00193	0.00193	0.00189

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00266	-0.00267	-0.00276
	(A2 * B1 * C1 * !Y)	0.00179	0.00178	0.00169
	(A2 * B1 * !C1 * Y)	-0.00251	-0.00251	-0.00252
	(A2 * B1 * !C1 * Y)	0.00351	0.00351	0.00352
	(A2 * !B1 * !C1 * Y)	-0.00220	-0.00242	-0.00241
	(A2 * !B1 * !C1 * Y)	0.00375	0.00366	0.00361
	(A1 * !A2 * B1 * C1 * !Y)	-0.00265	-0.00266	-0.00276
	(A1 * !A2 * B1 * C1 * !Y)	0.00179	0.00179	0.00170
	(A1 * !A2 * B1 * !C1 * Y)	-0.00251	-0.00251	-0.00252
	(A1 * !A2 * B1 * !C1 * Y)	0.00352	0.00352	0.00352
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00218	-0.00240	-0.00240
	(A1 * !A2 * !B1 * !C1 * Y)	0.00375	0.00362	0.00361
	(!A1 * !A2 * B1 * C1 * Y)	-0.00095	-0.00096	-0.00102
	(!A1 * !A2 * B1 * C1 * Y)	0.00370	0.00372	0.00359
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	0.00363	0.00364	0.00356
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00101	-0.00101	-0.00105
	(!A1 * !A2 * !B1 * C1 * Y)	0.00378	0.00377	0.00367
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00154	-0.00155	-0.00155
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00377	0.00375	0.00365

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00542	-0.00545	-0.00563
	(A2 * B1 * C1 * !Y)	0.00356	0.00355	0.00337
	(A2 * B1 * !C1 * Y)	-0.00509	-0.00513	-0.00510
	(A2 * B1 * !C1 * Y)	0.00707	0.00715	0.00709
	(A2 * !B1 * !C1 * Y)	-0.00441	-0.00488	-0.00486
	(A2 * !B1 * !C1 * Y)	0.00757	0.00737	0.00726
	(A1 * !A2 * B1 * C1 * !Y)	-0.00540	-0.00543	-0.00562
	(A1 * !A2 * B1 * C1 * !Y)	0.00357	0.00357	0.00339
	(A1 * !A2 * B1 * !C1 * Y)	-0.00510	-0.00511	-0.00510
	(A1 * !A2 * B1 * !C1 * Y)	0.00710	0.00711	0.00709
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00436	-0.00485	-0.00486
	(A1 * !A2 * !B1 * !C1 * Y)	0.00759	0.00732	0.00726
	(!A1 * !A2 * B1 * C1 * Y)	-0.00192	-0.00194	-0.00204
	(!A1 * !A2 * B1 * C1 * Y)	0.00748	0.00750	0.00723
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00285	-0.00289	-0.00287
	(!A1 * !A2 * B1 * !C1 * Y)	0.00733	0.00746	0.00718
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00201	-0.00203	-0.00211
	(!A1 * !A2 * !B1 * C1 * Y)	0.00755	0.00758	0.00737
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00304	-0.00305	-0.00305
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00761	0.00758	0.00736

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	0.00061	0.00061	0.00055
	(A2 * !B1 * !B2 * Y)	-0.00216	-0.00217	-0.00224
	(!A2 * !B1 * !B2 * Y)	0.00061	0.00061	0.00055
	(!A2 * !B1 * !B2 * Y)	-0.00215	-0.00217	-0.00224
	(!A1 * !A2 * B2 * Y)	0.00068	0.00067	0.00054
	(!A1 * !A2 * B2 * Y)	-0.00195	-0.00197	-0.00220
	(!A1 * !A2 * B1 * !B2 * Y)	0.00067	0.00067	0.00055
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00196	-0.00199	-0.00221
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00110	0.00109	0.00100
	(A2 * !B1 * !B2 * Y)	-0.00402	-0.00401	-0.00421
	(!A2 * !B1 * !B2 * Y)	0.00110	0.00110	0.00100
	(!A2 * !B1 * !B2 * Y)	-0.00402	-0.00402	-0.00421
	(!A1 * !A2 * B2 * Y)	0.00123	0.00123	0.00099
	(!A1 * !A2 * B2 * Y)	-0.00365	-0.00370	-0.00414
	(!A1 * !A2 * B1 * !B2 * Y)	0.00123	0.00122	0.00101
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00372	-0.00372	-0.00415
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00191	0.00190	0.00174
	(A2 * !B1 * !B2 * Y)	-0.00819	-0.00819	-0.00852
	(!A2 * !B1 * !B2 * Y)	0.00191	0.00190	0.00174
	(!A2 * !B1 * !B2 * Y)	-0.00819	-0.00820	-0.00852
	(!A1 * !A2 * B2 * Y)	0.00215	0.00213	0.00172
	(!A1 * !A2 * B2 * Y)	-0.00750	-0.00751	-0.00840
	(!A1 * !A2 * B1 * !B2 * Y)	0.00215	0.00213	0.00175
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00762	-0.00763	-0.00841

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(A2 * !B1 * !B2 * Y)	0.00225	0.00229	0.00226
	(!A2 * !B1 * !B2 * Y)	-0.00052	-0.00052	-0.00052
	(!A2 * !B1 * !B2 * Y)	0.00225	0.00227	0.00226
	(!A1 * !A2 * B2 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B2 * Y)	0.00226	0.00229	0.00226
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B1 * !B2 * Y)	0.00226	0.00227	0.00226
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00095	-0.00096	-0.00095
	(A2 * !B1 * !B2 * Y)	0.00422	0.00430	0.00424
	(!A2 * !B1 * !B2 * Y)	-0.00095	-0.00096	-0.00095
	(!A2 * !B1 * !B2 * Y)	0.00423	0.00427	0.00424
	(!A1 * !A2 * B2 * Y)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * B2 * Y)	0.00423	0.00430	0.00424
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * B1 * !B2 * Y)	0.00423	0.00427	0.00424
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00165	-0.00167	-0.00165
	(A2 * !B1 * !B2 * Y)	0.00855	0.00870	0.00858
	(!A2 * !B1 * !B2 * Y)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * Y)	0.00855	0.00862	0.00858
	(!A1 * !A2 * B2 * Y)	-0.00159	-0.00161	-0.00158
	(!A1 * !A2 * B2 * Y)	0.00854	0.00869	0.00857
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00160	-0.00162	-0.00160
	(!A1 * !A2 * B1 * !B2 * Y)	0.00854	0.00862	0.00857

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00272	0.00269	0.00265	0.00281	0.00277	0.79896
sky130_fd_sc_hs__o221a_2	0.00289	0.00284	0.00284	0.00295	0.00290	1.59135
sky130_fd_sc_hs__o221a_4	0.00541	0.00493	0.00573	0.00494	0.00502	3.06195

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	2.07048	5.45478
sky130_fd_sc_hs__o221a_2	0.00000	2.61155	5.66228
sky130_fd_sc_hs__o221a_4	0.00000	5.07722	11.11960

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)	0.24368	0.96100	7.79654
	A2->X (RR)	0.22244	0.93196	7.72573
	B1->X (RR)	0.22970	0.98160	7.98318
	B2->X (RR)	0.20944	0.94336	7.88491
	C1->X (RR)	0.20800	0.97611	8.10416
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.23713	0.84953	7.70866
	A2->X (RR)	0.21800	0.82447	7.64089
	B1->X (RR)	0.22379	0.87449	7.90619
	B2->X (RR)	0.20894	0.84583	7.82545
	C1->X (RR)	0.20323	0.87456	8.03162
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.25179	0.79013	7.84372
	A2->X (RR)	0.23044	0.76310	7.78816
	B1->X (RR)	0.24023	0.81621	8.03298
	B2->X (RR)	0.21762	0.77822	7.93917
	C1->X (RR)	0.21413	0.81434	8.16739

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.29388	0.85780	4.74975
	A2->X (FF)	0.27159	0.86915	4.84237
	B1->X (FF)	0.25579	0.80187	4.57533
	B2->X (FF)	0.23533	0.81193	4.64765
	C1->X (FF)	0.12245	0.65998	4.24299
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.34548	0.89012	5.03005
	A2->X (FF)	0.32113	0.90287	5.14861
	B1->X (FF)	0.29756	0.82837	4.85640
	B2->X (FF)	0.27728	0.84512	4.95883
	C1->X (FF)	0.13815	0.66563	4.47992
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.30864	0.80068	4.90537
	A2->X (FF)	0.28253	0.80871	4.99724
	B1->X (FF)	0.27929	0.75852	4.77064
	B2->X (FF)	0.25196	0.76446	4.85074
	C1->X (FF)	0.12903	0.60450	4.41875

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01408	0.01391	0.02296
	A1	0.00623	0.00607	0.01526
	A2	0.01234	0.01231	0.02303
	A2	0.00546	0.00542	0.01630
	B1	0.01279	0.01277	0.02349
	B1	0.00621	0.00622	0.01700
	B2	0.01113	0.01108	0.02370
	B2	0.00530	0.00524	0.01798
	C1	0.01201	0.01224	0.02766
	C1	0.00406	0.00470	0.02281
sky130_fd_sc_hs__o221a_2	A1	0.01719	0.01714	0.02650
	A1	0.00879	0.00874	0.01844
	A2	0.01530	0.01544	0.02641
	A2	0.00788	0.00802	0.01934
	B1	0.01576	0.01585	0.02693
	B1	0.00877	0.00886	0.02021
	B2	0.01415	0.01421	0.02710
	B2	0.00797	0.00803	0.02125
	C1	0.01485	0.01516	0.03097
	C1	0.00652	0.00732	0.02594

sky130_fd_sc_hs__o221a_4	**A1**	0.03230	0.03229	0.05208
	A1	0.01689	0.01690	0.03728
	A2	0.02809	0.02821	0.05126
	A2	0.01497	0.01511	0.03880
	B1	0.03023	0.03042	0.05185
	B1	0.01686	0.01705	0.03882
	B2	0.02593	0.02610	0.05111
	B2	0.01504	0.01521	0.04071
	C1	0.02778	0.02846	0.05876
	C1	0.01687	0.01757	0.04804

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00517	0.00516	0.01637
	A1	0.01286	0.01287	0.02401
	A2	0.00517	0.00558	0.01993
	A2	0.01190	0.01242	0.02654
	B1	0.00436	0.00456	0.01628
	B1	0.01090	0.01110	0.02259
	B2	0.00423	0.00485	0.01912
	B2	0.01002	0.01073	0.02488
	C1	0.00312	0.00414	0.02187
	C1	0.00891	0.00990	0.02643

sky130_fd_sc_hs__o221a_2	**A1**	0.00775	0.00740	0.02127
	A1	0.01599	0.01571	0.02730
	A2	0.00777	0.00794	0.02384
	A2	0.01502	0.01521	0.02994
	B1	0.00674	0.00673	0.01920
	B1	0.01367	0.01371	0.02575
	B2	0.00663	0.00710	0.02337
	B2	0.01275	0.01327	0.02813
	C1	0.00512	0.00634	0.02408
	C1	0.01115	0.01237	0.02959
sky130_fd_sc_hs__o221a_4	**A1**	0.01441	0.01425	0.03868
	A1	0.02951	0.02936	0.05237
	A2	0.01479	0.01545	0.04587
	A2	0.02763	0.02826	0.05708
	B1	0.01257	0.01245	0.03599
	B1	0.02587	0.02602	0.04923
	B2	0.01309	0.01424	0.04437
	B2	0.02392	0.02504	0.05367
	C1	0.01018	0.01291	0.04589
	C1	0.02111	0.02362	0.05678

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)**	0.00163	0.00136	0.00131
	(A2 * B2 * C1 * X)	-0.00127	-0.00153	-0.00158
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00112	0.00111	0.00112
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00177	-0.00177	-0.00178
	(A2 * B1 * !B2 * C1 * X)	0.00164	0.00137	0.00132
	(A2 * B1 * !B2 * C1 * X)	-0.00126	-0.00153	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00112	0.00112	0.00112
	(A2 * !B1 * !B2 * !X)	-0.00176	-0.00177	-0.00178
	(!A2 * B2 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A2 * B2 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * !B2 * !C1 * !X)	0.00103	0.00105	0.00103
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * C1 * !X)	0.00105	0.00106	0.00105
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00104	0.00105	0.00104
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00184	0.00156	0.00152
	(A2 * B2 * C1 * X)	-0.00125	-0.00152	-0.00157
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00131	0.00130	0.00131
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00177	-0.00177	-0.00179
	(A2 * B1 * !B2 * C1 * X)	0.00185	0.00157	0.00152
	(A2 * B1 * !B2 * C1 * X)	-0.00124	-0.00151	-0.00157
	(A2 * !B1 * !B2 * !X)	0.00131	0.00131	0.00131
	(A2 * !B1 * !B2 * !X)	-0.00176	-0.00177	-0.00178
	(!A2 * B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A2 * B2 * !C1 * !X)	-0.00179	-0.00181	-0.00179
	(!A2 * B1 * !B2 * !C1 * !X)	0.00121	0.00123	0.00121
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00181	-0.00179
	(!A2 * !B1 * !B2 * C1 * !X)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00180	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00341	0.00288	0.00276
	(A2 * B2 * C1 * X)	-0.00248	-0.00305	-0.00313
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00249	0.00251	0.00250
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00336	-0.00340	-0.00340
	(A2 * B1 * !B2 * C1 * X)	0.00342	0.00290	0.00278
	(A2 * B1 * !B2 * C1 * X)	-0.00247	-0.00303	-0.00312
	(A2 * !B1 * !B2 * !X)	0.00250	0.00252	0.00250
	(A2 * !B1 * !B2 * !X)	-0.00335	-0.00339	-0.00340
	(!A2 * B2 * !C1 * !X)	0.00232	0.00233	0.00232
	(!A2 * B2 * !C1 * !X)	-0.00342	-0.00343	-0.00342
	(!A2 * B1 * !B2 * !C1 * !X)	0.00234	0.00235	0.00234
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00342	-0.00344	-0.00342
	(!A2 * !B1 * !B2 * C1 * !X)	0.00237	0.00239	0.00238
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00342	-0.00343	-0.00342
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00237	0.00238	0.00236
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00344	-0.00344	-0.00343

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)**	-0.00123	-0.00124	-0.00123
	(A2 * B2 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00178	0.00180	0.00179
	(A2 * B1 * !B2 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * B1 * !B2 * C1 * X)	0.00167	0.00168	0.00167
	(A2 * !B1 * !B2 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * !B2 * !X)	0.00178	0.00180	0.00179
	(!A2 * B2 * !C1 * !X)	-0.00093	-0.00102	-0.00103
	(!A2 * B2 * !C1 * !X)	0.00183	0.00183	0.00182
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00103	-0.00103
	(!A2 * B1 * !B2 * !C1 * !X)	0.00182	0.00183	0.00182
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00097	-0.00103	-0.00105
	(!A2 * !B1 * !B2 * C1 * !X)	0.00183	0.00183	0.00182
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00098	-0.00104	-0.00104
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00143	-0.00144	-0.00143
	(A2 * B2 * C1 * X)	0.00165	0.00167	0.00166
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00180	0.00181	0.00181
	(A2 * B1 * !B2 * C1 * X)	-0.00143	-0.00143	-0.00142
	(A2 * B1 * !B2 * C1 * X)	0.00166	0.00167	0.00167
	(A2 * !B1 * !B2 * !X)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * !B2 * !X)	0.00181	0.00182	0.00181
	(!A2 * B2 * !C1 * !X)	-0.00107	-0.00119	-0.00120
	(!A2 * B2 * !C1 * !X)	0.00184	0.00184	0.00183
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00120	-0.00121
	(!A2 * B1 * !B2 * !C1 * !X)	0.00184	0.00184	0.00183
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00113	-0.00121	-0.00122
	(!A2 * !B1 * !B2 * C1 * !X)	0.00184	0.00185	0.00184
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00115	-0.00122	-0.00123
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00259	-0.00261	-0.00259
	(A2 * B2 * C1 * X)	0.00327	0.00332	0.00330
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00242	-0.00244	-0.00243
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00342	0.00346	0.00344
	(A2 * B1 * !B2 * C1 * X)	-0.00258	-0.00260	-0.00258
	(A2 * B1 * !B2 * C1 * X)	0.00329	0.00334	0.00331
	(A2 * !B1 * !B2 * !X)	-0.00241	-0.00244	-0.00242
	(A2 * !B1 * !B2 * !X)	0.00342	0.00347	0.00344
	(!A2 * B2 * !C1 * !X)	-0.00210	-0.00228	-0.00232
	(!A2 * B2 * !C1 * !X)	0.00351	0.00351	0.00350
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00213	-0.00230	-0.00233
	(!A2 * B1 * !B2 * !C1 * !X)	0.00352	0.00351	0.00350
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00220	-0.00232	-0.00234
	(!A2 * !B1 * !B2 * C1 * !X)	0.00352	0.00351	0.00350
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00222	-0.00232	-0.00235
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00350	0.00350	0.00350

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)**	0.00133	0.00134	0.00133
	(A1 * B2 * C1 * X)	-0.00075	-0.00075	-0.00075
	(A1 * B2 * !C1 * !X)	0.00115	0.00115	0.00115
	(A1 * B2 * !C1 * !X)	-0.00166	-0.00167	-0.00167
	(A1 * B1 * !B2 * C1 * X)	0.00134	0.00134	0.00134
	(A1 * B1 * !B2 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * B1 * !B2 * !C1 * !X)	0.00114	0.00115	0.00115
	(A1 * B1 * !B2 * !C1 * !X)	-0.00164	-0.00167	-0.00167
	(A1 * !B1 * !B2 * C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !B1 * !B2 * C1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !B1 * !B2 * !C1 * !X)	0.00114	0.00115	0.00114
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00164	-0.00167	-0.00167
	(!A1 * B2 * !C1 * !X)	0.00104	0.00104	0.00105
	(!A1 * B2 * !C1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	0.00106	0.00106	0.00106
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !B1 * !B2 * C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00106	0.00108	0.00107
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00168	-0.00169	-0.00168

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00151	0.00152	0.00152
	(A1 * B2 * C1 * X)	-0.00073	-0.00074	-0.00074
	(A1 * B2 * !C1 * !X)	0.00134	0.00134	0.00133
	(A1 * B2 * !C1 * !X)	-0.00164	-0.00165	-0.00165
	(A1 * B1 * !B2 * C1 * X)	0.00152	0.00153	0.00152
	(A1 * B1 * !B2 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * B1 * !B2 * !C1 * !X)	0.00134	0.00134	0.00133
	(A1 * B1 * !B2 * !C1 * !X)	-0.00164	-0.00165	-0.00165
	(A1 * !B1 * !B2 * C1 * !X)	0.00135	0.00134	0.00133
	(A1 * !B1 * !B2 * C1 * !X)	-0.00164	-0.00164	-0.00165
	(A1 * !B1 * !B2 * !C1 * !X)	0.00134	0.00134	0.00133
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00164	-0.00165	-0.00165
	(!A1 * B2 * !C1 * !X)	0.00121	0.00121	0.00122
	(!A1 * B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * !B2 * C1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00246	0.00247	0.00246
	(A1 * B2 * C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * B2 * !C1 * !X)	0.00215	0.00217	0.00216
	(A1 * B2 * !C1 * !X)	-0.00321	-0.00325	-0.00325
	(A1 * B1 * !B2 * C1 * X)	0.00247	0.00248	0.00248
	(A1 * B1 * !B2 * C1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * B1 * !B2 * !C1 * !X)	0.00215	0.00217	0.00215
	(A1 * B1 * !B2 * !C1 * !X)	-0.00321	-0.00325	-0.00325
	(A1 * !B1 * !B2 * C1 * !X)	0.00215	0.00218	0.00216
	(A1 * !B1 * !B2 * C1 * !X)	-0.00320	-0.00324	-0.00324
	(A1 * !B1 * !B2 * !C1 * !X)	0.00215	0.00217	0.00215
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00321	-0.00325	-0.00325
	(!A1 * B2 * !C1 * !X)	0.00196	0.00197	0.00197
	(!A1 * B2 * !C1 * !X)	-0.00327	-0.00328	-0.00327
	(!A1 * B1 * !B2 * !C1 * !X)	0.00198	0.00199	0.00199
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00327	-0.00328	-0.00327
	(!A1 * !B1 * !B2 * C1 * !X)	0.00204	0.00203	0.00203
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00329	-0.00328	-0.00327
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00202	0.00203	0.00201
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00329	-0.00329	-0.00328

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)**	-0.00124	-0.00124	-0.00128
	(A1 * B2 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(A1 * B1 * !B2 * C1 * X)	-0.00123	-0.00123	-0.00128
	(A1 * B1 * !B2 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(A1 * !B1 * !B2 * C1 * !X)	-0.00111	-0.00112	-0.00112
	(A1 * !B1 * !B2 * C1 * !X)	0.00167	0.00168	0.00167
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A1 * B2 * !C1 * !X)	-0.00095	-0.00104	-0.00105
	(!A1 * B2 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00105	-0.00106
	(!A1 * B1 * !B2 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00099	-0.00106	-0.00107
	(!A1 * !B1 * !B2 * C1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00100	-0.00106	-0.00107
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00170	0.00171	0.00170

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00141	-0.00141	-0.00146
	(A1 * B2 * C1 * X)	0.00084	0.00084	0.00080
	(A1 * B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(A1 * B1 * !B2 * C1 * X)	-0.00141	-0.00141	-0.00146
	(A1 * B1 * !B2 * C1 * X)	0.00085	0.00084	0.00080
	(A1 * B1 * !B2 * !C1 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * B1 * !B2 * !C1 * !X)	0.00166	0.00168	0.00167
	(A1 * !B1 * !B2 * C1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * !B2 * C1 * !X)	0.00167	0.00167	0.00167
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A1 * B2 * !C1 * !X)	-0.00108	-0.00121	-0.00122
	(!A1 * B2 * !C1 * !X)	0.00170	0.00171	0.00170
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00111	-0.00122	-0.00123
	(!A1 * B1 * !B2 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00115	-0.00123	-0.00124
	(!A1 * !B1 * !B2 * C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00116	-0.00123	-0.00125
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00170	0.00171	0.00170

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00225	-0.00226	-0.00236
	(A1 * B2 * C1 * X)	0.00168	0.00168	0.00159
	(A1 * B2 * !C1 * !X)	-0.00209	-0.00209	-0.00209
	(A1 * B2 * !C1 * !X)	0.00328	0.00328	0.00328
	(A1 * B1 * !B2 * C1 * X)	-0.00224	-0.00225	-0.00235
	(A1 * B1 * !B2 * C1 * X)	0.00169	0.00169	0.00161
	(A1 * B1 * !B2 * !C1 * !X)	-0.00207	-0.00209	-0.00209
	(A1 * B1 * !B2 * !C1 * !X)	0.00326	0.00328	0.00328
	(A1 * !B1 * !B2 * C1 * !X)	-0.00208	-0.00209	-0.00208
	(A1 * !B1 * !B2 * C1 * !X)	0.00328	0.00329	0.00328
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00209	-0.00210	-0.00209
	(A1 * !B1 * !B2 * !C1 * !X)	0.00328	0.00329	0.00328
	(!A1 * B2 * !C1 * !X)	-0.00173	-0.00194	-0.00197
	(!A1 * B2 * !C1 * !X)	0.00336	0.00337	0.00335
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00177	-0.00195	-0.00199
	(!A1 * B1 * !B2 * !C1 * !X)	0.00337	0.00337	0.00335
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00184	-0.00198	-0.00199
	(!A1 * !B1 * !B2 * C1 * !X)	0.00337	0.00337	0.00335
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00187	-0.00198	-0.00200
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00336	0.00337	0.00335

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

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

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00154	0.00129	0.00123
	(A2 * B2 * C1 * X)	-0.00129	-0.00157	-0.00161
	(A2 * !B2 * !C1 * !X)	0.00110	0.00110	0.00110
	(A2 * !B2 * !C1 * !X)	-0.00171	-0.00171	-0.00171
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00114	0.00115	0.00114
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00168	-0.00170	-0.00170
	(A1 * !A2 * B2 * C1 * X)	0.00155	0.00130	0.00124
	(A1 * !A2 * B2 * C1 * X)	-0.00128	-0.00157	-0.00160
	(A1 * !A2 * !B2 * !C1 * !X)	0.00110	0.00110	0.00110
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !A2 * B2 * C1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * B2 * C1 * !X)	-0.00168	-0.00170	-0.00170
	(!A1 * !A2 * B2 * !C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00168	-0.00171	-0.00170
	(!A1 * !A2 * !B2 * C1 * !X)	0.00053	0.00054	0.00056
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00169	-0.00170	-0.00168
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00171	-0.00172	-0.00171

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00175	0.00151	0.00144
	(A2 * B2 * C1 * X)	-0.00127	-0.00155	-0.00158
	(A2 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B2 * !C1 * !X)	-0.00172	-0.00172	-0.00172
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00132	0.00134	0.00132
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00169	-0.00171	-0.00171
	(A1 * !A2 * B2 * C1 * X)	0.00176	0.00152	0.00145
	(A1 * !A2 * B2 * C1 * X)	-0.00126	-0.00154	-0.00158
	(A1 * !A2 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00172	-0.00172	-0.00172
	(!A1 * !A2 * B2 * C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * B2 * C1 * !X)	-0.00170	-0.00172	-0.00171
	(!A1 * !A2 * B2 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00170	-0.00172	-0.00171
	(!A1 * !A2 * !B2 * C1 * !X)	0.00061	0.00062	0.00063
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00170	-0.00171	-0.00169
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00173	-0.00174	-0.00173

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00368	0.00315	0.00304
	(A2 * B2 * C1 * X)	-0.00251	-0.00307	-0.00315
	(A2 * !B2 * !C1 * !X)	0.00270	0.00272	0.00270
	(A2 * !B2 * !C1 * !X)	-0.00342	-0.00343	-0.00341
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00280	0.00281	0.00280
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00335	-0.00339	-0.00339
	(A1 * !A2 * B2 * C1 * X)	0.00369	0.00317	0.00305
	(A1 * !A2 * B2 * C1 * X)	-0.00249	-0.00306	-0.00314
	(A1 * !A2 * !B2 * !C1 * !X)	0.00269	0.00269	0.00270
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00341	-0.00341	-0.00341
	(!A1 * !A2 * B2 * C1 * !X)	0.00148	0.00148	0.00147
	(!A1 * !A2 * B2 * C1 * !X)	-0.00337	-0.00340	-0.00340
	(!A1 * !A2 * B2 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00337	-0.00341	-0.00341
	(!A1 * !A2 * !B2 * C1 * !X)	0.00150	0.00151	0.00154
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00340	-0.00341	-0.00338
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00187	0.00186	0.00186
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00344	-0.00344	-0.00344

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)**	-0.00115	-0.00115	-0.00115
	(A2 * B2 * C1 * X)	0.00169	0.00170	0.00169
	(A2 * !B2 * !C1 * !X)	-0.00100	-0.00109	-0.00109
	(A2 * !B2 * !C1 * !X)	0.00179	0.00177	0.00174
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00171	0.00173	0.00171
	(A1 * !A2 * B2 * C1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * B2 * C1 * X)	0.00169	0.00171	0.00170
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00099	-0.00109	-0.00109
	(A1 * !A2 * !B2 * !C1 * !X)	0.00179	0.00177	0.00174
	(!A1 * !A2 * B2 * C1 * !X)	-0.00045	-0.00045	-0.00048
	(!A1 * !A2 * B2 * C1 * !X)	0.00180	0.00181	0.00174
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A2 * B2 * !C1 * !X)	0.00177	0.00178	0.00173
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00047	-0.00047	-0.00049
	(!A1 * !A2 * !B2 * C1 * !X)	0.00180	0.00180	0.00176
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00180	0.00180	0.00176

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00135	-0.00136	-0.00135
	(A2 * B2 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * !B2 * !C1 * !X)	-0.00114	-0.00124	-0.00125
	(A2 * !B2 * !C1 * !X)	0.00182	0.00178	0.00176
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00173	0.00173	0.00173
	(A1 * !A2 * B2 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * B2 * C1 * X)	0.00167	0.00168	0.00168
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00112	-0.00124	-0.00125
	(A1 * !A2 * !B2 * !C1 * !X)	0.00182	0.00178	0.00176
	(!A1 * !A2 * B2 * C1 * !X)	-0.00050	-0.00050	-0.00053
	(!A1 * !A2 * B2 * C1 * !X)	0.00183	0.00184	0.00177
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	0.00180	0.00181	0.00175
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00052	-0.00053	-0.00055
	(!A1 * !A2 * !B2 * C1 * !X)	0.00183	0.00184	0.00179
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00183	0.00183	0.00179

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00287	-0.00288	-0.00287
	(A2 * B2 * C1 * X)	0.00329	0.00332	0.00332
	(A2 * !B2 * !C1 * !X)	-0.00247	-0.00264	-0.00267
	(A2 * !B2 * !C1 * !X)	0.00361	0.00352	0.00349
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00272	-0.00273	-0.00273
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00341	0.00343	0.00343
	(A1 * !A2 * B2 * C1 * X)	-0.00285	-0.00288	-0.00285
	(A1 * !A2 * B2 * C1 * X)	0.00330	0.00335	0.00333
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00244	-0.00264	-0.00267
	(A1 * !A2 * !B2 * !C1 * !X)	0.00362	0.00352	0.00349
	(!A1 * !A2 * B2 * C1 * !X)	-0.00127	-0.00129	-0.00135
	(!A1 * !A2 * B2 * C1 * !X)	0.00367	0.00370	0.00353
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * B2 * !C1 * !X)	0.00357	0.00359	0.00349
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00134	-0.00135	-0.00139
	(!A1 * !A2 * !B2 * C1 * !X)	0.00363	0.00364	0.00355
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00187	-0.00186	-0.00186
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00364	0.00365	0.00355

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)**	0.00148	0.00149	0.00149
	(A2 * B1 * C1 * X)	-0.00076	-0.00077	-0.00076
	(A2 * B1 * !C1 * !X)	0.00128	0.00128	0.00127
	(A2 * B1 * !C1 * !X)	-0.00170	-0.00171	-0.00171
	(A2 * !B1 * !C1 * !X)	0.00122	0.00123	0.00122
	(A2 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * B1 * C1 * X)	0.00149	0.00150	0.00149
	(A1 * !A2 * B1 * C1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00128	0.00127
	(A1 * !A2 * B1 * !C1 * !X)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00122	0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(!A1 * !A2 * B1 * C1 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * B1 * C1 * !X)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * B1 * !C1 * !X)	0.00077	0.00077	0.00076
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	0.00062	0.00062	0.00064
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00171	-0.00171	-0.00169
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00082	0.00081	0.00081
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00173	-0.00172

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00161	0.00162	0.00162
	(A2 * B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(A2 * B1 * !C1 * !X)	-0.00165	-0.00167	-0.00167
	(A2 * !B1 * !C1 * !X)	0.00135	0.00136	0.00135
	(A2 * !B1 * !C1 * !X)	-0.00169	-0.00169	-0.00168
	(A1 * !A2 * B1 * C1 * X)	0.00162	0.00163	0.00162
	(A1 * !A2 * B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(A1 * !A2 * B1 * !C1 * !X)	-0.00166	-0.00167	-0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	0.00135	0.00136	0.00135
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00169	-0.00169	-0.00168
	(!A1 * !A2 * B1 * C1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * C1 * !X)	-0.00166	-0.00168	-0.00168
	(!A1 * !A2 * B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00167	-0.00168	-0.00169
	(!A1 * !A2 * !B1 * C1 * !X)	0.00068	0.00067	0.00069
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00168	-0.00167	-0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00170

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00254	0.00255	0.00255
	(A2 * B1 * C1 * X)	-0.00148	-0.00149	-0.00148
	(A2 * B1 * !C1 * !X)	0.00219	0.00222	0.00220
	(A2 * B1 * !C1 * !X)	-0.00325	-0.00329	-0.00330
	(A2 * !B1 * !C1 * !X)	0.00211	0.00211	0.00211
	(A2 * !B1 * !C1 * !X)	-0.00332	-0.00333	-0.00332
	(A1 * !A2 * B1 * C1 * X)	0.00256	0.00257	0.00256
	(A1 * !A2 * B1 * C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * B1 * !C1 * !X)	0.00220	0.00222	0.00220
	(A1 * !A2 * B1 * !C1 * !X)	-0.00325	-0.00329	-0.00330
	(A1 * !A2 * !B1 * !C1 * !X)	0.00210	0.00212	0.00211
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00332	-0.00333	-0.00332
	(!A1 * !A2 * B1 * C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !A2 * B1 * C1 * !X)	-0.00327	-0.00330	-0.00331
	(!A1 * !A2 * B1 * !C1 * !X)	0.00124	0.00126	0.00124
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00327	-0.00331	-0.00332
	(!A1 * !A2 * !B1 * C1 * !X)	0.00097	0.00098	0.00101
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00329	-0.00330	-0.00328
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00334	-0.00337	-0.00334

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)**	-0.00139	-0.00139	-0.00144
	(A2 * B1 * C1 * X)	0.00086	0.00086	0.00082
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(A2 * !B1 * !C1 * !X)	-0.00112	-0.00122	-0.00122
	(A2 * !B1 * !C1 * !X)	0.00179	0.00177	0.00174
	(A1 * !A2 * B1 * C1 * X)	-0.00138	-0.00139	-0.00143
	(A1 * !A2 * B1 * C1 * X)	0.00087	0.00087	0.00082
	(A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * B1 * !C1 * !X)	0.00170	0.00173	0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00111	-0.00122	-0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	0.00180	0.00177	0.00174
	(!A1 * !A2 * B1 * C1 * !X)	-0.00052	-0.00052	-0.00055
	(!A1 * !A2 * B1 * C1 * !X)	0.00184	0.00184	0.00176
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * B1 * !C1 * !X)	0.00178	0.00180	0.00173
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00055	-0.00056	-0.00057
	(!A1 * !A2 * !B1 * C1 * !X)	0.00181	0.00181	0.00177
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00082	-0.00081	-0.00081
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00181	0.00181	0.00177

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00153	-0.00153	-0.00157
	(A2 * B1 * C1 * X)	0.00084	0.00083	0.00080
	(A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(A2 * !B1 * !C1 * !X)	-0.00123	-0.00133	-0.00134
	(A2 * !B1 * !C1 * !X)	0.00178	0.00175	0.00172
	(A1 * !A2 * B1 * C1 * X)	-0.00152	-0.00152	-0.00156
	(A1 * !A2 * B1 * C1 * X)	0.00084	0.00084	0.00080
	(A1 * !A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00121	-0.00133	-0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	0.00179	0.00175	0.00172
	(!A1 * !A2 * B1 * C1 * !X)	-0.00054	-0.00055	-0.00058
	(!A1 * !A2 * B1 * C1 * !X)	0.00183	0.00183	0.00174
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A1 * !A2 * B1 * !C1 * !X)	0.00177	0.00179	0.00172
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00058	-0.00058	-0.00060
	(!A1 * !A2 * !B1 * C1 * !X)	0.00180	0.00180	0.00176
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00181	0.00181	0.00176

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00233	-0.00235	-0.00245
	(A2 * B1 * C1 * X)	0.00167	0.00169	0.00160
	(A2 * B1 * !C1 * !X)	-0.00214	-0.00215	-0.00213
	(A2 * B1 * !C1 * !X)	0.00333	0.00334	0.00332
	(A2 * !B1 * !C1 * !X)	-0.00189	-0.00206	-0.00207
	(A2 * !B1 * !C1 * !X)	0.00350	0.00344	0.00340
	(A1 * !A2 * B1 * C1 * X)	-0.00231	-0.00234	-0.00243
	(A1 * !A2 * B1 * C1 * X)	0.00168	0.00170	0.00161
	(A1 * !A2 * B1 * !C1 * !X)	-0.00213	-0.00215	-0.00213
	(A1 * !A2 * B1 * !C1 * !X)	0.00332	0.00335	0.00332
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00186	-0.00206	-0.00207
	(A1 * !A2 * !B1 * !C1 * !X)	0.00351	0.00344	0.00340
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00078	-0.00083
	(!A1 * !A2 * B1 * C1 * !X)	0.00352	0.00352	0.00340
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00126	-0.00124
	(!A1 * !A2 * B1 * !C1 * !X)	0.00346	0.00350	0.00338
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00082	-0.00083	-0.00086
	(!A1 * !A2 * !B1 * C1 * !X)	0.00352	0.00352	0.00345
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00353	0.00354	0.00345

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	(A2 * !B1 * !B2 * !X)	0.00054	0.00054	0.00049
	(A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00201
	(!A2 * !B1 * !B2 * !X)	0.00054	0.00054	0.00049
	(!A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00201
	(!A1 * !A2 * B2 * !X)	0.00057	0.00057	0.00046
	(!A1 * !A2 * B2 * !X)	-0.00178	-0.00179	-0.00199
	(!A1 * !A2 * B1 * !B2 * !X)	0.00057	0.00057	0.00047
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00180	-0.00182	-0.00199
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00063	0.00063	0.00057
	(A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00202
	(!A2 * !B1 * !B2 * !X)	0.00063	0.00063	0.00057
	(!A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00202
	(!A1 * !A2 * B2 * !X)	0.00067	0.00067	0.00056
	(!A1 * !A2 * B2 * !X)	-0.00176	-0.00177	-0.00199
	(!A1 * !A2 * B1 * !B2 * !X)	0.00067	0.00067	0.00057
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00179	-0.00180	-0.00199
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00094	0.00094	0.00084
	(A2 * !B1 * !B2 * !X)	-0.00365	-0.00367	-0.00381
	(!A2 * !B1 * !B2 * !X)	0.00094	0.00094	0.00084
	(!A2 * !B1 * !B2 * !X)	-0.00365	-0.00367	-0.00381
	(!A1 * !A2 * B2 * !X)	0.00099	0.00099	0.00079
	(!A1 * !A2 * B2 * !X)	-0.00337	-0.00339	-0.00376
	(!A1 * !A2 * B1 * !B2 * !X)	0.00100	0.00099	0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00342	-0.00344	-0.00377

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)	-0.00044	-0.00045	-0.00044
	(A2 * !B1 * !B2 * !X)	0.00204	0.00205	0.00204
	(!A2 * !B1 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !B2 * !X)	0.00203	0.00205	0.00204
	(!A1 * !A2 * B2 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * B2 * !X)	0.00204	0.00205	0.00204
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * !B2 * !X)	0.00204	0.00205	0.00204
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00052	-0.00052	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00205	0.00207	0.00206
	(!A2 * !B1 * !B2 * !X)	-0.00051	-0.00052	-0.00052
	(!A2 * !B1 * !B2 * !X)	0.00205	0.00207	0.00206
	(!A1 * !A2 * B2 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B2 * !X)	0.00206	0.00207	0.00206
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B1 * !B2 * !X)	0.00206	0.00207	0.00206
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00073	-0.00074	-0.00073
	(A2 * !B1 * !B2 * !X)	0.00389	0.00391	0.00390
	(!A2 * !B1 * !B2 * !X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !B2 * !X)	0.00389	0.00391	0.00390
	(!A1 * !A2 * B2 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * B2 * !X)	0.00390	0.00391	0.00390
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * B1 * !B2 * !X)	0.00389	0.00391	0.00390

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00298	0.00294	0.00302	0.00309	0.39436
sky130_fd_sc_hs__o22ai_2	0.00564	0.00579	0.00578	0.00570	0.72714
sky130_fd_sc_hs__o22ai_4	0.01160	0.01108	0.01197	0.01129	1.30866

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.82995	1.60881
sky130_fd_sc_hs__o22ai_2	0.00000	1.69719	3.18438
sky130_fd_sc_hs__o22ai_4	0.00000	3.10811	6.37698

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)	0.17564	1.09254	9.88498
	A2->Y (FR)	0.15169	1.09881	10.29790
	B1->Y (FR)	0.11649	1.03221	9.83542
	B2->Y (FR)	0.09448	1.03832	10.24210
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.17139	0.94470	9.76152
	A2->Y (FR)	0.14225	0.94695	10.19180
	B1->Y (FR)	0.10914	0.87792	9.67915
	B2->Y (FR)	0.07736	0.87819	10.10620
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.16356	0.79980	9.25690
	A2->Y (FR)	0.13679	0.81775	9.79500
	B1->Y (FR)	0.10436	0.74510	9.26229
	B2->Y (FR)	0.07568	0.75922	9.75188

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.08927	0.63058	5.73441
	A2->Y (RF)	0.07489	0.61137	5.69798
	B1->Y (RF)	0.07351	0.67650	6.46063
	B2->Y (RF)	0.05999	0.65459	6.40506
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.08966	0.56335	5.65699
	A2->Y (RF)	0.07191	0.53860	5.60321
	B1->Y (RF)	0.07282	0.61066	6.42843
	B2->Y (RF)	0.05444	0.58178	6.33989
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.06663	0.45880	5.32659
	A2->Y (RF)	0.05370	0.43370	5.28794
	B1->Y (RF)	0.06528	0.53036	6.13077
	B2->Y (RF)	0.05277	0.51851	6.28672

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00185	0.00177	0.00494
	A1	0.00924	0.00916	0.01220
	A2	0.00192	0.00208	0.00663
	A2	0.00811	0.00826	0.01264
	B1	0.00001	-0.00003	0.00320
	B1	0.00627	0.00624	0.00932
	B2	0.00002	0.00038	0.00485
	B2	0.00519	0.00527	0.00977
sky130_fd_sc_hs__o22ai_2	A1	0.00333	0.00313	0.00951
	A1	0.01802	0.01787	0.02394
	A2	0.00327	0.00366	0.01280
	A2	0.01586	0.01621	0.02484
	B1	-0.00030	-0.00034	0.00608
	B1	0.01226	0.01200	0.01832
	B2	-0.00044	0.00052	0.00948
	B2	0.00981	0.01051	0.01912
sky130_fd_sc_hs__o22ai_4	A1	0.00521	0.00495	0.01947
	A1	0.03431	0.03411	0.04789
	A2	0.00519	0.00625	0.02579
	A2	0.02967	0.03073	0.04929
	B1	-0.00085	-0.00083	0.01358
	B1	0.02411	0.02407	0.03797
	B2	-0.00088	0.00123	0.02019
	B2	0.01950	0.02153	0.03954

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00990	0.00981	0.01254
	A1	0.00227	0.00220	0.00474
	A2	0.00775	0.00771	0.01041
	A2	0.00129	0.00127	0.00377
	B1	0.00851	0.00853	0.01189
	B1	0.00230	0.00231	0.00524
	B2	0.00654	0.00670	0.00979
	B2	0.00017	0.00031	0.00341
sky130_fd_sc_hs__o22ai_2	A1	0.02047	0.02023	0.02536
	A1	0.00533	0.00507	0.01024
	A2	0.01585	0.01581	0.02169
	A2	0.00277	0.00272	0.00780
	B1	0.01771	0.01767	0.02428
	B1	0.00531	0.00527	0.01108
	B2	0.01281	0.01310	0.01933
	B2	-0.00036	0.00006	0.00633
sky130_fd_sc_hs__o22ai_4	A1	0.03848	0.03805	0.05030
	A1	0.00852	0.00804	0.01929
	A2	0.02983	0.02969	0.04152
	A2	0.00444	0.00427	0.01537
	B1	0.03326	0.03334	0.04565
	B1	0.00860	0.00858	0.02101
	B2	0.02469	0.02556	0.03744
	B2	-0.00044	0.00036	0.01356

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00177	0.00151	0.00145
	(A2 * B2 * !Y)	-0.00152	-0.00181	-0.00185
	(A2 * B1 * !B2 * !Y)	0.00178	0.00151	0.00145
	(A2 * B1 * !B2 * !Y)	-0.00151	-0.00181	-0.00184
	(A2 * !B1 * !B2 * Y)	0.00145	0.00144	0.00145
	(A2 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00185
	(!A2 * !B1 * !B2 * Y)	0.00138	0.00138	0.00138
	(!A2 * !B1 * !B2 * Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00342	0.00280	0.00269
	(A2 * B2 * !Y)	-0.00291	-0.00358	-0.00367
	(A2 * B1 * !B2 * !Y)	0.00343	0.00281	0.00270
	(A2 * B1 * !B2 * !Y)	-0.00290	-0.00357	-0.00366
	(A2 * !B1 * !B2 * Y)	0.00267	0.00270	0.00268
	(A2 * !B1 * !B2 * Y)	-0.00362	-0.00368	-0.00367
	(!A2 * !B1 * !B2 * Y)	0.00255	0.00256	0.00255
	(!A2 * !B1 * !B2 * Y)	-0.00373	-0.00373	-0.00371
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00689	0.00565	0.00542
	(A2 * B2 * !Y)	-0.00583	-0.00705	-0.00725
	(A2 * B1 * !B2 * !Y)	0.00690	0.00566	0.00543
	(A2 * B1 * !B2 * !Y)	-0.00581	-0.00704	-0.00723
	(A2 * !B1 * !B2 * Y)	0.00528	0.00526	0.00525
	(A2 * !B1 * !B2 * Y)	-0.00736	-0.00740	-0.00738
	(!A2 * !B1 * !B2 * Y)	0.00495	0.00504	0.00497
	(!A2 * !B1 * !B2 * Y)	-0.00748	-0.00755	-0.00748

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00142	-0.00143	-0.00142
	(A2 * B2 * !Y)	0.00186	0.00188	0.00187
	(A2 * B1 * !B2 * !Y)	-0.00142	-0.00142	-0.00141
	(A2 * B1 * !B2 * !Y)	0.00186	0.00188	0.00187
	(A2 * !B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * !B2 * Y)	0.00185	0.00186	0.00185
	(!A2 * !B1 * !B2 * Y)	-0.00125	-0.00136	-0.00138
	(!A2 * !B1 * !B2 * Y)	0.00195	0.00191	0.00188
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00264	-0.00263	-0.00263
	(A2 * B2 * !Y)	0.00369	0.00367	0.00371
	(A2 * B1 * !B2 * !Y)	-0.00263	-0.00262	-0.00262
	(A2 * B1 * !B2 * !Y)	0.00370	0.00368	0.00372
	(A2 * !B1 * !B2 * Y)	-0.00266	-0.00267	-0.00266
	(A2 * !B1 * !B2 * Y)	0.00367	0.00370	0.00367
	(!A2 * !B1 * !B2 * Y)	-0.00231	-0.00253	-0.00255
	(!A2 * !B1 * !B2 * Y)	0.00388	0.00380	0.00375
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00531	-0.00533	-0.00529
	(A2 * B2 * !Y)	0.00730	0.00736	0.00734
	(A2 * B1 * !B2 * !Y)	-0.00529	-0.00531	-0.00528
	(A2 * B1 * !B2 * !Y)	0.00731	0.00737	0.00735
	(A2 * !B1 * !B2 * Y)	-0.00519	-0.00523	-0.00520
	(A2 * !B1 * !B2 * Y)	0.00736	0.00745	0.00738
	(!A2 * !B1 * !B2 * Y)	-0.00449	-0.00495	-0.00497
	(!A2 * !B1 * !B2 * Y)	0.00781	0.00767	0.00756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00143	0.00144	0.00143
	(A1 * B2 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * B1 * !B2 * !Y)	0.00143	0.00144	0.00144
	(A1 * B1 * !B2 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * !B1 * !B2 * Y)	0.00133	0.00133	0.00132
	(A1 * !B1 * !B2 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * !B1 * !B2 * Y)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !B2 * Y)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00305	0.00308	0.00307
	(A1 * B2 * !Y)	-0.00165	-0.00168	-0.00167
	(A1 * B1 * !B2 * !Y)	0.00305	0.00309	0.00308
	(A1 * B1 * !B2 * !Y)	-0.00164	-0.00167	-0.00166
	(A1 * !B1 * !B2 * Y)	0.00270	0.00270	0.00267
	(A1 * !B1 * !B2 * Y)	-0.00368	-0.00370	-0.00369
	(!A1 * !B1 * !B2 * Y)	0.00252	0.00253	0.00254
	(!A1 * !B1 * !B2 * Y)	-0.00374	-0.00375	-0.00375
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00566	0.00568	0.00566
	(A1 * B2 * !Y)	-0.00326	-0.00327	-0.00325
	(A1 * B1 * !B2 * !Y)	0.00567	0.00570	0.00568
	(A1 * B1 * !B2 * !Y)	-0.00324	-0.00326	-0.00324
	(A1 * !B1 * !B2 * Y)	0.00513	0.00522	0.00517
	(A1 * !B1 * !B2 * Y)	-0.00695	-0.00704	-0.00701
	(!A1 * !B1 * !B2 * Y)	0.00490	0.00490	0.00489
	(!A1 * !B1 * !B2 * Y)	-0.00717	-0.00716	-0.00713

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00137	-0.00138	-0.00142
	(A1 * B2 * !Y)	0.00090	0.00090	0.00086
	(A1 * B1 * !B2 * !Y)	-0.00137	-0.00137	-0.00142
	(A1 * B1 * !B2 * !Y)	0.00091	0.00091	0.00087
	(A1 * !B1 * !B2 * Y)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * Y)	0.00177	0.00179	0.00178
	(!A1 * !B1 * !B2 * Y)	-0.00114	-0.00124	-0.00125
	(!A1 * !B1 * !B2 * Y)	0.00187	0.00184	0.00182
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00289	-0.00290	-0.00304
	(A1 * B2 * !Y)	0.00183	0.00183	0.00172
	(A1 * B1 * !B2 * !Y)	-0.00289	-0.00290	-0.00304
	(A1 * B1 * !B2 * !Y)	0.00184	0.00184	0.00172
	(A1 * !B1 * !B2 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !B1 * !B2 * Y)	0.00368	0.00370	0.00369
	(!A1 * !B1 * !B2 * Y)	-0.00230	-0.00253	-0.00254
	(!A1 * !B1 * !B2 * Y)	0.00391	0.00383	0.00379
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00539	-0.00542	-0.00562
	(A1 * B2 * !Y)	0.00349	0.00349	0.00333
	(A1 * B1 * !B2 * !Y)	-0.00538	-0.00541	-0.00561
	(A1 * B1 * !B2 * !Y)	0.00351	0.00351	0.00334
	(A1 * !B1 * !B2 * Y)	-0.00511	-0.00514	-0.00512
	(A1 * !B1 * !B2 * Y)	0.00700	0.00704	0.00701
	(!A1 * !B1 * !B2 * Y)	-0.00442	-0.00486	-0.00489
	(!A1 * !B1 * !B2 * Y)	0.00747	0.00731	0.00721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00182	0.00155	0.00150
	(A2 * B2 * !Y)	-0.00149	-0.00177	-0.00181
	(A1 * !A2 * B2 * !Y)	0.00183	0.00155	0.00150
	(A1 * !A2 * B2 * !Y)	-0.00149	-0.00176	-0.00181
	(!A1 * !A2 * B2 * Y)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B2 * Y)	-0.00214	-0.00214	-0.00215
	(!A1 * !A2 * !B2 * Y)	0.00065	0.00065	0.00058
	(!A1 * !A2 * !B2 * Y)	-0.00202	-0.00204	-0.00216
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00342	0.00279	0.00268
	(A2 * B2 * !Y)	-0.00294	-0.00362	-0.00371
	(A1 * !A2 * B2 * !Y)	0.00343	0.00280	0.00269
	(A1 * !A2 * B2 * !Y)	-0.00293	-0.00361	-0.00371
	(!A1 * !A2 * B2 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B2 * Y)	-0.00422	-0.00427	-0.00428
	(!A1 * !A2 * !B2 * Y)	0.00113	0.00113	0.00098
	(!A1 * !A2 * !B2 * Y)	-0.00403	-0.00407	-0.00430
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00714	0.00591	0.00571
	(A2 * B2 * !Y)	-0.00569	-0.00692	-0.00709
	(A1 * !A2 * B2 * !Y)	0.00715	0.00592	0.00572
	(A1 * !A2 * B2 * !Y)	-0.00568	-0.00690	-0.00708
	(!A1 * !A2 * B2 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * B2 * Y)	-0.00859	-0.00865	-0.00866
	(!A1 * !A2 * !B2 * Y)	0.00209	0.00207	0.00183
	(!A1 * !A2 * !B2 * Y)	-0.00828	-0.00828	-0.00870

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00147	-0.00148	-0.00147
	(A2 * B2 * !Y)	0.00183	0.00185	0.00184
	(A1 * !A2 * B2 * !Y)	-0.00147	-0.00147	-0.00146
	(A1 * !A2 * B2 * !Y)	0.00183	0.00185	0.00184
	(!A1 * !A2 * B2 * Y)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * B2 * Y)	0.00219	0.00220	0.00216
	(!A1 * !A2 * !B2 * Y)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !B2 * Y)	0.00218	0.00220	0.00219
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00262	-0.00264	-0.00261
	(A2 * B2 * !Y)	0.00373	0.00378	0.00376
	(A1 * !A2 * B2 * !Y)	-0.00261	-0.00263	-0.00260
	(A1 * !A2 * B2 * !Y)	0.00374	0.00379	0.00377
	(!A1 * !A2 * B2 * Y)	-0.00085	-0.00086	-0.00088
	(!A1 * !A2 * B2 * Y)	0.00430	0.00434	0.00428
	(!A1 * !A2 * !B2 * Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !B2 * Y)	0.00434	0.00437	0.00435
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00562	-0.00561	-0.00559
	(A2 * B2 * !Y)	0.00717	0.00715	0.00718
	(A1 * !A2 * B2 * !Y)	-0.00561	-0.00563	-0.00558
	(A1 * !A2 * B2 * !Y)	0.00719	0.00725	0.00719
	(!A1 * !A2 * B2 * Y)	-0.00160	-0.00164	-0.00166
	(!A1 * !A2 * B2 * Y)	0.00871	0.00888	0.00867
	(!A1 * !A2 * !B2 * Y)	-0.00172	-0.00174	-0.00172
	(!A1 * !A2 * !B2 * Y)	0.00876	0.00883	0.00878

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00154	0.00155	0.00154
	(A2 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B1 * !Y)	0.00154	0.00156	0.00155
	(A1 * !A2 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * B1 * Y)	0.00045	0.00045	0.00045
	(!A1 * !A2 * B1 * Y)	-0.00213	-0.00214	-0.00214
	(!A1 * !A2 * !B1 * Y)	0.00056	0.00055	0.00048
	(!A1 * !A2 * !B1 * Y)	-0.00202	-0.00202	-0.00215
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00294	0.00296	0.00294
	(A2 * B1 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * !A2 * B1 * !Y)	0.00294	0.00298	0.00295
	(A1 * !A2 * B1 * !Y)	-0.00167	-0.00169	-0.00166
	(!A1 * !A2 * B1 * Y)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B1 * Y)	-0.00418	-0.00422	-0.00419
	(!A1 * !A2 * !B1 * Y)	0.00109	0.00108	0.00093
	(!A1 * !A2 * !B1 * Y)	-0.00398	-0.00399	-0.00423
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00572	0.00577	0.00573
	(A2 * B1 * !Y)	-0.00329	-0.00331	-0.00328
	(A1 * !A2 * B1 * !Y)	0.00573	0.00582	0.00575
	(A1 * !A2 * B1 * !Y)	-0.00327	-0.00332	-0.00326
	(!A1 * !A2 * B1 * Y)	0.00165	0.00164	0.00163
	(!A1 * !A2 * B1 * Y)	-0.00823	-0.00828	-0.00825
	(!A1 * !A2 * !B1 * Y)	0.00199	0.00198	0.00174
	(!A1 * !A2 * !B1 * Y)	-0.00790	-0.00792	-0.00833

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00149	-0.00150	-0.00153
	(A2 * B1 * !Y)	0.00087	0.00087	0.00083
	(A1 * !A2 * B1 * !Y)	-0.00149	-0.00149	-0.00153
	(A1 * !A2 * B1 * !Y)	0.00087	0.00087	0.00083
	(!A1 * !A2 * B1 * Y)	-0.00042	-0.00043	-0.00043
	(!A1 * !A2 * B1 * Y)	0.00215	0.00218	0.00214
	(!A1 * !A2 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !B1 * Y)	0.00216	0.00220	0.00217
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00275	-0.00278	-0.00291
	(A2 * B1 * !Y)	0.00183	0.00184	0.00172
	(A1 * !A2 * B1 * !Y)	-0.00276	-0.00278	-0.00291
	(A1 * !A2 * B1 * !Y)	0.00184	0.00185	0.00173
	(!A1 * !A2 * B1 * Y)	-0.00082	-0.00083	-0.00084
	(!A1 * !A2 * B1 * Y)	0.00424	0.00427	0.00419
	(!A1 * !A2 * !B1 * Y)	-0.00087	-0.00088	-0.00086
	(!A1 * !A2 * !B1 * Y)	0.00429	0.00433	0.00428
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00545	-0.00551	-0.00569
	(A2 * B1 * !Y)	0.00350	0.00353	0.00335
	(A1 * !A2 * B1 * !Y)	-0.00547	-0.00544	-0.00568
	(A1 * !A2 * B1 * !Y)	0.00356	0.00350	0.00337
	(!A1 * !A2 * B1 * Y)	-0.00154	-0.00155	-0.00157
	(!A1 * !A2 * B1 * Y)	0.00835	0.00842	0.00825
	(!A1 * !A2 * !B1 * Y)	-0.00163	-0.00165	-0.00163
	(!A1 * !A2 * !B1 * Y)	0.00838	0.00850	0.00841

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00256	0.00266	0.00274	0.00292	0.83181
sky130_fd_sc_hs__o22a_2	0.00274	0.00279	0.00291	0.00289	1.60930
sky130_fd_sc_hs__o22a_4	0.00534	0.00497	0.00547	0.00519	3.05322

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	1.86404	3.67659
sky130_fd_sc_hs__o22a_2	0.00000	2.29826	3.89231
sky130_fd_sc_hs__o22a_4	0.00000	4.56185	7.78183

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)	0.16225	0.86450	7.61866
	A2->X (RR)	0.14646	0.83229	7.53426
	B1->X (RR)	0.14849	0.87343	7.66059
	B2->X (RR)	0.13190	0.83059	7.55235
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.16353	0.77114	7.60747
	A2->X (RR)	0.14839	0.74381	7.53129
	B1->X (RR)	0.14968	0.78511	7.66260
	B2->X (RR)	0.13289	0.74858	7.55263
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.17394	0.71238	7.72413
	A2->X (RR)	0.16081	0.68330	7.64486
	B1->X (RR)	0.15907	0.72482	7.78061
	B2->X (RR)	0.14722	0.70135	7.71298

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.23919	0.77932	4.70054
	A2->X (FF)	0.21850	0.78866	4.77034
	B1->X (FF)	0.19304	0.70871	4.53400
	B2->X (FF)	0.17190	0.71501	4.60017
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.29335	0.82280	4.95294
	A2->X (FF)	0.27173	0.83851	5.05218
	B1->X (FF)	0.24116	0.74986	4.77422
	B2->X (FF)	0.21799	0.76280	4.86530
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.27984	0.76324	4.84359
	A2->X (FF)	0.25367	0.77019	4.92657
	B1->X (FF)	0.23732	0.70291	4.69932
	B2->X (FF)	0.21255	0.70750	4.76529

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01172	0.01191	0.02362
	A1	0.00498	0.00519	0.01707
	A2	0.00994	0.01010	0.02395
	A2	0.00413	0.00429	0.01827
	B1	0.01051	0.01094	0.02386
	B1	0.00494	0.00553	0.01845
	B2	0.00916	0.00961	0.02439
	B2	0.00314	0.00377	0.01976
sky130_fd_sc_hs__o22a_2	A1	0.01467	0.01510	0.02707
	A1	0.00761	0.00805	0.02037
	A2	0.01281	0.01323	0.02723
	A2	0.00672	0.00716	0.02121
	B1	0.01337	0.01395	0.02690
	B1	0.00765	0.00824	0.02154
	B2	0.01155	0.01219	0.02677
	B2	0.00681	0.00746	0.02206
sky130_fd_sc_hs__o22a_4	A1	0.02919	0.02993	0.05290
	A1	0.01575	0.01651	0.04017
	A2	0.02505	0.02574	0.05274
	A2	0.01377	0.01448	0.04216
	B1	0.02695	0.02802	0.05358
	B1	0.01575	0.01688	0.04304
	B2	0.02282	0.02392	0.05232
	B2	0.01376	0.01490	0.04396

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00419	0.00449	0.01706
	A1	0.01084	0.01114	0.02369
	A2	0.00418	0.00500	0.02081
	A2	0.00991	0.01074	0.02608
	B1	0.00308	0.00339	0.01664
	B1	0.00867	0.00896	0.02211
	B2	0.00265	0.00359	0.01931
	B2	0.00757	0.00850	0.02421
sky130_fd_sc_hs__o22a_2	A1	0.00700	0.00714	0.02223
	A1	0.01398	0.01413	0.02706
	A2	0.00703	0.00769	0.02427
	A2	0.01304	0.01372	0.02954
	B1	0.00546	0.00565	0.01939
	B1	0.01119	0.01137	0.02458
	B2	0.00545	0.00627	0.02348
	B2	0.01020	0.01101	0.02692
sky130_fd_sc_hs__o22a_4	A1	0.01330	0.01349	0.04049
	A1	0.02662	0.02681	0.05155
	A2	0.01353	0.01484	0.04696
	A2	0.02469	0.02597	0.05634
	B1	0.01096	0.01145	0.03745
	B1	0.02218	0.02260	0.04800
	B2	0.01140	0.01304	0.04662
	B2	0.02045	0.02201	0.05235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00150	0.00125	0.00118
	(A2 * B2 * X)	-0.00134	-0.00163	-0.00166
	(A2 * B1 * !B2 * X)	0.00151	0.00126	0.00119
	(A2 * B1 * !B2 * X)	-0.00134	-0.00162	-0.00166
	(A2 * !B1 * !B2 * !X)	0.00117	0.00118	0.00117
	(A2 * !B1 * !B2 * !X)	-0.00166	-0.00168	-0.00168
	(!A2 * !B1 * !B2 * !X)	0.00110	0.00111	0.00110
	(!A2 * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00172	0.00147	0.00140
	(A2 * B2 * X)	-0.00133	-0.00161	-0.00164
	(A2 * B1 * !B2 * X)	0.00172	0.00148	0.00141
	(A2 * B1 * !B2 * X)	-0.00132	-0.00160	-0.00164
	(A2 * !B1 * !B2 * !X)	0.00139	0.00141	0.00139
	(A2 * !B1 * !B2 * !X)	-0.00164	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(!A2 * !B1 * !B2 * !X)	-0.00166	-0.00166	-0.00166
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00330	0.00277	0.00264
	(A2 * B2 * X)	-0.00254	-0.00311	-0.00320
	(A2 * B1 * !B2 * X)	0.00331	0.00278	0.00266
	(A2 * B1 * !B2 * X)	-0.00252	-0.00310	-0.00318
	(A2 * !B1 * !B2 * !X)	0.00256	0.00258	0.00256
	(A2 * !B1 * !B2 * !X)	-0.00324	-0.00328	-0.00328
	(!A2 * !B1 * !B2 * !X)	0.00244	0.00244	0.00244
	(!A2 * !B1 * !B2 * !X)	-0.00331	-0.00331	-0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00113	-0.00113	-0.00113
	(A2 * B2 * X)	0.00171	0.00171	0.00171
	(A2 * B1 * !B2 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * !B2 * X)	0.00171	0.00171	0.00172
	(A2 * !B1 * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(A2 * !B1 * !B2 * !X)	0.00169	0.00170	0.00169
	(!A2 * !B1 * !B2 * !X)	-0.00098	-0.00108	-0.00110
	(!A2 * !B1 * !B2 * !X)	0.00179	0.00175	0.00172
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00134	-0.00135	-0.00134
	(A2 * B2 * X)	0.00169	0.00171	0.00170
	(A2 * B1 * !B2 * X)	-0.00134	-0.00134	-0.00133
	(A2 * B1 * !B2 * X)	0.00170	0.00171	0.00171
	(A2 * !B1 * !B2 * !X)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * !B2 * !X)	0.00168	0.00169	0.00168
	(!A2 * !B1 * !B2 * !X)	-0.00119	-0.00129	-0.00131
	(!A2 * !B1 * !B2 * !X)	0.00177	0.00173	0.00170
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00253	-0.00255	-0.00253
	(A2 * B2 * X)	0.00328	0.00331	0.00330
	(A2 * B1 * !B2 * X)	-0.00252	-0.00253	-0.00252
	(A2 * B1 * !B2 * X)	0.00329	0.00332	0.00332
	(A2 * !B1 * !B2 * !X)	-0.00247	-0.00249	-0.00248
	(A2 * !B1 * !B2 * !X)	0.00330	0.00333	0.00332
	(!A2 * !B1 * !B2 * !X)	-0.00219	-0.00236	-0.00240
	(!A2 * !B1 * !B2 * !X)	0.00352	0.00343	0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00130	0.00131	0.00130
	(A1 * B2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * B1 * !B2 * X)	0.00130	0.00131	0.00131
	(A1 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * !X)	0.00115	0.00114	0.00113
	(A1 * !B1 * !B2 * !X)	-0.00167	-0.00167	-0.00168
	(!A1 * !B1 * !B2 * !X)	0.00106	0.00107	0.00107
	(!A1 * !B1 * !B2 * !X)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00143	0.00143	0.00143
	(A1 * B2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * B1 * !B2 * X)	0.00143	0.00144	0.00144
	(A1 * B1 * !B2 * X)	-0.00077	-0.00078	-0.00077
	(A1 * !B1 * !B2 * !X)	0.00133	0.00134	0.00134
	(A1 * !B1 * !B2 * !X)	-0.00159	-0.00160	-0.00161
	(!A1 * !B1 * !B2 * !X)	0.00126	0.00128	0.00127
	(!A1 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00246	0.00247	0.00246
	(A1 * B2 * X)	-0.00154	-0.00155	-0.00154
	(A1 * B1 * !B2 * X)	0.00247	0.00248	0.00248
	(A1 * B1 * !B2 * X)	-0.00153	-0.00153	-0.00153
	(A1 * !B1 * !B2 * !X)	0.00219	0.00222	0.00220
	(A1 * !B1 * !B2 * !X)	-0.00323	-0.00327	-0.00328
	(!A1 * !B1 * !B2 * !X)	0.00207	0.00209	0.00207
	(!A1 * !B1 * !B2 * !X)	-0.00331	-0.00332	-0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00123	-0.00124	-0.00128
	(A1 * B2 * X)	0.00084	0.00084	0.00080
	(A1 * B1 * !B2 * X)	-0.00123	-0.00123	-0.00128
	(A1 * B1 * !B2 * X)	0.00085	0.00085	0.00081
	(A1 * !B1 * !B2 * !X)	-0.00111	-0.00111	-0.00110
	(A1 * !B1 * !B2 * !X)	0.00168	0.00169	0.00168
	(!A1 * !B1 * !B2 * !X)	-0.00095	-0.00104	-0.00106
	(!A1 * !B1 * !B2 * !X)	0.00178	0.00174	0.00172
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00136	-0.00136	-0.00141
	(A1 * B2 * X)	0.00085	0.00085	0.00081
	(A1 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00140
	(A1 * B1 * !B2 * X)	0.00086	0.00086	0.00082
	(A1 * !B1 * !B2 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !X)	0.00163	0.00163	0.00163
	(!A1 * !B1 * !B2 * !X)	-0.00113	-0.00124	-0.00125
	(!A1 * !B1 * !B2 * !X)	0.00172	0.00168	0.00166
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00230	-0.00231	-0.00242
	(A1 * B2 * X)	0.00169	0.00169	0.00160
	(A1 * B1 * !B2 * X)	-0.00229	-0.00230	-0.00240
	(A1 * B1 * !B2 * X)	0.00171	0.00170	0.00162
	(A1 * !B1 * !B2 * !X)	-0.00212	-0.00213	-0.00212
	(A1 * !B1 * !B2 * !X)	0.00331	0.00332	0.00331
	(!A1 * !B1 * !B2 * !X)	-0.00181	-0.00200	-0.00203
	(!A1 * !B1 * !B2 * !X)	0.00351	0.00343	0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00156	0.00132	0.00125
	(A2 * B2 * X)	-0.00139	-0.00166	-0.00169
	(A1 * !A2 * B2 * X)	0.00157	0.00133	0.00126
	(A1 * !A2 * B2 * X)	-0.00138	-0.00165	-0.00169
	(!A1 * !A2 * B2 * !X)	0.00038	0.00039	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00204	-0.00206	-0.00205
	(!A1 * !A2 * !B2 * !X)	0.00047	0.00046	0.00041
	(!A1 * !A2 * !B2 * !X)	-0.00196	-0.00197	-0.00206
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00178	0.00154	0.00147
	(A2 * B2 * X)	-0.00128	-0.00156	-0.00160
	(A1 * !A2 * B2 * X)	0.00179	0.00154	0.00147
	(A1 * !A2 * B2 * X)	-0.00128	-0.00155	-0.00159
	(!A1 * !A2 * B2 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * B2 * !X)	-0.00199	-0.00201	-0.00200
	(!A1 * !A2 * !B2 * !X)	0.00057	0.00057	0.00050
	(!A1 * !A2 * !B2 * !X)	-0.00187	-0.00190	-0.00201
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00343	0.00289	0.00277
	(A2 * B2 * X)	-0.00252	-0.00309	-0.00318
	(A1 * !A2 * B2 * X)	0.00344	0.00290	0.00279
	(A1 * !A2 * B2 * X)	-0.00250	-0.00308	-0.00317
	(!A1 * !A2 * B2 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * B2 * !X)	-0.00370	-0.00373	-0.00374
	(!A1 * !A2 * !B2 * !X)	0.00132	0.00132	0.00122
	(!A1 * !A2 * !B2 * !X)	-0.00355	-0.00358	-0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00120	-0.00121	-0.00120
	(A2 * B2 * X)	0.00173	0.00175	0.00174
	(A1 * !A2 * B2 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * B2 * X)	0.00174	0.00175	0.00175
	(!A1 * !A2 * B2 * !X)	-0.00034	-0.00035	-0.00035
	(!A1 * !A2 * B2 * !X)	0.00209	0.00210	0.00208
	(!A1 * !A2 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !A2 * !B2 * !X)	0.00210	0.00211	0.00210
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00141	-0.00142	-0.00141
	(A2 * B2 * X)	0.00165	0.00166	0.00165
	(A1 * !A2 * B2 * X)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * B2 * X)	0.00165	0.00167	0.00166
	(!A1 * !A2 * B2 * !X)	-0.00041	-0.00042	-0.00042
	(!A1 * !A2 * B2 * !X)	0.00206	0.00207	0.00204
	(!A1 * !A2 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !B2 * !X)	0.00205	0.00206	0.00206
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00266	-0.00267	-0.00266
	(A2 * B2 * X)	0.00326	0.00329	0.00329
	(A1 * !A2 * B2 * X)	-0.00265	-0.00267	-0.00265
	(A1 * !A2 * B2 * X)	0.00327	0.00333	0.00330
	(!A1 * !A2 * B2 * !X)	-0.00106	-0.00108	-0.00109
	(!A1 * !A2 * B2 * !X)	0.00384	0.00391	0.00381
	(!A1 * !A2 * !B2 * !X)	-0.00111	-0.00114	-0.00112
	(!A1 * !A2 * !B2 * !X)	0.00384	0.00390	0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00168	0.00169	0.00168
	(A2 * B1 * X)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * B1 * X)	0.00169	0.00170	0.00168
	(A1 * !A2 * B1 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * B1 * !X)	0.00075	0.00075	0.00075
	(!A1 * !A2 * B1 * !X)	-0.00184	-0.00186	-0.00186
	(!A1 * !A2 * !B1 * !X)	0.00084	0.00083	0.00078
	(!A1 * !A2 * !B1 * !X)	-0.00176	-0.00177	-0.00186
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00146	0.00147	0.00147
	(A2 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * B1 * X)	0.00147	0.00148	0.00148
	(A1 * !A2 * B1 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * B1 * !X)	0.00046	0.00046	0.00045
	(!A1 * !A2 * B1 * !X)	-0.00190	-0.00191	-0.00191
	(!A1 * !A2 * !B1 * !X)	0.00056	0.00056	0.00049
	(!A1 * !A2 * !B1 * !X)	-0.00179	-0.00179	-0.00191
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00259	0.00261	0.00260
	(A2 * B1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * B1 * X)	0.00261	0.00262	0.00261
	(A1 * !A2 * B1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * !A2 * B1 * !X)	0.00072	0.00073	0.00073
	(!A1 * !A2 * B1 * !X)	-0.00375	-0.00381	-0.00381
	(!A1 * !A2 * !B1 * !X)	0.00087	0.00088	0.00078
	(!A1 * !A2 * !B1 * !X)	-0.00362	-0.00365	-0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00162	-0.00163	-0.00166
	(A2 * B1 * X)	0.00082	0.00082	0.00078
	(A1 * !A2 * B1 * X)	-0.00161	-0.00162	-0.00165
	(A1 * !A2 * B1 * X)	0.00082	0.00082	0.00078
	(!A1 * !A2 * B1 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * B1 * !X)	0.00192	0.00194	0.00188
	(!A1 * !A2 * !B1 * !X)	-0.00074	-0.00075	-0.00073
	(!A1 * !A2 * !B1 * !X)	0.00190	0.00192	0.00190
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00140	-0.00141	-0.00145
	(A2 * B1 * X)	0.00083	0.00082	0.00079
	(A1 * !A2 * B1 * X)	-0.00140	-0.00140	-0.00144
	(A1 * !A2 * B1 * X)	0.00084	0.00083	0.00079
	(!A1 * !A2 * B1 * !X)	-0.00039	-0.00040	-0.00041
	(!A1 * !A2 * B1 * !X)	0.00195	0.00196	0.00194
	(!A1 * !A2 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !B1 * !X)	0.00196	0.00197	0.00196
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00245	-0.00246	-0.00256
	(A2 * B1 * X)	0.00169	0.00168	0.00159
	(A1 * !A2 * B1 * X)	-0.00244	-0.00245	-0.00254
	(A1 * !A2 * B1 * X)	0.00170	0.00170	0.00160
	(!A1 * !A2 * B1 * !X)	-0.00061	-0.00062	-0.00064
	(!A1 * !A2 * B1 * !X)	0.00392	0.00392	0.00386
	(!A1 * !A2 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * !B1 * !X)	0.00391	0.00393	0.00392

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00236	0.00256	0.00292	0.00307	0.39581
sky130_fd_sc_hs__o2bb2ai_2	0.00534	0.00474	0.00593	0.00554	0.77320
sky130_fd_sc_hs__o2bb2ai_4	0.01129	0.01139	0.01112	0.01139	1.39207

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	2.58628	6.16353
sky130_fd_sc_hs__o2bb2ai_2	0.00000	5.05629	12.23020
sky130_fd_sc_hs__o2bb2ai_4	0.00000	5.92045	7.73801

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)	0.11834	0.59891	4.01427
	A2_N->Y (RR)	0.11362	0.60310	4.02104
	B1->Y (FR)	0.13597	1.05185	9.86832
	B2->Y (FR)	0.11532	1.06149	10.27900
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.10660	0.51039	3.94014
	A2_N->Y (RR)	0.09848	0.50924	3.96998
	B1->Y (FR)	0.12141	0.88819	9.75522
	B2->Y (FR)	0.09550	0.89391	10.15810
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.11181	0.45105	3.75302
	A2_N->Y (RR)	0.10319	0.45746	3.81884
	B1->Y (FR)	0.12740	0.78063	9.61584
	B2->Y (FR)	0.10007	0.79639	10.14450

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)	0.15827	0.67338	3.93039
	A2_N->Y (FF)	0.14378	0.63712	3.83015
	B1->Y (RF)	0.07023	0.60378	5.71997
	B2->Y (RF)	0.05609	0.57936	5.63706
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.12953	0.57923	3.86804
	A2_N->Y (FF)	0.12148	0.55161	3.82420
	B1->Y (RF)	0.06209	0.51666	5.60530
	B2->Y (RF)	0.05017	0.50080	5.62773
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.14436	0.55216	3.99533
	A2_N->Y (FF)	0.12729	0.50631	3.85163
	B1->Y (RF)	0.06809	0.46640	5.60077
	B2->Y (RF)	0.05031	0.43548	5.47237

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	0.00734	0.00789	0.02502
	A1_N	0.00460	0.00516	0.02226
	A2_N	0.00666	0.00737	0.02400
	A2_N	0.00460	0.00532	0.02198
	B1	0.00075	0.00071	0.00381
	B1	0.00564	0.00551	0.00869
	B2	0.00075	0.00104	0.00536
	B2	0.00470	0.00497	0.00933
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01365	0.01456	0.04697
	A1_N	0.00757	0.00851	0.04096
	A2_N	0.01180	0.01334	0.04914
	A2_N	0.00785	0.00942	0.04521
	B1	0.00116	0.00109	0.00731
	B1	0.01093	0.01084	0.01695
	B2	0.00116	0.00170	0.01036
	B2	0.00844	0.00898	0.01767
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02968	0.03135	0.10018
	A1_N	0.01595	0.01772	0.08681
	A2_N	0.02576	0.02878	0.09913
	A2_N	0.01582	0.01895	0.08941
	B1	0.00182	0.00167	0.01405
	B1	0.02131	0.02113	0.03355
	B2	0.00167	0.00288	0.01993
	B2	0.01692	0.01819	0.03524

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00600	0.00708	0.02520
	A1_N	0.00879	0.00985	0.02785
	A2_N	0.00562	0.00666	0.02524
	A2_N	0.00775	0.00878	0.02707
	B1	0.00706	0.00699	0.00962
	B1	0.00216	0.00210	0.00473
	B2	0.00508	0.00512	0.00812
	B2	0.00110	0.00113	0.00372
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01113	0.01320	0.04882
	A1_N	0.01722	0.01928	0.05479
	A2_N	0.01042	0.01254	0.04880
	A2_N	0.01447	0.01657	0.05278
	B1	0.01380	0.01370	0.01994
	B1	0.00402	0.00385	0.00918
	B2	0.00925	0.00942	0.01505
	B2	0.00191	0.00203	0.00727
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02407	0.02797	0.10036
	A1_N	0.03795	0.04175	0.11378
	A2_N	0.02144	0.02516	0.09874
	A2_N	0.03168	0.03534	0.10874
	B1	0.02862	0.02824	0.03979
	B1	0.00908	0.00872	0.01966
	B2	0.01934	0.01960	0.03136
	B2	0.00393	0.00413	0.01498

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)	0.00626	0.00665	0.02382
	(A2_N * !B1 * !B2 * Y)	0.00224	0.00261	0.01980
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00115	0.00115	0.00115
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00142	-0.00142	-0.00141
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01224	0.01291	0.04724
	(A2_N * !B1 * !B2 * Y)	0.00365	0.00428	0.03863
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00224	0.00226	0.00224
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00334	-0.00336	-0.00334
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02687	0.02797	0.09704
	(A2_N * !B1 * !B2 * Y)	0.00788	0.00890	0.07801
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00507	0.00514	0.00510
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00737	-0.00742	-0.00737

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)	0.00064	0.00171	0.01952
	(A2_N * !B1 * !B2 * Y)	0.00470	0.00578	0.02353
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00105	-0.00112	-0.00113
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00153	0.00148	0.00144
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00108	0.00309	0.03857
	(A2_N * !B1 * !B2 * Y)	0.00978	0.01180	0.04716
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00202	-0.00219	-0.00221
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00354	0.00346	0.00339
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00262	0.00652	0.07757
	(A2_N * !B1 * !B2 * Y)	0.02177	0.02574	0.09653
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00459	-0.00499	-0.00505
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00785	0.00765	0.00750

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)	0.00562	0.00621	0.02440
	(A1_N * !B1 * !B2 * Y)	0.00223	0.00282	0.02102
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00044	0.00044	0.00042
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00170	-0.00171	-0.00173
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01051	0.01177	0.04738
	(A1_N * !B1 * !B2 * Y)	0.00393	0.00517	0.04080
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00082	0.00083	0.00078
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00318	-0.00321	-0.00328
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02321	0.02564	0.09753
	(A1_N * !B1 * !B2 * Y)	0.00777	0.01015	0.08206
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00191	0.00190	0.00178
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00828	-0.00828	-0.00853

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)	0.00028	0.00130	0.01974
	(A1_N * !B1 * !B2 * Y)	0.00368	0.00472	0.02314
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00039	-0.00039	-0.00039
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00175	0.00177	0.00175
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00029	0.00235	0.03830
	(A1_N * !B1 * !B2 * Y)	0.00691	0.00900	0.04492
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00072	-0.00073	-0.00072
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00332	0.00335	0.00333
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00008	0.00360	0.07665
	(A1_N * !B1 * !B2 * Y)	0.01553	0.01921	0.09220
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00163	-0.00167	-0.00163
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00860	0.00876	0.00864

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)	0.00143	0.00142	0.00143
	(A1_N * A2_N * B2 * Y)	-0.00178	-0.00178	-0.00179
	(A1_N * A2_N * !B2 * Y)	0.00137	0.00138	0.00138
	(A1_N * A2_N * !B2 * Y)	-0.00180	-0.00181	-0.00180
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00172	0.00144	0.00139
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00150	-0.00177	-0.00182
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00284	0.00283	0.00283
	(A1_N * A2_N * B2 * Y)	-0.00362	-0.00364	-0.00366
	(A1_N * A2_N * !B2 * Y)	0.00275	0.00277	0.00276
	(A1_N * A2_N * !B2 * Y)	-0.00368	-0.00370	-0.00368
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00349	0.00290	0.00280
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00300	-0.00359	-0.00369
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00534	0.00537	0.00534
	(A1_N * A2_N * B2 * Y)	-0.00721	-0.00729	-0.00731
	(A1_N * A2_N * !B2 * Y)	0.00515	0.00518	0.00517
	(A1_N * A2_N * !B2 * Y)	-0.00737	-0.00739	-0.00736
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00684	0.00559	0.00535
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00579	-0.00710	-0.00729

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)	-0.00132	-0.00132	-0.00132
	(A1_N * A2_N * B2 * Y)	0.00189	0.00190	0.00189
	(A1_N * A2_N * !B2 * Y)	-0.00120	-0.00127	-0.00129
	(A1_N * A2_N * !B2 * Y)	0.00198	0.00194	0.00192
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00135	-0.00136	-0.00135
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00186	0.00188	0.00186
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00261	-0.00262	-0.00261
	(A1_N * A2_N * B2 * Y)	0.00382	0.00386	0.00384
	(A1_N * A2_N * !B2 * Y)	-0.00239	-0.00255	-0.00256
	(A1_N * A2_N * !B2 * Y)	0.00400	0.00397	0.00392
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00271	-0.00272	-0.00270
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00375	0.00378	0.00377
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00519	-0.00523	-0.00520
	(A1_N * A2_N * B2 * Y)	0.00732	0.00743	0.00736
	(A1_N * A2_N * !B2 * Y)	-0.00468	-0.00505	-0.00508
	(A1_N * A2_N * !B2 * Y)	0.00774	0.00765	0.00753
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00518	-0.00519	-0.00515
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00743	0.00747	0.00745

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)	0.00148	0.00149	0.00148
	(A1_N * A2_N * B1 * Y)	-0.00179	-0.00181	-0.00181
	(A1_N * A2_N * !B1 * Y)	0.00143	0.00145	0.00143
	(A1_N * A2_N * !B1 * Y)	-0.00182	-0.00183	-0.00182
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00154	0.00156	0.00155
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00091	-0.00091	-0.00091
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00268	0.00268	0.00265
	(A1_N * A2_N * B1 * Y)	-0.00341	-0.00344	-0.00345
	(A1_N * A2_N * !B1 * Y)	0.00258	0.00259	0.00258
	(A1_N * A2_N * !B1 * Y)	-0.00347	-0.00348	-0.00347
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00281	0.00282	0.00281
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00538	0.00539	0.00535
	(A1_N * A2_N * B1 * Y)	-0.00730	-0.00737	-0.00738
	(A1_N * A2_N * !B1 * Y)	0.00515	0.00520	0.00517
	(A1_N * A2_N * !B1 * Y)	-0.00742	-0.00746	-0.00741
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00604	0.00610	0.00606
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00332	-0.00335	-0.00333

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)	-0.00137	-0.00138	-0.00137
	(A1_N * A2_N * B1 * Y)	0.00190	0.00190	0.00190
	(A1_N * A2_N * !B1 * Y)	-0.00126	-0.00133	-0.00134
	(A1_N * A2_N * !B1 * Y)	0.00200	0.00196	0.00193
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00148	-0.00148	-0.00152
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00099	0.00098	0.00094
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00243	-0.00245	-0.00243
	(A1_N * A2_N * B1 * Y)	0.00361	0.00364	0.00361
	(A1_N * A2_N * !B1 * Y)	-0.00224	-0.00237	-0.00239
	(A1_N * A2_N * !B1 * Y)	0.00380	0.00374	0.00370
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00265	-0.00266	-0.00276
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00178	0.00178	0.00169
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00519	-0.00523	-0.00520
	(A1_N * A2_N * B1 * Y)	0.00737	0.00744	0.00740
	(A1_N * A2_N * !B1 * Y)	-0.00473	-0.00504	-0.00508
	(A1_N * A2_N * !B1 * Y)	0.00786	0.00768	0.00758
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00567	-0.00573	-0.00595
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00366	0.00368	0.00348

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00236	0.00251	0.00257	0.00276	0.80896
sky130_fd_sc_hs__o2bb2a_2	0.00238	0.00259	0.00274	0.00284	1.52714
sky130_fd_sc_hs__o2bb2a_4	0.00236	0.00252	0.00514	0.00506	3.08089

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	4.60789	7.06197
sky130_fd_sc_hs__o2bb2a_2	0.00000	4.33383	7.76815
sky130_fd_sc_hs__o2bb2a_4	0.00000	8.41351	10.64670

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)	0.22610	0.94579	7.71636
	A2_N->X (FR)	0.21211	0.90746	7.57659
	B1->X (RR)	0.14644	0.82990	7.51244
	B2->X (RR)	0.12920	0.79415	7.41747
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.24324	0.87241	7.74550
	A2_N->X (FR)	0.22684	0.83351	7.60656
	B1->X (RR)	0.15129	0.74124	7.46169
	B2->X (RR)	0.13403	0.71138	7.37198
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.28144	0.85670	7.95630
	A2_N->X (FR)	0.26603	0.82290	7.82887
	B1->X (RR)	0.16979	0.68644	7.66006
	B2->X (RR)	0.14641	0.64585	7.55613

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)	0.18906	0.60100	3.74442
	A2_N->X (RF)	0.18428	0.60534	3.79528
	B1->X (FF)	0.22122	0.71967	4.48192
	B2->X (FF)	0.20281	0.72557	4.52398
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.20881	0.58279	3.65648
	A2_N->X (RF)	0.20454	0.58734	3.69576
	B1->X (FF)	0.27838	0.76915	4.64945
	B2->X (FF)	0.25859	0.78507	4.72847
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.23775	0.61575	3.99731
	A2_N->X (RF)	0.23323	0.62661	4.04553
	B1->X (FF)	0.27736	0.72868	4.73549
	B2->X (FF)	0.24744	0.72932	4.79505

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	0.00874	0.00991	0.02844
	A1_N	0.01146	0.01263	0.03135
	A2_N	0.00833	0.00953	0.02866
	A2_N	0.01031	0.01152	0.03078
	B1	0.00958	0.00987	0.02219
	B1	0.00509	0.00537	0.01773
	B2	0.00794	0.00821	0.02284
	B2	0.00420	0.00448	0.01916
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01183	0.01319	0.03161
	A1_N	0.01460	0.01598	0.03477
	A2_N	0.01127	0.01271	0.03161
	A2_N	0.01336	0.01482	0.03409
	B1	0.01274	0.01323	0.02580
	B1	0.00795	0.00844	0.02109
	B2	0.01101	0.01151	0.02622
	B2	0.00704	0.00756	0.02250
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02305	0.02475	0.04363
	A1_N	0.02455	0.02627	0.04555
	A2_N	0.02258	0.02429	0.04349
	A2_N	0.02335	0.02509	0.04496
	B1	0.02526	0.02594	0.04959
	B1	0.01617	0.01687	0.04119
	B2	0.02062	0.02151	0.04929
	B2	0.01355	0.01448	0.04225

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01030	0.01080	0.02896
	A1_N	0.00757	0.00804	0.02563
	A2_N	0.00952	0.01033	0.03011
	A2_N	0.00756	0.00832	0.02737
	B1	0.00401	0.00440	0.01719
	B1	0.00847	0.00886	0.02159
	B2	0.00400	0.00495	0.02068
	B2	0.00770	0.00864	0.02410
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01302	0.01387	0.03081
	A1_N	0.01024	0.01100	0.02802
	A2_N	0.01223	0.01328	0.03214
	A2_N	0.01022	0.01115	0.02960
	B1	0.00659	0.00695	0.02006
	B1	0.01134	0.01171	0.02480
	B2	0.00659	0.00746	0.02359
	B2	0.01053	0.01141	0.02737
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02011	0.02141	0.04058
	A1_N	0.01861	0.01977	0.03725
	A2_N	0.01917	0.02074	0.04177
	A2_N	0.01860	0.01997	0.03911
	B1	0.01259	0.01296	0.03764
	B1	0.02163	0.02198	0.04629
	B2	0.01263	0.01403	0.04599
	B2	0.01963	0.02102	0.05105

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)	0.00562	0.00605	0.02342
	(A2_N * !B1 * !B2 * !X)	0.00164	0.00205	0.01944
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00123	0.00123	0.00123
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00136	-0.00136	-0.00135
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00598	0.00637	0.02345
	(A2_N * !B1 * !B2 * !X)	0.00189	0.00227	0.01936
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00128	0.00128	0.00128
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00134	-0.00134	-0.00134
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00714	0.00744	0.02408
	(A2_N * !B1 * !B2 * !X)	0.00306	0.00334	0.01999
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00132	0.00132	0.00132
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00128	-0.00127	-0.00127

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)	0.00064	0.00169	0.01969
	(A2_N * !B1 * !B2 * !X)	0.00466	0.00572	0.02367
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00108	-0.00115	-0.00116
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00152	0.00147	0.00143
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00067	0.00168	0.01942
	(A2_N * !B1 * !B2 * !X)	0.00480	0.00582	0.02351
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00114	-0.00123	-0.00124
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00147	0.00143	0.00139
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00119	0.00209	0.01957
	(A2_N * !B1 * !B2 * !X)	0.00533	0.00624	0.02366
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00110	-0.00117	-0.00119
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00151	0.00145	0.00141

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)	0.00501	0.00567	0.02404
	(A1_N * !B1 * !B2 * !X)	0.00174	0.00239	0.02076
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00043	0.00043	0.00041
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00165	-0.00166	-0.00169
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00544	0.00603	0.02408
	(A1_N * !B1 * !B2 * !X)	0.00201	0.00257	0.02064
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00049	0.00049	0.00047
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00172
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00657	0.00704	0.02464
	(A1_N * !B1 * !B2 * !X)	0.00319	0.00365	0.02126
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00049	0.00049	0.00047
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00164

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)	0.00022	0.00131	0.01989
	(A1_N * !B1 * !B2 * !X)	0.00352	0.00462	0.02319
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00175	0.00177	0.00176
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00021	0.00124	0.01953
	(A1_N * !B1 * !B2 * !X)	0.00368	0.00472	0.02299
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00177	0.00179	0.00177
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00080	0.00168	0.01959
	(A1_N * !B1 * !B2 * !X)	0.00423	0.00513	0.02301
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00032	-0.00033	-0.00032
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00177	0.00179	0.00178

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)	0.00125	0.00125	0.00125
	(A1_N * A2_N * B2 * !X)	-0.00158	-0.00158	-0.00159
	(A1_N * A2_N * !B2 * !X)	0.00120	0.00121	0.00121
	(A1_N * A2_N * !B2 * !X)	-0.00159	-0.00160	-0.00159
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00156	0.00129	0.00124
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00129	-0.00154	-0.00159
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00142	0.00144	0.00142
	(A1_N * A2_N * B2 * !X)	-0.00161	-0.00162	-0.00162
	(A1_N * A2_N * !B2 * !X)	0.00138	0.00137	0.00138
	(A1_N * A2_N * !B2 * !X)	-0.00163	-0.00162	-0.00163
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00171	0.00147	0.00139
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00133	-0.00161	-0.00165
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00247	0.00249	0.00247
	(A1_N * A2_N * B2 * !X)	-0.00324	-0.00329	-0.00330
	(A1_N * A2_N * !B2 * !X)	0.00240	0.00241	0.00240
	(A1_N * A2_N * !B2 * !X)	-0.00333	-0.00333	-0.00332
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00326	0.00264	0.00250
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00250	-0.00316	-0.00327

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)	-0.00112	-0.00113	-0.00112
	(A1_N * A2_N * B2 * !X)	0.00169	0.00171	0.00170
	(A1_N * A2_N * !B2 * !X)	-0.00102	-0.00109	-0.00110
	(A1_N * A2_N * !B2 * !X)	0.00178	0.00175	0.00173
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00113	-0.00114	-0.00113
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00169	0.00171	0.00170
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00128	-0.00129	-0.00128
	(A1_N * A2_N * B2 * !X)	0.00174	0.00175	0.00174
	(A1_N * A2_N * !B2 * !X)	-0.00118	-0.00124	-0.00125
	(A1_N * A2_N * !B2 * !X)	0.00183	0.00179	0.00177
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00131	-0.00131	-0.00131
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00230	-0.00231	-0.00230
	(A1_N * A2_N * B2 * !X)	0.00342	0.00344	0.00343
	(A1_N * A2_N * !B2 * !X)	-0.00208	-0.00223	-0.00225
	(A1_N * A2_N * !B2 * !X)	0.00362	0.00355	0.00350
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00229	-0.00230	-0.00228
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00346	0.00349	0.00348

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)	0.00133	0.00134	0.00133
	(A1_N * A2_N * B1 * !X)	-0.00160	-0.00162	-0.00162
	(A1_N * A2_N * !B1 * !X)	0.00130	0.00130	0.00129
	(A1_N * A2_N * !B1 * !X)	-0.00163	-0.00163	-0.00162
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00140	0.00140	0.00140
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00151	0.00153	0.00152
	(A1_N * A2_N * B1 * !X)	-0.00156	-0.00158	-0.00158
	(A1_N * A2_N * !B1 * !X)	0.00147	0.00148	0.00148
	(A1_N * A2_N * !B1 * !X)	-0.00159	-0.00159	-0.00158
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00148	0.00148	0.00148
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00088	-0.00088	-0.00088
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00243	0.00242	0.00240
	(A1_N * A2_N * B1 * !X)	-0.00325	-0.00327	-0.00328
	(A1_N * A2_N * !B1 * !X)	0.00232	0.00235	0.00233
	(A1_N * A2_N * !B1 * !X)	-0.00330	-0.00332	-0.00330
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00262	0.00263	0.00262
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00158	-0.00159	-0.00158

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)	-0.00120	-0.00122	-0.00120
	(A1_N * A2_N * B1 * !X)	0.00172	0.00174	0.00173
	(A1_N * A2_N * !B1 * !X)	-0.00110	-0.00117	-0.00118
	(A1_N * A2_N * !B1 * !X)	0.00182	0.00178	0.00176
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00128	-0.00128	-0.00133
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00093	0.00093	0.00090
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00139	-0.00139	-0.00138
	(A1_N * A2_N * B1 * !X)	0.00170	0.00171	0.00170
	(A1_N * A2_N * !B1 * !X)	-0.00128	-0.00134	-0.00135
	(A1_N * A2_N * !B1 * !X)	0.00178	0.00175	0.00173
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00139	-0.00138	-0.00143
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00098	0.00097	0.00094
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00223	-0.00224	-0.00223
	(A1_N * A2_N * B1 * !X)	0.00340	0.00341	0.00340
	(A1_N * A2_N * !B1 * !X)	-0.00203	-0.00216	-0.00218
	(A1_N * A2_N * !B1 * !X)	0.00359	0.00352	0.00348
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00232	-0.00233	-0.00247
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00188	0.00187	0.00176

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00284	0.00299	0.00291	0.00301	0.00308	0.25817
sky130_fd_sc_hs__o311ai_2	0.00556	0.00569	0.00576	0.00577	0.00585	0.46374
sky130_fd_sc_hs__o311ai_4	0.01096	0.01100	0.01148	0.00856	0.00813	0.89605

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.69451	2.50133
sky130_fd_sc_hs__o311ai_2	0.00000	1.40134	4.96939
sky130_fd_sc_hs__o311ai_4	0.00000	1.86101	6.43159

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)	0.29176	1.27119	9.25235
	A2->Y (FR)	0.27463	1.28613	9.80572
	A3->Y (FR)	0.22120	1.24908	10.02340
	B1->Y (FR)	0.06743	0.66357	5.93914
	C1->Y (FR)	0.05600	0.64973	5.91749
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.30963	1.13105	9.08402
	A2->Y (FR)	0.28263	1.12780	9.62407
	A3->Y (FR)	0.22750	1.10117	9.97777
	B1->Y (FR)	0.06584	0.58996	5.78849
	C1->Y (FR)	0.05257	0.57375	5.77926
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.27559	0.95334	8.94891
	A2->Y (FR)	0.25465	0.96925	9.62272
	A3->Y (FR)	0.19261	0.93310	9.90905
	B1->Y (FR)	0.09238	0.71586	7.94434
	C1->Y (FR)	0.06467	0.69085	7.97779

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.11644	0.63943	4.89165
	A2->Y (RF)	0.11225	0.62950	4.92358
	A3->Y (RF)	0.08809	0.59620	4.84521
	B1->Y (RF)	0.09910	0.66363	5.55877
	C1->Y (RF)	0.08572	0.69058	5.97764
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.12699	0.59091	4.88411
	A2->Y (RF)	0.11563	0.56373	4.82544
	A3->Y (RF)	0.09198	0.53074	4.75537
	B1->Y (RF)	0.11396	0.62525	5.53718
	C1->Y (RF)	0.09708	0.66436	6.15553
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.12302	0.52431	4.90610
	A2->Y (RF)	0.11073	0.49505	4.83573
	A3->Y (RF)	0.08177	0.45625	4.74897
	B1->Y (RF)	0.10838	0.58948	5.90664
	C1->Y (RF)	0.08653	0.60827	6.38833

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00150	0.00136	0.00460
	A1	0.00968	0.00957	0.01280
	A2	0.00157	0.00146	0.00475
	A2	0.00875	0.00863	0.01188
	A3	0.00155	0.00170	0.00639
	A3	0.00765	0.00781	0.01246
	B1	0.00031	0.00065	0.00721
	B1	0.00734	0.00779	0.01404
	C1	-0.00030	0.00006	0.00650
	C1	0.00596	0.00631	0.01264
sky130_fd_sc_hs__o311ai_2	A1	0.00346	0.00313	0.00937
	A1	0.02003	0.01974	0.02598
	A2	0.00348	0.00322	0.00976
	A2	0.01795	0.01771	0.02420
	A3	0.00345	0.00367	0.01273
	A3	0.01584	0.01603	0.02505
	B1	0.00074	0.00180	0.01457
	B1	0.01492	0.01583	0.02803
	C1	-0.00065	0.00024	0.01293
	C1	0.01179	0.01266	0.02480

sky130_fd_sc_hs__o311ai_4	**A1**	0.00517	0.00467	0.01693
	A1	0.03771	0.03724	0.04936
	A2	0.00533	0.00486	0.01702
	A2	0.03357	0.03312	0.04516
	A3	0.00533	0.00585	0.02296
	A3	0.02961	0.03013	0.04715
	B1	0.00102	0.00187	0.01594
	B1	0.02545	0.02611	0.03924
	C1	-0.00191	-0.00052	0.01335
	C1	0.01863	0.02008	0.03297

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01129	0.01117	0.01404
	A1	0.00305	0.00289	0.00581
	A2	0.00944	0.00931	0.01220
	A2	0.00219	0.00206	0.00489
	A3	0.00723	0.00723	0.01004
	A3	0.00104	0.00103	0.00383
	B1	0.01015	0.01009	0.01347
	B1	0.00213	0.00205	0.00561
	C1	0.00933	0.00936	0.01333
	C1	0.00209	0.00213	0.00618

sky130_fd_sc_hs__o311ai_2	**A1**	0.02321	0.02279	0.02860
	A1	0.00650	0.00607	0.01183
	A2	0.01860	0.01835	0.02401
	A2	0.00392	0.00366	0.00938
	A3	0.01435	0.01426	0.01986
	A3	0.00175	0.00166	0.00728
	B1	0.02063	0.02042	0.02736
	B1	0.00144	0.00135	0.00901
	C1	0.01883	0.01911	0.02672
	C1	0.00135	0.00176	0.00990
sky130_fd_sc_hs__o311ai_4	**A1**	0.04247	0.04176	0.05407
	A1	0.00975	0.00903	0.02103
	A2	0.03454	0.03383	0.04619
	A2	0.00597	0.00524	0.01695
	A3	0.02492	0.02491	0.03707
	A3	0.00022	0.00017	0.01187
	B1	0.03639	0.03629	0.04380
	B1	0.01228	0.01213	0.01882
	C1	0.03251	0.03299	0.04133
	C1	0.01226	0.01273	0.02023

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)**	0.00136	0.00137	0.00136
	(A2 * B1 * !C1 * Y)	-0.00180	-0.00184	-0.00183
	(A2 * A3 * B1 * C1 * !Y)	0.00138	0.00137	0.00137
	(A2 * A3 * B1 * C1 * !Y)	-0.00177	-0.00181	-0.00183
	(A2 * !B1 * Y)	0.00136	0.00137	0.00136
	(A2 * !B1 * Y)	-0.00180	-0.00184	-0.00183
	(A2 * !A3 * B1 * C1 * !Y)	0.00159	0.00138	0.00138
	(A2 * !A3 * B1 * C1 * !Y)	-0.00159	-0.00180	-0.00182
	(!A2 * A3 * B1 * C1 * !Y)	0.00154	0.00141	0.00138
	(!A2 * A3 * B1 * C1 * !Y)	-0.00152	-0.00177	-0.00180
	(!A2 * A3 * B1 * !C1 * Y)	0.00135	0.00137	0.00136
	(!A2 * A3 * B1 * !C1 * Y)	-0.00166	-0.00177	-0.00177
	(!A2 * A3 * !B1 * Y)	0.00136	0.00137	0.00136
	(!A2 * A3 * !B1 * Y)	-0.00166	-0.00177	-0.00177
	(!A2 * !A3 * B1 * !C1 * Y)	0.00126	0.00126	0.00126
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00186	-0.00186	-0.00185
	(!A2 * !A3 * !B1 * C1 * Y)	0.00129	0.00130	0.00129
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00264	0.00266	0.00265
	(A2 * B1 * !C1 * Y)	-0.00356	-0.00366	-0.00364
	(A2 * A3 * B1 * C1 * !Y)	0.00270	0.00269	0.00267
	(A2 * A3 * B1 * C1 * !Y)	-0.00349	-0.00363	-0.00365
	(A2 * !B1 * Y)	0.00264	0.00266	0.00265
	(A2 * !B1 * Y)	-0.00356	-0.00366	-0.00364
	(A2 * !A3 * B1 * C1 * !Y)	0.00312	0.00272	0.00269
	(A2 * !A3 * B1 * C1 * !Y)	-0.00311	-0.00360	-0.00363
	(!A2 * A3 * B1 * C1 * !Y)	0.00306	0.00273	0.00269
	(!A2 * A3 * B1 * C1 * !Y)	-0.00298	-0.00350	-0.00357
	(!A2 * A3 * B1 * !C1 * Y)	0.00264	0.00266	0.00265
	(!A2 * A3 * B1 * !C1 * Y)	-0.00330	-0.00352	-0.00350
	(!A2 * A3 * !B1 * Y)	0.00264	0.00266	0.00265
	(!A2 * A3 * !B1 * Y)	-0.00330	-0.00352	-0.00350
	(!A2 * !A3 * B1 * !C1 * Y)	0.00244	0.00246	0.00244
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00372	-0.00372	-0.00371
	(!A2 * !A3 * !B1 * C1 * Y)	0.00250	0.00249	0.00249
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00373	-0.00371	-0.00372
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00249	0.00250	0.00248
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00373	-0.00373	-0.00372

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00533	0.00533	0.00529
	(A2 * B1 * !C1 * Y)	-0.00716	-0.00723	-0.00726
	(A2 * A3 * B1 * C1 * !Y)	0.00542	0.00535	0.00532
	(A2 * A3 * B1 * C1 * !Y)	-0.00707	-0.00725	-0.00729
	(A2 * !B1 * Y)	0.00534	0.00533	0.00530
	(A2 * !B1 * Y)	-0.00716	-0.00724	-0.00727
	(A2 * !A3 * B1 * C1 * !Y)	0.00625	0.00542	0.00536
	(A2 * !A3 * B1 * C1 * !Y)	-0.00630	-0.00721	-0.00726
	(!A2 * A3 * B1 * C1 * !Y)	0.00602	0.00545	0.00534
	(!A2 * A3 * B1 * C1 * !Y)	-0.00609	-0.00704	-0.00711
	(!A2 * A3 * B1 * !C1 * Y)	0.00531	0.00533	0.00529
	(!A2 * A3 * B1 * !C1 * Y)	-0.00663	-0.00705	-0.00700
	(!A2 * A3 * !B1 * Y)	0.00531	0.00533	0.00529
	(!A2 * A3 * !B1 * Y)	-0.00663	-0.00705	-0.00700
	(!A2 * !A3 * B1 * !C1 * Y)	0.00490	0.00490	0.00488
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00744	-0.00744	-0.00742
	(!A2 * !A3 * !B1 * C1 * Y)	0.00496	0.00502	0.00497
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00742	-0.00747	-0.00743
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00496	0.00501	0.00496
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00744	-0.00748	-0.00744

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)**	-0.00135	-0.00135	-0.00135
	(A2 * B1 * !C1 * Y)	0.00183	0.00184	0.00183
	(A2 * A3 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00134
	(A2 * A3 * B1 * C1 * !Y)	0.00184	0.00185	0.00184
	(A2 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * Y)	0.00183	0.00184	0.00183
	(A2 * !A3 * B1 * C1 * !Y)	-0.00132	-0.00133	-0.00132
	(A2 * !A3 * B1 * C1 * !Y)	0.00186	0.00187	0.00186
	(!A2 * A3 * B1 * C1 * !Y)	-0.00132	-0.00132	-0.00132
	(!A2 * A3 * B1 * C1 * !Y)	0.00179	0.00179	0.00180
	(!A2 * A3 * B1 * !C1 * Y)	-0.00134	-0.00135	-0.00135
	(!A2 * A3 * B1 * !C1 * Y)	0.00176	0.00177	0.00177
	(!A2 * A3 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(!A2 * A3 * !B1 * Y)	0.00176	0.00177	0.00177
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00117	-0.00126	-0.00126
	(!A2 * !A3 * B1 * !C1 * Y)	0.00188	0.00188	0.00187
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00122	-0.00129	-0.00129
	(!A2 * !A3 * !B1 * C1 * Y)	0.00187	0.00188	0.00187
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00187	0.00188	0.00187

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00264	-0.00264	-0.00263
	(A2 * B1 * !C1 * Y)	0.00365	0.00367	0.00364
	(A2 * A3 * B1 * C1 * !Y)	-0.00261	-0.00262	-0.00261
	(A2 * A3 * B1 * C1 * !Y)	0.00367	0.00369	0.00366
	(A2 * !B1 * Y)	-0.00264	-0.00264	-0.00263
	(A2 * !B1 * Y)	0.00365	0.00367	0.00364
	(A2 * !A3 * B1 * C1 * !Y)	-0.00260	-0.00260	-0.00259
	(A2 * !A3 * B1 * C1 * !Y)	0.00370	0.00372	0.00370
	(!A2 * A3 * B1 * C1 * !Y)	-0.00259	-0.00259	-0.00258
	(!A2 * A3 * B1 * C1 * !Y)	0.00355	0.00357	0.00357
	(!A2 * A3 * B1 * !C1 * Y)	-0.00262	-0.00264	-0.00263
	(!A2 * A3 * B1 * !C1 * Y)	0.00349	0.00352	0.00350
	(!A2 * A3 * !B1 * Y)	-0.00263	-0.00264	-0.00263
	(!A2 * A3 * !B1 * Y)	0.00350	0.00352	0.00350
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00224	-0.00246	-0.00244
	(!A2 * !A3 * B1 * !C1 * Y)	0.00377	0.00377	0.00374
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00236	-0.00249	-0.00249
	(!A2 * !A3 * !B1 * C1 * Y)	0.00375	0.00377	0.00374
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00238	-0.00250	-0.00248
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00375	0.00377	0.00373

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00526	-0.00525	-0.00527
	(A2 * B1 * !C1 * Y)	0.00725	0.00723	0.00726
	(A2 * A3 * B1 * C1 * !Y)	-0.00523	-0.00522	-0.00524
	(A2 * A3 * B1 * C1 * !Y)	0.00727	0.00725	0.00729
	(A2 * !B1 * Y)	-0.00525	-0.00525	-0.00526
	(A2 * !B1 * Y)	0.00725	0.00724	0.00727
	(A2 * !A3 * B1 * C1 * !Y)	-0.00518	-0.00522	-0.00520
	(A2 * !A3 * B1 * C1 * !Y)	0.00732	0.00740	0.00737
	(!A2 * A3 * B1 * C1 * !Y)	-0.00521	-0.00522	-0.00518
	(!A2 * A3 * B1 * C1 * !Y)	0.00708	0.00712	0.00711
	(!A2 * A3 * B1 * !C1 * Y)	-0.00527	-0.00529	-0.00526
	(!A2 * A3 * B1 * !C1 * Y)	0.00700	0.00705	0.00700
	(!A2 * A3 * !B1 * Y)	-0.00527	-0.00529	-0.00526
	(!A2 * A3 * !B1 * Y)	0.00701	0.00705	0.00700
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00455	-0.00490	-0.00488
	(!A2 * !A3 * B1 * !C1 * Y)	0.00754	0.00754	0.00746
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00473	-0.00501	-0.00497
	(!A2 * !A3 * !B1 * C1 * Y)	0.00749	0.00753	0.00747
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00477	-0.00501	-0.00496
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00748	0.00752	0.00746

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)**	0.00148	0.00150	0.00141
	(A1 * A3 * B1 * C1 * !Y)	-0.00120	-0.00121	-0.00123
	(A1 * A3 * B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(A1 * A3 * B1 * !C1 * Y)	-0.00129	-0.00131	-0.00130
	(A1 * A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * A3 * !B1 * Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A3 * B1 * C1 * !Y)	0.00140	0.00141	0.00138
	(A1 * !A3 * B1 * C1 * !Y)	-0.00090	-0.00090	-0.00092
	(A1 * !A3 * B1 * !C1 * Y)	0.00130	0.00130	0.00129
	(A1 * !A3 * B1 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * !B1 * C1 * Y)	0.00130	0.00131	0.00129
	(A1 * !A3 * !B1 * C1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * !B1 * !C1 * Y)	0.00130	0.00130	0.00129
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * B1 * C1 * !Y)	0.00180	0.00143	0.00137
	(!A1 * A3 * B1 * C1 * !Y)	-0.00135	-0.00175	-0.00179
	(!A1 * A3 * B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * A3 * B1 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * A3 * !B1 * Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !A3 * B1 * !C1 * Y)	0.00119	0.00120	0.00120
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00187	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00189

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00307	0.00307	0.00287
	(A1 * A3 * B1 * C1 * !Y)	-0.00248	-0.00250	-0.00257
	(A1 * A3 * B1 * !C1 * Y)	0.00267	0.00269	0.00267
	(A1 * A3 * B1 * !C1 * Y)	-0.00262	-0.00266	-0.00264
	(A1 * A3 * !B1 * Y)	0.00267	0.00269	0.00267
	(A1 * A3 * !B1 * Y)	-0.00263	-0.00266	-0.00264
	(A1 * !A3 * B1 * C1 * !Y)	0.00280	0.00281	0.00275
	(A1 * !A3 * B1 * C1 * !Y)	-0.00186	-0.00187	-0.00190
	(A1 * !A3 * B1 * !C1 * Y)	0.00269	0.00269	0.00267
	(A1 * !A3 * B1 * !C1 * Y)	-0.00367	-0.00369	-0.00368
	(A1 * !A3 * !B1 * C1 * Y)	0.00269	0.00270	0.00267
	(A1 * !A3 * !B1 * C1 * Y)	-0.00368	-0.00369	-0.00368
	(A1 * !A3 * !B1 * !C1 * Y)	0.00268	0.00269	0.00267
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00368	-0.00369	-0.00368
	(!A1 * A3 * B1 * C1 * !Y)	0.00359	0.00283	0.00271
	(!A1 * A3 * B1 * C1 * !Y)	-0.00284	-0.00361	-0.00369
	(!A1 * A3 * B1 * !C1 * Y)	0.00269	0.00269	0.00267
	(!A1 * A3 * B1 * !C1 * Y)	-0.00370	-0.00374	-0.00371
	(!A1 * A3 * !B1 * Y)	0.00269	0.00269	0.00267
	(!A1 * A3 * !B1 * Y)	-0.00371	-0.00374	-0.00371
	(!A1 * !A3 * B1 * !C1 * Y)	0.00244	0.00247	0.00245
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00376	-0.00378	-0.00377
	(!A1 * !A3 * !B1 * C1 * Y)	0.00249	0.00251	0.00250
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00377	-0.00378	-0.00377
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00249	0.00250	0.00249
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00377	-0.00378	-0.00378

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00593	0.00597	0.00560
	(A1 * A3 * B1 * C1 * !Y)	-0.00494	-0.00487	-0.00495
	(A1 * A3 * B1 * !C1 * Y)	0.00528	0.00526	0.00524
	(A1 * A3 * B1 * !C1 * Y)	-0.00514	-0.00519	-0.00514
	(A1 * A3 * !B1 * Y)	0.00528	0.00526	0.00524
	(A1 * A3 * !B1 * Y)	-0.00515	-0.00519	-0.00514
	(A1 * !A3 * B1 * C1 * !Y)	0.00550	0.00552	0.00540
	(A1 * !A3 * B1 * C1 * !Y)	-0.00362	-0.00364	-0.00370
	(A1 * !A3 * B1 * !C1 * Y)	0.00528	0.00528	0.00523
	(A1 * !A3 * B1 * !C1 * Y)	-0.00723	-0.00728	-0.00724
	(A1 * !A3 * !B1 * C1 * Y)	0.00528	0.00529	0.00523
	(A1 * !A3 * !B1 * C1 * Y)	-0.00724	-0.00728	-0.00724
	(A1 * !A3 * !B1 * !C1 * Y)	0.00528	0.00528	0.00523
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00724	-0.00728	-0.00724
	(!A1 * A3 * B1 * C1 * !Y)	0.00719	0.00558	0.00535
	(!A1 * A3 * B1 * C1 * !Y)	-0.00544	-0.00709	-0.00725
	(!A1 * A3 * B1 * !C1 * Y)	0.00526	0.00528	0.00523
	(!A1 * A3 * B1 * !C1 * Y)	-0.00729	-0.00734	-0.00730
	(!A1 * A3 * !B1 * Y)	0.00527	0.00528	0.00523
	(!A1 * A3 * !B1 * Y)	-0.00730	-0.00734	-0.00730
	(!A1 * !A3 * B1 * !C1 * Y)	0.00479	0.00484	0.00481
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00743	-0.00747	-0.00744
	(!A1 * !A3 * !B1 * C1 * Y)	0.00492	0.00492	0.00490
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00746	-0.00746	-0.00745
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00488	0.00487	0.00489
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00745	-0.00744	-0.00745

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)**	-0.00133	-0.00133	-0.00132
	(A1 * A3 * B1 * C1 * !Y)	0.00124	0.00124	0.00123
	(A1 * A3 * B1 * !C1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * A3 * B1 * !C1 * Y)	0.00129	0.00131	0.00130
	(A1 * A3 * !B1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * A3 * !B1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A3 * B1 * C1 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * B1 * C1 * !Y)	0.00098	0.00098	0.00099
	(A1 * !A3 * B1 * !C1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A3 * B1 * !C1 * Y)	0.00185	0.00186	0.00185
	(A1 * !A3 * !B1 * C1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A3 * !B1 * C1 * Y)	0.00185	0.00186	0.00185
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A3 * !B1 * !C1 * Y)	0.00185	0.00186	0.00185
	(!A1 * A3 * B1 * C1 * !Y)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * C1 * !Y)	0.00183	0.00184	0.00184
	(!A1 * A3 * B1 * !C1 * Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * B1 * !C1 * Y)	0.00185	0.00186	0.00185
	(!A1 * A3 * !B1 * Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * !B1 * Y)	0.00185	0.00186	0.00185
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00110	-0.00120	-0.00120
	(!A1 * !A3 * B1 * !C1 * Y)	0.00190	0.00191	0.00189
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00116	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * C1 * Y)	0.00189	0.00191	0.00189
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00116	-0.00122	-0.00121
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00189	0.00190	0.00189

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00268	-0.00268	-0.00267
	(A1 * A3 * B1 * C1 * !Y)	0.00258	0.00258	0.00257
	(A1 * A3 * B1 * !C1 * Y)	-0.00264	-0.00267	-0.00265
	(A1 * A3 * B1 * !C1 * Y)	0.00262	0.00266	0.00264
	(A1 * A3 * !B1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * A3 * !B1 * Y)	0.00263	0.00266	0.00264
	(A1 * !A3 * B1 * C1 * !Y)	-0.00261	-0.00261	-0.00260
	(A1 * !A3 * B1 * C1 * !Y)	0.00206	0.00205	0.00205
	(A1 * !A3 * B1 * !C1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !A3 * B1 * !C1 * Y)	0.00367	0.00369	0.00368
	(A1 * !A3 * !B1 * C1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !A3 * !B1 * C1 * Y)	0.00368	0.00369	0.00368
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !A3 * !B1 * !C1 * Y)	0.00368	0.00369	0.00368
	(!A1 * A3 * B1 * C1 * !Y)	-0.00261	-0.00261	-0.00259
	(!A1 * A3 * B1 * C1 * !Y)	0.00377	0.00378	0.00379
	(!A1 * A3 * B1 * !C1 * Y)	-0.00265	-0.00267	-0.00265
	(!A1 * A3 * B1 * !C1 * Y)	0.00370	0.00374	0.00371
	(!A1 * A3 * !B1 * Y)	-0.00265	-0.00267	-0.00265
	(!A1 * A3 * !B1 * Y)	0.00371	0.00374	0.00371
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00225	-0.00247	-0.00245
	(!A1 * !A3 * B1 * !C1 * Y)	0.00382	0.00382	0.00379
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00237	-0.00251	-0.00250
	(!A1 * !A3 * !B1 * C1 * Y)	0.00380	0.00382	0.00379
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00239	-0.00250	-0.00249
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00379	0.00381	0.00379

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00528	-0.00531	-0.00529
	(A1 * A3 * B1 * C1 * !Y)	0.00494	0.00499	0.00495
	(A1 * A3 * B1 * !C1 * Y)	-0.00521	-0.00524	-0.00521
	(A1 * A3 * B1 * !C1 * Y)	0.00514	0.00519	0.00514
	(A1 * A3 * !B1 * Y)	-0.00521	-0.00524	-0.00521
	(A1 * A3 * !B1 * Y)	0.00515	0.00519	0.00514
	(A1 * !A3 * B1 * C1 * !Y)	-0.00521	-0.00521	-0.00516
	(A1 * !A3 * B1 * C1 * !Y)	0.00391	0.00390	0.00394
	(A1 * !A3 * B1 * !C1 * Y)	-0.00520	-0.00523	-0.00520
	(A1 * !A3 * B1 * !C1 * Y)	0.00723	0.00728	0.00724
	(A1 * !A3 * !B1 * C1 * Y)	-0.00520	-0.00523	-0.00520
	(A1 * !A3 * !B1 * C1 * Y)	0.00724	0.00728	0.00724
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00521	-0.00523	-0.00521
	(A1 * !A3 * !B1 * !C1 * Y)	0.00724	0.00728	0.00724
	(!A1 * A3 * B1 * C1 * !Y)	-0.00519	-0.00522	-0.00517
	(!A1 * A3 * B1 * C1 * !Y)	0.00732	0.00739	0.00737
	(!A1 * A3 * B1 * !C1 * Y)	-0.00520	-0.00522	-0.00520
	(!A1 * A3 * B1 * !C1 * Y)	0.00729	0.00734	0.00730
	(!A1 * A3 * !B1 * Y)	-0.00520	-0.00521	-0.00520
	(!A1 * A3 * !B1 * Y)	0.00730	0.00734	0.00730
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00444	-0.00484	-0.00481
	(!A1 * !A3 * B1 * !C1 * Y)	0.00754	0.00753	0.00747
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00465	-0.00492	-0.00490
	(!A1 * !A3 * !B1 * C1 * Y)	0.00749	0.00753	0.00748
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00469	-0.00487	-0.00489
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00748	0.00752	0.00747

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)**	0.00148	0.00147	0.00147
	(A2 * B1 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A2 * B1 * !C1 * Y)	0.00133	0.00133	0.00132
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00178	-0.00178
	(A2 * !B1 * C1 * Y)	0.00133	0.00133	0.00132
	(A2 * !B1 * C1 * Y)	-0.00175	-0.00178	-0.00178
	(A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00132
	(A2 * !B1 * !C1 * Y)	-0.00173	-0.00179	-0.00178
	(A1 * !A2 * B1 * C1 * !Y)	0.00147	0.00148	0.00147
	(A1 * !A2 * B1 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * B1 * !C1 * Y)	0.00131	0.00132	0.00132
	(A1 * !A2 * B1 * !C1 * Y)	-0.00158	-0.00169	-0.00168
	(A1 * !A2 * !B1 * C1 * Y)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B1 * C1 * Y)	-0.00158	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00159	-0.00171	-0.00170
	(!A1 * !A2 * B1 * !C1 * Y)	0.00121	0.00122	0.00122
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * !A2 * !B1 * C1 * Y)	0.00124	0.00124	0.00124
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00181	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00124	0.00124	0.00124
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00181	-0.00181	-0.00181

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00302	0.00304	0.00302
	(A2 * B1 * C1 * !Y)	-0.00166	-0.00167	-0.00166
	(A2 * B1 * !C1 * Y)	0.00263	0.00266	0.00263
	(A2 * B1 * !C1 * Y)	-0.00359	-0.00370	-0.00367
	(A2 * !B1 * C1 * Y)	0.00262	0.00266	0.00263
	(A2 * !B1 * C1 * Y)	-0.00358	-0.00370	-0.00368
	(A2 * !B1 * !C1 * Y)	0.00262	0.00265	0.00263
	(A2 * !B1 * !C1 * Y)	-0.00359	-0.00370	-0.00368
	(A1 * !A2 * B1 * C1 * !Y)	0.00302	0.00304	0.00302
	(A1 * !A2 * B1 * C1 * !Y)	-0.00164	-0.00166	-0.00164
	(A1 * !A2 * B1 * !C1 * Y)	0.00263	0.00265	0.00263
	(A1 * !A2 * B1 * !C1 * Y)	-0.00331	-0.00350	-0.00349
	(A1 * !A2 * !B1 * C1 * Y)	0.00263	0.00265	0.00263
	(A1 * !A2 * !B1 * C1 * Y)	-0.00332	-0.00350	-0.00349
	(A1 * !A2 * !B1 * !C1 * Y)	0.00263	0.00265	0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00333	-0.00352	-0.00352
	(!A1 * !A2 * B1 * !C1 * Y)	0.00243	0.00245	0.00243
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00374	-0.00375	-0.00374
	(!A1 * !A2 * !B1 * C1 * Y)	0.00249	0.00248	0.00247
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00375	-0.00375	-0.00374
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00248	0.00248	0.00247
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00376	-0.00376	-0.00374

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00610	0.00615	0.00611
	(A2 * B1 * C1 * !Y)	-0.00333	-0.00336	-0.00333
	(A2 * B1 * !C1 * Y)	0.00510	0.00510	0.00506
	(A2 * B1 * !C1 * Y)	-0.00747	-0.00767	-0.00762
	(A2 * !B1 * C1 * Y)	0.00511	0.00511	0.00506
	(A2 * !B1 * C1 * Y)	-0.00747	-0.00767	-0.00762
	(A2 * !B1 * !C1 * Y)	0.00511	0.00509	0.00505
	(A2 * !B1 * !C1 * Y)	-0.00749	-0.00767	-0.00763
	(A1 * !A2 * B1 * C1 * !Y)	0.00611	0.00615	0.00611
	(A1 * !A2 * B1 * C1 * !Y)	-0.00331	-0.00333	-0.00330
	(A1 * !A2 * B1 * !C1 * Y)	0.00504	0.00510	0.00505
	(A1 * !A2 * B1 * !C1 * Y)	-0.00682	-0.00715	-0.00711
	(A1 * !A2 * !B1 * C1 * Y)	0.00505	0.00510	0.00506
	(A1 * !A2 * !B1 * C1 * Y)	-0.00682	-0.00717	-0.00712
	(A1 * !A2 * !B1 * !C1 * Y)	0.00504	0.00509	0.00505
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00684	-0.00724	-0.00721
	(!A1 * !A2 * B1 * !C1 * Y)	0.00465	0.00470	0.00467
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00777	-0.00781	-0.00778
	(!A1 * !A2 * !B1 * C1 * Y)	0.00474	0.00476	0.00475
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00777	-0.00779	-0.00778
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00472	0.00478	0.00474
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00778	-0.00783	-0.00779

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)**	-0.00138	-0.00138	-0.00143
	(A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00085
	(A2 * B1 * !C1 * Y)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * !C1 * Y)	0.00177	0.00178	0.00178
	(A2 * !B1 * C1 * Y)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * C1 * Y)	0.00178	0.00178	0.00178
	(A2 * !B1 * !C1 * Y)	-0.00130	-0.00132	-0.00131
	(A2 * !B1 * !C1 * Y)	0.00176	0.00179	0.00178
	(A1 * !A2 * B1 * C1 * !Y)	-0.00129	-0.00130	-0.00142
	(A1 * !A2 * B1 * C1 * !Y)	0.00093	0.00093	0.00085
	(A1 * !A2 * B1 * !C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * B1 * !C1 * Y)	0.00168	0.00169	0.00168
	(A1 * !A2 * !B1 * C1 * Y)	-0.00130	-0.00132	-0.00131
	(A1 * !A2 * !B1 * C1 * Y)	0.00168	0.00170	0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !B1 * !C1 * Y)	0.00169	0.00171	0.00170
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00112	-0.00122	-0.00122
	(!A1 * !A2 * B1 * !C1 * Y)	0.00182	0.00183	0.00181
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00118	-0.00124	-0.00124
	(!A1 * !A2 * !B1 * C1 * Y)	0.00181	0.00183	0.00182
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00119	-0.00124	-0.00124
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00181	0.00183	0.00181

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00284	-0.00285	-0.00295
	(A2 * B1 * C1 * !Y)	0.00184	0.00184	0.00175
	(A2 * B1 * !C1 * Y)	-0.00261	-0.00263	-0.00262
	(A2 * B1 * !C1 * Y)	0.00366	0.00370	0.00367
	(A2 * !B1 * C1 * Y)	-0.00262	-0.00263	-0.00261
	(A2 * !B1 * C1 * Y)	0.00368	0.00370	0.00368
	(A2 * !B1 * !C1 * Y)	-0.00262	-0.00263	-0.00262
	(A2 * !B1 * !C1 * Y)	0.00368	0.00370	0.00368
	(A1 * !A2 * B1 * C1 * !Y)	-0.00259	-0.00260	-0.00290
	(A1 * !A2 * B1 * C1 * !Y)	0.00198	0.00198	0.00176
	(A1 * !A2 * B1 * !C1 * Y)	-0.00261	-0.00262	-0.00261
	(A1 * !A2 * B1 * !C1 * Y)	0.00348	0.00350	0.00349
	(A1 * !A2 * !B1 * C1 * Y)	-0.00261	-0.00262	-0.00261
	(A1 * !A2 * !B1 * C1 * Y)	0.00348	0.00350	0.00349
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00262	-0.00262	-0.00262
	(A1 * !A2 * !B1 * !C1 * Y)	0.00351	0.00352	0.00352
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00222	-0.00245	-0.00243
	(!A1 * !A2 * B1 * !C1 * Y)	0.00378	0.00379	0.00376
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00234	-0.00248	-0.00247
	(!A1 * !A2 * !B1 * C1 * Y)	0.00376	0.00379	0.00376
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00236	-0.00248	-0.00247
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00376	0.00379	0.00376

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00575	-0.00579	-0.00602
	(A2 * B1 * C1 * !Y)	0.00368	0.00368	0.00347
	(A2 * B1 * !C1 * Y)	-0.00503	-0.00506	-0.00503
	(A2 * B1 * !C1 * Y)	0.00763	0.00767	0.00762
	(A2 * !B1 * C1 * Y)	-0.00502	-0.00505	-0.00502
	(A2 * !B1 * C1 * Y)	0.00761	0.00767	0.00762
	(A2 * !B1 * !C1 * Y)	-0.00503	-0.00506	-0.00503
	(A2 * !B1 * !C1 * Y)	0.00762	0.00767	0.00763
	(A1 * !A2 * B1 * C1 * !Y)	-0.00534	-0.00538	-0.00594
	(A1 * !A2 * B1 * C1 * !Y)	0.00387	0.00386	0.00345
	(A1 * !A2 * B1 * !C1 * Y)	-0.00504	-0.00506	-0.00503
	(A1 * !A2 * B1 * !C1 * Y)	0.00713	0.00715	0.00711
	(A1 * !A2 * !B1 * C1 * Y)	-0.00501	-0.00505	-0.00503
	(A1 * !A2 * !B1 * C1 * Y)	0.00709	0.00717	0.00712
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00502	-0.00505	-0.00503
	(A1 * !A2 * !B1 * !C1 * Y)	0.00718	0.00724	0.00721
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00431	-0.00470	-0.00467
	(!A1 * !A2 * B1 * !C1 * Y)	0.00786	0.00788	0.00781
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00451	-0.00476	-0.00475
	(!A1 * !A2 * !B1 * C1 * Y)	0.00782	0.00788	0.00781
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00454	-0.00478	-0.00474
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00781	0.00786	0.00781

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00124	0.00125	0.00125
	(A3 * !C1 * Y)	-0.00190	-0.00192	-0.00191
	(A2 * !A3 * !C1 * Y)	0.00124	0.00126	0.00125
	(A2 * !A3 * !C1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * !A3 * !C1 * Y)	0.00125	0.00125	0.00124
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * !A3 * C1 * Y)	0.00060	0.00060	0.00059
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00192	-0.00192	-0.00190
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00192	-0.00191	-0.00192
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00258	0.00259	0.00258
	(A3 * !C1 * Y)	-0.00376	-0.00377	-0.00375
	(A2 * !A3 * !C1 * Y)	0.00258	0.00260	0.00258
	(A2 * !A3 * !C1 * Y)	-0.00377	-0.00378	-0.00375
	(A1 * !A2 * !A3 * !C1 * Y)	0.00257	0.00259	0.00258
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00375	-0.00377	-0.00375
	(!A1 * !A2 * !A3 * C1 * Y)	0.00123	0.00125	0.00125
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00375	-0.00378	-0.00375
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00161	0.00160	0.00161
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00378	-0.00377	-0.00378
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00482	0.00487	0.00484
	(A3 * !C1 * Y)	-0.00422	-0.00424	-0.00421
	(A2 * !A3 * !C1 * Y)	0.00482	0.00484	0.00484
	(A2 * !A3 * !C1 * Y)	-0.00422	-0.00422	-0.00421
	(A1 * !A2 * !A3 * !C1 * Y)	0.00480	0.00484	0.00483
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00420	-0.00423	-0.00421
	(!A1 * !A2 * !A3 * C1 * Y)	0.00223	0.00225	0.00224
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00424	-0.00427	-0.00422
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00295	0.00297	0.00294
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00431	-0.00434	-0.00431

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00113	-0.00123	-0.00125
	(A3 * !C1 * Y)	0.00201	0.00196	0.00192
	(A2 * !A3 * !C1 * Y)	-0.00114	-0.00123	-0.00125
	(A2 * !A3 * !C1 * Y)	0.00203	0.00196	0.00192
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00113	-0.00123	-0.00124
	(A1 * !A2 * !A3 * !C1 * Y)	0.00204	0.00196	0.00192
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00053	-0.00054	-0.00055
	(!A1 * !A2 * !A3 * C1 * Y)	0.00197	0.00198	0.00194
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00203	0.00201	0.00195
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00235	-0.00257	-0.00258
	(A3 * !C1 * Y)	0.00396	0.00385	0.00378
	(A2 * !A3 * !C1 * Y)	-0.00234	-0.00256	-0.00258
	(A2 * !A3 * !C1 * Y)	0.00397	0.00386	0.00378
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00233	-0.00255	-0.00258
	(A1 * !A2 * !A3 * !C1 * Y)	0.00402	0.00383	0.00378
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00111	-0.00112	-0.00115
	(!A1 * !A2 * !A3 * C1 * Y)	0.00392	0.00394	0.00384
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00161	-0.00160	-0.00161
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00399	0.00397	0.00385

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00434	-0.00477	-0.00484
	(A3 * !C1 * Y)	0.00465	0.00432	0.00425
	(A2 * !A3 * !C1 * Y)	-0.00434	-0.00478	-0.00484
	(A2 * !A3 * !C1 * Y)	0.00472	0.00433	0.00425
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00429	-0.00477	-0.00483
	(A1 * !A2 * !A3 * !C1 * Y)	0.00477	0.00434	0.00425
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00199	-0.00200	-0.00207
	(!A1 * !A2 * !A3 * C1 * Y)	0.00455	0.00455	0.00438
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00295	-0.00297	-0.00294
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00473	0.00463	0.00442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00053	0.00053	0.00050
	(A3 * !B1 * Y)	-0.00217	-0.00218	-0.00221
	(A2 * !A3 * !B1 * Y)	0.00053	0.00053	0.00050
	(A2 * !A3 * !B1 * Y)	-0.00217	-0.00218	-0.00221
	(!A2 * !A3 * !B1 * Y)	0.00053	0.00053	0.00050
	(!A2 * !A3 * !B1 * Y)	-0.00217	-0.00218	-0.00221
	(!A1 * !A2 * !A3 * B1 * Y)	0.00059	0.00059	0.00051
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00203	-0.00203	-0.00219
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00103	0.00104	0.00097
	(A3 * !B1 * Y)	-0.00424	-0.00428	-0.00436
	(A2 * !A3 * !B1 * Y)	0.00103	0.00104	0.00097
	(A2 * !A3 * !B1 * Y)	-0.00424	-0.00428	-0.00436
	(!A2 * !A3 * !B1 * Y)	0.00103	0.00103	0.00097
	(!A2 * !A3 * !B1 * Y)	-0.00424	-0.00428	-0.00436
	(!A1 * !A2 * !A3 * B1 * Y)	0.00114	0.00114	0.00096
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00392	-0.00395	-0.00430
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00193	0.00193	0.00180
	(A3 * !B1 * Y)	-0.00461	-0.00465	-0.00483
	(A2 * !A3 * !B1 * Y)	0.00191	0.00193	0.00180
	(A2 * !A3 * !B1 * Y)	-0.00458	-0.00464	-0.00483
	(!A2 * !A3 * !B1 * Y)	0.00191	0.00193	0.00180
	(!A2 * !A3 * !B1 * Y)	-0.00458	-0.00464	-0.00483
	(!A1 * !A2 * !A3 * B1 * Y)	0.00212	0.00214	0.00180
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00401	-0.00407	-0.00472

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00048	-0.00049	-0.00048
	(A3 * !B1 * Y)	0.00221	0.00224	0.00222
	(A2 * !A3 * !B1 * Y)	-0.00048	-0.00049	-0.00048
	(A2 * !A3 * !B1 * Y)	0.00222	0.00224	0.00222
	(!A2 * !A3 * !B1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * !A3 * !B1 * Y)	0.00221	0.00223	0.00222
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * B1 * Y)	0.00221	0.00223	0.00222
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00092	-0.00094	-0.00093
	(A3 * !B1 * Y)	0.00437	0.00442	0.00439
	(A2 * !A3 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(A2 * !A3 * !B1 * Y)	0.00437	0.00441	0.00439
	(!A2 * !A3 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * !B1 * Y)	0.00437	0.00440	0.00439
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00090	-0.00091	-0.00089
	(!A1 * !A2 * !A3 * B1 * Y)	0.00438	0.00444	0.00438
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00173	-0.00176	-0.00173
	(A3 * !B1 * Y)	0.00485	0.00493	0.00486
	(A2 * !A3 * !B1 * Y)	-0.00174	-0.00174	-0.00173
	(A2 * !A3 * !B1 * Y)	0.00486	0.00488	0.00486
	(!A2 * !A3 * !B1 * Y)	-0.00174	-0.00174	-0.00173
	(!A2 * !A3 * !B1 * Y)	0.00486	0.00487	0.00486
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00168	-0.00168	-0.00166
	(!A1 * !A2 * !A3 * B1 * Y)	0.00484	0.00487	0.00485

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00270	0.00317	0.00276	0.00271	0.00277	0.81587
sky130_fd_sc_hs__o311a_2	0.00301	0.00301	0.00300	0.00294	0.00292	1.60863
sky130_fd_sc_hs__o311a_4	0.00498	0.00542	0.00503	0.00603	0.00526	3.12598

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	1.90347	5.43820
sky130_fd_sc_hs__o311a_2	0.00000	2.44749	4.78935
sky130_fd_sc_hs__o311a_4	0.00000	4.98510	11.15630

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)	0.23001	0.94855	7.74819
	A2->X (RR)	0.21976	0.92929	7.65351
	A3->X (RR)	0.18938	0.88282	7.53988
	B1->X (RR)	0.21359	0.95939	8.04811
	C1->X (RR)	0.20176	0.96999	8.09026
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.23117	0.84288	7.70479
	A2->X (RR)	0.21553	0.81610	7.59229
	A3->X (RR)	0.18480	0.77617	7.49498
	B1->X (RR)	0.22053	0.87319	8.02772
	C1->X (RR)	0.20643	0.88344	8.07508
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.24679	0.79084	7.79370
	A2->X (RR)	0.22842	0.76003	7.67802
	A3->X (RR)	0.19855	0.72068	7.59403
	B1->X (RR)	0.23722	0.82108	8.13710
	C1->X (RR)	0.21607	0.82247	8.18137

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.44422	0.98345	4.88657
	A2->X (FF)	0.42719	0.99317	5.10284
	A3->X (FF)	0.35447	0.95109	5.08399
	B1->X (FF)	0.12909	0.68356	4.40827
	C1->X (FF)	0.11861	0.65941	4.33703
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.47042	0.98528	5.13572
	A2->X (FF)	0.44469	0.99282	5.37990
	A3->X (FF)	0.39810	0.97581	5.40281
	B1->X (FF)	0.15416	0.70056	4.70963
	C1->X (FF)	0.14051	0.67561	4.62482
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.52641	1.00615	5.20712
	A2->X (FF)	0.50336	1.00730	5.42480
	A3->X (FF)	0.43019	0.96312	5.41673
	B1->X (FF)	0.14142	0.62587	4.58550
	C1->X (FF)	0.12665	0.59695	4.51091

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01452	0.01434	0.02322
	A1	0.00675	0.00657	0.01561
	A2	0.01281	0.01269	0.02135
	A2	0.00580	0.00567	0.01451
	A3	0.01016	0.01019	0.02064
	A3	0.00427	0.00431	0.01488
	B1	0.01341	0.01347	0.02748
	B1	0.00572	0.00591	0.02137
	C1	0.01273	0.01299	0.02829
	C1	0.00568	0.00609	0.02290
sky130_fd_sc_hs__o311a_2	A1	0.01719	0.01700	0.02616
	A1	0.00870	0.00854	0.01803
	A2	0.01505	0.01521	0.02438
	A2	0.00763	0.00779	0.01730
	A3	0.01301	0.01325	0.02381
	A3	0.00661	0.00686	0.01753
	B1	0.01600	0.01601	0.03001
	B1	0.00894	0.00895	0.02314
	C1	0.01518	0.01540	0.03067
	C1	0.00891	0.00914	0.02456

sky130_fd_sc_hs__o311a_4	**A1**	0.03294	0.03296	0.05220
	A1	0.01827	0.01831	0.03823
	A2	0.02939	0.02956	0.04815
	A2	0.01618	0.01635	0.03564
	A3	0.02409	0.02456	0.04675
	A3	0.01292	0.01340	0.03629
	B1	0.03137	0.03151	0.05744
	B1	0.01602	0.01633	0.04376
	C1	0.02927	0.02998	0.06002
	C1	0.01826	0.01899	0.04919

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00505	0.00476	0.01479
	A1	0.01274	0.01252	0.02244
	A2	0.00512	0.00486	0.01531
	A2	0.01203	0.01184	0.02176
	A3	0.00511	0.00550	0.01854
	A3	0.01088	0.01127	0.02389
	B1	0.00331	0.00438	0.02183
	B1	0.00993	0.01093	0.02735
	C1	0.00290	0.00392	0.02149
	C1	0.00889	0.00986	0.02647

sky130_fd_sc_hs__o311a_2	**A1**	0.00763	0.00695	0.01850
	A1	0.01602	0.01543	0.02563
	A2	0.00763	0.00726	0.01909
	A2	0.01495	0.01457	0.02507
	A3	0.00765	0.00760	0.02201
	A3	0.01392	0.01394	0.02673
	B1	0.00590	0.00712	0.02524
	B1	0.01298	0.01415	0.03085
	C1	0.00536	0.00655	0.02324
	C1	0.01166	0.01283	0.02952
sky130_fd_sc_hs__o311a_4	**A1**	0.01678	0.01500	0.03518
	A1	0.03125	0.02963	0.04954
	A2	0.01647	0.01474	0.03755
	A2	0.02947	0.02803	0.04787
	A3	0.01665	0.01590	0.04310
	A3	0.02759	0.02688	0.05193
	B1	0.01157	0.01402	0.04747
	B1	0.02473	0.02679	0.05969
	C1	0.01038	0.01302	0.04769
	C1	0.02146	0.02391	0.05770

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)**	0.00119	0.00119	0.00119
	(A2 * B1 * !C1 * !X)	-0.00175	-0.00177	-0.00178
	(A2 * A3 * B1 * C1 * X)	0.00142	0.00140	0.00140
	(A2 * A3 * B1 * C1 * X)	-0.00152	-0.00155	-0.00157
	(A2 * !B1 * !X)	0.00119	0.00119	0.00119
	(A2 * !B1 * !X)	-0.00175	-0.00177	-0.00178
	(A2 * !A3 * B1 * C1 * X)	0.00161	0.00142	0.00142
	(A2 * !A3 * B1 * C1 * X)	-0.00134	-0.00153	-0.00155
	(!A2 * A3 * B1 * C1 * X)	0.00159	0.00145	0.00141
	(!A2 * A3 * B1 * C1 * X)	-0.00129	-0.00151	-0.00154
	(!A2 * A3 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A2 * A3 * B1 * !C1 * !X)	-0.00164	-0.00173	-0.00174
	(!A2 * A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A2 * A3 * !B1 * !X)	-0.00164	-0.00173	-0.00174
	(!A2 * !A3 * B1 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * !A3 * !B1 * C1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00180	-0.00180	-0.00179
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00115	0.00115	0.00114
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00128	0.00130	0.00128
	(A2 * B1 * !C1 * !X)	-0.00192	-0.00197	-0.00197
	(A2 * A3 * B1 * C1 * X)	0.00148	0.00146	0.00146
	(A2 * A3 * B1 * C1 * X)	-0.00172	-0.00177	-0.00178
	(A2 * !B1 * !X)	0.00128	0.00130	0.00128
	(A2 * !B1 * !X)	-0.00192	-0.00197	-0.00197
	(A2 * !A3 * B1 * C1 * X)	0.00168	0.00150	0.00147
	(A2 * !A3 * B1 * C1 * X)	-0.00153	-0.00177	-0.00177
	(!A2 * A3 * B1 * C1 * X)	0.00164	0.00150	0.00147
	(!A2 * A3 * B1 * C1 * X)	-0.00147	-0.00173	-0.00176
	(!A2 * A3 * B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(!A2 * A3 * B1 * !C1 * !X)	-0.00178	-0.00192	-0.00192
	(!A2 * A3 * !B1 * !X)	0.00128	0.00130	0.00128
	(!A2 * A3 * !B1 * !X)	-0.00178	-0.00192	-0.00192
	(!A2 * !A3 * B1 * !C1 * !X)	0.00119	0.00118	0.00119
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00199	-0.00198	-0.00198
	(!A2 * !A3 * !B1 * C1 * !X)	0.00121	0.00122	0.00121
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00199	-0.00200	-0.00199
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00219	0.00218	0.00218
	(A2 * B1 * !C1 * !X)	-0.00324	-0.00329	-0.00330
	(A2 * A3 * B1 * C1 * X)	0.00228	0.00223	0.00222
	(A2 * A3 * B1 * C1 * X)	-0.00314	-0.00325	-0.00326
	(A2 * !B1 * !X)	0.00219	0.00219	0.00218
	(A2 * !B1 * !X)	-0.00323	-0.00329	-0.00330
	(A2 * !A3 * B1 * C1 * X)	0.00276	0.00229	0.00226
	(A2 * !A3 * B1 * C1 * X)	-0.00270	-0.00319	-0.00322
	(!A2 * A3 * B1 * C1 * X)	0.00273	0.00231	0.00224
	(!A2 * A3 * B1 * C1 * X)	-0.00258	-0.00311	-0.00320
	(!A2 * A3 * B1 * !C1 * !X)	0.00219	0.00219	0.00218
	(!A2 * A3 * B1 * !C1 * !X)	-0.00301	-0.00322	-0.00321
	(!A2 * A3 * !B1 * !X)	0.00219	0.00219	0.00218
	(!A2 * A3 * !B1 * !X)	-0.00300	-0.00321	-0.00321
	(!A2 * !A3 * B1 * !C1 * !X)	0.00204	0.00203	0.00203
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00334	-0.00333	-0.00333
	(!A2 * !A3 * !B1 * C1 * !X)	0.00207	0.00208	0.00206
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00334	-0.00335	-0.00333
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00206	0.00208	0.00206
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00334	-0.00335	-0.00334

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)**	-0.00116	-0.00116	-0.00116
	(A2 * B1 * !C1 * !X)	0.00179	0.00179	0.00179
	(A2 * A3 * B1 * C1 * X)	-0.00133	-0.00133	-0.00133
	(A2 * A3 * B1 * C1 * X)	0.00162	0.00163	0.00162
	(A2 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * !X)	0.00179	0.00179	0.00179
	(A2 * !A3 * B1 * C1 * X)	-0.00132	-0.00132	-0.00132
	(A2 * !A3 * B1 * C1 * X)	0.00164	0.00166	0.00165
	(!A2 * A3 * B1 * C1 * X)	-0.00131	-0.00132	-0.00130
	(!A2 * A3 * B1 * C1 * X)	0.00160	0.00161	0.00161
	(!A2 * A3 * B1 * !C1 * !X)	-0.00117	-0.00116	-0.00116
	(!A2 * A3 * B1 * !C1 * !X)	0.00174	0.00173	0.00174
	(!A2 * A3 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(!A2 * A3 * !B1 * !X)	0.00173	0.00173	0.00174
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00105	-0.00112	-0.00113
	(!A2 * !A3 * B1 * !C1 * !X)	0.00183	0.00183	0.00182
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00113	-0.00114
	(!A2 * !A3 * !B1 * C1 * !X)	0.00181	0.00183	0.00182
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00109	-0.00114	-0.00114
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00181	0.00183	0.00182

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00124	-0.00125	-0.00125
	(A2 * B1 * !C1 * !X)	0.00198	0.00200	0.00198
	(A2 * A3 * B1 * C1 * X)	-0.00139	-0.00138	-0.00139
	(A2 * A3 * B1 * C1 * X)	0.00184	0.00183	0.00184
	(A2 * !B1 * !X)	-0.00124	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00197	0.00200	0.00198
	(A2 * !A3 * B1 * C1 * X)	-0.00138	-0.00138	-0.00138
	(A2 * !A3 * B1 * C1 * X)	0.00186	0.00186	0.00186
	(!A2 * A3 * B1 * C1 * X)	-0.00137	-0.00138	-0.00137
	(!A2 * A3 * B1 * C1 * X)	0.00178	0.00179	0.00180
	(!A2 * A3 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(!A2 * A3 * B1 * !C1 * !X)	0.00191	0.00192	0.00192
	(!A2 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * !B1 * !X)	0.00191	0.00192	0.00192
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00107	-0.00117	-0.00119
	(!A2 * !A3 * B1 * !C1 * !X)	0.00204	0.00204	0.00202
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00112	-0.00119	-0.00120
	(!A2 * !A3 * !B1 * C1 * !X)	0.00203	0.00204	0.00202
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00113	-0.00120	-0.00121
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00203	0.00204	0.00202

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00210	-0.00211	-0.00211
	(A2 * B1 * !C1 * !X)	0.00332	0.00336	0.00334
	(A2 * A3 * B1 * C1 * X)	-0.00206	-0.00207	-0.00207
	(A2 * A3 * B1 * C1 * X)	0.00336	0.00339	0.00338
	(A2 * !B1 * !X)	-0.00210	-0.00211	-0.00210
	(A2 * !B1 * !X)	0.00333	0.00335	0.00334
	(A2 * !A3 * B1 * C1 * X)	-0.00204	-0.00205	-0.00204
	(A2 * !A3 * B1 * C1 * X)	0.00341	0.00343	0.00342
	(!A2 * A3 * B1 * C1 * X)	-0.00202	-0.00204	-0.00201
	(!A2 * A3 * B1 * C1 * X)	0.00330	0.00334	0.00333
	(!A2 * A3 * B1 * !C1 * !X)	-0.00210	-0.00211	-0.00211
	(!A2 * A3 * B1 * !C1 * !X)	0.00320	0.00322	0.00321
	(!A2 * A3 * !B1 * !X)	-0.00210	-0.00211	-0.00210
	(!A2 * A3 * !B1 * !X)	0.00320	0.00322	0.00321
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00183	-0.00199	-0.00202
	(!A2 * !A3 * B1 * !C1 * !X)	0.00342	0.00343	0.00341
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00190	-0.00202	-0.00204
	(!A2 * !A3 * !B1 * C1 * !X)	0.00341	0.00343	0.00341
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00192	-0.00203	-0.00204
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00341	0.00343	0.00341

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)**	0.00159	0.00162	0.00151
	(A1 * A3 * B1 * C1 * X)	-0.00114	-0.00113	-0.00118
	(A1 * A3 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * A3 * B1 * !C1 * !X)	-0.00146	-0.00147	-0.00146
	(A1 * A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(A1 * A3 * !B1 * !X)	-0.00146	-0.00147	-0.00146
	(A1 * !A3 * B1 * C1 * X)	0.00150	0.00150	0.00147
	(A1 * !A3 * B1 * C1 * X)	-0.00082	-0.00082	-0.00084
	(A1 * !A3 * B1 * !C1 * !X)	0.00120	0.00120	0.00119
	(A1 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00188	-0.00188
	(A1 * !A3 * !B1 * C1 * !X)	0.00120	0.00120	0.00119
	(A1 * !A3 * !B1 * C1 * !X)	-0.00188	-0.00188	-0.00188
	(A1 * !A3 * !B1 * !C1 * !X)	0.00120	0.00120	0.00119
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00188	-0.00188	-0.00188
	(!A1 * A3 * B1 * C1 * X)	0.00190	0.00152	0.00146
	(!A1 * A3 * B1 * C1 * X)	-0.00117	-0.00156	-0.00161
	(!A1 * A3 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A3 * B1 * !C1 * !X)	-0.00186	-0.00188	-0.00188
	(!A1 * A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A3 * !B1 * !X)	-0.00186	-0.00188	-0.00188
	(!A1 * !A3 * B1 * !C1 * !X)	0.00111	0.00112	0.00112
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00189	-0.00189	-0.00189
	(!A1 * !A3 * !B1 * C1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00149	0.00149	0.00140
	(A1 * A3 * B1 * C1 * X)	-0.00121	-0.00123	-0.00127
	(A1 * A3 * B1 * !C1 * !X)	0.00128	0.00129	0.00129
	(A1 * A3 * B1 * !C1 * !X)	-0.00135	-0.00136	-0.00135
	(A1 * A3 * !B1 * !X)	0.00129	0.00130	0.00129
	(A1 * A3 * !B1 * !X)	-0.00134	-0.00136	-0.00135
	(A1 * !A3 * B1 * C1 * X)	0.00139	0.00139	0.00137
	(A1 * !A3 * B1 * C1 * X)	-0.00092	-0.00093	-0.00094
	(A1 * !A3 * B1 * !C1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A3 * B1 * !C1 * !X)	-0.00187	-0.00189	-0.00189
	(A1 * !A3 * !B1 * C1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A3 * !B1 * C1 * !X)	-0.00186	-0.00189	-0.00189
	(A1 * !A3 * !B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00187	-0.00189	-0.00189
	(!A1 * A3 * B1 * C1 * X)	0.00178	0.00142	0.00136
	(!A1 * A3 * B1 * C1 * X)	-0.00140	-0.00177	-0.00181
	(!A1 * A3 * B1 * !C1 * !X)	0.00129	0.00130	0.00129
	(!A1 * A3 * B1 * !C1 * !X)	-0.00187	-0.00189	-0.00189
	(!A1 * A3 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * A3 * !B1 * !X)	-0.00187	-0.00189	-0.00189
	(!A1 * !A3 * B1 * !C1 * !X)	0.00118	0.00120	0.00119
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * C1 * !X)	0.00121	0.00121	0.00121
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00191	-0.00191	-0.00191
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00120	0.00121	0.00121
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00283	0.00285	0.00266
	(A1 * A3 * B1 * C1 * X)	-0.00230	-0.00225	-0.00236
	(A1 * A3 * B1 * !C1 * !X)	0.00252	0.00250	0.00249
	(A1 * A3 * B1 * !C1 * !X)	-0.00248	-0.00249	-0.00247
	(A1 * A3 * !B1 * !X)	0.00252	0.00250	0.00249
	(A1 * A3 * !B1 * !X)	-0.00248	-0.00249	-0.00247
	(A1 * !A3 * B1 * C1 * X)	0.00263	0.00264	0.00258
	(A1 * !A3 * B1 * C1 * X)	-0.00165	-0.00166	-0.00170
	(A1 * !A3 * B1 * !C1 * !X)	0.00252	0.00252	0.00249
	(A1 * !A3 * B1 * !C1 * !X)	-0.00327	-0.00329	-0.00329
	(A1 * !A3 * !B1 * C1 * !X)	0.00252	0.00252	0.00249
	(A1 * !A3 * !B1 * C1 * !X)	-0.00327	-0.00329	-0.00329
	(A1 * !A3 * !B1 * !C1 * !X)	0.00252	0.00251	0.00249
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00328	-0.00329	-0.00329
	(!A1 * A3 * B1 * C1 * X)	0.00345	0.00270	0.00256
	(!A1 * A3 * B1 * C1 * X)	-0.00236	-0.00312	-0.00322
	(!A1 * A3 * B1 * !C1 * !X)	0.00251	0.00251	0.00249
	(!A1 * A3 * B1 * !C1 * !X)	-0.00326	-0.00329	-0.00329
	(!A1 * A3 * !B1 * !X)	0.00252	0.00252	0.00249
	(!A1 * A3 * !B1 * !X)	-0.00326	-0.00329	-0.00329
	(!A1 * !A3 * B1 * !C1 * !X)	0.00230	0.00233	0.00231
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00331	-0.00332	-0.00331
	(!A1 * !A3 * !B1 * C1 * !X)	0.00235	0.00236	0.00235
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00331	-0.00332	-0.00331
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00234	0.00236	0.00235
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00332	-0.00333	-0.00332

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)**	-0.00138	-0.00138	-0.00137
	(A1 * A3 * B1 * C1 * X)	0.00123	0.00123	0.00122
	(A1 * A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * B1 * !C1 * !X)	0.00146	0.00147	0.00146
	(A1 * A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * !B1 * !X)	0.00146	0.00147	0.00146
	(A1 * !A3 * B1 * C1 * X)	-0.00136	-0.00136	-0.00135
	(A1 * !A3 * B1 * C1 * X)	0.00095	0.00096	0.00096
	(A1 * !A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A3 * !B1 * C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * !B1 * C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * !B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(!A1 * A3 * B1 * C1 * X)	-0.00135	-0.00135	-0.00134
	(!A1 * A3 * B1 * C1 * X)	0.00171	0.00172	0.00172
	(!A1 * A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * B1 * !C1 * !X)	0.00187	0.00190	0.00188
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * !B1 * !X)	0.00189	0.00190	0.00188
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00103	-0.00111	-0.00112
	(!A1 * !A3 * B1 * !C1 * !X)	0.00193	0.00193	0.00192
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00113	-0.00114
	(!A1 * !A3 * !B1 * C1 * !X)	0.00192	0.00193	0.00192
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00109	-0.00113	-0.00114
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00128	-0.00128	-0.00128
	(A1 * A3 * B1 * C1 * X)	0.00130	0.00130	0.00129
	(A1 * A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * B1 * !C1 * !X)	0.00135	0.00136	0.00135
	(A1 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * !B1 * !X)	0.00134	0.00136	0.00135
	(A1 * !A3 * B1 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * !A3 * B1 * C1 * X)	0.00105	0.00105	0.00105
	(A1 * !A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * B1 * !C1 * !X)	0.00189	0.00190	0.00190
	(A1 * !A3 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !B1 * C1 * !X)	0.00190	0.00190	0.00190
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(!A1 * A3 * B1 * C1 * X)	-0.00127	-0.00127	-0.00126
	(!A1 * A3 * B1 * C1 * X)	0.00189	0.00190	0.00190
	(!A1 * A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * B1 * !C1 * !X)	0.00190	0.00192	0.00190
	(!A1 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * !B1 * !X)	0.00190	0.00190	0.00190
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00107	-0.00117	-0.00119
	(!A1 * !A3 * B1 * !C1 * !X)	0.00196	0.00195	0.00194
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00112	-0.00119	-0.00120
	(!A1 * !A3 * !B1 * C1 * !X)	0.00195	0.00196	0.00195
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00113	-0.00120	-0.00121
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00195	0.00196	0.00194

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00237	-0.00239	-0.00238
	(A1 * A3 * B1 * C1 * X)	0.00245	0.00247	0.00245
	(A1 * A3 * B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * A3 * B1 * !C1 * !X)	0.00248	0.00249	0.00247
	(A1 * A3 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * A3 * !B1 * !X)	0.00248	0.00249	0.00247
	(A1 * !A3 * B1 * C1 * X)	-0.00236	-0.00235	-0.00232
	(A1 * !A3 * B1 * C1 * X)	0.00193	0.00192	0.00195
	(A1 * !A3 * B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A3 * B1 * !C1 * !X)	0.00331	0.00333	0.00331
	(A1 * !A3 * !B1 * C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A3 * !B1 * C1 * !X)	0.00331	0.00333	0.00332
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A3 * !B1 * !C1 * !X)	0.00331	0.00333	0.00332
	(!A1 * A3 * B1 * C1 * X)	-0.00234	-0.00235	-0.00233
	(!A1 * A3 * B1 * C1 * X)	0.00340	0.00343	0.00343
	(!A1 * A3 * B1 * !C1 * !X)	-0.00241	-0.00242	-0.00242
	(!A1 * A3 * B1 * !C1 * !X)	0.00330	0.00331	0.00332
	(!A1 * A3 * !B1 * !X)	-0.00241	-0.00242	-0.00242
	(!A1 * A3 * !B1 * !X)	0.00331	0.00331	0.00332
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00209	-0.00228	-0.00231
	(!A1 * !A3 * B1 * !C1 * !X)	0.00342	0.00341	0.00339
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00219	-0.00231	-0.00233
	(!A1 * !A3 * !B1 * C1 * !X)	0.00339	0.00341	0.00339
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00220	-0.00232	-0.00234
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00338	0.00340	0.00339

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)**	0.00134	0.00135	0.00135
	(A2 * B1 * C1 * X)	-0.00078	-0.00079	-0.00079
	(A2 * B1 * !C1 * !X)	0.00117	0.00119	0.00118
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00169	-0.00169
	(A2 * !B1 * C1 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * C1 * !X)	-0.00164	-0.00169	-0.00169
	(A2 * !B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A2 * !B1 * !C1 * !X)	-0.00164	-0.00169	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00135	0.00135	0.00135
	(A1 * !A2 * B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * B1 * !C1 * !X)	0.00117	0.00118	0.00118
	(A1 * !A2 * B1 * !C1 * !X)	-0.00153	-0.00162	-0.00162
	(A1 * !A2 * !B1 * C1 * !X)	0.00117	0.00118	0.00118
	(A1 * !A2 * !B1 * C1 * !X)	-0.00153	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00154	-0.00163	-0.00163
	(!A1 * !A2 * B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A2 * !B1 * C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00150	0.00151	0.00150
	(A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X)	0.00128	0.00130	0.00129
	(A2 * B1 * !C1 * !X)	-0.00179	-0.00184	-0.00184
	(A2 * !B1 * C1 * !X)	0.00128	0.00130	0.00129
	(A2 * !B1 * C1 * !X)	-0.00179	-0.00184	-0.00184
	(A2 * !B1 * !C1 * !X)	0.00128	0.00130	0.00129
	(A2 * !B1 * !C1 * !X)	-0.00179	-0.00184	-0.00184
	(A1 * !A2 * B1 * C1 * X)	0.00150	0.00151	0.00150
	(A1 * !A2 * B1 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00129
	(A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00177	-0.00176
	(A1 * !A2 * !B1 * C1 * !X)	0.00128	0.00129	0.00129
	(A1 * !A2 * !B1 * C1 * !X)	-0.00165	-0.00177	-0.00176
	(A1 * !A2 * !B1 * !C1 * !X)	0.00128	0.00129	0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00165	-0.00178	-0.00177
	(!A1 * !A2 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * !B1 * C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00187	-0.00187	-0.00186
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00121	0.00121	0.00121
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00257	0.00258	0.00258
	(A2 * B1 * C1 * X)	-0.00154	-0.00155	-0.00155
	(A2 * B1 * !C1 * !X)	0.00221	0.00223	0.00221
	(A2 * B1 * !C1 * !X)	-0.00326	-0.00337	-0.00337
	(A2 * !B1 * C1 * !X)	0.00221	0.00223	0.00221
	(A2 * !B1 * C1 * !X)	-0.00326	-0.00337	-0.00337
	(A2 * !B1 * !C1 * !X)	0.00220	0.00223	0.00221
	(A2 * !B1 * !C1 * !X)	-0.00326	-0.00337	-0.00338
	(A1 * !A2 * B1 * C1 * X)	0.00257	0.00259	0.00258
	(A1 * !A2 * B1 * C1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * B1 * !C1 * !X)	0.00221	0.00222	0.00221
	(A1 * !A2 * B1 * !C1 * !X)	-0.00304	-0.00325	-0.00323
	(A1 * !A2 * !B1 * C1 * !X)	0.00221	0.00222	0.00221
	(A1 * !A2 * !B1 * C1 * !X)	-0.00304	-0.00325	-0.00324
	(A1 * !A2 * !B1 * !C1 * !X)	0.00220	0.00222	0.00221
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00305	-0.00325	-0.00325
	(!A1 * !A2 * B1 * !C1 * !X)	0.00206	0.00207	0.00207
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00339	-0.00340	-0.00339
	(!A1 * !A2 * !B1 * C1 * !X)	0.00210	0.00212	0.00210
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00340	-0.00341	-0.00340
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00209	0.00211	0.00209
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00340	-0.00342	-0.00340

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)**	-0.00120	-0.00120	-0.00127
	(A2 * B1 * C1 * X)	0.00094	0.00093	0.00087
	(A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * B1 * !C1 * !X)	0.00168	0.00170	0.00169
	(A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * C1 * !X)	0.00169	0.00170	0.00169
	(A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(A1 * !A2 * B1 * C1 * X)	-0.00110	-0.00111	-0.00125
	(A1 * !A2 * B1 * C1 * X)	0.00099	0.00098	0.00088
	(A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(A1 * !A2 * B1 * !C1 * !X)	0.00162	0.00162	0.00162
	(A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * C1 * !X)	0.00161	0.00163	0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00162	0.00163	0.00163
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00102	-0.00110	-0.00111
	(!A1 * !A2 * B1 * !C1 * !X)	0.00173	0.00173	0.00172
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00106	-0.00112	-0.00113
	(!A1 * !A2 * !B1 * C1 * !X)	0.00172	0.00173	0.00173
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00107	-0.00112	-0.00113
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00172	0.00173	0.00172

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00138	-0.00138	-0.00143
	(A2 * B1 * C1 * X)	0.00091	0.00091	0.00088
	(A2 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * B1 * !C1 * !X)	0.00186	0.00186	0.00185
	(A2 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * !B1 * C1 * !X)	0.00185	0.00186	0.00186
	(A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * !B1 * !C1 * !X)	0.00185	0.00186	0.00186
	(A1 * !A2 * B1 * C1 * X)	-0.00129	-0.00129	-0.00141
	(A1 * !A2 * B1 * C1 * X)	0.00096	0.00096	0.00088
	(A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * B1 * !C1 * !X)	0.00176	0.00177	0.00176
	(A1 * !A2 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !B1 * C1 * !X)	0.00176	0.00177	0.00176
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !B1 * !C1 * !X)	0.00177	0.00178	0.00177
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00107	-0.00118	-0.00119
	(!A1 * !A2 * B1 * !C1 * !X)	0.00191	0.00191	0.00190
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00112	-0.00120	-0.00121
	(!A1 * !A2 * !B1 * C1 * !X)	0.00190	0.00191	0.00190
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00113	-0.00120	-0.00121
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00191	0.00190

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00226	-0.00227	-0.00242
	(A2 * B1 * C1 * X)	0.00186	0.00186	0.00173
	(A2 * B1 * !C1 * !X)	-0.00214	-0.00216	-0.00214
	(A2 * B1 * !C1 * !X)	0.00339	0.00341	0.00340
	(A2 * !B1 * C1 * !X)	-0.00214	-0.00215	-0.00214
	(A2 * !B1 * C1 * !X)	0.00339	0.00341	0.00340
	(A2 * !B1 * !C1 * !X)	-0.00214	-0.00216	-0.00214
	(A2 * !B1 * !C1 * !X)	0.00339	0.00341	0.00340
	(A1 * !A2 * B1 * C1 * X)	-0.00207	-0.00208	-0.00238
	(A1 * !A2 * B1 * C1 * X)	0.00196	0.00196	0.00173
	(A1 * !A2 * B1 * !C1 * !X)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * B1 * !C1 * !X)	0.00322	0.00325	0.00323
	(A1 * !A2 * !B1 * C1 * !X)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * !B1 * C1 * !X)	0.00323	0.00325	0.00324
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00214	-0.00214	-0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	0.00325	0.00325	0.00325
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00184	-0.00203	-0.00205
	(!A1 * !A2 * B1 * !C1 * !X)	0.00349	0.00349	0.00347
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00193	-0.00206	-0.00207
	(!A1 * !A2 * !B1 * C1 * !X)	0.00347	0.00349	0.00347
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00194	-0.00206	-0.00208
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00347	0.00349	0.00347

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00108	0.00108	0.00108
	(A3 * !C1 * !X)	-0.00173	-0.00173	-0.00172
	(A2 * !A3 * !C1 * !X)	0.00108	0.00109	0.00108
	(A2 * !A3 * !C1 * !X)	-0.00173	-0.00173	-0.00172
	(A1 * !A2 * !A3 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A2 * !A3 * C1 * !X)	0.00062	0.00062	0.00058
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00172	-0.00172	-0.00172
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00172	-0.00172	-0.00173
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00122	0.00122	0.00122
	(A3 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * !C1 * !X)	0.00121	0.00122	0.00122
	(A2 * !A3 * !C1 * !X)	-0.00177	-0.00177	-0.00177
	(A1 * !A2 * !A3 * !C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00178	-0.00178	-0.00177
	(!A1 * !A2 * !A3 * C1 * !X)	0.00058	0.00058	0.00057
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00180	-0.00181	-0.00179
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00075	0.00075	0.00075
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00181	-0.00181	-0.00181
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00237	0.00238	0.00237
	(A3 * !C1 * !X)	-0.00379	-0.00380	-0.00378
	(A2 * !A3 * !C1 * !X)	0.00237	0.00238	0.00237
	(A2 * !A3 * !C1 * !X)	-0.00379	-0.00380	-0.00378
	(A1 * !A2 * !A3 * !C1 * !X)	0.00236	0.00238	0.00237
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00378	-0.00379	-0.00378
	(!A1 * !A2 * !A3 * C1 * !X)	0.00129	0.00129	0.00127
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00380	-0.00381	-0.00377
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00162	0.00164	0.00162
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00380	-0.00383	-0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00097	-0.00105	-0.00106
	(A3 * !C1 * !X)	0.00185	0.00179	0.00175
	(A2 * !A3 * !C1 * !X)	-0.00097	-0.00105	-0.00106
	(A2 * !A3 * !C1 * !X)	0.00185	0.00179	0.00175
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00096	-0.00105	-0.00106
	(A1 * !A2 * !A3 * !C1 * !X)	0.00186	0.00179	0.00175
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00050	-0.00050	-0.00051
	(!A1 * !A2 * !A3 * C1 * !X)	0.00179	0.00180	0.00176
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00186	0.00183	0.00178
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00109	-0.00118	-0.00119
	(A3 * !C1 * !X)	0.00192	0.00185	0.00181
	(A2 * !A3 * !C1 * !X)	-0.00108	-0.00118	-0.00119
	(A2 * !A3 * !C1 * !X)	0.00193	0.00185	0.00181
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00107	-0.00117	-0.00119
	(A1 * !A2 * !A3 * !C1 * !X)	0.00194	0.00183	0.00181
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00049	-0.00049	-0.00050
	(!A1 * !A2 * !A3 * C1 * !X)	0.00188	0.00189	0.00184
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00195	0.00192	0.00187

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00213	-0.00230	-0.00232
	(A3 * !C1 * !X)	0.00405	0.00393	0.00386
	(A2 * !A3 * !C1 * !X)	-0.00212	-0.00230	-0.00232
	(A2 * !A3 * !C1 * !X)	0.00406	0.00393	0.00386
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00209	-0.00228	-0.00232
	(A1 * !A2 * !A3 * !C1 * !X)	0.00407	0.00390	0.00386
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00109	-0.00110	-0.00113
	(!A1 * !A2 * !A3 * C1 * !X)	0.00400	0.00401	0.00391
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00161	-0.00164	-0.00162
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00405	0.00403	0.00392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00047	0.00047	0.00045
	(A3 * !B1 * !X)	-0.00196	-0.00197	-0.00199
	(A2 * !A3 * !B1 * !X)	0.00047	0.00047	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00196	-0.00197	-0.00199
	(!A2 * !A3 * !B1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !A3 * !B1 * !X)	-0.00196	-0.00197	-0.00199
	(!A1 * !A2 * !A3 * B1 * !X)	0.00060	0.00060	0.00049
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00179	-0.00180	-0.00196
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00053	0.00053	0.00051
	(A3 * !B1 * !X)	-0.00197	-0.00198	-0.00201
	(A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00051
	(A2 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00201
	(!A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00051
	(!A2 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00201
	(!A1 * !A2 * !A3 * B1 * !X)	0.00060	0.00060	0.00052
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00184	-0.00185	-0.00200
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00099	0.00098	0.00092
	(A3 * !B1 * !X)	-0.00370	-0.00372	-0.00380
	(A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00092
	(A2 * !A3 * !B1 * !X)	-0.00370	-0.00372	-0.00380
	(!A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00092
	(!A2 * !A3 * !B1 * !X)	-0.00370	-0.00372	-0.00380
	(!A1 * !A2 * !A3 * B1 * !X)	0.00111	0.00111	0.00092
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00341	-0.00342	-0.00375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A3 * !B1 * !X)	0.00201	0.00203	0.00202
	(A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A2 * !A3 * !B1 * !X)	0.00201	0.00203	0.00202
	(!A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !A3 * !B1 * !X)	0.00201	0.00202	0.00202
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	0.00201	0.00203	0.00201
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(A3 * !B1 * !X)	0.00204	0.00206	0.00205
	(A2 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(A2 * !A3 * !B1 * !X)	0.00204	0.00206	0.00205
	(!A2 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !A3 * !B1 * !X)	0.00204	0.00205	0.00205
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	0.00204	0.00206	0.00205
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00083	-0.00083	-0.00082
	(A3 * !B1 * !X)	0.00388	0.00390	0.00388
	(A2 * !A3 * !B1 * !X)	-0.00083	-0.00083	-0.00082
	(A2 * !A3 * !B1 * !X)	0.00388	0.00390	0.00388
	(!A2 * !A3 * !B1 * !X)	-0.00083	-0.00083	-0.00082
	(!A2 * !A3 * !B1 * !X)	0.00388	0.00389	0.00388
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !A3 * B1 * !X)	0.00387	0.00390	0.00388

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00281	0.00327	0.00320	0.00292	0.26101
sky130_fd_sc_hs__o31ai_2	0.00574	0.00563	0.00590	0.00582	0.46700
sky130_fd_sc_hs__o31ai_4	0.01106	0.01106	0.01150	0.00838	0.88453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.73942	1.64616
sky130_fd_sc_hs__o31ai_2	0.00000	1.46735	3.38405
sky130_fd_sc_hs__o31ai_4	0.00000	2.11476	4.97607

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)	0.24804	1.22772	9.28074
	A2->Y (FR)	0.23684	1.24616	9.84279
	A3->Y (FR)	0.18411	1.21297	10.06220
	B1->Y (FR)	0.05160	0.64631	5.94396
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.25646	1.07078	9.07727
	A2->Y (FR)	0.22831	1.07067	9.61655
	A3->Y (FR)	0.17440	1.04757	9.97468
	B1->Y (FR)	0.04535	0.56881	5.82281
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.23747	0.91592	8.94607
	A2->Y (FR)	0.21177	0.91839	9.55522
	A3->Y (FR)	0.15389	0.89859	9.95203
	B1->Y (FR)	0.05942	0.68836	7.97793

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.07341	0.54345	4.46875
	A2->Y (RF)	0.07370	0.53261	4.44610
	A3->Y (RF)	0.05845	0.50762	4.38885
	B1->Y (RF)	0.06277	0.59822	5.13396
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.07320	0.49314	4.39793
	A2->Y (RF)	0.07047	0.47417	4.35570
	A3->Y (RF)	0.05669	0.45042	4.31169
	B1->Y (RF)	0.05751	0.54125	5.08594
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.07269	0.44143	4.37104
	A2->Y (RF)	0.06811	0.41800	4.29691
	A3->Y (RF)	0.05017	0.38402	4.17329
	B1->Y (RF)	0.05501	0.51000	5.36097

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00092	0.00080	0.00422
	A1	0.00825	0.00816	0.01159
	A2	0.00097	0.00083	0.00432
	A2	0.00757	0.00744	0.01090
	A3	0.00094	0.00113	0.00612
	A3	0.00646	0.00664	0.01163
	B1	-0.00023	0.00023	0.00726
	B1	0.00597	0.00638	0.01314
sky130_fd_sc_hs__o31ai_2	A1	0.00182	0.00149	0.00827
	A1	0.01662	0.01615	0.02314
	A2	0.00185	0.00164	0.00873
	A2	0.01441	0.01417	0.02125
	A3	0.00178	0.00214	0.01198
	A3	0.01234	0.01270	0.02250
	B1	-0.00131	-0.00016	0.01387
	B1	0.01087	0.01192	0.02553
sky130_fd_sc_hs__o31ai_4	A1	0.00290	0.00237	0.01573
	A1	0.03172	0.03117	0.04461
	A2	0.00294	0.00257	0.01640
	A2	0.02752	0.02712	0.04091
	A3	0.00278	0.00375	0.02278
	A3	0.02327	0.02421	0.04320
	B1	-0.00243	-0.00077	0.01500
	B1	0.01778	0.01924	0.03383

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00986	0.00975	0.01298
	A1	0.00250	0.00239	0.00555
	A2	0.00818	0.00811	0.01121
	A2	0.00154	0.00144	0.00451
	A3	0.00598	0.00607	0.00915
	A3	0.00041	0.00046	0.00349
	B1	0.00861	0.00869	0.01304
	B1	0.00022	0.00040	0.00508
sky130_fd_sc_hs__o31ai_2	A1	0.02027	0.01999	0.02634
	A1	0.00545	0.00507	0.01139
	A2	0.01559	0.01543	0.02181
	A2	0.00296	0.00281	0.00908
	A3	0.01135	0.01148	0.01786
	A3	0.00069	0.00076	0.00692
	B1	0.01742	0.01765	0.02627
	B1	0.00031	0.00078	0.01043
sky130_fd_sc_hs__o31ai_4	A1	0.03775	0.03715	0.05019
	A1	0.00893	0.00827	0.02108
	A2	0.02889	0.02851	0.04121
	A2	0.00419	0.00382	0.01650
	A3	0.02004	0.02038	0.03332
	A3	-0.00067	-0.00033	0.01232
	B1	0.03112	0.03165	0.04016
	B1	0.01136	0.01184	0.02041

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)**	0.00138	0.00136	0.00136
	(A2 * A3 * B1 * !Y)	-0.00173	-0.00178	-0.00179
	(A2 * !B1 * Y)	0.00136	0.00137	0.00136
	(A2 * !B1 * Y)	-0.00176	-0.00180	-0.00179
	(A2 * !A3 * B1 * !Y)	0.00158	0.00138	0.00137
	(A2 * !A3 * B1 * !Y)	-0.00155	-0.00176	-0.00178
	(!A2 * A3 * B1 * !Y)	0.00154	0.00140	0.00137
	(!A2 * A3 * B1 * !Y)	-0.00149	-0.00173	-0.00175
	(!A2 * A3 * !B1 * Y)	0.00136	0.00137	0.00136
	(!A2 * A3 * !B1 * Y)	-0.00162	-0.00173	-0.00172
	(!A2 * !A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A2 * !A3 * !B1 * Y)	-0.00182	-0.00182	-0.00181
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00278	0.00277	0.00275
	(A2 * A3 * B1 * !Y)	-0.00355	-0.00369	-0.00369
	(A2 * !B1 * Y)	0.00273	0.00275	0.00273
	(A2 * !B1 * Y)	-0.00360	-0.00371	-0.00368
	(A2 * !A3 * B1 * !Y)	0.00322	0.00280	0.00277
	(A2 * !A3 * B1 * !Y)	-0.00314	-0.00366	-0.00368
	(!A2 * A3 * B1 * !Y)	0.00316	0.00281	0.00276
	(!A2 * A3 * B1 * !Y)	-0.00301	-0.00355	-0.00360
	(!A2 * A3 * !B1 * Y)	0.00273	0.00274	0.00273
	(!A2 * A3 * !B1 * Y)	-0.00334	-0.00356	-0.00354
	(!A2 * !A3 * !B1 * Y)	0.00258	0.00259	0.00257
	(!A2 * !A3 * !B1 * Y)	-0.00378	-0.00378	-0.00376

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00538	0.00531	0.00529
	(A2 * A3 * B1 * !Y)	-0.00709	-0.00731	-0.00730
	(A2 * !B1 * Y)	0.00530	0.00529	0.00527
	(A2 * !B1 * Y)	-0.00717	-0.00734	-0.00730
	(A2 * !A3 * B1 * !Y)	0.00626	0.00537	0.00533
	(A2 * !A3 * B1 * !Y)	-0.00629	-0.00725	-0.00732
	(!A2 * A3 * B1 * !Y)	0.00607	0.00542	0.00531
	(!A2 * A3 * B1 * !Y)	-0.00603	-0.00706	-0.00711
	(!A2 * A3 * !B1 * Y)	0.00528	0.00530	0.00527
	(!A2 * A3 * !B1 * Y)	-0.00663	-0.00702	-0.00702
	(!A2 * !A3 * !B1 * Y)	0.00494	0.00497	0.00496
	(!A2 * !A3 * !B1 * Y)	-0.00745	-0.00747	-0.00744

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)**	-0.00134	-0.00135	-0.00134
	(A2 * A3 * B1 * !Y)	0.00179	0.00180	0.00179
	(A2 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * Y)	0.00179	0.00180	0.00179
	(A2 * !A3 * B1 * !Y)	-0.00133	-0.00134	-0.00133
	(A2 * !A3 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A2 * A3 * B1 * !Y)	-0.00133	-0.00133	-0.00133
	(!A2 * A3 * B1 * !Y)	0.00174	0.00174	0.00175
	(!A2 * A3 * !B1 * Y)	-0.00134	-0.00135	-0.00135
	(!A2 * A3 * !B1 * Y)	0.00172	0.00173	0.00172
	(!A2 * !A3 * !B1 * Y)	-0.00121	-0.00129	-0.00129
	(!A2 * !A3 * !B1 * Y)	0.00186	0.00185	0.00183

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00271	-0.00272	-0.00271
	(A2 * A3 * B1 * !Y)	0.00369	0.00372	0.00369
	(A2 * !B1 * Y)	-0.00272	-0.00273	-0.00272
	(A2 * !B1 * Y)	0.00369	0.00372	0.00368
	(A2 * !A3 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(A2 * !A3 * B1 * !Y)	0.00372	0.00376	0.00373
	(!A2 * A3 * B1 * !Y)	-0.00268	-0.00269	-0.00267
	(!A2 * A3 * B1 * !Y)	0.00357	0.00359	0.00360
	(!A2 * A3 * !B1 * Y)	-0.00272	-0.00273	-0.00272
	(!A2 * A3 * !B1 * Y)	0.00354	0.00356	0.00354
	(!A2 * !A3 * !B1 * Y)	-0.00239	-0.00258	-0.00257
	(!A2 * !A3 * !B1 * Y)	0.00389	0.00383	0.00378
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00523	-0.00527	-0.00524
	(A2 * A3 * B1 * !Y)	0.00728	0.00737	0.00730
	(A2 * !B1 * Y)	-0.00523	-0.00527	-0.00524
	(A2 * !B1 * Y)	0.00727	0.00737	0.00730
	(A2 * !A3 * B1 * !Y)	-0.00518	-0.00523	-0.00520
	(A2 * !A3 * B1 * !Y)	0.00732	0.00743	0.00738
	(!A2 * A3 * B1 * !Y)	-0.00520	-0.00523	-0.00517
	(!A2 * A3 * B1 * !Y)	0.00709	0.00716	0.00711
	(!A2 * A3 * !B1 * Y)	-0.00525	-0.00525	-0.00524
	(!A2 * A3 * !B1 * Y)	0.00702	0.00702	0.00702
	(!A2 * !A3 * !B1 * Y)	-0.00459	-0.00497	-0.00496
	(!A2 * !A3 * !B1 * Y)	0.00763	0.00759	0.00749

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)**	0.00167	0.00169	0.00159
	(A1 * A3 * B1 * !Y)	-0.00126	-0.00126	-0.00127
	(A1 * A3 * !B1 * Y)	0.00135	0.00135	0.00134
	(A1 * A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A3 * B1 * !Y)	0.00158	0.00159	0.00156
	(A1 * !A3 * B1 * !Y)	-0.00095	-0.00096	-0.00097
	(A1 * !A3 * !B1 * Y)	0.00136	0.00136	0.00134
	(A1 * !A3 * !B1 * Y)	-0.00203	-0.00204	-0.00203
	(!A1 * A3 * B1 * !Y)	0.00198	0.00161	0.00155
	(!A1 * A3 * B1 * !Y)	-0.00141	-0.00180	-0.00184
	(!A1 * A3 * !B1 * Y)	0.00135	0.00136	0.00134
	(!A1 * A3 * !B1 * Y)	-0.00203	-0.00205	-0.00204
	(!A1 * !A3 * !B1 * Y)	0.00126	0.00127	0.00126
	(!A1 * !A3 * !B1 * Y)	-0.00206	-0.00207	-0.00207
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00306	0.00304	0.00286
	(A1 * A3 * B1 * !Y)	-0.00244	-0.00247	-0.00251
	(A1 * A3 * !B1 * Y)	0.00267	0.00266	0.00265
	(A1 * A3 * !B1 * Y)	-0.00261	-0.00263	-0.00261
	(A1 * !A3 * B1 * !Y)	0.00279	0.00280	0.00274
	(A1 * !A3 * B1 * !Y)	-0.00184	-0.00184	-0.00187
	(A1 * !A3 * !B1 * Y)	0.00267	0.00268	0.00265
	(A1 * !A3 * !B1 * Y)	-0.00365	-0.00367	-0.00365
	(!A1 * A3 * B1 * !Y)	0.00357	0.00283	0.00271
	(!A1 * A3 * B1 * !Y)	-0.00282	-0.00357	-0.00365
	(!A1 * A3 * !B1 * Y)	0.00267	0.00268	0.00265
	(!A1 * A3 * !B1 * Y)	-0.00367	-0.00370	-0.00368
	(!A1 * !A3 * !B1 * Y)	0.00249	0.00251	0.00250
	(!A1 * !A3 * !B1 * Y)	-0.00374	-0.00376	-0.00374

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00607	0.00603	0.00564
	(A1 * A3 * B1 * !Y)	-0.00492	-0.00493	-0.00498
	(A1 * A3 * !B1 * Y)	0.00529	0.00528	0.00524
	(A1 * A3 * !B1 * Y)	-0.00521	-0.00525	-0.00520
	(A1 * !A3 * B1 * !Y)	0.00554	0.00555	0.00542
	(A1 * !A3 * B1 * !Y)	-0.00369	-0.00370	-0.00375
	(A1 * !A3 * !B1 * Y)	0.00523	0.00530	0.00524
	(A1 * !A3 * !B1 * Y)	-0.00728	-0.00729	-0.00730
	(!A1 * A3 * B1 * !Y)	0.00708	0.00562	0.00536
	(!A1 * A3 * B1 * !Y)	-0.00549	-0.00713	-0.00730
	(!A1 * A3 * !B1 * Y)	0.00522	0.00530	0.00524
	(!A1 * A3 * !B1 * Y)	-0.00730	-0.00741	-0.00735
	(!A1 * !A3 * !B1 * Y)	0.00496	0.00496	0.00494
	(!A1 * !A3 * !B1 * Y)	-0.00752	-0.00751	-0.00749

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)**	-0.00153	-0.00153	-0.00152
	(A1 * A3 * B1 * !Y)	0.00128	0.00128	0.00127
	(A1 * A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134
	(A1 * A3 * !B1 * Y)	0.00149	0.00150	0.00149
	(A1 * !A3 * B1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * !A3 * B1 * !Y)	0.00102	0.00102	0.00103
	(A1 * !A3 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(A1 * !A3 * !B1 * Y)	0.00203	0.00204	0.00203
	(!A1 * A3 * B1 * !Y)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * B1 * !Y)	0.00187	0.00188	0.00188
	(!A1 * A3 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(!A1 * A3 * !B1 * Y)	0.00203	0.00205	0.00204
	(!A1 * !A3 * !B1 * Y)	-0.00118	-0.00127	-0.00126
	(!A1 * !A3 * !B1 * Y)	0.00213	0.00210	0.00208
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00268	-0.00270	-0.00269
	(A1 * A3 * B1 * !Y)	0.00249	0.00252	0.00251
	(A1 * A3 * !B1 * Y)	-0.00263	-0.00265	-0.00263
	(A1 * A3 * !B1 * Y)	0.00261	0.00263	0.00261
	(A1 * !A3 * B1 * !Y)	-0.00264	-0.00264	-0.00263
	(A1 * !A3 * B1 * !Y)	0.00200	0.00200	0.00199
	(A1 * !A3 * !B1 * Y)	-0.00264	-0.00265	-0.00264
	(A1 * !A3 * !B1 * Y)	0.00365	0.00367	0.00365
	(!A1 * A3 * B1 * !Y)	-0.00263	-0.00263	-0.00262
	(!A1 * A3 * B1 * !Y)	0.00370	0.00371	0.00372
	(!A1 * A3 * !B1 * Y)	-0.00263	-0.00265	-0.00264
	(!A1 * A3 * !B1 * Y)	0.00367	0.00370	0.00368
	(!A1 * !A3 * !B1 * Y)	-0.00232	-0.00251	-0.00250
	(!A1 * !A3 * !B1 * Y)	0.00386	0.00380	0.00376

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00535	-0.00536	-0.00533
	(A1 * A3 * B1 * !Y)	0.00501	0.00502	0.00498
	(A1 * A3 * !B1 * Y)	-0.00522	-0.00525	-0.00521
	(A1 * A3 * !B1 * Y)	0.00521	0.00525	0.00520
	(A1 * !A3 * B1 * !Y)	-0.00522	-0.00527	-0.00522
	(A1 * !A3 * B1 * !Y)	0.00392	0.00397	0.00396
	(A1 * !A3 * !B1 * Y)	-0.00521	-0.00521	-0.00521
	(A1 * !A3 * !B1 * Y)	0.00729	0.00729	0.00730
	(!A1 * A3 * B1 * !Y)	-0.00521	-0.00526	-0.00521
	(!A1 * A3 * B1 * !Y)	0.00733	0.00744	0.00740
	(!A1 * A3 * !B1 * Y)	-0.00520	-0.00524	-0.00521
	(!A1 * A3 * !B1 * Y)	0.00733	0.00741	0.00735
	(!A1 * !A3 * !B1 * Y)	-0.00460	-0.00496	-0.00494
	(!A1 * !A3 * !B1 * Y)	0.00773	0.00761	0.00753

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00166	0.00167	0.00166
	(A2 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(A2 * !B1 * Y)	0.00131	0.00130	0.00129
	(A2 * !B1 * Y)	-0.00199	-0.00203	-0.00202
	(A1 * !A2 * B1 * !Y)	0.00166	0.00167	0.00166
	(A1 * !A2 * B1 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * !A2 * !B1 * Y)	0.00128	0.00130	0.00129
	(A1 * !A2 * !B1 * Y)	-0.00182	-0.00193	-0.00192
	(!A1 * !A2 * !B1 * Y)	0.00121	0.00122	0.00122
	(!A1 * !A2 * !B1 * Y)	-0.00204	-0.00205	-0.00204

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00312	0.00313	0.00312
	(A2 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(A2 * !B1 * Y)	0.00261	0.00261	0.00259
	(A2 * !B1 * Y)	-0.00375	-0.00384	-0.00381
	(A1 * !A2 * B1 * !Y)	0.00311	0.00314	0.00312
	(A1 * !A2 * B1 * !Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * Y)	0.00258	0.00261	0.00259
	(A1 * !A2 * !B1 * Y)	-0.00344	-0.00363	-0.00362
	(!A1 * !A2 * !B1 * Y)	0.00245	0.00246	0.00245
	(!A1 * !A2 * !B1 * Y)	-0.00389	-0.00389	-0.00387
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00613	0.00613	0.00609
	(A2 * B1 * !Y)	-0.00334	-0.00332	-0.00330
	(A2 * !B1 * Y)	0.00513	0.00510	0.00508
	(A2 * !B1 * Y)	-0.00742	-0.00758	-0.00755
	(A1 * !A2 * B1 * !Y)	0.00606	0.00617	0.00609
	(A1 * !A2 * B1 * !Y)	-0.00326	-0.00332	-0.00327
	(A1 * !A2 * !B1 * Y)	0.00508	0.00513	0.00508
	(A1 * !A2 * !B1 * Y)	-0.00678	-0.00713	-0.00708
	(!A1 * !A2 * !B1 * Y)	0.00482	0.00482	0.00480
	(!A1 * !A2 * !B1 * Y)	-0.00773	-0.00772	-0.00770

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00159	-0.00160	-0.00164
	(A2 * B1 * !Y)	0.00090	0.00090	0.00086
	(A2 * !B1 * Y)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * Y)	0.00201	0.00203	0.00202
	(A1 * !A2 * B1 * !Y)	-0.00150	-0.00151	-0.00162
	(A1 * !A2 * B1 * !Y)	0.00094	0.00094	0.00086
	(A1 * !A2 * !B1 * Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * Y)	0.00193	0.00193	0.00192
	(!A1 * !A2 * !B1 * Y)	-0.00114	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * Y)	0.00209	0.00208	0.00206
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00295	-0.00298	-0.00307
	(A2 * B1 * !Y)	0.00179	0.00181	0.00172
	(A2 * !B1 * Y)	-0.00258	-0.00259	-0.00257
	(A2 * !B1 * Y)	0.00381	0.00384	0.00381
	(A1 * !A2 * B1 * !Y)	-0.00270	-0.00274	-0.00302
	(A1 * !A2 * B1 * !Y)	0.00193	0.00194	0.00173
	(A1 * !A2 * !B1 * Y)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * !B1 * Y)	0.00361	0.00363	0.00362
	(!A1 * !A2 * !B1 * Y)	-0.00228	-0.00246	-0.00245
	(!A1 * !A2 * !B1 * Y)	0.00398	0.00394	0.00390
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00579	-0.00584	-0.00603
	(A2 * B1 * !Y)	0.00356	0.00358	0.00340
	(A2 * !B1 * Y)	-0.00505	-0.00508	-0.00505
	(A2 * !B1 * Y)	0.00754	0.00758	0.00755
	(A1 * !A2 * B1 * !Y)	-0.00532	-0.00539	-0.00593
	(A1 * !A2 * B1 * !Y)	0.00381	0.00382	0.00341
	(A1 * !A2 * !B1 * Y)	-0.00505	-0.00508	-0.00505
	(A1 * !A2 * !B1 * Y)	0.00707	0.00713	0.00708
	(!A1 * !A2 * !B1 * Y)	-0.00450	-0.00482	-0.00480
	(!A1 * !A2 * !B1 * Y)	0.00790	0.00783	0.00774

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)	0.00056	0.00056	0.00050
	(!A1 * !A2 * !A3 * Y)	-0.00204	-0.00205	-0.00213
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00111	0.00110	0.00098
	(!A1 * !A2 * !A3 * Y)	-0.00401	-0.00402	-0.00426
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00198	0.00199	0.00175
	(!A1 * !A2 * !A3 * Y)	-0.00449	-0.00454	-0.00494

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)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * Y)	0.00215	0.00217	0.00216
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00093	-0.00092	-0.00092
	(!A1 * !A2 * !A3 * Y)	0.00433	0.00434	0.00431
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00167	-0.00166	-0.00164
	(!A1 * !A2 * !A3 * Y)	0.00503	0.00504	0.00501

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00273	0.00268	0.00268	0.00245	0.79377
sky130_fd_sc_hs__o31a_2	0.00290	0.00282	0.00284	0.00296	1.44671
sky130_fd_sc_hs__o31a_4	0.00499	0.00530	0.00525	0.00522	3.09263

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	2.41217	4.94312
sky130_fd_sc_hs__o31a_2	0.00000	2.35997	3.89643
sky130_fd_sc_hs__o31a_4	0.00000	4.67304	7.76790

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)	0.15319	0.86145	7.53700
	A2->X (RR)	0.14674	0.84070	7.42215
	A3->X (RR)	0.12717	0.80317	7.31635
	B1->X (RR)	0.13888	0.86900	7.71293
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.15701	0.77129	7.39984
	A2->X (RR)	0.15161	0.75501	7.30616
	A3->X (RR)	0.13302	0.72329	7.20882
	B1->X (RR)	0.14417	0.78916	7.66008
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.16598	0.70379	7.72674
	A2->X (RR)	0.15814	0.68197	7.61141
	A3->X (RR)	0.13701	0.64776	7.52187
	B1->X (RR)	0.15169	0.72557	7.96634

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.35571	0.85728	4.60812
	A2->X (FF)	0.33239	0.86344	4.80117
	A3->X (FF)	0.28321	0.84127	4.78208
	B1->X (FF)	0.12463	0.66615	4.38155
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.45329	0.94146	4.71922
	A2->X (FF)	0.42938	0.95050	4.94675
	A3->X (FF)	0.37957	0.93150	4.95750
	B1->X (FF)	0.12904	0.63016	4.20261
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.44556	0.90231	4.99386
	A2->X (FF)	0.42224	0.90487	5.19161
	A3->X (FF)	0.35804	0.86990	5.17603
	B1->X (FF)	0.11983	0.58011	4.47830

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01181	0.01179	0.02131
	A1	0.00523	0.00522	0.01476
	A2	0.01005	0.01017	0.01945
	A2	0.00444	0.00457	0.01390
	A3	0.00818	0.00838	0.01940
	A3	0.00344	0.00364	0.01474
	B1	0.01057	0.01098	0.02748
	B1	0.00346	0.00423	0.02308
sky130_fd_sc_hs__o31a_2	A1	0.01486	0.01504	0.02381
	A1	0.00789	0.00808	0.01696
	A2	0.01302	0.01338	0.02191
	A2	0.00706	0.00743	0.01626
	A3	0.01116	0.01161	0.02142
	A3	0.00601	0.00648	0.01648
	B1	0.01362	0.01418	0.03139
	B1	0.00686	0.00765	0.02618
sky130_fd_sc_hs__o31a_4	A1	0.02866	0.02920	0.05041
	A1	0.01582	0.01638	0.03829
	A2	0.02535	0.02600	0.04643
	A2	0.01392	0.01456	0.03567
	A3	0.02049	0.02137	0.04541
	A3	0.01118	0.01211	0.03623
	B1	0.02641	0.02761	0.05876
	B1	0.01357	0.01511	0.04928

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00408	0.00393	0.01456
	A1	0.01060	0.01047	0.02103
	A2	0.00406	0.00402	0.01487
	A2	0.00962	0.00970	0.02032
	A3	0.00407	0.00468	0.01785
	A3	0.00875	0.00938	0.02246
	B1	0.00296	0.00420	0.02261
	B1	0.00813	0.00929	0.02650
sky130_fd_sc_hs__o31a_2	A1	0.00710	0.00635	0.01732
	A1	0.01401	0.01331	0.02378
	A2	0.00713	0.00653	0.01708
	A2	0.01301	0.01257	0.02293
	A3	0.00711	0.00704	0.02014
	A3	0.01217	0.01216	0.02512
	B1	0.00498	0.00646	0.02568
	B1	0.01080	0.01214	0.03025
sky130_fd_sc_hs__o31a_4	A1	0.01435	0.01336	0.03648
	A1	0.02710	0.02609	0.04737
	A2	0.01389	0.01313	0.03584
	A2	0.02522	0.02452	0.04544
	A3	0.01419	0.01419	0.04223
	A3	0.02336	0.02346	0.04955
	B1	0.00991	0.01267	0.04980
	B1	0.02067	0.02320	0.05838

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)**	0.00134	0.00131	0.00131
	(A2 * A3 * B1 * X)	-0.00150	-0.00156	-0.00157
	(A2 * !B1 * !X)	0.00112	0.00111	0.00111
	(A2 * !B1 * !X)	-0.00173	-0.00176	-0.00177
	(A2 * !A3 * B1 * X)	0.00156	0.00135	0.00133
	(A2 * !A3 * B1 * X)	-0.00131	-0.00153	-0.00155
	(!A2 * A3 * B1 * X)	0.00155	0.00137	0.00133
	(!A2 * A3 * B1 * X)	-0.00124	-0.00150	-0.00154
	(!A2 * A3 * !B1 * !X)	0.00111	0.00113	0.00111
	(!A2 * A3 * !B1 * !X)	-0.00162	-0.00173	-0.00172
	(!A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A2 * !A3 * !B1 * !X)	-0.00179	-0.00179	-0.00178
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00148	0.00145	0.00145
	(A2 * A3 * B1 * X)	-0.00157	-0.00163	-0.00164
	(A2 * !B1 * !X)	0.00135	0.00135	0.00135
	(A2 * !B1 * !X)	-0.00170	-0.00173	-0.00174
	(A2 * !A3 * B1 * X)	0.00170	0.00149	0.00147
	(A2 * !A3 * B1 * X)	-0.00137	-0.00160	-0.00162
	(!A2 * A3 * B1 * X)	0.00169	0.00151	0.00147
	(!A2 * A3 * B1 * X)	-0.00131	-0.00157	-0.00161
	(!A2 * A3 * !B1 * !X)	0.00135	0.00134	0.00135
	(!A2 * A3 * !B1 * !X)	-0.00159	-0.00169	-0.00170
	(!A2 * !A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(!A2 * !A3 * !B1 * !X)	-0.00176	-0.00176	-0.00175

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00231	0.00223	0.00221
	(A2 * A3 * B1 * X)	-0.00311	-0.00327	-0.00328
	(A2 * !B1 * !X)	0.00221	0.00221	0.00220
	(A2 * !B1 * !X)	-0.00321	-0.00329	-0.00330
	(A2 * !A3 * B1 * X)	0.00281	0.00233	0.00226
	(A2 * !A3 * B1 * X)	-0.00267	-0.00318	-0.00323
	(!A2 * A3 * B1 * X)	0.00277	0.00231	0.00224
	(!A2 * A3 * B1 * X)	-0.00256	-0.00313	-0.00323
	(!A2 * A3 * !B1 * !X)	0.00221	0.00221	0.00220
	(!A2 * A3 * !B1 * !X)	-0.00298	-0.00320	-0.00320
	(!A2 * !A3 * !B1 * !X)	0.00208	0.00209	0.00208
	(!A2 * !A3 * !B1 * !X)	-0.00335	-0.00336	-0.00334

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)**	-0.00125	-0.00126	-0.00125
	(A2 * A3 * B1 * X)	0.00162	0.00163	0.00162
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00177	0.00179	0.00178
	(A2 * !A3 * B1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * !A3 * B1 * X)	0.00164	0.00164	0.00165
	(!A2 * A3 * B1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * A3 * B1 * X)	0.00157	0.00160	0.00160
	(!A2 * A3 * !B1 * !X)	-0.00109	-0.00109	-0.00109
	(!A2 * A3 * !B1 * !X)	0.00171	0.00173	0.00172
	(!A2 * !A3 * !B1 * !X)	-0.00097	-0.00104	-0.00105
	(!A2 * !A3 * !B1 * !X)	0.00184	0.00183	0.00181

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00141	-0.00141	-0.00141
	(A2 * A3 * B1 * X)	0.00167	0.00169	0.00167
	(A2 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(A2 * !B1 * !X)	0.00175	0.00177	0.00176
	(A2 * !A3 * B1 * X)	-0.00139	-0.00138	-0.00138
	(A2 * !A3 * B1 * X)	0.00169	0.00169	0.00170
	(!A2 * A3 * B1 * X)	-0.00139	-0.00140	-0.00138
	(!A2 * A3 * B1 * X)	0.00163	0.00165	0.00165
	(!A2 * A3 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(!A2 * A3 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A2 * !A3 * !B1 * !X)	-0.00118	-0.00126	-0.00127
	(!A2 * !A3 * !B1 * !X)	0.00182	0.00181	0.00179
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00211	-0.00212	-0.00212
	(A2 * A3 * B1 * X)	0.00333	0.00335	0.00334
	(A2 * !B1 * !X)	-0.00212	-0.00213	-0.00213
	(A2 * !B1 * !X)	0.00332	0.00335	0.00333
	(A2 * !A3 * B1 * X)	-0.00209	-0.00211	-0.00209
	(A2 * !A3 * B1 * X)	0.00334	0.00338	0.00337
	(!A2 * A3 * B1 * X)	-0.00208	-0.00209	-0.00206
	(!A2 * A3 * B1 * X)	0.00326	0.00330	0.00329
	(!A2 * A3 * !B1 * !X)	-0.00212	-0.00213	-0.00213
	(!A2 * A3 * !B1 * !X)	0.00319	0.00322	0.00320
	(!A2 * !A3 * !B1 * !X)	-0.00188	-0.00202	-0.00205
	(!A2 * !A3 * !B1 * !X)	0.00348	0.00345	0.00342

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)**	0.00134	0.00136	0.00128
	(A1 * A3 * B1 * X)	-0.00101	-0.00101	-0.00105
	(A1 * A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * A3 * !B1 * !X)	-0.00114	-0.00116	-0.00115
	(A1 * !A3 * B1 * X)	0.00126	0.00126	0.00124
	(A1 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00078
	(A1 * !A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A3 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(!A1 * A3 * B1 * X)	0.00165	0.00130	0.00124
	(!A1 * A3 * B1 * X)	-0.00113	-0.00149	-0.00153
	(!A1 * A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A1 * A3 * !B1 * !X)	-0.00161	-0.00163	-0.00163
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00109
	(!A1 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00147	0.00149	0.00141
	(A1 * A3 * B1 * X)	-0.00105	-0.00105	-0.00109
	(A1 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(A1 * A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A3 * B1 * X)	0.00140	0.00140	0.00137
	(A1 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00081
	(A1 * !A3 * !B1 * !X)	0.00131	0.00131	0.00130
	(A1 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00164
	(!A1 * A3 * B1 * X)	0.00179	0.00143	0.00137
	(!A1 * A3 * B1 * X)	-0.00115	-0.00152	-0.00157
	(!A1 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A3 * !B1 * !X)	-0.00162	-0.00164	-0.00164
	(!A1 * !A3 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00289	0.00293	0.00275
	(A1 * A3 * B1 * X)	-0.00217	-0.00215	-0.00224
	(A1 * A3 * !B1 * !X)	0.00259	0.00260	0.00260
	(A1 * A3 * !B1 * !X)	-0.00234	-0.00236	-0.00234
	(A1 * !A3 * B1 * X)	0.00272	0.00271	0.00266
	(A1 * !A3 * B1 * X)	-0.00163	-0.00163	-0.00168
	(A1 * !A3 * !B1 * !X)	0.00259	0.00260	0.00259
	(A1 * !A3 * !B1 * !X)	-0.00325	-0.00328	-0.00329
	(!A1 * A3 * B1 * X)	0.00350	0.00278	0.00264
	(!A1 * A3 * B1 * X)	-0.00235	-0.00312	-0.00323
	(!A1 * A3 * !B1 * !X)	0.00259	0.00261	0.00259
	(!A1 * A3 * !B1 * !X)	-0.00321	-0.00326	-0.00328
	(!A1 * !A3 * !B1 * !X)	0.00248	0.00249	0.00247
	(!A1 * !A3 * !B1 * !X)	-0.00332	-0.00333	-0.00331

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)**	-0.00117	-0.00117	-0.00116
	(A1 * A3 * B1 * X)	0.00108	0.00109	0.00108
	(A1 * A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * A3 * !B1 * !X)	0.00114	0.00116	0.00115
	(A1 * !A3 * B1 * X)	-0.00115	-0.00115	-0.00114
	(A1 * !A3 * B1 * X)	0.00087	0.00087	0.00087
	(A1 * !A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A1 * A3 * B1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * A3 * B1 * X)	0.00162	0.00164	0.00163
	(!A1 * A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !A3 * !B1 * !X)	-0.00099	-0.00107	-0.00108
	(!A1 * !A3 * !B1 * !X)	0.00170	0.00168	0.00166
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00131	-0.00132	-0.00131
	(A1 * A3 * B1 * X)	0.00110	0.00111	0.00110
	(A1 * A3 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * A3 * !B1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A3 * B1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * !A3 * B1 * X)	0.00089	0.00089	0.00089
	(A1 * !A3 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(A1 * !A3 * !B1 * !X)	0.00165	0.00166	0.00165
	(!A1 * A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A3 * B1 * X)	0.00164	0.00165	0.00165
	(!A1 * A3 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00113	-0.00121	-0.00122
	(!A1 * !A3 * !B1 * !X)	0.00172	0.00170	0.00169

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00253	-0.00254	-0.00253
	(A1 * A3 * B1 * X)	0.00228	0.00229	0.00228
	(A1 * A3 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(A1 * A3 * !B1 * !X)	0.00234	0.00236	0.00234
	(A1 * !A3 * B1 * X)	-0.00250	-0.00250	-0.00247
	(A1 * !A3 * B1 * X)	0.00184	0.00185	0.00185
	(A1 * !A3 * !B1 * !X)	-0.00252	-0.00254	-0.00252
	(A1 * !A3 * !B1 * !X)	0.00330	0.00332	0.00331
	(!A1 * A3 * B1 * X)	-0.00248	-0.00249	-0.00247
	(!A1 * A3 * B1 * X)	0.00337	0.00338	0.00338
	(!A1 * A3 * !B1 * !X)	-0.00252	-0.00253	-0.00252
	(!A1 * A3 * !B1 * !X)	0.00328	0.00329	0.00329
	(!A1 * !A3 * !B1 * !X)	-0.00227	-0.00242	-0.00245
	(!A1 * !A3 * !B1 * !X)	0.00345	0.00341	0.00339

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00133	0.00132	0.00132
	(A2 * B1 * X)	-0.00074	-0.00073	-0.00073
	(A2 * !B1 * !X)	0.00115	0.00114	0.00114
	(A2 * !B1 * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !A2 * B1 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * !B1 * !X)	0.00115	0.00114	0.00114
	(A1 * !A2 * !B1 * !X)	-0.00150	-0.00158	-0.00157
	(!A1 * !A2 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !B1 * !X)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00153	0.00153	0.00153
	(A2 * B1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * !X)	0.00133	0.00135	0.00134
	(A2 * !B1 * !X)	-0.00162	-0.00166	-0.00167
	(A1 * !A2 * B1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * B1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A2 * !B1 * !X)	0.00133	0.00134	0.00134
	(A1 * !A2 * !B1 * !X)	-0.00150	-0.00161	-0.00160
	(!A1 * !A2 * !B1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !A2 * !B1 * !X)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00260	0.00262	0.00261
	(A2 * B1 * X)	-0.00162	-0.00164	-0.00163
	(A2 * !B1 * !X)	0.00234	0.00237	0.00235
	(A2 * !B1 * !X)	-0.00330	-0.00341	-0.00342
	(A1 * !A2 * B1 * X)	0.00260	0.00262	0.00261
	(A1 * !A2 * B1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !X)	0.00234	0.00236	0.00235
	(A1 * !A2 * !B1 * !X)	-0.00306	-0.00327	-0.00325
	(!A1 * !A2 * !B1 * !X)	0.00220	0.00220	0.00220
	(!A1 * !A2 * !B1 * !X)	-0.00347	-0.00346	-0.00346

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00121	-0.00121	-0.00126
	(A2 * B1 * X)	0.00084	0.00084	0.00080
	(A2 * !B1 * !X)	-0.00111	-0.00112	-0.00111
	(A2 * !B1 * !X)	0.00165	0.00166	0.00166
	(A1 * !A2 * B1 * X)	-0.00113	-0.00113	-0.00124
	(A1 * !A2 * B1 * X)	0.00088	0.00088	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00156	0.00158	0.00157
	(!A1 * !A2 * !B1 * !X)	-0.00098	-0.00106	-0.00107
	(!A1 * !A2 * !B1 * !X)	0.00172	0.00170	0.00169
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00143	-0.00144	-0.00148
	(A2 * B1 * X)	0.00083	0.00083	0.00079
	(A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !X)	0.00168	0.00169	0.00168
	(A1 * !A2 * B1 * X)	-0.00135	-0.00136	-0.00147
	(A1 * !A2 * B1 * X)	0.00087	0.00087	0.00079
	(A1 * !A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !A2 * !B1 * !X)	-0.00116	-0.00125	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00174	0.00173	0.00171
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00237	-0.00238	-0.00251
	(A2 * B1 * X)	0.00185	0.00185	0.00175
	(A2 * !B1 * !X)	-0.00227	-0.00229	-0.00228
	(A2 * !B1 * !X)	0.00342	0.00343	0.00343
	(A1 * !A2 * B1 * X)	-0.00219	-0.00220	-0.00247
	(A1 * !A2 * B1 * X)	0.00195	0.00194	0.00175
	(A1 * !A2 * !B1 * !X)	-0.00227	-0.00229	-0.00228
	(A1 * !A2 * !B1 * !X)	0.00325	0.00327	0.00325
	(!A1 * !A2 * !B1 * !X)	-0.00198	-0.00216	-0.00219
	(!A1 * !A2 * !B1 * !X)	0.00362	0.00358	0.00354

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)	0.00048	0.00048	0.00042
	(!A1 * !A2 * !A3 * !X)	-0.00157	-0.00158	-0.00167
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00062	0.00062	0.00055
	(!A1 * !A2 * !A3 * !X)	-0.00196	-0.00197	-0.00207
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00093	0.00094	0.00081
	(!A1 * !A2 * !A3 * !X)	-0.00369	-0.00374	-0.00393

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)	-0.00038	-0.00039	-0.00038
	(!A1 * !A2 * !A3 * !X)	0.00169	0.00171	0.00170
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !A3 * !X)	0.00211	0.00213	0.00212
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00071	-0.00071	-0.00070
	(!A1 * !A2 * !A3 * !X)	0.00403	0.00405	0.00403

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00282	0.00308	0.00301	0.00297	0.00307	0.25717
sky130_fd_sc_hs__o32ai_2	0.00594	0.00558	0.00601	0.00571	0.00580	0.47120
sky130_fd_sc_hs__o32ai_4	0.01125	0.01128	0.01140	0.01165	0.01133	0.87741

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.79129	1.61982
sky130_fd_sc_hs__o32ai_2	0.00000	1.63861	3.18424
sky130_fd_sc_hs__o32ai_4	0.00000	3.14252	6.36838

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)	0.29476	1.26924	9.24029
	A2->Y (FR)	0.27535	1.27989	9.79266
	A3->Y (FR)	0.22146	1.24537	10.01900
	B1->Y (FR)	0.11541	0.87656	7.49342
	B2->Y (FR)	0.09350	0.89006	7.96186
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.30156	1.10656	9.05330
	A2->Y (FR)	0.27864	1.12167	9.72043
	A3->Y (FR)	0.21566	1.07439	9.94994
	B1->Y (FR)	0.11586	0.78741	7.58360
	B2->Y (FR)	0.08239	0.78775	8.03715
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.29889	0.96791	8.88962
	A2->Y (FR)	0.27662	0.98270	9.56763
	A3->Y (FR)	0.21227	0.94769	9.86752
	B1->Y (FR)	0.11064	0.67530	7.35765
	B2->Y (FR)	0.07887	0.68922	7.90512

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.09353	0.56806	4.46654
	A2->Y (RF)	0.09211	0.56369	4.50826
	A3->Y (RF)	0.07622	0.54209	4.47113
	B1->Y (RF)	0.07340	0.60383	5.13728
	B2->Y (RF)	0.05985	0.58057	5.08551
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.09457	0.51089	4.33329
	A2->Y (RF)	0.09379	0.51003	4.42710
	A3->Y (RF)	0.07461	0.48352	4.37296
	B1->Y (RF)	0.07333	0.54668	5.07384
	B2->Y (RF)	0.05701	0.52611	5.07735
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.09023	0.46742	4.45068
	A2->Y (RF)	0.08301	0.44303	4.36852
	A3->Y (RF)	0.06248	0.40876	4.27753
	B1->Y (RF)	0.09287	0.55497	5.40278
	B2->Y (RF)	0.07296	0.54139	5.54023

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00191	0.00176	0.00529
	A1	0.01038	0.01026	0.01361
	A2	0.00201	0.00188	0.00550
	A2	0.00951	0.00940	0.01285
	A3	0.00198	0.00218	0.00733
	A3	0.00837	0.00855	0.01348
	B1	0.00001	-0.00003	0.00433
	B1	0.00724	0.00709	0.01135
	B2	0.00000	0.00043	0.00631
	B2	0.00620	0.00657	0.01211
sky130_fd_sc_hs__o32ai_2	A1	0.00343	0.00309	0.01008
	A1	0.02115	0.02079	0.02757
	A2	0.00360	0.00331	0.01035
	A2	0.01878	0.01849	0.02526
	A3	0.00350	0.00378	0.01396
	A3	0.01683	0.01712	0.02690
	B1	-0.00033	-0.00035	0.00814
	B1	0.01434	0.01428	0.02223
	B2	-0.00053	0.00050	0.01183
	B2	0.01220	0.01316	0.02376

sky130_fd_sc_hs__o32ai_4	**A1**	0.00686	0.00620	0.02148
	A1	0.04168	0.04111	0.05599
	A2	0.00694	0.00642	0.02172
	A2	0.03746	0.03695	0.05169
	A3	0.00693	0.00772	0.02889
	A3	0.03319	0.03395	0.05442
	B1	-0.00078	-0.00082	0.01571
	B1	0.02896	0.02878	0.04404
	B2	-0.00097	0.00107	0.02179
	B2	0.02442	0.02627	0.04532

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01215	0.01202	0.01505
	A1	0.00347	0.00333	0.00640
	A2	0.01013	0.01006	0.01313
	A2	0.00238	0.00230	0.00527
	A3	0.00795	0.00798	0.01095
	A3	0.00131	0.00133	0.00425
	B1	0.01063	0.01069	0.01461
	B1	0.00350	0.00352	0.00733
	B2	0.00868	0.00885	0.01272
	B2	0.00260	0.00273	0.00635

sky130_fd_sc_hs__o32ai_2	**A1**	0.02543	0.02516	0.03133
	A1	0.00731	0.00702	0.01321
	A2	0.02126	0.02101	0.02709
	A2	0.00561	0.00535	0.01128
	A3	0.01656	0.01658	0.02265
	A3	0.00273	0.00276	0.00862
	B1	0.02203	0.02207	0.02969
	B1	0.00760	0.00757	0.01505
	B2	0.01757	0.01802	0.02530
	B2	0.00504	0.00540	0.01249
sky130_fd_sc_hs__o32ai_4	**A1**	0.04954	0.04894	0.06346
	A1	0.01395	0.01336	0.02749
	A2	0.04146	0.04100	0.05518
	A2	0.01004	0.00955	0.02333
	A3	0.03204	0.03216	0.04576
	A3	0.00486	0.00489	0.01862
	B1	0.04347	0.04338	0.05816
	B1	0.01428	0.01414	0.02865
	B2	0.03465	0.03531	0.04940
	B2	0.00515	0.00563	0.02061

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)**	0.00139	0.00137	0.00138
	(A2 * A3 * B2 * !Y)	-0.00176	-0.00181	-0.00181
	(A2 * A3 * B1 * !B2 * !Y)	0.00139	0.00138	0.00138
	(A2 * A3 * B1 * !B2 * !Y)	-0.00176	-0.00180	-0.00181
	(A2 * !B1 * !B2 * Y)	0.00139	0.00138	0.00138
	(A2 * !B1 * !B2 * Y)	-0.00177	-0.00180	-0.00181
	(A2 * !A3 * B2 * !Y)	0.00159	0.00141	0.00139
	(A2 * !A3 * B2 * !Y)	-0.00158	-0.00181	-0.00181
	(A2 * !A3 * B1 * !B2 * !Y)	0.00159	0.00141	0.00139
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00158	-0.00181	-0.00181
	(!A2 * A3 * B2 * !Y)	0.00154	0.00142	0.00138
	(!A2 * A3 * B2 * !Y)	-0.00152	-0.00177	-0.00177
	(!A2 * A3 * B1 * !B2 * !Y)	0.00155	0.00142	0.00139
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00152	-0.00176	-0.00177
	(!A2 * A3 * !B1 * !B2 * Y)	0.00138	0.00140	0.00138
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00164	-0.00176	-0.00175
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00131	0.00132	0.00131
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00288	0.00286	0.00285
	(A2 * A3 * B2 * !Y)	-0.00365	-0.00377	-0.00376
	(A2 * A3 * B1 * !B2 * !Y)	0.00289	0.00287	0.00285
	(A2 * A3 * B1 * !B2 * !Y)	-0.00365	-0.00377	-0.00377
	(A2 * !B1 * !B2 * Y)	0.00286	0.00286	0.00285
	(A2 * !B1 * !B2 * Y)	-0.00370	-0.00377	-0.00377
	(A2 * !A3 * B2 * !Y)	0.00331	0.00290	0.00287
	(A2 * !A3 * B2 * !Y)	-0.00326	-0.00374	-0.00377
	(A2 * !A3 * B1 * !B2 * !Y)	0.00332	0.00291	0.00288
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00325	-0.00373	-0.00376
	(!A2 * A3 * B2 * !Y)	0.00320	0.00291	0.00286
	(!A2 * A3 * B2 * !Y)	-0.00317	-0.00365	-0.00367
	(!A2 * A3 * B1 * !B2 * !Y)	0.00321	0.00292	0.00287
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00317	-0.00364	-0.00368
	(!A2 * A3 * !B1 * !B2 * Y)	0.00285	0.00286	0.00285
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00344	-0.00365	-0.00363
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00268	0.00269	0.00267
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00385	-0.00385	-0.00383

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00546	0.00540	0.00537
	(A2 * A3 * B2 * !Y)	-0.00716	-0.00738	-0.00734
	(A2 * A3 * B1 * !B2 * !Y)	0.00548	0.00541	0.00538
	(A2 * A3 * B1 * !B2 * !Y)	-0.00714	-0.00736	-0.00736
	(A2 * !B1 * !B2 * Y)	0.00541	0.00541	0.00537
	(A2 * !B1 * !B2 * Y)	-0.00723	-0.00738	-0.00735
	(A2 * !A3 * B2 * !Y)	0.00633	0.00548	0.00541
	(A2 * !A3 * B2 * !Y)	-0.00637	-0.00731	-0.00737
	(A2 * !A3 * B1 * !B2 * !Y)	0.00635	0.00549	0.00543
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00635	-0.00729	-0.00735
	(!A2 * A3 * B2 * !Y)	0.00609	0.00550	0.00539
	(!A2 * A3 * B2 * !Y)	-0.00616	-0.00713	-0.00716
	(!A2 * A3 * B1 * !B2 * !Y)	0.00611	0.00550	0.00541
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00614	-0.00710	-0.00717
	(!A2 * A3 * !B1 * !B2 * Y)	0.00538	0.00539	0.00537
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00669	-0.00712	-0.00708
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00508	0.00509	0.00506
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00753	-0.00752	-0.00748

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)**	-0.00137	-0.00137	-0.00137
	(A2 * A3 * B2 * !Y)	0.00181	0.00182	0.00181
	(A2 * A3 * B1 * !B2 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * A3 * B1 * !B2 * !Y)	0.00181	0.00182	0.00181
	(A2 * !B1 * !B2 * Y)	-0.00137	-0.00137	-0.00137
	(A2 * !B1 * !B2 * Y)	0.00181	0.00182	0.00181
	(A2 * !A3 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(A2 * !A3 * B2 * !Y)	0.00182	0.00183	0.00183
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * B1 * !B2 * !Y)	0.00183	0.00183	0.00183
	(!A2 * A3 * B2 * !Y)	-0.00136	-0.00137	-0.00135
	(!A2 * A3 * B2 * !Y)	0.00176	0.00179	0.00177
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00136	-0.00137	-0.00135
	(!A2 * A3 * B1 * !B2 * !Y)	0.00177	0.00180	0.00177
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00137
	(!A2 * A3 * !B1 * !B2 * Y)	0.00174	0.00176	0.00175
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00121	-0.00131	-0.00131
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00188	0.00187	0.00185

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00283	-0.00284	-0.00283
	(A2 * A3 * B2 * !Y)	0.00376	0.00378	0.00376
	(A2 * A3 * B1 * !B2 * !Y)	-0.00282	-0.00283	-0.00282
	(A2 * A3 * B1 * !B2 * !Y)	0.00377	0.00379	0.00377
	(A2 * !B1 * !B2 * Y)	-0.00283	-0.00284	-0.00283
	(A2 * !B1 * !B2 * Y)	0.00377	0.00378	0.00377
	(A2 * !A3 * B2 * !Y)	-0.00279	-0.00282	-0.00280
	(A2 * !A3 * B2 * !Y)	0.00378	0.00383	0.00381
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00279	-0.00281	-0.00280
	(A2 * !A3 * B1 * !B2 * !Y)	0.00379	0.00384	0.00382
	(!A2 * A3 * B2 * !Y)	-0.00281	-0.00281	-0.00280
	(!A2 * A3 * B2 * !Y)	0.00364	0.00365	0.00367
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00280	-0.00280	-0.00279
	(!A2 * A3 * B1 * !B2 * !Y)	0.00365	0.00365	0.00368
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00282	-0.00283	-0.00283
	(!A2 * A3 * !B1 * !B2 * Y)	0.00363	0.00365	0.00363
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00244	-0.00267	-0.00267
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00399	0.00392	0.00387

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00533	-0.00535	-0.00533
	(A2 * A3 * B2 * !Y)	0.00732	0.00738	0.00734
	(A2 * A3 * B1 * !B2 * !Y)	-0.00531	-0.00534	-0.00532
	(A2 * A3 * B1 * !B2 * !Y)	0.00733	0.00740	0.00736
	(A2 * !B1 * !B2 * Y)	-0.00532	-0.00535	-0.00533
	(A2 * !B1 * !B2 * Y)	0.00734	0.00740	0.00735
	(A2 * !A3 * B2 * !Y)	-0.00527	-0.00530	-0.00528
	(A2 * !A3 * B2 * !Y)	0.00737	0.00745	0.00743
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00525	-0.00529	-0.00527
	(A2 * !A3 * B1 * !B2 * !Y)	0.00739	0.00746	0.00744
	(!A2 * A3 * B2 * !Y)	-0.00530	-0.00531	-0.00527
	(!A2 * A3 * B2 * !Y)	0.00713	0.00718	0.00716
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00528	-0.00530	-0.00525
	(!A2 * A3 * B1 * !B2 * !Y)	0.00714	0.00719	0.00717
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00532	-0.00535	-0.00533
	(!A2 * A3 * !B1 * !B2 * Y)	0.00708	0.00712	0.00708
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00462	-0.00505	-0.00506
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00777	0.00765	0.00755

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)**	0.00148	0.00149	0.00140
	(A1 * A3 * B2 * !Y)	-0.00130	-0.00131	-0.00131
	(A1 * A3 * B1 * !B2 * !Y)	0.00148	0.00150	0.00140
	(A1 * A3 * B1 * !B2 * !Y)	-0.00129	-0.00130	-0.00131
	(A1 * A3 * !B1 * !B2 * Y)	0.00133	0.00134	0.00133
	(A1 * A3 * !B1 * !B2 * Y)	-0.00134	-0.00135	-0.00135
	(A1 * !A3 * B2 * !Y)	0.00138	0.00139	0.00136
	(A1 * !A3 * B2 * !Y)	-0.00099	-0.00099	-0.00101
	(A1 * !A3 * B1 * !B2 * !Y)	0.00139	0.00139	0.00136
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00098	-0.00099	-0.00100
	(A1 * !A3 * !B1 * !B2 * Y)	0.00134	0.00135	0.00133
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00187	-0.00188	-0.00188
	(!A1 * A3 * B2 * !Y)	0.00178	0.00141	0.00135
	(!A1 * A3 * B2 * !Y)	-0.00144	-0.00184	-0.00187
	(!A1 * A3 * B1 * !B2 * !Y)	0.00179	0.00141	0.00136
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00144	-0.00183	-0.00187
	(!A1 * A3 * !B1 * !B2 * Y)	0.00134	0.00135	0.00133
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00187	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00125	0.00127	0.00126
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00190	-0.00192	-0.00190

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00295	0.00298	0.00279
	(A1 * A3 * B2 * !Y)	-0.00248	-0.00246	-0.00248
	(A1 * A3 * B1 * !B2 * !Y)	0.00296	0.00299	0.00279
	(A1 * A3 * B1 * !B2 * !Y)	-0.00248	-0.00245	-0.00249
	(A1 * A3 * !B1 * !B2 * Y)	0.00263	0.00262	0.00261
	(A1 * A3 * !B1 * !B2 * Y)	-0.00261	-0.00262	-0.00260
	(A1 * !A3 * B2 * !Y)	0.00273	0.00274	0.00268
	(A1 * !A3 * B2 * !Y)	-0.00182	-0.00182	-0.00186
	(A1 * !A3 * B1 * !B2 * !Y)	0.00274	0.00275	0.00269
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00181	-0.00181	-0.00185
	(A1 * !A3 * !B1 * !B2 * Y)	0.00263	0.00264	0.00261
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00361	-0.00364	-0.00361
	(!A1 * A3 * B2 * !Y)	0.00356	0.00276	0.00265
	(!A1 * A3 * B2 * !Y)	-0.00274	-0.00356	-0.00363
	(!A1 * A3 * B1 * !B2 * !Y)	0.00357	0.00277	0.00266
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00273	-0.00355	-0.00363
	(!A1 * A3 * !B1 * !B2 * Y)	0.00263	0.00263	0.00261
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00364	-0.00368	-0.00365
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00245	0.00247	0.00246
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00370	-0.00371	-0.00370

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00597	0.00606	0.00567
	(A1 * A3 * B2 * !Y)	-0.00499	-0.00498	-0.00500
	(A1 * A3 * B1 * !B2 * !Y)	0.00599	0.00608	0.00568
	(A1 * A3 * B1 * !B2 * !Y)	-0.00500	-0.00496	-0.00501
	(A1 * A3 * !B1 * !B2 * Y)	0.00539	0.00542	0.00538
	(A1 * A3 * !B1 * !B2 * Y)	-0.00520	-0.00523	-0.00518
	(A1 * !A3 * B2 * !Y)	0.00557	0.00559	0.00548
	(A1 * !A3 * B2 * !Y)	-0.00371	-0.00374	-0.00380
	(A1 * !A3 * B1 * !B2 * !Y)	0.00559	0.00561	0.00549
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00371	-0.00373	-0.00378
	(A1 * !A3 * !B1 * !B2 * Y)	0.00542	0.00543	0.00538
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00731	-0.00735	-0.00731
	(!A1 * A3 * B2 * !Y)	0.00729	0.00566	0.00543
	(!A1 * A3 * B2 * !Y)	-0.00557	-0.00723	-0.00739
	(!A1 * A3 * B1 * !B2 * !Y)	0.00730	0.00567	0.00545
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00555	-0.00722	-0.00737
	(!A1 * A3 * !B1 * !B2 * Y)	0.00541	0.00542	0.00538
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00737	-0.00743	-0.00739
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00503	0.00509	0.00506
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00748	-0.00753	-0.00749

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)**	-0.00134	-0.00134	-0.00133
	(A1 * A3 * B2 * !Y)	0.00132	0.00131	0.00131
	(A1 * A3 * B1 * !B2 * !Y)	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B1 * !B2 * !Y)	0.00132	0.00132	0.00131
	(A1 * A3 * !B1 * !B2 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * A3 * !B1 * !B2 * Y)	0.00134	0.00135	0.00135
	(A1 * !A3 * B2 * !Y)	-0.00133	-0.00133	-0.00132
	(A1 * !A3 * B2 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00133	-0.00133	-0.00131
	(A1 * !A3 * B1 * !B2 * !Y)	0.00105	0.00105	0.00106
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A3 * !B1 * !B2 * Y)	0.00188	0.00188	0.00188
	(!A1 * A3 * B2 * !Y)	-0.00132	-0.00133	-0.00132
	(!A1 * A3 * B2 * !Y)	0.00189	0.00190	0.00190
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00132	-0.00132	-0.00132
	(!A1 * A3 * B1 * !B2 * !Y)	0.00189	0.00190	0.00190
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00132	-0.00133	-0.00132
	(!A1 * A3 * !B1 * !B2 * Y)	0.00188	0.00189	0.00188
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00114	-0.00125	-0.00126
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00197	0.00194	0.00192

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00264	-0.00266	-0.00265
	(A1 * A3 * B2 * !Y)	0.00248	0.00250	0.00248
	(A1 * A3 * B1 * !B2 * !Y)	-0.00264	-0.00266	-0.00264
	(A1 * A3 * B1 * !B2 * !Y)	0.00248	0.00251	0.00249
	(A1 * A3 * !B1 * !B2 * Y)	-0.00259	-0.00260	-0.00258
	(A1 * A3 * !B1 * !B2 * Y)	0.00261	0.00262	0.00260
	(A1 * !A3 * B2 * !Y)	-0.00260	-0.00260	-0.00257
	(A1 * !A3 * B2 * !Y)	0.00194	0.00194	0.00196
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00259	-0.00259	-0.00256
	(A1 * !A3 * B1 * !B2 * !Y)	0.00195	0.00195	0.00197
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00258	-0.00260	-0.00258
	(A1 * !A3 * !B1 * !B2 * Y)	0.00361	0.00364	0.00361
	(!A1 * A3 * B2 * !Y)	-0.00259	-0.00260	-0.00258
	(!A1 * A3 * B2 * !Y)	0.00364	0.00367	0.00367
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00258	-0.00260	-0.00257
	(!A1 * A3 * B1 * !B2 * !Y)	0.00364	0.00368	0.00368
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00258	-0.00260	-0.00258
	(!A1 * A3 * !B1 * !B2 * Y)	0.00365	0.00368	0.00365
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00223	-0.00246	-0.00246
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00383	0.00377	0.00373

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00540	-0.00543	-0.00541
	(A1 * A3 * B2 * !Y)	0.00499	0.00503	0.00500
	(A1 * A3 * B1 * !B2 * !Y)	-0.00538	-0.00542	-0.00539
	(A1 * A3 * B1 * !B2 * !Y)	0.00500	0.00504	0.00501
	(A1 * A3 * !B1 * !B2 * Y)	-0.00533	-0.00536	-0.00533
	(A1 * A3 * !B1 * !B2 * Y)	0.00520	0.00523	0.00518
	(A1 * !A3 * B2 * !Y)	-0.00532	-0.00532	-0.00528
	(A1 * !A3 * B2 * !Y)	0.00396	0.00395	0.00400
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00531	-0.00531	-0.00527
	(A1 * !A3 * B1 * !B2 * !Y)	0.00398	0.00397	0.00401
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00532	-0.00535	-0.00533
	(A1 * !A3 * !B1 * !B2 * Y)	0.00731	0.00735	0.00731
	(!A1 * A3 * B2 * !Y)	-0.00532	-0.00535	-0.00529
	(!A1 * A3 * B2 * !Y)	0.00741	0.00749	0.00746
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00530	-0.00533	-0.00528
	(!A1 * A3 * B1 * !B2 * !Y)	0.00743	0.00750	0.00748
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00531	-0.00535	-0.00533
	(!A1 * A3 * !B1 * !B2 * Y)	0.00737	0.00743	0.00739
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00458	-0.00505	-0.00506
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00777	0.00764	0.00756

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00145	0.00145	0.00145
	(A2 * B2 * !Y)	-0.00085	-0.00085	-0.00084
	(A2 * B1 * !B2 * !Y)	0.00146	0.00145	0.00145
	(A2 * B1 * !B2 * !Y)	-0.00085	-0.00084	-0.00084
	(A2 * !B1 * !B2 * Y)	0.00134	0.00134	0.00133
	(A2 * !B1 * !B2 * Y)	-0.00175	-0.00179	-0.00179
	(A1 * !A2 * B2 * !Y)	0.00145	0.00145	0.00145
	(A1 * !A2 * B2 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * B1 * !B2 * !Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !B2 * Y)	0.00134	0.00133	0.00133
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00161	-0.00169	-0.00168
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00124	0.00126	0.00125
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00181	-0.00182	-0.00181
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00317	0.00318	0.00317
	(A2 * B2 * !Y)	-0.00168	-0.00168	-0.00167
	(A2 * B1 * !B2 * !Y)	0.00318	0.00320	0.00318
	(A2 * B1 * !B2 * !Y)	-0.00167	-0.00167	-0.00166
	(A2 * !B1 * !B2 * Y)	0.00258	0.00262	0.00260
	(A2 * !B1 * !B2 * Y)	-0.00375	-0.00388	-0.00387
	(A1 * !A2 * B2 * !Y)	0.00317	0.00319	0.00317
	(A1 * !A2 * B2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * B1 * !B2 * !Y)	0.00318	0.00320	0.00318
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * !B1 * !B2 * Y)	0.00259	0.00261	0.00259
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00348	-0.00364	-0.00362
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00245	0.00247	0.00246
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00393	-0.00395	-0.00393

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00600	0.00604	0.00602
	(A2 * B2 * !Y)	-0.00331	-0.00333	-0.00331
	(A2 * B1 * !B2 * !Y)	0.00602	0.00606	0.00603
	(A2 * B1 * !B2 * !Y)	-0.00329	-0.00332	-0.00329
	(A2 * !B1 * !B2 * Y)	0.00511	0.00512	0.00507
	(A2 * !B1 * !B2 * Y)	-0.00734	-0.00755	-0.00751
	(A1 * !A2 * B2 * !Y)	0.00601	0.00605	0.00602
	(A1 * !A2 * B2 * !Y)	-0.00329	-0.00330	-0.00328
	(A1 * !A2 * B1 * !B2 * !Y)	0.00603	0.00607	0.00603
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00327	-0.00329	-0.00327
	(A1 * !A2 * !B1 * !B2 * Y)	0.00505	0.00508	0.00506
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00671	-0.00702	-0.00699
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00478	0.00480	0.00480
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00763	-0.00764	-0.00763

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00138	-0.00139	-0.00144
	(A2 * B2 * !Y)	0.00090	0.00090	0.00086
	(A2 * B1 * !B2 * !Y)	-0.00138	-0.00139	-0.00143
	(A2 * B1 * !B2 * !Y)	0.00091	0.00091	0.00087
	(A2 * !B1 * !B2 * Y)	-0.00131	-0.00132	-0.00131
	(A2 * !B1 * !B2 * Y)	0.00178	0.00179	0.00179
	(A1 * !A2 * B2 * !Y)	-0.00129	-0.00129	-0.00142
	(A1 * !A2 * B2 * !Y)	0.00095	0.00095	0.00086
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00129	-0.00129	-0.00142
	(A1 * !A2 * B1 * !B2 * !Y)	0.00096	0.00095	0.00087
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !B1 * !B2 * Y)	0.00167	0.00169	0.00168
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00114	-0.00125	-0.00125
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00187	0.00184	0.00183
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00298	-0.00302	-0.00315
	(A2 * B2 * !Y)	0.00182	0.00184	0.00172
	(A2 * B1 * !B2 * !Y)	-0.00298	-0.00302	-0.00314
	(A2 * B1 * !B2 * !Y)	0.00184	0.00185	0.00173
	(A2 * !B1 * !B2 * Y)	-0.00258	-0.00258	-0.00257
	(A2 * !B1 * !B2 * Y)	0.00387	0.00388	0.00387
	(A1 * !A2 * B2 * !Y)	-0.00277	-0.00281	-0.00310
	(A1 * !A2 * B2 * !Y)	0.00192	0.00194	0.00172
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00277	-0.00281	-0.00310
	(A1 * !A2 * B1 * !B2 * !Y)	0.00193	0.00194	0.00173
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00257	-0.00259	-0.00257
	(A1 * !A2 * !B1 * !B2 * Y)	0.00362	0.00364	0.00362
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00223	-0.00246	-0.00246
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00405	0.00401	0.00396

sky130_fd_sc_hs__o32ai_4	(A2 * B2 * !Y)	-0.00571	-0.00574	-0.00598
	(A2 * B2 * !Y)	0.00361	0.00361	0.00340
	(A2 * B1 * !B2 * !Y)	-0.00566	-0.00574	-0.00596
	(A2 * B1 * !B2 * !Y)	0.00358	0.00362	0.00341
	(A2 * !B1 * !B2 * Y)	-0.00501	-0.00505	-0.00502
	(A2 * !B1 * !B2 * Y)	0.00749	0.00755	0.00751
	(A1 * !A2 * B2 * !Y)	-0.00528	-0.00532	-0.00589
	(A1 * !A2 * B2 * !Y)	0.00381	0.00380	0.00339
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00527	-0.00532	-0.00588
	(A1 * !A2 * B1 * !B2 * !Y)	0.00382	0.00381	0.00340
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00501	-0.00504	-0.00502
	(A1 * !A2 * !B1 * !B2 * Y)	0.00697	0.00702	0.00699
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00437	-0.00479	-0.00480
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00786	0.00777	0.00769

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B2 * !Y)	0.00180	0.00152	0.00147
	(A3 * B2 * !Y)	-0.00147	-0.00174	-0.00179
	(A2 * !A3 * B2 * !Y)	0.00180	0.00152	0.00147
	(A2 * !A3 * B2 * !Y)	-0.00147	-0.00174	-0.00179
	(A1 * !A2 * !A3 * B2 * !Y)	0.00180	0.00152	0.00148
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00146	-0.00174	-0.00178
	(!A1 * !A2 * !A3 * B2 * Y)	0.00053	0.00052	0.00053
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00210	-0.00210	-0.00211
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00064	0.00064	0.00056
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00197	-0.00199	-0.00212

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00340	0.00276	0.00267
	(A3 * B2 * !Y)	-0.00283	-0.00348	-0.00356
	(A2 * !A3 * B2 * !Y)	0.00340	0.00276	0.00268
	(A2 * !A3 * B2 * !Y)	-0.00283	-0.00348	-0.00356
	(A1 * !A2 * !A3 * B2 * !Y)	0.00340	0.00277	0.00268
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00282	-0.00347	-0.00355
	(!A1 * !A2 * !A3 * B2 * Y)	0.00084	0.00084	0.00084
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00415	-0.00419	-0.00420
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00108	0.00107	0.00090
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00390	-0.00392	-0.00420
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00708	0.00580	0.00561
	(A3 * B2 * !Y)	-0.00569	-0.00699	-0.00715
	(A2 * !A3 * B2 * !Y)	0.00708	0.00580	0.00561
	(A2 * !A3 * B2 * !Y)	-0.00569	-0.00699	-0.00715
	(A1 * !A2 * !A3 * B2 * !Y)	0.00709	0.00581	0.00562
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00568	-0.00697	-0.00714
	(!A1 * !A2 * !A3 * B2 * Y)	0.00169	0.00169	0.00168
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00860	-0.00867	-0.00868
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00215	0.00213	0.00181
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00809	-0.00815	-0.00869

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00145	-0.00145	-0.00144
	(A3 * B2 * !Y)	0.00181	0.00182	0.00181
	(A2 * !A3 * B2 * !Y)	-0.00144	-0.00145	-0.00144
	(A2 * !A3 * B2 * !Y)	0.00180	0.00182	0.00181
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !A3 * B2 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00049	-0.00049	-0.00051
	(!A1 * !A2 * !A3 * B2 * Y)	0.00215	0.00216	0.00212
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00214	0.00215	0.00214
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00263	-0.00263	-0.00261
	(A3 * B2 * !Y)	0.00359	0.00361	0.00360
	(A2 * !A3 * B2 * !Y)	-0.00262	-0.00263	-0.00261
	(A2 * !A3 * B2 * !Y)	0.00358	0.00361	0.00360
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00262	-0.00263	-0.00260
	(A1 * !A2 * !A3 * B2 * !Y)	0.00360	0.00363	0.00361
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00079	-0.00079	-0.00081
	(!A1 * !A2 * !A3 * B2 * Y)	0.00424	0.00424	0.00421
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00084	-0.00084	-0.00083
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00427	0.00427	0.00426
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00550	-0.00553	-0.00548
	(A3 * B2 * !Y)	0.00719	0.00726	0.00723
	(A2 * !A3 * B2 * !Y)	-0.00550	-0.00553	-0.00548
	(A2 * !A3 * B2 * !Y)	0.00719	0.00728	0.00723
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00549	-0.00551	-0.00547
	(A1 * !A2 * !A3 * B2 * !Y)	0.00720	0.00727	0.00725
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00158	-0.00159	-0.00162
	(!A1 * !A2 * !A3 * B2 * Y)	0.00873	0.00877	0.00868
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00877	0.00883	0.00880

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00154	0.00155	0.00154
	(A3 * B1 * !Y)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * B1 * !Y)	0.00154	0.00155	0.00154
	(A2 * !A3 * B1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !A3 * B1 * !Y)	0.00154	0.00156	0.00155
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !A3 * B1 * Y)	0.00045	0.00045	0.00045
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00212	-0.00214	-0.00213
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00056	0.00056	0.00048
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00200	-0.00200	-0.00214
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00301	0.00304	0.00302
	(A3 * B1 * !Y)	-0.00169	-0.00170	-0.00169
	(A2 * !A3 * B1 * !Y)	0.00301	0.00304	0.00302
	(A2 * !A3 * B1 * !Y)	-0.00168	-0.00170	-0.00168
	(A1 * !A2 * !A3 * B1 * !Y)	0.00302	0.00307	0.00303
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00168	-0.00170	-0.00168
	(!A1 * !A2 * !A3 * B1 * Y)	0.00089	0.00089	0.00088
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00424	-0.00426	-0.00425
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00112	0.00111	0.00095
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00398	-0.00399	-0.00427

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00591	0.00597	0.00593
	(A3 * B1 * !Y)	-0.00334	-0.00337	-0.00334
	(A2 * !A3 * B1 * !Y)	0.00591	0.00600	0.00593
	(A2 * !A3 * B1 * !Y)	-0.00333	-0.00339	-0.00334
	(A1 * !A2 * !A3 * B1 * !Y)	0.00593	0.00601	0.00594
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00332	-0.00338	-0.00332
	(!A1 * !A2 * !A3 * B1 * Y)	0.00172	0.00171	0.00170
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00842	-0.00846	-0.00843
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00217	0.00215	0.00183
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00792	-0.00795	-0.00849

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00148	-0.00150	-0.00153
	(A3 * B1 * !Y)	0.00086	0.00087	0.00084
	(A2 * !A3 * B1 * !Y)	-0.00149	-0.00150	-0.00153
	(A2 * !A3 * B1 * !Y)	0.00088	0.00087	0.00084
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00149	-0.00149	-0.00153
	(A1 * !A2 * !A3 * B1 * !Y)	0.00088	0.00088	0.00084
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00042	-0.00043	-0.00043
	(!A1 * !A2 * !A3 * B1 * Y)	0.00216	0.00217	0.00213
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00216	0.00218	0.00217

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00284	-0.00287	-0.00300
	(A3 * B1 * !Y)	0.00184	0.00185	0.00173
	(A2 * !A3 * B1 * !Y)	-0.00283	-0.00287	-0.00299
	(A2 * !A3 * B1 * !Y)	0.00183	0.00185	0.00173
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00284	-0.00287	-0.00299
	(A1 * !A2 * !A3 * B1 * !Y)	0.00186	0.00186	0.00174
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00084	-0.00085	-0.00085
	(!A1 * !A2 * !A3 * B1 * Y)	0.00429	0.00432	0.00425
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00432	0.00435	0.00433
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00561	-0.00567	-0.00588
	(A3 * B1 * !Y)	0.00360	0.00363	0.00343
	(A2 * !A3 * B1 * !Y)	-0.00564	-0.00567	-0.00588
	(A2 * !A3 * B1 * !Y)	0.00365	0.00364	0.00343
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00562	-0.00561	-0.00587
	(A1 * !A2 * !A3 * B1 * !Y)	0.00365	0.00361	0.00344
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00161	-0.00163	-0.00163
	(!A1 * !A2 * !A3 * B1 * Y)	0.00853	0.00858	0.00843
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00171	-0.00170	-0.00168
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00862	0.00864	0.00860

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00276	0.00269	0.00268	0.00270	0.00274	0.80136
sky130_fd_sc_hs__o32a_2	0.00290	0.00286	0.00290	0.00310	0.00291	1.56712
sky130_fd_sc_hs__o32a_4	0.00499	0.00532	0.00499	0.00658	0.00526	3.08746

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	1.75860	3.68876
sky130_fd_sc_hs__o32a_2	0.00000	2.17329	3.90034
sky130_fd_sc_hs__o32a_4	0.00000	4.33186	7.79730

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)	0.18028	0.90960	7.69391
	A2->X (RR)	0.17262	0.89182	7.59652
	A3->X (RR)	0.15395	0.85892	7.50046
	B1->X (RR)	0.16263	0.91614	7.80017
	B2->X (RR)	0.14454	0.88042	7.69126
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.18225	0.80844	7.60946
	A2->X (RR)	0.17650	0.79560	7.52984
	A3->X (RR)	0.16017	0.76905	7.44673
	B1->X (RR)	0.16531	0.82485	7.74023
	B2->X (RR)	0.14852	0.79222	7.63402
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.20252	0.76135	7.84520
	A2->X (RR)	0.18993	0.73733	7.74138
	A3->X (RR)	0.16590	0.70004	7.63582
	B1->X (RR)	0.18784	0.78298	7.99180
	B2->X (RR)	0.16144	0.74138	7.86817

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.39657	0.95281	4.83649
	A2->X (FF)	0.37303	0.96102	5.05426
	A3->X (FF)	0.32302	0.94093	5.06761
	B1->X (FF)	0.20590	0.75682	4.55737
	B2->X (FF)	0.18241	0.76341	4.64567
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.49897	1.04436	5.15755
	A2->X (FF)	0.47608	1.05586	5.41828
	A3->X (FF)	0.42756	1.03844	5.46088
	B1->X (FF)	0.26645	0.80669	4.83615
	B2->X (FF)	0.24147	0.81944	4.94845
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.48680	0.99288	5.19370
	A2->X (FF)	0.46196	0.99336	5.41621
	A3->X (FF)	0.39203	0.95603	5.43424
	B1->X (FF)	0.24621	0.73583	4.84462
	B2->X (FF)	0.21576	0.73688	4.93832

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01430	0.01422	0.02318
	A1	0.00629	0.00622	0.01535
	A2	0.01252	0.01262	0.02135
	A2	0.00550	0.00562	0.01451
	A3	0.01065	0.01079	0.02105
	A3	0.00450	0.00466	0.01496
	B1	0.01295	0.01323	0.02590
	B1	0.00626	0.00654	0.01937
	B2	0.01105	0.01138	0.02597
	B2	0.00535	0.00581	0.02043
sky130_fd_sc_hs__o32a_2	A1	0.01739	0.01750	0.02661
	A1	0.00884	0.00897	0.01844
	A2	0.01561	0.01590	0.02477
	A2	0.00804	0.00835	0.01726
	A3	0.01373	0.01410	0.02439
	A3	0.00701	0.00739	0.01777
	B1	0.01595	0.01634	0.02929
	B1	0.00867	0.00907	0.02238
	B2	0.01394	0.01440	0.02913
	B2	0.00790	0.00837	0.02345

sky130_fd_sc_hs__o32a_4	**A1**	0.03428	0.03461	0.05442
	A1	0.01849	0.01884	0.03928
	A2	0.03057	0.03099	0.05009
	A2	0.01639	0.01684	0.03662
	A3	0.02558	0.02638	0.04893
	A3	0.01369	0.01455	0.03776
	B1	0.03223	0.03288	0.05694
	B1	0.01804	0.01873	0.04314
	B2	0.02762	0.02868	0.05576
	B2	0.01626	0.01737	0.04501

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00465	0.00438	0.01482
	A1	0.01259	0.01231	0.02273
	A2	0.00466	0.00459	0.01602
	A2	0.01159	0.01151	0.02197
	A3	0.00464	0.00508	0.01806
	A3	0.01069	0.01117	0.02409
	B1	0.00302	0.00336	0.01648
	B1	0.00976	0.01005	0.02252
	B2	0.00308	0.00403	0.01916
	B2	0.00881	0.00974	0.02486

sky130_fd_sc_hs__o32a_2	**A1**	0.00872	0.00759	0.01948
	A1	0.01717	0.01611	0.02677
	A2	0.00874	0.00782	0.01924
	A2	0.01622	0.01536	0.02586
	A3	0.00871	0.00822	0.02301
	A3	0.01534	0.01494	0.02810
	B1	0.00619	0.00621	0.01897
	B1	0.01348	0.01357	0.02625
	B2	0.00626	0.00697	0.02444
	B2	0.01234	0.01302	0.02859
sky130_fd_sc_hs__o32a_4	**A1**	0.01631	0.01446	0.03667
	A1	0.03199	0.03012	0.05087
	A2	0.01626	0.01464	0.03696
	A2	0.03029	0.02865	0.04909
	A3	0.01623	0.01532	0.04303
	A3	0.02795	0.02721	0.05296
	B1	0.01135	0.01145	0.03779
	B1	0.02558	0.02570	0.05053
	B2	0.01126	0.01279	0.04523
	B2	0.02274	0.02415	0.05431

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)**	0.00134	0.00131	0.00131
	(A2 * A3 * B2 * X)	-0.00154	-0.00159	-0.00161
	(A2 * A3 * B1 * !B2 * X)	0.00134	0.00131	0.00132
	(A2 * A3 * B1 * !B2 * X)	-0.00153	-0.00159	-0.00160
	(A2 * !B1 * !B2 * !X)	0.00113	0.00112	0.00113
	(A2 * !B1 * !B2 * !X)	-0.00175	-0.00177	-0.00179
	(A2 * !A3 * B2 * X)	0.00155	0.00134	0.00133
	(A2 * !A3 * B2 * X)	-0.00135	-0.00156	-0.00159
	(A2 * !A3 * B1 * !B2 * X)	0.00156	0.00135	0.00133
	(A2 * !A3 * B1 * !B2 * X)	-0.00134	-0.00156	-0.00158
	(!A2 * A3 * B2 * X)	0.00154	0.00137	0.00132
	(!A2 * A3 * B2 * X)	-0.00128	-0.00154	-0.00157
	(!A2 * A3 * B1 * !B2 * X)	0.00155	0.00137	0.00133
	(!A2 * A3 * B1 * !B2 * X)	-0.00127	-0.00153	-0.00157
	(!A2 * A3 * !B1 * !B2 * !X)	0.00113	0.00114	0.00113
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00164	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00151	0.00148	0.00148
	(A2 * A3 * B2 * X)	-0.00154	-0.00159	-0.00161
	(A2 * A3 * B1 * !B2 * X)	0.00151	0.00148	0.00148
	(A2 * A3 * B1 * !B2 * X)	-0.00153	-0.00159	-0.00160
	(A2 * !B1 * !B2 * !X)	0.00131	0.00130	0.00131
	(A2 * !B1 * !B2 * !X)	-0.00174	-0.00176	-0.00177
	(A2 * !A3 * B2 * X)	0.00172	0.00151	0.00150
	(A2 * !A3 * B2 * X)	-0.00135	-0.00156	-0.00159
	(A2 * !A3 * B1 * !B2 * X)	0.00173	0.00152	0.00150
	(A2 * !A3 * B1 * !B2 * X)	-0.00134	-0.00156	-0.00158
	(!A2 * A3 * B2 * X)	0.00171	0.00154	0.00149
	(!A2 * A3 * B2 * X)	-0.00128	-0.00154	-0.00157
	(!A2 * A3 * B1 * !B2 * X)	0.00171	0.00154	0.00150
	(!A2 * A3 * B1 * !B2 * X)	-0.00127	-0.00153	-0.00157
	(!A2 * A3 * !B1 * !B2 * !X)	0.00131	0.00133	0.00131
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00162	-0.00174	-0.00174
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00179	-0.00179	-0.00178

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00233	0.00227	0.00226
	(A2 * A3 * B2 * X)	-0.00310	-0.00323	-0.00325
	(A2 * A3 * B1 * !B2 * X)	0.00235	0.00229	0.00228
	(A2 * A3 * B1 * !B2 * X)	-0.00309	-0.00322	-0.00323
	(A2 * !B1 * !B2 * !X)	0.00230	0.00229	0.00229
	(A2 * !B1 * !B2 * !X)	-0.00314	-0.00322	-0.00323
	(A2 * !A3 * B2 * X)	0.00281	0.00235	0.00231
	(A2 * !A3 * B2 * X)	-0.00267	-0.00317	-0.00321
	(A2 * !A3 * B1 * !B2 * X)	0.00283	0.00236	0.00232
	(A2 * !A3 * B1 * !B2 * X)	-0.00266	-0.00315	-0.00320
	(!A2 * A3 * B2 * X)	0.00277	0.00236	0.00229
	(!A2 * A3 * B2 * X)	-0.00255	-0.00310	-0.00319
	(!A2 * A3 * B1 * !B2 * X)	0.00279	0.00238	0.00231
	(!A2 * A3 * B1 * !B2 * X)	-0.00254	-0.00309	-0.00318
	(!A2 * A3 * !B1 * !B2 * !X)	0.00229	0.00230	0.00228
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00291	-0.00314	-0.00315
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00217	0.00217	0.00217
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00327	-0.00327	-0.00326

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)**	-0.00129	-0.00130	-0.00129
	(A2 * A3 * B2 * X)	0.00161	0.00162	0.00161
	(A2 * A3 * B1 * !B2 * X)	-0.00129	-0.00130	-0.00129
	(A2 * A3 * B1 * !B2 * X)	0.00161	0.00163	0.00161
	(A2 * !B1 * !B2 * !X)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * !B2 * !X)	0.00179	0.00181	0.00180
	(A2 * !A3 * B2 * X)	-0.00127	-0.00127	-0.00127
	(A2 * !A3 * B2 * X)	0.00163	0.00163	0.00164
	(A2 * !A3 * B1 * !B2 * X)	-0.00127	-0.00128	-0.00127
	(A2 * !A3 * B1 * !B2 * X)	0.00164	0.00166	0.00164
	(!A2 * A3 * B2 * X)	-0.00128	-0.00128	-0.00127
	(!A2 * A3 * B2 * X)	0.00158	0.00159	0.00159
	(!A2 * A3 * B1 * !B2 * X)	-0.00127	-0.00128	-0.00126
	(!A2 * A3 * B1 * !B2 * X)	0.00159	0.00160	0.00159
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * !B1 * !B2 * !X)	0.00174	0.00175	0.00174
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00096	-0.00105	-0.00106
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00187	0.00185	0.00183

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00145	-0.00147	-0.00146
	(A2 * A3 * B2 * X)	0.00160	0.00163	0.00161
	(A2 * A3 * B1 * !B2 * X)	-0.00144	-0.00146	-0.00145
	(A2 * A3 * B1 * !B2 * X)	0.00160	0.00163	0.00162
	(A2 * !B1 * !B2 * !X)	-0.00126	-0.00127	-0.00127
	(A2 * !B1 * !B2 * !X)	0.00179	0.00181	0.00180
	(A2 * !A3 * B2 * X)	-0.00144	-0.00144	-0.00144
	(A2 * !A3 * B2 * X)	0.00163	0.00164	0.00164
	(A2 * !A3 * B1 * !B2 * X)	-0.00143	-0.00143	-0.00143
	(A2 * !A3 * B1 * !B2 * X)	0.00164	0.00164	0.00164
	(!A2 * A3 * B2 * X)	-0.00144	-0.00145	-0.00143
	(!A2 * A3 * B2 * X)	0.00158	0.00159	0.00159
	(!A2 * A3 * B1 * !B2 * X)	-0.00143	-0.00144	-0.00143
	(!A2 * A3 * B1 * !B2 * X)	0.00158	0.00160	0.00160
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * A3 * !B1 * !B2 * !X)	0.00174	0.00174	0.00174
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00121	-0.00123
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00187	0.00185	0.00183

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00222	-0.00224	-0.00223
	(A2 * A3 * B2 * X)	0.00323	0.00328	0.00325
	(A2 * A3 * B1 * !B2 * X)	-0.00221	-0.00223	-0.00221
	(A2 * A3 * B1 * !B2 * X)	0.00324	0.00329	0.00326
	(A2 * !B1 * !B2 * !X)	-0.00221	-0.00221	-0.00221
	(A2 * !B1 * !B2 * !X)	0.00327	0.00329	0.00327
	(A2 * !A3 * B2 * X)	-0.00221	-0.00221	-0.00220
	(A2 * !A3 * B2 * X)	0.00328	0.00329	0.00329
	(A2 * !A3 * B1 * !B2 * X)	-0.00219	-0.00220	-0.00219
	(A2 * !A3 * B1 * !B2 * X)	0.00329	0.00331	0.00331
	(!A2 * A3 * B2 * X)	-0.00219	-0.00220	-0.00217
	(!A2 * A3 * B2 * X)	0.00317	0.00321	0.00320
	(!A2 * A3 * B1 * !B2 * X)	-0.00217	-0.00219	-0.00216
	(!A2 * A3 * B1 * !B2 * X)	0.00318	0.00323	0.00322
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00220	-0.00221	-0.00221
	(!A2 * A3 * !B1 * !B2 * !X)	0.00313	0.00316	0.00315
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00191	-0.00210	-0.00213
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00344	0.00339	0.00335

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)**	0.00132	0.00134	0.00126
	(A1 * A3 * B2 * X)	-0.00105	-0.00105	-0.00107
	(A1 * A3 * B1 * !B2 * X)	0.00133	0.00134	0.00126
	(A1 * A3 * B1 * !B2 * X)	-0.00104	-0.00104	-0.00107
	(A1 * A3 * !B1 * !B2 * !X)	0.00115	0.00116	0.00115
	(A1 * A3 * !B1 * !B2 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * B2 * X)	0.00124	0.00124	0.00122
	(A1 * !A3 * B2 * X)	-0.00079	-0.00080	-0.00081
	(A1 * !A3 * B1 * !B2 * X)	0.00124	0.00125	0.00122
	(A1 * !A3 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00080
	(A1 * !A3 * !B1 * !B2 * !X)	0.00116	0.00116	0.00115
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00162
	(!A1 * A3 * B2 * X)	0.00163	0.00128	0.00121
	(!A1 * A3 * B2 * X)	-0.00116	-0.00152	-0.00156
	(!A1 * A3 * B1 * !B2 * X)	0.00163	0.00128	0.00122
	(!A1 * A3 * B1 * !B2 * X)	-0.00115	-0.00151	-0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	0.00115	0.00116	0.00115
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00161	-0.00163	-0.00163
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00110	0.00110	0.00109
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00163

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00150	0.00152	0.00143
	(A1 * A3 * B2 * X)	-0.00105	-0.00105	-0.00107
	(A1 * A3 * B1 * !B2 * X)	0.00150	0.00152	0.00144
	(A1 * A3 * B1 * !B2 * X)	-0.00104	-0.00104	-0.00108
	(A1 * A3 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(A1 * A3 * !B1 * !B2 * !X)	-0.00117	-0.00119	-0.00117
	(A1 * !A3 * B2 * X)	0.00142	0.00142	0.00139
	(A1 * !A3 * B2 * X)	-0.00080	-0.00080	-0.00081
	(A1 * !A3 * B1 * !B2 * X)	0.00142	0.00143	0.00140
	(A1 * !A3 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00080
	(A1 * !A3 * !B1 * !B2 * !X)	0.00134	0.00134	0.00133
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00161	-0.00163	-0.00163
	(!A1 * A3 * B2 * X)	0.00180	0.00146	0.00139
	(!A1 * A3 * B2 * X)	-0.00116	-0.00152	-0.00157
	(!A1 * A3 * B1 * !B2 * X)	0.00181	0.00146	0.00140
	(!A1 * A3 * B1 * !B2 * X)	-0.00115	-0.00152	-0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00161	-0.00163	-0.00163
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00127	0.00127	0.00126
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00163

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00257	0.00262	0.00243
	(A1 * A3 * B2 * X)	-0.00233	-0.00231	-0.00238
	(A1 * A3 * B1 * !B2 * X)	0.00258	0.00264	0.00245
	(A1 * A3 * B1 * !B2 * X)	-0.00232	-0.00230	-0.00239
	(A1 * A3 * !B1 * !B2 * !X)	0.00234	0.00235	0.00234
	(A1 * A3 * !B1 * !B2 * !X)	-0.00244	-0.00247	-0.00245
	(A1 * !A3 * B2 * X)	0.00243	0.00243	0.00236
	(A1 * !A3 * B2 * X)	-0.00176	-0.00178	-0.00181
	(A1 * !A3 * B1 * !B2 * X)	0.00244	0.00245	0.00237
	(A1 * !A3 * B1 * !B2 * X)	-0.00175	-0.00176	-0.00180
	(A1 * !A3 * !B1 * !B2 * !X)	0.00234	0.00236	0.00234
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00338	-0.00340	-0.00341
	(!A1 * A3 * B2 * X)	0.00324	0.00249	0.00235
	(!A1 * A3 * B2 * X)	-0.00250	-0.00330	-0.00340
	(!A1 * A3 * B1 * !B2 * X)	0.00326	0.00250	0.00236
	(!A1 * A3 * B1 * !B2 * X)	-0.00249	-0.00329	-0.00339
	(!A1 * A3 * !B1 * !B2 * !X)	0.00234	0.00236	0.00234
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00336	-0.00341	-0.00342
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00223	0.00223	0.00221
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00346	-0.00346	-0.00343

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)**	-0.00119	-0.00119	-0.00119
	(A1 * A3 * B2 * X)	0.00107	0.00107	0.00107
	(A1 * A3 * B1 * !B2 * X)	-0.00118	-0.00119	-0.00118
	(A1 * A3 * B1 * !B2 * X)	0.00108	0.00108	0.00107
	(A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00113
	(A1 * A3 * !B1 * !B2 * !X)	0.00116	0.00117	0.00116
	(A1 * !A3 * B2 * X)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * B2 * X)	0.00085	0.00085	0.00086
	(A1 * !A3 * B1 * !B2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * !B2 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * !B1 * !B2 * !X)	0.00163	0.00164	0.00163
	(!A1 * A3 * B2 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * B2 * X)	0.00160	0.00162	0.00161
	(!A1 * A3 * B1 * !B2 * X)	-0.00116	-0.00116	-0.00115
	(!A1 * A3 * B1 * !B2 * X)	0.00161	0.00163	0.00162
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !B2 * !X)	0.00163	0.00165	0.00164
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00097	-0.00107	-0.00108
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00171	0.00168	0.00167

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00137	-0.00137	-0.00136
	(A1 * A3 * B2 * X)	0.00108	0.00108	0.00107
	(A1 * A3 * B1 * !B2 * X)	-0.00135	-0.00136	-0.00136
	(A1 * A3 * B1 * !B2 * X)	0.00107	0.00108	0.00108
	(A1 * A3 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * A3 * !B1 * !B2 * !X)	0.00117	0.00119	0.00117
	(A1 * !A3 * B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B2 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * B1 * !B2 * X)	-0.00135	-0.00134	-0.00134
	(A1 * !A3 * B1 * !B2 * X)	0.00087	0.00087	0.00087
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A3 * !B1 * !B2 * !X)	0.00165	0.00165	0.00165
	(!A1 * A3 * B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B2 * X)	0.00161	0.00163	0.00162
	(!A1 * A3 * B1 * !B2 * X)	-0.00133	-0.00134	-0.00133
	(!A1 * A3 * B1 * !B2 * X)	0.00162	0.00163	0.00163
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * A3 * !B1 * !B2 * !X)	0.00165	0.00166	0.00165
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00112	-0.00123	-0.00124
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00173	0.00170	0.00168

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00228	-0.00228	-0.00227
	(A1 * A3 * B2 * X)	0.00239	0.00239	0.00238
	(A1 * A3 * B1 * !B2 * X)	-0.00227	-0.00227	-0.00226
	(A1 * A3 * B1 * !B2 * X)	0.00240	0.00241	0.00239
	(A1 * A3 * !B1 * !B2 * !X)	-0.00225	-0.00227	-0.00226
	(A1 * A3 * !B1 * !B2 * !X)	0.00244	0.00247	0.00245
	(A1 * !A3 * B2 * X)	-0.00226	-0.00226	-0.00223
	(A1 * !A3 * B2 * X)	0.00192	0.00192	0.00194
	(A1 * !A3 * B1 * !B2 * X)	-0.00225	-0.00224	-0.00221
	(A1 * !A3 * B1 * !B2 * X)	0.00193	0.00193	0.00195
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00226	-0.00227	-0.00226
	(A1 * !A3 * !B1 * !B2 * !X)	0.00344	0.00345	0.00343
	(!A1 * A3 * B2 * X)	-0.00224	-0.00225	-0.00223
	(!A1 * A3 * B2 * X)	0.00348	0.00351	0.00350
	(!A1 * A3 * B1 * !B2 * X)	-0.00222	-0.00224	-0.00221
	(!A1 * A3 * B1 * !B2 * X)	0.00349	0.00353	0.00352
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00225	-0.00225	-0.00226
	(!A1 * A3 * !B1 * !B2 * !X)	0.00342	0.00344	0.00344
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00196	-0.00215	-0.00218
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00364	0.00356	0.00353

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00131	0.00130	0.00130
	(A2 * B2 * X)	-0.00076	-0.00075	-0.00075
	(A2 * B1 * !B2 * X)	0.00130	0.00131	0.00131
	(A2 * B1 * !B2 * X)	-0.00074	-0.00075	-0.00074
	(A2 * !B1 * !B2 * !X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !B2 * !X)	-0.00158	-0.00162	-0.00163
	(A1 * !A2 * B2 * X)	0.00130	0.00131	0.00130
	(A1 * !A2 * B2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * B1 * !B2 * X)	0.00131	0.00131	0.00131
	(A1 * !A2 * B1 * !B2 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * !B2 * !X)	0.00117	0.00117	0.00116
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00148	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00109	0.00110	0.00110
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00163
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00152	0.00151	0.00151
	(A2 * B2 * X)	-0.00076	-0.00075	-0.00075
	(A2 * B1 * !B2 * X)	0.00151	0.00152	0.00152
	(A2 * B1 * !B2 * X)	-0.00074	-0.00075	-0.00074
	(A2 * !B1 * !B2 * !X)	0.00134	0.00134	0.00134
	(A2 * !B1 * !B2 * !X)	-0.00161	-0.00165	-0.00166
	(A1 * !A2 * B2 * X)	0.00151	0.00152	0.00151
	(A1 * !A2 * B2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * B1 * !B2 * X)	0.00152	0.00152	0.00152
	(A1 * !A2 * B1 * !B2 * X)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * !B1 * !B2 * !X)	0.00135	0.00135	0.00134
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00151	-0.00158	-0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00246	0.00245	0.00245
	(A2 * B2 * X)	-0.00152	-0.00151	-0.00150
	(A2 * B1 * !B2 * X)	0.00247	0.00247	0.00246
	(A2 * B1 * !B2 * X)	-0.00150	-0.00150	-0.00149
	(A2 * !B1 * !B2 * !X)	0.00225	0.00228	0.00226
	(A2 * !B1 * !B2 * !X)	-0.00304	-0.00315	-0.00316
	(A1 * !A2 * B2 * X)	0.00244	0.00246	0.00245
	(A1 * !A2 * B2 * X)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * B1 * !B2 * X)	0.00246	0.00247	0.00246
	(A1 * !A2 * B1 * !B2 * X)	-0.00147	-0.00148	-0.00148
	(A1 * !A2 * !B1 * !B2 * !X)	0.00226	0.00228	0.00226
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00281	-0.00300	-0.00299
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00214	0.00216	0.00214
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00319	-0.00320	-0.00318

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00124	-0.00124	-0.00129
	(A2 * B2 * X)	0.00081	0.00081	0.00078
	(A2 * B1 * !B2 * X)	-0.00123	-0.00123	-0.00128
	(A2 * B1 * !B2 * X)	0.00082	0.00082	0.00078
	(A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
	(A2 * !B1 * !B2 * !X)	0.00163	0.00164	0.00164
	(A1 * !A2 * B2 * X)	-0.00115	-0.00116	-0.00127
	(A1 * !A2 * B2 * X)	0.00085	0.00085	0.00078
	(A1 * !A2 * B1 * !B2 * X)	-0.00115	-0.00115	-0.00126
	(A1 * !A2 * B1 * !B2 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !B1 * !B2 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00098	-0.00107	-0.00109
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00171	0.00168	0.00167
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00144	-0.00145	-0.00149
	(A2 * B2 * X)	0.00082	0.00081	0.00078
	(A2 * B1 * !B2 * X)	-0.00144	-0.00144	-0.00148
	(A2 * B1 * !B2 * X)	0.00082	0.00082	0.00078
	(A2 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00130
	(A2 * !B1 * !B2 * !X)	0.00167	0.00168	0.00168
	(A1 * !A2 * B2 * X)	-0.00136	-0.00137	-0.00148
	(A1 * !A2 * B2 * X)	0.00086	0.00085	0.00078
	(A1 * !A2 * B1 * !B2 * X)	-0.00136	-0.00136	-0.00147
	(A1 * !A2 * B1 * !B2 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00129	-0.00129	-0.00130
	(A1 * !A2 * !B1 * !B2 * !X)	0.00158	0.00158	0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00112	-0.00123	-0.00125
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00176	0.00172	0.00171

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00225	-0.00226	-0.00240
	(A2 * B2 * X)	0.00168	0.00167	0.00157
	(A2 * B1 * !B2 * X)	-0.00224	-0.00225	-0.00239
	(A2 * B1 * !B2 * X)	0.00169	0.00169	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00218	-0.00219	-0.00218
	(A2 * !B1 * !B2 * !X)	0.00318	0.00319	0.00318
	(A1 * !A2 * B2 * X)	-0.00206	-0.00207	-0.00236
	(A1 * !A2 * B2 * X)	0.00178	0.00177	0.00157
	(A1 * !A2 * B1 * !B2 * X)	-0.00205	-0.00206	-0.00235
	(A1 * !A2 * B1 * !B2 * X)	0.00179	0.00178	0.00159
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00217	-0.00220	-0.00218
	(A1 * !A2 * !B1 * !B2 * !X)	0.00298	0.00300	0.00299
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00188	-0.00208	-0.00211
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00336	0.00330	0.00327

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00166	0.00138	0.00133
	(A3 * B2 * X)	-0.00131	-0.00158	-0.00163
	(A2 * !A3 * B2 * X)	0.00166	0.00138	0.00133
	(A2 * !A3 * B2 * X)	-0.00131	-0.00158	-0.00163
	(A1 * !A2 * !A3 * B2 * X)	0.00166	0.00139	0.00134
	(A1 * !A2 * !A3 * B2 * X)	-0.00130	-0.00157	-0.00162
	(!A1 * !A2 * !A3 * B2 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00194	-0.00194	-0.00196
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00058	0.00059	0.00051
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00183	-0.00184	-0.00196

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00196	0.00168	0.00163
	(A3 * B2 * X)	-0.00144	-0.00171	-0.00176
	(A2 * !A3 * B2 * X)	0.00196	0.00168	0.00163
	(A2 * !A3 * B2 * X)	-0.00144	-0.00171	-0.00175
	(A1 * !A2 * !A3 * B2 * X)	0.00196	0.00169	0.00163
	(A1 * !A2 * !A3 * B2 * X)	-0.00143	-0.00170	-0.00175
	(!A1 * !A2 * !A3 * B2 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00217	-0.00218	-0.00218
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00071	0.00071	0.00062
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00203	-0.00205	-0.00218
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00356	0.00298	0.00284
	(A3 * B2 * X)	-0.00298	-0.00360	-0.00371
	(A2 * !A3 * B2 * X)	0.00357	0.00299	0.00284
	(A2 * !A3 * B2 * X)	-0.00297	-0.00358	-0.00370
	(A1 * !A2 * !A3 * B2 * X)	0.00360	0.00302	0.00286
	(A1 * !A2 * !A3 * B2 * X)	-0.00294	-0.00356	-0.00368
	(!A1 * !A2 * !A3 * B2 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00465	-0.00469	-0.00469
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00107	0.00107	0.00092
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00446	-0.00447	-0.00471

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00128	-0.00129	-0.00128
	(A3 * B2 * X)	0.00167	0.00168	0.00168
	(A2 * !A3 * B2 * X)	-0.00128	-0.00129	-0.00128
	(A2 * !A3 * B2 * X)	0.00167	0.00168	0.00168
	(A1 * !A2 * !A3 * B2 * X)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !A3 * B2 * X)	0.00167	0.00169	0.00169
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00044	-0.00044	-0.00045
	(!A1 * !A2 * !A3 * B2 * !X)	0.00200	0.00201	0.00198
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00047	-0.00047	-0.00046
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00199	0.00200	0.00200
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00157	-0.00158	-0.00157
	(A3 * B2 * X)	0.00180	0.00182	0.00181
	(A2 * !A3 * B2 * X)	-0.00157	-0.00158	-0.00157
	(A2 * !A3 * B2 * X)	0.00180	0.00182	0.00181
	(A1 * !A2 * !A3 * B2 * X)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * !A3 * B2 * X)	0.00181	0.00183	0.00182
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00053	-0.00053	-0.00054
	(!A1 * !A2 * !A3 * B2 * !X)	0.00224	0.00225	0.00222
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00223	0.00224	0.00224
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00272	-0.00274	-0.00272
	(A3 * B2 * X)	0.00381	0.00385	0.00383
	(A2 * !A3 * B2 * X)	-0.00272	-0.00273	-0.00272
	(A2 * !A3 * B2 * X)	0.00380	0.00383	0.00382
	(A1 * !A2 * !A3 * B2 * X)	-0.00272	-0.00273	-0.00271
	(A1 * !A2 * !A3 * B2 * X)	0.00380	0.00385	0.00383
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * !A3 * B2 * !X)	0.00481	0.00486	0.00476
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00080	-0.00082	-0.00080
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00479	0.00487	0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00135	0.00136	0.00136
	(A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * !A3 * B1 * X)	0.00135	0.00136	0.00136
	(A2 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !A3 * B1 * X)	0.00136	0.00137	0.00137
	(A1 * !A2 * !A3 * B1 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00192	-0.00193	-0.00193
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00043
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00180	-0.00181	-0.00193
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00153	0.00154	0.00154
	(A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * !A3 * B1 * X)	0.00153	0.00154	0.00154
	(A2 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !A3 * B1 * X)	0.00154	0.00155	0.00154
	(A1 * !A2 * !A3 * B1 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00196	-0.00195	-0.00196
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00059	0.00058	0.00050
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00181	-0.00181	-0.00196

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00263	0.00264	0.00263
	(A3 * B1 * X)	-0.00154	-0.00154	-0.00153
	(A2 * !A3 * B1 * X)	0.00263	0.00264	0.00263
	(A2 * !A3 * B1 * X)	-0.00154	-0.00154	-0.00153
	(A1 * !A2 * !A3 * B1 * X)	0.00264	0.00267	0.00264
	(A1 * !A2 * !A3 * B1 * X)	-0.00152	-0.00154	-0.00151
	(!A1 * !A2 * !A3 * B1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00374	-0.00377	-0.00378
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00104	0.00103	0.00089
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00353	-0.00355	-0.00379

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00129	-0.00129	-0.00134
	(A3 * B1 * X)	0.00083	0.00083	0.00078
	(A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00134
	(A2 * !A3 * B1 * X)	0.00082	0.00083	0.00078
	(A1 * !A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00133
	(A1 * !A2 * !A3 * B1 * X)	0.00083	0.00084	0.00079
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00036	-0.00036	-0.00037
	(!A1 * !A2 * !A3 * B1 * !X)	0.00196	0.00196	0.00195
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00197

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00146	-0.00147	-0.00152
	(A3 * B1 * X)	0.00083	0.00083	0.00079
	(A2 * !A3 * B1 * X)	-0.00147	-0.00147	-0.00152
	(A2 * !A3 * B1 * X)	0.00083	0.00083	0.00079
	(A1 * !A2 * !A3 * B1 * X)	-0.00146	-0.00147	-0.00151
	(A1 * !A2 * !A3 * B1 * X)	0.00084	0.00084	0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * !A3 * B1 * !X)	0.00200	0.00201	0.00199
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00201	0.00202	0.00201
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00247	-0.00248	-0.00258
	(A3 * B1 * X)	0.00168	0.00168	0.00159
	(A2 * !A3 * B1 * X)	-0.00246	-0.00248	-0.00258
	(A2 * !A3 * B1 * X)	0.00168	0.00168	0.00159
	(A1 * !A2 * !A3 * B1 * X)	-0.00245	-0.00247	-0.00257
	(A1 * !A2 * !A3 * B1 * X)	0.00169	0.00170	0.00160
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00072	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	0.00385	0.00388	0.00382
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00390	0.00391	0.00389

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00287	0.00293	0.00303	0.00302	0.00306	0.19288
sky130_fd_sc_hs__o41ai_2	0.00566	0.00575	0.00555	0.00566	0.00595	0.34831
sky130_fd_sc_hs__o41ai_4	0.01102	0.01097	0.01112	0.01132	0.00812	0.66291

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.70307	1.59907
sky130_fd_sc_hs__o41ai_2	0.00000	1.40577	3.18425
sky130_fd_sc_hs__o41ai_4	0.00000	1.98922	4.78997

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)	0.38194	1.43370	8.93851
	A2->Y (FR)	0.36044	1.41917	9.35404
	A3->Y (FR)	0.31135	1.39655	9.79336
	A4->Y (FR)	0.23004	1.33230	9.90183
	B1->Y (FR)	0.04810	0.58943	5.07839
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.39211	1.26831	8.79012
	A2->Y (FR)	0.36724	1.24371	9.18841
	A3->Y (FR)	0.31163	1.22158	9.73297
	A4->Y (FR)	0.20190	1.13296	9.82877
	B1->Y (FR)	0.03816	0.50109	4.82327
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.36910	1.09022	8.67330
	A2->Y (FR)	0.34413	1.07077	9.12946
	A3->Y (FR)	0.28974	1.04726	9.67205
	A4->Y (FR)	0.18436	0.97169	9.82110
	B1->Y (FR)	0.05186	0.62505	6.84442

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.07327	0.52176	3.85858
	A2->Y (RF)	0.07522	0.51149	3.83145
	A3->Y (RF)	0.07258	0.49717	3.80641
	A4->Y (RF)	0.05824	0.47328	3.76231
	B1->Y (RF)	0.05773	0.56472	4.42769
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.06935	0.46967	3.75605
	A2->Y (RF)	0.07141	0.45898	3.72753
	A3->Y (RF)	0.06980	0.44212	3.68812
	A4->Y (RF)	0.05399	0.41376	3.64365
	B1->Y (RF)	0.05143	0.51310	4.37927
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.07312	0.42983	3.74419
	A2->Y (RF)	0.07276	0.41340	3.68188
	A3->Y (RF)	0.06814	0.39190	3.62399
	A4->Y (RF)	0.04910	0.35667	3.52971
	B1->Y (RF)	0.05303	0.50318	4.71330

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00150	0.00133	0.00471
	A1	0.00998	0.00980	0.01318
	A2	0.00154	0.00138	0.00486
	A2	0.00896	0.00876	0.01229
	A3	0.00154	0.00140	0.00512
	A3	0.00801	0.00786	0.01153
	A4	0.00151	0.00167	0.00697
	A4	0.00697	0.00713	0.01241
	B1	-0.00039	0.00032	0.00844
	B1	0.00671	0.00721	0.01488
sky130_fd_sc_hs__o41ai_2	A1	0.00234	0.00195	0.00848
	A1	0.01939	0.01904	0.02554
	A2	0.00240	0.00200	0.00886
	A2	0.01734	0.01697	0.02381
	A3	0.00246	0.00214	0.00934
	A3	0.01517	0.01487	0.02200
	A4	0.00236	0.00273	0.01314
	A4	0.01298	0.01334	0.02372
	B1	-0.00182	-0.00043	0.01646
	B1	0.01250	0.01375	0.02927

sky130_fd_sc_hs__o41ai_4	**A1**	0.00408	0.00338	0.01639
	A1	0.03766	0.03701	0.04995
	A2	0.00417	0.00349	0.01697
	A2	0.03341	0.03272	0.04624
	A3	0.00416	0.00361	0.01778
	A3	0.02930	0.02873	0.04284
	A4	0.00395	0.00484	0.02516
	A4	0.02492	0.02579	0.04598
	B1	-0.00277	-0.00085	0.01840
	B1	0.02125	0.02292	0.04067

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01163	0.01149	0.01476
	A1	0.00318	0.00300	0.00629
	A2	0.00968	0.00955	0.01282
	A2	0.00224	0.00208	0.00534
	A3	0.00761	0.00760	0.01085
	A3	0.00109	0.00106	0.00428
	A4	0.00547	0.00559	0.00883
	A4	-0.00006	0.00004	0.00326
	B1	0.01016	0.01035	0.01512
	B1	0.00209	0.00230	0.00745

sky130_fd_sc_hs__o41ai_2	**A1**	0.02442	0.02395	0.03050
	A1	0.00743	0.00699	0.01352
	A2	0.01999	0.01971	0.02619
	A2	0.00502	0.00472	0.01125
	A3	0.01585	0.01569	0.02219
	A3	0.00304	0.00289	0.00931
	A4	0.01055	0.01086	0.01742
	A4	-0.00019	0.00007	0.00657
	B1	0.02129	0.02168	0.03150
	B1	0.00483	0.00518	0.01599
sky130_fd_sc_hs__o41ai_4	**A1**	0.04612	0.04527	0.05845
	A1	0.01276	0.01188	0.02531
	A2	0.03763	0.03693	0.05023
	A2	0.00832	0.00767	0.02103
	A3	0.02945	0.02917	0.04245
	A3	0.00408	0.00378	0.01697
	A4	0.01956	0.02019	0.03362
	A4	-0.00166	-0.00102	0.01236
	B1	0.03839	0.03879	0.04924
	B1	0.01512	0.01548	0.02576

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)**	0.00138	0.00137	0.00138
	(A2 * A4 * B1 * !Y)	-0.00179	-0.00183	-0.00184
	(A2 * A3 * !A4 * B1 * !Y)	0.00138	0.00137	0.00138
	(A2 * A3 * !A4 * B1 * !Y)	-0.00179	-0.00183	-0.00184
	(A2 * !B1 * Y)	0.00137	0.00136	0.00137
	(A2 * !B1 * Y)	-0.00180	-0.00183	-0.00184
	(A2 * !A3 * !A4 * B1 * !Y)	0.00147	0.00140	0.00138
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00167	-0.00183	-0.00183
	(!A2 * A3 * A4 * B1 * !Y)	0.00137	0.00139	0.00138
	(!A2 * A3 * A4 * B1 * !Y)	-0.00166	-0.00179	-0.00177
	(!A2 * A3 * !B1 * Y)	0.00137	0.00139	0.00137
	(!A2 * A3 * !B1 * Y)	-0.00166	-0.00178	-0.00177
	(!A2 * A3 * !A4 * B1 * !Y)	0.00141	0.00140	0.00138
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00163	-0.00179	-0.00178
	(!A2 * !A3 * A4 * B1 * !Y)	0.00144	0.00141	0.00138
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00158	-0.00177	-0.00176
	(!A2 * !A3 * A4 * !B1 * Y)	0.00137	0.00139	0.00137
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00163	-0.00175	-0.00174
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00273	0.00275	0.00273
	(A2 * A4 * B1 * !Y)	-0.00355	-0.00366	-0.00367
	(A2 * A3 * !A4 * B1 * !Y)	0.00273	0.00275	0.00273
	(A2 * A3 * !A4 * B1 * !Y)	-0.00354	-0.00366	-0.00367
	(A2 * !B1 * Y)	0.00272	0.00273	0.00272
	(A2 * !B1 * Y)	-0.00357	-0.00368	-0.00365
	(A2 * !A3 * !A4 * B1 * !Y)	0.00290	0.00276	0.00274
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00333	-0.00364	-0.00366
	(!A2 * A3 * A4 * B1 * !Y)	0.00273	0.00275	0.00273
	(!A2 * A3 * A4 * B1 * !Y)	-0.00328	-0.00354	-0.00352
	(!A2 * A3 * !B1 * Y)	0.00272	0.00274	0.00272
	(!A2 * A3 * !B1 * Y)	-0.00330	-0.00353	-0.00351
	(!A2 * A3 * !A4 * B1 * !Y)	0.00280	0.00276	0.00274
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00322	-0.00355	-0.00354
	(!A2 * !A3 * A4 * B1 * !Y)	0.00288	0.00280	0.00274
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00312	-0.00351	-0.00349
	(!A2 * !A3 * A4 * !B1 * Y)	0.00272	0.00275	0.00272
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00323	-0.00348	-0.00345
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00256	0.00257	0.00256
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00373	-0.00374	-0.00372

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00526	0.00529	0.00525
	(A2 * A4 * B1 * !Y)	-0.00709	-0.00733	-0.00731
	(A2 * A3 * !A4 * B1 * !Y)	0.00526	0.00529	0.00525
	(A2 * A3 * !A4 * B1 * !Y)	-0.00707	-0.00732	-0.00730
	(A2 * !B1 * Y)	0.00528	0.00528	0.00524
	(A2 * !B1 * Y)	-0.00714	-0.00734	-0.00730
	(A2 * !A3 * !A4 * B1 * !Y)	0.00570	0.00531	0.00528
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00657	-0.00728	-0.00733
	(!A2 * A3 * A4 * B1 * !Y)	0.00526	0.00527	0.00525
	(!A2 * A3 * A4 * B1 * !Y)	-0.00653	-0.00703	-0.00699
	(!A2 * A3 * !B1 * Y)	0.00525	0.00527	0.00524
	(!A2 * A3 * !B1 * Y)	-0.00655	-0.00703	-0.00699
	(!A2 * A3 * !A4 * B1 * !Y)	0.00543	0.00529	0.00527
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00641	-0.00705	-0.00703
	(!A2 * !A3 * A4 * B1 * !Y)	0.00557	0.00538	0.00528
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00621	-0.00697	-0.00694
	(!A2 * !A3 * A4 * !B1 * Y)	0.00526	0.00531	0.00524
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00643	-0.00691	-0.00686
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00493	0.00496	0.00492
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00745	-0.00747	-0.00743

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)**	-0.00136	-0.00136	-0.00136
	(A2 * A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(A2 * A3 * !A4 * B1 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * A3 * !A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * !B1 * Y)	0.00182	0.00184	0.00184
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * !A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * A3 * A4 * B1 * !Y)	-0.00136	-0.00136	-0.00136
	(!A2 * A3 * A4 * B1 * !Y)	0.00177	0.00179	0.00177
	(!A2 * A3 * !B1 * Y)	-0.00136	-0.00137	-0.00136
	(!A2 * A3 * !B1 * Y)	0.00176	0.00178	0.00177
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00136	-0.00136
	(!A2 * A3 * !A4 * B1 * !Y)	0.00177	0.00179	0.00178
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A2 * !A3 * A4 * B1 * !Y)	0.00175	0.00177	0.00176
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00136	-0.00137	-0.00136
	(!A2 * !A3 * A4 * !B1 * Y)	0.00173	0.00175	0.00174
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00120	-0.00130	-0.00129
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00190	0.00189	0.00187

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00268	-0.00271	-0.00269
	(A2 * A4 * B1 * !Y)	0.00364	0.00370	0.00367
	(A2 * A3 * !A4 * B1 * !Y)	-0.00269	-0.00271	-0.00269
	(A2 * A3 * !A4 * B1 * !Y)	0.00367	0.00370	0.00367
	(A2 * !B1 * Y)	-0.00270	-0.00272	-0.00270
	(A2 * !B1 * Y)	0.00364	0.00368	0.00365
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00269	-0.00269	-0.00269
	(A2 * !A3 * !A4 * B1 * !Y)	0.00368	0.00368	0.00369
	(!A2 * A3 * A4 * B1 * !Y)	-0.00269	-0.00270	-0.00269
	(!A2 * A3 * A4 * B1 * !Y)	0.00351	0.00354	0.00352
	(!A2 * A3 * !B1 * Y)	-0.00270	-0.00271	-0.00270
	(!A2 * A3 * !B1 * Y)	0.00350	0.00353	0.00351
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00268	-0.00269	-0.00268
	(!A2 * A3 * !A4 * B1 * !Y)	0.00352	0.00355	0.00354
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00267	-0.00269	-0.00267
	(!A2 * !A3 * A4 * B1 * !Y)	0.00347	0.00351	0.00349
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00270	-0.00272	-0.00270
	(!A2 * !A3 * A4 * !B1 * Y)	0.00345	0.00348	0.00345
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00238	-0.00257	-0.00256
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00380	0.00379	0.00375

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00520	-0.00522	-0.00521
	(A2 * A4 * B1 * !Y)	0.00728	0.00733	0.00731
	(A2 * A3 * !A4 * B1 * !Y)	-0.00519	-0.00522	-0.00520
	(A2 * A3 * !A4 * B1 * !Y)	0.00728	0.00733	0.00730
	(A2 * !B1 * Y)	-0.00520	-0.00524	-0.00521
	(A2 * !B1 * Y)	0.00726	0.00735	0.00730
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00520	-0.00521	-0.00520
	(A2 * !A3 * !A4 * B1 * !Y)	0.00733	0.00738	0.00735
	(!A2 * A3 * A4 * B1 * !Y)	-0.00520	-0.00523	-0.00521
	(!A2 * A3 * A4 * B1 * !Y)	0.00698	0.00703	0.00699
	(!A2 * A3 * !B1 * Y)	-0.00521	-0.00523	-0.00522
	(!A2 * A3 * !B1 * Y)	0.00698	0.00703	0.00699
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00519	-0.00521	-0.00519
	(!A2 * A3 * !A4 * B1 * !Y)	0.00702	0.00705	0.00703
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00517	-0.00519	-0.00515
	(!A2 * !A3 * A4 * B1 * !Y)	0.00691	0.00697	0.00694
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00521	-0.00524	-0.00522
	(!A2 * !A3 * A4 * !B1 * Y)	0.00685	0.00691	0.00686
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00458	-0.00496	-0.00492
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00759	0.00756	0.00748

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)**	0.00141	0.00142	0.00137
	(A1 * A3 * A4 * B1 * !Y)	-0.00127	-0.00127	-0.00126
	(A1 * A3 * !B1 * Y)	0.00132	0.00134	0.00133
	(A1 * A3 * !B1 * Y)	-0.00126	-0.00128	-0.00126
	(A1 * A3 * !A4 * B1 * !Y)	0.00145	0.00145	0.00137
	(A1 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A3 * A4 * B1 * !Y)	0.00147	0.00155	0.00142
	(A1 * !A3 * A4 * B1 * !Y)	-0.00122	-0.00118	-0.00122
	(A1 * !A3 * A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A3 * A4 * !B1 * Y)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * !A4 * B1 * !Y)	0.00136	0.00137	0.00135
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00092	-0.00093	-0.00093
	(A1 * !A3 * !A4 * !B1 * Y)	0.00134	0.00134	0.00133
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00178	-0.00180	-0.00179
	(!A1 * A3 * A4 * B1 * !Y)	0.00137	0.00134	0.00133
	(!A1 * A3 * A4 * B1 * !Y)	-0.00170	-0.00180	-0.00180
	(!A1 * A3 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A1 * A3 * !B1 * Y)	-0.00175	-0.00180	-0.00179
	(!A1 * A3 * !A4 * B1 * !Y)	0.00165	0.00136	0.00135
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00146	-0.00178	-0.00179
	(!A1 * !A3 * A4 * B1 * !Y)	0.00159	0.00137	0.00134
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00138	-0.00172	-0.00174
	(!A1 * !A3 * A4 * !B1 * Y)	0.00132	0.00134	0.00133
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00159	-0.00171	-0.00170
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00124	0.00126	0.00125
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00295	0.00293	0.00284
	(A1 * A3 * A4 * B1 * !Y)	-0.00263	-0.00263	-0.00261
	(A1 * A3 * !B1 * Y)	0.00273	0.00273	0.00272
	(A1 * A3 * !B1 * Y)	-0.00261	-0.00263	-0.00261
	(A1 * A3 * !A4 * B1 * !Y)	0.00305	0.00304	0.00286
	(A1 * A3 * !A4 * B1 * !Y)	-0.00255	-0.00257	-0.00258
	(A1 * !A3 * A4 * B1 * !Y)	0.00298	0.00319	0.00292
	(A1 * !A3 * A4 * B1 * !Y)	-0.00256	-0.00250	-0.00255
	(A1 * !A3 * A4 * !B1 * Y)	0.00274	0.00276	0.00272
	(A1 * !A3 * A4 * !B1 * Y)	-0.00258	-0.00260	-0.00259
	(A1 * !A3 * !A4 * B1 * !Y)	0.00277	0.00280	0.00276
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00191	-0.00194	-0.00194
	(A1 * !A3 * !A4 * !B1 * Y)	0.00275	0.00275	0.00272
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00367	-0.00369	-0.00367
	(!A1 * A3 * A4 * B1 * !Y)	0.00281	0.00276	0.00274
	(!A1 * A3 * A4 * B1 * !Y)	-0.00359	-0.00373	-0.00372
	(!A1 * A3 * !B1 * Y)	0.00275	0.00275	0.00272
	(!A1 * A3 * !B1 * Y)	-0.00365	-0.00374	-0.00371
	(!A1 * A3 * !A4 * B1 * !Y)	0.00330	0.00280	0.00276
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00313	-0.00369	-0.00371
	(!A1 * !A3 * A4 * B1 * !Y)	0.00315	0.00281	0.00275
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00301	-0.00359	-0.00359
	(!A1 * !A3 * A4 * !B1 * Y)	0.00271	0.00275	0.00272
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00335	-0.00354	-0.00353
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00255	0.00257	0.00255
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00377	-0.00378	-0.00377

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00561	0.00560	0.00540
	(A1 * A3 * A4 * B1 * !Y)	-0.00491	-0.00496	-0.00494
	(A1 * A3 * !B1 * Y)	0.00520	0.00523	0.00520
	(A1 * A3 * !B1 * Y)	-0.00494	-0.00501	-0.00495
	(A1 * A3 * !A4 * B1 * !Y)	0.00580	0.00577	0.00540
	(A1 * A3 * !A4 * B1 * !Y)	-0.00487	-0.00490	-0.00488
	(A1 * !A3 * A4 * B1 * !Y)	0.00574	0.00613	0.00557
	(A1 * !A3 * A4 * B1 * !Y)	-0.00486	-0.00475	-0.00485
	(A1 * !A3 * A4 * !B1 * Y)	0.00519	0.00526	0.00520
	(A1 * !A3 * A4 * !B1 * Y)	-0.00492	-0.00495	-0.00493
	(A1 * !A3 * !A4 * B1 * !Y)	0.00535	0.00535	0.00527
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00369	-0.00370	-0.00372
	(A1 * !A3 * !A4 * !B1 * Y)	0.00524	0.00524	0.00519
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00719	-0.00726	-0.00722
	(!A1 * A3 * A4 * B1 * !Y)	0.00541	0.00525	0.00520
	(!A1 * A3 * A4 * B1 * !Y)	-0.00696	-0.00728	-0.00726
	(!A1 * A3 * !B1 * Y)	0.00518	0.00524	0.00519
	(!A1 * A3 * !B1 * Y)	-0.00706	-0.00728	-0.00725
	(!A1 * A3 * !A4 * B1 * !Y)	0.00652	0.00534	0.00526
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00595	-0.00722	-0.00727
	(!A1 * !A3 * A4 * B1 * !Y)	0.00621	0.00536	0.00523
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00569	-0.00700	-0.00701
	(!A1 * !A3 * A4 * !B1 * Y)	0.00518	0.00524	0.00519
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00648	-0.00690	-0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00485	0.00490	0.00487
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00741	-0.00744	-0.00741

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)**	-0.00132	-0.00132	-0.00131
	(A1 * A3 * A4 * B1 * !Y)	0.00127	0.00127	0.00126
	(A1 * A3 * !B1 * Y)	-0.00131	-0.00133	-0.00132
	(A1 * A3 * !B1 * Y)	0.00126	0.00128	0.00126
	(A1 * A3 * !A4 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * A3 * !A4 * B1 * !Y)	0.00126	0.00125	0.00125
	(A1 * !A3 * A4 * B1 * !Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A3 * A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A3 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A3 * A4 * !B1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	0.00102	0.00102	0.00102
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A3 * !A4 * !B1 * Y)	0.00178	0.00180	0.00179
	(!A1 * A3 * A4 * B1 * !Y)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * A4 * B1 * !Y)	0.00179	0.00180	0.00180
	(!A1 * A3 * !B1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * A3 * !B1 * Y)	0.00179	0.00180	0.00179
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(!A1 * A3 * !A4 * B1 * !Y)	0.00182	0.00183	0.00182
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * A4 * B1 * !Y)	0.00171	0.00174	0.00174
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(!A1 * !A3 * A4 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00116	-0.00125	-0.00125
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00186	0.00185	0.00183

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00270	-0.00271	-0.00270
	(A1 * A3 * A4 * B1 * !Y)	0.00263	0.00263	0.00261
	(A1 * A3 * !B1 * Y)	-0.00270	-0.00272	-0.00271
	(A1 * A3 * !B1 * Y)	0.00261	0.00263	0.00261
	(A1 * A3 * !A4 * B1 * !Y)	-0.00270	-0.00271	-0.00270
	(A1 * A3 * !A4 * B1 * !Y)	0.00260	0.00260	0.00258
	(A1 * !A3 * A4 * B1 * !Y)	-0.00271	-0.00272	-0.00271
	(A1 * !A3 * A4 * B1 * !Y)	0.00256	0.00257	0.00255
	(A1 * !A3 * A4 * !B1 * Y)	-0.00270	-0.00272	-0.00271
	(A1 * !A3 * A4 * !B1 * Y)	0.00258	0.00260	0.00259
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00253	-0.00254	-0.00252
	(A1 * !A3 * !A4 * B1 * !Y)	0.00214	0.00215	0.00215
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00271	-0.00272	-0.00271
	(A1 * !A3 * !A4 * !B1 * Y)	0.00367	0.00369	0.00367
	(!A1 * A3 * A4 * B1 * !Y)	-0.00269	-0.00271	-0.00270
	(!A1 * A3 * A4 * B1 * !Y)	0.00371	0.00375	0.00372
	(!A1 * A3 * !B1 * Y)	-0.00271	-0.00272	-0.00271
	(!A1 * A3 * !B1 * Y)	0.00370	0.00374	0.00371
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00268	-0.00268	-0.00267
	(!A1 * A3 * !A4 * B1 * !Y)	0.00375	0.00376	0.00376
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00267	-0.00269	-0.00266
	(!A1 * !A3 * A4 * B1 * !Y)	0.00356	0.00361	0.00359
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00270	-0.00271	-0.00271
	(!A1 * !A3 * A4 * !B1 * Y)	0.00352	0.00354	0.00353
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00237	-0.00257	-0.00255
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00385	0.00383	0.00379

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00513	-0.00517	-0.00516
	(A1 * A3 * A4 * B1 * !Y)	0.00491	0.00496	0.00494
	(A1 * A3 * !B1 * Y)	-0.00515	-0.00520	-0.00517
	(A1 * A3 * !B1 * Y)	0.00494	0.00501	0.00495
	(A1 * A3 * !A4 * B1 * !Y)	-0.00516	-0.00517	-0.00515
	(A1 * A3 * !A4 * B1 * !Y)	0.00490	0.00490	0.00488
	(A1 * !A3 * A4 * B1 * !Y)	-0.00516	-0.00520	-0.00516
	(A1 * !A3 * A4 * B1 * !Y)	0.00486	0.00490	0.00485
	(A1 * !A3 * A4 * !B1 * Y)	-0.00515	-0.00518	-0.00517
	(A1 * !A3 * A4 * !B1 * Y)	0.00492	0.00495	0.00493
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00486	-0.00490	-0.00483
	(A1 * !A3 * !A4 * B1 * !Y)	0.00407	0.00412	0.00410
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00514	-0.00519	-0.00516
	(A1 * !A3 * !A4 * !B1 * Y)	0.00719	0.00726	0.00722
	(!A1 * A3 * A4 * B1 * !Y)	-0.00515	-0.00517	-0.00515
	(!A1 * A3 * A4 * B1 * !Y)	0.00725	0.00728	0.00726
	(!A1 * A3 * !B1 * Y)	-0.00516	-0.00518	-0.00516
	(!A1 * A3 * !B1 * Y)	0.00724	0.00728	0.00725
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00506	-0.00512	-0.00509
	(!A1 * A3 * !A4 * B1 * !Y)	0.00730	0.00739	0.00736
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00510	-0.00512	-0.00506
	(!A1 * !A3 * A4 * B1 * !Y)	0.00694	0.00700	0.00701
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00515	-0.00519	-0.00516
	(!A1 * !A3 * A4 * !B1 * Y)	0.00683	0.00690	0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00451	-0.00490	-0.00487
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00755	0.00752	0.00745

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)**	0.00154	0.00155	0.00145
	(A2 * A4 * B1 * !Y)	-0.00118	-0.00120	-0.00122
	(A2 * A4 * !B1 * Y)	0.00132	0.00134	0.00133
	(A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A2 * !A4 * B1 * !Y)	0.00141	0.00142	0.00139
	(A2 * !A4 * B1 * !Y)	-0.00090	-0.00090	-0.00092
	(A2 * !A4 * !B1 * Y)	0.00134	0.00134	0.00133
	(A2 * !A4 * !B1 * Y)	-0.00180	-0.00183	-0.00183
	(A1 * !A2 * A4 * B1 * !Y)	0.00171	0.00159	0.00148
	(A1 * !A2 * A4 * B1 * !Y)	-0.00105	-0.00117	-0.00120
	(A1 * !A2 * A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A2 * A4 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !A4 * B1 * !Y)	0.00142	0.00142	0.00140
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00089	-0.00089	-0.00091
	(A1 * !A2 * !A4 * !B1 * Y)	0.00134	0.00133	0.00133
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00165	-0.00173	-0.00172
	(!A1 * !A2 * A4 * B1 * !Y)	0.00184	0.00146	0.00139
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00174	-0.00178
	(!A1 * !A2 * A4 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00124	0.00126	0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00293	0.00295	0.00275
	(A2 * A4 * B1 * !Y)	-0.00251	-0.00248	-0.00254
	(A2 * A4 * !B1 * Y)	0.00259	0.00259	0.00258
	(A2 * A4 * !B1 * Y)	-0.00260	-0.00259	-0.00260
	(A2 * !A4 * B1 * !Y)	0.00268	0.00269	0.00263
	(A2 * !A4 * B1 * !Y)	-0.00183	-0.00184	-0.00187
	(A2 * !A4 * !B1 * Y)	0.00257	0.00260	0.00258
	(A2 * !A4 * !B1 * Y)	-0.00353	-0.00365	-0.00362
	(A1 * !A2 * A4 * B1 * !Y)	0.00331	0.00303	0.00279
	(A1 * !A2 * A4 * B1 * !Y)	-0.00214	-0.00240	-0.00248
	(A1 * !A2 * A4 * !B1 * Y)	0.00257	0.00262	0.00258
	(A1 * !A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * !A4 * B1 * !Y)	0.00270	0.00271	0.00264
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00179	-0.00181	-0.00185
	(A1 * !A2 * !A4 * !B1 * Y)	0.00257	0.00259	0.00257
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00325	-0.00341	-0.00339
	(!A1 * !A2 * A4 * B1 * !Y)	0.00356	0.00274	0.00260
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00269	-0.00353	-0.00363
	(!A1 * !A2 * A4 * !B1 * Y)	0.00260	0.00260	0.00258
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00361	-0.00364	-0.00361
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00242	0.00244	0.00243
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00369	-0.00371	-0.00369

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00593	0.00597	0.00558
	(A2 * A4 * B1 * !Y)	-0.00495	-0.00491	-0.00497
	(A2 * A4 * !B1 * Y)	0.00534	0.00531	0.00529
	(A2 * A4 * !B1 * Y)	-0.00508	-0.00513	-0.00508
	(A2 * !A4 * B1 * !Y)	0.00545	0.00546	0.00534
	(A2 * !A4 * B1 * !Y)	-0.00373	-0.00375	-0.00381
	(A2 * !A4 * !B1 * Y)	0.00528	0.00534	0.00528
	(A2 * !A4 * !B1 * Y)	-0.00715	-0.00736	-0.00732
	(A1 * !A2 * A4 * B1 * !Y)	0.00674	0.00618	0.00571
	(A1 * !A2 * A4 * B1 * !Y)	-0.00426	-0.00478	-0.00491
	(A1 * !A2 * A4 * !B1 * Y)	0.00526	0.00535	0.00528
	(A1 * !A2 * A4 * !B1 * Y)	-0.00499	-0.00504	-0.00501
	(A1 * !A2 * !A4 * B1 * !Y)	0.00548	0.00549	0.00536
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00367	-0.00369	-0.00376
	(A1 * !A2 * !A4 * !B1 * Y)	0.00528	0.00530	0.00528
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00655	-0.00679	-0.00675
	(!A1 * !A2 * A4 * B1 * !Y)	0.00722	0.00561	0.00532
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00546	-0.00720	-0.00741
	(!A1 * !A2 * A4 * !B1 * Y)	0.00527	0.00534	0.00528
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00733	-0.00740	-0.00736
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00498	0.00499	0.00495
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00754	-0.00754	-0.00751

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)**	-0.00136	-0.00136	-0.00136
	(A2 * A4 * B1 * !Y)	0.00123	0.00123	0.00122
	(A2 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(A2 * A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(A2 * !A4 * B1 * !Y)	-0.00136	-0.00136	-0.00135
	(A2 * !A4 * B1 * !Y)	0.00097	0.00097	0.00097
	(A2 * !A4 * !B1 * Y)	-0.00132	-0.00132	-0.00132
	(A2 * !A4 * !B1 * Y)	0.00182	0.00183	0.00183
	(A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * A4 * !B1 * Y)	0.00127	0.00128	0.00127
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00129	-0.00130	-0.00135
	(A1 * !A2 * !A4 * B1 * !Y)	0.00099	0.00099	0.00095
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00131	-0.00133	-0.00132
	(A1 * !A2 * !A4 * !B1 * Y)	0.00171	0.00173	0.00172
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * A4 * B1 * !Y)	0.00181	0.00182	0.00182
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * A4 * !B1 * Y)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00116	-0.00126	-0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00189	0.00188	0.00187

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00256	-0.00258	-0.00257
	(A2 * A4 * B1 * !Y)	0.00253	0.00256	0.00254
	(A2 * A4 * !B1 * Y)	-0.00256	-0.00255	-0.00256
	(A2 * A4 * !B1 * Y)	0.00260	0.00259	0.00260
	(A2 * !A4 * B1 * !Y)	-0.00254	-0.00254	-0.00250
	(A2 * !A4 * B1 * !Y)	0.00198	0.00199	0.00200
	(A2 * !A4 * !B1 * Y)	-0.00256	-0.00258	-0.00256
	(A2 * !A4 * !B1 * Y)	0.00361	0.00365	0.00362
	(A1 * !A2 * A4 * B1 * !Y)	-0.00255	-0.00257	-0.00255
	(A1 * !A2 * A4 * B1 * !Y)	0.00251	0.00253	0.00251
	(A1 * !A2 * A4 * !B1 * Y)	-0.00256	-0.00257	-0.00256
	(A1 * !A2 * A4 * !B1 * Y)	0.00254	0.00255	0.00254
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00241	-0.00243	-0.00250
	(A1 * !A2 * !A4 * B1 * !Y)	0.00201	0.00201	0.00196
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00256	-0.00257	-0.00256
	(A1 * !A2 * !A4 * !B1 * Y)	0.00338	0.00341	0.00339
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00252	-0.00253	-0.00251
	(!A1 * !A2 * A4 * B1 * !Y)	0.00366	0.00368	0.00369
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00256	-0.00257	-0.00256
	(!A1 * !A2 * A4 * !B1 * Y)	0.00361	0.00364	0.00361
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00225	-0.00244	-0.00243
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00376	0.00375	0.00371

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00525	-0.00528	-0.00526
	(A2 * A4 * B1 * !Y)	0.00495	0.00500	0.00497
	(A2 * A4 * !B1 * Y)	-0.00526	-0.00529	-0.00526
	(A2 * A4 * !B1 * Y)	0.00508	0.00513	0.00508
	(A2 * !A4 * B1 * !Y)	-0.00522	-0.00521	-0.00516
	(A2 * !A4 * B1 * !Y)	0.00395	0.00395	0.00400
	(A2 * !A4 * !B1 * Y)	-0.00524	-0.00528	-0.00525
	(A2 * !A4 * !B1 * Y)	0.00730	0.00736	0.00732
	(A1 * !A2 * A4 * B1 * !Y)	-0.00523	-0.00524	-0.00522
	(A1 * !A2 * A4 * B1 * !Y)	0.00496	0.00497	0.00496
	(A1 * !A2 * A4 * !B1 * Y)	-0.00523	-0.00527	-0.00525
	(A1 * !A2 * A4 * !B1 * Y)	0.00499	0.00504	0.00501
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00495	-0.00499	-0.00515
	(A1 * !A2 * !A4 * B1 * !Y)	0.00404	0.00403	0.00392
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00523	-0.00528	-0.00525
	(A1 * !A2 * !A4 * !B1 * Y)	0.00673	0.00679	0.00675
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00519	-0.00521	-0.00516
	(!A1 * !A2 * A4 * B1 * !Y)	0.00747	0.00751	0.00750
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00525	-0.00528	-0.00525
	(!A1 * !A2 * A4 * !B1 * Y)	0.00736	0.00740	0.00736
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00459	-0.00499	-0.00495
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00767	0.00762	0.00755

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00151	0.00152	0.00152
	(A3 * B1 * !Y)	-0.00082	-0.00082	-0.00082
	(A3 * !B1 * Y)	0.00134	0.00133	0.00132
	(A3 * !B1 * Y)	-0.00181	-0.00184	-0.00184
	(A2 * !A3 * B1 * !Y)	0.00152	0.00152	0.00152
	(A2 * !A3 * B1 * !Y)	-0.00082	-0.00082	-0.00081
	(A2 * !A3 * !B1 * Y)	0.00133	0.00133	0.00132
	(A2 * !A3 * !B1 * Y)	-0.00165	-0.00175	-0.00175
	(A1 * !A2 * !A3 * B1 * !Y)	0.00152	0.00153	0.00152
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * !A3 * !B1 * Y)	0.00133	0.00133	0.00132
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00161	-0.00171	-0.00170
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00295	0.00296	0.00295
	(A3 * B1 * !Y)	-0.00169	-0.00170	-0.00169
	(A3 * !B1 * Y)	0.00263	0.00264	0.00261
	(A3 * !B1 * Y)	-0.00358	-0.00368	-0.00366
	(A2 * !A3 * B1 * !Y)	0.00295	0.00296	0.00295
	(A2 * !A3 * B1 * !Y)	-0.00169	-0.00168	-0.00168
	(A2 * !A3 * !B1 * Y)	0.00260	0.00263	0.00261
	(A2 * !A3 * !B1 * Y)	-0.00326	-0.00348	-0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	0.00295	0.00297	0.00295
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00168	-0.00168	-0.00167
	(A1 * !A2 * !A3 * !B1 * Y)	0.00263	0.00262	0.00261
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00319	-0.00339	-0.00336
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00245	0.00248	0.00246
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00373	-0.00375	-0.00373

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00604	0.00607	0.00604
	(A3 * B1 * !Y)	-0.00329	-0.00331	-0.00329
	(A3 * !B1 * Y)	0.00534	0.00535	0.00529
	(A3 * !B1 * Y)	-0.00710	-0.00724	-0.00728
	(A2 * !A3 * B1 * !Y)	0.00604	0.00607	0.00604
	(A2 * !A3 * B1 * !Y)	-0.00327	-0.00328	-0.00326
	(A2 * !A3 * !B1 * Y)	0.00529	0.00534	0.00529
	(A2 * !A3 * !B1 * Y)	-0.00642	-0.00683	-0.00679
	(A1 * !A2 * !A3 * B1 * !Y)	0.00604	0.00609	0.00605
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00326	-0.00328	-0.00326
	(A1 * !A2 * !A3 * !B1 * Y)	0.00527	0.00532	0.00529
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00621	-0.00657	-0.00655
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00495	0.00499	0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00742	-0.00746	-0.00742

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00145	-0.00145	-0.00150
	(A3 * B1 * !Y)	0.00089	0.00089	0.00085
	(A3 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A3 * !B1 * Y)	0.00183	0.00184	0.00184
	(A2 * !A3 * B1 * !Y)	-0.00135	-0.00136	-0.00148
	(A2 * !A3 * B1 * !Y)	0.00094	0.00093	0.00085
	(A2 * !A3 * !B1 * Y)	-0.00132	-0.00132	-0.00131
	(A2 * !A3 * !B1 * Y)	0.00175	0.00175	0.00175
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00122	-0.00123	-0.00145
	(A1 * !A2 * !A3 * B1 * !Y)	0.00102	0.00102	0.00087
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !A3 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00115	-0.00125	-0.00124
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00190	0.00189	0.00188
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00273	-0.00277	-0.00290
	(A3 * B1 * !Y)	0.00187	0.00188	0.00176
	(A3 * !B1 * Y)	-0.00259	-0.00261	-0.00260
	(A3 * !B1 * Y)	0.00365	0.00368	0.00366
	(A2 * !A3 * B1 * !Y)	-0.00253	-0.00256	-0.00286
	(A2 * !A3 * B1 * !Y)	0.00197	0.00198	0.00176
	(A2 * !A3 * !B1 * Y)	-0.00259	-0.00260	-0.00260
	(A2 * !A3 * !B1 * Y)	0.00346	0.00348	0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00220	-0.00224	-0.00277
	(A1 * !A2 * !A3 * B1 * !Y)	0.00217	0.00217	0.00181
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00259	-0.00261	-0.00260
	(A1 * !A2 * !A3 * !B1 * Y)	0.00336	0.00339	0.00336
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00228	-0.00248	-0.00246
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00380	0.00379	0.00375

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00570	-0.00576	-0.00598
	(A3 * B1 * !Y)	0.00357	0.00360	0.00339
	(A3 * !B1 * Y)	-0.00526	-0.00524	-0.00526
	(A3 * !B1 * Y)	0.00726	0.00724	0.00728
	(A2 * !A3 * B1 * !Y)	-0.00530	-0.00537	-0.00591
	(A2 * !A3 * B1 * !Y)	0.00374	0.00376	0.00338
	(A2 * !A3 * !B1 * Y)	-0.00526	-0.00529	-0.00526
	(A2 * !A3 * !B1 * Y)	0.00678	0.00683	0.00679
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00467	-0.00475	-0.00574
	(A1 * !A2 * !A3 * B1 * !Y)	0.00413	0.00414	0.00348
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00526	-0.00528	-0.00526
	(A1 * !A2 * !A3 * !B1 * Y)	0.00654	0.00657	0.00655
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00461	-0.00499	-0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00758	0.00754	0.00747

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)	0.00063	0.00063	0.00054
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00206	-0.00208	-0.00221
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00144	0.00144	0.00127
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00394	-0.00398	-0.00425
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00213	0.00214	0.00185
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00417	-0.00423	-0.00475

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)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00224	0.00225	0.00224
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00120	-0.00121	-0.00120
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00429	0.00433	0.00430
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00173	-0.00173	-0.00172
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00484	0.00486	0.00484

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00273	0.00283	0.00283	0.00286	0.00257	0.80195
sky130_fd_sc_hs__o41a_2	0.00290	0.00303	0.00310	0.00296	0.00296	1.63038
sky130_fd_sc_hs__o41a_4	0.00526	0.00565	0.00568	0.00533	0.00482	3.03185

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	2.33212	4.07366
sky130_fd_sc_hs__o41a_2	0.00000	2.23014	3.03177
sky130_fd_sc_hs__o41a_4	0.00000	5.54655	8.50179

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)	0.16493	0.90328	7.69458
	A2->X (RR)	0.16115	0.88075	7.57460
	A3->X (RR)	0.15012	0.85064	7.44086
	A4->X (RR)	0.12976	0.81123	7.32567
	B1->X (RR)	0.14803	0.90980	7.82998
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.16428	0.79288	7.64025
	A2->X (RR)	0.16176	0.77624	7.54306
	A3->X (RR)	0.15317	0.75252	7.43117
	A4->X (RR)	0.13241	0.71708	7.32678
	B1->X (RR)	0.14864	0.80914	7.85669
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.17881	0.73787	7.78918
	A2->X (RR)	0.17600	0.72039	7.68822
	A3->X (RR)	0.15918	0.68837	7.55867
	A4->X (RR)	0.14048	0.65063	7.44894
	B1->X (RR)	0.16131	0.76260	8.01598

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.49201	1.02469	4.79785
	A2->X (FF)	0.46885	1.00701	4.98195
	A3->X (FF)	0.41740	0.97890	5.09232
	A4->X (FF)	0.34082	0.93377	5.03714
	B1->X (FF)	0.11942	0.67873	4.53927
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.60329	1.12772	5.23833
	A2->X (FF)	0.58315	1.11832	5.45748
	A3->X (FF)	0.53495	1.09493	5.61949
	A4->X (FF)	0.44874	1.04205	5.58114
	B1->X (FF)	0.12488	0.65174	4.70151
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.60189	1.07863	5.12113
	A2->X (FF)	0.57665	1.06023	5.31773
	A3->X (FF)	0.51184	1.01581	5.45854
	A4->X (FF)	0.41958	0.95626	5.40056
	B1->X (FF)	0.13892	0.62663	4.74134

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01446	0.01453	0.02451
	A1	0.00650	0.00657	0.01672
	A2	0.01243	0.01247	0.02202
	A2	0.00550	0.00555	0.01511
	A3	0.01028	0.01039	0.01974
	A3	0.00437	0.00449	0.01388
	A4	0.00830	0.00846	0.01960
	A4	0.00334	0.00350	0.01472
	B1	0.01310	0.01354	0.02750
	B1	0.00686	0.00730	0.02142
sky130_fd_sc_hs__o41a_2	A1	0.01752	0.01780	0.02806
	A1	0.00901	0.00929	0.01990
	A2	0.01565	0.01590	0.02560
	A2	0.00812	0.00840	0.01812
	A3	0.01353	0.01387	0.02329
	A3	0.00695	0.00730	0.01683
	A4	0.01128	0.01173	0.02284
	A4	0.00576	0.00624	0.01752
	B1	0.01601	0.01661	0.03257
	B1	0.00812	0.00886	0.02627

sky130_fd_sc_hs__o41a_4	**A1**	0.03441	0.03468	0.05376
	A1	0.01853	0.01885	0.03859
	A2	0.03097	0.03134	0.04967
	A2	0.01657	0.01698	0.03597
	A3	0.02596	0.02661	0.04463
	A3	0.01373	0.01510	0.03243
	A4	0.02106	0.02191	0.04315
	A4	0.01127	0.01215	0.03389
	B1	0.03146	0.03257	0.06108
	B1	0.01906	0.02018	0.04904

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00465	0.00456	0.01430
	A1	0.01259	0.01250	0.02221
	A2	0.00468	0.00457	0.01513
	A2	0.01155	0.01149	0.02116
	A3	0.00469	0.00470	0.01491
	A3	0.01052	0.01059	0.02026
	A4	0.00465	0.00517	0.01826
	A4	0.00953	0.01007	0.02194
	B1	0.00291	0.00409	0.02232
	B1	0.00923	0.01033	0.02780

sky130_fd_sc_hs__o41a_2	**A1**	0.00800	0.00711	0.01736
	A1	0.01648	0.01558	0.02558
	A2	0.00804	0.00716	0.01803
	A2	0.01548	0.01461	0.02442
	A3	0.00804	0.00709	0.01780
	A3	0.01453	0.01369	0.02357
	A4	0.00801	0.00767	0.02041
	A4	0.01343	0.01321	0.02524
	B1	0.00510	0.00650	0.02563
	B1	0.01199	0.01330	0.03199
sky130_fd_sc_hs__o41a_4	**A1**	0.01591	0.01398	0.03468
	A1	0.03174	0.02980	0.04793
	A2	0.01530	0.01333	0.03426
	A2	0.02960	0.02779	0.04596
	A3	0.01536	0.01359	0.03273
	A3	0.02744	0.02581	0.04435
	A4	0.01584	0.01498	0.03983
	A4	0.02546	0.02474	0.04756
	B1	0.01027	0.01292	0.04970
	B1	0.02290	0.02539	0.05998

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)**	0.00122	0.00121	0.00122
	(A2 * A4 * B1 * X)	-0.00179	-0.00183	-0.00184
	(A2 * A3 * !A4 * B1 * X)	0.00122	0.00121	0.00122
	(A2 * A3 * !A4 * B1 * X)	-0.00179	-0.00182	-0.00184
	(A2 * !B1 * !X)	0.00120	0.00120	0.00120
	(A2 * !B1 * !X)	-0.00181	-0.00185	-0.00186
	(A2 * !A3 * !A4 * B1 * X)	0.00132	0.00122	0.00122
	(A2 * !A3 * !A4 * B1 * X)	-0.00167	-0.00182	-0.00183
	(!A2 * A3 * A4 * B1 * X)	0.00121	0.00123	0.00122
	(!A2 * A3 * A4 * B1 * X)	-0.00165	-0.00180	-0.00182
	(!A2 * A3 * !B1 * !X)	0.00119	0.00121	0.00120
	(!A2 * A3 * !B1 * !X)	-0.00167	-0.00180	-0.00180
	(!A2 * A3 * !A4 * B1 * X)	0.00125	0.00123	0.00122
	(!A2 * A3 * !A4 * B1 * X)	-0.00162	-0.00179	-0.00181
	(!A2 * !A3 * A4 * B1 * X)	0.00128	0.00124	0.00122
	(!A2 * !A3 * A4 * B1 * X)	-0.00157	-0.00176	-0.00180
	(!A2 * !A3 * A4 * !B1 * !X)	0.00119	0.00121	0.00120
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00164	-0.00178	-0.00177
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00114	0.00114	0.00113
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00187	-0.00188	-0.00187

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00139	0.00139	0.00139
	(A2 * A4 * B1 * X)	-0.00177	-0.00180	-0.00182
	(A2 * A3 * !A4 * B1 * X)	0.00139	0.00139	0.00139
	(A2 * A3 * !A4 * B1 * X)	-0.00177	-0.00180	-0.00182
	(A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(A2 * !B1 * !X)	-0.00178	-0.00182	-0.00182
	(A2 * !A3 * !A4 * B1 * X)	0.00149	0.00139	0.00140
	(A2 * !A3 * !A4 * B1 * X)	-0.00165	-0.00179	-0.00181
	(!A2 * A3 * A4 * B1 * X)	0.00139	0.00141	0.00139
	(!A2 * A3 * A4 * B1 * X)	-0.00163	-0.00177	-0.00177
	(!A2 * A3 * !B1 * !X)	0.00138	0.00140	0.00139
	(!A2 * A3 * !B1 * !X)	-0.00164	-0.00178	-0.00177
	(!A2 * A3 * !A4 * B1 * X)	0.00142	0.00141	0.00139
	(!A2 * A3 * !A4 * B1 * X)	-0.00160	-0.00177	-0.00178
	(!A2 * !A3 * A4 * B1 * X)	0.00145	0.00142	0.00140
	(!A2 * !A3 * A4 * B1 * X)	-0.00156	-0.00174	-0.00176
	(!A2 * !A3 * A4 * !B1 * !X)	0.00138	0.00140	0.00139
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00175	-0.00174
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00184	-0.00184	-0.00183

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00226	0.00226	0.00225
	(A2 * A4 * B1 * X)	-0.00350	-0.00359	-0.00361
	(A2 * A3 * !A4 * B1 * X)	0.00227	0.00226	0.00225
	(A2 * A3 * !A4 * B1 * X)	-0.00349	-0.00359	-0.00360
	(A2 * !B1 * !X)	0.00223	0.00222	0.00222
	(A2 * !B1 * !X)	-0.00354	-0.00362	-0.00364
	(A2 * !A3 * !A4 * B1 * X)	0.00255	0.00228	0.00226
	(A2 * !A3 * !A4 * B1 * X)	-0.00318	-0.00356	-0.00358
	(!A2 * A3 * A4 * B1 * X)	0.00227	0.00226	0.00225
	(!A2 * A3 * A4 * B1 * X)	-0.00322	-0.00350	-0.00354
	(!A2 * A3 * !B1 * !X)	0.00223	0.00223	0.00221
	(!A2 * A3 * !B1 * !X)	-0.00326	-0.00354	-0.00352
	(!A2 * A3 * !A4 * B1 * X)	0.00238	0.00227	0.00226
	(!A2 * A3 * !A4 * B1 * X)	-0.00312	-0.00349	-0.00356
	(!A2 * !A3 * A4 * B1 * X)	0.00243	0.00229	0.00226
	(!A2 * !A3 * A4 * B1 * X)	-0.00300	-0.00342	-0.00351
	(!A2 * !A3 * A4 * !B1 * !X)	0.00222	0.00222	0.00221
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00316	-0.00347	-0.00344
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00208	0.00209	0.00208
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00369	-0.00370	-0.00368

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

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

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	-0.00115	-0.00116	-0.00116
	(A2 * A4 * B1 * X)	0.00188	0.00189	0.00188
	(A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00116	-0.00115
	(A2 * A3 * !A4 * B1 * X)	0.00188	0.00189	0.00188
	(A2 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !X)	0.00186	0.00187	0.00186
	(A2 * !A3 * !A4 * B1 * X)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * !A4 * B1 * X)	0.00189	0.00190	0.00189
	(!A2 * A3 * A4 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * A4 * B1 * X)	0.00181	0.00182	0.00182
	(!A2 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * !B1 * !X)	0.00179	0.00180	0.00180
	(!A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * A3 * !A4 * B1 * X)	0.00181	0.00183	0.00182
	(!A2 * !A3 * A4 * B1 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !A3 * A4 * B1 * X)	0.00178	0.00181	0.00180
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * !A3 * A4 * !B1 * !X)	0.00176	0.00178	0.00177
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00104	-0.00112	-0.00113
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00192	0.00192	0.00190

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00135	-0.00135	-0.00135
	(A2 * A4 * B1 * X)	0.00184	0.00186	0.00184
	(A2 * A3 * !A4 * B1 * X)	-0.00135	-0.00135	-0.00135
	(A2 * A3 * !A4 * B1 * X)	0.00184	0.00186	0.00184
	(A2 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * !X)	0.00184	0.00185	0.00184
	(A2 * !A3 * !A4 * B1 * X)	-0.00134	-0.00135	-0.00134
	(A2 * !A3 * !A4 * B1 * X)	0.00185	0.00186	0.00185
	(!A2 * A3 * A4 * B1 * X)	-0.00134	-0.00135	-0.00135
	(!A2 * A3 * A4 * B1 * X)	0.00177	0.00179	0.00177
	(!A2 * A3 * !B1 * !X)	-0.00135	-0.00135	-0.00135
	(!A2 * A3 * !B1 * !X)	0.00177	0.00178	0.00177
	(!A2 * A3 * !A4 * B1 * X)	-0.00134	-0.00135	-0.00134
	(!A2 * A3 * !A4 * B1 * X)	0.00177	0.00179	0.00178
	(!A2 * !A3 * A4 * B1 * X)	-0.00133	-0.00134	-0.00133
	(!A2 * !A3 * A4 * B1 * X)	0.00175	0.00177	0.00176
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(!A2 * !A3 * A4 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00118	-0.00128	-0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00190	0.00189	0.00187

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00211	-0.00213	-0.00212
	(A2 * A4 * B1 * X)	0.00367	0.00372	0.00369
	(A2 * A3 * !A4 * B1 * X)	-0.00211	-0.00212	-0.00212
	(A2 * A3 * !A4 * B1 * X)	0.00368	0.00371	0.00369
	(A2 * !B1 * !X)	-0.00214	-0.00216	-0.00215
	(A2 * !B1 * !X)	0.00365	0.00370	0.00366
	(A2 * !A3 * !A4 * B1 * X)	-0.00211	-0.00212	-0.00211
	(A2 * !A3 * !A4 * B1 * X)	0.00368	0.00371	0.00371
	(!A2 * A3 * A4 * B1 * X)	-0.00211	-0.00213	-0.00212
	(!A2 * A3 * A4 * B1 * X)	0.00352	0.00356	0.00354
	(!A2 * A3 * !B1 * !X)	-0.00214	-0.00215	-0.00215
	(!A2 * A3 * !B1 * !X)	0.00350	0.00354	0.00352
	(!A2 * A3 * !A4 * B1 * X)	-0.00211	-0.00212	-0.00211
	(!A2 * A3 * !A4 * B1 * X)	0.00355	0.00357	0.00356
	(!A2 * !A3 * A4 * B1 * X)	-0.00209	-0.00211	-0.00209
	(!A2 * !A3 * A4 * B1 * X)	0.00348	0.00352	0.00351
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00214	-0.00216	-0.00215
	(!A2 * !A3 * A4 * !B1 * !X)	0.00343	0.00347	0.00344
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00187	-0.00203	-0.00206
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00381	0.00379	0.00376

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)**	0.00125	0.00126	0.00121
	(A1 * A3 * A4 * B1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * A3 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * A3 * !A4 * B1 * X)	0.00128	0.00129	0.00120
	(A1 * A3 * !A4 * B1 * X)	-0.00126	-0.00127	-0.00129
	(A1 * !A3 * A4 * B1 * X)	0.00131	0.00139	0.00126
	(A1 * !A3 * A4 * B1 * X)	-0.00124	-0.00118	-0.00122
	(A1 * !A3 * A4 * !B1 * !X)	0.00115	0.00117	0.00115
	(A1 * !A3 * A4 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * !A3 * !A4 * B1 * X)	0.00120	0.00120	0.00118
	(A1 * !A3 * !A4 * B1 * X)	-0.00093	-0.00094	-0.00094
	(A1 * !A3 * !A4 * !B1 * !X)	0.00116	0.00117	0.00115
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00181	-0.00182	-0.00182
	(!A1 * A3 * A4 * B1 * X)	0.00122	0.00118	0.00117
	(!A1 * A3 * A4 * B1 * X)	-0.00170	-0.00180	-0.00180
	(!A1 * A3 * !B1 * !X)	0.00116	0.00116	0.00115
	(!A1 * A3 * !B1 * !X)	-0.00177	-0.00182	-0.00182
	(!A1 * A3 * !A4 * B1 * X)	0.00148	0.00120	0.00119
	(!A1 * A3 * !A4 * B1 * X)	-0.00147	-0.00178	-0.00179
	(!A1 * !A3 * A4 * B1 * X)	0.00145	0.00121	0.00118
	(!A1 * !A3 * A4 * B1 * X)	-0.00141	-0.00173	-0.00177
	(!A1 * !A3 * A4 * !B1 * !X)	0.00117	0.00116	0.00115
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00163	-0.00174	-0.00173
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00141	0.00142	0.00138
	(A1 * A3 * A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(A1 * A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * !A4 * B1 * X)	0.00144	0.00145	0.00137
	(A1 * A3 * !A4 * B1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !A3 * A4 * B1 * X)	0.00147	0.00156	0.00142
	(A1 * !A3 * A4 * B1 * X)	-0.00124	-0.00118	-0.00122
	(A1 * !A3 * A4 * !B1 * !X)	0.00133	0.00135	0.00133
	(A1 * !A3 * A4 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !A4 * B1 * X)	0.00137	0.00137	0.00135
	(A1 * !A3 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * !A4 * !B1 * !X)	0.00134	0.00135	0.00133
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00181	-0.00182	-0.00182
	(!A1 * A3 * A4 * B1 * X)	0.00138	0.00135	0.00134
	(!A1 * A3 * A4 * B1 * X)	-0.00172	-0.00181	-0.00181
	(!A1 * A3 * !B1 * !X)	0.00134	0.00134	0.00133
	(!A1 * A3 * !B1 * !X)	-0.00176	-0.00181	-0.00182
	(!A1 * A3 * !A4 * B1 * X)	0.00165	0.00137	0.00135
	(!A1 * A3 * !A4 * B1 * X)	-0.00147	-0.00179	-0.00180
	(!A1 * !A3 * A4 * B1 * X)	0.00160	0.00137	0.00134
	(!A1 * !A3 * A4 * B1 * X)	-0.00139	-0.00174	-0.00177
	(!A1 * !A3 * A4 * !B1 * !X)	0.00132	0.00134	0.00133
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00160	-0.00175	-0.00174
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00297	0.00300	0.00290
	(A1 * A3 * A4 * B1 * X)	-0.00256	-0.00258	-0.00256
	(A1 * A3 * !B1 * !X)	0.00277	0.00278	0.00275
	(A1 * A3 * !B1 * !X)	-0.00257	-0.00259	-0.00257
	(A1 * A3 * !A4 * B1 * X)	0.00304	0.00310	0.00290
	(A1 * A3 * !A4 * B1 * X)	-0.00245	-0.00246	-0.00252
	(A1 * !A3 * A4 * B1 * X)	0.00307	0.00321	0.00297
	(A1 * !A3 * A4 * B1 * X)	-0.00242	-0.00227	-0.00238
	(A1 * !A3 * A4 * !B1 * !X)	0.00275	0.00275	0.00275
	(A1 * !A3 * A4 * !B1 * !X)	-0.00248	-0.00250	-0.00248
	(A1 * !A3 * !A4 * B1 * X)	0.00284	0.00288	0.00281
	(A1 * !A3 * !A4 * B1 * X)	-0.00177	-0.00181	-0.00179
	(A1 * !A3 * !A4 * !B1 * !X)	0.00274	0.00275	0.00275
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00354	-0.00358	-0.00360
	(!A1 * A3 * A4 * B1 * X)	0.00283	0.00278	0.00278
	(!A1 * A3 * A4 * B1 * X)	-0.00335	-0.00352	-0.00356
	(!A1 * A3 * !B1 * !X)	0.00274	0.00275	0.00275
	(!A1 * A3 * !B1 * !X)	-0.00345	-0.00356	-0.00359
	(!A1 * A3 * !A4 * B1 * X)	0.00336	0.00281	0.00280
	(!A1 * A3 * !A4 * B1 * X)	-0.00287	-0.00349	-0.00354
	(!A1 * !A3 * A4 * B1 * X)	0.00327	0.00286	0.00279
	(!A1 * !A3 * A4 * B1 * X)	-0.00275	-0.00341	-0.00350
	(!A1 * !A3 * A4 * !B1 * !X)	0.00274	0.00278	0.00275
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00317	-0.00347	-0.00342
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00261	0.00262	0.00261
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00362	-0.00363	-0.00362

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)**	-0.00111	-0.00111	-0.00111
	(A1 * A3 * A4 * B1 * X)	0.00131	0.00131	0.00131
	(A1 * A3 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(A1 * A3 * !A4 * B1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A3 * !A4 * B1 * X)	0.00130	0.00130	0.00129
	(A1 * !A3 * A4 * B1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * !A3 * A4 * B1 * X)	0.00126	0.00126	0.00126
	(A1 * !A3 * A4 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * A4 * !B1 * !X)	0.00126	0.00126	0.00126
	(A1 * !A3 * !A4 * B1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * !A3 * !A4 * B1 * X)	0.00106	0.00106	0.00107
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * !A4 * !B1 * !X)	0.00181	0.00182	0.00182
	(!A1 * A3 * A4 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A3 * A4 * B1 * X)	0.00184	0.00185	0.00184
	(!A1 * A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !X)	0.00182	0.00183	0.00182
	(!A1 * A3 * !A4 * B1 * X)	-0.00110	-0.00110	-0.00109
	(!A1 * A3 * !A4 * B1 * X)	0.00186	0.00187	0.00187
	(!A1 * !A3 * A4 * B1 * X)	-0.00110	-0.00110	-0.00109
	(!A1 * !A3 * A4 * B1 * X)	0.00178	0.00178	0.00178
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * A4 * !B1 * !X)	0.00174	0.00174	0.00173
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00100	-0.00108	-0.00109
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00188	0.00187	0.00186

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00129	-0.00130	-0.00129
	(A1 * A3 * A4 * B1 * X)	0.00127	0.00128	0.00127
	(A1 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * A3 * !B1 * !X)	0.00127	0.00128	0.00127
	(A1 * A3 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00129
	(A1 * A3 * !A4 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * !A3 * A4 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A3 * A4 * B1 * X)	0.00124	0.00125	0.00124
	(A1 * !A3 * A4 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !A3 * A4 * !B1 * !X)	0.00125	0.00126	0.00125
	(A1 * !A3 * !A4 * B1 * X)	-0.00123	-0.00124	-0.00122
	(A1 * !A3 * !A4 * B1 * X)	0.00104	0.00105	0.00105
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !A3 * !A4 * !B1 * !X)	0.00183	0.00183	0.00183
	(!A1 * A3 * A4 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A3 * A4 * B1 * X)	0.00183	0.00184	0.00183
	(!A1 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * A3 * !B1 * !X)	0.00183	0.00184	0.00183
	(!A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * A3 * !A4 * B1 * X)	0.00185	0.00186	0.00186
	(!A1 * !A3 * A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A3 * A4 * B1 * X)	0.00175	0.00177	0.00177
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * A4 * !B1 * !X)	0.00173	0.00175	0.00174
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00113	-0.00123	-0.00125
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00189	0.00188	0.00187

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00268	-0.00269	-0.00268
	(A1 * A3 * A4 * B1 * X)	0.00256	0.00258	0.00256
	(A1 * A3 * !B1 * !X)	-0.00268	-0.00269	-0.00268
	(A1 * A3 * !B1 * !X)	0.00257	0.00259	0.00257
	(A1 * A3 * !A4 * B1 * X)	-0.00267	-0.00269	-0.00268
	(A1 * A3 * !A4 * B1 * X)	0.00253	0.00255	0.00253
	(A1 * !A3 * A4 * B1 * X)	-0.00266	-0.00268	-0.00266
	(A1 * !A3 * A4 * B1 * X)	0.00246	0.00248	0.00246
	(A1 * !A3 * A4 * !B1 * !X)	-0.00268	-0.00269	-0.00268
	(A1 * !A3 * A4 * !B1 * !X)	0.00248	0.00250	0.00248
	(A1 * !A3 * !A4 * B1 * X)	-0.00252	-0.00253	-0.00249
	(A1 * !A3 * !A4 * B1 * X)	0.00206	0.00208	0.00208
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00267	-0.00270	-0.00268
	(A1 * !A3 * !A4 * !B1 * !X)	0.00359	0.00363	0.00360
	(!A1 * A3 * A4 * B1 * X)	-0.00266	-0.00267	-0.00266
	(!A1 * A3 * A4 * B1 * X)	0.00361	0.00364	0.00362
	(!A1 * A3 * !B1 * !X)	-0.00268	-0.00269	-0.00268
	(!A1 * A3 * !B1 * !X)	0.00359	0.00362	0.00360
	(!A1 * A3 * !A4 * B1 * X)	-0.00263	-0.00264	-0.00262
	(!A1 * A3 * !A4 * B1 * X)	0.00365	0.00367	0.00367
	(!A1 * !A3 * A4 * B1 * X)	-0.00262	-0.00264	-0.00261
	(!A1 * !A3 * A4 * B1 * X)	0.00347	0.00351	0.00351
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00267	-0.00271	-0.00268
	(!A1 * !A3 * A4 * !B1 * !X)	0.00341	0.00347	0.00342
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00241	-0.00258	-0.00260
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00374	0.00374	0.00370

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)**	0.00132	0.00132	0.00123
	(A2 * A4 * B1 * X)	-0.00116	-0.00117	-0.00122
	(A2 * A4 * !B1 * !X)	0.00114	0.00115	0.00115
	(A2 * A4 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * !A4 * B1 * X)	0.00119	0.00120	0.00117
	(A2 * !A4 * B1 * X)	-0.00087	-0.00088	-0.00089
	(A2 * !A4 * !B1 * !X)	0.00116	0.00116	0.00115
	(A2 * !A4 * !B1 * !X)	-0.00173	-0.00178	-0.00178
	(A1 * !A2 * A4 * B1 * X)	0.00149	0.00137	0.00127
	(A1 * !A2 * A4 * B1 * X)	-0.00102	-0.00114	-0.00117
	(A1 * !A2 * A4 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * A4 * !B1 * !X)	-0.00122	-0.00123	-0.00121
	(A1 * !A2 * !A4 * B1 * X)	0.00120	0.00120	0.00118
	(A1 * !A2 * !A4 * B1 * X)	-0.00086	-0.00087	-0.00088
	(A1 * !A2 * !A4 * !B1 * !X)	0.00116	0.00115	0.00115
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00159	-0.00168	-0.00167
	(!A1 * !A2 * A4 * B1 * X)	0.00161	0.00124	0.00117
	(!A1 * !A2 * A4 * B1 * X)	-0.00134	-0.00171	-0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	0.00116	0.00116	0.00115
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00177	-0.00178	-0.00178
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00180	-0.00179	-0.00179

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00158	0.00158	0.00148
	(A2 * A4 * B1 * X)	-0.00121	-0.00121	-0.00125
	(A2 * A4 * !B1 * !X)	0.00134	0.00136	0.00135
	(A2 * A4 * !B1 * !X)	-0.00132	-0.00134	-0.00133
	(A2 * !A4 * B1 * X)	0.00144	0.00144	0.00142
	(A2 * !A4 * B1 * X)	-0.00089	-0.00090	-0.00091
	(A2 * !A4 * !B1 * !X)	0.00136	0.00136	0.00135
	(A2 * !A4 * !B1 * !X)	-0.00180	-0.00185	-0.00185
	(A1 * !A2 * A4 * B1 * X)	0.00173	0.00162	0.00151
	(A1 * !A2 * A4 * B1 * X)	-0.00104	-0.00115	-0.00119
	(A1 * !A2 * A4 * !B1 * !X)	0.00135	0.00136	0.00135
	(A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A4 * B1 * X)	0.00145	0.00145	0.00142
	(A1 * !A2 * !A4 * B1 * X)	-0.00088	-0.00089	-0.00090
	(A1 * !A2 * !A4 * !B1 * !X)	0.00136	0.00136	0.00135
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00165	-0.00174	-0.00175
	(!A1 * !A2 * A4 * B1 * X)	0.00186	0.00148	0.00141
	(!A1 * !A2 * A4 * B1 * X)	-0.00135	-0.00174	-0.00178
	(!A1 * !A2 * A4 * !B1 * !X)	0.00136	0.00136	0.00135
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00184	-0.00185	-0.00185
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00186	-0.00186	-0.00186

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00316	0.00316	0.00294
	(A2 * A4 * B1 * X)	-0.00229	-0.00238	-0.00246
	(A2 * A4 * !B1 * !X)	0.00270	0.00274	0.00271
	(A2 * A4 * !B1 * !X)	-0.00256	-0.00258	-0.00256
	(A2 * !A4 * B1 * X)	0.00284	0.00287	0.00278
	(A2 * !A4 * B1 * X)	-0.00174	-0.00176	-0.00176
	(A2 * !A4 * !B1 * !X)	0.00270	0.00272	0.00270
	(A2 * !A4 * !B1 * !X)	-0.00343	-0.00356	-0.00358
	(A1 * !A2 * A4 * B1 * X)	0.00345	0.00315	0.00297
	(A1 * !A2 * A4 * B1 * X)	-0.00202	-0.00226	-0.00234
	(A1 * !A2 * A4 * !B1 * !X)	0.00270	0.00271	0.00271
	(A1 * !A2 * A4 * !B1 * !X)	-0.00248	-0.00249	-0.00248
	(A1 * !A2 * !A4 * B1 * X)	0.00283	0.00288	0.00279
	(A1 * !A2 * !A4 * B1 * X)	-0.00170	-0.00174	-0.00175
	(A1 * !A2 * !A4 * !B1 * !X)	0.00270	0.00272	0.00270
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00315	-0.00336	-0.00335
	(!A1 * !A2 * A4 * B1 * X)	0.00362	0.00288	0.00277
	(!A1 * !A2 * A4 * B1 * X)	-0.00264	-0.00341	-0.00352
	(!A1 * !A2 * A4 * !B1 * !X)	0.00270	0.00271	0.00270
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00353	-0.00357	-0.00358
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00256	0.00257	0.00256
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00361	-0.00362	-0.00361

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)**	-0.00110	-0.00110	-0.00110
	(A2 * A4 * B1 * X)	0.00124	0.00124	0.00123
	(A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A2 * A4 * !B1 * !X)	0.00124	0.00125	0.00124
	(A2 * !A4 * B1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A4 * B1 * X)	0.00098	0.00098	0.00099
	(A2 * !A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A2 * !A4 * !B1 * !X)	0.00177	0.00178	0.00178
	(A1 * !A2 * A4 * B1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * A4 * B1 * X)	0.00122	0.00123	0.00122
	(A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * A4 * !B1 * !X)	0.00122	0.00123	0.00121
	(A1 * !A2 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00109
	(A1 * !A2 * !A4 * B1 * X)	0.00101	0.00101	0.00096
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !A4 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !A2 * A4 * B1 * X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * A4 * B1 * X)	0.00182	0.00183	0.00183
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A2 * A4 * !B1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00099	-0.00107	-0.00108
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00184	0.00183	0.00182

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00136	-0.00136	-0.00136
	(A2 * A4 * B1 * X)	0.00126	0.00126	0.00125
	(A2 * A4 * !B1 * !X)	-0.00130	-0.00132	-0.00131
	(A2 * A4 * !B1 * !X)	0.00132	0.00134	0.00133
	(A2 * !A4 * B1 * X)	-0.00135	-0.00135	-0.00134
	(A2 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(A2 * !A4 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(A2 * !A4 * !B1 * !X)	0.00185	0.00186	0.00186
	(A1 * !A2 * A4 * B1 * X)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * A4 * B1 * X)	0.00123	0.00123	0.00123
	(A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(A1 * !A2 * A4 * !B1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A2 * !A4 * B1 * X)	-0.00130	-0.00131	-0.00134
	(A1 * !A2 * !A4 * B1 * X)	0.00100	0.00099	0.00097
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00130	-0.00131	-0.00131
	(A1 * !A2 * !A4 * !B1 * !X)	0.00174	0.00174	0.00175
	(!A1 * !A2 * A4 * B1 * X)	-0.00135	-0.00135	-0.00134
	(!A1 * !A2 * A4 * B1 * X)	0.00183	0.00183	0.00184
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * A4 * !B1 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00114	-0.00124	-0.00126
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00193	0.00191	0.00190

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00265	-0.00265	-0.00264
	(A2 * A4 * B1 * X)	0.00250	0.00251	0.00251
	(A2 * A4 * !B1 * !X)	-0.00264	-0.00265	-0.00264
	(A2 * A4 * !B1 * !X)	0.00256	0.00258	0.00256
	(A2 * !A4 * B1 * X)	-0.00260	-0.00263	-0.00260
	(A2 * !A4 * B1 * X)	0.00196	0.00198	0.00197
	(A2 * !A4 * !B1 * !X)	-0.00263	-0.00265	-0.00264
	(A2 * !A4 * !B1 * !X)	0.00356	0.00359	0.00358
	(A1 * !A2 * A4 * B1 * X)	-0.00262	-0.00263	-0.00262
	(A1 * !A2 * A4 * B1 * X)	0.00245	0.00246	0.00246
	(A1 * !A2 * A4 * !B1 * !X)	-0.00263	-0.00264	-0.00263
	(A1 * !A2 * A4 * !B1 * !X)	0.00248	0.00249	0.00248
	(A1 * !A2 * !A4 * B1 * X)	-0.00244	-0.00247	-0.00259
	(A1 * !A2 * !A4 * B1 * X)	0.00202	0.00204	0.00193
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00263	-0.00265	-0.00263
	(A1 * !A2 * !A4 * !B1 * !X)	0.00334	0.00336	0.00335
	(!A1 * !A2 * A4 * B1 * X)	-0.00260	-0.00261	-0.00258
	(!A1 * !A2 * A4 * B1 * X)	0.00366	0.00369	0.00367
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00263	-0.00265	-0.00263
	(!A1 * !A2 * A4 * !B1 * !X)	0.00359	0.00362	0.00360
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00236	-0.00254	-0.00255
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00373	0.00372	0.00369

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00133	0.00134	0.00134
	(A3 * B1 * X)	-0.00079	-0.00080	-0.00080
	(A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A3 * !B1 * !X)	-0.00175	-0.00181	-0.00181
	(A2 * !A3 * B1 * X)	0.00134	0.00134	0.00134
	(A2 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A2 * !A3 * !B1 * !X)	-0.00160	-0.00172	-0.00171
	(A1 * !A2 * !A3 * B1 * X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00156	-0.00167	-0.00167
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00182	-0.00183	-0.00182
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00150	0.00150	0.00149
	(A3 * B1 * X)	-0.00082	-0.00082	-0.00081
	(A3 * !B1 * !X)	0.00134	0.00135	0.00134
	(A3 * !B1 * !X)	-0.00174	-0.00179	-0.00180
	(A2 * !A3 * B1 * X)	0.00149	0.00150	0.00149
	(A2 * !A3 * B1 * X)	-0.00081	-0.00081	-0.00081
	(A2 * !A3 * !B1 * !X)	0.00136	0.00135	0.00134
	(A2 * !A3 * !B1 * !X)	-0.00161	-0.00172	-0.00172
	(A1 * !A2 * !A3 * B1 * X)	0.00149	0.00150	0.00150
	(A1 * !A2 * !A3 * B1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * !A2 * !A3 * !B1 * !X)	0.00134	0.00136	0.00134
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00155	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00254	0.00255	0.00254
	(A3 * B1 * X)	-0.00162	-0.00163	-0.00162
	(A3 * !B1 * !X)	0.00222	0.00225	0.00222
	(A3 * !B1 * !X)	-0.00349	-0.00360	-0.00361
	(A2 * !A3 * B1 * X)	0.00255	0.00255	0.00254
	(A2 * !A3 * B1 * X)	-0.00161	-0.00161	-0.00160
	(A2 * !A3 * !B1 * !X)	0.00222	0.00223	0.00222
	(A2 * !A3 * !B1 * !X)	-0.00318	-0.00343	-0.00342
	(A1 * !A2 * !A3 * B1 * X)	0.00254	0.00255	0.00255
	(A1 * !A2 * !A3 * B1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * !A3 * !B1 * !X)	0.00222	0.00222	0.00222
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00308	-0.00333	-0.00331
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00209	0.00208	0.00209
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00365	-0.00364	-0.00365

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00123	-0.00124	-0.00128
	(A3 * B1 * X)	0.00090	0.00090	0.00087
	(A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A3 * !B1 * !X)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * X)	-0.00114	-0.00114	-0.00126
	(A2 * !A3 * B1 * X)	0.00095	0.00095	0.00087
	(A2 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(A1 * !A2 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00123
	(A1 * !A2 * !A3 * B1 * X)	0.00104	0.00103	0.00089
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !A3 * !B1 * !X)	0.00167	0.00167	0.00167
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00101	-0.00109	-0.00110
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00187	0.00186	0.00185
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00139	-0.00140	-0.00145
	(A3 * B1 * X)	0.00091	0.00091	0.00087
	(A3 * !B1 * !X)	-0.00130	-0.00131	-0.00131
	(A3 * !B1 * !X)	0.00180	0.00181	0.00181
	(A2 * !A3 * B1 * X)	-0.00130	-0.00130	-0.00143
	(A2 * !A3 * B1 * X)	0.00096	0.00096	0.00087
	(A2 * !A3 * !B1 * !X)	-0.00130	-0.00131	-0.00131
	(A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00172
	(A1 * !A2 * !A3 * B1 * X)	-0.00118	-0.00118	-0.00140
	(A1 * !A2 * !A3 * B1 * X)	0.00103	0.00103	0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00130	-0.00132	-0.00131
	(A1 * !A2 * !A3 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00114	-0.00124	-0.00126
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00187	0.00186	0.00185

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00230	-0.00231	-0.00241
	(A3 * B1 * X)	0.00185	0.00185	0.00177
	(A3 * !B1 * !X)	-0.00216	-0.00217	-0.00215
	(A3 * !B1 * !X)	0.00363	0.00364	0.00363
	(A2 * !A3 * B1 * X)	-0.00206	-0.00207	-0.00237
	(A2 * !A3 * B1 * X)	0.00198	0.00198	0.00177
	(A2 * !A3 * !B1 * !X)	-0.00216	-0.00217	-0.00216
	(A2 * !A3 * !B1 * !X)	0.00342	0.00343	0.00342
	(A1 * !A2 * !A3 * B1 * X)	-0.00179	-0.00180	-0.00230
	(A1 * !A2 * !A3 * B1 * X)	0.00214	0.00213	0.00181
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00214	-0.00217	-0.00216
	(A1 * !A2 * !A3 * !B1 * !X)	0.00330	0.00333	0.00331
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00187	-0.00204	-0.00207
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00376	0.00375	0.00372

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)**	0.00052	0.00052	0.00044
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00164	-0.00165	-0.00177
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00058	0.00058	0.00050
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00190	-0.00191	-0.00204
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00098	0.00098	0.00084
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00311	-0.00313	-0.00336

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)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00180	0.00181	0.00181
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00209	0.00210	0.00210
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00346	0.00347	0.00346

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00263	0.00245	0.82155
sky130_fd_sc_hs__or2b_2	0.00275	0.00236	1.43442
sky130_fd_sc_hs__or2b_4	0.00523	0.00296	3.05637

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	2.92402	4.33471
sky130_fd_sc_hs__or2b_2	0.00000	3.30759	5.17647
sky130_fd_sc_hs__or2b_4	0.00000	4.44861	6.07386

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)	0.10198	0.79184	7.52950
	B_N->X (FR)	0.17665	0.87074	7.57234
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.09985	0.69603	7.24065
	B_N->X (FR)	0.18934	0.78757	7.41220
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.09266	0.59536	7.38284
	B_N->X (FR)	0.19879	0.74159	7.70144

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.18279	0.65750	4.36780
	B_N->X (RF)	0.19831	0.62430	3.94812
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.24140	0.70450	4.31216
	B_N->X (RF)	0.26495	0.65149	3.62891
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.23474	0.65768	4.57483
	B_N->X (RF)	0.25400	0.63449	3.96057

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00728	0.00758	0.01887
	A	0.00391	0.00422	0.01553
	B_N	0.00655	0.00766	0.02588
	B_N	0.00941	0.01051	0.02888
sky130_fd_sc_hs__or2b_2	A	0.01013	0.01082	0.02228
	A	0.00655	0.00726	0.01892
	B_N	0.00935	0.01083	0.02809
	B_N	0.01217	0.01367	0.03122
sky130_fd_sc_hs__or2b_4	A	0.01938	0.02083	0.04834
	A	0.01271	0.01417	0.04189
	B_N	0.01766	0.01962	0.04077
	B_N	0.02088	0.02286	0.04474

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00419	0.00454	0.01578
	A	0.00754	0.00789	0.01893
	B_N	0.00911	0.00990	0.02820
	B_N	0.00625	0.00700	0.02492
sky130_fd_sc_hs__or2b_2	A	0.00669	0.00693	0.01926
	A	0.01025	0.01048	0.02253
	B_N	0.01226	0.01282	0.02977
	B_N	0.00943	0.00988	0.02644
sky130_fd_sc_hs__or2b_4	A	0.01333	0.01413	0.04033
	A	0.01999	0.02069	0.04671
	B_N	0.02057	0.02179	0.04425
	B_N	0.01735	0.01854	0.03941

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00148	0.00122	0.00117
	(!B_N * X)	-0.00142	-0.00168	-0.00173
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00160	0.00133	0.00128
	(!B_N * X)	-0.00150	-0.00176	-0.00181
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00317	0.00259	0.00246
	(!B_N * X)	-0.00266	-0.00326	-0.00337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00111	-0.00112	-0.00111
	(!B_N * X)	0.00178	0.00180	0.00179
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00122	-0.00123	-0.00122
	(!B_N * X)	0.00186	0.00188	0.00187
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00234	-0.00236	-0.00234
	(!B_N * X)	0.00346	0.00350	0.00349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00386	0.00443	0.02164
	(A * X)	0.00060	0.00116	0.01838
sky130_fd_sc_hs__or2b_2	(A * X)	0.00409	0.00463	0.02158
	(A * X)	0.00083	0.00135	0.01832
sky130_fd_sc_hs__or2b_4	(A * X)	0.00530	0.00578	0.02473
	(A * X)	0.00142	0.00189	0.02087

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00121	0.00227	0.01986
	(A * X)	0.00447	0.00554	0.02312
sky130_fd_sc_hs__or2b_2	(A * X)	0.00117	0.00225	0.01959
	(A * X)	0.00443	0.00552	0.02285
sky130_fd_sc_hs__or2b_4	(A * X)	0.00304	0.00402	0.02340
	(A * X)	0.00691	0.00789	0.02727

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00238	0.00228	0.81446
sky130_fd_sc_hs__or2_2	0.00296	0.00262	1.44752
sky130_fd_sc_hs__or2_4	0.00479	0.00420	3.03422

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	1.72080	3.32322
sky130_fd_sc_hs__or2_2	0.00000	1.68771	2.29750
sky130_fd_sc_hs__or2_4	0.00000	3.13117	4.43988

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)	0.09774	0.77788	7.39300
	B->X (RR)	0.08924	0.74933	7.31812
sky130_fd_sc_hs__or2_2	A->X (RR)	0.10083	0.69777	7.27748
	B->X (RR)	0.09103	0.67091	7.17521
sky130_fd_sc_hs__or2_4	A->X (RR)	0.13201	0.69496	7.92181
	B->X (RR)	0.11087	0.64740	7.77488

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.19936	0.68739	4.45302
	B->X (FF)	0.17428	0.68062	4.50735
sky130_fd_sc_hs__or2_2	A->X (FF)	0.23728	0.70099	4.31021
	B->X (FF)	0.20849	0.70469	4.39792
sky130_fd_sc_hs__or2_4	A->X (FF)	0.21790	0.63810	4.30258
	B->X (FF)	0.18941	0.63023	4.35219

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00770	0.00801	0.01880
	A	0.00379	0.00410	0.01493
	B	0.00639	0.00692	0.02038
	B	0.00323	0.00377	0.01732
sky130_fd_sc_hs__or2_2	A	0.01112	0.01168	0.02294
	A	0.00637	0.00694	0.01839
	B	0.00931	0.01011	0.02306
	B	0.00560	0.00643	0.01953
sky130_fd_sc_hs__or2_4	A	0.02039	0.02120	0.04166
	A	0.01248	0.01330	0.03424
	B	0.01618	0.01761	0.04202
	B	0.01052	0.01202	0.03699

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00309	0.00344	0.01410
	A	0.00700	0.00735	0.01793
	B	0.00292	0.00397	0.01846
	B	0.00609	0.00712	0.02161
sky130_fd_sc_hs__or2_2	A	0.00520	0.00545	0.01741
	A	0.00995	0.01017	0.02185
	B	0.00509	0.00603	0.02214
	B	0.00878	0.00969	0.02499
sky130_fd_sc_hs__or2_4	A	0.01117	0.01198	0.03188
	A	0.01910	0.01989	0.03910
	B	0.01115	0.01300	0.03954
	B	0.01683	0.01866	0.04468

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00144	0.00123	0.00117
	(B * X)	-0.00104	-0.00127	-0.00131
sky130_fd_sc_hs__or2_2	(B * X)	0.00175	0.00148	0.00143
	(B * X)	-0.00125	-0.00152	-0.00157
sky130_fd_sc_hs__or2_4	(B * X)	0.00244	0.00187	0.00175
	(B * X)	-0.00254	-0.00313	-0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00109	-0.00110	-0.00110
	(B * X)	0.00138	0.00138	0.00138
sky130_fd_sc_hs__or2_2	(B * X)	-0.00137	-0.00138	-0.00137
	(B * X)	0.00162	0.00164	0.00163
sky130_fd_sc_hs__or2_4	(B * X)	-0.00165	-0.00165	-0.00164
	(B * X)	0.00332	0.00335	0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00123	0.00123	0.00123
	(A * X)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__or2_2	(A * X)	0.00134	0.00134	0.00134
	(A * X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__or2_4	(A * X)	0.00159	0.00159	0.00159
	(A * X)	-0.00151	-0.00151	-0.00150

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00117	-0.00118	-0.00121
	(A * X)	0.00066	0.00066	0.00063
sky130_fd_sc_hs__or2_2	(A * X)	-0.00127	-0.00128	-0.00132
	(A * X)	0.00080	0.00080	0.00077
sky130_fd_sc_hs__or2_4	(A * X)	-0.00144	-0.00145	-0.00155
	(A * X)	0.00165	0.00164	0.00156

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00259	0.00281	0.00237	0.81875
sky130_fd_sc_hs__or3b_2	0.00276	0.00268	0.00236	1.44314
sky130_fd_sc_hs__or3b_4	0.00492	0.00452	0.00278	3.04195

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3b_1	0.00000	2.64848	4.37862
sky130_fd_sc_hs__or3b_2	0.00000	2.97679	5.47618
sky130_fd_sc_hs__or3b_4	0.00000	3.54417	5.81229

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)	0.11278	0.83087	7.60425
	B->X (RR)	0.10892	0.80926	7.48620
	C_N->X (FR)	0.18100	0.87405	7.56780
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.10796	0.72764	7.33752
	B->X (RR)	0.10428	0.70901	7.22834
	C_N->X (FR)	0.19089	0.79116	7.43693
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.14218	0.72666	7.97483
	B->X (RR)	0.13310	0.69813	7.83954
	C_N->X (FR)	0.21880	0.75738	7.71347

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.30093	0.80120	4.58033
	B->X (FF)	0.28359	0.80694	4.77219
	C_N->X (RF)	0.27679	0.73067	4.04083
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.38512	0.86606	4.61226
	B->X (FF)	0.35999	0.87134	4.82804
	C_N->X (RF)	0.35709	0.78606	3.85832
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.33819	0.76899	4.49415
	B->X (FF)	0.31380	0.76709	4.68154
	C_N->X (RF)	0.30887	0.70240	4.03123

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00913	0.00933	0.01968
	A	0.00477	0.00496	0.01549
	B	0.00768	0.00798	0.01823
	B	0.00394	0.00426	0.01454
	C_N	0.00667	0.00786	0.02599
	C_N	0.00914	0.01031	0.02859
sky130_fd_sc_hs__or3b_2	A	0.01201	0.01247	0.02287
	A	0.00750	0.00799	0.01856
	B	0.01034	0.01106	0.02130
	B	0.00669	0.00743	0.01786
	C_N	0.00933	0.01077	0.02802
	C_N	0.01195	0.01342	0.03094
sky130_fd_sc_hs__or3b_4	A	0.02248	0.02308	0.04200
	A	0.01449	0.01513	0.03438
	B	0.01870	0.01973	0.03882
	B	0.01269	0.01374	0.03345
	C_N	0.01628	0.01830	0.03880
	C_N	0.01930	0.02131	0.04259

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00499	0.00500	0.01507
	A	0.00936	0.00938	0.01940
	B	0.00483	0.00503	0.01568
	B	0.00856	0.00875	0.01922
	C_N	0.00988	0.01058	0.02873
	C_N	0.00742	0.00811	0.02584
sky130_fd_sc_hs__or3b_2	A	0.00758	0.00710	0.01772
	A	0.01208	0.01161	0.02205
	B	0.00741	0.00719	0.01801
	B	0.01106	0.01083	0.02160
	C_N	0.01299	0.01309	0.02983
	C_N	0.01037	0.01048	0.02691
sky130_fd_sc_hs__or3b_4	A	0.01420	0.01382	0.03107
	A	0.02223	0.02184	0.03908
	B	0.01419	0.01420	0.03521
	B	0.02019	0.02019	0.03858
	C_N	0.02099	0.02154	0.04186
	C_N	0.01796	0.01843	0.03881

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)	0.00138	0.00116	0.00114
	(B * C_N * X)	-0.00134	-0.00155	-0.00158
	(B * !C_N * X)	0.00113	0.00109	0.00110
	(B * !C_N * X)	-0.00157	-0.00161	-0.00162
	(!B * !C_N * X)	0.00133	0.00115	0.00111
	(!B * !C_N * X)	-0.00131	-0.00156	-0.00160
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00158	0.00136	0.00134
	(B * C_N * X)	-0.00134	-0.00157	-0.00159
	(B * !C_N * X)	0.00128	0.00125	0.00125
	(B * !C_N * X)	-0.00163	-0.00167	-0.00168
	(!B * !C_N * X)	0.00149	0.00130	0.00126
	(!B * !C_N * X)	-0.00136	-0.00162	-0.00165
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00244	0.00199	0.00195
	(B * C_N * X)	-0.00268	-0.00314	-0.00319
	(B * !C_N * X)	0.00176	0.00171	0.00171
	(B * !C_N * X)	-0.00332	-0.00341	-0.00342
	(!B * !C_N * X)	0.00218	0.00181	0.00173
	(!B * !C_N * X)	-0.00280	-0.00331	-0.00337

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)	-0.00103	-0.00104	-0.00103
	(B * C_N * X)	0.00167	0.00168	0.00168
	(B * !C_N * X)	-0.00108	-0.00109	-0.00108
	(B * !C_N * X)	0.00163	0.00164	0.00163
	(!B * !C_N * X)	-0.00106	-0.00107	-0.00105
	(!B * !C_N * X)	0.00161	0.00162	0.00162
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00123	-0.00124	-0.00123
	(B * C_N * X)	0.00169	0.00169	0.00169
	(B * !C_N * X)	-0.00123	-0.00124	-0.00123
	(B * !C_N * X)	0.00169	0.00170	0.00169
	(!B * !C_N * X)	-0.00121	-0.00122	-0.00120
	(!B * !C_N * X)	0.00167	0.00168	0.00168
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00182	-0.00182	-0.00182
	(B * C_N * X)	0.00328	0.00329	0.00330
	(B * !C_N * X)	-0.00168	-0.00168	-0.00168
	(B * !C_N * X)	0.00342	0.00344	0.00342
	(!B * !C_N * X)	-0.00164	-0.00164	-0.00162
	(!B * !C_N * X)	0.00340	0.00342	0.00341

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)	0.00137	0.00137	0.00135
	(A * C_N * X)	-0.00083	-0.00083	-0.00084
	(A * !C_N * X)	0.00128	0.00129	0.00121
	(A * !C_N * X)	-0.00125	-0.00126	-0.00128
	(!A * !C_N * X)	0.00159	0.00125	0.00118
	(!A * !C_N * X)	-0.00137	-0.00172	-0.00176
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00142	0.00143	0.00141
	(A * C_N * X)	-0.00077	-0.00077	-0.00078
	(A * !C_N * X)	0.00125	0.00127	0.00119
	(A * !C_N * X)	-0.00130	-0.00130	-0.00132
	(!A * !C_N * X)	0.00156	0.00122	0.00116
	(!A * !C_N * X)	-0.00137	-0.00173	-0.00177
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00181	0.00181	0.00177
	(A * C_N * X)	-0.00164	-0.00165	-0.00167
	(A * !C_N * X)	0.00171	0.00172	0.00156
	(A * !C_N * X)	-0.00249	-0.00250	-0.00254
	(!A * !C_N * X)	0.00225	0.00157	0.00145
	(!A * !C_N * X)	-0.00271	-0.00341	-0.00350

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)	-0.00125	-0.00126	-0.00126
	(A * C_N * X)	0.00094	0.00094	0.00094
	(A * !C_N * X)	-0.00114	-0.00115	-0.00114
	(A * !C_N * X)	0.00128	0.00128	0.00128
	(!A * !C_N * X)	-0.00113	-0.00113	-0.00113
	(!A * !C_N * X)	0.00181	0.00183	0.00182
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00130	-0.00130	-0.00131
	(A * C_N * X)	0.00088	0.00088	0.00088
	(A * !C_N * X)	-0.00112	-0.00112	-0.00112
	(A * !C_N * X)	0.00132	0.00132	0.00132
	(!A * !C_N * X)	-0.00110	-0.00111	-0.00110
	(!A * !C_N * X)	0.00182	0.00184	0.00183
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00164	-0.00165	-0.00165
	(A * C_N * X)	0.00180	0.00179	0.00181
	(A * !C_N * X)	-0.00141	-0.00141	-0.00141
	(A * !C_N * X)	0.00257	0.00256	0.00254
	(!A * !C_N * X)	-0.00135	-0.00135	-0.00134
	(!A * !C_N * X)	0.00362	0.00362	0.00361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00377	0.00437	0.02161
	(B * X)	0.00059	0.00119	0.01843
	(A * !B * X)	0.00385	0.00446	0.02167
	(A * !B * X)	0.00063	0.00122	0.01845
sky130_fd_sc_hs__or3b_2	(B * X)	0.00420	0.00474	0.02169
	(B * X)	0.00091	0.00144	0.01841
	(A * !B * X)	0.00429	0.00482	0.02175
	(A * !B * X)	0.00095	0.00147	0.01842
sky130_fd_sc_hs__or3b_4	(B * X)	0.00537	0.00599	0.02518
	(B * X)	0.00139	0.00201	0.02120
	(A * !B * X)	0.00556	0.00618	0.02531
	(A * !B * X)	0.00147	0.00209	0.02124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00097	0.00207	0.01967
	(B * X)	0.00413	0.00526	0.02284
	(A * !B * X)	0.00097	0.00207	0.01967
	(A * !B * X)	0.00415	0.00527	0.02286
sky130_fd_sc_hs__or3b_2	(B * X)	0.00105	0.00210	0.01947
	(B * X)	0.00432	0.00538	0.02275
	(A * !B * X)	0.00105	0.00210	0.01947
	(A * !B * X)	0.00434	0.00540	0.02276
sky130_fd_sc_hs__or3b_4	(B * X)	0.00134	0.00243	0.02197
	(B * X)	0.00531	0.00642	0.02593
	(A * !B * X)	0.00135	0.00244	0.02197
	(A * !B * X)	0.00534	0.00645	0.02596

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00267	0.00265	0.00260	0.82839
sky130_fd_sc_hs__or3_2	0.00273	0.00276	0.00284	1.59402
sky130_fd_sc_hs__or3_4	0.00512	0.00459	0.00450	3.07088

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	1.06757	2.09124
sky130_fd_sc_hs__or3_2	0.00000	1.37845	2.48222
sky130_fd_sc_hs__or3_4	0.00000	2.49624	4.42204

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)	0.11324	0.83113	7.60337
	B->X (RR)	0.10900	0.80853	7.48417
	C->X (RR)	0.09861	0.77609	7.39046
sky130_fd_sc_hs__or3_2	A->X (RR)	0.10705	0.72181	7.51239
	B->X (RR)	0.10319	0.70162	7.40001
	C->X (RR)	0.09518	0.67718	7.31319
sky130_fd_sc_hs__or3_4	A->X (RR)	0.14236	0.72958	8.03895
	B->X (RR)	0.13373	0.70029	7.90819
	C->X (RR)	0.11710	0.66338	7.79966

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.30822	0.81529	4.63434
	B->X (FF)	0.28496	0.81603	4.82443
	C->X (FF)	0.23712	0.79024	4.79257
sky130_fd_sc_hs__or3_2	A->X (FF)	0.37600	0.86688	4.87835
	B->X (FF)	0.35065	0.87201	5.09980
	C->X (FF)	0.30736	0.85821	5.09329
sky130_fd_sc_hs__or3_4	A->X (FF)	0.33768	0.77205	4.52517
	B->X (FF)	0.31278	0.77003	4.71490
	C->X (FF)	0.26108	0.73907	4.67467

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01058	0.01071	0.02130
	A	0.00492	0.00506	0.01581
	B	0.00874	0.00906	0.01957
	B	0.00405	0.00438	0.01492
	C	0.00698	0.00743	0.01970
	C	0.00313	0.00359	0.01591
sky130_fd_sc_hs__or3_2	A	0.01317	0.01366	0.02539
	A	0.00747	0.00798	0.01976
	B	0.01124	0.01198	0.02354
	B	0.00646	0.00723	0.01889
	C	0.00960	0.01038	0.02357
	C	0.00560	0.00641	0.01978
sky130_fd_sc_hs__or3_4	A	0.02474	0.02533	0.04426
	A	0.01446	0.01511	0.03434
	B	0.02056	0.02153	0.04058
	B	0.01263	0.01363	0.03319
	C	0.01668	0.01797	0.04005
	C	0.01041	0.01177	0.03444

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00377	0.00375	0.01401
	A	0.00944	0.00945	0.01946
	B	0.00380	0.00393	0.01543
	B	0.00849	0.00869	0.01921
	C	0.00373	0.00450	0.01745
	C	0.00758	0.00836	0.02128
sky130_fd_sc_hs__or3_2	A	0.00656	0.00628	0.01734
	A	0.01228	0.01200	0.02296
	B	0.00658	0.00657	0.01905
	B	0.01134	0.01134	0.02260
	C	0.00649	0.00669	0.02173
	C	0.01048	0.01095	0.02475
sky130_fd_sc_hs__or3_4	A	0.01199	0.01163	0.02882
	A	0.02230	0.02192	0.03912
	B	0.01233	0.01226	0.03078
	B	0.02026	0.02017	0.03866
	C	0.01208	0.01303	0.03924
	C	0.01834	0.01928	0.04233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00121	0.00120	0.00119
	(B * C * X)	-0.00155	-0.00162	-0.00161
	(B * !C * X)	0.00143	0.00123	0.00120
	(B * !C * X)	-0.00136	-0.00159	-0.00160
	(!B * C * X)	0.00142	0.00124	0.00120
	(!B * C * X)	-0.00131	-0.00155	-0.00158
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00129	0.00128	0.00126
	(B * C * X)	-0.00156	-0.00163	-0.00163
	(B * !C * X)	0.00151	0.00131	0.00128
	(B * !C * X)	-0.00137	-0.00160	-0.00161
	(!B * C * X)	0.00150	0.00132	0.00128
	(!B * C * X)	-0.00131	-0.00156	-0.00160
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00206	0.00201	0.00200
	(B * C * X)	-0.00310	-0.00322	-0.00322
	(B * !C * X)	0.00251	0.00207	0.00204
	(B * !C * X)	-0.00270	-0.00316	-0.00320
	(!B * C * X)	0.00248	0.00209	0.00203
	(!B * C * X)	-0.00259	-0.00308	-0.00317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00117	-0.00118	-0.00117
	(B * C * X)	0.00161	0.00162	0.00161
	(B * !C * X)	-0.00115	-0.00116	-0.00115
	(B * !C * X)	0.00164	0.00165	0.00164
	(!B * C * X)	-0.00116	-0.00116	-0.00115
	(!B * C * X)	0.00159	0.00160	0.00159
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00125	-0.00125	-0.00125
	(B * C * X)	0.00163	0.00164	0.00163
	(B * !C * X)	-0.00123	-0.00123	-0.00122
	(B * !C * X)	0.00166	0.00167	0.00166
	(!B * C * X)	-0.00123	-0.00124	-0.00122
	(!B * C * X)	0.00160	0.00162	0.00161
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00197	-0.00199	-0.00198
	(B * C * X)	0.00321	0.00326	0.00322
	(B * !C * X)	-0.00194	-0.00194	-0.00194
	(B * !C * X)	0.00327	0.00329	0.00328
	(!B * C * X)	-0.00193	-0.00195	-0.00192
	(!B * C * X)	0.00316	0.00320	0.00319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00124	0.00124	0.00116
	(A * C * X)	-0.00104	-0.00106	-0.00108
	(A * !C * X)	0.00113	0.00114	0.00111
	(A * !C * X)	-0.00080	-0.00081	-0.00082
	(!A * C * X)	0.00151	0.00117	0.00111
	(!A * C * X)	-0.00118	-0.00153	-0.00157
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00127	0.00127	0.00119
	(A * C * X)	-0.00114	-0.00115	-0.00117
	(A * !C * X)	0.00118	0.00118	0.00116
	(A * !C * X)	-0.00089	-0.00090	-0.00091
	(!A * C * X)	0.00156	0.00122	0.00116
	(!A * C * X)	-0.00127	-0.00162	-0.00166
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00171	0.00172	0.00156
	(A * C * X)	-0.00216	-0.00217	-0.00223
	(A * !C * X)	0.00151	0.00151	0.00146
	(A * !C * X)	-0.00167	-0.00168	-0.00170
	(!A * C * X)	0.00228	0.00157	0.00145
	(!A * C * X)	-0.00244	-0.00316	-0.00325

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00109	-0.00109	-0.00109
	(A * C * X)	0.00108	0.00108	0.00108
	(A * !C * X)	-0.00107	-0.00107	-0.00107
	(A * !C * X)	0.00087	0.00087	0.00086
	(!A * C * X)	-0.00106	-0.00107	-0.00106
	(!A * C * X)	0.00162	0.00163	0.00162
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00112	-0.00112	-0.00112
	(A * C * X)	0.00117	0.00118	0.00117
	(A * !C * X)	-0.00111	-0.00112	-0.00111
	(A * !C * X)	0.00095	0.00096	0.00096
	(!A * C * X)	-0.00110	-0.00111	-0.00110
	(!A * C * X)	0.00171	0.00172	0.00172
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00141	-0.00141	-0.00141
	(A * C * X)	0.00224	0.00224	0.00223
	(A * !C * X)	-0.00138	-0.00138	-0.00136
	(A * !C * X)	0.00180	0.00179	0.00181
	(!A * C * X)	-0.00135	-0.00136	-0.00134
	(!A * C * X)	0.00334	0.00336	0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00122	0.00123	0.00123
	(B * X)	-0.00076	-0.00077	-0.00076
	(A * !B * X)	0.00123	0.00123	0.00123
	(A * !B * X)	-0.00075	-0.00076	-0.00076
sky130_fd_sc_hs__or3_2	(B * X)	0.00141	0.00140	0.00140
	(B * X)	-0.00078	-0.00078	-0.00077
	(A * !B * X)	0.00140	0.00140	0.00140
	(A * !B * X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__or3_4	(B * X)	0.00179	0.00180	0.00179
	(B * X)	-0.00154	-0.00154	-0.00153
	(A * !B * X)	0.00180	0.00180	0.00180
	(A * !B * X)	-0.00152	-0.00152	-0.00152

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00118	-0.00118	-0.00122
	(B * X)	0.00082	0.00081	0.00078
	(A * !B * X)	-0.00108	-0.00109	-0.00120
	(A * !B * X)	0.00087	0.00086	0.00079
sky130_fd_sc_hs__or3_2	(B * X)	-0.00134	-0.00134	-0.00138
	(B * X)	0.00083	0.00083	0.00080
	(A * !B * X)	-0.00125	-0.00125	-0.00137
	(A * !B * X)	0.00088	0.00088	0.00080
sky130_fd_sc_hs__or3_4	(B * X)	-0.00166	-0.00167	-0.00176
	(B * X)	0.00167	0.00166	0.00158
	(A * !B * X)	-0.00147	-0.00149	-0.00173
	(A * !B * X)	0.00176	0.00175	0.00158

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00263	0.00260	0.00242	0.00245	0.81527
sky130_fd_sc_hs__or4bb_2	0.00263	0.00276	0.00239	0.00236	1.43439
sky130_fd_sc_hs__or4bb_4	0.00423	0.00430	0.00268	0.00266	2.74048

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	4.09092	7.53218
sky130_fd_sc_hs__or4bb_2	0.00000	4.33469	8.72700
sky130_fd_sc_hs__or4bb_4	0.00000	4.40951	8.11540

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)	0.11497	0.85080	7.63312
	B->X (RR)	0.11422	0.83528	7.53435
	C_N->X (FR)	0.20831	0.91604	7.63063
	D_N->X (FR)	0.18665	0.88133	7.56376
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.10852	0.74486	7.38590
	B->X (RR)	0.10990	0.73416	7.30121
	C_N->X (FR)	0.19195	0.78772	7.38809
	D_N->X (FR)	0.19045	0.79000	7.41873
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.15382	0.77202	7.95135
	B->X (RR)	0.15601	0.75934	7.85139
	C_N->X (FR)	0.26258	0.81997	7.72166
	D_N->X (FR)	0.25626	0.82118	7.73851

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.43460	0.96469	4.75856
	B->X (FF)	0.40622	0.94397	4.95817
	C_N->X (RF)	0.41193	0.91122	4.22040
	D_N->X (RF)	0.32603	0.81757	4.12656
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.53088	1.03513	4.79355
	B->X (FF)	0.51333	1.02740	4.98997
	C_N->X (RF)	0.50999	0.97171	3.99606
	D_N->X (RF)	0.44227	0.90359	3.96861
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.56592	1.03296	4.54401
	B->X (FF)	0.54466	1.01001	4.73807
	C_N->X (RF)	0.54579	0.97624	4.00207
	D_N->X (RF)	0.44342	0.88003	3.95408

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01013	0.01023	0.01967
	A	0.00588	0.00599	0.01559
	B	0.00845	0.00877	0.01819
	B	0.00496	0.00527	0.01471
	C_N	0.00768	0.00895	0.02651
	C_N	0.01047	0.01175	0.02948
	D_N	0.00662	0.00785	0.02572
	D_N	0.00910	0.01033	0.02835
sky130_fd_sc_hs__or4bb_2	A	0.01252	0.01312	0.02544
	A	0.00823	0.00883	0.02131
	B	0.01114	0.01174	0.02336
	B	0.00744	0.00807	0.01989
	C_N	0.00989	0.01145	0.02948
	C_N	0.01258	0.01416	0.03245
	D_N	0.00946	0.01070	0.02799
	D_N	0.01193	0.01320	0.03076
sky130_fd_sc_hs__or4bb_4	A	0.02557	0.02613	0.04488
	A	0.01782	0.01841	0.03764
	B	0.02142	0.02218	0.04012
	B	0.01549	0.01640	0.03484
	C_N	0.02050	0.02219	0.04150
	C_N	0.02308	0.02478	0.04481
	D_N	0.01785	0.01953	0.03904
	D_N	0.02046	0.02215	0.04244

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00641	0.00621	0.01549
	A	0.01066	0.01046	0.01929
	B	0.00621	0.00612	0.01594
	B	0.00971	0.00964	0.01905
	C_N	0.01178	0.01217	0.02943
	C_N	0.00899	0.00939	0.02631
	D_N	0.01034	0.01077	0.02872
	D_N	0.00786	0.00846	0.02594
sky130_fd_sc_hs__or4bb_2	A	0.00945	0.00857	0.01939
	A	0.01375	0.01300	0.02361
	B	0.00918	0.00835	0.01881
	B	0.01287	0.01214	0.02237
	C_N	0.01467	0.01431	0.03210
	C_N	0.01199	0.01173	0.02874
	D_N	0.01379	0.01342	0.03050
	D_N	0.01131	0.01100	0.02751
sky130_fd_sc_hs__or4bb_4	A	0.02002	0.01836	0.03385
	A	0.02781	0.02614	0.04160
	B	0.02019	0.01833	0.03507
	B	0.02609	0.02444	0.03997
	C_N	0.02664	0.02552	0.04468
	C_N	0.02405	0.02294	0.04094
	D_N	0.02543	0.02404	0.04454
	D_N	0.02281	0.02151	0.04020

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)**	0.00137	0.00122	0.00119
	(B * C_N * D_N * X)	-0.00137	-0.00156	-0.00156
	(B * !D_N * X)	0.00120	0.00117	0.00115
	(B * !D_N * X)	-0.00153	-0.00160	-0.00160
	(B * !C_N * D_N * X)	0.00116	0.00117	0.00115
	(B * !C_N * D_N * X)	-0.00157	-0.00160	-0.00160
	(!B * C_N * !D_N * X)	0.00134	0.00123	0.00119
	(!B * C_N * !D_N * X)	-0.00134	-0.00153	-0.00156
	(!B * !C_N * D_N * X)	0.00126	0.00118	0.00116
	(!B * !C_N * D_N * X)	-0.00138	-0.00156	-0.00157
	(!B * !C_N * !D_N * X)	0.00113	0.00114	0.00113
	(!B * !C_N * !D_N * X)	-0.00150	-0.00159	-0.00158
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00147	0.00129	0.00128
	(B * C_N * D_N * X)	-0.00136	-0.00153	-0.00155
	(B * !D_N * X)	0.00129	0.00125	0.00124
	(B * !D_N * X)	-0.00152	-0.00158	-0.00159
	(B * !C_N * D_N * X)	0.00112	0.00111	0.00112
	(B * !C_N * D_N * X)	-0.00169	-0.00170	-0.00171
	(!B * C_N * !D_N * X)	0.00143	0.00132	0.00128
	(!B * C_N * !D_N * X)	-0.00133	-0.00151	-0.00155
	(!B * !C_N * D_N * X)	0.00123	0.00114	0.00113
	(!B * !C_N * D_N * X)	-0.00150	-0.00168	-0.00169
	(!B * !C_N * !D_N * X)	0.00109	0.00110	0.00109
	(!B * !C_N * !D_N * X)	-0.00160	-0.00170	-0.00169

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00192	0.00159	0.00156
	(B * C_N * D_N * X)	-0.00287	-0.00325	-0.00327
	(B * !D_N * X)	0.00162	0.00154	0.00153
	(B * !D_N * X)	-0.00316	-0.00329	-0.00331
	(B * !C_N * D_N * X)	0.00154	0.00153	0.00152
	(B * !C_N * D_N * X)	-0.00322	-0.00330	-0.00331
	(!B * C_N * !D_N * X)	0.00192	0.00168	0.00159
	(!B * C_N * !D_N * X)	-0.00276	-0.00315	-0.00323
	(!B * !C_N * D_N * X)	0.00173	0.00156	0.00154
	(!B * !C_N * D_N * X)	-0.00288	-0.00320	-0.00325
	(!B * !C_N * !D_N * X)	0.00152	0.00151	0.00151
	(!B * !C_N * !D_N * X)	-0.00303	-0.00322	-0.00321

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)**	-0.00105	-0.00106	-0.00105
	(B * C_N * D_N * X)	0.00169	0.00171	0.00169
	(B * !D_N * X)	-0.00108	-0.00109	-0.00108
	(B * !D_N * X)	0.00165	0.00166	0.00165
	(B * !C_N * D_N * X)	-0.00109	-0.00109	-0.00109
	(B * !C_N * D_N * X)	0.00165	0.00167	0.00165
	(!B * C_N * !D_N * X)	-0.00112	-0.00112	-0.00111
	(!B * C_N * !D_N * X)	0.00160	0.00161	0.00160
	(!B * !C_N * D_N * X)	-0.00108	-0.00107	-0.00108
	(!B * !C_N * D_N * X)	0.00162	0.00161	0.00162
	(!B * !C_N * !D_N * X)	-0.00111	-0.00112	-0.00111
	(!B * !C_N * !D_N * X)	0.00158	0.00159	0.00158

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00114	-0.00114	-0.00114
	(B * C_N * D_N * X)	0.00168	0.00169	0.00168
	(B * !D_N * X)	-0.00117	-0.00118	-0.00117
	(B * !D_N * X)	0.00165	0.00166	0.00165
	(B * !C_N * D_N * X)	-0.00104	-0.00105	-0.00104
	(B * !C_N * D_N * X)	0.00177	0.00177	0.00177
	(!B * C_N * !D_N * X)	-0.00121	-0.00121	-0.00120
	(!B * C_N * !D_N * X)	0.00159	0.00160	0.00160
	(!B * !C_N * D_N * X)	-0.00104	-0.00104	-0.00104
	(!B * !C_N * D_N * X)	0.00174	0.00173	0.00174
	(!B * !C_N * !D_N * X)	-0.00107	-0.00107	-0.00107
	(!B * !C_N * !D_N * X)	0.00170	0.00170	0.00169
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00143	-0.00144	-0.00143
	(B * C_N * D_N * X)	0.00336	0.00340	0.00338
	(B * !D_N * X)	-0.00145	-0.00146	-0.00146
	(B * !D_N * X)	0.00332	0.00335	0.00334
	(B * !C_N * D_N * X)	-0.00145	-0.00146	-0.00146
	(B * !C_N * D_N * X)	0.00332	0.00337	0.00334
	(!B * C_N * !D_N * X)	-0.00153	-0.00154	-0.00151
	(!B * C_N * !D_N * X)	0.00322	0.00324	0.00323
	(!B * !C_N * D_N * X)	-0.00145	-0.00146	-0.00144
	(!B * !C_N * D_N * X)	0.00326	0.00331	0.00326
	(!B * !C_N * !D_N * X)	-0.00147	-0.00148	-0.00147
	(!B * !C_N * !D_N * X)	0.00321	0.00322	0.00321

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)**	0.00130	0.00130	0.00128
	(A * C_N * D_N * X)	-0.00085	-0.00085	-0.00085
	(A * C_N * !D_N * X)	0.00157	0.00165	0.00156
	(A * C_N * !D_N * X)	-0.00117	-0.00110	-0.00114
	(A * !C_N * D_N * X)	0.00111	0.00111	0.00103
	(A * !C_N * D_N * X)	-0.00140	-0.00142	-0.00145
	(A * !C_N * !D_N * X)	0.00105	0.00105	0.00101
	(A * !C_N * !D_N * X)	-0.00145	-0.00145	-0.00144
	(!A * C_N * !D_N * X)	0.00163	0.00132	0.00126
	(!A * C_N * !D_N * X)	-0.00127	-0.00158	-0.00162
	(!A * !C_N * D_N * X)	0.00133	0.00105	0.00102
	(!A * !C_N * D_N * X)	-0.00156	-0.00185	-0.00186
	(!A * !C_N * !D_N * X)	0.00104	0.00098	0.00098
	(!A * !C_N * !D_N * X)	-0.00184	-0.00191	-0.00190
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00158	0.00160	0.00157
	(A * C_N * D_N * X)	-0.00076	-0.00077	-0.00077
	(A * C_N * !D_N * X)	0.00186	0.00194	0.00184
	(A * C_N * !D_N * X)	-0.00107	-0.00101	-0.00105
	(A * !C_N * D_N * X)	0.00147	0.00148	0.00139
	(A * !C_N * D_N * X)	-0.00125	-0.00125	-0.00128
	(A * !C_N * !D_N * X)	0.00143	0.00142	0.00138
	(A * !C_N * !D_N * X)	-0.00126	-0.00128	-0.00127
	(!A * C_N * !D_N * X)	0.00191	0.00161	0.00155
	(!A * C_N * !D_N * X)	-0.00116	-0.00149	-0.00153
	(!A * !C_N * D_N * X)	0.00169	0.00142	0.00138
	(!A * !C_N * D_N * X)	-0.00138	-0.00168	-0.00169
	(!A * !C_N * !D_N * X)	0.00140	0.00135	0.00134
	(!A * !C_N * !D_N * X)	-0.00166	-0.00174	-0.00173

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00166	0.00166	0.00163
	(A * C_N * D_N * X)	-0.00168	-0.00168	-0.00170
	(A * C_N * !D_N * X)	0.00214	0.00234	0.00217
	(A * C_N * !D_N * X)	-0.00234	-0.00223	-0.00232
	(A * !C_N * D_N * X)	0.00182	0.00178	0.00161
	(A * !C_N * D_N * X)	-0.00233	-0.00237	-0.00243
	(A * !C_N * !D_N * X)	0.00169	0.00167	0.00158
	(A * !C_N * !D_N * X)	-0.00244	-0.00247	-0.00245
	(!A * C_N * !D_N * X)	0.00226	0.00171	0.00159
	(!A * C_N * !D_N * X)	-0.00255	-0.00315	-0.00325
	(!A * !C_N * D_N * X)	0.00216	0.00158	0.00152
	(!A * !C_N * D_N * X)	-0.00271	-0.00328	-0.00331
	(!A * !C_N * !D_N * X)	0.00157	0.00148	0.00147
	(!A * !C_N * !D_N * X)	-0.00327	-0.00337	-0.00336

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)**	-0.00109	-0.00110	-0.00111
	(A * C_N * D_N * X)	0.00103	0.00104	0.00103
	(A * C_N * !D_N * X)	-0.00137	-0.00137	-0.00137
	(A * C_N * !D_N * X)	0.00119	0.00119	0.00118
	(A * !C_N * D_N * X)	-0.00093	-0.00093	-0.00093
	(A * !C_N * D_N * X)	0.00146	0.00146	0.00145
	(A * !C_N * !D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !C_N * !D_N * X)	0.00145	0.00145	0.00144
	(!A * C_N * !D_N * X)	-0.00121	-0.00121	-0.00120
	(!A * C_N * !D_N * X)	0.00167	0.00168	0.00168
	(!A * !C_N * D_N * X)	-0.00091	-0.00091	-0.00090
	(!A * !C_N * D_N * X)	0.00197	0.00198	0.00198
	(!A * !C_N * !D_N * X)	-0.00096	-0.00096	-0.00096
	(!A * !C_N * !D_N * X)	0.00191	0.00193	0.00192
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00139	-0.00139	-0.00139
	(A * C_N * D_N * X)	0.00094	0.00095	0.00095
	(A * C_N * !D_N * X)	-0.00165	-0.00165	-0.00165
	(A * C_N * !D_N * X)	0.00109	0.00109	0.00109
	(A * !C_N * D_N * X)	-0.00129	-0.00130	-0.00129
	(A * !C_N * D_N * X)	0.00128	0.00129	0.00128
	(A * !C_N * !D_N * X)	-0.00131	-0.00132	-0.00132
	(A * !C_N * !D_N * X)	0.00126	0.00128	0.00127
	(!A * C_N * !D_N * X)	-0.00148	-0.00149	-0.00147
	(!A * C_N * !D_N * X)	0.00158	0.00159	0.00160
	(!A * !C_N * D_N * X)	-0.00127	-0.00127	-0.00126
	(!A * !C_N * D_N * X)	0.00181	0.00181	0.00181
	(!A * !C_N * !D_N * X)	-0.00132	-0.00132	-0.00132
	(!A * !C_N * !D_N * X)	0.00175	0.00176	0.00175

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00135	-0.00136	-0.00137
	(A * C_N * D_N * X)	0.00197	0.00199	0.00197
	(A * C_N * !D_N * X)	-0.00186	-0.00188	-0.00187
	(A * C_N * !D_N * X)	0.00234	0.00236	0.00234
	(A * !C_N * D_N * X)	-0.00143	-0.00144	-0.00143
	(A * !C_N * D_N * X)	0.00243	0.00245	0.00243
	(A * !C_N * !D_N * X)	-0.00144	-0.00145	-0.00144
	(A * !C_N * !D_N * X)	0.00244	0.00247	0.00245
	(!A * C_N * !D_N * X)	-0.00155	-0.00156	-0.00153
	(!A * C_N * !D_N * X)	0.00325	0.00328	0.00330
	(!A * !C_N * D_N * X)	-0.00137	-0.00137	-0.00136
	(!A * !C_N * D_N * X)	0.00346	0.00346	0.00346
	(!A * !C_N * !D_N * X)	-0.00142	-0.00143	-0.00142
	(!A * !C_N * !D_N * X)	0.00338	0.00340	0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00433	0.00485	0.02179
	(B * X)	0.00097	0.00148	0.01843
	(A * !B * X) + (!A * !B * !D_N * X)	0.00442	0.00494	0.02183
	(A * !B * X) + (!A * !B * !D_N * X)	0.00099	0.00149	0.01841
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00397	0.00454	0.02174
	(B * X)	0.00071	0.00128	0.01849
	(A * !B * X) + (!A * !B * !D_N * X)	0.00405	0.00462	0.02178
	(A * !B * X) + (!A * !B * !D_N * X)	0.00073	0.00129	0.01846
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00488	0.00551	0.02459
	(B * X)	0.00136	0.00198	0.02108
	(A * !B * X) + (!A * !B * !D_N * X)	0.00510	0.00572	0.02470
	(A * !B * X) + (!A * !B * !D_N * X)	0.00144	0.00205	0.02106

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00116	0.00219	0.01951
	(B * X)	0.00452	0.00556	0.02287
	(A * !B * X) + (!A * !B * !D_N * X)	0.00117	0.00220	0.01952
	(A * !B * X) + (!A * !B * !D_N * X)	0.00454	0.00558	0.02289
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00106	0.00215	0.01970
	(B * X)	0.00431	0.00541	0.02295
	(A * !B * X) + (!A * !B * !D_N * X)	0.00107	0.00215	0.01971
	(A * !B * X) + (!A * !B * !D_N * X)	0.00433	0.00543	0.02297
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00188	0.00298	0.02230
	(B * X)	0.00538	0.00649	0.02579
	(A * !B * X) + (!A * !B * !D_N * X)	0.00190	0.00300	0.02231
	(A * !B * X) + (!A * !B * !D_N * X)	0.00542	0.00653	0.02583

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)	0.00383	0.00440	0.02144
	(B * C_N * X)	0.00079	0.00135	0.01839
	(A * !B * C_N * X)	0.00395	0.00452	0.02152
	(A * !B * C_N * X)	0.00086	0.00142	0.01844
	(!C_N * X)	0.00390	0.00446	0.02151
	(!C_N * X)	0.00085	0.00142	0.01847
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00387	0.00442	0.02139
	(B * C_N * X)	0.00085	0.00138	0.01837
	(A * !B * C_N * X)	0.00398	0.00453	0.02147
	(A * !B * C_N * X)	0.00091	0.00144	0.01841
	(!C_N * X)	0.00394	0.00449	0.02148
	(!C_N * X)	0.00092	0.00146	0.01846
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00554	0.00611	0.02494
	(B * C_N * X)	0.00204	0.00259	0.02145
	(A * !B * C_N * X)	0.00584	0.00640	0.02515
	(A * !B * C_N * X)	0.00223	0.00278	0.02158
	(!C_N * X)	0.00582	0.00638	0.02526
	(!C_N * X)	0.00234	0.00289	0.02178

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)	0.00116	0.00223	0.01966
	(B * C_N * X)	0.00419	0.00528	0.02269
	(A * !B * C_N * X)	0.00116	0.00223	0.01966
	(A * !B * C_N * X)	0.00420	0.00529	0.02270
	(!C_N * X)	0.00100	0.00208	0.01951
	(!C_N * X)	0.00403	0.00512	0.02254
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00138	0.00244	0.01983
	(B * C_N * X)	0.00440	0.00547	0.02285
	(A * !B * C_N * X)	0.00138	0.00244	0.01983
	(A * !B * C_N * X)	0.00441	0.00547	0.02286
	(!C_N * X)	0.00122	0.00228	0.01967
	(!C_N * X)	0.00424	0.00530	0.02269
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00220	0.00326	0.02249
	(B * C_N * X)	0.00568	0.00675	0.02597
	(A * !B * C_N * X)	0.00220	0.00327	0.02249
	(A * !B * C_N * X)	0.00569	0.00676	0.02598
	(!C_N * X)	0.00180	0.00286	0.02209
	(!C_N * X)	0.00527	0.00634	0.02557

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00268	0.00256	0.00265	0.00247	0.79736
sky130_fd_sc_hs__or4b_2	0.00278	0.00268	0.00269	0.00236	1.44238
sky130_fd_sc_hs__or4b_4	0.00418	0.00470	0.00473	0.00262	3.10090

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	2.47521	4.58506
sky130_fd_sc_hs__or4b_2	0.00000	2.77505	5.72230
sky130_fd_sc_hs__or4b_4	0.00000	3.26938	6.32358

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)	0.12030	0.86446	7.65225
	B->X (RR)	0.11936	0.84945	7.55087
	C->X (RR)	0.11406	0.82614	7.43903
	D_N->X (FR)	0.18802	0.88624	7.54325
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.11078	0.74859	7.38170
	B->X (RR)	0.11092	0.73804	7.29663
	C->X (RR)	0.10676	0.71725	7.19189
	D_N->X (FR)	0.19786	0.80424	7.46179
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.15534	0.76997	8.14383
	B->X (RR)	0.15523	0.75533	8.04392
	C->X (RR)	0.14248	0.72143	7.89691
	D_N->X (FR)	0.23185	0.78154	7.82407

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.45540	0.99074	4.74525
	B->X (FF)	0.42662	0.97001	4.94872
	C->X (FF)	0.38469	0.95057	5.05907
	D_N->X (RF)	0.34361	0.84196	4.10022
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.55488	1.06415	4.82327
	B->X (FF)	0.52743	1.04773	5.05495
	C->X (FF)	0.47717	1.02458	5.19287
	D_N->X (RF)	0.45153	0.92370	4.02550
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.54511	1.02473	4.90859
	B->X (FF)	0.52614	1.00942	5.08513
	C->X (FF)	0.45973	0.96133	5.19576
	D_N->X (RF)	0.41875	0.85941	4.27116

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01143	0.01150	0.02057
	A	0.00593	0.00601	0.01525
	B	0.00959	0.00987	0.01894
	B	0.00512	0.00541	0.01449
	C	0.00798	0.00833	0.01711
	C	0.00417	0.00453	0.01336
	D_N	0.00700	0.00824	0.02609
	D_N	0.00931	0.01054	0.02854
sky130_fd_sc_hs__or4b_2	A	0.01417	0.01449	0.02409
	A	0.00858	0.00891	0.01878
	B	0.01238	0.01295	0.02245
	B	0.00780	0.00839	0.01808
	C	0.01068	0.01140	0.02054
	C	0.00676	0.00752	0.01679
	D_N	0.00981	0.01127	0.02846
	D_N	0.01225	0.01374	0.03120
sky130_fd_sc_hs__or4b_4	A	0.02684	0.02740	0.04602
	A	0.01707	0.01766	0.03649
	B	0.02364	0.02431	0.04218
	B	0.01527	0.01596	0.03416
	C	0.01931	0.02035	0.03800
	C	0.01254	0.01365	0.03178
	D_N	0.01734	0.01930	0.03902
	D_N	0.01964	0.02163	0.04203

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00548	0.00514	0.01386
	A	0.01100	0.01073	0.01938
	B	0.00549	0.00534	0.01492
	B	0.00997	0.00981	0.01904
	C	0.00538	0.00537	0.01490
	C	0.00918	0.00917	0.01830
	D_N	0.01033	0.01090	0.02885
	D_N	0.00802	0.00860	0.02628
sky130_fd_sc_hs__or4b_2	A	0.00834	0.00719	0.01641
	A	0.01395	0.01281	0.02200
	B	0.00838	0.00724	0.01798
	B	0.01296	0.01193	0.02147
	C	0.00813	0.00737	0.01756
	C	0.01205	0.01126	0.02068
	D_N	0.01398	0.01337	0.03026
	D_N	0.01154	0.01101	0.02740
sky130_fd_sc_hs__or4b_4	A	0.01796	0.01618	0.03373
	A	0.02779	0.02610	0.04160
	B	0.01783	0.01595	0.03270
	B	0.02623	0.02451	0.04008
	C	0.01741	0.01565	0.03220
	C	0.02416	0.02259	0.03891
	D_N	0.02440	0.02336	0.04369
	D_N	0.02210	0.02107	0.04075

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)**	0.00120	0.00121	0.00120
	(B * C * D_N * X)	-0.00153	-0.00158	-0.00158
	(B * !D_N * X)	0.00117	0.00117	0.00117
	(B * !D_N * X)	-0.00156	-0.00160	-0.00161
	(B * !C * D_N * X)	0.00138	0.00121	0.00121
	(B * !C * D_N * X)	-0.00137	-0.00155	-0.00157
	(!B * C * D_N * X)	0.00131	0.00123	0.00121
	(!B * C * D_N * X)	-0.00134	-0.00154	-0.00156
	(!B * C * !D_N * X)	0.00117	0.00119	0.00117
	(!B * C * !D_N * X)	-0.00144	-0.00155	-0.00155
	(!B * !C * !D_N * X)	0.00129	0.00122	0.00119
	(!B * !C * !D_N * X)	-0.00134	-0.00153	-0.00156
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00133	0.00133	0.00133
	(B * C * D_N * X)	-0.00155	-0.00159	-0.00160
	(B * !D_N * X)	0.00126	0.00126	0.00126
	(B * !D_N * X)	-0.00163	-0.00166	-0.00167
	(B * !C * D_N * X)	0.00151	0.00135	0.00134
	(B * !C * D_N * X)	-0.00139	-0.00157	-0.00159
	(!B * C * D_N * X)	0.00144	0.00136	0.00134
	(!B * C * D_N * X)	-0.00136	-0.00155	-0.00157
	(!B * C * !D_N * X)	0.00126	0.00127	0.00126
	(!B * C * !D_N * X)	-0.00151	-0.00161	-0.00161
	(!B * !C * !D_N * X)	0.00138	0.00130	0.00127
	(!B * !C * !D_N * X)	-0.00141	-0.00159	-0.00162

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00135	0.00133	0.00132
	(B * C * D_N * X)	-0.00317	-0.00327	-0.00327
	(B * !D_N * X)	0.00131	0.00132	0.00131
	(B * !D_N * X)	-0.00321	-0.00329	-0.00329
	(B * !C * D_N * X)	0.00173	0.00138	0.00136
	(B * !C * D_N * X)	-0.00282	-0.00322	-0.00324
	(!B * C * D_N * X)	0.00158	0.00136	0.00134
	(!B * C * D_N * X)	-0.00278	-0.00316	-0.00320
	(!B * C * !D_N * X)	0.00132	0.00131	0.00131
	(!B * C * !D_N * X)	-0.00298	-0.00318	-0.00316
	(!B * !C * !D_N * X)	0.00158	0.00138	0.00134
	(!B * !C * !D_N * X)	-0.00272	-0.00312	-0.00319

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)**	-0.00113	-0.00114	-0.00114
	(B * C * D_N * X)	0.00163	0.00165	0.00163
	(B * !D_N * X)	-0.00116	-0.00116	-0.00116
	(B * !D_N * X)	0.00161	0.00162	0.00161
	(B * !C * D_N * X)	-0.00113	-0.00114	-0.00113
	(B * !C * D_N * X)	0.00164	0.00166	0.00165
	(!B * C * D_N * X)	-0.00113	-0.00113	-0.00113
	(!B * C * D_N * X)	0.00159	0.00158	0.00159
	(!B * C * !D_N * X)	-0.00116	-0.00116	-0.00116
	(!B * C * !D_N * X)	0.00155	0.00155	0.00155
	(!B * !C * !D_N * X)	-0.00114	-0.00115	-0.00113
	(!B * !C * !D_N * X)	0.00156	0.00156	0.00156

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00126	-0.00126	-0.00126
	(B * C * D_N * X)	0.00165	0.00166	0.00165
	(B * !D_N * X)	-0.00124	-0.00125	-0.00124
	(B * !D_N * X)	0.00167	0.00168	0.00167
	(B * !C * D_N * X)	-0.00125	-0.00126	-0.00125
	(B * !C * D_N * X)	0.00167	0.00168	0.00167
	(!B * C * D_N * X)	-0.00125	-0.00125	-0.00125
	(!B * C * D_N * X)	0.00161	0.00160	0.00161
	(!B * C * !D_N * X)	-0.00124	-0.00124	-0.00124
	(!B * C * !D_N * X)	0.00161	0.00161	0.00161
	(!B * !C * !D_N * X)	-0.00122	-0.00123	-0.00121
	(!B * !C * !D_N * X)	0.00162	0.00163	0.00162
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00126	-0.00127	-0.00126
	(B * C * D_N * X)	0.00329	0.00332	0.00330
	(B * !D_N * X)	-0.00127	-0.00128	-0.00127
	(B * !D_N * X)	0.00328	0.00331	0.00329
	(B * !C * D_N * X)	-0.00126	-0.00126	-0.00126
	(B * !C * D_N * X)	0.00332	0.00334	0.00333
	(!B * C * D_N * X)	-0.00125	-0.00126	-0.00125
	(!B * C * D_N * X)	0.00318	0.00322	0.00320
	(!B * C * !D_N * X)	-0.00127	-0.00128	-0.00128
	(!B * C * !D_N * X)	0.00314	0.00318	0.00316
	(!B * !C * !D_N * X)	-0.00124	-0.00124	-0.00122
	(!B * !C * !D_N * X)	0.00316	0.00320	0.00319

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)**	0.00117	0.00117	0.00109
	(A * C * D_N * X)	-0.00103	-0.00104	-0.00108
	(A * C * !D_N * X)	0.00111	0.00111	0.00107
	(A * C * !D_N * X)	-0.00108	-0.00108	-0.00108
	(A * !C * D_N * X)	0.00109	0.00109	0.00107
	(A * !C * D_N * X)	-0.00078	-0.00078	-0.00078
	(A * !C * !D_N * X)	0.00116	0.00124	0.00112
	(A * !C * !D_N * X)	-0.00105	-0.00102	-0.00106
	(!A * C * D_N * X)	0.00139	0.00110	0.00106
	(!A * C * D_N * X)	-0.00122	-0.00151	-0.00153
	(!A * C * !D_N * X)	0.00109	0.00103	0.00102
	(!A * C * !D_N * X)	-0.00149	-0.00157	-0.00157
	(!A * !C * !D_N * X)	0.00134	0.00108	0.00104
	(!A * !C * !D_N * X)	-0.00116	-0.00150	-0.00154
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00130	0.00131	0.00124
	(A * C * D_N * X)	-0.00105	-0.00105	-0.00108
	(A * C * !D_N * X)	0.00121	0.00122	0.00117
	(A * C * !D_N * X)	-0.00114	-0.00114	-0.00113
	(A * !C * D_N * X)	0.00123	0.00124	0.00121
	(A * !C * D_N * X)	-0.00079	-0.00079	-0.00079
	(A * !C * !D_N * X)	0.00127	0.00135	0.00122
	(A * !C * !D_N * X)	-0.00112	-0.00108	-0.00112
	(!A * C * D_N * X)	0.00153	0.00124	0.00121
	(!A * C * D_N * X)	-0.00122	-0.00153	-0.00155
	(!A * C * !D_N * X)	0.00119	0.00114	0.00113
	(!A * C * !D_N * X)	-0.00154	-0.00162	-0.00162
	(!A * !C * !D_N * X)	0.00146	0.00119	0.00115
	(!A * !C * !D_N * X)	-0.00124	-0.00155	-0.00159

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00193	0.00196	0.00178
	(A * C * D_N * X)	-0.00227	-0.00225	-0.00231
	(A * C * !D_N * X)	0.00180	0.00181	0.00172
	(A * C * !D_N * X)	-0.00235	-0.00239	-0.00237
	(A * !C * D_N * X)	0.00176	0.00175	0.00170
	(A * !C * D_N * X)	-0.00170	-0.00170	-0.00172
	(A * !C * !D_N * X)	0.00191	0.00206	0.00181
	(A * !C * !D_N * X)	-0.00230	-0.00222	-0.00231
	(!A * C * D_N * X)	0.00235	0.00173	0.00167
	(!A * C * D_N * X)	-0.00256	-0.00323	-0.00327
	(!A * C * !D_N * X)	0.00172	0.00163	0.00162
	(!A * C * !D_N * X)	-0.00315	-0.00332	-0.00331
	(!A * !C * !D_N * X)	0.00226	0.00173	0.00165
	(!A * !C * !D_N * X)	-0.00249	-0.00316	-0.00327

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)**	-0.00099	-0.00099	-0.00099
	(A * C * D_N * X)	0.00109	0.00109	0.00109
	(A * C * !D_N * X)	-0.00102	-0.00102	-0.00102
	(A * C * !D_N * X)	0.00108	0.00108	0.00108
	(A * !C * D_N * X)	-0.00093	-0.00094	-0.00094
	(A * !C * D_N * X)	0.00090	0.00091	0.00091
	(A * !C * !D_N * X)	-0.00101	-0.00102	-0.00101
	(A * !C * !D_N * X)	0.00105	0.00106	0.00106
	(!A * C * D_N * X)	-0.00096	-0.00096	-0.00095
	(!A * C * D_N * X)	0.00162	0.00164	0.00163
	(!A * C * !D_N * X)	-0.00101	-0.00101	-0.00101
	(!A * C * !D_N * X)	0.00157	0.00159	0.00157
	(!A * !C * !D_N * X)	-0.00099	-0.00099	-0.00097
	(!A * !C * !D_N * X)	0.00154	0.00155	0.00156
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00113	-0.00114	-0.00113
	(A * C * D_N * X)	0.00110	0.00111	0.00110
	(A * C * !D_N * X)	-0.00111	-0.00112	-0.00111
	(A * C * !D_N * X)	0.00114	0.00114	0.00113
	(A * !C * D_N * X)	-0.00108	-0.00108	-0.00108
	(A * !C * D_N * X)	0.00092	0.00092	0.00093
	(A * !C * !D_N * X)	-0.00111	-0.00112	-0.00111
	(A * !C * !D_N * X)	0.00112	0.00113	0.00112
	(!A * C * D_N * X)	-0.00110	-0.00111	-0.00110
	(!A * C * D_N * X)	0.00164	0.00166	0.00165
	(!A * C * !D_N * X)	-0.00111	-0.00112	-0.00111
	(!A * C * !D_N * X)	0.00162	0.00164	0.00163
	(!A * !C * !D_N * X)	-0.00109	-0.00110	-0.00108
	(!A * !C * !D_N * X)	0.00160	0.00160	0.00161

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00163	-0.00163	-0.00162
	(A * C * D_N * X)	0.00231	0.00232	0.00231
	(A * C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(A * C * !D_N * X)	0.00235	0.00239	0.00237
	(A * !C * D_N * X)	-0.00149	-0.00149	-0.00147
	(A * !C * D_N * X)	0.00192	0.00192	0.00194
	(A * !C * !D_N * X)	-0.00158	-0.00159	-0.00158
	(A * !C * !D_N * X)	0.00230	0.00232	0.00231
	(!A * C * D_N * X)	-0.00153	-0.00154	-0.00152
	(!A * C * D_N * X)	0.00337	0.00340	0.00339
	(!A * C * !D_N * X)	-0.00158	-0.00159	-0.00158
	(!A * C * !D_N * X)	0.00329	0.00333	0.00331
	(!A * !C * !D_N * X)	-0.00154	-0.00154	-0.00151
	(!A * !C * !D_N * X)	0.00324	0.00327	0.00328

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)	0.00127	0.00128	0.00126
	(B * D_N * X)	-0.00076	-0.00077	-0.00078
	(B * !D_N * X)	0.00126	0.00127	0.00119
	(B * !D_N * X)	-0.00114	-0.00114	-0.00116
	(A * !B * D_N * X)	0.00128	0.00128	0.00126
	(A * !B * D_N * X)	-0.00076	-0.00076	-0.00077
	(A * !B * !D_N * X)	0.00143	0.00132	0.00123
	(A * !B * !D_N * X)	-0.00099	-0.00110	-0.00114
	(!A * !B * !D_N * X)	0.00156	0.00121	0.00114
	(!A * !B * !D_N * X)	-0.00126	-0.00160	-0.00165

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00142	0.00142	0.00141
	(B * D_N * X)	-0.00078	-0.00079	-0.00080
	(B * !D_N * X)	0.00128	0.00128	0.00120
	(B * !D_N * X)	-0.00134	-0.00133	-0.00136
	(A * !B * D_N * X)	0.00143	0.00143	0.00141
	(A * !B * D_N * X)	-0.00077	-0.00078	-0.00079
	(A * !B * !D_N * X)	0.00142	0.00132	0.00123
	(A * !B * !D_N * X)	-0.00117	-0.00127	-0.00131
	(!A * !B * !D_N * X)	0.00156	0.00121	0.00114
	(!A * !B * !D_N * X)	-0.00141	-0.00176	-0.00181
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00209	0.00210	0.00207
	(B * D_N * X)	-0.00164	-0.00166	-0.00168
	(B * !D_N * X)	0.00202	0.00199	0.00182
	(B * !D_N * X)	-0.00256	-0.00261	-0.00270
	(A * !B * D_N * X)	0.00211	0.00211	0.00207
	(A * !B * D_N * X)	-0.00163	-0.00163	-0.00166
	(A * !B * !D_N * X)	0.00227	0.00203	0.00185
	(A * !B * !D_N * X)	-0.00228	-0.00251	-0.00258
	(!A * !B * !D_N * X)	0.00251	0.00181	0.00168
	(!A * !B * !D_N * X)	-0.00280	-0.00348	-0.00358

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

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

sky130_fd_sc_hs__or4b_1	**(B * D_N * X)**	-0.00117	-0.00117	-0.00118
	(B * D_N * X)	0.00087	0.00087	0.00087
	(B * !D_N * X)	-0.00111	-0.00111	-0.00111
	(B * !D_N * X)	0.00117	0.00117	0.00116
	(A * !B * D_N * X)	-0.00109	-0.00110	-0.00117
	(A * !B * D_N * X)	0.00089	0.00089	0.00086
	(A * !B * !D_N * X)	-0.00110	-0.00111	-0.00110
	(A * !B * !D_N * X)	0.00116	0.00117	0.00117
	(!A * !B * !D_N * X)	-0.00108	-0.00109	-0.00108
	(!A * !B * !D_N * X)	0.00170	0.00170	0.00170
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00131	-0.00131	-0.00131
	(B * D_N * X)	0.00090	0.00089	0.00090
	(B * !D_N * X)	-0.00110	-0.00110	-0.00110
	(B * !D_N * X)	0.00137	0.00137	0.00136
	(A * !B * D_N * X)	-0.00124	-0.00125	-0.00131
	(A * !B * D_N * X)	0.00091	0.00091	0.00088
	(A * !B * !D_N * X)	-0.00109	-0.00110	-0.00109
	(A * !B * !D_N * X)	0.00134	0.00135	0.00134
	(!A * !B * !D_N * X)	-0.00108	-0.00109	-0.00108
	(!A * !B * !D_N * X)	0.00186	0.00188	0.00187
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00192	-0.00193	-0.00196
	(B * D_N * X)	0.00180	0.00180	0.00180
	(B * !D_N * X)	-0.00161	-0.00162	-0.00161
	(B * !D_N * X)	0.00271	0.00272	0.00270
	(A * !B * D_N * X)	-0.00174	-0.00176	-0.00194
	(A * !B * D_N * X)	0.00187	0.00187	0.00177
	(A * !B * !D_N * X)	-0.00159	-0.00160	-0.00159
	(A * !B * !D_N * X)	0.00263	0.00265	0.00265
	(!A * !B * !D_N * X)	-0.00157	-0.00157	-0.00156
	(!A * !B * !D_N * X)	0.00368	0.00369	0.00370

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00388	0.00445	0.02167
	(C * X)	0.00062	0.00118	0.01841
	(B * !C * X)	0.00397	0.00454	0.02173
	(B * !C * X)	0.00066	0.00121	0.01842
	(A * !B * !C * X)	0.00409	0.00465	0.02181
	(A * !B * !C * X)	0.00073	0.00128	0.01847
sky130_fd_sc_hs__or4b_2	(C * X)	0.00435	0.00486	0.02175
	(C * X)	0.00101	0.00151	0.01841
	(B * !C * X)	0.00444	0.00495	0.02181
	(B * !C * X)	0.00104	0.00154	0.01843
	(A * !B * !C * X)	0.00455	0.00506	0.02189
	(A * !B * !C * X)	0.00110	0.00160	0.01847
sky130_fd_sc_hs__or4b_4	(C * X)	0.00522	0.00585	0.02501
	(C * X)	0.00153	0.00214	0.02131
	(B * !C * X)	0.00546	0.00608	0.02517
	(B * !C * X)	0.00164	0.00225	0.02136
	(A * !B * !C * X)	0.00572	0.00633	0.02535
	(A * !B * !C * X)	0.00178	0.00238	0.02145

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00097	0.00206	0.01964
	(C * X)	0.00423	0.00532	0.02290
	(B * !C * X)	0.00097	0.00206	0.01964
	(B * !C * X)	0.00424	0.00533	0.02290
	(A * !B * !C * X)	0.00097	0.00206	0.01964
	(A * !B * !C * X)	0.00424	0.00533	0.02291
sky130_fd_sc_hs__or4b_2	(C * X)	0.00117	0.00219	0.01952
	(C * X)	0.00450	0.00554	0.02286
	(B * !C * X)	0.00116	0.00219	0.01952
	(B * !C * X)	0.00450	0.00555	0.02286
	(A * !B * !C * X)	0.00117	0.00223	0.01952
	(A * !B * !C * X)	0.00451	0.00559	0.02287
sky130_fd_sc_hs__or4b_4	(C * X)	0.00177	0.00285	0.02234
	(C * X)	0.00545	0.00656	0.02604
	(B * !C * X)	0.00177	0.00286	0.02235
	(B * !C * X)	0.00548	0.00659	0.02606
	(A * !B * !C * X)	0.00177	0.00286	0.02235
	(A * !B * !C * X)	0.00550	0.00660	0.02608

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00266	0.00254	0.00259	0.00252	0.79161
sky130_fd_sc_hs__or4_2	0.00277	0.00274	0.00285	0.00284	1.59401
sky130_fd_sc_hs__or4_4	0.00414	0.00473	0.00479	0.00453	3.11761

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.88594	2.09099
sky130_fd_sc_hs__or4_2	0.00000	1.14535	2.68759
sky130_fd_sc_hs__or4_4	0.00000	2.21367	4.49092

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)	0.11558	0.85652	7.61369
	B->X (RR)	0.11573	0.84234	7.51582
	C->X (RR)	0.11053	0.81721	7.39459
	D->X (RR)	0.09906	0.78371	7.29081
sky130_fd_sc_hs__or4_2	A->X (RR)	0.10826	0.73715	7.53676
	B->X (RR)	0.10815	0.72632	7.44651
	C->X (RR)	0.10499	0.70653	7.34332
	D->X (RR)	0.09623	0.68200	7.25642
sky130_fd_sc_hs__or4_4	A->X (RR)	0.14392	0.75040	8.14242
	B->X (RR)	0.14866	0.74210	8.06279
	C->X (RR)	0.13604	0.70600	7.90495
	D->X (RR)	0.12055	0.67065	7.80550

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.43698	0.96496	4.65821
	B->X (FF)	0.40937	0.94454	4.86290
	C->X (FF)	0.36086	0.91803	4.95546
	D->X (FF)	0.28123	0.86939	4.88766
sky130_fd_sc_hs__or4_2	A->X (FF)	0.53536	1.05201	5.07377
	B->X (FF)	0.50762	1.03471	5.30526
	C->X (FF)	0.46527	1.01945	5.45117
	D->X (FF)	0.39029	0.97896	5.40223
sky130_fd_sc_hs__or4_4	A->X (FF)	0.51983	0.99260	4.87622
	B->X (FF)	0.50325	0.97916	5.02021
	C->X (FF)	0.43931	0.93235	5.15997
	D->X (FF)	0.34473	0.87168	5.07183

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01260	0.01268	0.02180
	A	0.00595	0.00604	0.01533
	B	0.01075	0.01101	0.02011
	B	0.00509	0.00536	0.01450
	C	0.00886	0.00920	0.01804
	C	0.00403	0.00439	0.01328
	D	0.00707	0.00753	0.01792
	D	0.00309	0.00355	0.01402
sky130_fd_sc_hs__or4_2	A	0.01520	0.01560	0.02635
	A	0.00825	0.00867	0.01946
	B	0.01328	0.01387	0.02455
	B	0.00730	0.00789	0.01866
	C	0.01157	0.01226	0.02254
	C	0.00642	0.00714	0.01757
	D	0.00980	0.01058	0.02237
	D	0.00546	0.00625	0.01823
sky130_fd_sc_hs__or4_4	A	0.02931	0.02996	0.04878
	A	0.01741	0.01809	0.03711
	B	0.02615	0.02656	0.04386
	B	0.01554	0.01601	0.03360
	C	0.02160	0.02255	0.04037
	C	0.01291	0.01390	0.03222
	D	0.01757	0.01895	0.03989
	D	0.01069	0.01209	0.03366

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00372	0.00346	0.01218
	A	0.01040	0.01013	0.01885
	B	0.00376	0.00358	0.01302
	B	0.00943	0.00927	0.01853
	C	0.00375	0.00379	0.01403
	C	0.00857	0.00861	0.01781
	D	0.00364	0.00425	0.01637
	D	0.00763	0.00825	0.01969
sky130_fd_sc_hs__or4_2	A	0.00704	0.00603	0.01689
	A	0.01402	0.01310	0.02282
	B	0.00705	0.00625	0.01680
	B	0.01305	0.01224	0.02234
	C	0.00705	0.00636	0.01764
	C	0.01221	0.01150	0.02142
	D	0.00696	0.00668	0.02065
	D	0.01131	0.01115	0.02349
sky130_fd_sc_hs__or4_4	A	0.01406	0.01260	0.03016
	A	0.02604	0.02457	0.04041
	B	0.01395	0.01238	0.02971
	B	0.02457	0.02303	0.03817
	C	0.01401	0.01258	0.03043
	C	0.02269	0.02132	0.03783
	D	0.01362	0.01325	0.03647
	D	0.02049	0.02010	0.04100

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00115	0.00117	0.00115
	(B * D * X)	-0.00158	-0.00163	-0.00162
	(B * C * !D * X)	0.00115	0.00117	0.00115
	(B * C * !D * X)	-0.00158	-0.00163	-0.00162
	(B * !C * !D * X)	0.00131	0.00118	0.00117
	(B * !C * !D * X)	-0.00142	-0.00161	-0.00161
	(!B * C * D * X)	0.00115	0.00117	0.00115
	(!B * C * D * X)	-0.00146	-0.00157	-0.00156
	(!B * C * !D * X)	0.00124	0.00118	0.00116
	(!B * C * !D * X)	-0.00139	-0.00158	-0.00158
	(!B * !C * D * X)	0.00127	0.00120	0.00117
	(!B * !C * D * X)	-0.00135	-0.00155	-0.00156
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00128	0.00130	0.00128
	(B * D * X)	-0.00160	-0.00165	-0.00164
	(B * C * !D * X)	0.00128	0.00130	0.00128
	(B * C * !D * X)	-0.00159	-0.00165	-0.00164
	(B * !C * !D * X)	0.00144	0.00131	0.00130
	(B * !C * !D * X)	-0.00143	-0.00163	-0.00163
	(!B * C * D * X)	0.00128	0.00130	0.00128
	(!B * C * D * X)	-0.00148	-0.00159	-0.00158
	(!B * C * !D * X)	0.00137	0.00131	0.00129
	(!B * C * !D * X)	-0.00141	-0.00159	-0.00160
	(!B * !C * D * X)	0.00140	0.00133	0.00130
	(!B * !C * D * X)	-0.00137	-0.00157	-0.00159

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00132	0.00132	0.00131
	(B * D * X)	-0.00318	-0.00326	-0.00326
	(B * C * !D * X)	0.00133	0.00132	0.00131
	(B * C * !D * X)	-0.00316	-0.00325	-0.00326
	(B * !C * !D * X)	0.00167	0.00136	0.00134
	(B * !C * !D * X)	-0.00282	-0.00321	-0.00323
	(!B * C * D * X)	0.00132	0.00132	0.00131
	(!B * C * D * X)	-0.00293	-0.00314	-0.00312
	(!B * C * !D * X)	0.00152	0.00135	0.00133
	(!B * C * !D * X)	-0.00278	-0.00315	-0.00316
	(!B * !C * D * X)	0.00158	0.00138	0.00134
	(!B * !C * D * X)	-0.00267	-0.00307	-0.00313

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00114	-0.00115	-0.00114
	(B * D * X)	0.00162	0.00163	0.00162
	(B * C * !D * X)	-0.00114	-0.00115	-0.00114
	(B * C * !D * X)	0.00162	0.00163	0.00162
	(B * !C * !D * X)	-0.00114	-0.00115	-0.00114
	(B * !C * !D * X)	0.00163	0.00165	0.00163
	(!B * C * D * X)	-0.00114	-0.00115	-0.00114
	(!B * C * D * X)	0.00156	0.00157	0.00156
	(!B * C * !D * X)	-0.00114	-0.00115	-0.00114
	(!B * C * !D * X)	0.00158	0.00160	0.00158
	(!B * !C * D * X)	-0.00113	-0.00113	-0.00112
	(!B * !C * D * X)	0.00156	0.00157	0.00156

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00127	-0.00127	-0.00127
	(B * D * X)	0.00164	0.00165	0.00165
	(B * C * !D * X)	-0.00127	-0.00127	-0.00127
	(B * C * !D * X)	0.00164	0.00165	0.00165
	(B * !C * !D * X)	-0.00126	-0.00127	-0.00127
	(B * !C * !D * X)	0.00165	0.00167	0.00166
	(!B * C * D * X)	-0.00127	-0.00127	-0.00127
	(!B * C * D * X)	0.00159	0.00159	0.00158
	(!B * C * !D * X)	-0.00126	-0.00126	-0.00126
	(!B * C * !D * X)	0.00160	0.00159	0.00160
	(!B * !C * D * X)	-0.00125	-0.00125	-0.00124
	(!B * !C * D * X)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00128	-0.00129	-0.00129
	(B * D * X)	0.00325	0.00327	0.00326
	(B * C * !D * X)	-0.00128	-0.00129	-0.00128
	(B * C * !D * X)	0.00325	0.00327	0.00326
	(B * !C * !D * X)	-0.00128	-0.00128	-0.00128
	(B * !C * !D * X)	0.00328	0.00329	0.00328
	(!B * C * D * X)	-0.00128	-0.00129	-0.00129
	(!B * C * D * X)	0.00310	0.00314	0.00312
	(!B * C * !D * X)	-0.00127	-0.00128	-0.00127
	(!B * C * !D * X)	0.00314	0.00316	0.00316
	(!B * !C * D * X)	-0.00125	-0.00126	-0.00123
	(!B * !C * D * X)	0.00310	0.00314	0.00313

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)**	0.00110	0.00111	0.00106
	(A * C * D * X)	-0.00113	-0.00113	-0.00113
	(A * C * !D * X)	0.00113	0.00114	0.00106
	(A * C * !D * X)	-0.00111	-0.00112	-0.00112
	(A * !C * D * X)	0.00116	0.00123	0.00111
	(A * !C * D * X)	-0.00108	-0.00104	-0.00108
	(A * !C * !D * X)	0.00106	0.00107	0.00104
	(A * !C * !D * X)	-0.00084	-0.00084	-0.00084
	(!A * C * D * X)	0.00108	0.00103	0.00102
	(!A * C * D * X)	-0.00150	-0.00160	-0.00160
	(!A * C * !D * X)	0.00135	0.00106	0.00104
	(!A * C * !D * X)	-0.00126	-0.00157	-0.00159
	(!A * !C * D * X)	0.00135	0.00107	0.00103
	(!A * !C * D * X)	-0.00120	-0.00152	-0.00157
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00123	0.00123	0.00118
	(A * C * D * X)	-0.00118	-0.00119	-0.00118
	(A * C * !D * X)	0.00126	0.00126	0.00117
	(A * C * !D * X)	-0.00116	-0.00117	-0.00117
	(A * !C * D * X)	0.00128	0.00136	0.00123
	(A * !C * D * X)	-0.00114	-0.00109	-0.00113
	(A * !C * !D * X)	0.00118	0.00118	0.00116
	(A * !C * !D * X)	-0.00090	-0.00090	-0.00090
	(!A * C * D * X)	0.00122	0.00116	0.00115
	(!A * C * D * X)	-0.00157	-0.00167	-0.00167
	(!A * C * !D * X)	0.00147	0.00119	0.00117
	(!A * C * !D * X)	-0.00134	-0.00164	-0.00166
	(!A * !C * D * X)	0.00148	0.00120	0.00116
	(!A * !C * D * X)	-0.00127	-0.00159	-0.00164

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00185	0.00186	0.00178
	(A * C * D * X)	-0.00233	-0.00236	-0.00233
	(A * C * !D * X)	0.00192	0.00195	0.00177
	(A * C * !D * X)	-0.00230	-0.00228	-0.00230
	(A * !C * D * X)	0.00196	0.00211	0.00186
	(A * !C * D * X)	-0.00224	-0.00214	-0.00222
	(A * !C * !D * X)	0.00175	0.00176	0.00171
	(A * !C * !D * X)	-0.00171	-0.00172	-0.00174
	(!A * C * D * X)	0.00176	0.00168	0.00166
	(!A * C * D * X)	-0.00310	-0.00330	-0.00329
	(!A * C * !D * X)	0.00234	0.00175	0.00170
	(!A * C * !D * X)	-0.00258	-0.00324	-0.00327
	(!A * !C * D * X)	0.00229	0.00177	0.00169
	(!A * !C * D * X)	-0.00245	-0.00313	-0.00323

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)**	-0.00102	-0.00102	-0.00102
	(A * C * D * X)	0.00113	0.00113	0.00113
	(A * C * !D * X)	-0.00102	-0.00102	-0.00102
	(A * C * !D * X)	0.00112	0.00112	0.00112
	(A * !C * D * X)	-0.00101	-0.00101	-0.00101
	(A * !C * D * X)	0.00108	0.00109	0.00108
	(A * !C * !D * X)	-0.00095	-0.00095	-0.00095
	(A * !C * !D * X)	0.00092	0.00092	0.00092
	(!A * C * D * X)	-0.00101	-0.00101	-0.00101
	(!A * C * D * X)	0.00160	0.00161	0.00160
	(!A * C * !D * X)	-0.00098	-0.00098	-0.00098
	(!A * C * !D * X)	0.00162	0.00163	0.00163
	(!A * !C * D * X)	-0.00099	-0.00099	-0.00098
	(!A * !C * D * X)	0.00156	0.00157	0.00157
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00113	-0.00113	-0.00113
	(A * C * D * X)	0.00118	0.00119	0.00118
	(A * C * !D * X)	-0.00113	-0.00113	-0.00113
	(A * C * !D * X)	0.00117	0.00117	0.00117
	(A * !C * D * X)	-0.00113	-0.00113	-0.00113
	(A * !C * D * X)	0.00114	0.00115	0.00114
	(A * !C * !D * X)	-0.00107	-0.00108	-0.00107
	(A * !C * !D * X)	0.00098	0.00099	0.00098
	(!A * C * D * X)	-0.00113	-0.00113	-0.00113
	(!A * C * D * X)	0.00167	0.00168	0.00168
	(!A * C * !D * X)	-0.00110	-0.00111	-0.00110
	(!A * C * !D * X)	0.00170	0.00172	0.00171
	(!A * !C * D * X)	-0.00111	-0.00111	-0.00110
	(!A * !C * D * X)	0.00163	0.00164	0.00164

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00166	-0.00167	-0.00166
	(A * C * D * X)	0.00233	0.00236	0.00233
	(A * C * !D * X)	-0.00166	-0.00166	-0.00165
	(A * C * !D * X)	0.00231	0.00232	0.00230
	(A * !C * D * X)	-0.00164	-0.00164	-0.00164
	(A * !C * D * X)	0.00224	0.00226	0.00224
	(A * !C * !D * X)	-0.00151	-0.00151	-0.00148
	(A * !C * !D * X)	0.00190	0.00191	0.00192
	(!A * C * D * X)	-0.00163	-0.00164	-0.00164
	(!A * C * D * X)	0.00327	0.00331	0.00329
	(!A * C * !D * X)	-0.00157	-0.00158	-0.00157
	(!A * C * !D * X)	0.00334	0.00337	0.00336
	(!A * !C * D * X)	-0.00159	-0.00159	-0.00156
	(!A * !C * D * X)	0.00319	0.00321	0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00121	0.00120	0.00112
	(B * D * X)	-0.00106	-0.00106	-0.00109
	(B * !D * X)	0.00106	0.00107	0.00105
	(B * !D * X)	-0.00081	-0.00082	-0.00083
	(A * !B * D * X)	0.00135	0.00123	0.00115
	(A * !B * D * X)	-0.00092	-0.00103	-0.00106
	(A * !B * !D * X)	0.00108	0.00108	0.00105
	(A * !B * !D * X)	-0.00081	-0.00081	-0.00082
	(!A * !B * D * X)	0.00148	0.00113	0.00106
	(!A * !B * D * X)	-0.00119	-0.00153	-0.00158

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00136	0.00137	0.00129
	(B * D * X)	-0.00105	-0.00105	-0.00108
	(B * !D * X)	0.00125	0.00126	0.00123
	(B * !D * X)	-0.00082	-0.00083	-0.00084
	(A * !B * D * X)	0.00153	0.00142	0.00133
	(A * !B * D * X)	-0.00092	-0.00103	-0.00106
	(A * !B * !D * X)	0.00126	0.00126	0.00123
	(A * !B * !D * X)	-0.00082	-0.00082	-0.00083
	(!A * !B * D * X)	0.00167	0.00131	0.00124
	(!A * !B * D * X)	-0.00119	-0.00155	-0.00160
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00209	0.00206	0.00189
	(B * D * X)	-0.00216	-0.00221	-0.00229
	(B * !D * X)	0.00176	0.00177	0.00172
	(B * !D * X)	-0.00169	-0.00170	-0.00172
	(A * !B * D * X)	0.00234	0.00209	0.00192
	(A * !B * D * X)	-0.00190	-0.00213	-0.00219
	(A * !B * !D * X)	0.00178	0.00178	0.00173
	(A * !B * !D * X)	-0.00167	-0.00168	-0.00170
	(!A * !B * D * X)	0.00258	0.00186	0.00173
	(!A * !B * D * X)	-0.00245	-0.00316	-0.00326

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00103	-0.00103	-0.00103
	(B * D * X)	0.00109	0.00109	0.00109
	(B * !D * X)	-0.00102	-0.00102	-0.00102
	(B * !D * X)	0.00087	0.00087	0.00087
	(A * !B * D * X)	-0.00102	-0.00103	-0.00102
	(A * !B * D * X)	0.00108	0.00109	0.00108
	(A * !B * !D * X)	-0.00095	-0.00096	-0.00102
	(A * !B * !D * X)	0.00090	0.00090	0.00086
	(!A * !B * D * X)	-0.00101	-0.00101	-0.00101
	(!A * !B * D * X)	0.00162	0.00163	0.00163
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00120	-0.00120	-0.00120
	(B * D * X)	0.00108	0.00108	0.00108
	(B * !D * X)	-0.00120	-0.00120	-0.00119
	(B * !D * X)	0.00088	0.00088	0.00089
	(A * !B * D * X)	-0.00120	-0.00120	-0.00119
	(A * !B * D * X)	0.00108	0.00109	0.00109
	(A * !B * !D * X)	-0.00114	-0.00115	-0.00119
	(A * !B * !D * X)	0.00090	0.00090	0.00087
	(!A * !B * D * X)	-0.00118	-0.00119	-0.00118
	(!A * !B * D * X)	0.00164	0.00164	0.00165
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00168	-0.00169	-0.00168
	(B * D * X)	0.00229	0.00231	0.00229
	(B * !D * X)	-0.00164	-0.00164	-0.00164
	(B * !D * X)	0.00183	0.00182	0.00182
	(A * !B * D * X)	-0.00166	-0.00167	-0.00166
	(A * !B * D * X)	0.00225	0.00225	0.00225
	(A * !B * !D * X)	-0.00147	-0.00149	-0.00164
	(A * !B * !D * X)	0.00190	0.00189	0.00179
	(!A * !B * D * X)	-0.00163	-0.00164	-0.00162
	(!A * !B * D * X)	0.00335	0.00337	0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00118	0.00117	0.00117
	(C * X)	-0.00079	-0.00079	-0.00079
	(B * !C * X)	0.00117	0.00117	0.00117
	(B * !C * X)	-0.00078	-0.00079	-0.00078
	(A * !B * !C * X)	0.00117	0.00117	0.00117
	(A * !B * !C * X)	-0.00078	-0.00078	-0.00078
sky130_fd_sc_hs__or4_2	(C * X)	0.00140	0.00141	0.00140
	(C * X)	-0.00078	-0.00078	-0.00078
	(B * !C * X)	0.00140	0.00141	0.00140
	(B * !C * X)	-0.00078	-0.00078	-0.00077
	(A * !B * !C * X)	0.00140	0.00141	0.00140
	(A * !B * !C * X)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__or4_4	(C * X)	0.00194	0.00198	0.00195
	(C * X)	-0.00153	-0.00156	-0.00153
	(B * !C * X)	0.00195	0.00198	0.00195
	(B * !C * X)	-0.00152	-0.00154	-0.00152
	(A * !B * !C * X)	0.00195	0.00198	0.00195
	(A * !B * !C * X)	-0.00151	-0.00154	-0.00151

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00111	-0.00112	-0.00116
	(C * X)	0.00084	0.00084	0.00081
	(B * !C * X)	-0.00103	-0.00103	-0.00114
	(B * !C * X)	0.00089	0.00089	0.00081
	(A * !B * !C * X)	-0.00090	-0.00091	-0.00111
	(A * !B * !C * X)	0.00096	0.00096	0.00083
sky130_fd_sc_hs__or4_2	(C * X)	-0.00134	-0.00135	-0.00139
	(C * X)	0.00084	0.00084	0.00081
	(B * !C * X)	-0.00126	-0.00127	-0.00137
	(B * !C * X)	0.00088	0.00087	0.00080
	(A * !B * !C * X)	-0.00114	-0.00115	-0.00134
	(A * !B * !C * X)	0.00095	0.00095	0.00082
sky130_fd_sc_hs__or4_4	(C * X)	-0.00181	-0.00183	-0.00192
	(C * X)	0.00166	0.00167	0.00159
	(B * !C * X)	-0.00158	-0.00160	-0.00187
	(B * !C * X)	0.00179	0.00179	0.00159
	(A * !B * !C * X)	-0.00133	-0.00136	-0.00181
	(A * !B * !C * X)	0.00194	0.00194	0.00163

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00200	0.00181	0.00422	0.00185	0.00569	0.00315	0.81563	0.80756
sky130_fd_sc_hs__sdfbbn_2	0.00202	0.00183	0.00427	0.00172	0.00563	0.00311	1.61914	1.62362

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	15.45390	26.51830
sky130_fd_sc_hs__sdfbbn_2	0.00000	15.63430	27.54680

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FR)	0.61000	1.35972	8.33219
	SET_B->Q (FR)	0.27613	1.06809	8.25180
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.69495	1.31924	8.35246
	SET_B->Q (FR)	0.32905	1.02286	8.34821

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FF)	0.62792	1.12594	4.72245
	RESET_B->Q (FF)	0.41106	0.95861	4.74926
	SET_B->Q (RF)	0.25471	0.70174	4.07846
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.67591	1.12465	4.76378
	RESET_B->Q (FF)	0.46444	0.96332	4.81292
	SET_B->Q (RF)	0.30854	0.72226	4.25447

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FR)	0.56151	1.33288	8.25344
	RESET_B->Q_N (FR)	0.34532	1.17243	8.29778
	SET_B->Q_N (RR)	0.18953	0.92305	7.84416
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.55844	1.23003	8.21184
	RESET_B->Q_N (FR)	0.34778	1.07096	8.27372
	SET_B->Q_N (RR)	0.19276	0.83647	7.89973

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FF)	0.51996	1.11084	4.79427
	SET_B->Q_N (FF)	0.19787	0.81754	4.93011
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.55511	1.11763	4.81722
	SET_B->Q_N (FF)	0.21388	0.80752	5.02395

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)	-0.07255	-0.07118	-0.05295
	setup	CLK_N (F)	0.26993	0.24618	0.20449
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07769	-0.07929	-0.07951
	setup	CLK_N (F)	0.27714	0.25184	0.23193

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)	-0.36222	-0.42313	-1.21988
	setup	CLK_N (F)	0.40982	0.45538	1.24917
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.39345	-0.44816	-1.29276
	setup	CLK_N (F)	0.44542	0.48417	1.33693

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)	-0.07255	-0.07118	-0.05295
	setup	CLK_N (F)	0.26993	0.24618	0.20449
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07769	-0.07929	-0.07951
	setup	CLK_N (F)	0.27714	0.25184	0.23193

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)	-0.36222	-0.42313	-1.21988
	setup	CLK_N (F)	0.40982	0.45538	1.24917
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.39345	-0.44816	-1.29276
	setup	CLK_N (F)	0.44542	0.48417	1.33693

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)	-0.10791	-0.08863	-0.11124
	setup	CLK_N (F)	0.31383	0.27345	0.29165
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11528	-0.09443	-0.13441
	setup	CLK_N (F)	0.31934	0.27776	0.31229

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)	-0.45312	-0.50653	-1.31876
	setup	CLK_N (F)	0.50894	0.54383	1.35746
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.48768	-0.53763	-1.39646
	setup	CLK_N (F)	0.54432	0.57790	1.43911

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)	-0.10791	-0.08863	-0.11124
	hold	CLK_N (F)	-0.11729	-0.09890	-0.15523
	setup	CLK_N (F)	0.30670	0.26361	0.25112
	setup	CLK_N (F)	0.31383	0.27345	0.29165
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11528	-0.09443	-0.13441
	hold	CLK_N (F)	-0.12618	-0.10758	-0.17943
	setup	CLK_N (F)	0.31241	0.26829	0.27039
	setup	CLK_N (F)	0.31934	0.27776	0.31229

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)	-0.45409	-0.50959	-1.31916
	hold	CLK_N (F)	-0.45312	-0.50653	-1.31876
	setup	CLK_N (F)	0.50659	0.54238	1.34965
	setup	CLK_N (F)	0.50894	0.54383	1.35746
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.48940	-0.53849	-1.39646
	hold	CLK_N (F)	-0.48768	-0.53763	-1.40260
	setup	CLK_N (F)	0.54032	0.57369	1.43253
	setup	CLK_N (F)	0.54432	0.57790	1.43911

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)	-0.09360	-0.09874	-0.24477
	setup	CLK_N (F)	0.49886	0.49011	0.39292
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10268	-0.10777	-0.26391
	setup	CLK_N (F)	0.52840	0.51948	0.40912

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)	-0.16286	-0.15181	-0.09119
	setup	CLK_N (F)	0.41744	0.44233	1.12347
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.17019	-0.16155	-0.10224
	setup	CLK_N (F)	0.45082	0.47497	1.20344

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)	-0.44639	-0.45507	-0.32015
	hold	CLK_N (F)	-0.09360	-0.09874	-0.24477
	setup	CLK_N (F)	0.49886	0.49011	0.34760
	setup	CLK_N (F)	0.29019	0.27408	0.39292
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.47576	-0.48787	-0.36055
	hold	CLK_N (F)	-0.10268	-0.10777	-0.26391
	setup	CLK_N (F)	0.52840	0.51948	0.38497
	setup	CLK_N (F)	0.29904	0.27890	0.40912

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)	-0.16286	-0.15181	-0.09119
	hold	CLK_N (F)	-0.36859	-0.41116	-1.09145
	setup	CLK_N (F)	0.36066	0.32577	0.23705
	setup	CLK_N (F)	0.41744	0.44233	1.12347
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.17019	-0.16155	-0.10224
	hold	CLK_N (F)	-0.39970	-0.44233	-1.16996
	setup	CLK_N (F)	0.36684	0.33334	0.24288
	setup	CLK_N (F)	0.45082	0.47497	1.20344

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)	0.17002	0.13059	-0.16768
	removal	CLK_N (F)	0.04188	0.06910	0.41087
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.17062	0.12821	-0.17201
	removal	CLK_N (F)	0.04721	0.07208	0.42446

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)	0.16960	0.13059	-0.16776
	recovery	CLK_N (F)	0.17002	0.13059	-0.16768
	recovery	CLK_N (F)	0.16999	0.13059	-0.16773
	removal	CLK_N (F)	0.04188	0.06910	0.41087
	removal	CLK_N (F)	0.04188	0.06910	0.41087
	removal	CLK_N (F)	0.04188	0.06910	0.41087
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.17021	0.12809	-0.17212
	recovery	CLK_N (F)	0.17062	0.12821	-0.17201
	recovery	CLK_N (F)	0.17056	0.12820	-0.17225
	removal	CLK_N (F)	0.04721	0.07208	0.42446
	removal	CLK_N (F)	0.04721	0.07208	0.42446
	removal	CLK_N (F)	0.04721	0.07208	0.42446

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 ()	0.37667	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.32792	0.82153	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.38277	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.33402	0.82153	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)	-0.03647	-0.09192	0.52285
	removal	CLK_N (F)	0.05742	0.11790	0.46838
	hold	RESET_B (R)	-0.10744	-0.16465	-0.64904
	setup	RESET_B (R)	0.22567	0.25414	0.87374
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02825	-0.08455	0.80163
	removal	CLK_N (F)	0.05267	0.10998	0.44050
	hold	RESET_B (R)	-0.14260	-0.20252	-0.80080
	setup	RESET_B (R)	0.23258	0.27640	0.97530

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)	-0.03679	-0.09213	0.52013
	recovery	CLK_N (F)	-0.03670	-0.09212	0.52285
	recovery	CLK_N (F)	-0.03647	-0.09192	0.52268
	removal	CLK_N (F)	0.05742	0.11790	0.46438
	removal	CLK_N (F)	0.05742	0.11790	0.46438
	removal	CLK_N (F)	0.05695	0.11790	0.46838
	hold	RESET_B (R)	-0.10754	-0.16554	-0.64904
	hold	RESET_B (R)	-0.10744	-0.16465	-0.65065
	setup	RESET_B (R)	0.22567	0.25414	0.85306
	setup	RESET_B (R)	0.17529	0.21917	0.87374
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.03086	-0.08472	0.80163
	recovery	CLK_N (F)	-0.03086	-0.08468	0.80138
	recovery	CLK_N (F)	-0.02825	-0.08455	0.80097
	removal	CLK_N (F)	0.05267	0.10998	0.43784
	removal	CLK_N (F)	0.05267	0.10998	0.43784
	removal	CLK_N (F)	0.05078	0.10733	0.44050
	hold	RESET_B (R)	-0.14626	-0.21150	-0.81089
	hold	RESET_B (R)	-0.14260	-0.20252	-0.80080
	setup	RESET_B (R)	0.23258	0.27640	0.97530
	setup	RESET_B (R)	0.18197	0.24144	0.96175

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 ()	0.21518	0.82153	16.50020
	min_pulse_width	SET_B ()	0.19081	0.82153	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.24565	0.82153	16.50020
	min_pulse_width	SET_B ()	0.22737	0.82153	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 ()	0.31573	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.24870	0.82153	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.32487	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.26393	0.82153	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 ()	0.27612	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.31573	0.82153	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.30355	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.32487	0.82153	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	0.01261	0.01319	0.02400
	CLK_N	0.01461	0.01520	0.02559
	SET_B	0.01320	0.01389	0.03179
	SET_B	0.01690	0.01760	0.03534
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01531	0.01582	0.02946
	CLK_N	0.01724	0.01778	0.02856
	SET_B	0.01578	0.01658	0.03431
	SET_B	0.01940	0.02020	0.03790

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01337	0.01405	0.02392
	CLK_N	0.01512	0.01581	0.02567
	RESET_B	0.01634	0.01675	0.02269
	RESET_B	0.01738	0.01780	0.02374
	SET_B	0.01704	0.01705	0.03193
	SET_B	0.01333	0.01335	0.02822
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01586	0.01677	0.02709
	CLK_N	0.01765	0.01856	0.02857
	RESET_B	0.01922	0.01985	0.02596
	RESET_B	0.02030	0.02093	0.02699
	SET_B	0.01984	0.02008	0.03493
	SET_B	0.01622	0.01646	0.03110

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01350	0.01419	0.02434
	CLK_N	0.01525	0.01594	0.02597
	RESET_B	0.01645	0.01686	0.02296
	RESET_B	0.01750	0.01792	0.02397
	SET_B	0.01716	0.01717	0.03255
	SET_B	0.01344	0.01347	0.02850
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01599	0.01691	0.02729
	CLK_N	0.01778	0.01869	0.02885
	RESET_B	0.01934	0.01991	0.02637
	RESET_B	0.02042	0.02106	0.02729
	SET_B	0.01997	0.02022	0.03566
	SET_B	0.01634	0.01659	0.03142

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01248	0.01306	0.02328
	CLK_N	0.01449	0.01508	0.02516
	SET_B	0.01308	0.01377	0.03147
	SET_B	0.01678	0.01747	0.03500
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01519	0.01571	0.02602
	CLK_N	0.01712	0.01766	0.02779
	SET_B	0.01566	0.01647	0.03445
	SET_B	0.01928	0.02007	0.03762

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * SCD * SCE)**	0.00114	0.00115	0.00114
	(CLK_N * SCD * SCE)	-0.00038	-0.00038	-0.00038
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01056	0.01063	0.02034
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00825	0.00834	0.01804
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00738	0.00744	0.01616
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00469	0.00476	0.01348
	(CLK_N * !SCD * SCE)	0.00061	0.00061	0.00059
	(CLK_N * !SCD * SCE)	-0.00115	-0.00115	-0.00117
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00618	0.00625	0.01493
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00352	0.00358	0.01227
	(!CLK_N * SCD * SCE)	0.00122	0.00123	0.00122
	(!CLK_N * SCD * SCE)	-0.00030	-0.00031	-0.00030
	(!CLK_N * !SCE)	0.00420	0.00433	0.01385
	(!CLK_N * !SCE)	0.00154	0.00167	0.01120
	(!CLK_N * !SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK_N * !SCD * SCE)	-0.00117	-0.00117	-0.00119

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00116	0.00117	0.00116
	(CLK_N * SCD * SCE)	-0.00039	-0.00039	-0.00039
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01066	0.01073	0.02035
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00828	0.00836	0.01797
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00751	0.00756	0.01619
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00478	0.00485	0.01346
	(CLK_N * !SCD * SCE)	0.00063	0.00063	0.00061
	(CLK_N * !SCD * SCE)	-0.00114	-0.00115	-0.00117
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00625	0.00630	0.01489
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00354	0.00360	0.01219
	(!CLK_N * SCD * SCE)	0.00117	0.00119	0.00117
	(!CLK_N * SCD * SCE)	-0.00038	-0.00038	-0.00037
	(!CLK_N * !SCE)	0.00410	0.00420	0.01368
	(!CLK_N * !SCE)	0.00139	0.00149	0.01098
	(!CLK_N * !SCD * SCE)	0.00059	0.00060	0.00058
	(!CLK_N * !SCD * SCE)	-0.00117	-0.00119	-0.00121

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)**	-0.00082	-0.00083	-0.00086
	(CLK_N * SCD * SCE)	0.00070	0.00070	0.00067
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01028	0.01054	0.02077
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01258	0.01284	0.02307
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00334	0.00362	0.01289
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00604	0.00631	0.01557
	(CLK_N * !SCD * SCE)	-0.00020	-0.00021	-0.00020
	(CLK_N * !SCD * SCE)	0.00154	0.00155	0.00154
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00422	0.00452	0.01389
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00689	0.00718	0.01655
	(!CLK_N * SCD * SCE)	-0.00074	-0.00074	-0.00078
	(!CLK_N * SCD * SCE)	0.00078	0.00078	0.00075
	(!CLK_N * !SCE)	0.00213	0.00252	0.01236
	(!CLK_N * !SCE)	0.00480	0.00518	0.01502
	(!CLK_N * !SCD * SCE)	-0.00022	-0.00023	-0.00022
	(!CLK_N * !SCD * SCE)	0.00152	0.00152	0.00152

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00085	-0.00086	-0.00089
	(CLK_N * SCD * SCE)	0.00070	0.00070	0.00067
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01112	0.01135	0.02150
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01349	0.01373	0.02387
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00364	0.00390	0.01308
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00637	0.00663	0.01580
	(CLK_N * !SCD * SCE)	-0.00023	-0.00024	-0.00023
	(CLK_N * !SCD * SCE)	0.00154	0.00155	0.00154
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00460	0.00488	0.01417
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00731	0.00758	0.01687
	(!CLK_N * SCD * SCE)	-0.00084	-0.00084	-0.00088
	(!CLK_N * SCD * SCE)	0.00071	0.00070	0.00068
	(!CLK_N * !SCE)	0.00235	0.00272	0.01246
	(!CLK_N * !SCE)	0.00506	0.00543	0.01516
	(!CLK_N * !SCD * SCE)	-0.00027	-0.00028	-0.00027
	(!CLK_N * !SCD * SCE)	0.00150	0.00151	0.00150

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)**	0.00904	0.00905	0.01621
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00553	0.00554	0.01271
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01220	0.01222	0.02023
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00907	0.00909	0.01711
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00784	0.00785	0.01496
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00436	0.00436	0.01149
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00991	0.00990	0.01683
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00616	0.00616	0.01310
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01308	0.01310	0.02085
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00971	0.00973	0.01750
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00872	0.00871	0.01559
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00499	0.00498	0.01188
	(!CLK_N * D * SCE)	0.00587	0.00589	0.01356
	(!CLK_N * D * SCE)	0.00239	0.00240	0.01008
	(!CLK_N * !D * SCE)	0.00675	0.00675	0.01414
	(!CLK_N * !D * SCE)	0.00302	0.00302	0.01043
	!SCE	0.00114	0.00094	0.00090
	!SCE	-0.00079	-0.00099	-0.00103

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00912	0.00912	0.01622
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00563	0.00564	0.01275
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01225	0.01227	0.02021
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00912	0.00914	0.01709
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00786	0.00786	0.01491
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00439	0.00440	0.01146
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00998	0.00998	0.01684
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00625	0.00625	0.01313
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01312	0.01315	0.02083
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00975	0.00977	0.01747
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00872	0.00871	0.01554
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00501	0.00501	0.01184
	(!CLK_N * D * SCE)	0.00572	0.00574	0.01338
	(!CLK_N * D * SCE)	0.00225	0.00227	0.00992
	(!CLK_N * !D * SCE)	0.00658	0.00659	0.01395
	(!CLK_N * !D * SCE)	0.00287	0.00288	0.01026
	!SCE	0.00113	0.00093	0.00089
	!SCE	-0.00080	-0.00101	-0.00104

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)**	0.00475	0.00476	0.01214
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00827	0.00828	0.01563
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01169	0.01167	0.01980
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01482	0.01481	0.02290
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00563	0.00564	0.01313
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00912	0.00914	0.01659
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00438	0.00439	0.01190
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00813	0.00815	0.01563
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01134	0.01135	0.01973
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01470	0.01472	0.02308
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00525	0.00527	0.01289
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00898	0.00900	0.01659
	(!CLK_N * D * SCE)	0.00356	0.00358	0.01144
	(!CLK_N * D * SCE)	0.00705	0.00707	0.01491
	(!CLK_N * !D * SCE)	0.00318	0.00321	0.01122
	(!CLK_N * !D * SCE)	0.00690	0.00695	0.01493
	!SCE	-0.00060	-0.00061	-0.00061
	!SCE	0.00131	0.00132	0.00132

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00505	0.00506	0.01237
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00855	0.00857	0.01585
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01254	0.01251	0.02056
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01568	0.01566	0.02368
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00602	0.00603	0.01345
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00949	0.00950	0.01689
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00467	0.00469	0.01212
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00841	0.00843	0.01584
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01217	0.01217	0.02049
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01555	0.01555	0.02384
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00564	0.00565	0.01320
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00934	0.00936	0.01689
	(!CLK_N * D * SCE)	0.00378	0.00380	0.01159
	(!CLK_N * D * SCE)	0.00725	0.00728	0.01503
	(!CLK_N * !D * SCE)	0.00340	0.00342	0.01136
	(!CLK_N * !D * SCE)	0.00710	0.00713	0.01505
	!SCE	-0.00061	-0.00061	-0.00061
	!SCE	0.00133	0.00134	0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(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)	0.00455	0.00484	0.01705
	(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	-0.00002	0.01220
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01624	0.01676	0.02924
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01232	0.01284	0.02529
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00931	0.00985	0.02233
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00579	0.00630	0.01875
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01020	0.01073	0.02325
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00664	0.00716	0.01964
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01156	0.01210	0.03223
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00547	0.00603	0.02616
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)**	0.01473	0.01529	0.03639
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00902	0.00960	0.03070
	(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)	0.00457	0.00500	0.01717
	(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)	0.00004	0.00046	0.01262
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01037	0.01092	0.03097
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00430	0.00484	0.02494
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00472	0.00501	0.01722
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00013	0.00015	0.01237
	(!CLK_N * D * !SCD)	0.00828	0.00876	0.02133
	(!CLK_N * D * !SCD)	0.00472	0.00518	0.01772
	(!CLK_N * !D * SCD)	0.00849	0.00909	0.02975
	(!CLK_N * !D * SCD)	0.00242	0.00300	0.02370

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)**	0.00462	0.00491	0.01713
	(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)	-0.00029	-0.00001	0.01223
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01713	0.01766	0.03016
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01321	0.01372	0.02618
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00965	0.01020	0.02268
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00609	0.00661	0.01907
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01062	0.01117	0.02369
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00703	0.00756	0.02005
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01172	0.01227	0.03232
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00556	0.00610	0.02619
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01487	0.01541	0.03646
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00906	0.00962	0.03068
	(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)	0.00463	0.00506	0.01724
	(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)	0.00004	0.00046	0.01263
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01046	0.01101	0.03102
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00432	0.00486	0.02490
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00471	0.00500	0.01722
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00020	0.00008	0.01232
	(!CLK_N * D * !SCD)	0.00855	0.00904	0.02159
	(!CLK_N * D * !SCD)	0.00495	0.00543	0.01794
	(!CLK_N * !D * SCD)	0.00842	0.00901	0.02965
	(!CLK_N * !D * SCD)	0.00228	0.00286	0.02352

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)	-0.00025	0.00050	0.01296
	(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)	0.00457	0.00534	0.01780
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01008	0.01075	0.02318
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01402	0.01469	0.02700
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00690	0.00756	0.01997
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01047	0.01114	0.02341
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00571	0.00637	0.01876
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00929	0.00995	0.02222
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00344	0.00414	0.02447
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00952	0.01024	0.03055
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01036	0.01105	0.03210
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01605	0.01675	0.03779
	(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)	-0.00002	0.00067	0.01305
	(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)	0.00453	0.00521	0.01758
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00432	0.00503	0.02548
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01036	0.01108	0.03153
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00027	0.00047	0.01295
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00455	0.00530	0.01779
	(!CLK_N * D * !SCD)	0.00366	0.00425	0.01677
	(!CLK_N * D * !SCD)	0.00725	0.00785	0.02024
	(!CLK_N * !D * SCD)	0.00214	0.00291	0.02384
	(!CLK_N * !D * SCD)	0.00818	0.00898	0.02990

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)**	-0.00032	0.00043	0.01292
	(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)	0.00458	0.00533	0.01782
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01011	0.01078	0.02321
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01406	0.01473	0.02704
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00696	0.00762	0.02003
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01056	0.01123	0.02350
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00570	0.00636	0.01875
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00932	0.00998	0.02225
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00369	0.00438	0.02464
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00984	0.01055	0.03077
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01115	0.01183	0.03280
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01695	0.01763	0.03860
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00006	0.00063	0.01301
	(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)	0.00455	0.00524	0.01761
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00465	0.00535	0.02572
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01078	0.01150	0.03185
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00042	0.00033	0.01282
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00448	0.00523	0.01772
	(!CLK_N * D * !SCD)	0.00348	0.00408	0.01662
	(!CLK_N * D * !SCD)	0.00710	0.00771	0.02012
	(!CLK_N * !D * SCD)	0.00231	0.00307	0.02391
	(!CLK_N * !D * SCD)	0.00843	0.00920	0.03005

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)	0.01104	0.01115	0.02258
	(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)	0.00868	0.00879	0.02022
	(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)	0.00667	0.00692	0.01805
	(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)	0.00395	0.00419	0.01534
	(!SET_B * Q * !Q_N)	0.00661	0.00687	0.01821
	(!SET_B * Q * !Q_N)	0.00384	0.00409	0.01544

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)**	0.01077	0.01086	0.02229
	(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)	0.00847	0.00855	0.01999
	(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)	0.00638	0.00663	0.01779
	(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)	0.00375	0.00398	0.01515
	(!SET_B * Q * !Q_N)	0.00644	0.00670	0.01807
	(!SET_B * Q * !Q_N)	0.00376	0.00401	0.01538

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)**	0.00969	0.01013	0.02201
	(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)	0.01205	0.01248	0.02437
	(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)	0.00322	0.00370	0.01509
	(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)	0.00594	0.00643	0.01781
	(!SET_B * Q * !Q_N)	0.00223	0.00278	0.01429
	(!SET_B * Q * !Q_N)	0.00502	0.00557	0.01707

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)**	0.01027	0.01070	0.02255
	(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)	0.01257	0.01301	0.02486
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00338	0.00384	0.01525
	(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)	0.00601	0.00648	0.01788
	(!SET_B * Q * !Q_N)	0.00225	0.00279	0.01430
	(!SET_B * Q * !Q_N)	0.00495	0.00550	0.01700

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)**	0.00288	0.00289	0.00287
	(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)	-0.00361	-0.00362	-0.00359
	(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)	0.00994	0.00987	0.02388
	(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)	0.00300	0.00291	0.01695

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)**	0.00293	0.00293	0.00295
	(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)	-0.00348	-0.00348	-0.00349
	(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)	0.01049	0.01040	0.02430
	(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)	0.00360	0.00351	0.01740

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)**	-0.00249	-0.00259	-0.00260
	(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)	0.00401	0.00393	0.00389
	(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)	0.00178	0.00233	0.01775
	(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)	0.00874	0.00928	0.02471

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)**	-0.00257	-0.00268	-0.00268
	(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)	0.00386	0.00381	0.00377
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00166	0.00220	0.01758
	(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)	0.00856	0.00912	0.02448

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)	0.01797	0.01849	0.03862
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01456	0.01507	0.03521
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01116	0.01154	0.03091
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00739	0.00777	0.02715
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01803	0.01855	0.03868
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01462	0.01513	0.03526
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01121	0.01159	0.03097
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00744	0.00782	0.02720
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01940	0.01969	0.03943
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01530	0.01558	0.03533
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01117	0.01154	0.03098
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00775	0.02721
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01224	0.01257	0.03249
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00849	0.00881	0.02873
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01367	0.01417	0.03422
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00990	0.01039	0.03045
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01372	0.01422	0.03427
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00995	0.01044	0.03050
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01798	0.01851	0.03864
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01457	0.01509	0.03523
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01117	0.01155	0.03093
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00740	0.00778	0.02715
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01941	0.01970	0.03946
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01528	0.01557	0.03533
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01939	0.01968	0.03943
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01528	0.01557	0.03532
	(!D * !SCE * SET_B * !Q * Q_N)	0.01121	0.01158	0.03103
	(!D * !SCE * SET_B * !Q * Q_N)	0.00744	0.00779	0.02725
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01228	0.01261	0.03253
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00853	0.00885	0.02878
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01117	0.01153	0.03098
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00775	0.02721
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01224	0.01258	0.03250
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00849	0.00882	0.02875
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01369	0.01418	0.03424
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00992	0.01040	0.03046

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01814	0.01865	0.03877
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01475	0.01526	0.03538
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01106	0.01145	0.03083
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00734	0.00772	0.02711
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01820	0.01870	0.03882
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01481	0.01531	0.03543
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01110	0.01149	0.03087
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00738	0.00777	0.02714
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01980	0.02009	0.03986
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01578	0.01607	0.03583
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01112	0.01150	0.03095
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00775	0.02722
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01212	0.01246	0.03237
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00842	0.00875	0.02866
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01376	0.01426	0.03430
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01004	0.01053	0.03058
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01381	0.01430	0.03435
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01009	0.01057	0.03062
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01816	0.01867	0.03879
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01477	0.01528	0.03540
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01107	0.01146	0.03084
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00735	0.00773	0.02711
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01981	0.02010	0.03986
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01575	0.01605	0.03581
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01980	0.02009	0.03987
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01576	0.01605	0.03583
	(!D * !SCE * SET_B * !Q * Q_N)	0.01116	0.01153	0.03098
	(!D * !SCE * SET_B * !Q * Q_N)	0.00744	0.00779	0.02726
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01216	0.01250	0.03241
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00846	0.00879	0.02870
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01112	0.01149	0.03095
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00776	0.02722
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01212	0.01247	0.03238
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00842	0.00876	0.02867
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01378	0.01427	0.03431
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01005	0.01054	0.03059

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)**	0.00842	0.00931	0.02926
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01218	0.01309	0.03303
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00833	0.00923	0.02918
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01209	0.01301	0.03295
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00900	0.00978	0.02974
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01276	0.01357	0.03351
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01170	0.01247	0.03303
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01545	0.01624	0.03679
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01179	0.01269	0.03233
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01556	0.01647	0.03610
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01171	0.01261	0.03225
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01547	0.01639	0.03602
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00843	0.00933	0.02927
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01219	0.01311	0.03305
	(!D * !SCE * SET_B * !Q * Q_N)	0.00890	0.00969	0.02965
	(!D * !SCE * SET_B * !Q * Q_N)	0.01267	0.01347	0.03342
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01161	0.01247	0.03293
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01536	0.01624	0.03670
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00900	0.00978	0.02974
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01276	0.01357	0.03351
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01169	0.01246	0.03304
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01544	0.01623	0.03680
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01180	0.01271	0.03235
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01557	0.01648	0.03612

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00840	0.00919	0.02926
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01212	0.01293	0.03298
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00832	0.00911	0.02918
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01203	0.01285	0.03290
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00895	0.00974	0.02971
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01267	0.01345	0.03343
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01168	0.01245	0.03305
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01539	0.01618	0.03676
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01195	0.01275	0.03246
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01567	0.01647	0.03619
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01187	0.01267	0.03240
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01559	0.01640	0.03613
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00841	0.00921	0.02927
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01213	0.01294	0.03300
	(!D * !SCE * SET_B * !Q * Q_N)	0.00886	0.00965	0.02962
	(!D * !SCE * SET_B * !Q * Q_N)	0.01258	0.01337	0.03334
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01159	0.01236	0.03296
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01530	0.01609	0.03668
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00895	0.00973	0.02971
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01267	0.01347	0.03343
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01167	0.01245	0.03306
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01538	0.01617	0.03678
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01196	0.01276	0.03250
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01568	0.01649	0.03622

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00200	0.00183	0.00412	0.00173	0.00639	0.00309	0.79611	0.76390

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	15.24540	26.03930

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RR)	0.60198	1.29088	7.81767
	SET_B->Q (FR)	0.25839	1.04968	8.13937

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.47819	0.90539	4.06439
	RESET_B->Q (FF)	0.39488	0.92728	4.60391
	SET_B->Q (RF)	0.25790	0.68835	3.95890

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)	0.41318	1.12394	7.70772
	RESET_B->Q_N (FR)	0.32950	1.15556	8.26708
	SET_B->Q_N (RR)	0.19289	0.92174	7.82655

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)	0.51138	1.02499	4.14513
	SET_B->Q_N (FF)	0.18149	0.77843	4.67753

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)	-0.15709	-0.24646	-0.89511
	setup	CLK (R)	0.22663	0.28077	0.93629

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)	-0.31524	-0.36151	-1.30860
	setup	CLK (R)	0.43669	0.45918	1.44060

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)	-0.15709	-0.24646	-0.89511
	setup	CLK (R)	0.22663	0.28077	0.93629

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)	-0.31524	-0.36151	-1.30860
	setup	CLK (R)	0.43669	0.45918	1.44060

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)	-0.19421	-0.26520	-0.96531
	setup	CLK (R)	0.27239	0.31007	1.03410

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)	-0.41283	-0.44900	-1.40719
	setup	CLK (R)	0.54074	0.55338	1.53689

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)	-0.19421	-0.26520	-0.96531
	hold	CLK (R)	-0.20240	-0.27761	-1.00110
	setup	CLK (R)	0.26534	0.29843	1.00547
	setup	CLK (R)	0.27239	0.31007	1.03410

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)	-0.41283	-0.45040	-1.40719
	hold	CLK (R)	-0.41342	-0.44900	-1.41383
	setup	CLK (R)	0.53872	0.55105	1.53031
	setup	CLK (R)	0.54074	0.55338	1.53689

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)	-0.18303	-0.27514	-0.40129
	setup	CLK (R)	0.53018	0.50217	1.11361

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)	-0.25307	-0.33348	-0.96733
	setup	CLK (R)	0.44520	0.44845	1.29765

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)	-0.40200	-0.39937	-0.40129
	hold	CLK (R)	-0.18303	-0.27514	-1.07242
	setup	CLK (R)	0.53018	0.50217	0.53127
	setup	CLK (R)	0.24894	0.30983	1.11361

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)	-0.25307	-0.33348	-0.96733
	hold	CLK (R)	-0.32217	-0.34950	-1.15683
	setup	CLK (R)	0.32003	0.36859	0.99828
	setup	CLK (R)	0.44520	0.44845	1.29765

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)	0.12207	0.12539	0.18969
	removal	CLK (R)	-0.04722	-0.05816	-0.05079

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)	0.12207	0.12510	0.18896
	recovery	CLK (R)	0.12036	0.12538	0.18969
	recovery	CLK (R)	0.12040	0.12539	0.18967
	removal	CLK (R)	-0.04952	-0.06009	-0.05079
	removal	CLK (R)	-0.04722	-0.05816	-0.05276
	removal	CLK (R)	-0.04722	-0.05816	-0.05276

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 ()	0.32183	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.33706	0.82153	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)	0.02790	0.00000	1.45487
	removal	CLK (R)	0.10386	0.13816	0.17625
	hold	RESET_B (R)	-0.11446	-0.17587	-0.70852
	setup	RESET_B (R)	0.20178	0.24832	0.92997

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)	0.02790	0.00000	1.45384
	recovery	CLK (R)	0.02613	0.00000	1.45391
	recovery	CLK (R)	0.02560	0.00000	1.45487
	removal	CLK (R)	0.10386	0.13816	0.17225
	removal	CLK (R)	0.10386	0.13816	0.17625
	removal	CLK (R)	0.10386	0.13816	0.17225
	hold	RESET_B (R)	-0.11446	-0.17667	-0.71086
	hold	RESET_B (R)	-0.11610	-0.17587	-0.70852
	setup	RESET_B (R)	0.19297	0.23493	0.92997
	setup	RESET_B (R)	0.20178	0.24832	0.90913

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 ()	0.17252	0.82153	16.50020
	min_pulse_width	SET_B ()	0.19081	0.82153	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 ()	0.17252	0.82153	16.50020
	min_pulse_width	CLK ()	0.20299	0.82153	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 ()	0.28222	0.82153	16.50020
	min_pulse_width	CLK ()	0.42542	0.82153	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	0.01462	0.01511	0.02551
	CLK	0.01271	0.01320	0.02322
	SET_B	0.01299	0.01368	0.03187
	SET_B	0.01694	0.01765	0.03565

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01454	0.01496	0.02513
	CLK	0.01245	0.01287	0.02291
	RESET_B	0.01501	0.01541	0.02141
	RESET_B	0.01597	0.01637	0.02230
	SET_B	0.01613	0.01607	0.03158
	SET_B	0.01216	0.01209	0.02728

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01465	0.01508	0.02570
	CLK	0.01256	0.01299	0.02330
	RESET_B	0.01513	0.01552	0.02175
	RESET_B	0.01609	0.01649	0.02262
	SET_B	0.01625	0.01621	0.03175
	SET_B	0.01229	0.01221	0.02750

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01450	0.01499	0.02498
	CLK	0.01259	0.01306	0.02289
	SET_B	0.01287	0.01356	0.03138
	SET_B	0.01681	0.01751	0.03528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00123	0.00123	0.00122
	(CLK * SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !SCE)	0.00408	0.00425	0.01395
	(CLK * !SCE)	0.00140	0.00156	0.01127
	(CLK * !SCD * SCE)	0.00059	0.00059	0.00057
	(CLK * !SCD * SCE)	-0.00117	-0.00117	-0.00119
	(!CLK * SCD * SCE)	0.00115	0.00115	0.00115
	(!CLK * SCD * SCE)	-0.00038	-0.00038	-0.00038
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01049	0.01058	0.02034
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00798	0.00807	0.01784
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00706	0.00714	0.01590
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00416	0.00424	0.01300
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00060
	(!CLK * !SCD * SCE)	-0.00115	-0.00115	-0.00117
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00599	0.00606	0.01479
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00309	0.00317	0.01190

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00075	-0.00076	-0.00080
	(CLK * SCD * SCE)	0.00077	0.00077	0.00074
	(CLK * !SCE)	0.00120	0.00164	0.01159
	(CLK * !SCE)	0.00389	0.00433	0.01427
	(CLK * !SCD * SCE)	-0.00023	-0.00024	-0.00023
	(CLK * !SCD * SCE)	0.00151	0.00151	0.00151
	(!CLK * SCD * SCE)	-0.00083	-0.00084	-0.00087
	(!CLK * SCD * SCE)	0.00070	0.00070	0.00067
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00838	0.00868	0.01903
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01090	0.01118	0.02154
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00323	0.00352	0.01279
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00615	0.00643	0.01569
	(!CLK * !SCD * SCE)	-0.00021	-0.00022	-0.00021
	(!CLK * !SCD * SCE)	0.00154	0.00154	0.00153
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00394	0.00425	0.01364
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00684	0.00714	0.01652

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00577	0.00579	0.01356
	(CLK * D * SCE)	0.00227	0.00229	0.01008
	(CLK * !D * SCE)	0.00664	0.00665	0.01413
	(CLK * !D * SCE)	0.00290	0.00290	0.01041
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00874	0.00874	0.01591
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00502	0.00502	0.01221
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01215	0.01217	0.02022
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00883	0.00885	0.01691
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00766	0.00766	0.01479
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00395	0.00396	0.01110
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00961	0.00960	0.01654
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00565	0.00564	0.01260
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01302	0.01305	0.02083
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00946	0.00948	0.01728
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00854	0.00853	0.01542
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00459	0.00458	0.01149
	!SCE	0.00122	0.00102	0.00098
	!SCE	-0.00072	-0.00092	-0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00262	0.00264	0.01059
	(CLK * D * SCE)	0.00612	0.00615	0.01407
	(CLK * !D * SCE)	0.00225	0.00229	0.01040
	(CLK * !D * SCE)	0.00598	0.00603	0.01412
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00462	0.00462	0.01201
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00835	0.00836	0.01571
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00979	0.00978	0.01802
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01312	0.01311	0.02133
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00533	0.00534	0.01284
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00904	0.00906	0.01653
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00425	0.00426	0.01178
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00822	0.00823	0.01572
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00945	0.00947	0.01799
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01301	0.01304	0.02154
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00497	0.00498	0.01262
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00891	0.00894	0.01655
	!SCE	-0.00054	-0.00054	-0.00054
	!SCE	0.00141	0.00141	0.00141

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)	0.00458	0.00486	0.01699
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	0.00007	0.01223
	(CLK * D * !SCD)	0.00724	0.00768	0.02019
	(CLK * D * !SCD)	0.00378	0.00421	0.01671
	(CLK * !D * SCD)	0.00826	0.00886	0.02957
	(CLK * !D * SCD)	0.00226	0.00285	0.02359
	(!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)	0.00467	0.00495	0.01709
	(!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)	-0.00008	0.00016	0.01232
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01448	0.01498	0.02739
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01085	0.01135	0.02371
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00931	0.00983	0.02224
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00608	0.00658	0.01896
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01004	0.01056	0.02300
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00679	0.00729	0.01971
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01139	0.01193	0.03199
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00517	0.00570	0.02581
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01481	0.01536	0.03643
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00899	0.00954	0.03062
	(!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)	0.00470	0.00512	0.01722
	(!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)	0.00026	0.00065	0.01275
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01032	0.01084	0.03088
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00411	0.00464	0.02469

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)**	-0.00010	0.00064	0.01303
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00465	0.00540	0.01779
	(CLK * D * !SCD)	0.00372	0.00429	0.01678
	(CLK * D * !SCD)	0.00720	0.00775	0.02014
	(CLK * !D * SCD)	0.00138	0.00217	0.02317
	(CLK * !D * SCD)	0.00736	0.00816	0.02916
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00034	0.00040	0.01279
	(!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)	0.00440	0.00516	0.01755
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00992	0.01058	0.02296
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01358	0.01424	0.02649
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00650	0.00715	0.01949
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00976	0.01041	0.02263
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00542	0.00607	0.01841
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00869	0.00935	0.02156
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00323	0.00393	0.02421
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00944	0.01015	0.03043
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00838	0.00911	0.03016
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01418	0.01490	0.03597
	(!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)	-0.00011	0.00056	0.01286
	(!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)	0.00435	0.00502	0.01733
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00394	0.00467	0.02506
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01013	0.01086	0.03126

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)	0.00574	0.00600	0.01732
	(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)	0.00347	0.00372	0.01504
	(!SET_B * Q * !Q_N)	0.00608	0.00636	0.01788
	(!SET_B * Q * !Q_N)	0.00376	0.00403	0.01556
	(!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)	0.01036	0.01044	0.02203
	(!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)	0.00849	0.00856	0.02015

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)	0.00311	0.00362	0.01506
	(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)	0.00538	0.00589	0.01734
	(!SET_B * Q * !Q_N)	0.00164	0.00222	0.01380
	(!SET_B * Q * !Q_N)	0.00398	0.00456	0.01614
	(!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)	0.00804	0.00848	0.02040
	(!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)	0.00992	0.01036	0.02228

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)	0.00301	0.00302	0.00301
	(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)	-0.00423	-0.00424	-0.00423
	(!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)	0.00806	0.00802	0.02253
	(!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)	0.00032	0.00028	0.01477

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)	-0.00259	-0.00272	-0.00272
	(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)	0.00462	0.00460	0.00454
	(!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)	0.00230	0.00279	0.01850
	(!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)	0.01003	0.01057	0.02626

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)**	0.01274	0.01312	0.03239
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00874	0.00911	0.02838
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01291	0.01330	0.03256
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00891	0.00928	0.02855
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01290	0.01326	0.03259
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00890	0.00926	0.02859
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01630	0.01668	0.03604
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01207	0.01244	0.03182
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01543	0.01574	0.03522
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01164	0.01194	0.03143
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01561	0.01592	0.03539
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01182	0.01211	0.03160
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01276	0.01314	0.03240
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00875	0.00912	0.02840
	(!D * !SCE * SET_B * !Q * Q_N)	0.01307	0.01342	0.03276
	(!D * !SCE * SET_B * !Q * Q_N)	0.00907	0.00942	0.02875
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01646	0.01685	0.03621
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01224	0.01261	0.03198
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01290	0.01326	0.03259
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00890	0.00926	0.02858
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01630	0.01668	0.03600
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01208	0.01244	0.03177
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01545	0.01576	0.03523
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01195	0.03144

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)	0.01351	0.01420	0.03442
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01768	0.01838	0.03860
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00681	0.00763	0.02761
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01082	0.01164	0.03163
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01331	0.01400	0.03422
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01748	0.01817	0.03840
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00661	0.00742	0.02741
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01061	0.01144	0.03142
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01480	0.01572	0.03623
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01868	0.01958	0.04011
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00723	0.00803	0.02791
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01123	0.01204	0.03192
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00953	0.01043	0.03075
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01376	0.01468	0.03497
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00868	0.00942	0.02966
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01247	0.01322	0.03346
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00848	0.00922	0.02946
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01227	0.01301	0.03325
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01352	0.01421	0.03445
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01769	0.01839	0.03862
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00683	0.00764	0.02763
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01083	0.01166	0.03164
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01455	0.01545	0.03577
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01839	0.01928	0.03963
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01480	0.01570	0.03600
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01866	0.01955	0.03987
	(!D * !SCE * SET_B * !Q * Q_N)	0.00701	0.00781	0.02769
	(!D * !SCE * SET_B * !Q * Q_N)	0.01102	0.01182	0.03170
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00931	0.01022	0.03053
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01354	0.01446	0.03476
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00723	0.00803	0.02791
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01123	0.01204	0.03191
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00953	0.01044	0.03075
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01376	0.01468	0.03498
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00870	0.00943	0.02968
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01249	0.01323	0.03347

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00191	0.00197	0.00430	0.00579	0.00323	0.80865	0.81971
sky130_fd_sc_hs__sdfrbp_2	0.00193	0.00199	0.00442	0.00592	0.00317	1.63925	1.61624

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	9.96421	16.80660
sky130_fd_sc_hs__sdfrbp_2	0.00000	10.51120	16.82250

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)	0.37392	1.04951	7.56372
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.45052	1.01812	7.93177

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.34657	0.77709	3.92326
	RESET_B->Q (FF)	0.50604	1.10818	5.45230
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.39549	0.78514	4.13494
	RESET_B->Q (FF)	0.56077	1.12354	5.68278

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)	0.28004	0.98707	7.50057
	RESET_B->Q_N (FR)	0.43914	1.31396	9.02909
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.28188	0.89255	7.46447
	RESET_B->Q_N (FR)	0.44696	1.22535	9.00806

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)	0.28514	0.81295	4.19847
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.31487	0.80973	4.15167

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)	-0.16328	-0.28591	-1.22785
	setup	CLK (R)	0.33454	0.38754	1.33548
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16673	-0.29542	-1.26571
	setup	CLK (R)	0.32553	0.38831	1.36279

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)	-0.14248	-0.24775	-1.21863
	setup	CLK (R)	0.41917	0.45495	1.46096
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17371	-0.27964	-1.33948
	setup	CLK (R)	0.43871	0.47539	1.51534

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)	-0.16328	-0.28630	-1.22785
	hold	CLK (R)	-0.16441	-0.28591	-1.23154
	setup	CLK (R)	0.33356	0.38692	1.33548
	setup	CLK (R)	0.33454	0.38754	1.33515
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16673	-0.29542	-1.26571
	hold	CLK (R)	-0.16843	-0.29579	-1.27248
	setup	CLK (R)	0.32553	0.38691	1.36279
	setup	CLK (R)	0.32487	0.38831	1.36195

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)	-0.14253	-0.24785	-1.21887
	hold	CLK (R)	-0.14248	-0.24775	-1.21863
	setup	CLK (R)	0.41863	0.45495	1.46072
	setup	CLK (R)	0.41917	0.45431	1.46096
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17548	-0.28149	-1.34030
	hold	CLK (R)	-0.17371	-0.27964	-1.33948
	setup	CLK (R)	0.43871	0.47521	1.51185
	setup	CLK (R)	0.43843	0.47539	1.51534

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)	-0.20665	-0.31815	-1.30140
	setup	CLK (R)	0.39114	0.43185	1.41601
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20744	-0.32198	-1.32543
	setup	CLK (R)	0.38406	0.42873	1.44393

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)	-0.19120	-0.29592	-1.35448
	setup	CLK (R)	0.51483	0.53304	1.57350
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.22305	-0.33498	-1.45160
	setup	CLK (R)	0.53406	0.55124	1.61437

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)	-0.20665	-0.31815	-1.30140
	hold	CLK (R)	-0.22457	-0.33614	-1.33199
	setup	CLK (R)	0.38307	0.41838	1.39259
	setup	CLK (R)	0.39114	0.43185	1.41601
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20744	-0.32198	-1.32543
	hold	CLK (R)	-0.22427	-0.34021	-1.35521
	setup	CLK (R)	0.36882	0.41396	1.40977
	setup	CLK (R)	0.38406	0.42873	1.44393

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)	-0.20763	-0.31563	-1.35724
	hold	CLK (R)	-0.19120	-0.29592	-1.35448
	setup	CLK (R)	0.51040	0.53069	1.55870
	setup	CLK (R)	0.51483	0.53304	1.57350
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.23923	-0.34601	-1.45160
	hold	CLK (R)	-0.22305	-0.33498	-1.46564
	setup	CLK (R)	0.53014	0.54590	1.60218
	setup	CLK (R)	0.53406	0.55124	1.61437

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)	-0.17962	-0.28857	-0.46156
	setup	CLK (R)	0.50992	0.50827	1.43214
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17939	-0.31124	-0.49953
	setup	CLK (R)	0.52857	0.52095	1.45751

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)	-0.16317	-0.24864	-1.13232
	setup	CLK (R)	0.44469	0.50246	1.35945
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.19369	-0.27658	-1.16942
	setup	CLK (R)	0.45521	0.49009	1.39841

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)	-0.20837	-0.28857	-0.46156
	hold	CLK (R)	-0.17962	-0.30561	-1.33596
	setup	CLK (R)	0.50992	0.50827	0.61294
	setup	CLK (R)	0.34618	0.40748	1.43214
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.24124	-0.31681	-0.49953
	hold	CLK (R)	-0.17939	-0.31124	-1.36411
	setup	CLK (R)	0.52857	0.52095	0.61279
	setup	CLK (R)	0.33488	0.40619	1.45751

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)	-0.27473	-0.40077	-1.18379
	hold	CLK (R)	-0.16317	-0.24864	-1.13232
	setup	CLK (R)	0.44469	0.50246	1.23435
	setup	CLK (R)	0.43690	0.46003	1.35945
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.27587	-0.39954	-1.16942
	hold	CLK (R)	-0.19369	-0.27658	-1.23212
	setup	CLK (R)	0.43151	0.49009	1.22492
	setup	CLK (R)	0.45521	0.47494	1.39841

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)	0.42560	0.44139	1.48025
	removal	CLK (R)	-0.29199	-0.33831	-1.30318
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.41572	0.43936	1.48887
	removal	CLK (R)	-0.30741	-0.35176	-1.33281

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)	0.41436	0.42907	1.46668
	recovery	CLK (R)	0.39010	0.40363	1.37227
	recovery	CLK (R)	0.38412	0.38938	1.34959
	recovery	CLK (R)	0.42560	0.44139	1.48025
	removal	CLK (R)	-0.32486	-0.37598	-1.42058
	removal	CLK (R)	-0.29914	-0.35176	-1.32798
	removal	CLK (R)	-0.29199	-0.33831	-1.30318
	removal	CLK (R)	-0.33847	-0.38983	-1.44009
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.40024	0.42368	1.46736
	recovery	CLK (R)	0.37826	0.40282	1.37904
	recovery	CLK (R)	0.37147	0.38825	1.35388
	recovery	CLK (R)	0.41572	0.43936	1.48887
	removal	CLK (R)	-0.33570	-0.38620	-1.44447
	removal	CLK (R)	-0.31356	-0.36333	-1.35938
	removal	CLK (R)	-0.30741	-0.35176	-1.33281
	removal	CLK (R)	-0.34727	-0.40348	-1.46761

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 ()	0.24870	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.21213	0.82153	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.25175	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.23651	0.82153	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 ()	0.21518	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.28222	0.82153	16.50020
	min_pulse_width	CLK ()	0.16034	0.82153	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 ()	0.32183	0.82153	16.50020
	min_pulse_width	CLK ()	0.39496	0.82153	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.30355	0.82153	16.50020
	min_pulse_width	CLK ()	0.39800	0.82153	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	0.01338	0.01373	0.02383
	CLK	0.01134	0.01169	0.02178
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01616	0.01658	0.02744
	CLK	0.01407	0.01449	0.02475

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01343	0.01392	0.02412
	CLK	0.01141	0.01190	0.02193
	RESET_B	0.01152	0.01184	0.02267
	RESET_B	0.01589	0.01620	0.02683
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01581	0.01662	0.02696
	CLK	0.01392	0.01471	0.02485
	RESET_B	0.01402	0.01462	0.02579
	RESET_B	0.01861	0.01917	0.02977

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01348	0.01398	0.02452
	CLK	0.01147	0.01196	0.02222
	RESET_B	0.01136	0.01169	0.02303
	RESET_B	0.01609	0.01639	0.02710
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01588	0.01668	0.02720
	CLK	0.01398	0.01477	0.02513
	RESET_B	0.01410	0.01470	0.02637
	RESET_B	0.01862	0.01919	0.03010

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01328	0.01362	0.02365
	CLK	0.01123	0.01159	0.02154
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01605	0.01646	0.02680
	CLK	0.01396	0.01437	0.02444

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00111	0.00111	0.00111
	(CLK * RESET_B * SCD * SCE)	-0.00038	-0.00038	-0.00038
	(CLK * RESET_B * SCD * !SCE)	0.00463	0.00475	0.01390
	(CLK * RESET_B * SCD * !SCE)	0.00167	0.00178	0.01094
	(CLK * RESET_B * !SCD * !SCE)	0.00464	0.00476	0.01390
	(CLK * RESET_B * !SCD * !SCE)	0.00169	0.00180	0.01095
	(CLK * !SCD * SCE)	0.00060	0.00061	0.00059
	(CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00114
	(CLK * !RESET_B * SCD * SCE)	0.00059	0.00060	0.00058
	(CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00112	-0.00114
	(CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00037
	(CLK * !RESET_B * SCD * !SCE)	-0.00123	-0.00124	-0.00134
	(CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00037
	(CLK * !RESET_B * !SCD * !SCE)	-0.00127	-0.00129	-0.00136
	(!CLK * RESET_B * SCD * SCE)	0.00112	0.00112	0.00112
	(!CLK * RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01065	0.01083	0.02080
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00753	0.00771	0.01769
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01066	0.01084	0.02081
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00755	0.00773	0.01770
	(!CLK * !SCD * SCE)	0.00064	0.00065	0.00063
	(!CLK * !SCD * SCE)	-0.00106	-0.00107	-0.00110
	(!CLK * !RESET_B * SCD * SCE)	0.00059	0.00060	0.00058
	(!CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00112	-0.00114
	(!CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00037
	(!CLK * !RESET_B * SCD * !SCE)	-0.00123	-0.00124	-0.00134
	(!CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00128	-0.00128	-0.00136

	(CLK * RESET_B * SCD * SCE)	0.00114	0.00114	0.00114
	(CLK * RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00493	0.00503	0.01409
	(CLK * RESET_B * SCD * !SCE)	0.00192	0.00201	0.01108
	(CLK * RESET_B * !SCD * !SCE)	0.00495	0.00504	0.01410
	(CLK * RESET_B * !SCD * !SCE)	0.00193	0.00203	0.01109
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00060
	(CLK * !SCD * SCE)	-0.00111	-0.00112	-0.00114
	(CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00112	-0.00114
	(CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00037
	(CLK * !RESET_B * SCD * !SCE)	-0.00126	-0.00126	-0.00137
	(CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00037
	(CLK * !RESET_B * !SCD * !SCE)	-0.00130	-0.00131	-0.00138
	(!CLK * RESET_B * SCD * SCE)	0.00113	0.00114	0.00114
	(!CLK * RESET_B * SCD * SCE)	-0.00037	-0.00038	-0.00037
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01097	0.01113	0.02104
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00779	0.00797	0.01787
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01098	0.01114	0.02104
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00781	0.00798	0.01787
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00063
	(!CLK * !SCD * SCE)	-0.00108	-0.00109	-0.00111
	(!CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00059
	(!CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00112	-0.00114
	(!CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00037
	(!CLK * !RESET_B * SCD * !SCE)	-0.00126	-0.00126	-0.00137
	(!CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00130	-0.00131	-0.00138

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00082	-0.00082	-0.00086
	(CLK * RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(CLK * RESET_B * SCD * !SCE)	0.00071	0.00110	0.01063
	(CLK * RESET_B * SCD * !SCE)	0.00367	0.00406	0.01358
	(CLK * RESET_B * !SCD * !SCE)	0.00071	0.00110	0.01064
	(CLK * RESET_B * !SCD * !SCE)	0.00367	0.00406	0.01359
	(CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCD * SCE)	0.00127	0.00129	0.00128
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00128
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(CLK * !RESET_B * SCD * !SCE)	0.00145	0.00146	0.00146
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(CLK * !RESET_B * !SCD * !SCE)	0.00145	0.00146	0.00146
	(!CLK * RESET_B * SCD * SCE)	-0.00081	-0.00082	-0.00085
	(!CLK * RESET_B * SCD * SCE)	0.00068	0.00068	0.00065
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00670	0.00714	0.01830
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00981	0.01024	0.02141
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00670	0.00709	0.01831
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00981	0.01020	0.02142
	(!CLK * !SCD * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !RESET_B * SCD * SCE)	0.00128	0.00128	0.00128
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !RESET_B * SCD * !SCE)	0.00145	0.00146	0.00146
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	0.00146	0.00146	0.00146

	(CLK * RESET_B * SCD * SCE)	-0.00083	-0.00084	-0.00088
	(CLK * RESET_B * SCD * SCE)	0.00068	0.00067	0.00064
	(CLK * RESET_B * SCD * !SCE)	0.00083	0.00120	0.01067
	(CLK * RESET_B * SCD * !SCE)	0.00384	0.00422	0.01368
	(CLK * RESET_B * !SCD * !SCE)	0.00083	0.00120	0.01068
	(CLK * RESET_B * !SCD * !SCE)	0.00385	0.00421	0.01369
	(CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCD * SCE)	0.00129	0.00130	0.00130
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * SCD * SCE)	0.00130	0.00131	0.00130
	(CLK * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK * !RESET_B * SCD * !SCE)	0.00149	0.00150	0.00150
	(CLK * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00024
	(CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00151	0.00150
	(!CLK * RESET_B * SCD * SCE)	-0.00084	-0.00084	-0.00088
	(!CLK * RESET_B * SCD * SCE)	0.00068	0.00068	0.00064
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00683	0.00719	0.01841
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01000	0.01036	0.02157
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00683	0.00720	0.01842
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01000	0.01036	0.02158
	(!CLK * !SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !SCD * SCE)	0.00132	0.00134	0.00133
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(!CLK * !RESET_B * SCD * SCE)	0.00130	0.00131	0.00130
	(!CLK * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(!CLK * !RESET_B * SCD * !SCE)	0.00149	0.00150	0.00150
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00151	0.00150

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00604	0.00602	0.01350
	(CLK * D * RESET_B * SCE)	0.00229	0.00226	0.00974
	(CLK * D * RESET_B * !SCE)	0.00115	0.00098	0.00095
	(CLK * D * RESET_B * !SCE)	-0.00083	-0.00101	-0.00104
	(CLK * D * !RESET_B * SCE)	0.00055	0.00055	0.00052
	(CLK * D * !RESET_B * SCE)	-0.00119	-0.00119	-0.00118
	(CLK * D * !RESET_B * !SCE)	0.00039	0.00039	0.00040
	(CLK * D * !RESET_B * !SCE)	-0.00130	-0.00129	-0.00129
	(CLK * !D * RESET_B * SCE)	0.00692	0.00688	0.01406
	(CLK * !D * RESET_B * SCE)	0.00293	0.00288	0.01007
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00055	0.00052
	(CLK * !D * !RESET_B * SCE)	-0.00119	-0.00119	-0.00118
	(!D * RESET_B * !SCE)	0.00070	0.00070	0.00070
	(!D * RESET_B * !SCE)	-0.00128	-0.00129	-0.00128
	(!D * !RESET_B * !SCE)	0.00048	0.00048	0.00048
	(!D * !RESET_B * !SCE)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01206	0.01213	0.02052
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00815	0.00822	0.01662
	(!CLK * D * RESET_B * !SCE)	0.00116	0.00100	0.00096
	(!CLK * D * RESET_B * !SCE)	-0.00082	-0.00100	-0.00102
	(!CLK * D * !RESET_B * SCE)	0.00055	0.00055	0.00052
	(!CLK * D * !RESET_B * SCE)	-0.00119	-0.00119	-0.00118
	(!CLK * D * !RESET_B * !SCE)	0.00039	0.00039	0.00040
	(!CLK * D * !RESET_B * !SCE)	-0.00130	-0.00129	-0.00129
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01295	0.01300	0.02122
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00881	0.00885	0.01708
	(!CLK * !D * !RESET_B * SCE)	0.00055	0.00055	0.00052
	(!CLK * !D * !RESET_B * SCE)	-0.00119	-0.00119	-0.00118

	(CLK * D * RESET_B * SCE)	0.00625	0.00623	0.01366
	(CLK * D * RESET_B * SCE)	0.00244	0.00241	0.00985
	(CLK * D * RESET_B * !SCE)	0.00118	0.00102	0.00098
	(CLK * D * RESET_B * !SCE)	-0.00083	-0.00100	-0.00103
	(CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00118	-0.00119	-0.00117
	(CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00041
	(CLK * D * !RESET_B * !SCE)	-0.00129	-0.00129	-0.00129
	(CLK * !D * RESET_B * SCE)	0.00713	0.00709	0.01423
	(CLK * !D * RESET_B * SCE)	0.00308	0.00304	0.01018
	(CLK * !D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(CLK * !D * !RESET_B * SCE)	-0.00118	-0.00119	-0.00117
	(!D * RESET_B * !SCE)	0.00072	0.00073	0.00073
	(!D * RESET_B * !SCE)	-0.00128	-0.00129	-0.00128
	(!D * !RESET_B * !SCE)	0.00050	0.00050	0.00049
	(!D * !RESET_B * !SCE)	-0.00138	-0.00138	-0.00138
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01229	0.01235	0.02070
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00832	0.00838	0.01674
	(!CLK * D * RESET_B * !SCE)	0.00118	0.00102	0.00098
	(!CLK * D * RESET_B * !SCE)	-0.00083	-0.00100	-0.00103
	(!CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00118	-0.00118	-0.00117
	(!CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00041
	(!CLK * D * !RESET_B * !SCE)	-0.00129	-0.00129	-0.00129
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01318	0.01323	0.02142
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00898	0.00902	0.01722
	(!CLK * !D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(!CLK * !D * !RESET_B * SCE)	-0.00118	-0.00119	-0.00117

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00208	0.00206	0.00976
	(CLK * D * RESET_B * SCE)	0.00584	0.00583	0.01350
	(CLK * D * RESET_B * !SCE)	-0.00069	-0.00070	-0.00070
	(CLK * D * RESET_B * !SCE)	0.00130	0.00131	0.00130
	(CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00141	0.00142	0.00141
	(CLK * !D * RESET_B * SCE)	0.00163	0.00163	0.00950
	(CLK * !D * RESET_B * SCE)	0.00563	0.00563	0.01348
	(CLK * !D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(!D * RESET_B * !SCE)	-0.00056	-0.00061	-0.00061
	(!D * RESET_B * !SCE)	0.00142	0.00140	0.00138
	(!D * !RESET_B * !SCE)	-0.00040	-0.00041	-0.00041
	(!D * !RESET_B * !SCE)	0.00151	0.00150	0.00148
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00814	0.00817	0.01721
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01206	0.01208	0.02111
	(!CLK * D * RESET_B * !SCE)	-0.00067	-0.00068	-0.00069
	(!CLK * D * RESET_B * !SCE)	0.00131	0.00131	0.00131
	(!CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00141	0.00142	0.00141
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00777	0.00785	0.01731
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01193	0.01200	0.02143
	(!CLK * !D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00136	0.00136	0.00134

	(CLK * D * RESET_B * SCE)	0.00215	0.00213	0.00981
	(CLK * D * RESET_B * SCE)	0.00597	0.00595	0.01361
	(CLK * D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00071
	(CLK * D * RESET_B * !SCE)	0.00131	0.00132	0.00131
	(CLK * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00143	0.00144	0.00143
	(CLK * !D * RESET_B * SCE)	0.00176	0.00176	0.00960
	(CLK * !D * RESET_B * SCE)	0.00582	0.00583	0.01363
	(CLK * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(!D * RESET_B * !SCE)	-0.00057	-0.00061	-0.00062
	(!D * RESET_B * !SCE)	0.00144	0.00141	0.00140
	(!D * !RESET_B * !SCE)	-0.00039	-0.00041	-0.00041
	(!D * !RESET_B * !SCE)	0.00153	0.00154	0.00150
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00820	0.00825	0.01730
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01218	0.01223	0.02126
	(!CLK * D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * D * RESET_B * !SCE)	0.00131	0.00131	0.00131
	(!CLK * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00143	0.00145	0.00143
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00792	0.00802	0.01744
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01214	0.01223	0.02163
	(!CLK * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !D * !RESET_B * SCE)	0.00137	0.00137	0.00135

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)**	0.00540	0.00551	0.01749
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00022	0.00031	0.01230
	(CLK * D * RESET_B * !SCD)	0.00754	0.00785	0.02025
	(CLK * D * RESET_B * !SCD)	0.00398	0.00427	0.01663
	(CLK * !D * RESET_B * SCD)	0.00991	0.01027	0.03029
	(CLK * !D * RESET_B * SCD)	0.00318	0.00352	0.02357
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00541	0.00553	0.01750
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00023	0.00032	0.01231
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01352	0.01384	0.02624
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01010	0.01042	0.02278
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00531	0.00564	0.01763
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00037	0.00067	0.01268
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01592	0.01635	0.03761
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00903	0.00947	0.03076

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00499	0.00515	0.01723
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00035	-0.00023	0.01187
	(CLK * D * RESET_B * !SCD)	0.00725	0.00758	0.02006
	(CLK * D * RESET_B * !SCD)	0.00356	0.00388	0.01631
	(CLK * !D * RESET_B * SCD)	0.00974	0.01012	0.03021
	(CLK * !D * RESET_B * SCD)	0.00282	0.00317	0.02331
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00499	0.00514	0.01723
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00035	-0.00023	0.01187
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01324	0.01359	0.02607
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00970	0.01005	0.02249
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00495	0.00525	0.01739
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00016	0.00013	0.01228
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01577	0.01625	0.03764
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00869	0.00915	0.03057

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)**	-0.00006	0.00057	0.01287
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00512	0.00575	0.01806
	(CLK * D * RESET_B * !SCD)	0.00445	0.00489	0.01731
	(CLK * D * RESET_B * !SCD)	0.00804	0.00849	0.02077
	(CLK * !D * RESET_B * SCD)	0.00119	0.00180	0.02214
	(CLK * !D * RESET_B * SCD)	0.00793	0.00853	0.02887
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00005	0.00058	0.01288
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00513	0.00576	0.01807
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01045	0.01097	0.02342
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01389	0.01440	0.02673
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00011	0.00048	0.01270
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00482	0.00543	0.01762
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00716	0.00784	0.02938
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01404	0.01472	0.03627

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00002	0.00062	0.01299
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00533	0.00600	0.01834
	(CLK * D * RESET_B * !SCD)	0.00479	0.00524	0.01769
	(CLK * D * RESET_B * !SCD)	0.00853	0.00897	0.02128
	(CLK * !D * RESET_B * SCD)	0.00129	0.00191	0.02228
	(CLK * !D * RESET_B * SCD)	0.00823	0.00883	0.02922
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00002	0.00065	0.01299
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00533	0.00601	0.01834
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01081	0.01134	0.02379
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01439	0.01490	0.02723
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00011	0.00050	0.01278
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00501	0.00563	0.01788
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00727	0.00796	0.02956
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01436	0.01505	0.03666

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)**	0.00858	0.00847	0.01816
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00008	-0.00022	0.00950
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00810	0.00797	0.01800
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00026	-0.00041	0.00964
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00282	0.00283	0.00281
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00370	-0.00370	-0.00369
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00775	0.00766	0.01783
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00024	-0.00036	0.00985
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00946	0.00934	0.01870
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00056	0.00041	0.00981
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00276	0.00275	0.00276
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00374	-0.00372	-0.00373
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00282	0.00282	0.00281
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00370	-0.00370	-0.00369
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00277	0.00275	0.00277
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00375	-0.00373	-0.00374
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01517	0.01482	0.02642
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00636	0.00600	0.01760
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01469	0.01430	0.02626
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00618	0.00578	0.01775
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00282	0.00283	0.00282
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00370	-0.00370	-0.00369
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01434	0.01399	0.02604
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00620	0.00584	0.01789
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01607	0.01571	0.02696
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00702	0.00667	0.01793
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00277	0.00277	0.00276
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00374	-0.00374	-0.00373
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00282	0.00283	0.00282
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00370	-0.00370	-0.00369
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00277	0.00278	0.00277
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00375	-0.00375	-0.00373

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00867	0.00856	0.01820
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00002	-0.00016	0.00950
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00830	0.00816	0.01811
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00008	-0.00022	0.00972
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00273	0.00274	0.00272
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00378	-0.00378	-0.00376
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00795	0.00786	0.01794
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00006	-0.00018	0.00994
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00955	0.00943	0.01874
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00063	0.00048	0.00980
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00267	0.00266	0.00267
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00382	-0.00380	-0.00380
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00273	0.00273	0.00272
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00378	-0.00377	-0.00377
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00268	0.00267	0.00267
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00382	-0.00381	-0.00381
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01526	0.01491	0.02645
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00643	0.00607	0.01760
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01489	0.01452	0.02643
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00636	0.00597	0.01789
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00272	0.00273	0.00272
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00378	-0.00378	-0.00377
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01454	0.01420	0.02619
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00638	0.00602	0.01801
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01616	0.01584	0.02703
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00708	0.00675	0.01794
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00267	0.00267	0.00266
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00382	-0.00382	-0.00381
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00272	0.00272	0.00272
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00378	-0.00378	-0.00377
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00267	0.00268	0.00267
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00383	-0.00383	-0.00382

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)**	0.00100	0.00127	0.01213
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00968	0.00995	0.02079
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00008	0.00033	0.01121
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00844	0.00872	0.01954
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00259	-0.00267	-0.00267
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00389	0.00387	0.00385
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00019	0.00009	0.01111
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00779	0.00811	0.01909
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00055	0.00084	0.01188
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00946	0.00979	0.02077
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00257	-0.00267	-0.00269
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00390	0.00386	0.00383
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00259	-0.00267	-0.00267
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00389	0.00387	0.00385
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00258	-0.00268	-0.00269
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00390	0.00387	0.00383
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00687	0.00703	0.02079
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01568	0.01587	0.02961
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00594	0.00608	0.01961
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01445	0.01463	0.02811
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00260	-0.00267	-0.00268
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00388	0.00386	0.00384
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00567	0.00575	0.01950
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01380	0.01389	0.02763
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00642	0.00653	0.02071
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01547	0.01562	0.02976
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00258	-0.00268	-0.00269
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00388	0.00385	0.00382
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00261	-0.00267	-0.00268
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00388	0.00386	0.00384
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00260	-0.00269	-0.00269
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00389	0.00385	0.00383

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00115	0.00142	0.01226
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00986	0.01011	0.02093
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00020	0.00044	0.01129
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00859	0.00886	0.01967
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00248	-0.00256	-0.00257
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00399	0.00396	0.00394
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00007	0.00020	0.01120
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00794	0.00825	0.01919
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00078	0.00106	0.01205
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00971	0.01001	0.02097
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00245	-0.00256	-0.00258
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00399	0.00395	0.00392
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00248	-0.00256	-0.00257
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00398	0.00396	0.00394
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00247	-0.00257	-0.00258
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00400	0.00395	0.00392
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00705	0.00719	0.02095
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01589	0.01608	0.02978
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00609	0.00621	0.01975
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01463	0.01479	0.02828
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00249	-0.00255	-0.00256
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00398	0.00397	0.00394
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00581	0.00588	0.01965
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01398	0.01407	0.02781
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00667	0.00677	0.02091
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01575	0.01588	0.02999
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00246	-0.00256	-0.00257
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00398	0.00395	0.00392
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00249	-0.00256	-0.00256
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00398	0.00397	0.00394
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00248	-0.00257	-0.00258
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00399	0.00396	0.00393

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)**	0.01262	0.01295	0.03209
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00855	0.00886	0.02802
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01260	0.01293	0.03207
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00853	0.00885	0.02800
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01262	0.01295	0.03209
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00856	0.00887	0.02803
	(D * !SCD * SCE * !Q * Q_N)	0.01276	0.01309	0.03224
	(D * !SCD * SCE * !Q * Q_N)	0.00870	0.00901	0.02817
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01277	0.01310	0.03224
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00870	0.00902	0.02817
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01274	0.01307	0.03222
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00867	0.00899	0.02815
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01274	0.01307	0.03222
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00867	0.00899	0.02815
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01263	0.01296	0.03210
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00857	0.00888	0.02804
	(!D * !SCE * !Q * Q_N)	0.01274	0.01306	0.03221
	(!D * !SCE * !Q * Q_N)	0.00867	0.00898	0.02815
	(!D * !SCD * SCE * !Q * Q_N)	0.01276	0.01307	0.03224
	(!D * !SCD * SCE * !Q * Q_N)	0.00870	0.00902	0.02817
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01277	0.01310	0.03225
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00870	0.00902	0.02819

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01267	0.01298	0.03219
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00868	0.00898	0.02820
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01265	0.01296	0.03218
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00867	0.00897	0.02818
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01267	0.01298	0.03220
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00869	0.00898	0.02821
	(D * !SCD * SCE * !Q * Q_N)	0.01276	0.01307	0.03229
	(D * !SCD * SCE * !Q * Q_N)	0.00878	0.00907	0.02831
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01276	0.01307	0.03228
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00878	0.00908	0.02829
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01274	0.01305	0.03227
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00875	0.00905	0.02828
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01274	0.01305	0.03227
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00875	0.00905	0.02828
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01268	0.01300	0.03221
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00870	0.00900	0.02821
	(!D * !SCE * !Q * Q_N)	0.01274	0.01304	0.03227
	(!D * !SCE * !Q * Q_N)	0.00875	0.00905	0.02828
	(!D * !SCD * SCE * !Q * Q_N)	0.01276	0.01307	0.03229
	(!D * !SCD * SCE * !Q * Q_N)	0.00878	0.00907	0.02830
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01276	0.01307	0.03228
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00878	0.00908	0.02829

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)	0.00665	0.00747	0.02726
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01072	0.01155	0.03133
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01224	0.01312	0.03331
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01615	0.01703	0.03722
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00664	0.00746	0.02724
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01070	0.01153	0.03131
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01218	0.01307	0.03326
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01609	0.01698	0.03718
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01310	0.01400	0.03409
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01734	0.01824	0.03834
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00666	0.00748	0.02726
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01072	0.01156	0.03133
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01221	0.01309	0.03328
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01611	0.01700	0.03720
	(D * !SCD * SCE * !Q * Q_N)	0.00617	0.00711	0.02684
	(D * !SCD * SCE * !Q * Q_N)	0.01023	0.01117	0.03090
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00617	0.00711	0.02683
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01024	0.01118	0.03090
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00615	0.00708	0.02681
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01021	0.01115	0.03087
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00615	0.00708	0.02681
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01021	0.01115	0.03087
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00667	0.00749	0.02727
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01073	0.01156	0.03134
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01228	0.01316	0.03336
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01617	0.01705	0.03726
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01303	0.01393	0.03402
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01725	0.01814	0.03825
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01308	0.01399	0.03407
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01731	0.01821	0.03831
	(!D * !SCE * !Q * Q_N)	0.00614	0.00708	0.02682
	(!D * !SCE * !Q * Q_N)	0.01021	0.01114	0.03087
	(!D * !SCD * SCE * !Q * Q_N)	0.00617	0.00710	0.02684
	(!D * !SCD * SCE * !Q * Q_N)	0.01023	0.01117	0.03090
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00617	0.00711	0.02683
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01024	0.01118	0.03090

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00660	0.00745	0.02731
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01058	0.01145	0.03131
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01227	0.01315	0.03345
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01609	0.01699	0.03729
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00658	0.00743	0.02729
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01056	0.01143	0.03129
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01222	0.01310	0.03340
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01604	0.01693	0.03724
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01303	0.01397	0.03412
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01719	0.01813	0.03829
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00660	0.00745	0.02732
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01059	0.01145	0.03131
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01224	0.01312	0.03342
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01606	0.01696	0.03726
	(D * !SCD * SCE * !Q * Q_N)	0.00620	0.00714	0.02699
	(D * !SCD * SCE * !Q * Q_N)	0.01018	0.01114	0.03098
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00620	0.00715	0.02698
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01019	0.01115	0.03097
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00618	0.00712	0.02695
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01016	0.01112	0.03095
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00618	0.00712	0.02695
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01016	0.01112	0.03095
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00661	0.00746	0.02733
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01059	0.01146	0.03132
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01231	0.01319	0.03350
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01612	0.01701	0.03732
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01296	0.01390	0.03406
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01710	0.01804	0.03822
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01301	0.01395	0.03410
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01716	0.01811	0.03828
	(!D * !SCE * !Q * Q_N)	0.00617	0.00711	0.02696
	(!D * !SCE * !Q * Q_N)	0.01015	0.01111	0.03096
	(!D * !SCD * SCE * !Q * Q_N)	0.00620	0.00714	0.02699
	(!D * !SCD * SCE * !Q * Q_N)	0.01018	0.01114	0.03098
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00620	0.00715	0.02698
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01019	0.01115	0.03097

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00201	0.00196	0.00424	0.00566	0.00304	0.81808

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	9.52055	16.01840

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)	0.40375	1.15955	8.13417

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)	0.33869	0.84647	4.51061
	RESET_B->Q (FF)	0.48642	1.08898	5.45660

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)	-0.05832	-0.07856	-0.26624
	setup	CLK_N (F)	0.25022	0.23746	0.48349

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)	-0.22934	-0.32897	-1.02176
	setup	CLK_N (F)	0.53794	0.56618	1.30792

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)	-0.05832	-0.07856	-0.26624
	hold	CLK_N (F)	-0.06138	-0.07975	-0.26697
	setup	CLK_N (F)	0.25022	0.23569	0.48349
	setup	CLK_N (F)	0.24931	0.23746	0.48346

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)	-0.23066	-0.32897	-1.02993
	hold	CLK_N (F)	-0.22934	-0.33064	-1.02176
	setup	CLK_N (F)	0.53446	0.56618	1.30766
	setup	CLK_N (F)	0.53794	0.56573	1.30792

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)	-0.10023	-0.09775	-0.32955
	setup	CLK_N (F)	0.30827	0.27896	0.55366

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)	-0.28569	-0.36904	-1.09849
	setup	CLK_N (F)	0.63364	0.64791	1.41844

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)	-0.10023	-0.09775	-0.32955
	hold	CLK_N (F)	-0.11898	-0.12131	-0.38869
	setup	CLK_N (F)	0.29447	0.26092	0.50739
	setup	CLK_N (F)	0.30827	0.27896	0.55366

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)	-0.30438	-0.38885	-1.13651
	hold	CLK_N (F)	-0.28569	-0.36904	-1.09849
	setup	CLK_N (F)	0.62197	0.63630	1.39079
	setup	CLK_N (F)	0.63364	0.64791	1.41844

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)	-0.07475	-0.09613	-0.29644
	setup	CLK_N (F)	0.62085	0.60818	0.59285

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)	-0.16905	-0.18235	-0.19314
	setup	CLK_N (F)	0.56251	0.57352	1.23120

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)	-0.30402	-0.35647	-0.29644
	hold	CLK_N (F)	-0.07475	-0.09613	-0.39328
	setup	CLK_N (F)	0.62085	0.60818	0.38788
	setup	CLK_N (F)	0.26524	0.25424	0.59285

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)	-0.16905	-0.18235	-0.19314
	hold	CLK_N (F)	-0.25521	-0.33179	-0.95385
	setup	CLK_N (F)	0.35848	0.33855	0.28931
	setup	CLK_N (F)	0.56251	0.57352	1.23120

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)	0.33993	0.28724	0.52531
	removal	CLK_N (F)	-0.22872	-0.18049	-0.34062

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)	0.32807	0.27189	0.48997
	recovery	CLK_N (F)	0.30442	0.24897	0.39749
	recovery	CLK_N (F)	0.29716	0.23542	0.37995
	recovery	CLK_N (F)	0.33993	0.28724	0.52531
	removal	CLK_N (F)	-0.26028	-0.21393	-0.45450
	removal	CLK_N (F)	-0.23822	-0.19098	-0.35935
	removal	CLK_N (F)	-0.22872	-0.18049	-0.34062
	removal	CLK_N (F)	-0.27276	-0.23013	-0.48896

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 ()	0.19995	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.25175	0.82153	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 ()	0.24565	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.38886	0.82153	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 ()	0.22432	0.82153	16.50020
	min_pulse_width	CLK_N ()	0.21213	0.82153	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	0.02088	0.02220	0.04292
	CLK_N	0.02500	0.02632	0.04711

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01920	0.02027	0.04075
	CLK_N	0.02283	0.02391	0.04421
	RESET_B	0.02093	0.02139	0.04276
	RESET_B	0.02950	0.02994	0.05076

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)**	0.00114	0.00115	0.00115
	(CLK_N * RESET_B * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * RESET_B * SCD * !SCE)	0.01130	0.01147	0.02114
	(CLK_N * RESET_B * SCD * !SCE)	0.00825	0.00842	0.01810
	(CLK_N * RESET_B * !SCD * !SCE)	0.01131	0.01148	0.02115
	(CLK_N * RESET_B * !SCD * !SCE)	0.00826	0.00844	0.01810
	(CLK_N * !SCD * SCE)	0.00070	0.00070	0.00068
	(CLK_N * !SCD * SCE)	-0.00113	-0.00113	-0.00115
	(CLK_N * !RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(CLK_N * !RESET_B * SCD * SCE)	-0.00117	-0.00117	-0.00119
	(CLK_N * !RESET_B * SCD * !SCE)	0.00039	0.00038	0.00032
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00142	-0.00141	-0.00151
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00037	0.00037	0.00032
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00147	-0.00146	-0.00153
	(!CLK_N * RESET_B * SCD * SCE)	0.00113	0.00114	0.00114
	(!CLK_N * RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK_N * RESET_B * SCD * !SCE)	0.00489	0.00498	0.01393
	(!CLK_N * RESET_B * SCD * !SCE)	0.00181	0.00190	0.01086
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00490	0.00499	0.01393
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00182	0.00192	0.01086
	(!CLK_N * !SCD * SCE)	0.00067	0.00067	0.00065
	(!CLK_N * !SCD * SCE)	-0.00117	-0.00117	-0.00119
	(!CLK_N * !RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00117	-0.00117	-0.00119
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00039	0.00038	0.00032
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00142	-0.00142	-0.00151
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00037	0.00037	0.00032
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00147	-0.00146	-0.00153

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)**	-0.00085	-0.00086	-0.00089
	(CLK_N * RESET_B * SCD * SCE)	0.00075	0.00075	0.00072
	(CLK_N * RESET_B * SCD * !SCE)	0.00784	0.00820	0.01919
	(CLK_N * RESET_B * SCD * !SCE)	0.01089	0.01123	0.02223
	(CLK_N * RESET_B * !SCD * !SCE)	0.00785	0.00819	0.01920
	(CLK_N * RESET_B * !SCD * !SCE)	0.01089	0.01123	0.02224
	(CLK_N * !SCD * SCE)	-0.00046	-0.00047	-0.00046
	(CLK_N * !SCD * SCE)	0.00136	0.00137	0.00136
	(CLK_N * !RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00049
	(CLK_N * !RESET_B * SCD * SCE)	0.00132	0.00133	0.00132
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK_N * !RESET_B * SCD * !SCE)	0.00161	0.00162	0.00162
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00021	-0.00022	-0.00021
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00162	0.00163	0.00162
	(!CLK_N * RESET_B * SCD * SCE)	-0.00086	-0.00086	-0.00090
	(!CLK_N * RESET_B * SCD * SCE)	0.00075	0.00074	0.00071
	(!CLK_N * RESET_B * SCD * !SCE)	0.00117	0.00154	0.01092
	(!CLK_N * RESET_B * SCD * !SCE)	0.00423	0.00461	0.01399
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00117	0.00154	0.01093
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00423	0.00461	0.01400
	(!CLK_N * !SCD * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK_N * !SCD * SCE)	0.00132	0.00133	0.00132
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK_N * !RESET_B * SCD * SCE)	0.00132	0.00134	0.00132
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00161	0.00162	0.00162
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00162	0.00163	0.00162

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)**	0.01266	0.01274	0.02095
	(CLK_N * D * RESET_B * SCE)	0.00892	0.00900	0.01720
	(CLK_N * D * RESET_B * !SCE)	0.00110	0.00094	0.00090
	(CLK_N * D * RESET_B * !SCE)	-0.00090	-0.00108	-0.00110
	(CLK_N * D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(CLK_N * D * !RESET_B * SCE)	-0.00114	-0.00115	-0.00113
	(CLK_N * D * !RESET_B * !SCE)	0.00039	0.00039	0.00040
	(CLK_N * D * !RESET_B * !SCE)	-0.00131	-0.00131	-0.00131
	(CLK_N * !D * RESET_B * SCE)	0.01354	0.01361	0.02164
	(CLK_N * !D * RESET_B * SCE)	0.00955	0.00962	0.01766
	(CLK_N * !D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(CLK_N * !D * !RESET_B * SCE)	-0.00114	-0.00115	-0.00113
	(!D * RESET_B * !SCE)	0.00075	0.00075	0.00075
	(!D * RESET_B * !SCE)	-0.00125	-0.00126	-0.00125
	(!D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * !RESET_B * !SCE)	-0.00139	-0.00140	-0.00139
	(!CLK_N * D * RESET_B * SCE)	0.00625	0.00625	0.01363
	(!CLK_N * D * RESET_B * SCE)	0.00248	0.00248	0.00986
	(!CLK_N * D * RESET_B * !SCE)	0.00109	0.00093	0.00089
	(!CLK_N * D * RESET_B * !SCE)	-0.00091	-0.00108	-0.00111
	(!CLK_N * D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(!CLK_N * D * !RESET_B * SCE)	-0.00114	-0.00115	-0.00113
	(!CLK_N * D * !RESET_B * !SCE)	0.00039	0.00039	0.00040
	(!CLK_N * D * !RESET_B * !SCE)	-0.00131	-0.00131	-0.00131
	(!CLK_N * !D * RESET_B * SCE)	0.00712	0.00711	0.01420
	(!CLK_N * !D * RESET_B * SCE)	0.00310	0.00308	0.01018
	(!CLK_N * !D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(!CLK_N * !D * !RESET_B * SCE)	-0.00114	-0.00115	-0.00113

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)**	0.00909	0.00915	0.01803
	(CLK_N * D * RESET_B * SCE)	0.01284	0.01291	0.02177
	(CLK_N * D * RESET_B * !SCE)	-0.00063	-0.00064	-0.00064
	(CLK_N * D * RESET_B * !SCE)	0.00138	0.00139	0.00138
	(CLK_N * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK_N * D * !RESET_B * SCE)	0.00130	0.00130	0.00128
	(CLK_N * D * !RESET_B * !SCE)	-0.00028	-0.00029	-0.00029
	(CLK_N * D * !RESET_B * !SCE)	0.00142	0.00144	0.00142
	(CLK_N * !D * RESET_B * SCE)	0.00882	0.00889	0.01813
	(CLK_N * !D * RESET_B * SCE)	0.01281	0.01288	0.02210
	(CLK_N * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00043
	(CLK_N * !D * !RESET_B * SCE)	0.00130	0.00130	0.00128
	(!D * RESET_B * !SCE)	-0.00054	-0.00059	-0.00059
	(!D * RESET_B * !SCE)	0.00146	0.00144	0.00142
	(!D * !RESET_B * !SCE)	-0.00039	-0.00041	-0.00040
	(!D * !RESET_B * !SCE)	0.00153	0.00154	0.00150
	(!CLK_N * D * RESET_B * SCE)	0.00237	0.00237	0.01002
	(!CLK_N * D * RESET_B * SCE)	0.00615	0.00616	0.01378
	(!CLK_N * D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00065
	(!CLK_N * D * RESET_B * !SCE)	0.00137	0.00138	0.00137
	(!CLK_N * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK_N * D * !RESET_B * SCE)	0.00130	0.00130	0.00128
	(!CLK_N * D * !RESET_B * !SCE)	-0.00028	-0.00029	-0.00029
	(!CLK_N * D * !RESET_B * !SCE)	0.00142	0.00144	0.00142
	(!CLK_N * !D * RESET_B * SCE)	0.00200	0.00202	0.00981
	(!CLK_N * !D * RESET_B * SCE)	0.00602	0.00605	0.01381
	(!CLK_N * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00043
	(!CLK_N * !D * !RESET_B * SCE)	0.00130	0.00130	0.00128

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)	0.00492	0.00507	0.01712
	(CLK_N * D * RESET_B * SCD)	-0.00031	-0.00016	0.01189
	(CLK_N * D * RESET_B * !SCD)	0.01407	0.01446	0.02686
	(CLK_N * D * RESET_B * !SCD)	0.01043	0.01082	0.02319
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00484	0.00522	0.01726
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00015	0.00021	0.01226
	(CLK_N * !D * RESET_B * SCD)	0.01610	0.01656	0.03762
	(CLK_N * !D * RESET_B * SCD)	0.00935	0.00981	0.03089
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00491	0.00507	0.01711
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00032	-0.00017	0.01188
	(!CLK_N * D * RESET_B * !SCD)	0.00741	0.00780	0.02020
	(!CLK_N * D * RESET_B * !SCD)	0.00381	0.00417	0.01655
	(!CLK_N * !D * RESET_B * SCD)	0.00969	0.01006	0.02991
	(!CLK_N * !D * RESET_B * SCD)	0.00291	0.00329	0.02314

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)	-0.00004	0.00063	0.01293
	(CLK_N * D * RESET_B * SCD)	0.00519	0.00587	0.01815
	(CLK_N * D * RESET_B * !SCD)	0.01122	0.01177	0.02415
	(CLK_N * D * RESET_B * !SCD)	0.01486	0.01542	0.02769
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00011	0.00051	0.01273
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00486	0.00552	0.01770
	(CLK_N * !D * RESET_B * SCD)	0.00826	0.00891	0.03013
	(CLK_N * !D * RESET_B * SCD)	0.01500	0.01565	0.03688
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00005	0.00063	0.01292
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00519	0.00587	0.01815
	(!CLK_N * D * RESET_B * !SCD)	0.00483	0.00530	0.01767
	(!CLK_N * D * RESET_B * !SCD)	0.00844	0.00894	0.02116
	(!CLK_N * !D * RESET_B * SCD)	0.00160	0.00220	0.02231
	(!CLK_N * !D * RESET_B * SCD)	0.00837	0.00900	0.02909

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01614	0.01577	0.02712
	(CLK_N * D * SCD * SCE * !Q)	0.00747	0.00709	0.01844
	(CLK_N * D * SCD * !SCE * !Q)	0.01579	0.01539	0.02707
	(CLK_N * D * SCD * !SCE * !Q)	0.00742	0.00702	0.01871
	(CLK_N * D * !SCD * SCE * !Q)	0.00321	0.00321	0.00320
	(CLK_N * D * !SCD * SCE * !Q)	-0.00335	-0.00334	-0.00334
	(CLK_N * D * !SCD * !SCE * !Q)	0.01543	0.01507	0.02683
	(CLK_N * D * !SCD * !SCE * !Q)	0.00744	0.00708	0.01883
	(CLK_N * !D * SCD * SCE * !Q)	0.01702	0.01668	0.02771
	(CLK_N * !D * SCD * SCE * !Q)	0.00810	0.00776	0.01881
	(CLK_N * !D * SCD * !SCE * !Q)	0.00315	0.00317	0.00314
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00339	-0.00340	-0.00338
	(CLK_N * !D * !SCD * SCE * !Q)	0.00320	0.00320	0.00320
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00335	-0.00334	-0.00334
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00316	0.00318	0.00315
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00340	-0.00341	-0.00338
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00912	0.00899	0.01856
	(!CLK_N * D * SCD * SCE * !Q)	0.00041	0.00027	0.00985
	(!CLK_N * D * SCD * !SCE * !Q)	0.00877	0.00864	0.01849
	(!CLK_N * D * SCD * !SCE * !Q)	0.00037	0.00021	0.01009
	(!CLK_N * D * !SCD * SCE * !Q)	0.00312	0.00315	0.00312
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00343	-0.00344	-0.00342
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00842	0.00832	0.01832
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00039	0.00026	0.01030
	(!CLK_N * !D * SCD * SCE * !Q)	0.00999	0.00985	0.01910
	(!CLK_N * !D * SCD * SCE * !Q)	0.00104	0.00089	0.01015
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00307	0.00309	0.00306
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00347	-0.00348	-0.00346
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00312	0.00314	0.00312
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00343	-0.00344	-0.00342
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00307	0.00309	0.00307
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00348	-0.00349	-0.00347

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00749	0.00759	0.02114
	(CLK_N * D * SCD * SCE * !Q)	0.01622	0.01627	0.02981
	(CLK_N * D * SCD * !SCE * !Q)	0.00653	0.00659	0.01996
	(CLK_N * D * SCD * !SCE * !Q)	0.01494	0.01499	0.02832
	(CLK_N * D * !SCD * SCE * !Q)	-0.00301	-0.00308	-0.00307
	(CLK_N * D * !SCD * SCE * !Q)	0.00355	0.00352	0.00348
	(CLK_N * D * !SCD * !SCE * !Q)	0.00626	0.00635	0.01985
	(CLK_N * D * !SCD * !SCE * !Q)	0.01429	0.01439	0.02783
	(CLK_N * !D * SCD * SCE * !Q)	0.00713	0.00727	0.02110
	(CLK_N * !D * SCD * SCE * !Q)	0.01609	0.01619	0.02999
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00298	-0.00308	-0.00308
	(CLK_N * !D * SCD * !SCE * !Q)	0.00354	0.00351	0.00347
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00302	-0.00308	-0.00307
	(CLK_N * !D * !SCD * SCE * !Q)	0.00355	0.00352	0.00348
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00300	-0.00309	-0.00308
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00356	0.00352	0.00347
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00088	0.00117	0.01196
	(!CLK_N * D * SCD * SCE * !Q)	0.00965	0.00992	0.02066
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00005	0.00019	0.01100
	(!CLK_N * D * SCD * !SCE * !Q)	0.00834	0.00863	0.01938
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00292	-0.00299	-0.00298
	(!CLK_N * D * !SCD * SCE * !Q)	0.00364	0.00361	0.00357
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00033	-0.00006	0.01089
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00769	0.00801	0.01893
	(!CLK_N * !D * SCD * SCE * !Q)	0.00055	0.00082	0.01177
	(!CLK_N * !D * SCD * SCE * !Q)	0.00948	0.00979	0.02071
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00289	-0.00299	-0.00299
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00365	0.00360	0.00355
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00292	-0.00299	-0.00298
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00364	0.00361	0.00357
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00291	-0.00300	-0.00300
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00366	0.00360	0.00356

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)**	0.01150	0.01181	0.03122
	(D * RESET_B * SCD * SCE * Q)	0.00762	0.00791	0.02733
	(D * RESET_B * SCD * SCE * !Q)	0.01822	0.01858	0.03827
	(D * RESET_B * SCD * SCE * !Q)	0.01437	0.01472	0.03441
	(D * RESET_B * SCD * !SCE * Q)	0.01148	0.01179	0.03120
	(D * RESET_B * SCD * !SCE * Q)	0.00760	0.00790	0.02732
	(D * RESET_B * SCD * !SCE * !Q)	0.01819	0.01855	0.03824
	(D * RESET_B * SCD * !SCE * !Q)	0.01434	0.01469	0.03438
	(D * RESET_B * !SCD * SCE * Q)	0.01763	0.01781	0.03737
	(D * RESET_B * !SCD * SCE * Q)	0.01375	0.01392	0.03348
	(D * RESET_B * !SCD * !SCE * Q)	0.01150	0.01182	0.03122
	(D * RESET_B * !SCD * !SCE * Q)	0.00763	0.00792	0.02734
	(D * RESET_B * !SCD * !SCE * !Q)	0.01821	0.01856	0.03826
	(D * RESET_B * !SCD * !SCE * !Q)	0.01436	0.01471	0.03440
	(D * !SCD * SCE * !Q)	0.01129	0.01162	0.03100
	(D * !SCD * SCE * !Q)	0.00741	0.00772	0.02712
	(D * !RESET_B * SCD * SCE * !Q)	0.01129	0.01162	0.03101
	(D * !RESET_B * SCD * SCE * !Q)	0.00741	0.00772	0.02712
	(D * !RESET_B * SCD * !SCE * !Q)	0.01126	0.01159	0.03098
	(D * !RESET_B * SCD * !SCE * !Q)	0.00739	0.00769	0.02709
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01126	0.01159	0.03098
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00739	0.00769	0.02709
	(!D * RESET_B * SCD * SCE * Q)	0.01151	0.01183	0.03123
	(!D * RESET_B * SCD * SCE * Q)	0.00763	0.00793	0.02735
	(!D * RESET_B * SCD * SCE * !Q)	0.01827	0.01863	0.03832
	(!D * RESET_B * SCD * SCE * !Q)	0.01441	0.01475	0.03445
	(!D * RESET_B * !SCE * Q)	0.01757	0.01775	0.03731
	(!D * RESET_B * !SCE * Q)	0.01367	0.01383	0.03339
	(!D * RESET_B * !SCD * SCE * Q)	0.01761	0.01778	0.03735
	(!D * RESET_B * !SCD * SCE * Q)	0.01372	0.01389	0.03344
	(!D * !SCE * !Q)	0.01126	0.01159	0.03097
	(!D * !SCE * !Q)	0.00738	0.00769	0.02709
	(!D * !SCD * SCE * !Q)	0.01129	0.01162	0.03100
	(!D * !SCD * SCE * !Q)	0.00741	0.00772	0.02712
	(!D * !RESET_B * SCD * SCE * !Q)	0.01129	0.01162	0.03100
	(!D * !RESET_B * SCD * SCE * !Q)	0.00741	0.00772	0.02712

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)	0.00839	0.00913	0.02913
	(D * RESET_B * SCD * SCE * Q)	0.01227	0.01302	0.03301
	(D * RESET_B * SCD * !SCE * Q)	0.00837	0.00911	0.02911
	(D * RESET_B * SCD * !SCE * Q)	0.01225	0.01300	0.03299
	(D * RESET_B * !SCD * !SCE * Q)	0.00840	0.00914	0.02914
	(D * RESET_B * !SCD * !SCE * Q)	0.01228	0.01302	0.03301
	(D * !SCD * SCE * !Q)	0.00823	0.00895	0.02897
	(D * !SCD * SCE * !Q)	0.01211	0.01285	0.03285
	(D * !RESET_B * SCD * SCE * !Q)	0.00823	0.00896	0.02896
	(D * !RESET_B * SCD * SCE * !Q)	0.01211	0.01286	0.03285
	(D * !RESET_B * SCD * !SCE * !Q)	0.00821	0.00894	0.02893
	(D * !RESET_B * SCD * !SCE * !Q)	0.01209	0.01284	0.03282
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00821	0.00894	0.02893
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01209	0.01284	0.03282
	(!D * RESET_B * SCD * SCE * Q)	0.00840	0.00914	0.02914
	(!D * RESET_B * SCD * SCE * Q)	0.01228	0.01303	0.03302
	(!D * !SCE * !Q)	0.00820	0.00893	0.02894
	(!D * !SCE * !Q)	0.01208	0.01283	0.03282
	(!D * !SCD * SCE * !Q)	0.00823	0.00895	0.02897
	(!D * !SCD * SCE * !Q)	0.01211	0.01285	0.03285
	(!D * !RESET_B * SCD * SCE * !Q)	0.00823	0.00896	0.02896
	(!D * !RESET_B * SCD * SCE * !Q)	0.01211	0.01286	0.03285

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00193	0.00200	0.00425	0.00569	0.00324	0.82325
sky130_fd_sc_hs__sdfrtp_2	0.00187	0.00202	0.00433	0.00576	0.00324	1.63052
sky130_fd_sc_hs__sdfrtp_4	0.00188	0.00199	0.00436	0.00568	0.00324	3.10346

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	9.45464	15.94040
sky130_fd_sc_hs__sdfrtp_2	0.00000	9.67982	16.30400
sky130_fd_sc_hs__sdfrtp_4	0.00000	12.24650	19.44780

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)	0.31139	0.99348	7.57077
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.33425	0.90513	7.57551
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.38627	0.88129	7.65493

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.32634	0.75709	3.94649
	RESET_B->Q (FF)	0.48137	1.08299	5.47116
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.33773	0.72645	3.95588
	RESET_B->Q (FF)	0.49486	1.05645	5.49697
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.35566	0.70630	3.89110
	RESET_B->Q (FF)	0.51009	1.03330	5.42274

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)	-0.18581	-0.31358	-1.32392
	setup	CLK (R)	0.37108	0.42461	1.49976
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17966	-0.30312	-1.27776
	setup	CLK (R)	0.37141	0.41833	1.45082
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18047	-0.30376	-1.27780
	setup	CLK (R)	0.35410	0.40824	1.42171

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)	-0.14397	-0.26474	-1.17255
	setup	CLK (R)	0.44510	0.48037	1.54057
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13685	-0.24816	-1.13237
	setup	CLK (R)	0.42187	0.45858	1.48271
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14744	-0.25252	-1.18819
	setup	CLK (R)	0.41668	0.45563	1.47527

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)	-0.18581	-0.31556	-1.32392
	hold	CLK (R)	-0.18811	-0.31358	-1.32536
	setup	CLK (R)	0.36980	0.42455	1.49976
	setup	CLK (R)	0.37108	0.42461	1.49834
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17966	-0.30312	-1.27776
	hold	CLK (R)	-0.18191	-0.30474	-1.28356
	setup	CLK (R)	0.36751	0.41719	1.44894
	setup	CLK (R)	0.37141	0.41833	1.45082
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18047	-0.30540	-1.27780
	hold	CLK (R)	-0.18138	-0.30376	-1.28293
	setup	CLK (R)	0.35410	0.40824	1.41850
	setup	CLK (R)	0.35373	0.40536	1.42171

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)	-0.14397	-0.26492	-1.17255
	hold	CLK (R)	-0.14443	-0.26474	-1.17389
	setup	CLK (R)	0.44387	0.48037	1.54057
	setup	CLK (R)	0.44510	0.47985	1.53943
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13685	-0.24816	-1.13286
	hold	CLK (R)	-0.13802	-0.24816	-1.13237
	setup	CLK (R)	0.42182	0.45854	1.48271
	setup	CLK (R)	0.42187	0.45858	1.48249
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14744	-0.25268	-1.18839
	hold	CLK (R)	-0.14764	-0.25252	-1.18819
	setup	CLK (R)	0.41668	0.45563	1.47527
	setup	CLK (R)	0.41643	0.45562	1.47527

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)	-0.22971	-0.34114	-1.37164
	setup	CLK (R)	0.42791	0.46327	1.55882
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22583	-0.33409	-1.34197
	setup	CLK (R)	0.43099	0.46243	1.52068
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22491	-0.33392	-1.34281
	setup	CLK (R)	0.41113	0.45136	1.48584

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)	-0.19030	-0.30945	-1.30246
	setup	CLK (R)	0.53643	0.55614	1.63668
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18958	-0.29897	-1.27920
	setup	CLK (R)	0.52166	0.54284	1.59319
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19661	-0.30737	-1.33050
	setup	CLK (R)	0.51595	0.53695	1.58998

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)	-0.22971	-0.34114	-1.37164
	hold	CLK (R)	-0.24693	-0.35872	-1.40711
	setup	CLK (R)	0.41720	0.44950	1.52757
	setup	CLK (R)	0.42791	0.46327	1.55882
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22583	-0.33409	-1.34197
	hold	CLK (R)	-0.24037	-0.34983	-1.37270
	setup	CLK (R)	0.41718	0.44625	1.48815
	setup	CLK (R)	0.43099	0.46243	1.52068
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22491	-0.33392	-1.34281
	hold	CLK (R)	-0.23990	-0.34942	-1.36965
	setup	CLK (R)	0.40250	0.43666	1.46410
	setup	CLK (R)	0.41113	0.45136	1.48584

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)	-0.20278	-0.32691	-1.31021
	hold	CLK (R)	-0.19030	-0.30945	-1.30246
	setup	CLK (R)	0.53327	0.55357	1.62158
	setup	CLK (R)	0.53643	0.55614	1.63668
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19966	-0.31854	-1.28194
	hold	CLK (R)	-0.18958	-0.29897	-1.27920
	setup	CLK (R)	0.51904	0.53931	1.57895
	setup	CLK (R)	0.52166	0.54284	1.59319
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21327	-0.32461	-1.33470
	hold	CLK (R)	-0.19661	-0.30737	-1.33050
	setup	CLK (R)	0.51595	0.53695	1.58335
	setup	CLK (R)	0.51570	0.53661	1.58998

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)	-0.19810	-0.29461	-0.42303
	setup	CLK (R)	0.53408	0.52614	1.58661
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19642	-0.28018	-0.40302
	setup	CLK (R)	0.51383	0.50226	1.55484
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19823	-0.28686	-0.42334
	setup	CLK (R)	0.50722	0.50020	1.51847

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)	-0.16045	-0.25954	-1.07632
	setup	CLK (R)	0.47608	0.52160	1.42222
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15601	-0.24581	-1.04776
	setup	CLK (R)	0.47165	0.51170	1.36743
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16655	-0.25081	-1.09130
	setup	CLK (R)	0.45388	0.50220	1.36389

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)	-0.20563	-0.29461	-0.42303
	hold	CLK (R)	-0.19810	-0.33104	-1.41913
	setup	CLK (R)	0.53408	0.52614	0.61389
	setup	CLK (R)	0.38262	0.43804	1.58661
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19674	-0.28018	-0.40302
	hold	CLK (R)	-0.19642	-0.32421	-1.39231
	setup	CLK (R)	0.51383	0.50226	0.58627
	setup	CLK (R)	0.38649	0.43936	1.55484
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.20653	-0.28686	-0.42334
	hold	CLK (R)	-0.19823	-0.32330	-1.38952
	setup	CLK (R)	0.50722	0.50020	0.58547
	setup	CLK (R)	0.36897	0.42458	1.51847

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)	-0.29186	-0.41532	-1.18630
	hold	CLK (R)	-0.16045	-0.25954	-1.07632
	setup	CLK (R)	0.47608	0.52160	1.28249
	setup	CLK (R)	0.46056	0.48121	1.42222
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.28248	-0.40137	-1.15487
	hold	CLK (R)	-0.15601	-0.24581	-1.04776
	setup	CLK (R)	0.47165	0.51170	1.24614
	setup	CLK (R)	0.43760	0.46073	1.36743
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.28459	-0.40312	-1.15443
	hold	CLK (R)	-0.16655	-0.25081	-1.09130
	setup	CLK (R)	0.45388	0.50220	1.21406
	setup	CLK (R)	0.43663	0.45665	1.36389

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)	0.46086	0.47346	1.57795
	removal	CLK (R)	-0.30765	-0.35601	-1.35403
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.46252	0.46838	1.55005
	removal	CLK (R)	-0.30442	-0.34909	-1.33081
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.44546	0.45844	1.53377
	removal	CLK (R)	-0.30413	-0.34769	-1.33029

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)	0.45175	0.46017	1.55503
	recovery	CLK (R)	0.42900	0.43661	1.47044
	recovery	CLK (R)	0.41972	0.42329	1.44822
	recovery	CLK (R)	0.46086	0.47346	1.57795
	removal	CLK (R)	-0.33602	-0.39331	-1.46473
	removal	CLK (R)	-0.31343	-0.37124	-1.37807
	removal	CLK (R)	-0.30765	-0.35601	-1.35403
	removal	CLK (R)	-0.34903	-0.40780	-1.48772
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.44986	0.45942	1.53000
	recovery	CLK (R)	0.42523	0.43397	1.43903
	recovery	CLK (R)	0.41951	0.41942	1.41774
	recovery	CLK (R)	0.46252	0.46838	1.55005
	removal	CLK (R)	-0.33541	-0.38648	-1.44643
	removal	CLK (R)	-0.30938	-0.36109	-1.35315
	removal	CLK (R)	-0.30442	-0.34909	-1.33081
	removal	CLK (R)	-0.34981	-0.40077	-1.47062
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.43546	0.44492	1.51771
	recovery	CLK (R)	0.41022	0.42096	1.42521
	recovery	CLK (R)	0.40322	0.40768	1.40120
	recovery	CLK (R)	0.44546	0.45844	1.53377
	removal	CLK (R)	-0.33354	-0.38470	-1.44812
	removal	CLK (R)	-0.30871	-0.36109	-1.35410
	removal	CLK (R)	-0.30413	-0.34769	-1.33029
	removal	CLK (R)	-0.34391	-0.39749	-1.46483

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 ()	0.24565	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.19385	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.24870	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.19995	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.24565	0.82153	16.50020
	min_pulse_width	RESET_B ()	0.19995	0.82153	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 ()	0.15424	0.82153	16.50020
	min_pulse_width	CLK ()	0.12377	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.17557	0.82153	16.50020
	min_pulse_width	CLK ()	0.12377	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.20604	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	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 ()	0.33706	0.82153	16.50020
	min_pulse_width	CLK ()	0.38886	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.35839	0.82153	16.50020
	min_pulse_width	CLK ()	0.39800	0.82153	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.33706	0.82153	16.50020
	min_pulse_width	CLK ()	0.39191	0.82153	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	0.02384	0.02439	0.04462
	CLK	0.01976	0.02031	0.04065
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02705	0.02789	0.04820
	CLK	0.02285	0.02369	0.04426
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03306	0.03415	0.05459
	CLK	0.02895	0.03004	0.05117

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02424	0.02509	0.04546
	CLK	0.02024	0.02106	0.04102
	RESET_B	0.02035	0.02084	0.04278
	RESET_B	0.02914	0.02958	0.05074
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02678	0.02799	0.04848
	CLK	0.02284	0.02405	0.04406
	RESET_B	0.02332	0.02410	0.04556
	RESET_B	0.03233	0.03308	0.05427
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03327	0.03527	0.05679
	CLK	0.02925	0.03109	0.05128
	RESET_B	0.02984	0.03137	0.05587
	RESET_B	0.03875	0.04024	0.06160

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)**	0.00113	0.00114	0.00113
	(CLK * RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00542	0.00550	0.01445
	(CLK * RESET_B * SCD * !SCE)	0.00240	0.00246	0.01142
	(CLK * RESET_B * !SCD * !SCE)	0.00544	0.00551	0.01446
	(CLK * RESET_B * !SCD * !SCE)	0.00241	0.00248	0.01143
	(CLK * !SCD * SCE)	0.00061	0.00061	0.00060
	(CLK * !SCD * SCE)	-0.00115	-0.00117	-0.00118
	(CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !RESET_B * SCD * SCE)	-0.00116	-0.00117	-0.00119
	(CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00038
	(CLK * !RESET_B * SCD * !SCE)	-0.00128	-0.00129	-0.00139
	(CLK * !RESET_B * !SCD * !SCE)	0.00044	0.00044	0.00038
	(CLK * !RESET_B * !SCD * !SCE)	-0.00133	-0.00133	-0.00141
	(!CLK * RESET_B * SCD * SCE)	0.00113	0.00114	0.00114
	(!CLK * RESET_B * SCD * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * RESET_B * SCD * !SCE)	0.01150	0.01166	0.02148
	(!CLK * RESET_B * SCD * !SCE)	0.00831	0.00846	0.01829
	(!CLK * RESET_B * !SCD * !SCE)	0.01151	0.01167	0.02149
	(!CLK * RESET_B * !SCD * !SCE)	0.00832	0.00848	0.01829
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00063
	(!CLK * !SCD * SCE)	-0.00112	-0.00113	-0.00115
	(!CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00059
	(!CLK * !RESET_B * SCD * SCE)	-0.00116	-0.00117	-0.00119
	(!CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00038
	(!CLK * !RESET_B * SCD * !SCE)	-0.00128	-0.00129	-0.00139
	(!CLK * !RESET_B * !SCD * !SCE)	0.00044	0.00044	0.00038
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00133	-0.00133	-0.00141

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00109	0.00109	0.00109
	(CLK * RESET_B * SCD * SCE)	-0.00038	-0.00038	-0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00461	0.00473	0.01389
	(CLK * RESET_B * SCD * !SCE)	0.00170	0.00182	0.01098
	(CLK * RESET_B * !SCD * !SCE)	0.00462	0.00474	0.01389
	(CLK * RESET_B * !SCD * !SCE)	0.00172	0.00183	0.01099
	(CLK * !SCD * SCE)	0.00060	0.00061	0.00059
	(CLK * !SCD * SCE)	-0.00108	-0.00109	-0.00111
	(CLK * !RESET_B * SCD * SCE)	0.00059	0.00059	0.00058
	(CLK * !RESET_B * SCD * SCE)	-0.00108	-0.00109	-0.00111
	(CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00038
	(CLK * !RESET_B * SCD * !SCE)	-0.00120	-0.00121	-0.00131
	(CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00038
	(CLK * !RESET_B * !SCD * !SCE)	-0.00125	-0.00126	-0.00133
	(!CLK * RESET_B * SCD * SCE)	0.00107	0.00108	0.00108
	(!CLK * RESET_B * SCD * SCE)	-0.00038	-0.00039	-0.00038
	(!CLK * RESET_B * SCD * !SCE)	0.01092	0.01110	0.02108
	(!CLK * RESET_B * SCD * !SCE)	0.00785	0.00804	0.01802
	(!CLK * RESET_B * !SCD * !SCE)	0.01093	0.01111	0.02109
	(!CLK * RESET_B * !SCD * !SCE)	0.00787	0.00806	0.01803
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00061
	(!CLK * !SCD * SCE)	-0.00106	-0.00107	-0.00109
	(!CLK * !RESET_B * SCD * SCE)	0.00059	0.00059	0.00058
	(!CLK * !RESET_B * SCD * SCE)	-0.00108	-0.00109	-0.00111
	(!CLK * !RESET_B * SCD * !SCE)	0.00044	0.00044	0.00038
	(!CLK * !RESET_B * SCD * !SCE)	-0.00120	-0.00121	-0.00131
	(!CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00038
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00125	-0.00126	-0.00133

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00110	0.00111	0.00110
	(CLK * RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(CLK * RESET_B * SCD * !SCE)	0.00468	0.00480	0.01395
	(CLK * RESET_B * SCD * !SCE)	0.00174	0.00185	0.01101
	(CLK * RESET_B * !SCD * !SCE)	0.00470	0.00481	0.01395
	(CLK * RESET_B * !SCD * !SCE)	0.00175	0.00187	0.01102
	(CLK * !SCD * SCE)	0.00061	0.00062	0.00059
	(CLK * !SCD * SCE)	-0.00107	-0.00109	-0.00111
	(CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !RESET_B * SCD * SCE)	-0.00108	-0.00109	-0.00111
	(CLK * !RESET_B * SCD * !SCE)	0.00046	0.00046	0.00039
	(CLK * !RESET_B * SCD * !SCE)	-0.00118	-0.00119	-0.00130
	(CLK * !RESET_B * !SCD * !SCE)	0.00045	0.00045	0.00040
	(CLK * !RESET_B * !SCD * !SCE)	-0.00123	-0.00124	-0.00131
	(!CLK * RESET_B * SCD * SCE)	0.00112	0.00112	0.00112
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00034
	(!CLK * RESET_B * SCD * !SCE)	0.01103	0.01120	0.02125
	(!CLK * RESET_B * SCD * !SCE)	0.00793	0.00812	0.01815
	(!CLK * RESET_B * !SCD * !SCE)	0.01104	0.01122	0.02126
	(!CLK * RESET_B * !SCD * !SCE)	0.00794	0.00813	0.01816
	(!CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00103	-0.00104	-0.00106
	(!CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK * !RESET_B * SCD * SCE)	-0.00108	-0.00109	-0.00111
	(!CLK * !RESET_B * SCD * !SCE)	0.00046	0.00046	0.00039
	(!CLK * !RESET_B * SCD * !SCE)	-0.00118	-0.00119	-0.00130
	(!CLK * !RESET_B * !SCD * !SCE)	0.00045	0.00045	0.00040
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00123	-0.00124	-0.00131

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)**	-0.00085	-0.00085	-0.00089
	(CLK * RESET_B * SCD * SCE)	0.00070	0.00069	0.00066
	(CLK * RESET_B * SCD * !SCE)	0.00078	0.00114	0.01055
	(CLK * RESET_B * SCD * !SCE)	0.00382	0.00418	0.01358
	(CLK * RESET_B * !SCD * !SCE)	0.00078	0.00114	0.01056
	(CLK * RESET_B * !SCD * !SCE)	0.00382	0.00417	0.01359
	(CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCD * SCE)	0.00132	0.00132	0.00132
	(CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !RESET_B * SCD * SCE)	0.00132	0.00133	0.00132
	(CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !RESET_B * SCD * !SCE)	0.00149	0.00150	0.00150
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00028	-0.00027
	(CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00151	0.00150
	(!CLK * RESET_B * SCD * SCE)	-0.00084	-0.00085	-0.00089
	(!CLK * RESET_B * SCD * SCE)	0.00070	0.00070	0.00067
	(!CLK * RESET_B * SCD * !SCE)	0.00686	0.00722	0.01845
	(!CLK * RESET_B * SCD * !SCE)	0.01005	0.01041	0.02165
	(!CLK * RESET_B * !SCD * !SCE)	0.00688	0.00722	0.01846
	(!CLK * RESET_B * !SCD * !SCE)	0.01007	0.01041	0.02166
	(!CLK * !SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCD * SCE)	0.00135	0.00137	0.00135
	(!CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !RESET_B * SCD * SCE)	0.00132	0.00132	0.00132
	(!CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !RESET_B * SCD * !SCE)	0.00150	0.00150	0.00150
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00028	-0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00151	0.00150

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00079	-0.00079	-0.00084
	(CLK * RESET_B * SCD * SCE)	0.00067	0.00067	0.00064
	(CLK * RESET_B * SCD * !SCE)	0.00083	0.00123	0.01076
	(CLK * RESET_B * SCD * !SCE)	0.00374	0.00413	0.01366
	(CLK * RESET_B * !SCD * !SCE)	0.00083	0.00123	0.01077
	(CLK * RESET_B * !SCD * !SCE)	0.00374	0.00413	0.01367
	(CLK * !SCD * SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !SCD * SCE)	0.00126	0.00127	0.00126
	(CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00126	0.00126	0.00126
	(CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00143	0.00144	0.00144
	(CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00144	0.00144
	(!CLK * RESET_B * SCD * SCE)	-0.00080	-0.00081	-0.00084
	(!CLK * RESET_B * SCD * SCE)	0.00066	0.00066	0.00063
	(!CLK * RESET_B * SCD * !SCE)	0.00746	0.00784	0.01920
	(!CLK * RESET_B * SCD * !SCE)	0.01052	0.01090	0.02226
	(!CLK * RESET_B * !SCD * !SCE)	0.00746	0.00784	0.01922
	(!CLK * RESET_B * !SCD * !SCE)	0.01052	0.01090	0.02227
	(!CLK * !SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !SCD * SCE)	0.00128	0.00129	0.00128
	(!CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !RESET_B * SCD * SCE)	0.00126	0.00127	0.00126
	(!CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00143	0.00144	0.00144
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00144	0.00144

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00078	-0.00078	-0.00082
	(CLK * RESET_B * SCD * SCE)	0.00068	0.00068	0.00065
	(CLK * RESET_B * SCD * !SCE)	0.00080	0.00119	0.01072
	(CLK * RESET_B * SCD * !SCE)	0.00374	0.00413	0.01365
	(CLK * RESET_B * !SCD * !SCE)	0.00080	0.00119	0.01073
	(CLK * RESET_B * !SCD * !SCE)	0.00374	0.00413	0.01366
	(CLK * !SCD * SCE)	-0.00040	-0.00041	-0.00040
	(CLK * !SCD * SCE)	0.00128	0.00130	0.00128
	(CLK * !RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00039
	(CLK * !RESET_B * SCD * SCE)	0.00128	0.00130	0.00129
	(CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00144	0.00145	0.00144
	(CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00145	0.00145
	(!CLK * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00081
	(!CLK * RESET_B * SCD * SCE)	0.00070	0.00070	0.00067
	(!CLK * RESET_B * SCD * !SCE)	0.00716	0.00756	0.01898
	(!CLK * RESET_B * SCD * !SCE)	0.01026	0.01065	0.02208
	(!CLK * RESET_B * !SCD * !SCE)	0.00717	0.00756	0.01900
	(!CLK * RESET_B * !SCD * !SCE)	0.01026	0.01065	0.02209
	(!CLK * !SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCD * SCE)	0.00133	0.00134	0.00133
	(!CLK * !RESET_B * SCD * SCE)	-0.00039	-0.00039	-0.00039
	(!CLK * !RESET_B * SCD * SCE)	0.00129	0.00129	0.00129
	(!CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00144	0.00144	0.00144
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00145	0.00145

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)**	0.00671	0.00667	0.01403
	(CLK * D * RESET_B * SCE)	0.00289	0.00286	0.01022
	(CLK * D * RESET_B * !SCE)	0.00117	0.00101	0.00097
	(CLK * D * RESET_B * !SCE)	-0.00086	-0.00103	-0.00106
	(CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00120	-0.00120	-0.00119
	(CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00041
	(CLK * D * !RESET_B * !SCE)	-0.00132	-0.00132	-0.00132
	(CLK * !D * RESET_B * SCE)	0.00759	0.00755	0.01461
	(CLK * !D * RESET_B * SCE)	0.00353	0.00348	0.01056
	(CLK * !D * !RESET_B * SCE)	0.00057	0.00058	0.00055
	(CLK * !D * !RESET_B * SCE)	-0.00119	-0.00120	-0.00119
	(!D * RESET_B * !SCE)	0.00072	0.00072	0.00072
	(!D * RESET_B * !SCE)	-0.00131	-0.00131	-0.00131
	(!D * !RESET_B * !SCE)	0.00049	0.00049	0.00049
	(!D * !RESET_B * !SCE)	-0.00141	-0.00141	-0.00140
	(!CLK * D * RESET_B * SCE)	0.01278	0.01283	0.02114
	(!CLK * D * RESET_B * SCE)	0.00881	0.00887	0.01716
	(!CLK * D * RESET_B * !SCE)	0.00118	0.00102	0.00098
	(!CLK * D * RESET_B * !SCE)	-0.00085	-0.00102	-0.00105
	(!CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00120	-0.00120	-0.00119
	(!CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00041
	(!CLK * D * !RESET_B * !SCE)	-0.00132	-0.00132	-0.00132
	(!CLK * !D * RESET_B * SCE)	0.01367	0.01373	0.02183
	(!CLK * !D * RESET_B * SCE)	0.00946	0.00951	0.01762
	(!CLK * !D * !RESET_B * SCE)	0.00057	0.00058	0.00055
	(!CLK * !D * !RESET_B * SCE)	-0.00119	-0.00120	-0.00119

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00607	0.00603	0.01349
	(CLK * D * RESET_B * SCE)	0.00231	0.00227	0.00973
	(CLK * D * RESET_B * !SCE)	0.00119	0.00103	0.00099
	(CLK * D * RESET_B * !SCE)	-0.00083	-0.00100	-0.00103
	(CLK * D * !RESET_B * SCE)	0.00056	0.00056	0.00053
	(CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(CLK * D * !RESET_B * !SCE)	0.00040	0.00039	0.00040
	(CLK * D * !RESET_B * !SCE)	-0.00133	-0.00131	-0.00132
	(CLK * !D * RESET_B * SCE)	0.00695	0.00690	0.01406
	(CLK * !D * RESET_B * SCE)	0.00295	0.00289	0.01006
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00055	0.00053
	(CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!D * RESET_B * !SCE)	0.00071	0.00072	0.00072
	(!D * RESET_B * !SCE)	-0.00130	-0.00131	-0.00131
	(!D * !RESET_B * !SCE)	0.00049	0.00048	0.00048
	(!D * !RESET_B * !SCE)	-0.00140	-0.00141	-0.00140
	(!CLK * D * RESET_B * SCE)	0.01237	0.01243	0.02080
	(!CLK * D * RESET_B * SCE)	0.00846	0.00852	0.01689
	(!CLK * D * RESET_B * !SCE)	0.00119	0.00102	0.00098
	(!CLK * D * RESET_B * !SCE)	-0.00084	-0.00101	-0.00104
	(!CLK * D * !RESET_B * SCE)	0.00056	0.00056	0.00053
	(!CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!CLK * D * !RESET_B * !SCE)	0.00039	0.00039	0.00040
	(!CLK * D * !RESET_B * !SCE)	-0.00131	-0.00132	-0.00132
	(!CLK * !D * RESET_B * SCE)	0.01327	0.01331	0.02149
	(!CLK * !D * RESET_B * SCE)	0.00911	0.00916	0.01734
	(!CLK * !D * !RESET_B * SCE)	0.00056	0.00055	0.00053
	(!CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00610	0.00608	0.01354
	(CLK * D * RESET_B * SCE)	0.00233	0.00230	0.00977
	(CLK * D * RESET_B * !SCE)	0.00119	0.00102	0.00098
	(CLK * D * RESET_B * !SCE)	-0.00081	-0.00099	-0.00102
	(CLK * D * !RESET_B * SCE)	0.00056	0.00056	0.00054
	(CLK * D * !RESET_B * SCE)	-0.00118	-0.00118	-0.00117
	(CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00042
	(CLK * D * !RESET_B * !SCE)	-0.00127	-0.00128	-0.00128
	(CLK * !D * RESET_B * SCE)	0.00698	0.00694	0.01411
	(CLK * !D * RESET_B * SCE)	0.00297	0.00292	0.01010
	(CLK * !D * !RESET_B * SCE)	0.00056	0.00056	0.00054
	(CLK * !D * !RESET_B * SCE)	-0.00118	-0.00118	-0.00117
	(!D * RESET_B * !SCE)	0.00073	0.00073	0.00073
	(!D * RESET_B * !SCE)	-0.00127	-0.00127	-0.00127
	(!D * !RESET_B * !SCE)	0.00050	0.00050	0.00050
	(!D * !RESET_B * !SCE)	-0.00137	-0.00137	-0.00136
	(!CLK * D * RESET_B * SCE)	0.01245	0.01252	0.02096
	(!CLK * D * RESET_B * SCE)	0.00852	0.00859	0.01703
	(!CLK * D * RESET_B * !SCE)	0.00120	0.00104	0.00100
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00097	-0.00100
	(!CLK * D * !RESET_B * SCE)	0.00056	0.00056	0.00054
	(!CLK * D * !RESET_B * SCE)	-0.00118	-0.00118	-0.00117
	(!CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00042
	(!CLK * D * !RESET_B * !SCE)	-0.00127	-0.00128	-0.00128
	(!CLK * !D * RESET_B * SCE)	0.01334	0.01340	0.02164
	(!CLK * !D * RESET_B * SCE)	0.00917	0.00923	0.01748
	(!CLK * !D * !RESET_B * SCE)	0.00056	0.00056	0.00054
	(!CLK * !D * !RESET_B * SCE)	-0.00118	-0.00118	-0.00117

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)	0.00213	0.00211	0.00974
	(CLK * D * RESET_B * SCE)	0.00596	0.00593	0.01354
	(CLK * D * RESET_B * !SCE)	-0.00072	-0.00073	-0.00073
	(CLK * D * RESET_B * !SCE)	0.00131	0.00133	0.00131
	(CLK * D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00039
	(CLK * D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00030
	(CLK * D * !RESET_B * !SCE)	0.00144	0.00144	0.00143
	(CLK * !D * RESET_B * SCE)	0.00174	0.00174	0.00952
	(CLK * !D * RESET_B * SCE)	0.00581	0.00579	0.01356
	(CLK * !D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00039
	(CLK * !D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(!D * RESET_B * !SCE)	-0.00058	-0.00063	-0.00064
	(!D * RESET_B * !SCE)	0.00144	0.00141	0.00140
	(!D * !RESET_B * !SCE)	-0.00041	-0.00043	-0.00042
	(!D * !RESET_B * !SCE)	0.00154	0.00154	0.00150
	(!CLK * D * RESET_B * SCE)	0.00827	0.00831	0.01738
	(!CLK * D * RESET_B * SCE)	0.01226	0.01230	0.02134
	(!CLK * D * RESET_B * !SCE)	-0.00071	-0.00072	-0.00072
	(!CLK * D * RESET_B * !SCE)	0.00132	0.00132	0.00132
	(!CLK * D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00039
	(!CLK * D * !RESET_B * SCE)	0.00136	0.00136	0.00134
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00030
	(!CLK * D * !RESET_B * !SCE)	0.00144	0.00144	0.00143
	(!CLK * !D * RESET_B * SCE)	0.00800	0.00808	0.01749
	(!CLK * !D * RESET_B * SCE)	0.01222	0.01230	0.02168
	(!CLK * !D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00039
	(!CLK * !D * !RESET_B * SCE)	0.00136	0.00136	0.00134

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00212	0.00209	0.00979
	(CLK * D * RESET_B * SCE)	0.00590	0.00587	0.01354
	(CLK * D * RESET_B * !SCE)	-0.00072	-0.00073	-0.00073
	(CLK * D * RESET_B * !SCE)	0.00130	0.00132	0.00130
	(CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00139	0.00140	0.00137
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00145	0.00145	0.00144
	(CLK * !D * RESET_B * SCE)	0.00174	0.00172	0.00957
	(CLK * !D * RESET_B * SCE)	0.00575	0.00574	0.01356
	(CLK * !D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00139	0.00139	0.00137
	(!D * RESET_B * !SCE)	-0.00057	-0.00061	-0.00062
	(!D * RESET_B * !SCE)	0.00145	0.00143	0.00141
	(!D * !RESET_B * !SCE)	-0.00039	-0.00040	-0.00040
	(!D * !RESET_B * !SCE)	0.00155	0.00154	0.00152
	(!CLK * D * RESET_B * SCE)	0.00884	0.00885	0.01799
	(!CLK * D * RESET_B * SCE)	0.01276	0.01278	0.02189
	(!CLK * D * RESET_B * !SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * D * RESET_B * !SCE)	0.00129	0.00130	0.00129
	(!CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00139	0.00139	0.00137
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00145	0.00145	0.00144
	(!CLK * !D * RESET_B * SCE)	0.00854	0.00861	0.01814
	(!CLK * !D * RESET_B * SCE)	0.01270	0.01276	0.02227
	(!CLK * !D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00139	0.00139	0.00137

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00217	0.00215	0.00984
	(CLK * D * RESET_B * SCE)	0.00596	0.00594	0.01359
	(CLK * D * RESET_B * !SCE)	-0.00068	-0.00070	-0.00069
	(CLK * D * RESET_B * !SCE)	0.00132	0.00133	0.00132
	(CLK * D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00034
	(CLK * D * !RESET_B * SCE)	0.00138	0.00139	0.00136
	(CLK * D * !RESET_B * !SCE)	-0.00026	-0.00026	-0.00027
	(CLK * D * !RESET_B * !SCE)	0.00144	0.00144	0.00143
	(CLK * !D * RESET_B * SCE)	0.00172	0.00171	0.00957
	(CLK * !D * RESET_B * SCE)	0.00574	0.00574	0.01356
	(CLK * !D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00034
	(CLK * !D * !RESET_B * SCE)	0.00138	0.00138	0.00136
	(!D * RESET_B * !SCE)	-0.00055	-0.00060	-0.00060
	(!D * RESET_B * !SCE)	0.00144	0.00143	0.00140
	(!D * !RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(!D * !RESET_B * !SCE)	0.00154	0.00153	0.00150
	(!CLK * D * RESET_B * SCE)	0.00863	0.00866	0.01784
	(!CLK * D * RESET_B * SCE)	0.01257	0.01260	0.02176
	(!CLK * D * RESET_B * !SCE)	-0.00067	-0.00067	-0.00068
	(!CLK * D * RESET_B * !SCE)	0.00133	0.00133	0.00133
	(!CLK * D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00034
	(!CLK * D * !RESET_B * SCE)	0.00138	0.00138	0.00136
	(!CLK * D * !RESET_B * !SCE)	-0.00026	-0.00026	-0.00027
	(!CLK * D * !RESET_B * !SCE)	0.00144	0.00144	0.00143
	(!CLK * !D * RESET_B * SCE)	0.00826	0.00834	0.01794
	(!CLK * !D * RESET_B * SCE)	0.01244	0.01252	0.02210
	(!CLK * !D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00034
	(!CLK * !D * !RESET_B * SCE)	0.00138	0.00138	0.00136

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)	0.00488	0.00505	0.01714
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00030	-0.00015	0.01196
	(CLK * D * RESET_B * !SCD)	0.00715	0.00752	0.01999
	(CLK * D * RESET_B * !SCD)	0.00361	0.00396	0.01641
	(CLK * !D * RESET_B * SCD)	0.01008	0.01047	0.03050
	(CLK * !D * RESET_B * SCD)	0.00334	0.00372	0.02378
	(!CLK * D * RESET_B * SCD)	0.00488	0.00505	0.01715
	(!CLK * D * RESET_B * SCD)	-0.00029	-0.00014	0.01197
	(!CLK * D * RESET_B * !SCD)	0.01324	0.01361	0.02609
	(!CLK * D * RESET_B * !SCD)	0.00987	0.01024	0.02268
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00486	0.00520	0.01734
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00007	0.00025	0.01240
	(!CLK * !D * RESET_B * SCD)	0.01615	0.01662	0.03802
	(!CLK * !D * RESET_B * SCD)	0.00925	0.00973	0.03113

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00490	0.00511	0.01723
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00033	-0.00013	0.01201
	(CLK * D * RESET_B * !SCD)	0.00709	0.00746	0.02002
	(CLK * D * RESET_B * !SCD)	0.00346	0.00381	0.01633
	(CLK * !D * RESET_B * SCD)	0.00940	0.00983	0.03009
	(CLK * !D * RESET_B * SCD)	0.00265	0.00306	0.02336
	(!CLK * D * RESET_B * SCD)	0.00489	0.00510	0.01722
	(!CLK * D * RESET_B * SCD)	-0.00034	-0.00015	0.01200
	(!CLK * D * RESET_B * !SCD)	0.01372	0.01410	0.02666
	(!CLK * D * RESET_B * !SCD)	0.01024	0.01061	0.02313
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00482	0.00517	0.01738
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	0.00017	0.01239
	(!CLK * !D * RESET_B * SCD)	0.01570	0.01621	0.03779
	(!CLK * !D * RESET_B * SCD)	0.00880	0.00932	0.03089

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00492	0.00514	0.01726
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00032	-0.00012	0.01203
	(CLK * D * RESET_B * !SCD)	0.00713	0.00751	0.02007
	(CLK * D * RESET_B * !SCD)	0.00352	0.00388	0.01640
	(CLK * !D * RESET_B * SCD)	0.00946	0.00989	0.03016
	(CLK * !D * RESET_B * SCD)	0.00267	0.00308	0.02338
	(!CLK * D * RESET_B * SCD)	0.00494	0.00516	0.01727
	(!CLK * D * RESET_B * SCD)	-0.00030	-0.00011	0.01205
	(!CLK * D * RESET_B * !SCD)	0.01351	0.01388	0.02645
	(!CLK * D * RESET_B * !SCD)	0.01005	0.01042	0.02295
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00483	0.00515	0.01739
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	0.00014	0.01239
	(!CLK * !D * RESET_B * SCD)	0.01580	0.01631	0.03795
	(!CLK * !D * RESET_B * SCD)	0.00886	0.00936	0.03102

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)**	-0.00000	0.00066	0.01303
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00516	0.00585	0.01820
	(CLK * D * RESET_B * !SCD)	0.00528	0.00574	0.01818
	(CLK * D * RESET_B * !SCD)	0.00884	0.00931	0.02161
	(CLK * !D * RESET_B * SCD)	0.00127	0.00189	0.02220
	(CLK * !D * RESET_B * SCD)	0.00800	0.00864	0.02894
	(!CLK * D * RESET_B * SCD)	0.00000	0.00066	0.01304
	(!CLK * D * RESET_B * SCD)	0.00517	0.00584	0.01821
	(!CLK * D * RESET_B * !SCD)	0.01134	0.01188	0.02433
	(!CLK * D * RESET_B * !SCD)	0.01473	0.01527	0.02760
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	0.00050	0.01278
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00480	0.00544	0.01770
	(!CLK * !D * RESET_B * SCD)	0.00733	0.00802	0.02964
	(!CLK * !D * RESET_B * SCD)	0.01423	0.01492	0.03654

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00010	0.00057	0.01301
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00513	0.00583	0.01824
	(CLK * D * RESET_B * !SCD)	0.00441	0.00489	0.01741
	(CLK * D * RESET_B * !SCD)	0.00808	0.00857	0.02095
	(CLK * !D * RESET_B * SCD)	0.00128	0.00192	0.02245
	(CLK * !D * RESET_B * SCD)	0.00800	0.00867	0.02921
	(!CLK * D * RESET_B * SCD)	-0.00010	0.00056	0.01300
	(!CLK * D * RESET_B * SCD)	0.00512	0.00581	0.01823
	(!CLK * D * RESET_B * !SCD)	0.01070	0.01126	0.02380
	(!CLK * D * RESET_B * !SCD)	0.01422	0.01477	0.02717
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	0.00048	0.01282
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00483	0.00546	0.01779
	(!CLK * !D * RESET_B * SCD)	0.00787	0.00859	0.03043
	(!CLK * !D * RESET_B * SCD)	0.01477	0.01549	0.03731

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00011	0.00057	0.01300
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00513	0.00579	0.01824
	(CLK * D * RESET_B * !SCD)	0.00445	0.00493	0.01745
	(CLK * D * RESET_B * !SCD)	0.00809	0.00858	0.02096
	(CLK * !D * RESET_B * SCD)	0.00124	0.00187	0.02241
	(CLK * !D * RESET_B * SCD)	0.00801	0.00868	0.02921
	(!CLK * D * RESET_B * SCD)	-0.00009	0.00057	0.01302
	(!CLK * D * RESET_B * SCD)	0.00515	0.00584	0.01826
	(!CLK * D * RESET_B * !SCD)	0.01078	0.01134	0.02389
	(!CLK * D * RESET_B * !SCD)	0.01426	0.01482	0.02724
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00015	0.00049	0.01283
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00484	0.00548	0.01781
	(!CLK * !D * RESET_B * SCD)	0.00757	0.00829	0.03019
	(!CLK * !D * RESET_B * SCD)	0.01452	0.01524	0.03714

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)**	0.00915	0.00903	0.01854
	(CLK * D * SCD * SCE * !Q)	0.00054	0.00039	0.00992
	(CLK * D * SCD * !SCE * !Q)	0.00881	0.00867	0.01847
	(CLK * D * SCD * !SCE * !Q)	0.00049	0.00033	0.01015
	(CLK * D * !SCD * SCE * !Q)	0.00274	0.00275	0.00274
	(CLK * D * !SCD * SCE * !Q)	-0.00370	-0.00369	-0.00368
	(CLK * D * !SCD * !SCE * !Q)	0.00846	0.00833	0.01831
	(CLK * D * !SCD * !SCE * !Q)	0.00051	0.00039	0.01035
	(CLK * !D * SCD * SCE * !Q)	0.01004	0.00989	0.01908
	(CLK * !D * SCD * SCE * !Q)	0.00118	0.00103	0.01024
	(CLK * !D * SCD * !SCE * !Q)	0.00269	0.00271	0.00268
	(CLK * !D * SCD * !SCE * !Q)	-0.00374	-0.00375	-0.00373
	(CLK * !D * !SCD * SCE * !Q)	0.00274	0.00275	0.00274
	(CLK * !D * !SCD * SCE * !Q)	-0.00370	-0.00370	-0.00369
	(CLK * !D * !SCD * !SCE * !Q)	0.00270	0.00272	0.00269
	(CLK * !D * !SCD * !SCE * !Q)	-0.00374	-0.00376	-0.00373
	(!CLK * D * SCD * SCE * !Q)	0.01581	0.01544	0.02685
	(!CLK * D * SCD * SCE * !Q)	0.00704	0.00666	0.01807
	(!CLK * D * SCD * !SCE * !Q)	0.01546	0.01506	0.02681
	(!CLK * D * SCD * !SCE * !Q)	0.00699	0.00659	0.01834
	(!CLK * D * !SCD * SCE * !Q)	0.00276	0.00276	0.00275
	(!CLK * D * !SCD * SCE * !Q)	-0.00368	-0.00368	-0.00367
	(!CLK * D * !SCD * !SCE * !Q)	0.01511	0.01472	0.02658
	(!CLK * D * !SCD * !SCE * !Q)	0.00701	0.00664	0.01848
	(!CLK * !D * SCD * SCE * !Q)	0.01670	0.01636	0.02744
	(!CLK * !D * SCD * SCE * !Q)	0.00769	0.00734	0.01841
	(!CLK * !D * SCD * !SCE * !Q)	0.00270	0.00271	0.00270
	(!CLK * !D * SCD * !SCE * !Q)	-0.00372	-0.00372	-0.00371
	(!CLK * !D * !SCD * SCE * !Q)	0.00276	0.00276	0.00275
	(!CLK * !D * !SCD * SCE * !Q)	-0.00368	-0.00368	-0.00367
	(!CLK * !D * !SCD * !SCE * !Q)	0.00271	0.00271	0.00270
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00373	-0.00373	-0.00372

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00850	0.00840	0.01809
	(CLK * D * SCD * SCE * !Q)	-0.00010	-0.00023	0.00948
	(CLK * D * SCD * !SCE * !Q)	0.00801	0.00789	0.01792
	(CLK * D * SCD * !SCE * !Q)	-0.00028	-0.00041	0.00963
	(CLK * D * !SCD * SCE * !Q)	0.00276	0.00277	0.00275
	(CLK * D * !SCD * SCE * !Q)	-0.00371	-0.00371	-0.00370
	(CLK * D * !SCD * !SCE * !Q)	0.00766	0.00759	0.01775
	(CLK * D * !SCD * !SCE * !Q)	-0.00026	-0.00036	0.00984
	(CLK * !D * SCD * SCE * !Q)	0.00938	0.00927	0.01861
	(CLK * !D * SCD * SCE * !Q)	0.00055	0.00041	0.00980
	(CLK * !D * SCD * !SCE * !Q)	0.00270	0.00268	0.00270
	(CLK * !D * SCD * !SCE * !Q)	-0.00375	-0.00373	-0.00374
	(CLK * !D * !SCD * SCE * !Q)	0.00276	0.00276	0.00275
	(CLK * !D * !SCD * SCE * !Q)	-0.00371	-0.00371	-0.00370
	(CLK * !D * !SCD * !SCE * !Q)	0.00271	0.00269	0.00270
	(CLK * !D * !SCD * !SCE * !Q)	-0.00376	-0.00374	-0.00375
	(!CLK * D * SCD * SCE * !Q)	0.01544	0.01508	0.02662
	(!CLK * D * SCD * SCE * !Q)	0.00671	0.00634	0.01788
	(!CLK * D * SCD * !SCE * !Q)	0.01496	0.01454	0.02649
	(!CLK * D * SCD * !SCE * !Q)	0.00652	0.00613	0.01805
	(!CLK * D * !SCD * SCE * !Q)	0.00275	0.00275	0.00274
	(!CLK * D * !SCD * SCE * !Q)	-0.00372	-0.00371	-0.00371
	(!CLK * D * !SCD * !SCE * !Q)	0.01461	0.01425	0.02626
	(!CLK * D * !SCD * !SCE * !Q)	0.00654	0.00618	0.01819
	(!CLK * !D * SCD * SCE * !Q)	0.01635	0.01601	0.02722
	(!CLK * !D * SCD * SCE * !Q)	0.00737	0.00702	0.01825
	(!CLK * !D * SCD * !SCE * !Q)	0.00269	0.00270	0.00269
	(!CLK * !D * SCD * !SCE * !Q)	-0.00376	-0.00376	-0.00375
	(!CLK * !D * !SCD * SCE * !Q)	0.00275	0.00275	0.00274
	(!CLK * !D * !SCD * SCE * !Q)	-0.00372	-0.00372	-0.00371
	(!CLK * !D * !SCD * !SCE * !Q)	0.00270	0.00271	0.00270
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00376	-0.00376	-0.00375

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00854	0.00843	0.01813
	(CLK * D * SCD * SCE * !Q)	-0.00002	-0.00016	0.00955
	(CLK * D * SCD * !SCE * !Q)	0.00805	0.00793	0.01795
	(CLK * D * SCD * !SCE * !Q)	-0.00020	-0.00035	0.00968
	(CLK * D * !SCD * SCE * !Q)	0.00273	0.00273	0.00273
	(CLK * D * !SCD * SCE * !Q)	-0.00368	-0.00367	-0.00366
	(CLK * D * !SCD * !SCE * !Q)	0.00771	0.00762	0.01779
	(CLK * D * !SCD * !SCE * !Q)	-0.00019	-0.00030	0.00990
	(CLK * !D * SCD * SCE * !Q)	0.00943	0.00930	0.01866
	(CLK * !D * SCD * SCE * !Q)	0.00062	0.00047	0.00987
	(CLK * !D * SCD * !SCE * !Q)	0.00267	0.00270	0.00267
	(CLK * !D * SCD * !SCE * !Q)	-0.00372	-0.00373	-0.00370
	(CLK * !D * !SCD * SCE * !Q)	0.00273	0.00273	0.00272
	(CLK * !D * !SCD * SCE * !Q)	-0.00368	-0.00367	-0.00367
	(CLK * !D * !SCD * !SCE * !Q)	0.00268	0.00270	0.00268
	(CLK * !D * !SCD * !SCE * !Q)	-0.00372	-0.00374	-0.00371
	(!CLK * D * SCD * SCE * !Q)	0.01543	0.01505	0.02668
	(!CLK * D * SCD * SCE * !Q)	0.00671	0.00636	0.01795
	(!CLK * D * SCD * !SCE * !Q)	0.01494	0.01455	0.02651
	(!CLK * D * SCD * !SCE * !Q)	0.00653	0.00613	0.01808
	(!CLK * D * !SCD * SCE * !Q)	0.00272	0.00272	0.00271
	(!CLK * D * !SCD * SCE * !Q)	-0.00369	-0.00369	-0.00368
	(!CLK * D * !SCD * !SCE * !Q)	0.01459	0.01423	0.02621
	(!CLK * D * !SCD * !SCE * !Q)	0.00654	0.00619	0.01816
	(!CLK * !D * SCD * SCE * !Q)	0.01632	0.01599	0.02724
	(!CLK * !D * SCD * SCE * !Q)	0.00736	0.00703	0.01828
	(!CLK * !D * SCD * !SCE * !Q)	0.00266	0.00267	0.00266
	(!CLK * !D * SCD * !SCE * !Q)	-0.00373	-0.00373	-0.00372
	(!CLK * !D * !SCD * SCE * !Q)	0.00272	0.00272	0.00271
	(!CLK * !D * !SCD * SCE * !Q)	-0.00369	-0.00369	-0.00368
	(!CLK * !D * !SCD * !SCE * !Q)	0.00267	0.00267	0.00266
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00374	-0.00373	-0.00372

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)**	0.00115	0.00141	0.01219
	(CLK * D * SCD * SCE * !Q)	0.00979	0.01006	0.02080
	(CLK * D * SCD * !SCE * !Q)	0.00017	0.00042	0.01120
	(CLK * D * SCD * !SCE * !Q)	0.00850	0.00876	0.01950
	(CLK * D * !SCD * SCE * !Q)	-0.00252	-0.00259	-0.00261
	(CLK * D * !SCD * SCE * !Q)	0.00388	0.00385	0.00383
	(CLK * D * !SCD * !SCE * !Q)	-0.00010	0.00017	0.01110
	(CLK * D * !SCD * !SCE * !Q)	0.00785	0.00815	0.01905
	(CLK * !D * SCD * SCE * !Q)	0.00076	0.00105	0.01198
	(CLK * !D * SCD * SCE * !Q)	0.00964	0.00993	0.02083
	(CLK * !D * SCD * !SCE * !Q)	-0.00250	-0.00260	-0.00262
	(CLK * !D * SCD * !SCE * !Q)	0.00389	0.00384	0.00382
	(CLK * !D * !SCD * SCE * !Q)	-0.00252	-0.00260	-0.00261
	(CLK * !D * !SCD * SCE * !Q)	0.00388	0.00385	0.00383
	(CLK * !D * !SCD * !SCE * !Q)	-0.00251	-0.00261	-0.00262
	(CLK * !D * !SCD * !SCE * !Q)	0.00390	0.00384	0.00382
	(!CLK * D * SCD * SCE * !Q)	0.00711	0.00719	0.02098
	(!CLK * D * SCD * SCE * !Q)	0.01589	0.01601	0.02973
	(!CLK * D * SCD * !SCE * !Q)	0.00613	0.00618	0.01975
	(!CLK * D * SCD * !SCE * !Q)	0.01460	0.01468	0.02822
	(!CLK * D * !SCD * SCE * !Q)	-0.00254	-0.00261	-0.00262
	(!CLK * D * !SCD * SCE * !Q)	0.00385	0.00383	0.00382
	(!CLK * D * !SCD * !SCE * !Q)	0.00586	0.00593	0.01964
	(!CLK * D * !SCD * !SCE * !Q)	0.01395	0.01406	0.02775
	(!CLK * !D * SCD * SCE * !Q)	0.00673	0.00683	0.02092
	(!CLK * !D * SCD * SCE * !Q)	0.01575	0.01589	0.02994
	(!CLK * !D * SCD * !SCE * !Q)	-0.00252	-0.00261	-0.00263
	(!CLK * !D * SCD * !SCE * !Q)	0.00386	0.00382	0.00380
	(!CLK * !D * !SCD * SCE * !Q)	-0.00254	-0.00261	-0.00262
	(!CLK * !D * !SCD * SCE * !Q)	0.00385	0.00383	0.00382
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00262	-0.00264
	(!CLK * !D * !SCD * !SCE * !Q)	0.00387	0.00383	0.00380

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00106	0.00134	0.01221
	(CLK * D * SCD * SCE * !Q)	0.00968	0.00995	0.02080
	(CLK * D * SCD * !SCE * !Q)	0.00016	0.00042	0.01130
	(CLK * D * SCD * !SCE * !Q)	0.00846	0.00873	0.01957
	(CLK * D * !SCD * SCE * !Q)	-0.00252	-0.00260	-0.00260
	(CLK * D * !SCD * SCE * !Q)	0.00391	0.00389	0.00386
	(CLK * D * !SCD * !SCE * !Q)	-0.00011	0.00018	0.01120
	(CLK * D * !SCD * !SCE * !Q)	0.00781	0.00813	0.01912
	(CLK * !D * SCD * SCE * !Q)	0.00068	0.00097	0.01200
	(CLK * !D * SCD * SCE * !Q)	0.00952	0.00985	0.02083
	(CLK * !D * SCD * !SCE * !Q)	-0.00249	-0.00260	-0.00261
	(CLK * !D * SCD * !SCE * !Q)	0.00392	0.00388	0.00385
	(CLK * !D * !SCD * SCE * !Q)	-0.00252	-0.00260	-0.00260
	(CLK * !D * !SCD * SCE * !Q)	0.00391	0.00389	0.00386
	(CLK * !D * !SCD * !SCE * !Q)	-0.00251	-0.00261	-0.00262
	(CLK * !D * !SCD * !SCE * !Q)	0.00393	0.00388	0.00385
	(!CLK * D * SCD * SCE * !Q)	0.00758	0.00771	0.02157
	(!CLK * D * SCD * SCE * !Q)	0.01633	0.01648	0.03031
	(!CLK * D * SCD * !SCE * !Q)	0.00667	0.00677	0.02039
	(!CLK * D * SCD * !SCE * !Q)	0.01511	0.01524	0.02882
	(!CLK * D * !SCD * SCE * !Q)	-0.00252	-0.00259	-0.00260
	(!CLK * D * !SCD * SCE * !Q)	0.00391	0.00389	0.00387
	(!CLK * D * !SCD * !SCE * !Q)	0.00640	0.00644	0.02029
	(!CLK * D * !SCD * !SCE * !Q)	0.01446	0.01453	0.02834
	(!CLK * !D * SCD * SCE * !Q)	0.00720	0.00728	0.02154
	(!CLK * !D * SCD * SCE * !Q)	0.01618	0.01628	0.03052
	(!CLK * !D * SCD * !SCE * !Q)	-0.00250	-0.00260	-0.00261
	(!CLK * !D * SCD * !SCE * !Q)	0.00391	0.00388	0.00385
	(!CLK * !D * !SCD * SCE * !Q)	-0.00252	-0.00259	-0.00260
	(!CLK * !D * !SCD * SCE * !Q)	0.00391	0.00389	0.00387
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00251	-0.00260	-0.00261
	(!CLK * !D * !SCD * !SCE * !Q)	0.00392	0.00389	0.00385

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00109	0.00137	0.01223
	(CLK * D * SCD * SCE * !Q)	0.00968	0.00998	0.02079
	(CLK * D * SCD * !SCE * !Q)	0.00019	0.00046	0.01132
	(CLK * D * SCD * !SCE * !Q)	0.00846	0.00874	0.01955
	(CLK * D * !SCD * SCE * !Q)	-0.00246	-0.00253	-0.00255
	(CLK * D * !SCD * SCE * !Q)	0.00390	0.00387	0.00386
	(CLK * D * !SCD * !SCE * !Q)	-0.00008	0.00021	0.01121
	(CLK * D * !SCD * !SCE * !Q)	0.00781	0.00815	0.01911
	(CLK * !D * SCD * SCE * !Q)	0.00065	0.00095	0.01197
	(CLK * !D * SCD * SCE * !Q)	0.00946	0.00980	0.02077
	(CLK * !D * SCD * !SCE * !Q)	-0.00244	-0.00254	-0.00256
	(CLK * !D * SCD * !SCE * !Q)	0.00391	0.00385	0.00384
	(CLK * !D * !SCD * SCE * !Q)	-0.00246	-0.00254	-0.00255
	(CLK * !D * !SCD * SCE * !Q)	0.00390	0.00387	0.00386
	(CLK * !D * !SCD * !SCE * !Q)	-0.00245	-0.00254	-0.00256
	(CLK * !D * !SCD * !SCE * !Q)	0.00391	0.00385	0.00384
	(!CLK * D * SCD * SCE * !Q)	0.00733	0.00743	0.02142
	(!CLK * D * SCD * SCE * !Q)	0.01605	0.01616	0.03013
	(!CLK * D * SCD * !SCE * !Q)	0.00641	0.00647	0.02023
	(!CLK * D * SCD * !SCE * !Q)	0.01483	0.01493	0.02862
	(!CLK * D * !SCD * SCE * !Q)	-0.00246	-0.00253	-0.00254
	(!CLK * D * !SCD * SCE * !Q)	0.00390	0.00388	0.00387
	(!CLK * D * !SCD * !SCE * !Q)	0.00614	0.00623	0.02012
	(!CLK * D * !SCD * !SCE * !Q)	0.01418	0.01429	0.02816
	(!CLK * !D * SCD * SCE * !Q)	0.00688	0.00701	0.02135
	(!CLK * !D * SCD * SCE * !Q)	0.01584	0.01599	0.03031
	(!CLK * !D * SCD * !SCE * !Q)	-0.00244	-0.00253	-0.00255
	(!CLK * !D * SCD * !SCE * !Q)	0.00391	0.00386	0.00385
	(!CLK * !D * !SCD * SCE * !Q)	-0.00246	-0.00253	-0.00254
	(!CLK * !D * !SCD * SCE * !Q)	0.00390	0.00388	0.00387
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00245	-0.00254	-0.00255
	(!CLK * !D * !SCD * !SCE * !Q)	0.00391	0.00387	0.00385

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)	0.01278	0.01311	0.03225
	(D * RESET_B * SCD * SCE * Q)	0.00873	0.00904	0.02820
	(D * RESET_B * SCD * !SCE * Q)	0.01276	0.01309	0.03223
	(D * RESET_B * SCD * !SCE * Q)	0.00871	0.00902	0.02818
	(D * RESET_B * !SCD * !SCE * Q)	0.01278	0.01312	0.03225
	(D * RESET_B * !SCD * !SCE * Q)	0.00874	0.00904	0.02820
	(D * !SCD * SCE * !Q)	0.01292	0.01325	0.03238
	(D * !SCD * SCE * !Q)	0.00887	0.00918	0.02833
	(D * !RESET_B * SCD * SCE * !Q)	0.01292	0.01326	0.03238
	(D * !RESET_B * SCD * SCE * !Q)	0.00887	0.00919	0.02833
	(D * !RESET_B * SCD * !SCE * !Q)	0.01289	0.01323	0.03236
	(D * !RESET_B * SCD * !SCE * !Q)	0.00885	0.00916	0.02830
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01289	0.01323	0.03236
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00885	0.00916	0.02830
	(!D * RESET_B * SCD * SCE * Q)	0.01279	0.01312	0.03226
	(!D * RESET_B * SCD * SCE * Q)	0.00874	0.00905	0.02821
	(!D * !SCE * !Q)	0.01289	0.01323	0.03236
	(!D * !SCE * !Q)	0.00885	0.00915	0.02830
	(!D * !SCD * SCE * !Q)	0.01292	0.01325	0.03238
	(!D * !SCD * SCE * !Q)	0.00887	0.00918	0.02833
	(!D * !RESET_B * SCD * SCE * !Q)	0.01292	0.01326	0.03238
	(!D * !RESET_B * SCD * SCE * !Q)	0.00887	0.00919	0.02833

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01275	0.01308	0.03221
	(D * RESET_B * SCD * SCE * Q)	0.00867	0.00898	0.02813
	(D * RESET_B * SCD * !SCE * Q)	0.01273	0.01306	0.03219
	(D * RESET_B * SCD * !SCE * Q)	0.00865	0.00896	0.02810
	(D * RESET_B * !SCD * !SCE * Q)	0.01275	0.01308	0.03221
	(D * RESET_B * !SCD * !SCE * Q)	0.00868	0.00898	0.02813
	(D * !SCD * SCE * !Q)	0.01298	0.01330	0.03244
	(D * !SCD * SCE * !Q)	0.00890	0.00920	0.02835
	(D * !RESET_B * SCD * SCE * !Q)	0.01298	0.01331	0.03244
	(D * !RESET_B * SCD * SCE * !Q)	0.00890	0.00921	0.02836
	(D * !RESET_B * SCD * !SCE * !Q)	0.01295	0.01329	0.03241
	(D * !RESET_B * SCD * !SCE * !Q)	0.00887	0.00919	0.02833
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01295	0.01329	0.03241
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00887	0.00919	0.02833
	(!D * RESET_B * SCD * SCE * Q)	0.01276	0.01309	0.03223
	(!D * RESET_B * SCD * SCE * Q)	0.00869	0.00899	0.02815
	(!D * !SCE * !Q)	0.01295	0.01328	0.03241
	(!D * !SCE * !Q)	0.00887	0.00918	0.02833
	(!D * !SCD * SCE * !Q)	0.01298	0.01330	0.03245
	(!D * !SCD * SCE * !Q)	0.00890	0.00920	0.02837
	(!D * !RESET_B * SCD * SCE * !Q)	0.01298	0.01331	0.03244
	(!D * !RESET_B * SCD * SCE * !Q)	0.00890	0.00921	0.02836

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01262	0.01296	0.03212
	(D * RESET_B * SCD * SCE * Q)	0.00855	0.00886	0.02804
	(D * RESET_B * SCD * !SCE * Q)	0.01260	0.01294	0.03210
	(D * RESET_B * SCD * !SCE * Q)	0.00853	0.00884	0.02802
	(D * RESET_B * !SCD * !SCE * Q)	0.01262	0.01296	0.03212
	(D * RESET_B * !SCD * !SCE * Q)	0.00855	0.00887	0.02805
	(D * !SCD * SCE * !Q)	0.01278	0.01312	0.03227
	(D * !SCD * SCE * !Q)	0.00871	0.00902	0.02819
	(D * !RESET_B * SCD * SCE * !Q)	0.01278	0.01312	0.03227
	(D * !RESET_B * SCD * SCE * !Q)	0.00871	0.00903	0.02819
	(D * !RESET_B * SCD * !SCE * !Q)	0.01275	0.01310	0.03225
	(D * !RESET_B * SCD * !SCE * !Q)	0.00869	0.00900	0.02817
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01275	0.01310	0.03225
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00869	0.00900	0.02817
	(!D * RESET_B * SCD * SCE * Q)	0.01263	0.01297	0.03213
	(!D * RESET_B * SCD * SCE * Q)	0.00856	0.00887	0.02805
	(!D * !SCE * !Q)	0.01275	0.01309	0.03225
	(!D * !SCE * !Q)	0.00868	0.00899	0.02817
	(!D * !SCD * SCE * !Q)	0.01278	0.01312	0.03227
	(!D * !SCD * SCE * !Q)	0.00871	0.00902	0.02819
	(!D * !RESET_B * SCD * SCE * !Q)	0.01278	0.01313	0.03228
	(!D * !RESET_B * SCD * SCE * !Q)	0.00871	0.00903	0.02821

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)**	0.00664	0.00757	0.02723
	(D * RESET_B * SCD * SCE * Q)	0.01069	0.01163	0.03129
	(D * RESET_B * SCD * SCE * !Q)	0.01228	0.01315	0.03332
	(D * RESET_B * SCD * SCE * !Q)	0.01617	0.01704	0.03722
	(D * RESET_B * SCD * !SCE * Q)	0.00662	0.00756	0.02721
	(D * RESET_B * SCD * !SCE * Q)	0.01068	0.01161	0.03127
	(D * RESET_B * SCD * !SCE * !Q)	0.01223	0.01310	0.03327
	(D * RESET_B * SCD * !SCE * !Q)	0.01612	0.01700	0.03717
	(D * RESET_B * !SCD * SCE * Q)	0.01316	0.01419	0.03411
	(D * RESET_B * !SCD * SCE * Q)	0.01740	0.01842	0.03836
	(D * RESET_B * !SCD * !SCE * Q)	0.00665	0.00758	0.02723
	(D * RESET_B * !SCD * !SCE * Q)	0.01070	0.01164	0.03129
	(D * RESET_B * !SCD * !SCE * !Q)	0.01225	0.01312	0.03329
	(D * RESET_B * !SCD * !SCE * !Q)	0.01614	0.01702	0.03720
	(D * !SCD * SCE * !Q)	0.00617	0.00710	0.02682
	(D * !SCD * SCE * !Q)	0.01023	0.01116	0.03088
	(D * !RESET_B * SCD * SCE * !Q)	0.00618	0.00711	0.02681
	(D * !RESET_B * SCD * SCE * !Q)	0.01023	0.01116	0.03087
	(D * !RESET_B * SCD * !SCE * !Q)	0.00615	0.00708	0.02679
	(D * !RESET_B * SCD * !SCE * !Q)	0.01020	0.01114	0.03085
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00615	0.00708	0.02679
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01020	0.01114	0.03085
	(!D * RESET_B * SCD * SCE * Q)	0.00665	0.00759	0.02724
	(!D * RESET_B * SCD * SCE * Q)	0.01071	0.01165	0.03130
	(!D * RESET_B * SCD * SCE * !Q)	0.01232	0.01319	0.03336
	(!D * RESET_B * SCD * SCE * !Q)	0.01620	0.01707	0.03724
	(!D * RESET_B * !SCE * Q)	0.01309	0.01412	0.03402
	(!D * RESET_B * !SCE * Q)	0.01731	0.01832	0.03824
	(!D * RESET_B * !SCD * SCE * Q)	0.01314	0.01418	0.03411
	(!D * RESET_B * !SCD * SCE * Q)	0.01737	0.01840	0.03835
	(!D * !SCE * !Q)	0.00615	0.00707	0.02680
	(!D * !SCE * !Q)	0.01020	0.01113	0.03085
	(!D * !SCD * SCE * !Q)	0.00617	0.00710	0.02682
	(!D * !SCD * SCE * !Q)	0.01023	0.01116	0.03088
	(!D * !RESET_B * SCD * SCE * !Q)	0.00618	0.00711	0.02681
	(!D * !RESET_B * SCD * SCE * !Q)	0.01023	0.01116	0.03087

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00665	0.00758	0.02725
	(D * RESET_B * SCD * SCE * Q)	0.01073	0.01167	0.03133
	(D * RESET_B * SCD * SCE * !Q)	0.01259	0.01346	0.03363
	(D * RESET_B * SCD * SCE * !Q)	0.01652	0.01739	0.03756
	(D * RESET_B * SCD * !SCE * Q)	0.00663	0.00757	0.02723
	(D * RESET_B * SCD * !SCE * Q)	0.01071	0.01165	0.03132
	(D * RESET_B * SCD * !SCE * !Q)	0.01254	0.01341	0.03358
	(D * RESET_B * SCD * !SCE * !Q)	0.01647	0.01734	0.03752
	(D * RESET_B * !SCD * SCE * Q)	0.01376	0.01477	0.03473
	(D * RESET_B * !SCD * SCE * Q)	0.01801	0.01902	0.03899
	(D * RESET_B * !SCD * !SCE * Q)	0.00665	0.00759	0.02725
	(D * RESET_B * !SCD * !SCE * Q)	0.01073	0.01167	0.03134
	(D * RESET_B * !SCD * !SCE * !Q)	0.01256	0.01343	0.03360
	(D * RESET_B * !SCD * !SCE * !Q)	0.01649	0.01736	0.03754
	(D * !SCD * SCE * !Q)	0.00620	0.00713	0.02685
	(D * !SCD * SCE * !Q)	0.01028	0.01121	0.03094
	(D * !RESET_B * SCD * SCE * !Q)	0.00621	0.00714	0.02685
	(D * !RESET_B * SCD * SCE * !Q)	0.01029	0.01122	0.03093
	(D * !RESET_B * SCD * !SCE * !Q)	0.00618	0.00711	0.02682
	(D * !RESET_B * SCD * !SCE * !Q)	0.01026	0.01119	0.03091
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00618	0.00711	0.02682
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01026	0.01119	0.03091
	(!D * RESET_B * SCD * SCE * Q)	0.00666	0.00760	0.02726
	(!D * RESET_B * SCD * SCE * Q)	0.01074	0.01168	0.03135
	(!D * RESET_B * SCD * SCE * !Q)	0.01263	0.01350	0.03368
	(!D * RESET_B * SCD * SCE * !Q)	0.01655	0.01742	0.03760
	(!D * RESET_B * !SCE * Q)	0.01368	0.01470	0.03466
	(!D * RESET_B * !SCE * Q)	0.01791	0.01892	0.03889
	(!D * RESET_B * !SCD * SCE * Q)	0.01374	0.01478	0.03470
	(!D * RESET_B * !SCD * SCE * Q)	0.01799	0.01902	0.03895
	(!D * !SCE * !Q)	0.00618	0.00710	0.02683
	(!D * !SCE * !Q)	0.01026	0.01119	0.03091
	(!D * !SCD * SCE * !Q)	0.00620	0.00713	0.02685
	(!D * !SCD * SCE * !Q)	0.01028	0.01121	0.03094
	(!D * !RESET_B * SCD * SCE * !Q)	0.00621	0.00714	0.02685
	(!D * !RESET_B * SCD * SCE * !Q)	0.01029	0.01122	0.03093

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00665	0.00759	0.02726
	(D * RESET_B * SCD * SCE * Q)	0.01072	0.01167	0.03134
	(D * RESET_B * SCD * SCE * !Q)	0.01248	0.01336	0.03355
	(D * RESET_B * SCD * SCE * !Q)	0.01640	0.01727	0.03748
	(D * RESET_B * SCD * !SCE * Q)	0.00663	0.00757	0.02724
	(D * RESET_B * SCD * !SCE * Q)	0.01071	0.01165	0.03132
	(D * RESET_B * SCD * !SCE * !Q)	0.01243	0.01331	0.03351
	(D * RESET_B * SCD * !SCE * !Q)	0.01635	0.01723	0.03742
	(D * RESET_B * !SCD * SCE * Q)	0.01346	0.01448	0.03444
	(D * RESET_B * !SCD * SCE * Q)	0.01773	0.01873	0.03870
	(D * RESET_B * !SCD * !SCE * Q)	0.00665	0.00759	0.02726
	(D * RESET_B * !SCD * !SCE * Q)	0.01073	0.01168	0.03135
	(D * RESET_B * !SCD * !SCE * !Q)	0.01245	0.01333	0.03353
	(D * RESET_B * !SCD * !SCE * !Q)	0.01637	0.01725	0.03744
	(D * !SCD * SCE * !Q)	0.00614	0.00707	0.02682
	(D * !SCD * SCE * !Q)	0.01022	0.01115	0.03090
	(D * !RESET_B * SCD * SCE * !Q)	0.00615	0.00708	0.02681
	(D * !RESET_B * SCD * SCE * !Q)	0.01022	0.01116	0.03089
	(D * !RESET_B * SCD * !SCE * !Q)	0.00612	0.00705	0.02678
	(D * !RESET_B * SCD * !SCE * !Q)	0.01020	0.01114	0.03086
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00612	0.00705	0.02678
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01020	0.01114	0.03086
	(!D * RESET_B * SCD * SCE * Q)	0.00666	0.00760	0.02727
	(!D * RESET_B * SCD * SCE * Q)	0.01074	0.01168	0.03135
	(!D * RESET_B * SCD * SCE * !Q)	0.01252	0.01340	0.03360
	(!D * RESET_B * SCD * SCE * !Q)	0.01642	0.01731	0.03751
	(!D * RESET_B * !SCE * Q)	0.01339	0.01440	0.03437
	(!D * RESET_B * !SCE * Q)	0.01762	0.01863	0.03861
	(!D * RESET_B * !SCD * SCE * Q)	0.01344	0.01448	0.03442
	(!D * RESET_B * !SCD * SCE * Q)	0.01769	0.01872	0.03867
	(!D * !SCE * !Q)	0.00612	0.00705	0.02679
	(!D * !SCE * !Q)	0.01019	0.01113	0.03087
	(!D * !SCD * SCE * !Q)	0.00614	0.00707	0.02681
	(!D * !SCD * SCE * !Q)	0.01022	0.01115	0.03089
	(!D * !RESET_B * SCD * SCE * !Q)	0.00615	0.00708	0.02681
	(!D * !RESET_B * SCD * SCE * !Q)	0.01022	0.01116	0.03089

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00194	0.00213	0.00410	0.00342	0.00313	0.80043	0.75944
sky130_fd_sc_hs__sdfsbp_2	0.00200	0.00207	0.00430	0.00353	0.00317	1.60395	1.60836

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	9.55662	13.53820
sky130_fd_sc_hs__sdfsbp_2	0.00000	10.61490	17.51230

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)	0.43009	1.10877	7.68722
	SET_B->Q (FR)	0.44343	1.32560	9.34816
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.46946	1.03923	7.71150
	SET_B->Q (FR)	0.60943	1.36356	9.67496

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.39188	0.82001	3.94723
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.42400	0.82565	4.11587

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)	0.32537	1.04827	7.55932
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.31746	0.93128	7.60842

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)	0.34168	0.86335	3.90406
	SET_B->Q_N (FF)	0.34665	1.08639	5.64949
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.33927	0.82442	4.22795
	SET_B->Q_N (FF)	0.43494	1.17597	6.30189

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)	-0.13989	-0.25321	-1.08558
	setup	CLK (R)	0.24592	0.31595	1.12266
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17791	-0.28918	-1.17627
	setup	CLK (R)	0.31414	0.37171	1.22959

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)	-0.15000	-0.25422	-1.23893
	setup	CLK (R)	0.45083	0.48364	1.57385
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18392	-0.28178	-1.26665
	setup	CLK (R)	0.54196	0.56288	1.69723

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)	-0.13989	-0.25321	-1.08558
	setup	CLK (R)	0.24592	0.31595	1.12266
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17791	-0.28918	-1.17627
	setup	CLK (R)	0.31414	0.37171	1.22959

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)	-0.15000	-0.25422	-1.23893
	setup	CLK (R)	0.45083	0.48364	1.57385
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18392	-0.28178	-1.26665
	setup	CLK (R)	0.54196	0.56288	1.69723

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)	-0.17212	-0.26968	-1.11137
	setup	CLK (R)	0.28991	0.34139	1.16508
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20627	-0.29977	-1.16852
	setup	CLK (R)	0.35445	0.38833	1.23530

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)	-0.19249	-0.30048	-1.36520
	setup	CLK (R)	0.54385	0.55563	1.66122
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.23058	-0.33594	-1.37772
	setup	CLK (R)	0.63852	0.64169	1.75775

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)	-0.17212	-0.26968	-1.11137
	hold	CLK (R)	-0.18069	-0.28007	-1.13925
	setup	CLK (R)	0.28565	0.33088	1.14458
	setup	CLK (R)	0.28991	0.34139	1.16508
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20627	-0.29977	-1.16852
	hold	CLK (R)	-0.21559	-0.30959	-1.19564
	setup	CLK (R)	0.34686	0.38333	1.21392
	setup	CLK (R)	0.35445	0.38833	1.23530

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)	-0.20961	-0.31475	-1.36520
	hold	CLK (R)	-0.19249	-0.30048	-1.37073
	setup	CLK (R)	0.53815	0.55000	1.64000
	setup	CLK (R)	0.54385	0.55563	1.66122
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.24344	-0.34302	-1.37772
	hold	CLK (R)	-0.23058	-0.33594	-1.39172
	setup	CLK (R)	0.63255	0.63260	1.73895
	setup	CLK (R)	0.63852	0.64169	1.75775

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)	-0.15685	-0.27559	-0.39097
	setup	CLK (R)	0.53227	0.51483	1.22930
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19527	-0.30264	-0.34686
	setup	CLK (R)	0.62451	0.59735	1.32603

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)	-0.17078	-0.25632	-1.12863
	setup	CLK (R)	0.47362	0.48833	1.46890
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20810	-0.28126	-1.10742
	setup	CLK (R)	0.56525	0.56638	1.56744

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)	-0.20421	-0.27559	-0.39097
	hold	CLK (R)	-0.15685	-0.27607	-1.18833
	setup	CLK (R)	0.53227	0.51483	0.59587
	setup	CLK (R)	0.26815	0.34002	1.22930
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.23788	-0.30264	-0.34686
	hold	CLK (R)	-0.19527	-0.30961	-1.27515
	setup	CLK (R)	0.62451	0.59735	0.61059
	setup	CLK (R)	0.33219	0.39233	1.32603

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)	-0.23770	-0.34902	-1.12863
	hold	CLK (R)	-0.17078	-0.25632	-1.16443
	setup	CLK (R)	0.34484	0.40714	1.14371
	setup	CLK (R)	0.47362	0.48833	1.46890
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26950	-0.37557	-1.10742
	hold	CLK (R)	-0.20810	-0.28126	-1.17214
	setup	CLK (R)	0.40633	0.45672	1.13309
	setup	CLK (R)	0.56525	0.56638	1.56744

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)	-0.13602	-0.20084	-0.75980
	removal	CLK (R)	0.17577	0.23297	0.79619
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.19256	-0.27634	-0.96653
	removal	CLK (R)	0.22337	0.30334	1.16996

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)	-0.13602	-0.20086	-0.76092
	recovery	CLK (R)	-0.13602	-0.20084	-0.76094
	recovery	CLK (R)	-0.13609	-0.20139	-0.75980
	removal	CLK (R)	0.17577	0.23297	0.79619
	removal	CLK (R)	0.17577	0.23297	0.79619
	removal	CLK (R)	0.17577	0.23297	0.79517
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.19256	-0.27634	-0.96653
	recovery	CLK (R)	-0.19256	-0.27635	-0.96653
	recovery	CLK (R)	-0.19295	-0.27890	-0.96662
	removal	CLK (R)	0.22301	0.30245	1.16996
	removal	CLK (R)	0.22301	0.30245	1.16996
	removal	CLK (R)	0.22337	0.30334	1.16777

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 ()	0.33706	0.82153	16.50020
	min_pulse_width	SET_B ()	0.34316	0.82153	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.38581	0.82153	16.50020
	min_pulse_width	SET_B ()	0.47664	0.92559	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 ()	0.26089	0.82153	16.50020
	min_pulse_width	CLK ()	0.15729	0.82153	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.27308	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	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 ()	0.28831	0.82153	16.50020
	min_pulse_width	CLK ()	0.47722	0.82153	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.37972	0.82153	16.50020
	min_pulse_width	CLK ()	0.60215	0.82153	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	0.01372	0.01402	0.02449
	CLK	0.01180	0.01209	0.02221
	SET_B	0.01278	0.01294	0.01779
	SET_B	0.01478	0.01493	0.01941
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01923	0.01962	0.03070
	CLK	0.01724	0.01764	0.02801
	SET_B	0.01827	0.01840	0.02344
	SET_B	0.02032	0.02046	0.02485

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01419	0.01461	0.02451
	CLK	0.01216	0.01258	0.02230
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01891	0.01963	0.02973
	CLK	0.01691	0.01762	0.02751

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01425	0.01468	0.02488
	CLK	0.01222	0.01264	0.02263
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01900	0.01972	0.03063
	CLK	0.01699	0.01771	0.02790

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01362	0.01392	0.02380
	CLK	0.01170	0.01199	0.02185
	SET_B	0.01269	0.01285	0.01727
	SET_B	0.01468	0.01483	0.01916
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01912	0.01951	0.02983
	CLK	0.01713	0.01753	0.02763
	SET_B	0.01817	0.01830	0.02298
	SET_B	0.02023	0.02036	0.02459

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00110	0.00111	0.00110
	(CLK * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !SCE)	0.00370	0.00392	0.01375
	(CLK * !SCE)	0.00098	0.00121	0.01105
	(CLK * !SCD * SCE)	0.00063	0.00063	0.00061
	(CLK * !SCD * SCE)	-0.00112	-0.00112	-0.00114
	(!CLK * SCD * SCE)	0.00109	0.00110	0.00110
	(!CLK * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00986	0.00998	0.01878
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00685	0.00698	0.01577
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00795	0.00808	0.01660
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00485	0.00499	0.01352
	(!CLK * !SCD * SCE)	0.00063	0.00063	0.00061
	(!CLK * !SCD * SCE)	-0.00112	-0.00112	-0.00114

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00117	0.00119	0.00118
	(CLK * SCD * SCE)	-0.00038	-0.00039	-0.00039
	(CLK * !SCE)	0.00386	0.00407	0.01388
	(CLK * !SCE)	0.00111	0.00131	0.01112
	(CLK * !SCD * SCE)	0.00067	0.00067	0.00065
	(CLK * !SCD * SCE)	-0.00112	-0.00113	-0.00115
	(!CLK * SCD * SCE)	0.00116	0.00117	0.00116
	(!CLK * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01114	0.01127	0.01979
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00821	0.00835	0.01687
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00928	0.00941	0.01758
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00625	0.00637	0.01455
	(!CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00113	-0.00114	-0.00115

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00084	-0.00085	-0.00089
	(CLK * SCD * SCE)	0.00067	0.00067	0.00064
	(CLK * !SCE)	0.00085	0.00135	0.01136
	(CLK * !SCE)	0.00356	0.00406	0.01407
	(CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCD * SCE)	0.00130	0.00132	0.00130
	(!CLK * SCD * SCE)	-0.00085	-0.00086	-0.00089
	(!CLK * SCD * SCE)	0.00067	0.00067	0.00064
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00656	0.00688	0.01660
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00957	0.00989	0.01961
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00392	0.00423	0.01334
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00703	0.00732	0.01644
	(!CLK * !SCD * SCE)	-0.00043	-0.00045	-0.00044
	(!CLK * !SCD * SCE)	0.00130	0.00132	0.00130

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00090	-0.00091	-0.00094
	(CLK * SCD * SCE)	0.00066	0.00066	0.00063
	(CLK * !SCE)	0.00103	0.00149	0.01150
	(CLK * !SCE)	0.00379	0.00426	0.01426
	(CLK * !SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCD * SCE)	0.00133	0.00134	0.00133
	(!CLK * SCD * SCE)	-0.00091	-0.00092	-0.00096
	(!CLK * SCD * SCE)	0.00065	0.00065	0.00062
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00847	0.00874	0.01828
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01139	0.01166	0.02121
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00565	0.00591	0.01478
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00868	0.00894	0.01781
	(!CLK * !SCD * SCE)	-0.00046	-0.00048	-0.00046
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00528	0.00530	0.01332
	(CLK * D * SCE)	0.00154	0.00155	0.00959
	(CLK * !D * SCE)	0.00616	0.00615	0.01388
	(CLK * !D * SCE)	0.00218	0.00217	0.00990
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01130	0.01130	0.01870
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00727	0.00726	0.01466
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00939	0.00941	0.01660
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00528	0.00528	0.01248
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01219	0.01218	0.01933
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00791	0.00789	0.01505
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01028	0.01027	0.01723
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00592	0.00590	0.01287
	!SCE	0.00141	0.00124	0.00120
	!SCE	-0.00086	-0.00103	-0.00105

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00531	0.00534	0.01335
	(CLK * D * SCE)	0.00163	0.00166	0.00966
	(CLK * !D * SCE)	0.00619	0.00621	0.01392
	(CLK * !D * SCE)	0.00227	0.00226	0.00999
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01248	0.01251	0.01970
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00863	0.00866	0.01585
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01062	0.01066	0.01762
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00667	0.00670	0.01367
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01336	0.01338	0.02035
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00927	0.00929	0.01626
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01150	0.01153	0.01827
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00731	0.00732	0.01408
	!SCE	0.00135	0.00118	0.00114
	!SCE	-0.00086	-0.00102	-0.00105

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00196	0.00199	0.01015
	(CLK * D * SCE)	0.00572	0.00574	0.01388
	(CLK * !D * SCE)	0.00158	0.00163	0.00995
	(CLK * !D * SCE)	0.00557	0.00563	0.01392
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00778	0.00778	0.01569
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01183	0.01183	0.01972
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00514	0.00512	0.01255
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00928	0.00927	0.01667
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00742	0.00745	0.01554
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01171	0.01172	0.01981
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00476	0.00475	0.01231
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00914	0.00913	0.01667
	!SCE	-0.00097	-0.00098	-0.00098
	!SCE	0.00128	0.00129	0.00128

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00219	0.00223	0.01035
	(CLK * D * SCE)	0.00589	0.00593	0.01403
	(CLK * !D * SCE)	0.00180	0.00187	0.01014
	(CLK * !D * SCE)	0.00574	0.00581	0.01406
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00973	0.00973	0.01747
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01359	0.01360	0.02131
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00688	0.00688	0.01407
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01085	0.01084	0.01801
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00935	0.00939	0.01727
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01345	0.01349	0.02135
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00650	0.00651	0.01381
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01070	0.01071	0.01800
	!SCE	-0.00090	-0.00090	-0.00090
	!SCE	0.00131	0.00131	0.00130

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)**	0.00461	0.00482	0.01691
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00034	-0.00014	0.01196
	(CLK * D * !SCD)	0.00695	0.00730	0.01981
	(CLK * D * !SCD)	0.00336	0.00367	0.01617
	(CLK * !D * SCD)	0.00819	0.00881	0.02921
	(CLK * !D * SCD)	0.00197	0.00257	0.02301
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00461	0.00482	0.01691
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00034	-0.00015	0.01196
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01252	0.01295	0.02540
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00922	0.00963	0.02204
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00988	0.01032	0.02275
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00666	0.00709	0.01949
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01434	0.01479	0.03473
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00782	0.00827	0.02823
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01243	0.01287	0.03255
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00582	0.00628	0.02596
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00456	0.00486	0.01693
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00008	0.00021	0.01227

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00482	0.00504	0.01715
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00030	-0.00010	0.01205
	(CLK * D * !SCD)	0.00731	0.00767	0.02023
	(CLK * D * !SCD)	0.00355	0.00388	0.01641
	(CLK * !D * SCD)	0.00847	0.00895	0.02963
	(CLK * !D * SCD)	0.00208	0.00255	0.02325
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00480	0.00503	0.01714
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00031	-0.00011	0.01204
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01459	0.01502	0.02753
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01099	0.01141	0.02390
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01177	0.01221	0.02469
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00827	0.00869	0.02116
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01574	0.01619	0.03610
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00918	0.00964	0.02957
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01388	0.01432	0.03391
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00722	0.00766	0.02727
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00469	0.00499	0.01712
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00012	0.00016	0.01228

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)**	-0.00007	0.00064	0.01298
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00488	0.00561	0.01793
	(CLK * D * !SCD)	0.00363	0.00413	0.01664
	(CLK * D * !SCD)	0.00724	0.00776	0.02015
	(CLK * !D * SCD)	0.00125	0.00197	0.02274
	(CLK * !D * SCD)	0.00747	0.00821	0.02895
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00006	0.00064	0.01298
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00488	0.00561	0.01793
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00976	0.01035	0.02264
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01309	0.01368	0.02585
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00785	0.00844	0.02075
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01109	0.01169	0.02387
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00695	0.00760	0.02786
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01347	0.01411	0.03437
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00433	0.00495	0.02475
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01093	0.01157	0.03135
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00021	0.00087	0.01310
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00486	0.00555	0.01776

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00020	0.00049	0.01290
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00491	0.00563	0.01802
	(CLK * D * !SCD)	0.00355	0.00405	0.01659
	(CLK * D * !SCD)	0.00734	0.00784	0.02027
	(CLK * !D * SCD)	0.00143	0.00213	0.02303
	(CLK * !D * SCD)	0.00783	0.00852	0.02942
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00021	0.00048	0.01289
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00490	0.00561	0.01801
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01079	0.01139	0.02372
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01442	0.01501	0.02723
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00893	0.00953	0.02186
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01246	0.01307	0.02526
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00886	0.00948	0.02969
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01541	0.01604	0.03623
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00605	0.00666	0.02634
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01272	0.01333	0.03299
	(!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	0.00078	0.01307
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00495	0.00562	0.01790

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)	0.00224	0.00225	0.00225
	(CLK * Q * !Q_N)	-0.00185	-0.00185	-0.00185
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00237	0.00241	0.00239
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00170	-0.00172	-0.00171
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00443	0.00448	0.00955
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00020	0.00022	0.00529
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00228	0.00231	0.00229
	(CLK * Q * !Q_N)	-0.00192	-0.00193	-0.00192
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00239	0.00240	0.00238
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00183	-0.00184	-0.00182
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00468	0.00471	0.00976
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00030	0.00032	0.00538

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)	-0.00201	-0.00206	-0.00204
	(CLK * Q * !Q_N)	0.00211	0.00210	0.00207
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00214	-0.00220	-0.00218
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00198	0.00196	0.00192
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00016	0.00037	0.00565
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00441	0.00464	0.00991
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00205	-0.00209	-0.00208
	(CLK * Q * !Q_N)	0.00219	0.00216	0.00214
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00214	-0.00218	-0.00218
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00210	0.00206	0.00204
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00001	0.00017	0.00545
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00436	0.00456	0.00983

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)	0.01287	0.01315	0.03227
	(D * SCD * SCE * Q * !Q_N)	0.00891	0.00918	0.02830
	(D * !SCE * Q * !Q_N)	0.01285	0.01314	0.03225
	(D * !SCE * Q * !Q_N)	0.00889	0.00916	0.02829
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01263	0.01292	0.03201
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00867	0.00893	0.02804
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02243	0.02286	0.04237
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01808	0.01850	0.03802
	(!D * SCD * SCE * Q * !Q_N)	0.01288	0.01317	0.03228
	(!D * SCD * SCE * Q * !Q_N)	0.00892	0.00919	0.02832
	(!D * !SCE * SET_B * !Q * Q_N)	0.01261	0.01290	0.03199
	(!D * !SCE * SET_B * !Q * Q_N)	0.00864	0.00891	0.02802
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02240	0.02283	0.04235
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01805	0.01847	0.03799
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01264	0.01292	0.03201
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00867	0.00893	0.02804
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02247	0.02286	0.04236
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01812	0.01851	0.03801

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01668	0.01689	0.03577
	(D * SCD * SCE * Q * !Q_N)	0.01268	0.01287	0.03176
	(D * !SCE * Q * !Q_N)	0.01666	0.01687	0.03576
	(D * !SCE * Q * !Q_N)	0.01266	0.01286	0.03174
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01620	0.01641	0.03530
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01219	0.01239	0.03129
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03656	0.03707	0.05700
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03229	0.03280	0.05273
	(!D * SCD * SCE * Q * !Q_N)	0.01669	0.01690	0.03579
	(!D * SCD * SCE * Q * !Q_N)	0.01269	0.01289	0.03177
	(!D * !SCE * SET_B * !Q * Q_N)	0.01618	0.01638	0.03528
	(!D * !SCE * SET_B * !Q * Q_N)	0.01216	0.01236	0.03127
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03654	0.03705	0.05697
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03226	0.03277	0.05269
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01620	0.01641	0.03530
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01220	0.01239	0.03129
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03666	0.03711	0.05696
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03238	0.03283	0.05269

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01304	0.01381	0.03389
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01672	0.01748	0.03758
	(D * SCD * SCE * Q * !Q_N)	0.00714	0.00797	0.02775
	(D * SCD * SCE * Q * !Q_N)	0.01111	0.01195	0.03173
	(D * !SCE * SET_B * !Q * Q_N)	0.01299	0.01377	0.03385
	(D * !SCE * SET_B * !Q * Q_N)	0.01668	0.01744	0.03753
	(D * !SCE * Q * !Q_N)	0.00712	0.00796	0.02773
	(D * !SCE * Q * !Q_N)	0.01109	0.01194	0.03171
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01412	0.01505	0.03534
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01841	0.01933	0.03964
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00805	0.02788
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01119	0.01203	0.03185
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01237	0.03249
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01579	0.01671	0.03685
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01308	0.01385	0.03393
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01675	0.01751	0.03761
	(!D * SCD * SCE * Q * !Q_N)	0.00715	0.00799	0.02777
	(!D * SCD * SCE * Q * !Q_N)	0.01112	0.01197	0.03174
	(!D * !SCE * SET_B * Q * !Q_N)	0.01406	0.01499	0.03528
	(!D * !SCE * SET_B * Q * !Q_N)	0.01833	0.01925	0.03955
	(!D * !SCE * SET_B * !Q * Q_N)	0.00719	0.00803	0.02786
	(!D * !SCE * SET_B * !Q * Q_N)	0.01116	0.01201	0.03183
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01142	0.01234	0.03246
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01578	0.01669	0.03681
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01411	0.01503	0.03512
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01839	0.01931	0.03941
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00805	0.02788
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01119	0.01203	0.03186
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01145	0.01238	0.03248
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01581	0.01673	0.03684

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01567	0.01635	0.03621
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01952	0.02018	0.04007
	(D * SCD * SCE * Q * !Q_N)	0.00849	0.00925	0.02877
	(D * SCD * SCE * Q * !Q_N)	0.01250	0.01326	0.03278
	(D * !SCE * SET_B * !Q * Q_N)	0.01563	0.01630	0.03617
	(D * !SCE * SET_B * !Q * Q_N)	0.01948	0.02014	0.04001
	(D * !SCE * Q * !Q_N)	0.00847	0.00923	0.02875
	(D * !SCE * Q * !Q_N)	0.01248	0.01325	0.03276
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01768	0.01856	0.03859
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02188	0.02276	0.04280
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00872	0.00945	0.02908
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01273	0.01345	0.03310
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01475	0.01557	0.03556
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01902	0.01985	0.03985
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01572	0.01639	0.03626
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01955	0.02021	0.04009
	(!D * SCD * SCE * Q * !Q_N)	0.00850	0.00927	0.02878
	(!D * SCD * SCE * Q * !Q_N)	0.01251	0.01328	0.03279
	(!D * !SCE * SET_B * Q * !Q_N)	0.01763	0.01851	0.03854
	(!D * !SCE * SET_B * Q * !Q_N)	0.02180	0.02268	0.04272
	(!D * !SCE * SET_B * !Q * Q_N)	0.00869	0.00943	0.02906
	(!D * !SCE * SET_B * !Q * Q_N)	0.01270	0.01342	0.03307
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01474	0.01554	0.03553
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01902	0.01982	0.03982
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01769	0.01855	0.03854
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02187	0.02274	0.04274
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00872	0.00945	0.02908
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01273	0.01347	0.03310
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01477	0.01566	0.03570
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01905	0.01994	0.03999

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00193	0.00214	0.00409	0.00333	0.00312	0.79371
sky130_fd_sc_hs__sdfstp_2	0.00193	0.00210	0.00408	0.00343	0.00312	1.60581
sky130_fd_sc_hs__sdfstp_4	0.00193	0.00214	0.00414	0.00344	0.00312	3.07492

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	8.87774	12.64510
sky130_fd_sc_hs__sdfstp_2	0.00000	9.22654	16.99550
sky130_fd_sc_hs__sdfstp_4	0.00000	12.87050	18.59880

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)	0.35648	1.03689	7.52652
	SET_B->Q (FR)	0.37776	1.25456	9.05705
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.32809	0.90297	7.51906
	SET_B->Q (FR)	0.43301	1.20507	9.23917
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.37631	0.87336	7.56298
	SET_B->Q (FR)	0.49965	1.19485	9.36725

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.37061	0.79776	3.90667
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.37969	0.77587	4.02503
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.39057	0.75464	4.07252

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)	-0.14223	-0.25750	-1.08840
	setup	CLK (R)	0.25571	0.31894	1.12943
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17120	-0.28593	-1.17339
	setup	CLK (R)	0.31215	0.36352	1.28715
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17474	-0.28839	-1.18672
	setup	CLK (R)	0.30291	0.36082	1.27143

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)	-0.12826	-0.23191	-1.11570
	setup	CLK (R)	0.43643	0.46786	1.54576
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14024	-0.24533	-1.09049
	setup	CLK (R)	0.50738	0.53304	1.66070
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15617	-0.25833	-1.16576
	setup	CLK (R)	0.50745	0.53603	1.67831

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)	-0.14223	-0.25750	-1.08840
	setup	CLK (R)	0.25571	0.31894	1.12943
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17120	-0.28593	-1.17339
	setup	CLK (R)	0.31215	0.36352	1.28715
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17474	-0.28839	-1.18672
	setup	CLK (R)	0.30291	0.36082	1.27143

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)	-0.12826	-0.23191	-1.11570
	setup	CLK (R)	0.43643	0.46786	1.54576
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14024	-0.24533	-1.09049
	setup	CLK (R)	0.50738	0.53304	1.66070
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15617	-0.25833	-1.16576
	setup	CLK (R)	0.50745	0.53603	1.67831

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)	-0.17745	-0.27273	-1.11325
	setup	CLK (R)	0.30008	0.34372	1.17174
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.20496	-0.29758	-1.18082
	setup	CLK (R)	0.35902	0.38723	1.29672
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20579	-0.30049	-1.18981
	setup	CLK (R)	0.34754	0.38393	1.28843

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)	-0.16814	-0.27490	-1.24948
	setup	CLK (R)	0.52579	0.54082	1.63363
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18320	-0.29336	-1.22919
	setup	CLK (R)	0.59933	0.60733	1.73134
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19750	-0.30888	-1.27544
	setup	CLK (R)	0.60073	0.60859	1.74833

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)	-0.17745	-0.27273	-1.11325
	hold	CLK (R)	-0.18768	-0.28473	-1.13962
	setup	CLK (R)	0.29192	0.33504	1.14954
	setup	CLK (R)	0.30008	0.34372	1.17174
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.20496	-0.29758	-1.18082
	hold	CLK (R)	-0.21365	-0.31053	-1.20438
	setup	CLK (R)	0.35002	0.38097	1.27085
	setup	CLK (R)	0.35902	0.38723	1.29672
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20579	-0.30049	-1.18981
	hold	CLK (R)	-0.21413	-0.31089	-1.21339
	setup	CLK (R)	0.34226	0.37645	1.25763
	setup	CLK (R)	0.34754	0.38393	1.28843

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)	-0.18388	-0.29211	-1.25908
	hold	CLK (R)	-0.16814	-0.27490	-1.24948
	setup	CLK (R)	0.52117	0.53638	1.61376
	setup	CLK (R)	0.52579	0.54082	1.63363
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19575	-0.30788	-1.23912
	hold	CLK (R)	-0.18320	-0.29336	-1.22919
	setup	CLK (R)	0.59270	0.60166	1.71230
	setup	CLK (R)	0.59933	0.60733	1.73134
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21208	-0.32153	-1.27544
	hold	CLK (R)	-0.19750	-0.30888	-1.28940
	setup	CLK (R)	0.59613	0.60224	1.72713
	setup	CLK (R)	0.60073	0.60859	1.74833

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)	-0.16007	-0.25202	-0.33608
	setup	CLK (R)	0.51568	0.49750	1.23339
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19087	-0.26335	-0.31051
	setup	CLK (R)	0.58666	0.56450	1.38270
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19032	-0.28040	-0.33423
	setup	CLK (R)	0.59006	0.56576	1.36892

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)	-0.14895	-0.23471	-1.04663
	setup	CLK (R)	0.45843	0.46982	1.44300
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16178	-0.24591	-1.02995
	setup	CLK (R)	0.52802	0.53713	1.55037
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17702	-0.26208	-1.08692
	setup	CLK (R)	0.52988	0.53953	1.56658

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)	-0.17845	-0.25202	-0.33608
	hold	CLK (R)	-0.16007	-0.27896	-1.19109
	setup	CLK (R)	0.51568	0.49750	0.58204
	setup	CLK (R)	0.27408	0.34007	1.23339
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19325	-0.26335	-0.31051
	hold	CLK (R)	-0.19087	-0.30773	-1.27025
	setup	CLK (R)	0.58666	0.56450	0.62214
	setup	CLK (R)	0.33201	0.38549	1.38270
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20449	-0.28040	-0.33423
	hold	CLK (R)	-0.19032	-0.30907	-1.28245
	setup	CLK (R)	0.59006	0.56576	0.62174
	setup	CLK (R)	0.32372	0.38224	1.36892

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)	-0.24335	-0.35261	-1.13606
	hold	CLK (R)	-0.14895	-0.23471	-1.04663
	setup	CLK (R)	0.35134	0.41069	1.15105
	setup	CLK (R)	0.45843	0.46982	1.44300
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.27039	-0.37865	-1.15021
	hold	CLK (R)	-0.16178	-0.24591	-1.02995
	setup	CLK (R)	0.40980	0.45326	1.19041
	setup	CLK (R)	0.52802	0.53713	1.55037
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.26988	-0.37956	-1.15419
	hold	CLK (R)	-0.17702	-0.26208	-1.08692
	setup	CLK (R)	0.40271	0.45105	1.18268
	setup	CLK (R)	0.52988	0.53953	1.56658

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)	-0.13835	-0.21498	-0.78678
	removal	CLK (R)	0.17985	0.24099	0.86542
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.20043	-0.28180	-0.85991
	removal	CLK (R)	0.23785	0.44431	3.30207
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.19288	-0.27639	-0.87673
	removal	CLK (R)	0.21868	0.30188	1.73696

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)	-0.13838	-0.21570	-0.78679
	recovery	CLK (R)	-0.13835	-0.21570	-0.78678
	recovery	CLK (R)	-0.14008	-0.21498	-0.78705
	removal	CLK (R)	0.17841	0.24099	0.86248
	removal	CLK (R)	0.17841	0.24099	0.86248
	removal	CLK (R)	0.17985	0.24057	0.86542
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.20043	-0.28180	-0.85991
	recovery	CLK (R)	-0.20043	-0.28180	-0.85991
	recovery	CLK (R)	-0.20043	-0.28180	-0.85991
	removal	CLK (R)	0.23483	0.44431	3.30207
	removal	CLK (R)	0.23483	0.44431	3.30166
	removal	CLK (R)	0.23785	0.44431	3.26690
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.19288	-0.27639	-0.87673
	recovery	CLK (R)	-0.19288	-0.27639	-0.87673
	recovery	CLK (R)	-0.19288	-0.27639	-0.87673
	removal	CLK (R)	0.21868	0.30188	1.73696
	removal	CLK (R)	0.21868	0.30188	1.73696
	removal	CLK (R)	0.21868	0.30188	1.72208

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 ()	0.30355	0.82153	16.50020
	min_pulse_width	SET_B ()	0.27612	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.32487	0.82153	16.50020
	min_pulse_width	SET_B ()	0.32183	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.33097	0.82153	16.50020
	min_pulse_width	SET_B ()	0.35534	0.82153	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 ()	0.19385	0.82153	16.50020
	min_pulse_width	CLK ()	0.14205	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.16034	0.82153	16.50020
	min_pulse_width	CLK ()	0.14815	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.18471	0.82153	16.50020
	min_pulse_width	CLK ()	0.14815	0.82153	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 ()	0.29136	0.82153	16.50020
	min_pulse_width	CLK ()	0.46503	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.37972	0.82153	16.50020
	min_pulse_width	CLK ()	0.56559	0.82153	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.36449	0.82153	16.50020
	min_pulse_width	CLK ()	0.55340	0.82153	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	0.02424	0.02467	0.04481
	CLK	0.02046	0.02091	0.04118
	SET_B	0.02251	0.02238	0.03115
	SET_B	0.02643	0.02627	0.03502
sky130_fd_sc_hs__sdfstp_2	CLK	0.03003	0.03068	0.05099
	CLK	0.02630	0.02696	0.04753
	SET_B	0.03001	0.02980	0.03819
	SET_B	0.03400	0.03377	0.04231
sky130_fd_sc_hs__sdfstp_4	CLK	0.03619	0.03723	0.05766
	CLK	0.03251	0.03358	0.05453
	SET_B	0.03606	0.03632	0.04493
	SET_B	0.04012	0.04036	0.04922

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02576	0.02635	0.04636
	CLK	0.02170	0.02227	0.04165
sky130_fd_sc_hs__sdfstp_2	CLK	0.03134	0.03231	0.05238
	CLK	0.02736	0.02829	0.04748
sky130_fd_sc_hs__sdfstp_4	CLK	0.03750	0.03914	0.05989
	CLK	0.03344	0.03507	0.05446

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00108	0.00110	0.00109
	(CLK * SCD * SCE)	-0.00043	-0.00043	-0.00042
	(CLK * !SCE)	0.00373	0.00396	0.01380
	(CLK * !SCE)	0.00103	0.00126	0.01111
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00060
	(CLK * !SCD * SCE)	-0.00112	-0.00112	-0.00114
	(!CLK * SCD * SCE)	0.00108	0.00109	0.00108
	(!CLK * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(!CLK * !SCE * SET_B)	0.00957	0.00970	0.01851
	(!CLK * !SCE * SET_B)	0.00663	0.00677	0.01558
	(!CLK * !SCE * !SET_B * Q)	0.00777	0.00790	0.01644
	(!CLK * !SCE * !SET_B * Q)	0.00476	0.00490	0.01344
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00060
	(!CLK * !SCD * SCE)	-0.00112	-0.00112	-0.00114
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00108	0.00109	0.00108
	(CLK * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCE)	0.00369	0.00391	0.01376
	(CLK * !SCE)	0.00099	0.00122	0.01107
	(CLK * !SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * !SCD * SCE)	-0.00113	-0.00113	-0.00115
	(!CLK * SCD * SCE)	0.00107	0.00108	0.00108
	(!CLK * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * !SCE * SET_B)	0.01101	0.01115	0.01974
	(!CLK * !SCE * SET_B)	0.00797	0.00811	0.01669
	(!CLK * !SCE * !SET_B * Q)	0.00910	0.00924	0.01747
	(!CLK * !SCE * !SET_B * Q)	0.00598	0.00612	0.01436
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00059
	(!CLK * !SCD * SCE)	-0.00113	-0.00113	-0.00115

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00111	0.00111	0.00111
	(CLK * SCD * SCE)	-0.00040	-0.00040	-0.00039
	(CLK * !SCE)	0.00384	0.00405	0.01385
	(CLK * !SCE)	0.00114	0.00135	0.01116
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00063
	(CLK * !SCD * SCE)	-0.00109	-0.00109	-0.00111
	(!CLK * SCD * SCE)	0.00111	0.00112	0.00111
	(!CLK * SCD * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !SCE * SET_B)	0.01097	0.01111	0.01968
	(!CLK * !SCE * SET_B)	0.00799	0.00814	0.01671
	(!CLK * !SCE * !SET_B * Q)	0.00909	0.00922	0.01744
	(!CLK * !SCE * !SET_B * Q)	0.00604	0.00618	0.01440
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(!CLK * !SCD * SCE)	-0.00108	-0.00108	-0.00110

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00085	-0.00085	-0.00089
	(CLK * SCD * SCE)	0.00066	0.00066	0.00063
	(CLK * !SCE)	0.00073	0.00123	0.01126
	(CLK * !SCE)	0.00343	0.00393	0.01396
	(CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCD * SCE)	0.00129	0.00130	0.00129
	(!CLK * SCD * SCE)	-0.00085	-0.00086	-0.00089
	(!CLK * SCD * SCE)	0.00066	0.00066	0.00063
	(!CLK * !SCE * SET_B)	0.00649	0.00682	0.01657
	(!CLK * !SCE * SET_B)	0.00943	0.00975	0.01950
	(!CLK * !SCE * !SET_B * Q)	0.00400	0.00432	0.01344
	(!CLK * !SCE * !SET_B * Q)	0.00703	0.00732	0.01645
	(!CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCD * SCE)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00085	-0.00085	-0.00089
	(CLK * SCD * SCE)	0.00066	0.00065	0.00063
	(CLK * !SCE)	0.00077	0.00127	0.01130
	(CLK * !SCE)	0.00347	0.00397	0.01399
	(CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCD * SCE)	0.00128	0.00130	0.00128
	(!CLK * SCD * SCE)	-0.00085	-0.00086	-0.00090
	(!CLK * SCD * SCE)	0.00066	0.00065	0.00062
	(!CLK * !SCE * SET_B)	0.00756	0.00787	0.01744
	(!CLK * !SCE * SET_B)	0.01060	0.01091	0.02048
	(!CLK * !SCE * !SET_B * Q)	0.00493	0.00523	0.01415
	(!CLK * !SCE * !SET_B * Q)	0.00806	0.00834	0.01727
	(!CLK * !SCD * SCE)	-0.00044	-0.00046	-0.00044
	(!CLK * !SCD * SCE)	0.00128	0.00130	0.00128

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00081	-0.00081	-0.00086
	(CLK * SCD * SCE)	0.00069	0.00068	0.00066
	(CLK * !SCE)	0.00094	0.00142	0.01141
	(CLK * !SCE)	0.00364	0.00411	0.01410
	(CLK * !SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCD * SCE)	0.00131	0.00132	0.00131
	(!CLK * SCD * SCE)	-0.00081	-0.00082	-0.00085
	(!CLK * SCD * SCE)	0.00070	0.00069	0.00066
	(!CLK * !SCE * SET_B)	0.00771	0.00802	0.01758
	(!CLK * !SCE * SET_B)	0.01068	0.01098	0.02055
	(!CLK * !SCE * !SET_B * Q)	0.00511	0.00540	0.01431
	(!CLK * !SCE * !SET_B * Q)	0.00817	0.00845	0.01736
	(!CLK * !SCD * SCE)	-0.00040	-0.00042	-0.00041
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00530	0.00532	0.01335
	(CLK * D * SCE)	0.00156	0.00157	0.00962
	(CLK * !D * SCE)	0.00618	0.00618	0.01391
	(CLK * !D * SCE)	0.00220	0.00219	0.00993
	(!CLK * D * SCE * SET_B)	0.01101	0.01101	0.01842
	(!CLK * D * SCE * SET_B)	0.00704	0.00703	0.01444
	(!CLK * D * SCE * !SET_B * Q)	0.00921	0.00923	0.01643
	(!CLK * D * SCE * !SET_B * Q)	0.00517	0.00516	0.01238
	(!CLK * !D * SCE * SET_B)	0.01189	0.01189	0.01905
	(!CLK * !D * SCE * SET_B)	0.00768	0.00766	0.01483
	(!CLK * !D * SCE * !SET_B * Q)	0.01010	0.01009	0.01706
	(!CLK * !D * SCE * !SET_B * Q)	0.00581	0.00579	0.01276
	!SCE	0.00139	0.00123	0.00119
	!SCE	-0.00088	-0.00105	-0.00107
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00523	0.00525	0.01328
	(CLK * D * SCE)	0.00152	0.00153	0.00957
	(CLK * !D * SCE)	0.00611	0.00611	0.01383
	(CLK * !D * SCE)	0.00216	0.00215	0.00989
	(!CLK * D * SCE * SET_B)	0.01243	0.01244	0.01968
	(!CLK * D * SCE * SET_B)	0.00838	0.00839	0.01562
	(!CLK * D * SCE * !SET_B * Q)	0.01052	0.01054	0.01754
	(!CLK * D * SCE * !SET_B * Q)	0.00639	0.00640	0.01341
	(!CLK * !D * SCE * SET_B)	0.01332	0.01332	0.02034
	(!CLK * !D * SCE * SET_B)	0.00902	0.00902	0.01604
	(!CLK * !D * SCE * !SET_B * Q)	0.01141	0.01141	0.01817
	(!CLK * !D * SCE * !SET_B * Q)	0.00703	0.00703	0.01381
	!SCE	0.00135	0.00119	0.00115
	!SCE	-0.00088	-0.00105	-0.00108

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00541	0.00543	0.01343
	(CLK * D * SCE)	0.00167	0.00167	0.00969
	(CLK * !D * SCE)	0.00629	0.00629	0.01399
	(CLK * !D * SCE)	0.00231	0.00229	0.01001
	(!CLK * D * SCE * SET_B)	0.01241	0.01242	0.01964
	(!CLK * D * SCE * SET_B)	0.00840	0.00840	0.01563
	(!CLK * D * SCE * !SET_B * Q)	0.01053	0.01054	0.01754
	(!CLK * D * SCE * !SET_B * Q)	0.00645	0.00644	0.01345
	(!CLK * !D * SCE * SET_B)	0.01329	0.01328	0.02029
	(!CLK * !D * SCE * SET_B)	0.00904	0.00903	0.01603
	(!CLK * !D * SCE * !SET_B * Q)	0.01141	0.01141	0.01818
	(!CLK * !D * SCE * !SET_B * Q)	0.00709	0.00707	0.01385
	!SCE	0.00141	0.00125	0.00121
	!SCE	-0.00085	-0.00102	-0.00105

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00186	0.00188	0.01006
	(CLK * D * SCE)	0.00561	0.00564	0.01379
	(CLK * !D * SCE)	0.00147	0.00152	0.00986
	(CLK * !D * SCE)	0.00546	0.00552	0.01383
	(!CLK * D * SCE * SET_B)	0.00772	0.00772	0.01564
	(!CLK * D * SCE * SET_B)	0.01171	0.01171	0.01961
	(!CLK * D * SCE * !SET_B * Q)	0.00523	0.00521	0.01264
	(!CLK * D * SCE * !SET_B * Q)	0.00930	0.00928	0.01669
	(!CLK * !D * SCE * SET_B)	0.00736	0.00738	0.01550
	(!CLK * !D * SCE * SET_B)	0.01160	0.01161	0.01971
	(!CLK * !D * SCE * !SET_B * Q)	0.00485	0.00484	0.01240
	(!CLK * !D * SCE * !SET_B * Q)	0.00915	0.00915	0.01669
	!SCE	-0.00097	-0.00098	-0.00098
	!SCE	0.00129	0.00130	0.00129
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00196	0.00198	0.01016
	(CLK * D * SCE)	0.00568	0.00571	0.01385
	(CLK * !D * SCE)	0.00157	0.00163	0.00995
	(CLK * !D * SCE)	0.00553	0.00559	0.01389
	(!CLK * D * SCE * SET_B)	0.00884	0.00885	0.01662
	(!CLK * D * SCE * SET_B)	0.01291	0.01293	0.02067
	(!CLK * D * SCE * !SET_B * Q)	0.00621	0.00619	0.01346
	(!CLK * D * SCE * !SET_B * Q)	0.01036	0.01034	0.01758
	(!CLK * !D * SCE * SET_B)	0.00849	0.00851	0.01646
	(!CLK * !D * SCE * SET_B)	0.01279	0.01281	0.02074
	(!CLK * !D * SCE * !SET_B * Q)	0.00583	0.00582	0.01320
	(!CLK * !D * SCE * !SET_B * Q)	0.01021	0.01021	0.01757
	!SCE	-0.00095	-0.00096	-0.00096
	!SCE	0.00128	0.00129	0.00128

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00206	0.00208	0.01022
	(CLK * D * SCE)	0.00582	0.00584	0.01395
	(CLK * !D * SCE)	0.00168	0.00173	0.01002
	(CLK * !D * SCE)	0.00567	0.00571	0.01398
	(!CLK * D * SCE * SET_B)	0.00893	0.00894	0.01671
	(!CLK * D * SCE * SET_B)	0.01297	0.01298	0.02072
	(!CLK * D * SCE * !SET_B * Q)	0.00633	0.00631	0.01357
	(!CLK * D * SCE * !SET_B * Q)	0.01044	0.01043	0.01766
	(!CLK * !D * SCE * SET_B)	0.00858	0.00860	0.01655
	(!CLK * !D * SCE * SET_B)	0.01285	0.01286	0.02080
	(!CLK * !D * SCE * !SET_B * Q)	0.00595	0.00595	0.01332
	(!CLK * !D * SCE * !SET_B * Q)	0.01030	0.01029	0.01764
	!SCE	-0.00094	-0.00095	-0.00095
	!SCE	0.00132	0.00132	0.00132

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)**	0.00461	0.00482	0.01690
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00033	-0.00013	0.01197
	(CLK * D * !SCD)	0.00686	0.00721	0.01972
	(CLK * D * !SCD)	0.00328	0.00359	0.01608
	(CLK * !D * SCD)	0.00823	0.00885	0.02926
	(CLK * !D * SCD)	0.00203	0.00264	0.02307
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00461	0.00482	0.01690
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00033	-0.00013	0.01196
	(!CLK * D * !SCD * SET_B)	0.01248	0.01291	0.02535
	(!CLK * D * !SCD * SET_B)	0.00912	0.00955	0.02194
	(!CLK * D * !SCD * !SET_B * Q)	0.00998	0.01043	0.02285
	(!CLK * D * !SCD * !SET_B * Q)	0.00671	0.00713	0.01953
	(!CLK * !D * SCD * SET_B)	0.01405	0.01450	0.03446
	(!CLK * !D * SCD * SET_B)	0.00761	0.00806	0.02803
	(!CLK * !D * SCD * !SET_B * Q)	0.01225	0.01270	0.03238
	(!CLK * !D * SCD * !SET_B * Q)	0.00574	0.00620	0.02589
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00457	0.00487	0.01694
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00006	0.00023	0.01229

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00461	0.00483	0.01690
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00033	-0.00013	0.01195
	(CLK * D * !SCD)	0.00694	0.00730	0.01977
	(CLK * D * !SCD)	0.00332	0.00367	0.01612
	(CLK * !D * SCD)	0.00819	0.00868	0.02921
	(CLK * !D * SCD)	0.00198	0.00246	0.02302
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00461	0.00483	0.01689
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00033	-0.00014	0.01195
	(!CLK * D * !SCD * SET_B)	0.01357	0.01401	0.02644
	(!CLK * D * !SCD * SET_B)	0.01030	0.01074	0.02315
	(!CLK * D * !SCD * !SET_B * Q)	0.01094	0.01138	0.02382
	(!CLK * D * !SCD * !SET_B * Q)	0.00775	0.00819	0.02059
	(!CLK * !D * SCD * SET_B)	0.01550	0.01596	0.03574
	(!CLK * !D * SCD * SET_B)	0.00895	0.00941	0.02921
	(!CLK * !D * SCD * !SET_B * Q)	0.01359	0.01405	0.03351
	(!CLK * !D * SCD * !SET_B * Q)	0.00697	0.00741	0.02690
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00459	0.00488	0.01694
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00006	0.00023	0.01228

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00468	0.00489	0.01697
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00011	0.01198
	(CLK * D * !SCD)	0.00710	0.00745	0.01994
	(CLK * D * !SCD)	0.00346	0.00378	0.01627
	(CLK * !D * SCD)	0.00838	0.00886	0.02937
	(CLK * !D * SCD)	0.00213	0.00260	0.02312
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00469	0.00489	0.01697
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00030	-0.00011	0.01198
	(!CLK * D * !SCD * SET_B)	0.01372	0.01415	0.02661
	(!CLK * D * !SCD * SET_B)	0.01035	0.01077	0.02320
	(!CLK * D * !SCD * !SET_B * Q)	0.01112	0.01155	0.02398
	(!CLK * D * !SCD * !SET_B * Q)	0.00783	0.00825	0.02065
	(!CLK * !D * SCD * SET_B)	0.01550	0.01594	0.03573
	(!CLK * !D * SCD * SET_B)	0.00897	0.00941	0.02922
	(!CLK * !D * SCD * !SET_B * Q)	0.01362	0.01407	0.03352
	(!CLK * !D * SCD * !SET_B * Q)	0.00702	0.00746	0.02694
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00465	0.00494	0.01701
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00003	0.00025	0.01231

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)**	-0.00005	0.00065	0.01299
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00488	0.00561	0.01792
	(CLK * D * !SCD)	0.00368	0.00417	0.01669
	(CLK * D * !SCD)	0.00729	0.00780	0.02018
	(CLK * !D * SCD)	0.00114	0.00186	0.02264
	(CLK * !D * SCD)	0.00734	0.00808	0.02884
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00005	0.00065	0.01299
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00488	0.00560	0.01792
	(!CLK * D * !SCD * SET_B)	0.00949	0.01008	0.02236
	(!CLK * D * !SCD * SET_B)	0.01287	0.01345	0.02562
	(!CLK * D * !SCD * !SET_B * Q)	0.00769	0.00827	0.02058
	(!CLK * D * !SCD * !SET_B * Q)	0.01100	0.01159	0.02376
	(!CLK * !D * SCD * SET_B)	0.00690	0.00755	0.02782
	(!CLK * !D * SCD * SET_B)	0.01333	0.01398	0.03425
	(!CLK * !D * SCD * !SET_B * Q)	0.00442	0.00504	0.02484
	(!CLK * !D * SCD * !SET_B * Q)	0.01093	0.01157	0.03136
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00022	0.00088	0.01309
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00484	0.00554	0.01773

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00006	0.00064	0.01297
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00488	0.00560	0.01791
	(CLK * D * !SCD)	0.00362	0.00411	0.01662
	(CLK * D * !SCD)	0.00725	0.00776	0.02013
	(CLK * !D * SCD)	0.00118	0.00190	0.02267
	(CLK * !D * SCD)	0.00738	0.00812	0.02887
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00006	0.00064	0.01297
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00488	0.00560	0.01791
	(!CLK * D * !SCD * SET_B)	0.01092	0.01151	0.02379
	(!CLK * D * !SCD * SET_B)	0.01420	0.01479	0.02695
	(!CLK * D * !SCD * !SET_B * Q)	0.00901	0.00960	0.02187
	(!CLK * D * !SCD * !SET_B * Q)	0.01222	0.01282	0.02496
	(!CLK * !D * SCD * SET_B)	0.00796	0.00860	0.02870
	(!CLK * !D * SCD * SET_B)	0.01451	0.01515	0.03525
	(!CLK * !D * SCD * !SET_B * Q)	0.00534	0.00596	0.02555
	(!CLK * !D * SCD * !SET_B * Q)	0.01197	0.01261	0.03218
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00020	0.00085	0.01307
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00484	0.00553	0.01772

	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00007	0.00063	0.01297
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00492	0.00564	0.01796
	(CLK * D * !SCD)	0.00374	0.00424	0.01674
	(CLK * D * !SCD)	0.00741	0.00791	0.02028
	(CLK * !D * SCD)	0.00131	0.00202	0.02275
	(CLK * !D * SCD)	0.00756	0.00829	0.02900
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00006	0.00064	0.01298
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00493	0.00564	0.01796
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.01084	0.01143	0.02371
	(!CLK * D * !SCD * SET_B)	0.01424	0.01482	0.02698
	(!CLK * D * !SCD * !SET_B * Q)	0.00897	0.00955	0.02183
	(!CLK * D * !SCD * !SET_B * Q)	0.01229	0.01287	0.02502
	(!CLK * !D * SCD * SET_B)	0.00808	0.00871	0.02882
	(!CLK * !D * SCD * SET_B)	0.01460	0.01524	0.03533
	(!CLK * !D * SCD * !SET_B * Q)	0.00549	0.00611	0.02569
	(!CLK * !D * SCD * !SET_B * Q)	0.01209	0.01272	0.03230
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00021	0.00086	0.01308
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00489	0.00558	0.01778

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00206	0.00208	0.00207
	(CLK * Q)	-0.00187	-0.00188	-0.00188
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00224	0.00225	0.00225
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00169	-0.00170	-0.00170
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00424	0.00428	0.00940
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00016	0.00019	0.00531
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00230	0.00229	0.00229
	(CLK * Q)	-0.00184	-0.00183	-0.00183
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00250	0.00252	0.00250
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00163	-0.00164	-0.00163
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00445	0.00450	0.00959
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00019	0.00021	0.00531

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00216	0.00217	0.00217
	(CLK * Q)	-0.00188	-0.00188	-0.00188
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00238	0.00239	0.00237
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00169	-0.00169	-0.00168
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00438	0.00442	0.00950
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00018	0.00021	0.00530

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00185	-0.00189	-0.00188
	(CLK * Q)	0.00212	0.00210	0.00208
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00203	-0.00206	-0.00206
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00195	0.00192	0.00190
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00013	0.00036	0.00565
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00420	0.00447	0.00974

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00208	-0.00211	-0.00211
	(CLK * Q)	0.00207	0.00205	0.00202
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00229	-0.00233	-0.00232
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00187	0.00183	0.00181
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00006	0.00027	0.00557
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00432	0.00456	0.00984
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00188	-0.00191	-0.00191
	(CLK * Q)	0.00220	0.00218	0.00215
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00208	-0.00212	-0.00212
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00200	0.00197	0.00194
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00017	0.00039	0.00567
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00436	0.00460	0.00986

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)**	0.01294	0.01323	0.03235
	(D * SCD * SCE * Q)	0.00904	0.00932	0.02844
	(D * !SCE * Q)	0.01292	0.01322	0.03233
	(D * !SCE * Q)	0.00902	0.00930	0.02843
	(D * !SCD * SCE * SET_B * !Q)	0.01261	0.01291	0.03200
	(D * !SCD * SCE * SET_B * !Q)	0.00871	0.00898	0.02809
	(D * !SCD * SCE * !SET_B * Q)	0.02242	0.02285	0.04233
	(D * !SCD * SCE * !SET_B * Q)	0.01820	0.01862	0.03811
	(!D * SCD * SCE * Q)	0.01296	0.01325	0.03236
	(!D * SCD * SCE * Q)	0.00905	0.00933	0.02846
	(!D * !SCE * SET_B * !Q)	0.01259	0.01288	0.03197
	(!D * !SCE * SET_B * !Q)	0.00868	0.00895	0.02806
	(!D * !SCE * !SET_B * Q)	0.02239	0.02282	0.04228
	(!D * !SCE * !SET_B * Q)	0.01817	0.01859	0.03806
	(!D * !SCD * SCE * SET_B * !Q)	0.01262	0.01291	0.03200
	(!D * !SCD * SCE * SET_B * !Q)	0.00871	0.00898	0.02810
	(!D * !SCD * SCE * !SET_B * Q)	0.02246	0.02286	0.04231
	(!D * !SCD * SCE * !SET_B * Q)	0.01824	0.01863	0.03809

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01491	0.01513	0.03390
	(D * SCD * SCE * Q)	0.01104	0.01124	0.03002
	(D * !SCE * Q)	0.01490	0.01511	0.03389
	(D * !SCE * Q)	0.01102	0.01123	0.03001
	(D * !SCD * SCE * SET_B * !Q)	0.01486	0.01507	0.03385
	(D * !SCD * SCE * SET_B * !Q)	0.01097	0.01116	0.02995
	(D * !SCD * SCE * !SET_B * Q)	0.03298	0.03347	0.05347
	(D * !SCD * SCE * !SET_B * Q)	0.02872	0.02921	0.04921
	(!D * SCD * SCE * Q)	0.01493	0.01514	0.03392
	(!D * SCD * SCE * Q)	0.01105	0.01126	0.03004
	(!D * !SCE * SET_B * !Q)	0.01483	0.01504	0.03382
	(!D * !SCE * SET_B * !Q)	0.01094	0.01114	0.02992
	(!D * !SCE * !SET_B * Q)	0.03294	0.03344	0.05343
	(!D * !SCE * !SET_B * Q)	0.02868	0.02917	0.04917
	(!D * !SCD * SCE * SET_B * !Q)	0.01486	0.01507	0.03383
	(!D * !SCD * SCE * SET_B * !Q)	0.01097	0.01117	0.02994
	(!D * !SCD * SCE * !SET_B * Q)	0.03305	0.03350	0.05335
	(!D * !SCD * SCE * !SET_B * Q)	0.02879	0.02923	0.04909

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01478	0.01501	0.03381
	(D * SCD * SCE * Q)	0.01090	0.01112	0.02994
	(D * !SCE * Q)	0.01476	0.01500	0.03379
	(D * !SCE * Q)	0.01088	0.01110	0.02992
	(D * !SCD * SCE * SET_B * !Q)	0.01475	0.01497	0.03378
	(D * !SCD * SCE * SET_B * !Q)	0.01086	0.01108	0.02990
	(D * !SCD * SCE * !SET_B * Q)	0.03272	0.03327	0.05341
	(D * !SCD * SCE * !SET_B * Q)	0.02852	0.02906	0.04921
	(!D * SCD * SCE * Q)	0.01480	0.01503	0.03382
	(!D * SCD * SCE * Q)	0.01092	0.01114	0.02995
	(!D * !SCE * SET_B * !Q)	0.01473	0.01494	0.03376
	(!D * !SCE * SET_B * !Q)	0.01083	0.01106	0.02987
	(!D * !SCE * !SET_B * Q)	0.03269	0.03324	0.05338
	(!D * !SCE * !SET_B * Q)	0.02848	0.02902	0.04918
	(!D * !SCD * SCE * SET_B * !Q)	0.01476	0.01498	0.03379
	(!D * !SCD * SCE * SET_B * !Q)	0.01086	0.01107	0.02989
	(!D * !SCD * SCE * !SET_B * Q)	0.03280	0.03330	0.05338
	(!D * !SCD * SCE * !SET_B * Q)	0.02860	0.02908	0.04918

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)**	0.01277	0.01354	0.03361
	(D * SCD * SCE * SET_B * !Q)	0.01645	0.01723	0.03731
	(D * SCD * SCE * Q)	0.00709	0.00793	0.02769
	(D * SCD * SCE * Q)	0.01100	0.01185	0.03161
	(D * !SCE * SET_B * !Q)	0.01272	0.01349	0.03357
	(D * !SCE * SET_B * !Q)	0.01641	0.01718	0.03726
	(D * !SCE * Q)	0.00707	0.00791	0.02768
	(D * !SCE * Q)	0.01098	0.01183	0.03159
	(D * !SCD * SCE * SET_B * Q)	0.01419	0.01512	0.03539
	(D * !SCD * SCE * SET_B * Q)	0.01836	0.01928	0.03957
	(D * !SCD * SCE * SET_B * !Q)	0.00728	0.00811	0.02793
	(D * !SCD * SCE * SET_B * !Q)	0.01119	0.01203	0.03184
	(D * !SCD * SCE * !SET_B * Q)	0.01165	0.01259	0.03268
	(D * !SCD * SCE * !SET_B * Q)	0.01587	0.01682	0.03691
	(!D * SCD * SCE * SET_B * !Q)	0.01281	0.01358	0.03366
	(!D * SCD * SCE * SET_B * !Q)	0.01648	0.01726	0.03734
	(!D * SCD * SCE * Q)	0.00710	0.00794	0.02771
	(!D * SCD * SCE * Q)	0.01101	0.01186	0.03162
	(!D * !SCE * SET_B * Q)	0.01414	0.01506	0.03533
	(!D * !SCE * SET_B * Q)	0.01828	0.01920	0.03948
	(!D * !SCE * SET_B * !Q)	0.00725	0.00808	0.02790
	(!D * !SCE * SET_B * !Q)	0.01116	0.01201	0.03182
	(!D * !SCE * !SET_B * Q)	0.01163	0.01256	0.03265
	(!D * !SCE * !SET_B * Q)	0.01586	0.01679	0.03686
	(!D * !SCD * SCE * SET_B * Q)	0.01419	0.01511	0.03517
	(!D * !SCD * SCE * SET_B * Q)	0.01835	0.01927	0.03934
	(!D * !SCD * SCE * SET_B * !Q)	0.00728	0.00811	0.02793
	(!D * !SCD * SCE * SET_B * !Q)	0.01119	0.01203	0.03184
	(!D * !SCD * SCE * !SET_B * Q)	0.01166	0.01260	0.03267
	(!D * !SCD * SCE * !SET_B * Q)	0.01589	0.01681	0.03691

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01510	0.01582	0.03563
	(D * SCD * SCE * SET_B * !Q)	0.01864	0.01934	0.03917
	(D * SCD * SCE * Q)	0.00816	0.00897	0.02841
	(D * SCD * SCE * Q)	0.01202	0.01285	0.03230
	(D * !SCE * SET_B * !Q)	0.01505	0.01578	0.03558
	(D * !SCE * SET_B * !Q)	0.01859	0.01931	0.03913
	(D * !SCE * Q)	0.00814	0.00895	0.02840
	(D * !SCE * Q)	0.01201	0.01283	0.03228
	(D * !SCD * SCE * SET_B * Q)	0.01662	0.01755	0.03753
	(D * !SCD * SCE * SET_B * Q)	0.02083	0.02177	0.04175
	(D * !SCD * SCE * SET_B * !Q)	0.00800	0.00877	0.02836
	(D * !SCD * SCE * SET_B * !Q)	0.01189	0.01266	0.03226
	(D * !SCD * SCE * !SET_B * Q)	0.01389	0.01485	0.03469
	(D * !SCD * SCE * !SET_B * Q)	0.01814	0.01912	0.03896
	(!D * SCD * SCE * SET_B * !Q)	0.01514	0.01586	0.03567
	(!D * SCD * SCE * SET_B * !Q)	0.01867	0.01938	0.03920
	(!D * SCD * SCE * Q)	0.00817	0.00898	0.02843
	(!D * SCD * SCE * Q)	0.01204	0.01287	0.03231
	(!D * !SCE * SET_B * Q)	0.01657	0.01750	0.03747
	(!D * !SCE * SET_B * Q)	0.02075	0.02169	0.04166
	(!D * !SCE * SET_B * !Q)	0.00797	0.00875	0.02834
	(!D * !SCE * SET_B * !Q)	0.01186	0.01263	0.03224
	(!D * !SCE * !SET_B * Q)	0.01388	0.01482	0.03465
	(!D * !SCE * !SET_B * Q)	0.01813	0.01909	0.03893
	(!D * !SCD * SCE * SET_B * Q)	0.01662	0.01755	0.03735
	(!D * !SCD * SCE * SET_B * Q)	0.02082	0.02175	0.04155
	(!D * !SCD * SCE * SET_B * !Q)	0.00800	0.00877	0.02836
	(!D * !SCD * SCE * SET_B * !Q)	0.01189	0.01267	0.03226
	(!D * !SCD * SCE * !SET_B * Q)	0.01391	0.01485	0.03468
	(!D * !SCD * SCE * !SET_B * Q)	0.01816	0.01911	0.03895

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01475	0.01548	0.03530
	(D * SCD * SCE * SET_B * !Q)	0.01837	0.01909	0.03892
	(D * SCD * SCE * Q)	0.00804	0.00886	0.02832
	(D * SCD * SCE * Q)	0.01192	0.01275	0.03221
	(D * !SCE * SET_B * !Q)	0.01470	0.01543	0.03525
	(D * !SCE * SET_B * !Q)	0.01832	0.01904	0.03888
	(D * !SCE * Q)	0.00802	0.00884	0.02831
	(D * !SCE * Q)	0.01190	0.01273	0.03219
	(D * !SCD * SCE * SET_B * Q)	0.01633	0.01728	0.03728
	(D * !SCD * SCE * SET_B * Q)	0.02049	0.02143	0.04143
	(D * !SCD * SCE * SET_B * !Q)	0.00780	0.00859	0.02820
	(D * !SCD * SCE * SET_B * !Q)	0.01170	0.01249	0.03209
	(D * !SCD * SCE * !SET_B * Q)	0.01362	0.01459	0.03445
	(D * !SCD * SCE * !SET_B * Q)	0.01782	0.01880	0.03866
	(!D * SCD * SCE * SET_B * !Q)	0.01479	0.01552	0.03534
	(!D * SCD * SCE * SET_B * !Q)	0.01840	0.01912	0.03895
	(!D * SCD * SCE * Q)	0.00805	0.00887	0.02834
	(!D * SCD * SCE * Q)	0.01193	0.01276	0.03223
	(!D * !SCE * SET_B * Q)	0.01628	0.01722	0.03722
	(!D * !SCE * SET_B * Q)	0.02041	0.02135	0.04135
	(!D * !SCE * SET_B * !Q)	0.00778	0.00856	0.02817
	(!D * !SCE * SET_B * !Q)	0.01167	0.01246	0.03207
	(!D * !SCE * !SET_B * Q)	0.01361	0.01456	0.03442
	(!D * !SCE * !SET_B * Q)	0.01781	0.01878	0.03863
	(!D * !SCD * SCE * SET_B * Q)	0.01633	0.01727	0.03709
	(!D * !SCD * SCE * SET_B * Q)	0.02048	0.02141	0.04124
	(!D * !SCD * SCE * SET_B * !Q)	0.00780	0.00859	0.02819
	(!D * !SCD * SCE * SET_B * !Q)	0.01170	0.01248	0.03209
	(!D * !SCD * SCE * !SET_B * Q)	0.01364	0.01459	0.03444
	(!D * !SCD * SCE * !SET_B * Q)	0.01784	0.01880	0.03865

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00194	0.00196	0.00415	0.00312	0.82610	0.79292
sky130_fd_sc_hs__sdfxbp_2	0.00192	0.00193	0.00420	0.00312	1.61387	1.61802

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	11.62590	16.36820
sky130_fd_sc_hs__sdfxbp_2	0.00000	12.01900	16.22060

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)	0.33595	1.02086	7.59192
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.32558	0.89968	7.50676

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.35992	0.80782	4.01322
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.38674	0.80144	3.99818

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)	0.42421	1.10143	7.56405
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.49085	1.05104	7.70018

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)	0.39948	0.81905	3.91988
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.42380	0.80464	4.09596

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)	-0.11180	-0.21351	-0.88361
	setup	CLK (R)	0.23437	0.29059	1.03126
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11346	-0.21195	-0.89252
	setup	CLK (R)	0.23747	0.29116	1.02958

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)	-0.13259	-0.23323	-1.07336
	setup	CLK (R)	0.36919	0.41057	1.42105
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13211	-0.23306	-1.09005
	setup	CLK (R)	0.37492	0.41819	1.43777

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)	-0.11180	-0.21351	-0.88361
	setup	CLK (R)	0.23437	0.29059	1.03126
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11346	-0.21195	-0.89252
	setup	CLK (R)	0.23747	0.29116	1.02958

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)	-0.13259	-0.23323	-1.07336
	setup	CLK (R)	0.36919	0.41057	1.42105
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13211	-0.23306	-1.09005
	setup	CLK (R)	0.37492	0.41819	1.43777

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)	-0.14356	-0.22843	-0.94477
	setup	CLK (R)	0.28525	0.31996	1.10766
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14344	-0.22794	-0.93969
	setup	CLK (R)	0.28392	0.31926	1.09351

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)	-0.18367	-0.28953	-1.29735
	setup	CLK (R)	0.46493	0.48941	1.55706
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17729	-0.28455	-1.31792
	setup	CLK (R)	0.47155	0.49413	1.57257

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)	-0.14356	-0.22843	-0.94477
	hold	CLK (R)	-0.15231	-0.23983	-0.97309
	setup	CLK (R)	0.27541	0.31146	1.07739
	setup	CLK (R)	0.28525	0.31996	1.10766
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14344	-0.22794	-0.93969
	hold	CLK (R)	-0.15227	-0.23873	-0.96905
	setup	CLK (R)	0.27477	0.30909	1.06903
	setup	CLK (R)	0.28392	0.31926	1.09351

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)	-0.19708	-0.30307	-1.29856
	hold	CLK (R)	-0.18367	-0.28953	-1.29735
	setup	CLK (R)	0.45989	0.48659	1.53627
	setup	CLK (R)	0.46493	0.48941	1.55706
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.19491	-0.30165	-1.32013
	hold	CLK (R)	-0.17729	-0.28455	-1.31792
	setup	CLK (R)	0.46604	0.48948	1.55482
	setup	CLK (R)	0.47155	0.49413	1.57257

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)	-0.13202	-0.23584	-0.37232
	setup	CLK (R)	0.45228	0.44903	1.17684
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13096	-0.23628	-0.38447
	setup	CLK (R)	0.46082	0.45649	1.17080

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)	-0.15853	-0.23526	-0.96300
	setup	CLK (R)	0.39260	0.41622	1.30631
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15881	-0.23701	-0.98934
	setup	CLK (R)	0.40048	0.42401	1.32982

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)	-0.19151	-0.25963	-0.37232
	hold	CLK (R)	-0.13202	-0.23584	-1.02378
	setup	CLK (R)	0.45228	0.44903	0.51666
	setup	CLK (R)	0.25851	0.31895	1.17684
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.18642	-0.26434	-0.38447
	hold	CLK (R)	-0.13096	-0.23628	-1.01951
	setup	CLK (R)	0.46082	0.45649	0.52930
	setup	CLK (R)	0.25791	0.31792	1.17080

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)	-0.20717	-0.31227	-1.02518
	hold	CLK (R)	-0.15853	-0.23526	-0.96300
	setup	CLK (R)	0.33095	0.38144	1.09786
	setup	CLK (R)	0.39260	0.41622	1.30631
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.21247	-0.31429	-1.03608
	hold	CLK (R)	-0.15881	-0.23701	-0.98934
	setup	CLK (R)	0.33569	0.38695	1.11043
	setup	CLK (R)	0.40048	0.42401	1.32982

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 ()	0.15729	0.82153	16.50020
	min_pulse_width	CLK ()	0.12377	0.82153	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.15729	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	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 ()	0.28222	0.82153	16.50020
	min_pulse_width	CLK ()	0.37667	0.82153	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.28526	0.82153	16.50020
	min_pulse_width	CLK ()	0.38277	0.82153	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	0.01334	0.01377	0.02454
	CLK	0.01138	0.01180	0.02222
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01612	0.01689	0.02785
	CLK	0.01416	0.01492	0.02544

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01356	0.01412	0.02431
	CLK	0.01161	0.01216	0.02234
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01627	0.01710	0.02761
	CLK	0.01432	0.01514	0.02541

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01364	0.01420	0.02491
	CLK	0.01169	0.01224	0.02270
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01636	0.01718	0.02853
	CLK	0.01440	0.01522	0.02588

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01326	0.01367	0.02390
	CLK	0.01129	0.01171	0.02187
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01604	0.01678	0.02705
	CLK	0.01408	0.01483	0.02503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00119	0.00120	0.00119
	(CLK * SCD * SCE)	-0.00039	-0.00040	-0.00039
	(CLK * !SCE)	0.00381	0.00402	0.01387
	(CLK * !SCE)	0.00098	0.00119	0.01105
	(CLK * !SCD * SCE)	0.00074	0.00074	0.00072
	(CLK * !SCD * SCE)	-0.00107	-0.00108	-0.00110
	(!CLK * SCD * SCE)	0.00116	0.00116	0.00116
	(!CLK * SCD * SCE)	-0.00043	-0.00043	-0.00042
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00880	0.00901	0.01938
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00598	0.00620	0.01656
	(!CLK * !SCD * SCE)	0.00075	0.00075	0.00073
	(!CLK * !SCD * SCE)	-0.00106	-0.00106	-0.00108
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00120	0.00122	0.00120
	(CLK * SCD * SCE)	-0.00038	-0.00038	-0.00038
	(CLK * !SCE)	0.00374	0.00395	0.01379
	(CLK * !SCE)	0.00094	0.00116	0.01100
	(CLK * !SCD * SCE)	0.00076	0.00076	0.00074
	(CLK * !SCD * SCE)	-0.00105	-0.00106	-0.00107
	(!CLK * SCD * SCE)	0.00118	0.00118	0.00118
	(!CLK * SCD * SCE)	-0.00041	-0.00041	-0.00040
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00887	0.00908	0.01942
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00607	0.00630	0.01663
	(!CLK * !SCD * SCE)	0.00078	0.00078	0.00077
	(!CLK * !SCD * SCE)	-0.00103	-0.00103	-0.00105

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00089	-0.00089	-0.00093
	(CLK * SCD * SCE)	0.00069	0.00069	0.00066
	(CLK * !SCE)	0.00098	0.00147	0.01150
	(CLK * !SCE)	0.00380	0.00429	0.01431
	(CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !SCD * SCE)	0.00130	0.00131	0.00131
	(!CLK * SCD * SCE)	-0.00092	-0.00093	-0.00097
	(!CLK * SCD * SCE)	0.00066	0.00066	0.00062
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00673	0.00717	0.01822
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00955	0.00998	0.02104
	(!CLK * !SCD * SCE)	-0.00047	-0.00049	-0.00048
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00090	-0.00090	-0.00095
	(CLK * SCD * SCE)	0.00068	0.00067	0.00065
	(CLK * !SCE)	0.00108	0.00158	0.01159
	(CLK * !SCE)	0.00388	0.00436	0.01438
	(CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCD * SCE)	0.00128	0.00129	0.00128
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * SCD * SCE)	0.00065	0.00065	0.00062
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00677	0.00722	0.01824
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00956	0.01000	0.02103
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00131	0.00132	0.00131

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00532	0.00534	0.01333
	(CLK * D * SCE)	0.00174	0.00176	0.00976
	(CLK * !D * SCE)	0.00620	0.00620	0.01389
	(CLK * !D * SCE)	0.00238	0.00237	0.01008
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01030	0.01038	0.01897
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00672	0.00679	0.01540
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01119	0.01126	0.01958
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00737	0.00743	0.01577
	!SCE	0.00120	0.00104	0.00100
	!SCE	-0.00084	-0.00101	-0.00104
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00522	0.00525	0.01325
	(CLK * D * SCE)	0.00169	0.00172	0.00973
	(CLK * !D * SCE)	0.00610	0.00611	0.01382
	(CLK * !D * SCE)	0.00233	0.00233	0.01005
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01034	0.01042	0.01902
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00681	0.00689	0.01549
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01122	0.01129	0.01963
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00745	0.00752	0.01586
	!SCE	0.00118	0.00101	0.00097
	!SCE	-0.00086	-0.00103	-0.00105

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00220	0.00222	0.01035
	(CLK * D * SCE)	0.00578	0.00582	0.01391
	(CLK * !D * SCE)	0.00181	0.00186	0.01014
	(CLK * !D * SCE)	0.00563	0.00569	0.01394
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00800	0.00805	0.01699
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01158	0.01163	0.02056
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00767	0.00776	0.01709
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01150	0.01158	0.02089
	!SCE	-0.00072	-0.00073	-0.00073
	!SCE	0.00132	0.00133	0.00132
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00228	0.00232	0.01046
	(CLK * D * SCE)	0.00582	0.00587	0.01397
	(CLK * !D * SCE)	0.00190	0.00196	0.01025
	(CLK * !D * SCE)	0.00567	0.00574	0.01401
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00801	0.00807	0.01702
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01155	0.01161	0.02053
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00769	0.00779	0.01710
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01146	0.01156	0.02085
	!SCE	-0.00069	-0.00070	-0.00070
	!SCE	0.00132	0.00133	0.00133

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)**	0.00489	0.00506	0.01722
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00009	0.01209
	(CLK * D * !SCD)	0.00717	0.00754	0.02013
	(CLK * D * !SCD)	0.00343	0.00379	0.01634
	(CLK * !D * SCD)	0.00860	0.00915	0.02978
	(CLK * !D * SCD)	0.00216	0.00268	0.02333
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00485	0.00501	0.01719
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00031	-0.00013	0.01206
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01285	0.01328	0.02582
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00910	0.00952	0.02202
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01359	0.01419	0.03557
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00714	0.00772	0.02913
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00476	0.00510	0.01717
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00010	0.00024	0.01232

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00508	0.00523	0.01736
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00019	-0.00004	0.01212
	(CLK * D * !SCD)	0.00745	0.00781	0.02035
	(CLK * D * !SCD)	0.00356	0.00389	0.01641
	(CLK * !D * SCD)	0.00875	0.00926	0.02985
	(CLK * !D * SCD)	0.00221	0.00271	0.02333
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00505	0.00520	0.01733
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00022	-0.00007	0.01210
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01305	0.01346	0.02599
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00916	0.00957	0.02207
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01387	0.01442	0.03578
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00733	0.00788	0.02925
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00494	0.00526	0.01731
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00002	0.00029	0.01234

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)**	-0.00018	0.00048	0.01289
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00494	0.00564	0.01803
	(CLK * D * !SCD)	0.00360	0.00407	0.01662
	(CLK * D * !SCD)	0.00735	0.00787	0.02027
	(CLK * !D * SCD)	0.00135	0.00203	0.02291
	(CLK * !D * SCD)	0.00780	0.00850	0.02937
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00022	0.00046	0.01285
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00491	0.00562	0.01800
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00856	0.00912	0.02158
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01232	0.01290	0.02524
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00709	0.00780	0.02936
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01354	0.01425	0.03582
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00019	0.00081	0.01311
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00505	0.00569	0.01796

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00023	0.00042	0.01281
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00503	0.00569	0.01806
	(CLK * D * !SCD)	0.00350	0.00397	0.01650
	(CLK * D * !SCD)	0.00741	0.00789	0.02029
	(CLK * !D * SCD)	0.00143	0.00209	0.02294
	(CLK * !D * SCD)	0.00796	0.00864	0.02947
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00025	0.00041	0.01279
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00500	0.00567	0.01804
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00861	0.00915	0.02160
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01251	0.01307	0.02539
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00710	0.00779	0.02931
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01363	0.01432	0.03586
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00018	0.00078	0.01306
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00515	0.00576	0.01803

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)	0.01209	0.01244	0.03199
	(D * SCD * SCE * Q * !Q_N)	0.00817	0.00852	0.02806
	(D * !SCE * Q * !Q_N)	0.01207	0.01241	0.03197
	(D * !SCE * Q * !Q_N)	0.00814	0.00850	0.02804
	(D * !SCD * SCE * !Q * Q_N)	0.01186	0.01219	0.03176
	(D * !SCD * SCE * !Q * Q_N)	0.00793	0.00827	0.02783
	(!D * SCD * SCE * Q * !Q_N)	0.01211	0.01245	0.03201
	(!D * SCD * SCE * Q * !Q_N)	0.00818	0.00853	0.02808
	(!D * !SCE * !Q * Q_N)	0.01183	0.01217	0.03171
	(!D * !SCE * !Q * Q_N)	0.00790	0.00825	0.02779
	(!D * !SCD * SCE * !Q * Q_N)	0.01186	0.01220	0.03176
	(!D * !SCD * SCE * !Q * Q_N)	0.00793	0.00827	0.02783
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01237	0.01271	0.03223
	(D * SCD * SCE * Q * !Q_N)	0.00845	0.00877	0.02830
	(D * !SCE * Q * !Q_N)	0.01235	0.01269	0.03221
	(D * !SCE * Q * !Q_N)	0.00842	0.00875	0.02828
	(D * !SCD * SCE * !Q * Q_N)	0.01214	0.01247	0.03199
	(D * !SCD * SCE * !Q * Q_N)	0.00822	0.00854	0.02808
	(!D * SCD * SCE * Q * !Q_N)	0.01238	0.01273	0.03224
	(!D * SCD * SCE * Q * !Q_N)	0.00846	0.00878	0.02831
	(!D * !SCE * !Q * Q_N)	0.01211	0.01244	0.03196
	(!D * !SCE * !Q * Q_N)	0.00819	0.00851	0.02805
	(!D * !SCD * SCE * !Q * Q_N)	0.01214	0.01247	0.03200
	(!D * !SCD * SCE * !Q * Q_N)	0.00822	0.00854	0.02808

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)**	0.00672	0.00750	0.02749
	(D * SCD * SCE * Q * !Q_N)	0.01064	0.01144	0.03142
	(D * SCD * SCE * !Q * Q_N)	0.01157	0.01225	0.03270
	(D * SCD * SCE * !Q * Q_N)	0.01548	0.01617	0.03663
	(D * !SCE * Q * !Q_N)	0.00671	0.00748	0.02747
	(D * !SCE * Q * !Q_N)	0.01062	0.01142	0.03140
	(D * !SCE * !Q * Q_N)	0.01151	0.01220	0.03274
	(D * !SCE * !Q * Q_N)	0.01543	0.01613	0.03666
	(D * !SCD * SCE * Q * !Q_N)	0.01343	0.01427	0.03481
	(D * !SCD * SCE * Q * !Q_N)	0.01738	0.01821	0.03876
	(D * !SCD * SCE * !Q * Q_N)	0.00680	0.00757	0.02764
	(D * !SCD * SCE * !Q * Q_N)	0.01072	0.01151	0.03157
	(!D * SCD * SCE * Q * !Q_N)	0.00674	0.00751	0.02751
	(!D * SCD * SCE * Q * !Q_N)	0.01065	0.01145	0.03144
	(!D * SCD * SCE * !Q * Q_N)	0.01161	0.01229	0.03275
	(!D * SCD * SCE * !Q * Q_N)	0.01551	0.01620	0.03666
	(!D * !SCE * Q * !Q_N)	0.01336	0.01420	0.03469
	(!D * !SCE * Q * !Q_N)	0.01728	0.01811	0.03862
	(!D * !SCE * !Q * Q_N)	0.00677	0.00754	0.02760
	(!D * !SCE * !Q * Q_N)	0.01069	0.01148	0.03153
	(!D * !SCD * SCE * Q * !Q_N)	0.01343	0.01426	0.03479
	(!D * !SCD * SCE * Q * !Q_N)	0.01737	0.01819	0.03873
	(!D * !SCD * SCE * !Q * Q_N)	0.00680	0.00757	0.02764
	(!D * !SCD * SCE * !Q * Q_N)	0.01072	0.01151	0.03156

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00683	0.00761	0.02757
	(D * SCD * SCE * Q * !Q_N)	0.01077	0.01154	0.03149
	(D * SCD * SCE * !Q * Q_N)	0.01177	0.01247	0.03292
	(D * SCD * SCE * !Q * Q_N)	0.01570	0.01639	0.03684
	(D * !SCE * Q * !Q_N)	0.00682	0.00760	0.02756
	(D * !SCE * Q * !Q_N)	0.01074	0.01152	0.03148
	(D * !SCE * !Q * Q_N)	0.01172	0.01241	0.03292
	(D * !SCE * !Q * Q_N)	0.01565	0.01634	0.03685
	(D * !SCD * SCE * Q * !Q_N)	0.01346	0.01429	0.03481
	(D * !SCD * SCE * Q * !Q_N)	0.01741	0.01823	0.03877
	(D * !SCD * SCE * !Q * Q_N)	0.00689	0.00765	0.02770
	(D * !SCD * SCE * !Q * Q_N)	0.01081	0.01159	0.03163
	(!D * SCD * SCE * Q * !Q_N)	0.00685	0.00763	0.02759
	(!D * SCD * SCE * Q * !Q_N)	0.01078	0.01156	0.03151
	(!D * SCD * SCE * !Q * Q_N)	0.01180	0.01249	0.03296
	(!D * SCD * SCE * !Q * Q_N)	0.01572	0.01641	0.03688
	(!D * !SCE * Q * !Q_N)	0.01338	0.01422	0.03469
	(!D * !SCE * Q * !Q_N)	0.01731	0.01813	0.03862
	(!D * !SCE * !Q * Q_N)	0.00686	0.00763	0.02766
	(!D * !SCE * !Q * Q_N)	0.01078	0.01156	0.03159
	(!D * !SCD * SCE * Q * !Q_N)	0.01346	0.01429	0.03480
	(!D * !SCD * SCE * Q * !Q_N)	0.01740	0.01822	0.03874
	(!D * !SCD * SCE * !Q * Q_N)	0.00689	0.00765	0.02770
	(!D * !SCD * SCE * !Q * Q_N)	0.01081	0.01158	0.03163

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00195	0.00205	0.00430	0.00310	0.81409
sky130_fd_sc_hs__sdfxtp_2	0.00198	0.00202	0.00416	0.00313	1.58527
sky130_fd_sc_hs__sdfxtp_4	0.00196	0.00200	0.00428	0.00310	3.07988

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	9.97980	14.45360
sky130_fd_sc_hs__sdfxtp_2	0.00000	9.93952	13.97390
sky130_fd_sc_hs__sdfxtp_4	0.00000	13.04290	18.13430

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)**	0.30935	0.98939	7.50663
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.31337	0.88277	7.42384
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.37629	0.87035	7.62846

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.34573	0.78097	3.93422
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.35843	0.75578	3.92160
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.36562	0.72249	3.98593

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)	-0.11143	-0.21403	-0.89420
	setup	CLK (R)	0.23979	0.29401	1.04229
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11460	-0.22221	-0.90871
	setup	CLK (R)	0.25160	0.30389	1.06123
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11155	-0.21152	-0.88468
	setup	CLK (R)	0.23784	0.29133	1.01995

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)	-0.13471	-0.23789	-1.09204
	setup	CLK (R)	0.37699	0.42261	1.45040
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13931	-0.24436	-1.12803
	setup	CLK (R)	0.40010	0.44228	1.48732
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13608	-0.23877	-1.13845
	setup	CLK (R)	0.37739	0.42056	1.43614

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)	-0.11143	-0.21403	-0.89420
	setup	CLK (R)	0.23979	0.29401	1.04229
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11460	-0.22221	-0.90871
	setup	CLK (R)	0.25160	0.30389	1.06123
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11155	-0.21152	-0.88468
	setup	CLK (R)	0.23784	0.29133	1.01995

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)	-0.13471	-0.23789	-1.09204
	setup	CLK (R)	0.37699	0.42261	1.45040
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13931	-0.24436	-1.12803
	setup	CLK (R)	0.40010	0.44228	1.48732
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13608	-0.23877	-1.13845
	setup	CLK (R)	0.37739	0.42056	1.43614

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)	-0.14713	-0.23045	-0.95418
	setup	CLK (R)	0.28776	0.32399	1.11685
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14846	-0.23514	-0.96108
	setup	CLK (R)	0.30209	0.33323	1.12956
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14353	-0.22814	-0.94644
	setup	CLK (R)	0.28591	0.32109	1.09547

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)	-0.18600	-0.29330	-1.30846
	setup	CLK (R)	0.47575	0.50171	1.57913
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18813	-0.29931	-1.32911
	setup	CLK (R)	0.49591	0.51918	1.60495
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.18890	-0.29778	-1.34142
	setup	CLK (R)	0.47818	0.50052	1.57019

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)	-0.14713	-0.23045	-0.95418
	hold	CLK (R)	-0.15477	-0.24503	-0.98451
	setup	CLK (R)	0.27942	0.31471	1.09325
	setup	CLK (R)	0.28776	0.32399	1.11685
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14846	-0.23514	-0.96108
	hold	CLK (R)	-0.15948	-0.24751	-0.99019
	setup	CLK (R)	0.29410	0.32549	1.10289
	setup	CLK (R)	0.30209	0.33323	1.12956
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14353	-0.22814	-0.94644
	hold	CLK (R)	-0.15335	-0.24174	-0.97551
	setup	CLK (R)	0.27745	0.30911	1.06910
	setup	CLK (R)	0.28591	0.32109	1.09547

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)	-0.20444	-0.31304	-1.30956
	hold	CLK (R)	-0.18600	-0.29330	-1.30846
	setup	CLK (R)	0.47153	0.49672	1.56055
	setup	CLK (R)	0.47575	0.50171	1.57913
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.20372	-0.31369	-1.32977
	hold	CLK (R)	-0.18813	-0.29931	-1.32911
	setup	CLK (R)	0.49378	0.51649	1.59126
	setup	CLK (R)	0.49591	0.51918	1.60495
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.20575	-0.31239	-1.34194
	hold	CLK (R)	-0.18890	-0.29778	-1.34142
	setup	CLK (R)	0.47285	0.49565	1.54665
	setup	CLK (R)	0.47818	0.50052	1.57019

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)	-0.13195	-0.23840	-0.39392
	setup	CLK (R)	0.46374	0.46364	1.19343
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13432	-0.24049	-0.37720
	setup	CLK (R)	0.48340	0.47800	1.20417
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12976	-0.23719	-0.40751
	setup	CLK (R)	0.46472	0.46074	1.17244

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)	-0.15993	-0.24054	-0.96227
	setup	CLK (R)	0.40380	0.42779	1.32985
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16451	-0.24629	-0.98709
	setup	CLK (R)	0.42334	0.44686	1.36347
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16650	-0.24103	-1.02380
	setup	CLK (R)	0.40310	0.42559	1.32094

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)	-0.19521	-0.27034	-0.39392
	hold	CLK (R)	-0.13195	-0.23840	-1.03475
	setup	CLK (R)	0.46374	0.46364	0.54168
	setup	CLK (R)	0.26096	0.32190	1.19343
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.19901	-0.27716	-0.37720
	hold	CLK (R)	-0.13432	-0.24049	-1.04393
	setup	CLK (R)	0.48340	0.47800	0.54222
	setup	CLK (R)	0.27790	0.33224	1.20417
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.19788	-0.27013	-0.40751
	hold	CLK (R)	-0.12976	-0.23719	-1.02684
	setup	CLK (R)	0.46472	0.46074	0.53756
	setup	CLK (R)	0.26038	0.32041	1.17244

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)	-0.21339	-0.32271	-1.05317
	hold	CLK (R)	-0.15993	-0.24054	-0.96227
	setup	CLK (R)	0.34149	0.39438	1.12617
	setup	CLK (R)	0.40380	0.42779	1.32985
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.21414	-0.32005	-1.03944
	hold	CLK (R)	-0.16451	-0.24629	-0.98709
	setup	CLK (R)	0.35049	0.39850	1.11072
	setup	CLK (R)	0.42334	0.44686	1.36347
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.21239	-0.31820	-1.04213
	hold	CLK (R)	-0.16650	-0.24103	-1.02380
	setup	CLK (R)	0.33927	0.39232	1.08715
	setup	CLK (R)	0.40310	0.42559	1.32094

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 ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.12377	0.82153	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.15424	0.82153	16.50020
	min_pulse_width	CLK ()	0.12682	0.82153	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.19995	0.82153	16.50020
	min_pulse_width	CLK ()	0.13291	0.82153	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 ()	0.28222	0.82153	16.50020
	min_pulse_width	CLK ()	0.37972	0.82153	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.39496	0.82153	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.28222	0.82153	16.50020
	min_pulse_width	CLK ()	0.38581	0.82153	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	0.02067	0.02128	0.04194
	CLK	0.01678	0.01739	0.03819
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02383	0.02469	0.04533
	CLK	0.01990	0.02078	0.04169
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03021	0.03134	0.05214
	CLK	0.02631	0.02746	0.04895

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02131	0.02221	0.04294
	CLK	0.01745	0.01832	0.03873
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02416	0.02538	0.04660
	CLK	0.02026	0.02144	0.04184
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03025	0.03201	0.05465
	CLK	0.02635	0.02813	0.04874

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00119	0.00121	0.00119
	(CLK * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK * !SCE)	0.00380	0.00400	0.01383
	(CLK * !SCE)	0.00090	0.00111	0.01094
	(CLK * !SCD * SCE)	0.00073	0.00074	0.00072
	(CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00112
	(!CLK * SCD * SCE)	0.00119	0.00119	0.00119
	(!CLK * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCE)	0.00899	0.00921	0.01955
	(!CLK * !SCE)	0.00610	0.00632	0.01667
	(!CLK * !SCD * SCE)	0.00078	0.00078	0.00076
	(!CLK * !SCD * SCE)	-0.00106	-0.00106	-0.00108
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00124	0.00125	0.00124
	(CLK * SCD * SCE)	-0.00041	-0.00041	-0.00040
	(CLK * !SCE)	0.00411	0.00430	0.01404
	(CLK * !SCE)	0.00117	0.00135	0.01110
	(CLK * !SCD * SCE)	0.00077	0.00077	0.00075
	(CLK * !SCD * SCE)	-0.00111	-0.00111	-0.00113
	(!CLK * SCD * SCE)	0.00121	0.00122	0.00121
	(!CLK * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCE)	0.00975	0.00995	0.02020
	(!CLK * !SCE)	0.00680	0.00701	0.01725
	(!CLK * !SCD * SCE)	0.00080	0.00079	0.00078
	(!CLK * !SCD * SCE)	-0.00108	-0.00108	-0.00110

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00123	0.00125	0.00123
	(CLK * SCD * SCE)	-0.00039	-0.00039	-0.00038
	(CLK * !SCE)	0.00382	0.00403	0.01387
	(CLK * !SCE)	0.00094	0.00114	0.01099
	(CLK * !SCD * SCE)	0.00078	0.00078	0.00076
	(CLK * !SCD * SCE)	-0.00107	-0.00108	-0.00109
	(!CLK * SCD * SCE)	0.00124	0.00125	0.00124
	(!CLK * SCD * SCE)	-0.00039	-0.00039	-0.00038
	(!CLK * !SCE)	0.00906	0.00928	0.01961
	(!CLK * !SCE)	0.00618	0.00639	0.01673
	(!CLK * !SCD * SCE)	0.00083	0.00083	0.00082
	(!CLK * !SCD * SCE)	-0.00102	-0.00102	-0.00104

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00095	-0.00095	-0.00099
	(CLK * SCD * SCE)	0.00066	0.00065	0.00063
	(CLK * !SCE)	0.00103	0.00152	0.01152
	(CLK * !SCE)	0.00392	0.00440	0.01441
	(CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !SCD * SCE)	0.00127	0.00128	0.00128
	(!CLK * SCD * SCE)	-0.00095	-0.00096	-0.00100
	(!CLK * SCD * SCE)	0.00065	0.00065	0.00062
	(!CLK * !SCE)	0.00657	0.00701	0.01807
	(!CLK * !SCE)	0.00947	0.00989	0.02096
	(!CLK * !SCD * SCE)	-0.00050	-0.00052	-0.00050
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00098	-0.00098	-0.00102
	(CLK * SCD * SCE)	0.00067	0.00066	0.00063
	(CLK * !SCE)	0.00109	0.00155	0.01151
	(CLK * !SCE)	0.00403	0.00450	0.01445
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00129	0.00130	0.00129
	(!CLK * SCD * SCE)	-0.00100	-0.00101	-0.00104
	(!CLK * SCD * SCE)	0.00064	0.00064	0.00061
	(!CLK * !SCE)	0.00673	0.00716	0.01811
	(!CLK * !SCE)	0.00968	0.01010	0.02105
	(!CLK * !SCD * SCE)	-0.00053	-0.00054	-0.00054
	(!CLK * !SCD * SCE)	0.00132	0.00133	0.00132
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00094	-0.00095	-0.00099
	(CLK * SCD * SCE)	0.00068	0.00067	0.00064
	(CLK * !SCE)	0.00102	0.00151	0.01152
	(CLK * !SCE)	0.00391	0.00439	0.01440
	(CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !SCD * SCE)	0.00129	0.00129	0.00129
	(!CLK * SCD * SCE)	-0.00094	-0.00095	-0.00098
	(!CLK * SCD * SCE)	0.00068	0.00068	0.00065
	(!CLK * !SCE)	0.00694	0.00739	0.01837
	(!CLK * !SCE)	0.00983	0.01026	0.02125
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00135	0.00135	0.00135

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00539	0.00540	0.01337
	(CLK * D * SCE)	0.00169	0.00169	0.00967
	(CLK * !D * SCE)	0.00627	0.00626	0.01393
	(CLK * !D * SCE)	0.00233	0.00231	0.00999
	(!CLK * D * SCE)	0.01057	0.01064	0.01922
	(!CLK * D * SCE)	0.00688	0.00694	0.01552
	(!CLK * !D * SCE)	0.01146	0.01151	0.01981
	(!CLK * !D * SCE)	0.00752	0.00757	0.01588
	!SCE	0.00120	0.00103	0.00099
	!SCE	-0.00092	-0.00110	-0.00113
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00554	0.00555	0.01348
	(CLK * D * SCE)	0.00187	0.00188	0.00982
	(CLK * !D * SCE)	0.00642	0.00641	0.01405
	(CLK * !D * SCE)	0.00252	0.00249	0.01015
	(!CLK * D * SCE)	0.01117	0.01123	0.01975
	(!CLK * D * SCE)	0.00750	0.00756	0.01608
	(!CLK * !D * SCE)	0.01206	0.01212	0.02035
	(!CLK * !D * SCE)	0.00814	0.00820	0.01645
	!SCE	0.00121	0.00105	0.00101
	!SCE	-0.00087	-0.00104	-0.00106
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00537	0.00539	0.01337
	(CLK * D * SCE)	0.00175	0.00176	0.00975
	(CLK * !D * SCE)	0.00625	0.00625	0.01394
	(CLK * !D * SCE)	0.00239	0.00237	0.01007
	(!CLK * D * SCE)	0.01060	0.01067	0.01925
	(!CLK * D * SCE)	0.00698	0.00704	0.01562
	(!CLK * !D * SCE)	0.01149	0.01154	0.01986
	(!CLK * !D * SCE)	0.00762	0.00768	0.01599
	!SCE	0.00120	0.00103	0.00099
	!SCE	-0.00088	-0.00105	-0.00108

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00219	0.00220	0.01030
	(CLK * D * SCE)	0.00590	0.00592	0.01399
	(CLK * !D * SCE)	0.00180	0.00184	0.01010
	(CLK * !D * SCE)	0.00575	0.00579	0.01402
	(!CLK * D * SCE)	0.00778	0.00782	0.01677
	(!CLK * D * SCE)	0.01149	0.01153	0.02045
	(!CLK * !D * SCE)	0.00745	0.00753	0.01685
	(!CLK * !D * SCE)	0.01140	0.01148	0.02077
	!SCE	-0.00077	-0.00078	-0.00078
	!SCE	0.00136	0.00135	0.00135
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00232	0.00234	0.01042
	(CLK * D * SCE)	0.00600	0.00603	0.01407
	(CLK * !D * SCE)	0.00194	0.00198	0.01021
	(CLK * !D * SCE)	0.00585	0.00590	0.01411
	(!CLK * D * SCE)	0.00800	0.00804	0.01694
	(!CLK * D * SCE)	0.01168	0.01172	0.02060
	(!CLK * !D * SCE)	0.00769	0.00776	0.01699
	(!CLK * !D * SCE)	0.01160	0.01167	0.02089
	!SCE	-0.00078	-0.00078	-0.00078
	!SCE	0.00131	0.00131	0.00130

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.00220	0.00222	0.01034
	(CLK * D * SCE)	0.00584	0.00587	0.01395
	(CLK * !D * SCE)	0.00181	0.00186	0.01013
	(CLK * !D * SCE)	0.00569	0.00573	0.01398
	(!CLK * D * SCE)	0.00816	0.00821	0.01711
	(!CLK * D * SCE)	0.01180	0.01184	0.02073
	(!CLK * !D * SCE)	0.00784	0.00792	0.01720
	(!CLK * !D * SCE)	0.01171	0.01179	0.02105
	!SCE	-0.00073	-0.00074	-0.00074
	!SCE	0.00134	0.00135	0.00135

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)	0.00512	0.00526	0.01738
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00017	0.01197
	(CLK * D * !SCD)	0.00750	0.00783	0.02035
	(CLK * D * !SCD)	0.00351	0.00383	0.01633
	(CLK * !D * SCD)	0.00885	0.00934	0.02992
	(CLK * !D * SCD)	0.00209	0.00255	0.02316
	(!CLK * D * SCD)	0.00511	0.00526	0.01738
	(!CLK * D * SCD)	-0.00031	-0.00018	0.01196
	(!CLK * D * !SCD)	0.01295	0.01335	0.02586
	(!CLK * D * !SCD)	0.00897	0.00936	0.02185
	(!CLK * !D * SCD)	0.01404	0.01456	0.03593
	(!CLK * !D * SCD)	0.00728	0.00779	0.02917
	(!CLK * !D * !SCD)	0.00501	0.00530	0.01735
	(!CLK * !D * !SCD)	-0.00011	0.00018	0.01222

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00494	0.00510	0.01725
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00030	-0.00013	0.01204
	(CLK * D * !SCD)	0.00740	0.00778	0.02032
	(CLK * D * !SCD)	0.00364	0.00400	0.01651
	(CLK * !D * SCD)	0.00892	0.00946	0.03000
	(CLK * !D * SCD)	0.00234	0.00285	0.02341
	(!CLK * D * SCD)	0.00492	0.00507	0.01722
	(!CLK * D * SCD)	-0.00032	-0.00015	0.01202
	(!CLK * D * !SCD)	0.01296	0.01340	0.02593
	(!CLK * D * !SCD)	0.00920	0.00963	0.02214
	(!CLK * !D * SCD)	0.01455	0.01513	0.03645
	(!CLK * !D * SCD)	0.00797	0.00853	0.02986
	(!CLK * !D * !SCD)	0.00485	0.00518	0.01725
	(!CLK * !D * !SCD)	-0.00008	0.00025	0.01231
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00514	0.00527	0.01739
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00015	0.01198
	(CLK * D * !SCD)	0.00747	0.00780	0.02031
	(CLK * D * !SCD)	0.00348	0.00379	0.01628
	(CLK * !D * SCD)	0.00889	0.00938	0.02994
	(CLK * !D * SCD)	0.00214	0.00263	0.02322
	(!CLK * D * SCD)	0.00514	0.00528	0.01739
	(!CLK * D * SCD)	-0.00027	-0.00015	0.01199
	(!CLK * D * !SCD)	0.01329	0.01369	0.02617
	(!CLK * D * !SCD)	0.00930	0.00970	0.02214
	(!CLK * !D * SCD)	0.01413	0.01463	0.03596
	(!CLK * !D * SCD)	0.00738	0.00791	0.02924
	(!CLK * !D * !SCD)	0.00503	0.00532	0.01736
	(!CLK * !D * !SCD)	-0.00008	0.00021	0.01224

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)	-0.00023	0.00039	0.01278
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00518	0.00582	0.01819
	(CLK * D * !SCD)	0.00358	0.00402	0.01655
	(CLK * D * !SCD)	0.00758	0.00804	0.02042
	(CLK * !D * SCD)	0.00138	0.00202	0.02284
	(CLK * !D * SCD)	0.00815	0.00881	0.02961
	(!CLK * D * SCD)	-0.00024	0.00041	0.01277
	(!CLK * D * SCD)	0.00518	0.00584	0.01818
	(!CLK * D * !SCD)	0.00875	0.00928	0.02172
	(!CLK * D * !SCD)	0.01274	0.01328	0.02559
	(!CLK * !D * SCD)	0.00691	0.00759	0.02911
	(!CLK * !D * SCD)	0.01368	0.01435	0.03588
	(!CLK * !D * !SCD)	0.00018	0.00076	0.01304
	(!CLK * !D * !SCD)	0.00532	0.00590	0.01817

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00021	0.00045	0.01284
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00501	0.00568	0.01806
	(CLK * D * !SCD)	0.00388	0.00435	0.01685
	(CLK * D * !SCD)	0.00765	0.00815	0.02052
	(CLK * !D * SCD)	0.00144	0.00210	0.02290
	(CLK * !D * SCD)	0.00804	0.00871	0.02950
	(!CLK * D * SCD)	-0.00023	0.00045	0.01282
	(!CLK * D * SCD)	0.00498	0.00568	0.01804
	(!CLK * D * !SCD)	0.00949	0.01004	0.02248
	(!CLK * D * !SCD)	0.01326	0.01383	0.02613
	(!CLK * !D * SCD)	0.00708	0.00776	0.02922
	(!CLK * !D * SCD)	0.01367	0.01435	0.03582
	(!CLK * !D * !SCD)	0.00016	0.00077	0.01305
	(!CLK * !D * !SCD)	0.00509	0.00572	0.01798
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00018	0.00044	0.01281
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00520	0.00586	0.01821
	(CLK * D * !SCD)	0.00364	0.00408	0.01659
	(CLK * D * !SCD)	0.00763	0.00809	0.02047
	(CLK * !D * SCD)	0.00140	0.00204	0.02286
	(CLK * !D * SCD)	0.00813	0.00879	0.02959
	(!CLK * D * SCD)	-0.00017	0.00046	0.01282
	(!CLK * D * SCD)	0.00520	0.00588	0.01821
	(!CLK * D * !SCD)	0.00885	0.00937	0.02182
	(!CLK * D * !SCD)	0.01285	0.01338	0.02571
	(!CLK * !D * SCD)	0.00731	0.00798	0.02943
	(!CLK * !D * SCD)	0.01404	0.01471	0.03618
	(!CLK * !D * !SCD)	0.00024	0.00082	0.01309
	(!CLK * !D * !SCD)	0.00536	0.00595	0.01821

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)	0.01197	0.01233	0.03186
	(D * SCD * SCE * Q)	0.00808	0.00843	0.02797
	(D * !SCE * Q)	0.01195	0.01231	0.03184
	(D * !SCE * Q)	0.00806	0.00841	0.02795
	(D * !SCD * SCE * !Q)	0.01182	0.01216	0.03171
	(D * !SCD * SCE * !Q)	0.00793	0.00828	0.02783
	(!D * SCD * SCE * Q)	0.01198	0.01235	0.03188
	(!D * SCD * SCE * Q)	0.00810	0.00844	0.02799
	(!D * !SCE * !Q)	0.01179	0.01215	0.03167
	(!D * !SCE * !Q)	0.00791	0.00825	0.02778
	(!D * !SCD * SCE * !Q)	0.01182	0.01217	0.03172
	(!D * !SCD * SCE * !Q)	0.00794	0.00828	0.02783
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01217	0.01252	0.03195
	(D * SCD * SCE * Q)	0.00825	0.00858	0.02804
	(D * !SCE * Q)	0.01215	0.01250	0.03194
	(D * !SCE * Q)	0.00822	0.00856	0.02801
	(D * !SCD * SCE * !Q)	0.01215	0.01248	0.03193
	(D * !SCD * SCE * !Q)	0.00822	0.00855	0.02802
	(!D * SCD * SCE * Q)	0.01218	0.01253	0.03196
	(!D * SCD * SCE * Q)	0.00826	0.00859	0.02805
	(!D * !SCE * !Q)	0.01212	0.01246	0.03191
	(!D * !SCE * !Q)	0.00820	0.00852	0.02798
	(!D * !SCD * SCE * !Q)	0.01215	0.01248	0.03193
	(!D * !SCD * SCE * !Q)	0.00822	0.00854	0.02801

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01214	0.01249	0.03201
	(D * SCD * SCE * Q)	0.00824	0.00857	0.02810
	(D * !SCE * Q)	0.01211	0.01247	0.03199
	(D * !SCE * Q)	0.00821	0.00855	0.02808
	(D * !SCD * SCE * !Q)	0.01193	0.01228	0.03180
	(D * !SCD * SCE * !Q)	0.00803	0.00836	0.02790
	(!D * SCD * SCE * Q)	0.01215	0.01251	0.03202
	(!D * SCD * SCE * Q)	0.00825	0.00859	0.02812
	(!D * !SCE * !Q)	0.01190	0.01225	0.03176
	(!D * !SCE * !Q)	0.00800	0.00833	0.02787
	(!D * !SCD * SCE * !Q)	0.01193	0.01227	0.03180
	(!D * !SCD * SCE * !Q)	0.00803	0.00836	0.02790

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)**	0.00684	0.00762	0.02760
	(D * SCD * SCE * Q)	0.01072	0.01150	0.03149
	(D * SCD * SCE * !Q)	0.01171	0.01239	0.03286
	(D * SCD * SCE * !Q)	0.01559	0.01628	0.03673
	(D * !SCE * Q)	0.00682	0.00761	0.02758
	(D * !SCE * Q)	0.01070	0.01149	0.03147
	(D * !SCE * !Q)	0.01166	0.01234	0.03290
	(D * !SCE * !Q)	0.01554	0.01624	0.03678
	(D * !SCD * SCE * Q)	0.01326	0.01410	0.03462
	(D * !SCD * SCE * Q)	0.01717	0.01801	0.03854
	(D * !SCD * SCE * !Q)	0.00677	0.00754	0.02760
	(D * !SCD * SCE * !Q)	0.01065	0.01144	0.03149
	(!D * SCD * SCE * Q)	0.00686	0.00764	0.02762
	(!D * SCD * SCE * Q)	0.01074	0.01152	0.03151
	(!D * SCD * SCE * !Q)	0.01175	0.01243	0.03290
	(!D * SCD * SCE * !Q)	0.01562	0.01631	0.03676
	(!D * !SCE * Q)	0.01319	0.01403	0.03450
	(!D * !SCE * Q)	0.01707	0.01792	0.03839
	(!D * !SCE * !Q)	0.00674	0.00751	0.02756
	(!D * !SCE * !Q)	0.01062	0.01141	0.03145
	(!D * !SCD * SCE * Q)	0.01326	0.01410	0.03460
	(!D * !SCD * SCE * Q)	0.01716	0.01800	0.03851
	(!D * !SCD * SCE * !Q)	0.00677	0.00754	0.02760
	(!D * !SCD * SCE * !Q)	0.01065	0.01144	0.03149

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00711	0.00787	0.02779
	(D * SCD * SCE * Q)	0.01103	0.01179	0.03172
	(D * SCD * SCE * !Q)	0.01243	0.01308	0.03346
	(D * SCD * SCE * !Q)	0.01635	0.01700	0.03739
	(D * !SCE * Q)	0.00709	0.00785	0.02777
	(D * !SCE * Q)	0.01101	0.01178	0.03170
	(D * !SCE * !Q)	0.01238	0.01303	0.03351
	(D * !SCE * !Q)	0.01630	0.01696	0.03744
	(D * !SCD * SCE * Q)	0.01363	0.01445	0.03492
	(D * !SCD * SCE * Q)	0.01758	0.01839	0.03886
	(D * !SCD * SCE * !Q)	0.00695	0.00770	0.02769
	(D * !SCD * SCE * !Q)	0.01087	0.01163	0.03162
	(!D * SCD * SCE * Q)	0.00712	0.00788	0.02780
	(!D * SCD * SCE * Q)	0.01105	0.01181	0.03173
	(!D * SCD * SCE * !Q)	0.01247	0.01312	0.03350
	(!D * SCD * SCE * !Q)	0.01638	0.01703	0.03742
	(!D * !SCE * Q)	0.01356	0.01437	0.03480
	(!D * !SCE * Q)	0.01748	0.01828	0.03872
	(!D * !SCE * !Q)	0.00692	0.00767	0.02766
	(!D * !SCE * !Q)	0.01084	0.01160	0.03159
	(!D * !SCD * SCE * Q)	0.01362	0.01444	0.03490
	(!D * !SCD * SCE * Q)	0.01757	0.01837	0.03884
	(!D * !SCD * SCE * !Q)	0.00695	0.00770	0.02769
	(!D * !SCD * SCE * !Q)	0.01087	0.01163	0.03162

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00683	0.00761	0.02758
	(D * SCD * SCE * Q)	0.01072	0.01152	0.03148
	(D * SCD * SCE * !Q)	0.01179	0.01247	0.03289
	(D * SCD * SCE * !Q)	0.01568	0.01637	0.03680
	(D * !SCE * Q)	0.00681	0.00759	0.02756
	(D * !SCE * Q)	0.01070	0.01150	0.03146
	(D * !SCE * !Q)	0.01174	0.01242	0.03293
	(D * !SCE * !Q)	0.01563	0.01632	0.03683
	(D * !SCD * SCE * Q)	0.01366	0.01450	0.03502
	(D * !SCD * SCE * Q)	0.01758	0.01842	0.03893
	(D * !SCD * SCE * !Q)	0.00679	0.00756	0.02761
	(D * !SCD * SCE * !Q)	0.01069	0.01148	0.03151
	(!D * SCD * SCE * Q)	0.00684	0.00762	0.02759
	(!D * SCD * SCE * Q)	0.01073	0.01153	0.03150
	(!D * SCD * SCE * !Q)	0.01183	0.01251	0.03294
	(!D * SCD * SCE * !Q)	0.01571	0.01640	0.03683
	(!D * !SCE * Q)	0.01359	0.01443	0.03490
	(!D * !SCE * Q)	0.01748	0.01832	0.03879
	(!D * !SCE * !Q)	0.00676	0.00753	0.02757
	(!D * !SCE * !Q)	0.01065	0.01145	0.03147
	(!D * !SCD * SCE * Q)	0.01366	0.01450	0.03499
	(!D * !SCD * SCE * Q)	0.01756	0.01840	0.03891
	(!D * !SCD * SCE * !Q)	0.00679	0.00756	0.02761
	(!D * !SCD * SCE * !Q)	0.01069	0.01148	0.03151

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00245	0.00226	0.00489	0.79782
sky130_fd_sc_hs__sdlclkp_2	0.00245	0.00225	0.00520	1.56558
sky130_fd_sc_hs__sdlclkp_4	0.00233	0.00214	0.00532	3.04751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	9.26167	13.40640
sky130_fd_sc_hs__sdlclkp_2	0.00000	8.96461	12.42800
sky130_fd_sc_hs__sdlclkp_4	0.00000	9.67640	14.05780

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)	0.12011	0.77812	7.47649
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.12625	0.69059	7.41958
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.16536	0.69602	7.70141

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.13302	0.62305	4.25000
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.14752	0.63334	4.43078
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.19936	0.70522	4.77790

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)	-0.07467	-0.16423	-0.78713
	setup	CLK (R)	0.23421	0.30659	1.31564
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07445	-0.16423	-0.78223
	setup	CLK (R)	0.22484	0.29065	1.29128
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07788	-0.16684	-0.79935
	setup	CLK (R)	0.22419	0.27781	1.18915

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)	-0.21276	-0.27773	-1.19099
	setup	CLK (R)	0.27232	0.35835	1.30654
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.20966	-0.27223	-1.18577
	setup	CLK (R)	0.25962	0.33377	1.28655
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.21633	-0.28175	-1.19886
	setup	CLK (R)	0.25933	0.31567	1.31067

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)	-0.07467	-0.16423	-0.78713
	setup	CLK (R)	0.23421	0.30659	1.31564
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07445	-0.16423	-0.78223
	setup	CLK (R)	0.22484	0.29065	1.29128
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07788	-0.16684	-0.79935
	setup	CLK (R)	0.22419	0.27781	1.18915

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)	-0.21276	-0.27773	-1.19099
	setup	CLK (R)	0.27232	0.35835	1.30654
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.20966	-0.27223	-1.18577
	setup	CLK (R)	0.25962	0.33377	1.28655
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.21633	-0.28175	-1.19886
	setup	CLK (R)	0.25933	0.31567	1.31067

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)	-0.08170	-0.18248	-0.88514
	setup	CLK (R)	0.23938	0.32135	1.41866
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08374	-0.17987	-0.88285
	setup	CLK (R)	0.23381	0.30625	1.38415
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08360	-0.18248	-0.89403
	setup	CLK (R)	0.23438	0.29124	1.28453

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)	-0.22924	-0.27673	-1.14157
	setup	CLK (R)	0.29155	0.35835	1.23832
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.22540	-0.27468	-1.13689
	setup	CLK (R)	0.27642	0.33846	1.21654
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.23433	-0.28175	-1.14635
	setup	CLK (R)	0.27914	0.31916	1.23083

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)	-0.08170	-0.18248	-0.88514
	setup	CLK (R)	0.23938	0.32135	1.41866
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08374	-0.17987	-0.88285
	setup	CLK (R)	0.23381	0.30625	1.38415
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08360	-0.18248	-0.89403
	setup	CLK (R)	0.23438	0.29124	1.28453

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)	-0.22924	-0.27673	-1.14157
	setup	CLK (R)	0.29155	0.35835	1.23832
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.22540	-0.27468	-1.13689
	setup	CLK (R)	0.27642	0.33846	1.21654
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.23433	-0.28175	-1.14635
	setup	CLK (R)	0.27914	0.31916	1.23083

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 ()	0.09026	0.82153	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.09940	0.82153	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.13596	0.82153	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 ()	0.31878	0.82153	16.50020
	min_pulse_width	CLK ()	0.27308	0.82153	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.30964	0.82153	16.50020
	min_pulse_width	CLK ()	0.26698	0.82153	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.31269	0.82153	16.50020
	min_pulse_width	CLK ()	0.27003	0.82153	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	0.01533	0.01643	0.05336
	CLK	0.00922	0.01032	0.04734
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01844	0.01970	0.05698
	CLK	0.01192	0.01318	0.05055
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02432	0.02565	0.06140
	CLK	0.01762	0.01895	0.05535

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01757	0.01994	0.05674
	CLK	0.02333	0.02565	0.06222
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01966	0.02240	0.05964
	CLK	0.02579	0.02851	0.06553
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02596	0.02895	0.06471
	CLK	0.03229	0.03496	0.07085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00130	0.00130	0.00130
	(CLK * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * !SCE)	0.00418	0.00460	0.01931
	(CLK * !SCE)	0.00102	0.00144	0.01616
	(!CLK * SCE * !GCLK)	0.00123	0.00124	0.00124
	(!CLK * SCE * !GCLK)	-0.00064	-0.00064	-0.00064
	(!CLK * !SCE * !GCLK)	0.01062	0.01083	0.02540
	(!CLK * !SCE * !GCLK)	0.00780	0.00800	0.02258
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00130	0.00131	0.00130
	(CLK * SCE)	-0.00057	-0.00057	-0.00057
	(CLK * !SCE)	0.00414	0.00457	0.01928
	(CLK * !SCE)	0.00100	0.00142	0.01615
	(!CLK * SCE * !GCLK)	0.00124	0.00124	0.00124
	(!CLK * SCE * !GCLK)	-0.00063	-0.00064	-0.00063
	(!CLK * !SCE * !GCLK)	0.01047	0.01068	0.02529
	(!CLK * !SCE * !GCLK)	0.00770	0.00790	0.02252
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00126	0.00127	0.00126
	(CLK * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * !SCE)	0.00404	0.00447	0.01913
	(CLK * !SCE)	0.00105	0.00146	0.01614
	(!CLK * SCE * !GCLK)	0.00121	0.00122	0.00121
	(!CLK * SCE * !GCLK)	-0.00058	-0.00059	-0.00058
	(!CLK * !SCE * !GCLK)	0.01054	0.01075	0.02531
	(!CLK * !SCE * !GCLK)	0.00787	0.00808	0.02264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00109	-0.00110	-0.00113
	(CLK * SCE)	0.00078	0.00078	0.00075
	(CLK * !SCE)	0.00088	0.00171	0.01668
	(CLK * !SCE)	0.00404	0.00488	0.01983
	(!CLK * SCE * !GCLK)	-0.00110	-0.00110	-0.00113
	(!CLK * SCE * !GCLK)	0.00078	0.00078	0.00075
	(!CLK * !SCE * !GCLK)	0.00942	0.01018	0.02596
	(!CLK * !SCE * !GCLK)	0.01225	0.01299	0.02878
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00108	-0.00109	-0.00112
	(CLK * SCE)	0.00079	0.00078	0.00075
	(CLK * !SCE)	0.00093	0.00176	0.01672
	(CLK * !SCE)	0.00406	0.00490	0.01985
	(!CLK * SCE * !GCLK)	-0.00109	-0.00109	-0.00112
	(!CLK * SCE * !GCLK)	0.00079	0.00078	0.00075
	(!CLK * !SCE * !GCLK)	0.00952	0.01029	0.02606
	(!CLK * !SCE * !GCLK)	0.01231	0.01307	0.02885
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00102	-0.00102	-0.00106
	(CLK * SCE)	0.00078	0.00077	0.00074
	(CLK * !SCE)	0.00120	0.00201	0.01693
	(CLK * !SCE)	0.00420	0.00502	0.01993
	(!CLK * SCE * !GCLK)	-0.00103	-0.00103	-0.00107
	(!CLK * SCE * !GCLK)	0.00076	0.00076	0.00073
	(!CLK * !SCE * !GCLK)	0.00987	0.01061	0.02633
	(!CLK * !SCE * !GCLK)	0.01254	0.01329	0.02901

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00140	0.00117	0.00112
	(CLK * GATE)	-0.00107	-0.00129	-0.00134
	(CLK * !GATE)	0.00550	0.00581	0.01776
	(CLK * !GATE)	0.00165	0.00196	0.01393
	(!CLK * GATE * !GCLK)	0.00137	0.00114	0.00109
	(!CLK * GATE * !GCLK)	-0.00110	-0.00132	-0.00137
	(!CLK * !GATE * !GCLK)	0.01193	0.01226	0.02442
	(!CLK * !GATE * !GCLK)	0.00843	0.00874	0.02092
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00140	0.00117	0.00112
	(CLK * GATE)	-0.00106	-0.00128	-0.00133
	(CLK * !GATE)	0.00546	0.00578	0.01772
	(CLK * !GATE)	0.00164	0.00194	0.01392
	(!CLK * GATE * !GCLK)	0.00137	0.00114	0.00109
	(!CLK * GATE * !GCLK)	-0.00109	-0.00131	-0.00136
	(!CLK * !GATE * !GCLK)	0.01178	0.01211	0.02429
	(!CLK * !GATE * !GCLK)	0.00833	0.00864	0.02083
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00137	0.00115	0.00109
	(CLK * GATE)	-0.00102	-0.00126	-0.00129
	(CLK * !GATE)	0.00538	0.00570	0.01762
	(CLK * !GATE)	0.00169	0.00200	0.01395
	(!CLK * GATE * !GCLK)	0.00133	0.00112	0.00106
	(!CLK * GATE * !GCLK)	-0.00105	-0.00129	-0.00132
	(!CLK * !GATE * !GCLK)	0.01185	0.01216	0.02433
	(!CLK * !GATE * !GCLK)	0.00851	0.00881	0.02099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00091	-0.00091	-0.00091
	(CLK * GATE)	0.00156	0.00156	0.00155
	(CLK * !GATE)	0.00094	0.00118	0.01312
	(CLK * !GATE)	0.00477	0.00504	0.01696
	(!CLK * GATE * !GCLK)	-0.00094	-0.00094	-0.00094
	(!CLK * GATE * !GCLK)	0.00152	0.00154	0.00152
	(!CLK * !GATE * !GCLK)	0.00941	0.00964	0.02198
	(!CLK * !GATE * !GCLK)	0.01293	0.01315	0.02550
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00089	-0.00090	-0.00089
	(CLK * GATE)	0.00156	0.00157	0.00156
	(CLK * !GATE)	0.00098	0.00123	0.01317
	(CLK * !GATE)	0.00480	0.00506	0.01699
	(!CLK * GATE * !GCLK)	-0.00092	-0.00093	-0.00092
	(!CLK * GATE * !GCLK)	0.00152	0.00154	0.00153
	(!CLK * !GATE * !GCLK)	0.00952	0.00974	0.02209
	(!CLK * !GATE * !GCLK)	0.01299	0.01321	0.02557
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00083	-0.00083	-0.00083
	(CLK * GATE)	0.00154	0.00156	0.00155
	(CLK * !GATE)	0.00124	0.00148	0.01339
	(CLK * !GATE)	0.00492	0.00516	0.01707
	(!CLK * GATE * !GCLK)	-0.00086	-0.00086	-0.00086
	(!CLK * GATE * !GCLK)	0.00151	0.00152	0.00152
	(!CLK * !GATE * !GCLK)	0.00987	0.01008	0.02238
	(!CLK * !GATE * !GCLK)	0.01323	0.01345	0.02575

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00929	0.00992	0.03051
	(!GATE * !SCE * !GCLK)	0.00344	0.00404	0.02465
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00942	0.01006	0.03069
	(!GATE * !SCE * !GCLK)	0.00319	0.00382	0.02446
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00957	0.01021	0.03079
	(!GATE * !SCE * !GCLK)	0.00319	0.00379	0.02440

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01055	0.01172	0.03483
	(GATE * SCE * !GCLK)	0.01683	0.01802	0.04112
	(GATE * !SCE * !GCLK)	0.01055	0.01171	0.03477
	(GATE * !SCE * !GCLK)	0.01683	0.01802	0.04106
	(!GATE * SCE * !GCLK)	0.01058	0.01175	0.03483
	(!GATE * SCE * !GCLK)	0.01685	0.01804	0.04109
	(!GATE * !SCE * !GCLK)	0.00432	0.00550	0.02638
	(!GATE * !SCE * !GCLK)	0.01017	0.01136	0.03225
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01024	0.01133	0.03478
	(GATE * SCE * !GCLK)	0.01694	0.01805	0.04148
	(GATE * !SCE * !GCLK)	0.01024	0.01134	0.03472
	(GATE * !SCE * !GCLK)	0.01694	0.01804	0.04141
	(!GATE * SCE * !GCLK)	0.01027	0.01137	0.03477
	(!GATE * SCE * !GCLK)	0.01695	0.01806	0.04145
	(!GATE * !SCE * !GCLK)	0.00411	0.00523	0.02619
	(!GATE * !SCE * !GCLK)	0.01033	0.01148	0.03243
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01065	0.01170	0.03508
	(GATE * SCE * !GCLK)	0.01748	0.01857	0.04192
	(GATE * !SCE * !GCLK)	0.01065	0.01171	0.03502
	(GATE * !SCE * !GCLK)	0.01749	0.01856	0.04186
	(!GATE * SCE * !GCLK)	0.01068	0.01174	0.03508
	(!GATE * SCE * !GCLK)	0.01750	0.01858	0.04189
	(!GATE * !SCE * !GCLK)	0.00434	0.00545	0.02637
	(!GATE * !SCE * !GCLK)	0.01072	0.01185	0.03278

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00203	0.00390	0.00181	0.00393	0.00297	0.81405	0.81146
sky130_fd_sc_hs__sedfxbp_2	0.00212	0.00395	0.00183	0.00400	0.00298	1.43900	1.47688

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	13.63840	22.76210
sky130_fd_sc_hs__sedfxbp_2	0.00000	14.09630	22.79170

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)	0.31201	1.01371	7.53102
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.32136	0.92902	7.35950

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.28330	0.79126	4.08913
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.32537	0.79246	3.77136

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)	0.42068	1.09576	7.63407
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.49940	1.05841	7.54137

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)	0.44026	0.89632	4.08381
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.49401	0.89506	3.90563

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)	-0.29117	-0.40758	-1.50425
	setup	CLK (R)	0.36012	0.44977	1.56528
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.29382	-0.40894	-1.51401
	setup	CLK (R)	0.36439	0.44742	1.56836

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.59227	-0.67069	-2.06284
	setup	CLK (R)	0.74776	0.77794	2.19469
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.58870	-0.66599	-2.06361
	setup	CLK (R)	0.73902	0.77072	2.17970

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)	-0.29117	-0.40758	-1.50425
	setup	CLK (R)	0.36012	0.44977	1.56528
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.29382	-0.40894	-1.51401
	setup	CLK (R)	0.36439	0.44742	1.56836

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.59227	-0.67069	-2.06284
	setup	CLK (R)	0.74776	0.77794	2.19469
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.58870	-0.66599	-2.06361
	setup	CLK (R)	0.73902	0.77072	2.17970

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)	-0.08204	-0.09357	-0.11550
	setup	CLK (R)	0.80636	0.79599	1.37687
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08230	-0.09279	-0.12552
	setup	CLK (R)	0.79512	0.78812	1.38495

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)	-0.39989	-0.50386	-1.27419
	setup	CLK (R)	0.64611	0.69147	1.93243
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.40149	-0.50587	-1.28199
	setup	CLK (R)	0.64402	0.68903	1.93874

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)	-0.08204	-0.09357	-0.11550
	hold	CLK (R)	-0.24371	-0.27879	-0.44185
	setup	CLK (R)	0.36134	0.41695	1.37687
	setup	CLK (R)	0.80636	0.79599	0.95926
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08230	-0.09279	-0.12552
	hold	CLK (R)	-0.24044	-0.27769	-0.44123
	setup	CLK (R)	0.36138	0.42095	1.38495
	setup	CLK (R)	0.79512	0.78812	0.93515

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.60143	-0.66433	-1.91657
	hold	CLK (R)	-0.39989	-0.50386	-1.27419
	setup	CLK (R)	0.64611	0.69147	1.93243
	setup	CLK (R)	0.43316	0.52356	1.28568
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.59491	-0.65730	-1.92159
	hold	CLK (R)	-0.40149	-0.50587	-1.28199
	setup	CLK (R)	0.64402	0.68903	1.93874
	setup	CLK (R)	0.43145	0.52077	1.28856

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)	-0.17806	-0.26006	-1.00973
	setup	CLK (R)	0.21867	0.28341	1.03873
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.17901	-0.25951	-1.02510
	setup	CLK (R)	0.22220	0.28702	1.05458

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)	-0.38141	-0.43050	-1.46256
	setup	CLK (R)	0.51638	0.53500	1.62805
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.37588	-0.43180	-1.46875
	setup	CLK (R)	0.50814	0.53199	1.61145

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)	-0.17806	-0.26006	-1.00973
	setup	CLK (R)	0.21867	0.28341	1.03873
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.17901	-0.25951	-1.02510
	setup	CLK (R)	0.22220	0.28702	1.05458

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)	-0.38141	-0.43050	-1.46256
	setup	CLK (R)	0.51638	0.53500	1.62805
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.37588	-0.43180	-1.46875
	setup	CLK (R)	0.50814	0.53199	1.61145

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)	-0.00161	0.01224	0.34254
	setup	CLK (R)	0.53923	0.52529	0.96873
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00131	0.01085	0.33499
	setup	CLK (R)	0.53588	0.52520	0.97469

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)	-0.27124	-0.38945	-1.20826
	setup	CLK (R)	0.53037	0.55303	1.72767
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27719	-0.39650	-1.23815
	setup	CLK (R)	0.52134	0.54901	1.71643

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)	-0.40285	-0.42090	-0.48754
	hold	CLK (R)	-0.00161	0.01224	0.34254
	hold	CLK (R)	-0.15116	-0.24846	-0.92863
	hold	CLK (R)	-0.16249	-0.19788	-0.28586
	setup	CLK (R)	0.53687	0.52529	0.70917
	setup	CLK (R)	0.19429	0.27677	0.96782
	setup	CLK (R)	0.19421	0.27677	0.96873
	setup	CLK (R)	0.53923	0.52297	0.71064
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.40487	-0.42421	-0.51740
	hold	CLK (R)	0.00131	0.01085	0.33499
	hold	CLK (R)	-0.14930	-0.24955	-0.93669
	hold	CLK (R)	-0.16152	-0.20032	-0.30452
	setup	CLK (R)	0.53588	0.52520	0.69896
	setup	CLK (R)	0.19501	0.27538	0.97381
	setup	CLK (R)	0.19339	0.27538	0.97469
	setup	CLK (R)	0.53206	0.52517	0.69897

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)	-0.27603	-0.39659	-1.22451
	hold	CLK (R)	-0.37178	-0.43332	-1.55166
	hold	CLK (R)	-0.36073	-0.42652	-1.56815
	hold	CLK (R)	-0.27124	-0.38945	-1.20826
	setup	CLK (R)	0.33707	0.42930	1.24564
	setup	CLK (R)	0.41580	0.46106	1.57839
	setup	CLK (R)	0.53037	0.55303	1.72767
	setup	CLK (R)	0.30547	0.40850	1.21727
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28322	-0.40541	-1.25555
	hold	CLK (R)	-0.36490	-0.43324	-1.56791
	hold	CLK (R)	-0.35599	-0.42884	-1.58834
	hold	CLK (R)	-0.27719	-0.39650	-1.23815
	setup	CLK (R)	0.34495	0.43474	1.27472
	setup	CLK (R)	0.41454	0.46286	1.59093
	setup	CLK (R)	0.52134	0.54901	1.71643
	setup	CLK (R)	0.30992	0.41504	1.24454

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 ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.22432	0.82153	16.50020
	min_pulse_width	CLK ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.22737	0.82153	16.50020
	min_pulse_width	CLK ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.22432	0.82153	16.50020
	min_pulse_width	CLK ()	0.22432	0.82153	16.50020
	min_pulse_width	CLK ()	0.14510	0.82153	16.50020
	min_pulse_width	CLK ()	0.22737	0.82153	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.30050	0.82153	16.50020
	min_pulse_width	CLK ()	0.16948	0.82153	16.50020
	min_pulse_width	CLK ()	0.30050	0.82153	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 ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.25479	0.82153	16.50020
	min_pulse_width	CLK ()	0.41628	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.41628	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.45285	0.82153	16.50020
	min_pulse_width	CLK ()	0.41628	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.41628	0.82153	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.25479	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.44066	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	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	0.01639	0.01679	0.02716
	CLK	0.01402	0.01442	0.02450
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01891	0.01934	0.02994
	CLK	0.01656	0.01700	0.02725

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01491	0.01519	0.02546
	CLK	0.01344	0.01372	0.02380
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01761	0.01790	0.02814
	CLK	0.01612	0.01643	0.02650

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01499	0.01528	0.02590
	CLK	0.01352	0.01381	0.02409
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01771	0.01800	0.02877
	CLK	0.01622	0.01653	0.02694

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01629	0.01668	0.02678
	CLK	0.01391	0.01432	0.02420
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01879	0.01923	0.02925
	CLK	0.01643	0.01689	0.02678

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00443	0.00451	0.01393
	(DE * SCE)	0.00168	0.00177	0.01118
	(CLK * DE * !SCE)	0.00886	0.00891	0.01722
	(CLK * DE * !SCE)	0.00522	0.00527	0.01359
	(CLK * !DE * !SCE)	0.00102	0.00103	0.00102
	(CLK * !DE * !SCE)	-0.00063	-0.00063	-0.00063
	(!DE * SCE)	0.00047	0.00047	0.00045
	(!DE * SCE)	-0.00139	-0.00140	-0.00141
	(!CLK * DE * !SCE * Q * !Q_N)	0.01572	0.01589	0.02528
	(!CLK * DE * !SCE * Q * !Q_N)	0.01212	0.01230	0.02169
	(!CLK * DE * !SCE * !Q * Q_N)	0.01540	0.01554	0.02477
	(!CLK * DE * !SCE * !Q * Q_N)	0.01176	0.01190	0.02114
	(!CLK * !DE * !SCE)	0.00102	0.00102	0.00102
	(!CLK * !DE * !SCE)	-0.00064	-0.00064	-0.00063
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00451	0.00458	0.01402
	(DE * SCE)	0.00165	0.00173	0.01118
	(CLK * DE * !SCE)	0.00904	0.00908	0.01738
	(CLK * DE * !SCE)	0.00527	0.00531	0.01362
	(CLK * !DE * !SCE)	0.00108	0.00109	0.00108
	(CLK * !DE * !SCE)	-0.00066	-0.00067	-0.00065
	(!DE * SCE)	0.00112	0.00112	0.00112
	(!DE * SCE)	-0.00062	-0.00062	-0.00061
	(!CLK * DE * !SCE * Q * !Q_N)	0.01580	0.01597	0.02536
	(!CLK * DE * !SCE * Q * !Q_N)	0.01208	0.01225	0.02164
	(!CLK * DE * !SCE * !Q * Q_N)	0.01544	0.01558	0.02482
	(!CLK * DE * !SCE * !Q * Q_N)	0.01167	0.01181	0.02105
	(!CLK * !DE * !SCE)	0.00107	0.00108	0.00107
	(!CLK * !DE * !SCE)	-0.00067	-0.00067	-0.00066

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00192	0.00236	0.01227
	(DE * SCE)	0.00466	0.00511	0.01501
	(CLK * DE * !SCE)	0.00322	0.00350	0.01276
	(CLK * DE * !SCE)	0.00686	0.00713	0.01639
	(CLK * !DE * !SCE)	-0.00022	-0.00023	-0.00022
	(CLK * !DE * !SCE)	0.00163	0.00164	0.00164
	(!DE * SCE)	-0.00015	-0.00016	-0.00015
	(!DE * SCE)	0.00170	0.00171	0.00171
	(!CLK * DE * !SCE * Q * !Q_N)	0.01016	0.01038	0.02147
	(!CLK * DE * !SCE * Q * !Q_N)	0.01375	0.01398	0.02506
	(!CLK * DE * !SCE * !Q * Q_N)	0.01094	0.01123	0.02258
	(!CLK * DE * !SCE * !Q * Q_N)	0.01457	0.01486	0.02622
	(!CLK * !DE * !SCE)	-0.00022	-0.00023	-0.00023
	(!CLK * !DE * !SCE)	0.00163	0.00165	0.00163
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00171	0.00216	0.01208
	(DE * SCE)	0.00456	0.00500	0.01492
	(CLK * DE * !SCE)	0.00309	0.00336	0.01261
	(CLK * DE * !SCE)	0.00685	0.00712	0.01638
	(CLK * !DE * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK * !DE * !SCE)	0.00171	0.00171	0.00170
	(!DE * SCE)	-0.00017	-0.00017	-0.00016
	(!DE * SCE)	0.00178	0.00178	0.00177
	(!CLK * DE * !SCE * Q * !Q_N)	0.00996	0.01023	0.02129
	(!CLK * DE * !SCE * Q * !Q_N)	0.01368	0.01396	0.02501
	(!CLK * DE * !SCE * !Q * Q_N)	0.01076	0.01106	0.02239
	(!CLK * DE * !SCE * !Q * Q_N)	0.01452	0.01481	0.02615
	(!CLK * !DE * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK * !DE * !SCE)	0.00171	0.00171	0.00170

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00836	0.00872	0.02867
	SCE	0.00248	0.00281	0.02278
	(CLK * !SCE)	0.01279	0.01312	0.03227
	(CLK * !SCE)	0.00602	0.00632	0.02549
	(!CLK * D * !SCE * Q * !Q_N)	0.00515	0.00528	0.01727
	(!CLK * D * !SCE * Q * !Q_N)	0.00023	0.00036	0.01236
	(!CLK * D * !SCE * !Q * Q_N)	0.01932	0.01970	0.03958
	(!CLK * D * !SCE * !Q * Q_N)	0.01255	0.01293	0.03281
	(!CLK * !D * !SCE * Q * !Q_N)	0.01594	0.01625	0.02838
	(!CLK * !D * !SCE * Q * !Q_N)	0.01301	0.01332	0.02545
	(!CLK * !D * !SCE * !Q * Q_N)	0.00500	0.00532	0.01730
	(!CLK * !D * !SCE * !Q * Q_N)	0.00012	0.00043	0.01242
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00838	0.00874	0.02872
	SCE	0.00239	0.00274	0.02274
	(CLK * !SCE)	0.01291	0.01325	0.03241
	(CLK * !SCE)	0.00601	0.00632	0.02550
	(!CLK * D * !SCE * Q * !Q_N)	0.00513	0.00527	0.01727
	(!CLK * D * !SCE * Q * !Q_N)	0.00014	0.00027	0.01229
	(!CLK * D * !SCE * !Q * Q_N)	0.01931	0.01971	0.03960
	(!CLK * D * !SCE * !Q * Q_N)	0.01241	0.01280	0.03269
	(!CLK * !D * !SCE * Q * !Q_N)	0.01581	0.01610	0.02824
	(!CLK * !D * !SCE * Q * !Q_N)	0.01286	0.01315	0.02529
	(!CLK * !D * !SCE * !Q * Q_N)	0.00500	0.00533	0.01733
	(!CLK * !D * !SCE * !Q * Q_N)	0.00006	0.00036	0.01237

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00268	0.00334	0.02371
	SCE	0.00857	0.00925	0.02959
	(CLK * !SCE)	0.00396	0.00456	0.02435
	(CLK * !SCE)	0.01074	0.01135	0.03112
	(!CLK * D * !SCE * Q * !Q_N)	0.00019	0.00075	0.01288
	(!CLK * D * !SCE * Q * !Q_N)	0.00509	0.00567	0.01779
	(!CLK * D * !SCE * !Q * Q_N)	0.01155	0.01219	0.03328
	(!CLK * D * !SCE * !Q * Q_N)	0.01834	0.01898	0.04005
	(!CLK * !D * !SCE * Q * !Q_N)	0.01602	0.01657	0.02866
	(!CLK * !D * !SCE * Q * !Q_N)	0.01893	0.01949	0.03160
	(!CLK * !D * !SCE * !Q * Q_N)	0.00001	0.00060	0.01276
	(!CLK * !D * !SCE * !Q * Q_N)	0.00488	0.00549	0.01765
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00247	0.00313	0.02353
	SCE	0.00846	0.00915	0.02951
	(CLK * !SCE)	0.00381	0.00442	0.02422
	(CLK * !SCE)	0.01072	0.01135	0.03111
	(!CLK * D * !SCE * Q * !Q_N)	0.00017	0.00073	0.01287
	(!CLK * D * !SCE * Q * !Q_N)	0.00514	0.00573	0.01785
	(!CLK * D * !SCE * !Q * Q_N)	0.01136	0.01201	0.03310
	(!CLK * D * !SCE * !Q * Q_N)	0.01828	0.01893	0.04000
	(!CLK * !D * !SCE * Q * !Q_N)	0.01602	0.01658	0.02866
	(!CLK * !D * !SCE * Q * !Q_N)	0.01895	0.01951	0.03163
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00005	0.00054	0.01271
	(!CLK * !D * !SCE * !Q * Q_N)	0.00489	0.00550	0.01768

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00515	0.00521	0.01306
	(CLK * SCE)	0.00232	0.00237	0.01022
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01164	0.01178	0.02022
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00881	0.00893	0.01738
	!SCE	0.00113	0.00097	0.00093
	!SCE	-0.00083	-0.00099	-0.00102
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00526	0.00533	0.01316
	(CLK * SCE)	0.00236	0.00242	0.01026
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01162	0.01173	0.02020
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00872	0.00882	0.01730
	!SCE	0.00113	0.00096	0.00092
	!SCE	-0.00087	-0.00103	-0.00106

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00288	0.00296	0.01107
	(CLK * SCE)	0.00572	0.00581	0.01390
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01002	0.01011	0.01919
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01287	0.01295	0.02201
	!SCE	-0.00058	-0.00058	-0.00059
	!SCE	0.00138	0.00138	0.00137
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00285	0.00293	0.01103
	(CLK * SCE)	0.00576	0.00585	0.01392
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00995	0.01004	0.01911
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01286	0.01295	0.02200
	!SCE	-0.00057	-0.00058	-0.00058
	!SCE	0.00142	0.00142	0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00745	0.00811	0.02883
	(CLK * D)	0.00232	0.00295	0.02369
	(CLK * !D)	0.00747	0.00815	0.02876
	(CLK * !D)	0.00234	0.00299	0.02362
	(!CLK * D * SCD * Q * !Q_N)	0.00438	0.00475	0.01682
	(!CLK * D * SCD * Q * !Q_N)	0.00013	0.00048	0.01256
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00425	0.00462	0.01669
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00000	0.00035	0.01243
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01495	0.01533	0.02984
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01144	0.01181	0.02629
	(!CLK * D * !SCD * Q * !Q_N)	0.01493	0.01530	0.02986
	(!CLK * D * !SCD * Q * !Q_N)	0.01142	0.01178	0.02631
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01395	0.01466	0.03593
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00882	0.00950	0.03078
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00484	0.00525	0.01728
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00043	0.00083	0.01284
	(!CLK * !D * SCD * !Q * Q_N)	0.01397	0.01468	0.03586
	(!CLK * !D * SCD * !Q * Q_N)	0.00884	0.00955	0.03073
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01443	0.01512	0.03622
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00930	0.00997	0.03108
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00503	0.00544	0.01746
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00061	0.00101	0.01303
	(!CLK * !D * !SCD * !Q * Q_N)	0.00487	0.00528	0.01730
	(!CLK * !D * !SCD * !Q * Q_N)	0.00045	0.00085	0.01287
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00437	0.00474	0.01681
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00047	0.01255
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01492	0.01529	0.02985
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01141	0.01177	0.02630

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00756	0.00818	0.02890
	(CLK * D)	0.00227	0.00288	0.02361
	(CLK * !D)	0.00757	0.00823	0.02883
	(CLK * !D)	0.00229	0.00292	0.02354
	(!CLK * D * SCD * Q * !Q_N)	0.00446	0.00481	0.01684
	(!CLK * D * SCD * Q * !Q_N)	0.00009	0.00044	0.01246
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00434	0.00469	0.01672
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00003	0.00032	0.01234
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01506	0.01541	0.02990
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01145	0.01180	0.02625
	(!CLK * D * !SCD * Q * !Q_N)	0.01499	0.01533	0.02987
	(!CLK * D * !SCD * Q * !Q_N)	0.01138	0.01172	0.02622
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01392	0.01459	0.03588
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00864	0.00929	0.03058
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00498	0.00537	0.01736
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00043	0.00081	0.01281
	(!CLK * !D * SCD * !Q * Q_N)	0.01394	0.01462	0.03582
	(!CLK * !D * SCD * !Q * Q_N)	0.00866	0.00933	0.03052
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01443	0.01509	0.03620
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00915	0.00979	0.03091
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00516	0.00554	0.01754
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00061	0.00098	0.01298
	(!CLK * !D * !SCD * !Q * Q_N)	0.00501	0.00540	0.01739
	(!CLK * !D * !SCD * !Q * Q_N)	0.00046	0.00083	0.01283
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00445	0.00480	0.01683
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00008	0.00043	0.01245
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01498	0.01532	0.02985
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01137	0.01171	0.02621

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00500	0.00643	0.02521
	(CLK * D)	0.00852	0.00997	0.02861
	(CLK * !D)	0.00494	0.00637	0.02516
	(CLK * !D)	0.00847	0.00991	0.02857
	(!CLK * D * SCD * Q * !Q_N)	0.00022	0.00089	0.01318
	(!CLK * D * SCD * Q * !Q_N)	0.00446	0.00516	0.01744
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00040	0.00107	0.01337
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00464	0.00534	0.01763
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01146	0.01285	0.03161
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01499	0.01637	0.03502
	(!CLK * D * !SCD * Q * !Q_N)	0.01157	0.01296	0.03166
	(!CLK * D * !SCD * Q * !Q_N)	0.01509	0.01649	0.03507
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00885	0.00988	0.03270
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01400	0.01502	0.03784
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00009	0.00057	0.01276
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00434	0.00502	0.01719
	(!CLK * !D * SCD * !Q * Q_N)	0.00894	0.00994	0.03274
	(!CLK * !D * SCD * !Q * Q_N)	0.01406	0.01507	0.03789
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00857	0.00961	0.03244
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01373	0.01475	0.03757
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00022	0.00044	0.01263
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00421	0.00489	0.01706
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00007	0.00060	0.01278
	(!CLK * !D * !SCD * !Q * Q_N)	0.00436	0.00505	0.01721
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00020	0.00087	0.01317
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00445	0.00514	0.01743
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01155	0.01294	0.03165
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01508	0.01647	0.03506

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00519	0.00660	0.02537
	(CLK * D)	0.00881	0.01023	0.02887
	(CLK * !D)	0.00514	0.00656	0.02534
	(CLK * !D)	0.00877	0.01019	0.02884
	(!CLK * D * SCD * Q * !Q_N)	0.00031	0.00097	0.01323
	(!CLK * D * SCD * Q * !Q_N)	0.00467	0.00534	0.01761
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00047	0.00112	0.01339
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00484	0.00551	0.01777
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01151	0.01289	0.03164
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01514	0.01652	0.03515
	(!CLK * D * !SCD * Q * !Q_N)	0.01169	0.01306	0.03176
	(!CLK * D * !SCD * Q * !Q_N)	0.01532	0.01669	0.03526
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00885	0.00986	0.03263
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01415	0.01513	0.03793
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00007	0.00057	0.01274
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00447	0.00514	0.01728
	(!CLK * !D * SCD * !Q * Q_N)	0.00892	0.00990	0.03267
	(!CLK * !D * SCD * !Q * Q_N)	0.01422	0.01520	0.03796
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00855	0.00957	0.03234
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01385	0.01485	0.03764
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00018	0.00045	0.01263
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00437	0.00503	0.01717
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00005	0.00059	0.01276
	(!CLK * !D * !SCD * !Q * Q_N)	0.00450	0.00517	0.01730
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00030	0.00095	0.01321
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00466	0.00534	0.01759
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01167	0.01303	0.03175
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01530	0.01664	0.03525

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)	0.01292	0.01326	0.03263
	(SCD * SCE * Q * !Q_N)	0.00913	0.00947	0.02884
	(D * !SCE * Q * !Q_N)	0.01287	0.01322	0.03258
	(D * !SCE * Q * !Q_N)	0.00909	0.00942	0.02879
	(D * !DE * !SCE * !Q * Q_N)	0.01308	0.01340	0.03284
	(D * !DE * !SCE * !Q * Q_N)	0.00929	0.00960	0.02905
	(!SCD * SCE * !Q * Q_N)	0.01320	0.01353	0.03296
	(!SCD * SCE * !Q * Q_N)	0.00942	0.00973	0.02918
	(!D * !SCE * !Q * Q_N)	0.01310	0.01343	0.03286
	(!D * !SCE * !Q * Q_N)	0.00932	0.00963	0.02908
	(!D * !DE * !SCE * Q * !Q_N)	0.01286	0.01320	0.03257
	(!D * !DE * !SCE * Q * !Q_N)	0.00908	0.00941	0.02878
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01286	0.01321	0.03264
	(SCD * SCE * Q * !Q_N)	0.00908	0.00942	0.02885
	(D * !SCE * Q * !Q_N)	0.01281	0.01315	0.03258
	(D * !SCE * Q * !Q_N)	0.00903	0.00936	0.02880
	(D * !DE * !SCE * !Q * Q_N)	0.01311	0.01344	0.03293
	(D * !DE * !SCE * !Q * Q_N)	0.00934	0.00964	0.02915
	(!SCD * SCE * !Q * Q_N)	0.01324	0.01357	0.03308
	(!SCD * SCE * !Q * Q_N)	0.00947	0.00978	0.02930
	(!D * !SCE * !Q * Q_N)	0.01313	0.01346	0.03297
	(!D * !SCE * !Q * Q_N)	0.00936	0.00967	0.02919
	(!D * !DE * !SCE * Q * !Q_N)	0.01280	0.01314	0.03257
	(!D * !DE * !SCE * Q * !Q_N)	0.00902	0.00935	0.02879

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)	0.00700	0.00775	0.02770
	(SCD * SCE * Q * !Q_N)	0.01077	0.01153	0.03148
	(SCD * SCE * !Q * Q_N)	0.01359	0.01425	0.03454
	(SCD * SCE * !Q * Q_N)	0.01736	0.01804	0.03833
	(D * DE * !SCE * !Q * Q_N)	0.01352	0.01425	0.03444
	(D * DE * !SCE * !Q * Q_N)	0.01730	0.01804	0.03822
	(D * !SCE * Q * !Q_N)	0.00696	0.00771	0.02767
	(D * !SCE * Q * !Q_N)	0.01074	0.01150	0.03145
	(D * !DE * !SCE * !Q * Q_N)	0.00704	0.00779	0.02762
	(D * !DE * !SCE * !Q * Q_N)	0.01081	0.01156	0.03140
	(!SCD * SCE * Q * !Q_N)	0.01500	0.01586	0.03633
	(!SCD * SCE * Q * !Q_N)	0.01879	0.01965	0.04013
	(!SCD * SCE * !Q * Q_N)	0.00715	0.00790	0.02773
	(!SCD * SCE * !Q * Q_N)	0.01093	0.01168	0.03152
	(!D * DE * !SCE * Q * !Q_N)	0.01512	0.01597	0.03639
	(!D * DE * !SCE * Q * !Q_N)	0.01889	0.01974	0.04018
	(!D * !SCE * !Q * Q_N)	0.00706	0.00781	0.02764
	(!D * !SCE * !Q * Q_N)	0.01084	0.01158	0.03143
	(!D * !DE * !SCE * Q * !Q_N)	0.00695	0.00770	0.02766
	(!D * !DE * !SCE * Q * !Q_N)	0.01072	0.01149	0.03144

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00711	0.00788	0.02788
	(SCD * SCE * Q * !Q_N)	0.01088	0.01166	0.03166
	(SCD * SCE * !Q * Q_N)	0.01348	0.01422	0.03447
	(SCD * SCE * !Q * Q_N)	0.01725	0.01800	0.03825
	(D * DE * !SCE * !Q * Q_N)	0.01343	0.01417	0.03439
	(D * DE * !SCE * !Q * Q_N)	0.01719	0.01794	0.03817
	(D * !SCE * Q * !Q_N)	0.00709	0.00785	0.02785
	(D * !SCE * Q * !Q_N)	0.01086	0.01163	0.03164
	(D * !DE * !SCE * !Q * Q_N)	0.00706	0.00787	0.02769
	(D * !DE * !SCE * !Q * Q_N)	0.01082	0.01166	0.03148
	(!SCD * SCE * Q * !Q_N)	0.01506	0.01593	0.03645
	(!SCD * SCE * Q * !Q_N)	0.01884	0.01971	0.04024
	(!SCD * SCE * !Q * Q_N)	0.00716	0.00798	0.02780
	(!SCD * SCE * !Q * Q_N)	0.01093	0.01177	0.03158
	(!D * DE * !SCE * Q * !Q_N)	0.01517	0.01603	0.03651
	(!D * DE * !SCE * Q * !Q_N)	0.01894	0.01981	0.04029
	(!D * !SCE * !Q * Q_N)	0.00708	0.00789	0.02772
	(!D * !SCE * !Q * Q_N)	0.01085	0.01168	0.03150
	(!D * !DE * !SCE * Q * !Q_N)	0.00707	0.00784	0.02784
	(!D * !DE * !SCE * Q * !Q_N)	0.01084	0.01162	0.03162

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00204	0.00397	0.00185	0.00388	0.00296	0.82115
sky130_fd_sc_hs__sedfxtp_2	0.00214	0.00400	0.00187	0.00393	0.00298	1.61213
sky130_fd_sc_hs__sedfxtp_4	0.00215	0.00398	0.00187	0.00391	0.00307	3.12579

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	13.59290	23.77450
sky130_fd_sc_hs__sedfxtp_2	0.00000	14.06770	24.50220
sky130_fd_sc_hs__sedfxtp_4	0.00000	15.12210	26.10870

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)**	0.30367	1.00205	7.57383
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.31291	0.91449	7.55431
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.35318	0.89115	7.66197

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.26521	0.75455	4.00800
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.30757	0.77744	4.08829
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.40980	0.87355	4.33365

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)	-0.29268	-0.40719	-1.50068
	setup	CLK (R)	0.35975	0.44775	1.56266
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.29424	-0.40589	-1.50863
	setup	CLK (R)	0.36173	0.44763	1.56465
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.29761	-0.41208	-1.52203
	setup	CLK (R)	0.36150	0.44723	1.57243

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.59347	-0.66949	-2.06604
	setup	CLK (R)	0.74702	0.77674	2.20908
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.58968	-0.66595	-2.06332
	setup	CLK (R)	0.74132	0.77307	2.18088
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.59303	-0.66991	-2.07557
	setup	CLK (R)	0.72883	0.76535	2.15531

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)	-0.08078	-0.09279	-0.11662
	setup	CLK (R)	0.80666	0.79711	1.37874
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07970	-0.09279	-0.11643
	setup	CLK (R)	0.79857	0.79235	1.37975
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07931	-0.09357	-0.12153
	setup	CLK (R)	0.78460	0.78221	1.38872

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)	-0.40123	-0.50455	-1.28325
	setup	CLK (R)	0.65002	0.69329	1.93828
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.40169	-0.50772	-1.28495
	setup	CLK (R)	0.64738	0.69068	1.93263
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.40636	-0.51211	-1.28784
	setup	CLK (R)	0.64960	0.69529	1.94573

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)	-0.08078	-0.09279	-0.11662
	hold	CLK (R)	-0.24682	-0.28294	-0.45410
	setup	CLK (R)	0.36096	0.41915	1.37874
	setup	CLK (R)	0.80666	0.79711	0.97562
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07970	-0.09279	-0.11643
	hold	CLK (R)	-0.23593	-0.27317	-0.43693
	setup	CLK (R)	0.36264	0.41955	1.37975
	setup	CLK (R)	0.79857	0.79235	0.94760
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07931	-0.09357	-0.12153
	hold	CLK (R)	-0.24244	-0.27769	-0.44110
	setup	CLK (R)	0.35625	0.41695	1.38872
	setup	CLK (R)	0.78460	0.78221	0.89814

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.60031	-0.66775	-1.92212
	hold	CLK (R)	-0.40123	-0.50455	-1.28325
	setup	CLK (R)	0.65002	0.69329	1.93828
	setup	CLK (R)	0.43145	0.52397	1.29111
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.59732	-0.66094	-1.91430
	hold	CLK (R)	-0.40169	-0.50772	-1.28495
	setup	CLK (R)	0.64738	0.69068	1.93263
	setup	CLK (R)	0.43475	0.52466	1.29102
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.60228	-0.66444	-1.92774
	hold	CLK (R)	-0.40636	-0.51211	-1.28784
	setup	CLK (R)	0.64960	0.69529	1.94573
	setup	CLK (R)	0.43478	0.52542	1.29415

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)	-0.17424	-0.26151	-1.01557
	setup	CLK (R)	0.22024	0.28492	1.04641
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.17638	-0.26091	-1.01695
	setup	CLK (R)	0.21949	0.28302	1.04335
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.17992	-0.26406	-1.03660
	setup	CLK (R)	0.22051	0.28702	1.05774

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)	-0.38227	-0.43369	-1.47188
	setup	CLK (R)	0.51852	0.53604	1.65114
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.37393	-0.43002	-1.46025
	setup	CLK (R)	0.50982	0.53129	1.61330
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.38411	-0.43550	-1.48416
	setup	CLK (R)	0.50217	0.52357	1.59487

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)	0.00170	0.01516	0.34354
	setup	CLK (R)	0.54503	0.53024	0.96674
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.00008	0.01376	0.34802
	setup	CLK (R)	0.53657	0.52552	0.96588
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.00008	0.01376	0.33805
	setup	CLK (R)	0.52802	0.52004	0.98015

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)	-0.27344	-0.39401	-1.23041
	setup	CLK (R)	0.53365	0.55509	1.73939
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27449	-0.39790	-1.23118
	setup	CLK (R)	0.52450	0.54814	1.71518
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28159	-0.39798	-1.23874
	setup	CLK (R)	0.51456	0.54199	1.68843

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.40798	-0.42658	-0.50904
	hold	CLK (R)	0.00170	0.01516	0.34354
	hold	CLK (R)	-0.14701	-0.24964	-0.92516
	hold	CLK (R)	-0.17005	-0.20605	-0.30215
	setup	CLK (R)	0.54462	0.53024	0.74452
	setup	CLK (R)	0.19247	0.27677	0.96570
	setup	CLK (R)	0.19209	0.27677	0.96674
	setup	CLK (R)	0.54503	0.53024	0.74148
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.40000	-0.42323	-0.49684
	hold	CLK (R)	-0.00008	0.01376	0.34802
	hold	CLK (R)	-0.15008	-0.25100	-0.92877
	hold	CLK (R)	-0.15866	-0.19625	-0.29111
	setup	CLK (R)	0.53657	0.52538	0.71211
	setup	CLK (R)	0.19298	0.27538	0.96487
	setup	CLK (R)	0.19257	0.27538	0.96588
	setup	CLK (R)	0.53622	0.52552	0.70913
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.40783	-0.43073	-0.51235
	hold	CLK (R)	-0.00008	0.01376	0.33805
	hold	CLK (R)	-0.15172	-0.25365	-0.94782
	hold	CLK (R)	-0.16599	-0.20236	-0.30460
	setup	CLK (R)	0.52684	0.52004	0.65804
	setup	CLK (R)	0.19236	0.27836	0.97913
	setup	CLK (R)	0.19060	0.27828	0.98015
	setup	CLK (R)	0.52802	0.51996	0.65924

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)	-0.28129	-0.40137	-1.24660
	hold	CLK (R)	-0.37177	-0.43618	-1.56578
	hold	CLK (R)	-0.36033	-0.43124	-1.58102
	hold	CLK (R)	-0.27344	-0.39401	-1.23041
	setup	CLK (R)	0.34148	0.43238	1.27002
	setup	CLK (R)	0.41808	0.46370	1.59084
	setup	CLK (R)	0.53365	0.55509	1.73939
	setup	CLK (R)	0.30552	0.41299	1.23853
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.28091	-0.40419	-1.24517
	hold	CLK (R)	-0.36205	-0.43061	-1.55450
	hold	CLK (R)	-0.35294	-0.42543	-1.57034
	hold	CLK (R)	-0.27449	-0.39790	-1.23118
	setup	CLK (R)	0.34137	0.43442	1.26582
	setup	CLK (R)	0.41107	0.45966	1.58036
	setup	CLK (R)	0.52450	0.54814	1.71518
	setup	CLK (R)	0.30912	0.41342	1.23720
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28784	-0.40412	-1.25410
	hold	CLK (R)	-0.37114	-0.43937	-1.56996
	hold	CLK (R)	-0.36139	-0.43216	-1.58436
	hold	CLK (R)	-0.28159	-0.39798	-1.23874
	setup	CLK (R)	0.34004	0.43442	1.27202
	setup	CLK (R)	0.41650	0.46485	1.59489
	setup	CLK (R)	0.51456	0.54199	1.68843
	setup	CLK (R)	0.30795	0.41334	1.24267

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 ()**	0.14205	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.14205	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.14205	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.14205	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.14205	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.16338	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.16338	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.27612	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.16338	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.27612	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.16338	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.27308	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.27308	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.16338	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.27612	0.82153	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.20299	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20299	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.40105	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.40105	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.39800	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.39800	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.20604	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.40105	0.82153	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 ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.25479	0.82153	16.50020
	min_pulse_width	CLK ()	0.41324	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.41324	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.44675	0.82153	16.50020
	min_pulse_width	CLK ()	0.41324	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.41324	0.82153	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.25479	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.44066	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020
	min_pulse_width	CLK ()	0.23651	0.82153	16.50020
	min_pulse_width	CLK ()	0.40714	0.82153	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.23042	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.24565	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.38886	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.23042	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.38886	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.23042	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.42238	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.38886	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.23042	0.82153	16.50020
	min_pulse_width	**CLK ()**	0.38886	0.82153	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	0.02840	0.02909	0.04916
	CLK	0.02379	0.02448	0.04473
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03136	0.03221	0.05238
	CLK	0.02670	0.02756	0.04800
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03715	0.03802	0.05855
	CLK	0.03239	0.03328	0.05455

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02561	0.02616	0.04637
	CLK	0.02260	0.02317	0.04331
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02870	0.02917	0.04981
	CLK	0.02570	0.02619	0.04630
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03517	0.03420	0.05512
	CLK	0.03205	0.03109	0.05136

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00439	0.00449	0.01392
	(DE * SCE)	0.00163	0.00175	0.01117
	(CLK * DE * !SCE)	0.00886	0.00891	0.01723
	(CLK * DE * !SCE)	0.00520	0.00524	0.01358
	(CLK * !DE * !SCE)	0.00102	0.00102	0.00102
	(CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00064
	(!DE * SCE)	0.00049	0.00048	0.00047
	(!DE * SCE)	-0.00139	-0.00140	-0.00141
	(!CLK * DE * !SCE * Q)	0.01572	0.01590	0.02530
	(!CLK * DE * !SCE * Q)	0.01210	0.01228	0.02168
	(!CLK * DE * !SCE * !Q)	0.01539	0.01551	0.02478
	(!CLK * DE * !SCE * !Q)	0.01172	0.01186	0.02112
	(!CLK * !DE * !SCE)	0.00101	0.00102	0.00101
	(!CLK * !DE * !SCE)	-0.00066	-0.00066	-0.00065
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00454	0.00463	0.01404
	(DE * SCE)	0.00166	0.00175	0.01116
	(CLK * DE * !SCE)	0.00906	0.00910	0.01740
	(CLK * DE * !SCE)	0.00526	0.00530	0.01361
	(CLK * !DE * !SCE)	0.00107	0.00107	0.00107
	(CLK * !DE * !SCE)	-0.00069	-0.00069	-0.00068
	(!DE * SCE)	0.00049	0.00049	0.00048
	(!DE * SCE)	-0.00146	-0.00147	-0.00149
	(!CLK * DE * !SCE * Q)	0.01583	0.01599	0.02538
	(!CLK * DE * !SCE * Q)	0.01207	0.01224	0.02163
	(!CLK * DE * !SCE * !Q)	0.01554	0.01568	0.02491
	(!CLK * DE * !SCE * !Q)	0.01174	0.01188	0.02112
	(!CLK * !DE * !SCE)	0.00106	0.00107	0.00106
	(!CLK * !DE * !SCE)	-0.00069	-0.00070	-0.00069

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00456	0.00464	0.01407
	(DE * SCE)	0.00167	0.00176	0.01118
	(CLK * DE * !SCE)	0.00911	0.00914	0.01742
	(CLK * DE * !SCE)	0.00531	0.00535	0.01363
	(CLK * !DE * !SCE)	0.00043	0.00043	0.00042
	(CLK * !DE * !SCE)	-0.00153	-0.00153	-0.00155
	(!DE * SCE)	0.00051	0.00050	0.00049
	(!DE * SCE)	-0.00145	-0.00146	-0.00148
	(!CLK * DE * !SCE * Q)	0.01573	0.01590	0.02529
	(!CLK * DE * !SCE * Q)	0.01197	0.01215	0.02154
	(!CLK * DE * !SCE * !Q)	0.01541	0.01554	0.02479
	(!CLK * DE * !SCE * !Q)	0.01161	0.01174	0.02099
	(!CLK * !DE * !SCE)	0.00043	0.00043	0.00042
	(!CLK * !DE * !SCE)	-0.00153	-0.00153	-0.00155

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00183	0.00228	0.01221
	(DE * SCE)	0.00458	0.00503	0.01496
	(CLK * DE * !SCE)	0.00315	0.00343	0.01270
	(CLK * DE * !SCE)	0.00681	0.00709	0.01636
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !DE * !SCE)	0.00165	0.00166	0.00165
	(!DE * SCE)	-0.00015	-0.00015	-0.00015
	(!DE * SCE)	0.00171	0.00173	0.00172
	(!CLK * DE * !SCE * Q)	0.00996	0.01022	0.02129
	(!CLK * DE * !SCE * Q)	0.01358	0.01384	0.02491
	(!CLK * DE * !SCE * !Q)	0.01077	0.01108	0.02243
	(!CLK * DE * !SCE * !Q)	0.01443	0.01473	0.02608
	(!CLK * !DE * !SCE)	-0.00022	-0.00023	-0.00022
	(!CLK * !DE * !SCE)	0.00165	0.00167	0.00165
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00179	0.00223	0.01214
	(DE * SCE)	0.00467	0.00511	0.01502
	(CLK * DE * !SCE)	0.00309	0.00336	0.01262
	(CLK * DE * !SCE)	0.00689	0.00715	0.01641
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00021
	(CLK * !DE * !SCE)	0.00175	0.00174	0.00174
	(!DE * SCE)	-0.00015	-0.00015	-0.00014
	(!DE * SCE)	0.00182	0.00181	0.00181
	(!CLK * DE * !SCE * Q)	0.00990	0.01017	0.02123
	(!CLK * DE * !SCE * Q)	0.01366	0.01392	0.02498
	(!CLK * DE * !SCE * !Q)	0.01069	0.01098	0.02232
	(!CLK * DE * !SCE * !Q)	0.01448	0.01477	0.02611
	(!CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE * !SCE)	0.00174	0.00174	0.00173

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00173	0.00216	0.01210
	(DE * SCE)	0.00462	0.00505	0.01499
	(CLK * DE * !SCE)	0.00329	0.00356	0.01278
	(CLK * DE * !SCE)	0.00709	0.00735	0.01658
	(CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00020
	(CLK * !DE * !SCE)	0.00176	0.00176	0.00176
	(!DE * SCE)	-0.00014	-0.00014	-0.00013
	(!DE * SCE)	0.00183	0.00183	0.00183
	(!CLK * DE * !SCE * Q)	0.01000	0.01026	0.02132
	(!CLK * DE * !SCE * Q)	0.01376	0.01402	0.02507
	(!CLK * DE * !SCE * !Q)	0.01084	0.01113	0.02246
	(!CLK * DE * !SCE * !Q)	0.01464	0.01492	0.02625
	(!CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00020
	(!CLK * !DE * !SCE)	0.00176	0.00176	0.00175

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00837	0.00873	0.02869
	SCE	0.00241	0.00274	0.02273
	(CLK * !SCE)	0.01283	0.01316	0.03233
	(CLK * !SCE)	0.00596	0.00627	0.02545
	(!CLK * D * !SCE * Q)	0.00517	0.00531	0.01730
	(!CLK * D * !SCE * Q)	0.00018	0.00029	0.01231
	(!CLK * D * !SCE * !Q)	0.01936	0.01975	0.03963
	(!CLK * D * !SCE * !Q)	0.01248	0.01287	0.03276
	(!CLK * !D * !SCE * Q)	0.01579	0.01610	0.02824
	(!CLK * !D * !SCE * Q)	0.01282	0.01310	0.02524
	(!CLK * !D * !SCE * !Q)	0.00504	0.00535	0.01735
	(!CLK * !D * !SCE * !Q)	0.00009	0.00038	0.01239

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00849	0.00885	0.02879
	SCE	0.00241	0.00274	0.02271
	(CLK * !SCE)	0.01301	0.01333	0.03248
	(CLK * !SCE)	0.00601	0.00632	0.02548
	(!CLK * D * !SCE * Q)	0.00520	0.00533	0.01733
	(!CLK * D * !SCE * Q)	0.00014	0.00025	0.01227
	(!CLK * D * !SCE * !Q)	0.01948	0.01987	0.03974
	(!CLK * D * !SCE * !Q)	0.01249	0.01288	0.03275
	(!CLK * !D * !SCE * Q)	0.01580	0.01611	0.02824
	(!CLK * !D * !SCE * Q)	0.01281	0.01309	0.02522
	(!CLK * !D * !SCE * !Q)	0.00508	0.00539	0.01738
	(!CLK * !D * !SCE * !Q)	0.00006	0.00034	0.01235
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00849	0.00885	0.02880
	SCE	0.00243	0.00276	0.02275
	(CLK * !SCE)	0.01303	0.01336	0.03250
	(CLK * !SCE)	0.00607	0.00638	0.02552
	(!CLK * D * !SCE * Q)	0.00520	0.00533	0.01732
	(!CLK * D * !SCE * Q)	0.00015	0.00027	0.01229
	(!CLK * D * !SCE * !Q)	0.01933	0.01973	0.03961
	(!CLK * D * !SCE * !Q)	0.01237	0.01276	0.03264
	(!CLK * !D * !SCE * Q)	0.01589	0.01620	0.02834
	(!CLK * !D * !SCE * Q)	0.01292	0.01321	0.02535
	(!CLK * !D * !SCE * !Q)	0.00508	0.00539	0.01739
	(!CLK * !D * !SCE * !Q)	0.00008	0.00037	0.01238

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00260	0.00326	0.02363
	SCE	0.00856	0.00923	0.02959
	(CLK * !SCE)	0.00389	0.00449	0.02428
	(CLK * !SCE)	0.01077	0.01138	0.03114
	(!CLK * D * !SCE * Q)	0.00017	0.00073	0.01284
	(!CLK * D * !SCE * Q)	0.00514	0.00574	0.01783
	(!CLK * D * !SCE * !Q)	0.01140	0.01203	0.03312
	(!CLK * D * !SCE * !Q)	0.01828	0.01892	0.03998
	(!CLK * !D * !SCE * Q)	0.01599	0.01652	0.02863
	(!CLK * !D * !SCE * Q)	0.01896	0.01951	0.03163
	(!CLK * !D * !SCE * !Q)	-0.00000	0.00056	0.01274
	(!CLK * !D * !SCE * !Q)	0.00495	0.00554	0.01771
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00260	0.00326	0.02361
	SCE	0.00868	0.00934	0.02969
	(CLK * !SCE)	0.00387	0.00447	0.02424
	(CLK * !SCE)	0.01087	0.01148	0.03123
	(!CLK * D * !SCE * Q)	0.00016	0.00071	0.01282
	(!CLK * D * !SCE * Q)	0.00519	0.00579	0.01788
	(!CLK * D * !SCE * !Q)	0.01135	0.01197	0.03304
	(!CLK * D * !SCE * !Q)	0.01834	0.01898	0.04003
	(!CLK * !D * !SCE * Q)	0.01600	0.01653	0.02863
	(!CLK * !D * !SCE * Q)	0.01899	0.01953	0.03165
	(!CLK * !D * !SCE * !Q)	-0.00002	0.00054	0.01272
	(!CLK * !D * !SCE * !Q)	0.00501	0.00559	0.01777

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00255	0.00320	0.02358
	SCE	0.00861	0.00928	0.02963
	(CLK * !SCE)	0.00408	0.00467	0.02442
	(CLK * !SCE)	0.01105	0.01166	0.03138
	(!CLK * D * !SCE * Q)	0.00016	0.00072	0.01283
	(!CLK * D * !SCE * Q)	0.00517	0.00578	0.01787
	(!CLK * D * !SCE * !Q)	0.01150	0.01213	0.03320
	(!CLK * D * !SCE * !Q)	0.01847	0.01912	0.04016
	(!CLK * !D * !SCE * Q)	0.01590	0.01644	0.02854
	(!CLK * !D * !SCE * Q)	0.01888	0.01942	0.03154
	(!CLK * !D * !SCE * !Q)	-0.00000	0.00056	0.01274
	(!CLK * !D * !SCE * !Q)	0.00500	0.00559	0.01776

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00516	0.00523	0.01308
	(CLK * SCE)	0.00225	0.00231	0.01017
	(!CLK * SCE)	0.01165	0.01177	0.02022
	(!CLK * SCE)	0.00874	0.00885	0.01731
	!SCE	0.00113	0.00096	0.00092
	!SCE	-0.00088	-0.00105	-0.00108
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00528	0.00535	0.01319
	(CLK * SCE)	0.00234	0.00240	0.01024
	(!CLK * SCE)	0.01172	0.01186	0.02029
	(!CLK * SCE)	0.00878	0.00891	0.01734
	!SCE	0.00115	0.00099	0.00095
	!SCE	-0.00089	-0.00105	-0.00108
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00529	0.00536	0.01317
	(CLK * SCE)	0.00236	0.00242	0.01023
	(!CLK * SCE)	0.01155	0.01168	0.02012
	(!CLK * SCE)	0.00862	0.00874	0.01719
	!SCE	0.00116	0.00100	0.00096
	!SCE	-0.00087	-0.00104	-0.00106

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00290	0.00299	0.01110
	(CLK * SCE)	0.00582	0.00591	0.01400
	(!CLK * SCE)	0.00996	0.01005	0.01914
	(!CLK * SCE)	0.01288	0.01297	0.02204
	!SCE	-0.00056	-0.00056	-0.00056
	!SCE	0.00145	0.00145	0.00145
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00283	0.00291	0.01103
	(CLK * SCE)	0.00578	0.00588	0.01396
	(!CLK * SCE)	0.00985	0.00994	0.01902
	(!CLK * SCE)	0.01280	0.01290	0.02196
	!SCE	-0.00057	-0.00058	-0.00058
	!SCE	0.00147	0.00147	0.00146
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00314	0.00322	0.01129
	(CLK * SCE)	0.00608	0.00616	0.01421
	(!CLK * SCE)	0.01012	0.01021	0.01927
	(!CLK * SCE)	0.01306	0.01315	0.02219
	!SCE	-0.00055	-0.00055	-0.00056
	!SCE	0.00148	0.00148	0.00147

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00733	0.00800	0.02873
	(CLK * D)	0.00221	0.00286	0.02360
	(CLK * !D)	0.00735	0.00804	0.02866
	(CLK * !D)	0.00223	0.00290	0.02353
	(!CLK * D * SCD * Q)	0.00425	0.00463	0.01668
	(!CLK * D * SCD * Q)	0.00003	0.00039	0.01246
	(!CLK * D * DE * SCD * !Q)	0.00417	0.00455	0.01660
	(!CLK * D * DE * SCD * !Q)	-0.00005	0.00031	0.01238
	(!CLK * D * DE * !SCD * !Q)	0.01495	0.01531	0.02975
	(!CLK * D * DE * !SCD * !Q)	0.01148	0.01185	0.02626
	(!CLK * D * !SCD * Q)	0.01484	0.01520	0.02969
	(!CLK * D * !SCD * Q)	0.01138	0.01173	0.02620
	(!CLK * D * !DE * SCD * !Q)	0.01383	0.01455	0.03582
	(!CLK * D * !DE * SCD * !Q)	0.00870	0.00941	0.03068
	(!CLK * D * !DE * !SCD * !Q)	0.00484	0.00526	0.01726
	(!CLK * D * !DE * !SCD * !Q)	0.00044	0.00086	0.01286
	(!CLK * !D * SCD * !Q)	0.01385	0.01458	0.03576
	(!CLK * !D * SCD * !Q)	0.00872	0.00944	0.03062
	(!CLK * !D * DE * SCD * Q)	0.01429	0.01498	0.03610
	(!CLK * !D * DE * SCD * Q)	0.00916	0.00986	0.03096
	(!CLK * !D * DE * !SCD * Q)	0.00497	0.00539	0.01739
	(!CLK * !D * DE * !SCD * Q)	0.00058	0.00099	0.01300
	(!CLK * !D * !SCD * !Q)	0.00486	0.00529	0.01729
	(!CLK * !D * !SCD * !Q)	0.00047	0.00088	0.01289
	(!CLK * !D * !DE * SCD * Q)	0.00424	0.00462	0.01667
	(!CLK * !D * !DE * SCD * Q)	0.00002	0.00038	0.01244
	(!CLK * !D * !DE * !SCD * Q)	0.01483	0.01519	0.02968
	(!CLK * !D * !DE * !SCD * Q)	0.01137	0.01172	0.02619

	(CLK * D)	0.00747	0.00812	0.02884
	(CLK * D)	0.00227	0.00290	0.02364
	(CLK * !D)	0.00749	0.00816	0.02877
	(CLK * !D)	0.00229	0.00294	0.02357
	(!CLK * D * SCD * Q)	0.00431	0.00468	0.01673
	(!CLK * D * SCD * Q)	0.00002	0.00038	0.01243
	(!CLK * D * DE * SCD * !Q)	0.00424	0.00461	0.01666
	(!CLK * D * DE * SCD * !Q)	-0.00004	0.00031	0.01236
	(!CLK * D * DE * !SCD * !Q)	0.01492	0.01527	0.02971
	(!CLK * D * DE * !SCD * !Q)	0.01139	0.01175	0.02616
	(!CLK * D * !SCD * Q)	0.01484	0.01519	0.02968
	(!CLK * D * !SCD * Q)	0.01132	0.01166	0.02613
	(!CLK * D * !DE * SCD * !Q)	0.01391	0.01460	0.03590
	(!CLK * D * !DE * SCD * !Q)	0.00872	0.00940	0.03068
sky130_fd_sc_hs__sedfxtp_2	**(!CLK * D * !DE * !SCD * !Q)**	0.00489	0.00530	0.01730
	(!CLK * D * !DE * !SCD * !Q)	0.00043	0.00084	0.01284
	(!CLK * !D * SCD * !Q)	0.01393	0.01465	0.03583
	(!CLK * !D * SCD * !Q)	0.00874	0.00944	0.03062
	(!CLK * !D * DE * SCD * Q)	0.01432	0.01500	0.03612
	(!CLK * !D * DE * SCD * Q)	0.00912	0.00979	0.03091
	(!CLK * !D * DE * !SCD * Q)	0.00502	0.00542	0.01742
	(!CLK * !D * DE * !SCD * Q)	0.00056	0.00096	0.01296
	(!CLK * !D * !SCD * !Q)	0.00492	0.00532	0.01733
	(!CLK * !D * !SCD * !Q)	0.00046	0.00087	0.01286
	(!CLK * !D * !DE * SCD * Q)	0.00430	0.00466	0.01671
	(!CLK * !D * !DE * SCD * Q)	0.00001	0.00037	0.01242
	(!CLK * !D * !DE * !SCD * Q)	0.01483	0.01518	0.02967
	(!CLK * !D * !DE * !SCD * Q)	0.01130	0.01165	0.02611

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00749	0.00814	0.02881
	(CLK * D)	0.00233	0.00296	0.02364
	(CLK * !D)	0.00751	0.00818	0.02874
	(CLK * !D)	0.00235	0.00300	0.02357
	(!CLK * D * SCD * Q)	0.00428	0.00466	0.01671
	(!CLK * D * SCD * Q)	0.00003	0.00039	0.01245
	(!CLK * D * DE * SCD * !Q)	0.00422	0.00460	0.01665
	(!CLK * D * DE * SCD * !Q)	-0.00003	0.00033	0.01239
	(!CLK * D * DE * !SCD * !Q)	0.01513	0.01550	0.02993
	(!CLK * D * DE * !SCD * !Q)	0.01164	0.01200	0.02641
	(!CLK * D * !SCD * Q)	0.01501	0.01537	0.02986
	(!CLK * D * !SCD * Q)	0.01152	0.01187	0.02634
	(!CLK * D * !DE * SCD * !Q)	0.01376	0.01446	0.03574
	(!CLK * D * !DE * SCD * !Q)	0.00860	0.00930	0.03057
	(!CLK * D * !DE * !SCD * !Q)	0.00488	0.00529	0.01730
	(!CLK * D * !DE * !SCD * !Q)	0.00046	0.00087	0.01287
	(!CLK * !D * SCD * !Q)	0.01378	0.01450	0.03568
	(!CLK * !D * SCD * !Q)	0.00862	0.00933	0.03050
	(!CLK * !D * DE * SCD * Q)	0.01419	0.01487	0.03599
	(!CLK * !D * DE * SCD * Q)	0.00903	0.00972	0.03082
	(!CLK * !D * DE * !SCD * Q)	0.00500	0.00541	0.01742
	(!CLK * !D * DE * !SCD * Q)	0.00057	0.00098	0.01298
	(!CLK * !D * !SCD * !Q)	0.00491	0.00533	0.01733
	(!CLK * !D * !SCD * !Q)	0.00048	0.00089	0.01290
	(!CLK * !D * !DE * SCD * Q)	0.00427	0.00464	0.01670
	(!CLK * !D * !DE * SCD * Q)	0.00002	0.00038	0.01244
	(!CLK * !D * !DE * !SCD * Q)	0.01500	0.01536	0.02985
	(!CLK * !D * !DE * !SCD * Q)	0.01151	0.01186	0.02633

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00518	0.00663	0.02540
	(CLK * D)	0.00867	0.01011	0.02876
	(CLK * !D)	0.00514	0.00658	0.02537
	(CLK * !D)	0.00863	0.01007	0.02873
	(!CLK * D * SCD * Q)	0.00038	0.00106	0.01333
	(!CLK * D * SCD * Q)	0.00459	0.00528	0.01756
	(!CLK * D * DE * SCD * !Q)	0.00055	0.00123	0.01350
	(!CLK * D * DE * SCD * !Q)	0.00476	0.00545	0.01773
	(!CLK * D * DE * !SCD * !Q)	0.01164	0.01305	0.03180
	(!CLK * D * DE * !SCD * !Q)	0.01512	0.01653	0.03514
	(!CLK * D * !SCD * Q)	0.01179	0.01320	0.03189
	(!CLK * D * !SCD * Q)	0.01528	0.01668	0.03525
	(!CLK * D * !DE * SCD * !Q)	0.00886	0.00988	0.03270
	(!CLK * D * !DE * SCD * !Q)	0.01398	0.01501	0.03784
	(!CLK * D * !DE * !SCD * !Q)	-0.00002	0.00065	0.01283
	(!CLK * D * !DE * !SCD * !Q)	0.00438	0.00507	0.01721
	(!CLK * !D * SCD * !Q)	0.00893	0.00994	0.03274
	(!CLK * !D * SCD * !Q)	0.01406	0.01507	0.03786
	(!CLK * !D * DE * SCD * Q)	0.00856	0.00959	0.03241
	(!CLK * !D * DE * SCD * Q)	0.01369	0.01472	0.03753
	(!CLK * !D * DE * !SCD * Q)	-0.00014	0.00053	0.01271
	(!CLK * !D * DE * !SCD * Q)	0.00427	0.00495	0.01709
	(!CLK * !D * !SCD * !Q)	0.00000	0.00068	0.01285
	(!CLK * !D * !SCD * !Q)	0.00441	0.00509	0.01723
	(!CLK * !D * !DE * SCD * Q)	0.00037	0.00105	0.01332
	(!CLK * !D * !DE * SCD * Q)	0.00458	0.00527	0.01754
	(!CLK * !D * !DE * !SCD * Q)	0.01177	0.01318	0.03188
	(!CLK * !D * !DE * !SCD * Q)	0.01526	0.01665	0.03524

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00521	0.00664	0.02541
	(CLK * D)	0.00875	0.01019	0.02883
	(CLK * !D)	0.00512	0.00655	0.02534
	(CLK * !D)	0.00866	0.01010	0.02876
	(!CLK * D * SCD * Q)	0.00036	0.00103	0.01329
	(!CLK * D * SCD * Q)	0.00464	0.00531	0.01759
	(!CLK * D * DE * SCD * !Q)	0.00052	0.00119	0.01346
	(!CLK * D * DE * SCD * !Q)	0.00480	0.00548	0.01776
	(!CLK * D * DE * !SCD * !Q)	0.01162	0.01302	0.03178
	(!CLK * D * DE * !SCD * !Q)	0.01516	0.01656	0.03518
	(!CLK * D * !SCD * Q)	0.01174	0.01313	0.03182
	(!CLK * D * !SCD * Q)	0.01528	0.01667	0.03524
	(!CLK * D * !DE * SCD * !Q)	0.00877	0.00979	0.03260
	(!CLK * D * !DE * SCD * !Q)	0.01399	0.01500	0.03780
	(!CLK * D * !DE * !SCD * !Q)	-0.00003	0.00063	0.01280
	(!CLK * D * !DE * !SCD * !Q)	0.00442	0.00511	0.01725
	(!CLK * !D * SCD * !Q)	0.00884	0.00986	0.03264
	(!CLK * !D * SCD * !Q)	0.01406	0.01506	0.03785
	(!CLK * !D * DE * SCD * Q)	0.00852	0.00955	0.03236
	(!CLK * !D * DE * SCD * Q)	0.01374	0.01475	0.03756
	(!CLK * !D * DE * !SCD * Q)	-0.00015	0.00051	0.01269
	(!CLK * !D * DE * !SCD * Q)	0.00432	0.00500	0.01714
	(!CLK * !D * !SCD * !Q)	-0.00001	0.00065	0.01282
	(!CLK * !D * !SCD * !Q)	0.00445	0.00513	0.01727
	(!CLK * !D * !DE * SCD * Q)	0.00034	0.00101	0.01328
	(!CLK * !D * !DE * SCD * Q)	0.00462	0.00530	0.01758
	(!CLK * !D * !DE * !SCD * Q)	0.01172	0.01311	0.03181
	(!CLK * !D * !DE * !SCD * Q)	0.01526	0.01664	0.03523

	(CLK * D)	0.00525	0.00670	0.02546
	(CLK * D)	0.00877	0.01020	0.02885
	(CLK * !D)	0.00516	0.00661	0.02539
	(CLK * !D)	0.00868	0.01012	0.02878
	(!CLK * D * SCD * Q)	0.00038	0.00106	0.01333
	(!CLK * D * SCD * Q)	0.00463	0.00531	0.01759
	(!CLK * D * DE * SCD * !Q)	0.00056	0.00123	0.01351
	(!CLK * D * DE * SCD * !Q)	0.00480	0.00549	0.01777
	(!CLK * D * DE * !SCD * !Q)	0.01149	0.01290	0.03165
	(!CLK * D * DE * !SCD * !Q)	0.01501	0.01641	0.03505
	(!CLK * D * !SCD * Q)	0.01163	0.01304	0.03174
	(!CLK * D * !SCD * Q)	0.01515	0.01655	0.03513
	(!CLK * D * !DE * SCD * !Q)	0.00904	0.01006	0.03286
	(!CLK * D * !DE * SCD * !Q)	0.01421	0.01522	0.03803
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	-0.00001	0.00066	0.01284
	(!CLK * D * !DE * !SCD * !Q)	0.00443	0.00511	0.01725
	(!CLK * !D * SCD * !Q)	0.00911	0.01010	0.03290
	(!CLK * !D * SCD * !Q)	0.01429	0.01528	0.03806
	(!CLK * !D * DE * SCD * Q)	0.00874	0.00976	0.03257
	(!CLK * !D * DE * SCD * Q)	0.01392	0.01493	0.03774
	(!CLK * !D * DE * !SCD * Q)	-0.00013	0.00054	0.01271
	(!CLK * !D * DE * !SCD * Q)	0.00431	0.00499	0.01713
	(!CLK * !D * !SCD * !Q)	0.00002	0.00069	0.01286
	(!CLK * !D * !SCD * !Q)	0.00445	0.00514	0.01728
	(!CLK * !D * !DE * SCD * Q)	0.00037	0.00104	0.01332
	(!CLK * !D * !DE * SCD * Q)	0.00462	0.00530	0.01758
	(!CLK * !D * !DE * !SCD * Q)	0.01161	0.01302	0.03173
	(!CLK * !D * !DE * !SCD * Q)	0.01513	0.01653	0.03512

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01260	0.01296	0.03236
	(SCD * SCE * Q)	0.00886	0.00920	0.02861
	(D * !SCE * Q)	0.01255	0.01290	0.03231
	(D * !SCE * Q)	0.00881	0.00914	0.02856
	(D * !DE * !SCE * !Q)	0.01299	0.01333	0.03280
	(D * !DE * !SCE * !Q)	0.00924	0.00956	0.02904
	(!SCD * SCE * !Q)	0.01312	0.01346	0.03293
	(!SCD * SCE * !Q)	0.00938	0.00970	0.02918
	(!D * !SCE * !Q)	0.01301	0.01335	0.03282
	(!D * !SCE * !Q)	0.00926	0.00959	0.02907
	(!D * !DE * !SCE * Q)	0.01253	0.01289	0.03230
	(!D * !DE * !SCE * Q)	0.00879	0.00913	0.02855
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01275	0.01311	0.03249
	(SCD * SCE * Q)	0.00898	0.00933	0.02872
	(D * !SCE * Q)	0.01271	0.01306	0.03244
	(D * !SCE * Q)	0.00894	0.00928	0.02867
	(D * !DE * !SCE * !Q)	0.01315	0.01349	0.03293
	(D * !DE * !SCE * !Q)	0.00938	0.00971	0.02916
	(!SCD * SCE * !Q)	0.01327	0.01362	0.03307
	(!SCD * SCE * !Q)	0.00952	0.00984	0.02930
	(!D * !SCE * !Q)	0.01317	0.01351	0.03297
	(!D * !SCE * !Q)	0.00941	0.00973	0.02920
	(!D * !DE * !SCE * Q)	0.01269	0.01305	0.03243
	(!D * !DE * !SCE * Q)	0.00893	0.00927	0.02866

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01275	0.01308	0.03248
	(SCD * SCE * Q)	0.00886	0.00919	0.02859
	(D * !SCE * Q)	0.01270	0.01302	0.03243
	(D * !SCE * Q)	0.00881	0.00914	0.02854
	(D * !DE * !SCE * !Q)	0.01304	0.01336	0.03282
	(D * !DE * !SCE * !Q)	0.00916	0.00946	0.02893
	(!SCD * SCE * !Q)	0.01317	0.01349	0.03295
	(!SCD * SCE * !Q)	0.00929	0.00959	0.02907
	(!D * !SCE * !Q)	0.01307	0.01338	0.03284
	(!D * !SCE * !Q)	0.00918	0.00948	0.02896
	(!D * !DE * !SCE * Q)	0.01268	0.01301	0.03242
	(!D * !DE * !SCE * Q)	0.00880	0.00913	0.02853

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00704	0.00781	0.02781
	(SCD * SCE * Q)	0.01078	0.01157	0.03156
	(SCD * SCE * !Q)	0.01344	0.01412	0.03445
	(SCD * SCE * !Q)	0.01717	0.01787	0.03820
	(D * DE * !SCE * !Q)	0.01338	0.01413	0.03436
	(D * DE * !SCE * !Q)	0.01712	0.01788	0.03811
	(D * !SCE * Q)	0.00702	0.00778	0.02779
	(D * !SCE * Q)	0.01076	0.01154	0.03153
	(D * !DE * !SCE * !Q)	0.00689	0.00766	0.02754
	(D * !DE * !SCE * !Q)	0.01063	0.01141	0.03129
	(!SCD * SCE * Q)	0.01494	0.01580	0.03631
	(!SCD * SCE * Q)	0.01869	0.01955	0.04008
	(!SCD * SCE * !Q)	0.00700	0.00777	0.02765
	(!SCD * SCE * !Q)	0.01074	0.01153	0.03140
	(!D * DE * !SCE * Q)	0.01505	0.01591	0.03637
	(!D * DE * !SCE * Q)	0.01879	0.01965	0.04013
	(!D * !SCE * !Q)	0.00692	0.00769	0.02756
	(!D * !SCE * !Q)	0.01066	0.01143	0.03132
	(!D * !DE * !SCE * Q)	0.00700	0.00777	0.02778
	(!D * !DE * !SCE * Q)	0.01074	0.01153	0.03152

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00711	0.00787	0.02785
	(SCD * SCE * Q)	0.01087	0.01164	0.03161
	(SCD * SCE * !Q)	0.01345	0.01419	0.03442
	(SCD * SCE * !Q)	0.01721	0.01796	0.03819
	(D * DE * !SCE * !Q)	0.01339	0.01414	0.03434
	(D * DE * !SCE * !Q)	0.01715	0.01790	0.03809
	(D * !SCE * Q)	0.00708	0.00783	0.02781
	(D * !SCE * Q)	0.01084	0.01161	0.03158
	(D * !DE * !SCE * !Q)	0.00696	0.00771	0.02757
	(D * !DE * !SCE * !Q)	0.01072	0.01148	0.03134
	(!SCD * SCE * Q)	0.01500	0.01586	0.03633
	(!SCD * SCE * Q)	0.01878	0.01963	0.04012
	(!SCD * SCE * !Q)	0.00707	0.00783	0.02768
	(!SCD * SCE * !Q)	0.01084	0.01159	0.03145
	(!D * DE * !SCE * Q)	0.01512	0.01594	0.03640
	(!D * DE * !SCE * Q)	0.01888	0.01970	0.04017
	(!D * !SCE * !Q)	0.00698	0.00774	0.02759
	(!D * !SCE * !Q)	0.01075	0.01150	0.03136
	(!D * !DE * !SCE * Q)	0.00707	0.00782	0.02780
	(!D * !DE * !SCE * Q)	0.01083	0.01159	0.03157

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00692	0.00767	0.02767
	(SCD * SCE * Q)	0.01079	0.01156	0.03155
	(SCD * SCE * !Q)	0.01324	0.01390	0.03422
	(SCD * SCE * !Q)	0.01711	0.01779	0.03809
	(D * DE * !SCE * !Q)	0.01319	0.01386	0.03414
	(D * DE * !SCE * !Q)	0.01706	0.01774	0.03802
	(D * !SCE * Q)	0.00689	0.00764	0.02765
	(D * !SCE * Q)	0.01076	0.01152	0.03154
	(D * !DE * !SCE * !Q)	0.00689	0.00764	0.02751
	(D * !DE * !SCE * !Q)	0.01077	0.01153	0.03140
	(!SCD * SCE * Q)	0.01470	0.01556	0.03607
	(!SCD * SCE * Q)	0.01859	0.01945	0.03997
	(!SCD * SCE * !Q)	0.00701	0.00775	0.02762
	(!SCD * SCE * !Q)	0.01088	0.01164	0.03150
	(!D * DE * !SCE * Q)	0.01481	0.01565	0.03612
	(!D * DE * !SCE * Q)	0.01869	0.01952	0.04001
	(!D * !SCE * !Q)	0.00692	0.00767	0.02754
	(!D * !SCE * !Q)	0.01080	0.01155	0.03142
	(!D * !DE * !SCE * Q)	0.00688	0.00763	0.02763
	(!D * !DE * !SCE * Q)	0.01075	0.01152	0.03152

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00528	0.00544	0.39298
sky130_fd_sc_hs__xnor2_2	0.00881	0.00873	0.74711
sky130_fd_sc_hs__xnor2_4	0.01574	0.01597	1.30223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	2.64515	6.16894
sky130_fd_sc_hs__xnor2_2	0.00000	2.97443	3.95183
sky130_fd_sc_hs__xnor2_4	0.00000	6.30505	12.75670

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	0.12297	0.60910	4.05937
	A->Y (FR)	!B	0.13734	1.05488	9.87203
	B->Y (RR)	A	0.11529	0.60988	4.09111
	B->Y (FR)	!A	0.11590	1.06075	10.27760
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.13679	0.57044	4.06459
	A->Y (FR)	!B	0.13465	0.90189	9.69955
	B->Y (RR)	A	0.13107	0.58254	4.08596
	B->Y (FR)	!A	0.10899	0.90644	10.10030
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.15446	0.71051	6.92079
	A->Y (FR)	!B	0.13330	0.79464	9.59885
	B->Y (RR)	A	0.14659	0.71076	6.91850
	B->Y (FR)	!A	0.10549	0.81025	10.13390

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	0.14611	0.64617	3.73193
	A->Y (RF)	!B	0.06966	0.60258	5.69252
	B->Y (FF)	A	0.14627	0.63474	3.82602
	B->Y (RF)	!A	0.05446	0.57624	5.59891
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.16974	0.66705	4.09537
	A->Y (RF)	!B	0.06723	0.52170	5.54367
	B->Y (FF)	A	0.16271	0.62120	3.81976
	B->Y (RF)	!A	0.05590	0.50845	5.58943
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.15637	0.59750	4.00327
	A->Y (RF)	!B	0.06801	0.45670	5.34655
	B->Y (FF)	A	0.14936	0.55115	3.71546
	B->Y (RF)	!A	0.05580	0.43994	5.40565

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	0.00889	0.00944	0.02657
	A	B	0.00160	0.00214	0.01937
	A	!B	-0.00044	-0.00053	0.00256
	A	!B	0.00705	0.00689	0.01005
	B	A	0.00824	0.00886	0.02700
	B	A	0.00252	0.00312	0.02141
	B	!A	0.00037	0.00064	0.00506
	B	!A	0.00638	0.00648	0.01109
sky130_fd_sc_hs__xnor2_2	A	B	0.01411	0.01459	0.03189
	A	B	0.00334	0.00382	0.02110
	A	!B	0.00047	0.00030	0.00638
	A	!B	0.01366	0.01347	0.01957
	B	A	0.01358	0.01408	0.03036
	B	A	0.00511	0.00562	0.02210
	B	!A	0.00103	0.00158	0.00996
	B	!A	0.01185	0.01238	0.02071
sky130_fd_sc_hs__xnor2_4	A	B	0.02251	0.02344	0.05613
	A	B	0.00314	0.00404	0.03961
	A	!B	0.00014	-0.00017	0.01241
	A	!B	0.02525	0.02503	0.03760
	B	A	0.02188	0.02271	0.05407
	B	A	0.00699	0.00780	0.03921
	B	!A	0.00102	0.00221	0.01866
	B	!A	0.02164	0.02288	0.03932

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xnor2_1	A	B	0.00241	0.00355	0.02166
	A	B	0.00971	0.01085	0.02888
	A	!B	0.00840	0.00835	0.01104
	A	!B	0.00088	0.00082	0.00348
	B	A	0.00402	0.00436	0.02286
	B	A	0.00964	0.00997	0.02833
	B	!A	0.00568	0.00575	0.00870
	B	!A	-0.00017	-0.00013	0.00246
sky130_fd_sc_hs__xnor2_2	A	B	0.00481	0.00598	0.02471
	A	B	0.01557	0.01675	0.03532
	A	!B	0.01612	0.01598	0.02205
	A	!B	0.00288	0.00266	0.00799
	B	A	0.00812	0.00784	0.02614
	B	A	0.01625	0.01597	0.03431
	B	!A	0.01110	0.01124	0.01684
	B	!A	0.00047	0.00056	0.00582
sky130_fd_sc_hs__xnor2_4	A	B	0.00778	0.00975	0.04475
	A	B	0.02716	0.02910	0.06404
	A	!B	0.02980	0.02941	0.04127
	A	!B	0.00460	0.00420	0.01564
	B	A	0.01212	0.01216	0.04688
	B	A	0.02645	0.02645	0.06081
	B	!A	0.02065	0.02098	0.03269
	B	!A	0.00044	0.00082	0.01214

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00276	0.00721	0.00438	0.80069
sky130_fd_sc_hs__xnor3_2	0.00280	0.00723	0.00443	1.58838
sky130_fd_sc_hs__xnor3_4	0.00279	0.00721	0.00434	3.12225

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	15.07300	17.02610
sky130_fd_sc_hs__xnor3_2	0.00000	15.52540	17.72310
sky130_fd_sc_hs__xnor3_4	0.00000	16.58970	19.33030

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)	0.43330	1.25248	8.29817
	B->X (-R)	0.30560	1.05395	7.93530
	C->X (-R)	0.22551	0.98905	7.85864
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.45901	1.18811	8.30917
	B->X (-R)	0.32470	0.98117	7.92229
	C->X (-R)	0.23894	0.91461	7.85180
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.33869	0.99308	8.43225
	B->X (-R)	0.30373	0.94006	8.23724
	C->X (-R)	0.21909	0.85551	8.05397

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.41183	1.09674	5.35166
	B->X (-F)	0.38796	1.06151	5.51963
	C->X (-F)	0.22382	0.83095	4.94690
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.46173	1.11656	5.40764
	B->X (-F)	0.43824	1.07844	5.58146
	C->X (-F)	0.29074	0.88931	5.08668
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.56266	1.21272	5.73907
	B->X (-F)	0.56097	1.19300	5.97646
	C->X (-F)	0.44570	1.03080	5.53321

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02214	0.02263	0.04022
	A	0.02169	0.02261	0.04178
	B	0.01952	0.02125	0.06254
	B	0.02019	0.02266	0.06466
	C	0.01024	0.01104	0.03471
	C	0.01096	0.01299	0.03615
sky130_fd_sc_hs__xnor3_2	A	0.02473	0.02527	0.04241
	A	0.02411	0.02504	0.04414
	B	0.02206	0.02376	0.06456
	B	0.02266	0.02509	0.06678
	C	0.01288	0.01379	0.03715
	C	0.01336	0.01539	0.03881
sky130_fd_sc_hs__xnor3_4	A	0.03135	0.03141	0.04887
	A	0.02675	0.02676	0.04433
	B	0.02853	0.02979	0.07030
	B	0.02921	0.03085	0.07233
	C	0.01926	0.01983	0.04355
	C	0.01372	0.01428	0.03833

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01768	0.01813	0.03711
	A	0.02229	0.02272	0.04130
	B	0.01774	0.01929	0.06002
	B	0.02097	0.02305	0.06448
	C	0.01060	0.01180	0.03437
	C	0.00937	0.01073	0.03536
sky130_fd_sc_hs__xnor3_2	A	0.02087	0.02036	0.03946
	A	0.02555	0.02509	0.04330
	B	0.01435	0.01552	0.05746
	B	0.02416	0.02540	0.06638
	C	0.00700	0.00729	0.03215
	C	0.01264	0.01322	0.03777
sky130_fd_sc_hs__xnor3_4	A	0.03019	0.02645	0.04524
	A	0.03480	0.03109	0.04909
	B	0.02393	0.02130	0.06126
	B	0.03362	0.03099	0.07075
	C	0.01774	0.01336	0.04038
	C	0.02328	0.01958	0.04338

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00540	0.00559	0.36807
sky130_fd_sc_hs__xor2_2	0.00832	0.00825	0.70399
sky130_fd_sc_hs__xor2_4	0.01686	0.01648	1.26398

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	1.64134	2.35633
sky130_fd_sc_hs__xor2_2	0.00000	2.26260	2.74820
sky130_fd_sc_hs__xor2_4	0.00000	4.40060	5.29760

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	0.14094	0.97498	7.20774
	A->X (FR)	B	0.15605	1.08971	9.84550
	B->X (RR)	!A	0.16262	0.98357	7.39166
	B->X (FR)	A	0.12455	1.03401	9.62168
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.11972	0.82976	7.33846
	A->X (FR)	B	0.13717	0.92508	9.83321
	B->X (RR)	!A	0.13345	0.80464	7.21846
	B->X (FR)	A	0.11011	0.89572	9.81071
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.11016	0.68759	7.12560
	A->X (FR)	B	0.13732	0.79159	9.45380
	B->X (RR)	!A	0.11859	0.65366	6.81694
	B->X (FR)	A	0.11185	0.77026	9.54798

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	0.19347	0.57976	2.63574
	A->X (RF)	B	0.06471	0.57651	5.35140
	B->X (FF)	!A	0.17757	0.58105	2.65820
	B->X (RF)	A	0.05465	0.61972	5.96004
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.25274	0.74187	4.29125
	A->X (RF)	B	0.05990	0.51515	5.45631
	B->X (FF)	!A	0.22476	0.74252	4.33243
	B->X (RF)	A	0.05287	0.58488	6.39441
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.25132	0.68215	4.20737
	A->X (RF)	B	0.06086	0.44920	5.24161
	B->X (FF)	!A	0.21732	0.67601	4.22625
	B->X (RF)	A	0.05391	0.50676	6.05379

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	0.00070	0.00066	0.00378
	A	B	0.00825	0.00820	0.01132
	A	!B	0.01068	0.01108	0.02394
	A	!B	0.00290	0.00331	0.01620
	B	A	0.00077	0.00071	0.00383
	B	A	0.00653	0.00639	0.00960
	B	!A	0.00940	0.00917	0.02409
	B	!A	0.00342	0.00320	0.01815
sky130_fd_sc_hs__xor2_2	A	B	0.00195	0.00187	0.00798
	A	B	0.01430	0.01425	0.02030
	A	!B	0.01432	0.01468	0.02903
	A	!B	0.00351	0.00390	0.01831
	B	A	0.00091	0.00090	0.00692
	B	A	0.01077	0.01071	0.01675
	B	!A	0.01388	0.01338	0.02966
	B	!A	0.00564	0.00512	0.02145
sky130_fd_sc_hs__xor2_4	A	B	0.00316	0.00291	0.01537
	A	B	0.02915	0.02894	0.04144
	A	!B	0.02879	0.02946	0.05877
	A	!B	0.00753	0.00821	0.03762
	B	A	0.00234	0.00232	0.01475
	B	A	0.02291	0.02292	0.03542
	B	!A	0.02537	0.02483	0.05807
	B	!A	0.00954	0.00905	0.04225

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	0.00782	0.00755	0.01039
	A	B	0.00029	-0.00004	0.00270
	A	!B	0.00203	0.00242	0.01484
	A	!B	0.00973	0.01012	0.02258
	B	A	0.00663	0.00669	0.01022
	B	A	0.00079	0.00085	0.00390
	B	!A	0.00309	0.00391	0.01894
	B	!A	0.00929	0.01007	0.02512
sky130_fd_sc_hs__xor2_2	A	B	0.01338	0.01304	0.01870
	A	B	0.00100	0.00055	0.00604
	A	!B	0.00193	0.00235	0.01624
	A	!B	0.01260	0.01305	0.02673
	B	A	0.01136	0.01148	0.01773
	B	A	0.00147	0.00157	0.00720
	B	!A	0.00336	0.00415	0.02053
	B	!A	0.01217	0.01298	0.02930
sky130_fd_sc_hs__xor2_4	A	B	0.02740	0.02643	0.03887
	A	B	0.00143	0.00038	0.01179
	A	!B	0.00405	0.00482	0.03324
	A	!B	0.02506	0.02582	0.05417
	B	A	0.02309	0.02314	0.03547
	B	A	0.00221	0.00217	0.01424
	B	!A	0.00746	0.00917	0.04181
	B	!A	0.02429	0.02593	0.05856

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ss_1.60v_150C.ccs
Cell Library: Process , Voltage 1.60,
Temp 150.00

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	0.00275	0.00739	0.00438	0.81160
sky130_fd_sc_hs__xor3_2	0.00277	0.00749	0.00437	1.58394
sky130_fd_sc_hs__xor3_4	0.00275	0.00758	0.00433	3.10603

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	15.13310	17.11900
sky130_fd_sc_hs__xor3_2	0.00000	15.56320	17.79300
sky130_fd_sc_hs__xor3_4	0.00000	16.66030	19.42620

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)	0.42202	1.23282	8.26374
	B->X (-R)	0.23595	0.99395	7.87005
	C->X (-R)	0.21883	0.98513	7.85352
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.44906	1.17740	8.22195
	B->X (-R)	0.25386	0.92911	7.93294
	C->X (-R)	0.23460	0.91512	7.82086
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.35231	1.00767	8.43742
	B->X (-R)	0.31557	0.95261	8.25232
	C->X (-R)	0.23711	0.88965	8.13851

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.41337	1.09108	5.26552
	B->X (-F)	0.38936	1.05058	5.42484
	C->X (-F)	0.20621	0.79975	4.84170
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.46129	1.11504	5.39250
	B->X (-F)	0.44180	1.07890	5.57687
	C->X (-F)	0.28180	0.88966	5.11819
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.57556	1.22612	5.75929
	B->X (-F)	0.57227	1.20074	5.98235
	C->X (-F)	0.43567	1.03873	5.56781

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02337	0.02377	0.04112
	A	0.02166	0.02255	0.04162
	B	0.02136	0.02309	0.06436
	B	0.01945	0.02214	0.06399
	C	0.01038	0.01115	0.03521
	C	0.01090	0.01290	0.03635
sky130_fd_sc_hs__xor3_2	A	0.02604	0.02653	0.04396
	A	0.02418	0.02517	0.04442
	B	0.02401	0.02574	0.06673
	B	0.02216	0.02479	0.06661
	C	0.01310	0.01388	0.03782
	C	0.01368	0.01574	0.03920
sky130_fd_sc_hs__xor3_4	A	0.03244	0.03258	0.04989
	A	0.02791	0.02799	0.04541
	B	0.03029	0.03161	0.07225
	B	0.02002	0.02129	0.06213
	C	0.01949	0.01972	0.04311
	C	0.01397	0.01418	0.03780

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02209	0.02217	0.04029
	A	0.02241	0.02281	0.04123
	B	0.01981	0.02124	0.06187
	B	0.02028	0.02238	0.06396
	C	0.01134	0.01259	0.03511
	C	0.00927	0.01063	0.03540
sky130_fd_sc_hs__xor3_2	A	0.02121	0.02059	0.04031
	A	0.02571	0.02515	0.04335
	B	0.02322	0.02383	0.06359
	B	0.02416	0.02535	0.06527
	C	0.00677	0.00750	0.03241
	C	0.01235	0.01313	0.03771
sky130_fd_sc_hs__xor3_4	A	0.03120	0.02722	0.04660
	A	0.03576	0.03178	0.04964
	B	0.02464	0.02181	0.06147
	B	0.03458	0.03187	0.07140
	C	0.01794	0.01410	0.03943
	C	0.02348	0.01962	0.04334