sky130_fd_sc_hs_tt_1.80v_100C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00289	0.00280	0.00290	0.00302	0.00301	0.31575
sky130_fd_sc_hs__a2111oi_2	0.00550	0.00536	0.00447	0.00449	0.00449	0.54613
sky130_fd_sc_hs__a2111oi_4	0.01092	0.01074	0.00877	0.00863	0.00880	0.99654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	1.84556	6.96293
sky130_fd_sc_hs__a2111oi_2	0.00000	3.61098	13.91860
sky130_fd_sc_hs__a2111oi_4	0.00000	7.21658	27.83330

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)	0.18268	1.01491	8.49462
	A2->Y (FR)	0.21601	1.06847	8.70364
	B1->Y (FR)	0.19984	1.07318	9.23820
	C1->Y (FR)	0.17045	1.08421	9.70913
	D1->Y (FR)	0.12520	1.05953	9.85101
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.16966	0.85292	8.22390
	A2->Y (FR)	0.21174	0.90153	8.36450
	B1->Y (FR)	0.18732	0.89468	8.68341
	C1->Y (FR)	0.15537	0.90775	9.31850
	D1->Y (FR)	0.09202	0.86830	9.44309
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.16245	0.71404	7.96014
	A2->Y (FR)	0.20812	0.76926	8.18068
	B1->Y (FR)	0.18433	0.76906	8.59602
	C1->Y (FR)	0.14825	0.77982	9.24043
	D1->Y (FR)	0.08550	0.74767	9.43227

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.03513	0.35965	3.04330
	A2->Y (RF)	0.03889	0.32003	2.60978
	B1->Y (RF)	0.02549	0.27657	2.33294
	C1->Y (RF)	0.02571	0.26834	2.30630
	D1->Y (RF)	0.02177	0.25825	2.27818
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.03045	0.31423	2.98397
	A2->Y (RF)	0.03641	0.27759	2.51667
	B1->Y (RF)	0.03873	0.36861	3.70437
	C1->Y (RF)	0.03709	0.35422	3.66248
	D1->Y (RF)	0.02748	0.34232	3.62616
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.03177	0.28106	3.02075
	A2->Y (RF)	0.03698	0.23257	2.36779
	B1->Y (RF)	0.03385	0.30212	3.41338
	C1->Y (RF)	0.03307	0.28637	3.36872
	D1->Y (RF)	0.02357	0.27051	3.39736

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00061	0.00056	0.02247
	A1	0.01016	0.01012	0.03204
	A2	0.00108	0.00110	0.02364
	A2	0.01187	0.01191	0.03440
	B1	0.00048	0.00082	0.02483
	B1	0.00859	0.00894	0.03298
	C1	0.00046	0.00112	0.02330
	C1	0.00738	0.00804	0.03026
	D1	0.00033	0.00209	0.03001
	D1	0.00612	0.00778	0.03579
sky130_fd_sc_hs__a2111oi_2	A1	0.00031	0.00023	0.04198
	A1	0.01840	0.01835	0.06010
	A2	0.00209	0.00200	0.04482
	A2	0.02257	0.02249	0.06564
	B1	0.00112	0.00150	0.03300
	B1	0.01504	0.01541	0.04709
	C1	0.00123	0.00202	0.03085
	C1	0.01250	0.01328	0.04220
	D1	0.00103	0.00357	0.04088
	D1	0.00970	0.01189	0.04959

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00034	-0.00035	0.07933
	A1	0.03596	0.03597	0.11588
	A2	0.00286	0.00282	0.08508
	A2	0.04399	0.04393	0.12623
	B1	0.00145	0.00238	0.06461
	B1	0.02922	0.03023	0.09262
	C1	0.00155	0.00356	0.06082
	C1	0.02402	0.02602	0.08324
	D1	0.00110	0.00667	0.07831
	D1	0.01841	0.02399	0.09564

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01402	0.01453	0.03441
	A1	0.00454	0.00502	0.02498
	A2	0.01525	0.01557	0.03499
	A2	0.00451	0.00484	0.02428
	B1	0.01056	0.01156	0.03439
	B1	0.00246	0.00344	0.02632
	C1	0.00816	0.00935	0.03075
	C1	0.00124	0.00241	0.02383
	D1	0.00581	0.00717	0.02813
	D1	0.00003	0.00136	0.02233

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02662	0.02766	0.06589
	A1	0.00869	0.00971	0.04794
	A2	0.02898	0.02961	0.06747
	A2	0.00859	0.00919	0.04717
	B1	0.01846	0.01967	0.04989
	B1	0.00461	0.00578	0.03598
	C1	0.01353	0.01499	0.04342
	C1	0.00231	0.00372	0.03198
	D1	0.00742	0.00949	0.03682
	D1	-0.00124	0.00077	0.02792
sky130_fd_sc_hs__a2111oi_4	**A1**	0.05199	0.05416	0.12833
	A1	0.01599	0.01810	0.09242
	A2	0.05680	0.05833	0.13471
	A2	0.01584	0.01734	0.09402
	B1	0.03616	0.03883	0.10054
	B1	0.00851	0.01117	0.07262
	C1	0.02603	0.02931	0.08664
	C1	0.00363	0.00692	0.06411
	D1	0.01470	0.01913	0.07343
	D1	-0.00254	0.00180	0.05581

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)**	0.00166	0.00166	0.00165
	(A2 * B1 * D1 * !Y)	-0.00214	-0.00220	-0.00219
	(A2 * B1 * C1 * !D1 * !Y)	0.00166	0.00166	0.00165
	(A2 * B1 * C1 * !D1 * !Y)	-0.00213	-0.00220	-0.00219
	(A2 * B1 * !C1 * !D1 * !Y)	0.00195	0.00171	0.00169
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00185	-0.00215	-0.00216
	(A2 * !B1 * C1 * D1 * !Y)	0.00167	0.00166	0.00165
	(A2 * !B1 * C1 * D1 * !Y)	-0.00200	-0.00215	-0.00213
	(A2 * !B1 * C1 * !D1 * !Y)	0.00190	0.00172	0.00169
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00181	-0.00212	-0.00215
	(A2 * !B1 * !C1 * D1 * !Y)	0.00196	0.00176	0.00171
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00174	-0.00206	-0.00211
	(!A2 * B1 * D1 * !Y)	0.00159	0.00160	0.00159
	(!A2 * B1 * D1 * !Y)	-0.00222	-0.00223	-0.00222
	(!A2 * B1 * C1 * !D1 * !Y)	0.00159	0.00160	0.00159
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00221	-0.00222	-0.00222
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00162	0.00163	0.00162
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00219	-0.00219	-0.00219
	(!A2 * !B1 * C1 * D1 * !Y)	0.00159	0.00161	0.00159
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00222	-0.00223	-0.00222
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00161	0.00163	0.00162
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00165	0.00167	0.00165
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00216	-0.00217	-0.00216
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00055	0.00055	0.00053
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00250	-0.00251	-0.00255

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00329	0.00333	0.00330
	(A2 * B1 * D1 * !Y)	-0.00423	-0.00439	-0.00436
	(A2 * B1 * C1 * !D1 * !Y)	0.00329	0.00333	0.00330
	(A2 * B1 * C1 * !D1 * !Y)	-0.00421	-0.00439	-0.00436
	(A2 * B1 * !C1 * !D1 * !Y)	0.00387	0.00343	0.00339
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00367	-0.00430	-0.00431
	(A2 * !B1 * C1 * D1 * !Y)	0.00331	0.00333	0.00330
	(A2 * !B1 * C1 * D1 * !Y)	-0.00395	-0.00424	-0.00423
	(A2 * !B1 * C1 * !D1 * !Y)	0.00376	0.00343	0.00338
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00360	-0.00423	-0.00427
	(A2 * !B1 * !C1 * D1 * !Y)	0.00391	0.00353	0.00343
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00342	-0.00412	-0.00421
	(!A2 * B1 * D1 * !Y)	0.00316	0.00320	0.00316
	(!A2 * B1 * D1 * !Y)	-0.00444	-0.00445	-0.00443
	(!A2 * B1 * C1 * !D1 * !Y)	0.00316	0.00320	0.00317
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00443	-0.00445	-0.00442
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00321	0.00322	0.00322
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00436	-0.00437	-0.00437
	(!A2 * !B1 * C1 * D1 * !Y)	0.00316	0.00317	0.00317
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00443	-0.00443	-0.00442
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00322	0.00324	0.00323
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00435	-0.00437	-0.00436
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00327	0.00330	0.00328
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00430	-0.00433	-0.00431
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00112	0.00112	0.00106
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00497	-0.00499	-0.00510

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00660	0.00668	0.00662
	(A2 * B1 * D1 * !Y)	-0.00850	-0.00873	-0.00874
	(A2 * B1 * C1 * !D1 * !Y)	0.00662	0.00668	0.00663
	(A2 * B1 * C1 * !D1 * !Y)	-0.00847	-0.00873	-0.00874
	(A2 * B1 * !C1 * !D1 * !Y)	0.00778	0.00689	0.00680
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00737	-0.00862	-0.00864
	(A2 * !B1 * C1 * D1 * !Y)	0.00664	0.00668	0.00663
	(A2 * !B1 * C1 * D1 * !Y)	-0.00794	-0.00853	-0.00849
	(A2 * !B1 * C1 * !D1 * !Y)	0.00756	0.00689	0.00678
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00723	-0.00848	-0.00858
	(A2 * !B1 * !C1 * D1 * !Y)	0.00783	0.00708	0.00688
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00692	-0.00825	-0.00845
	(!A2 * B1 * D1 * !Y)	0.00631	0.00636	0.00635
	(!A2 * B1 * D1 * !Y)	-0.00884	-0.00889	-0.00888
	(!A2 * B1 * C1 * !D1 * !Y)	0.00635	0.00636	0.00635
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00889	-0.00889	-0.00887
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00644	0.00648	0.00646
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00875	-0.00878	-0.00876
	(!A2 * !B1 * C1 * D1 * !Y)	0.00632	0.00637	0.00635
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00886	-0.00889	-0.00887
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00645	0.00649	0.00647
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00873	-0.00877	-0.00875
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00655	0.00663	0.00658
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00862	-0.00869	-0.00864
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00214	0.00215	0.00204
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01004	-0.01009	-0.01029

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)**	-0.00165	-0.00166	-0.00165
	(A2 * B1 * D1 * !Y)	0.00218	0.00221	0.00219
	(A2 * B1 * C1 * !D1 * !Y)	-0.00164	-0.00165	-0.00165
	(A2 * B1 * C1 * !D1 * !Y)	0.00218	0.00220	0.00219
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * !C1 * !D1 * !Y)	0.00221	0.00222	0.00222
	(A2 * !B1 * C1 * D1 * !Y)	-0.00164	-0.00165	-0.00165
	(A2 * !B1 * C1 * D1 * !Y)	0.00212	0.00215	0.00213
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * C1 * !D1 * !Y)	0.00217	0.00220	0.00219
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00158	-0.00158	-0.00157
	(A2 * !B1 * !C1 * D1 * !Y)	0.00217	0.00218	0.00219
	(!A2 * B1 * D1 * !Y)	-0.00157	-0.00160	-0.00159
	(!A2 * B1 * D1 * !Y)	0.00222	0.00226	0.00223
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00156	-0.00160	-0.00159
	(!A2 * B1 * C1 * !D1 * !Y)	0.00222	0.00226	0.00223
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00154	-0.00157	-0.00157
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00226	0.00229	0.00226
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00156	-0.00160	-0.00159
	(!A2 * !B1 * C1 * D1 * !Y)	0.00222	0.00226	0.00223
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00154	-0.00157	-0.00157
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00226	0.00227	0.00226
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00151	-0.00154	-0.00154
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00229	0.00229	0.00229
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00256	0.00261	0.00257

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00329	-0.00330	-0.00329
	(A2 * B1 * D1 * !Y)	0.00437	0.00440	0.00436
	(A2 * B1 * C1 * !D1 * !Y)	-0.00329	-0.00330	-0.00328
	(A2 * B1 * C1 * !D1 * !Y)	0.00437	0.00440	0.00436
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00326	-0.00328	-0.00326
	(A2 * B1 * !C1 * !D1 * !Y)	0.00442	0.00445	0.00442
	(A2 * !B1 * C1 * D1 * !Y)	-0.00328	-0.00329	-0.00328
	(A2 * !B1 * C1 * D1 * !Y)	0.00422	0.00424	0.00423
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00323	-0.00326	-0.00323
	(A2 * !B1 * C1 * !D1 * !Y)	0.00430	0.00436	0.00432
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00316	-0.00317	-0.00314
	(A2 * !B1 * !C1 * D1 * !Y)	0.00432	0.00435	0.00436
	(!A2 * B1 * D1 * !Y)	-0.00312	-0.00320	-0.00316
	(!A2 * B1 * D1 * !Y)	0.00445	0.00446	0.00444
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00311	-0.00320	-0.00317
	(!A2 * B1 * C1 * !D1 * !Y)	0.00444	0.00447	0.00445
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00304	-0.00312	-0.00315
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00449	0.00452	0.00450
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00311	-0.00317	-0.00317
	(!A2 * !B1 * C1 * D1 * !Y)	0.00445	0.00447	0.00445
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00304	-0.00312	-0.00314
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00450	0.00453	0.00451
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00299	-0.00306	-0.00309
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00455	0.00458	0.00456
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00102	-0.00103	-0.00101
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00514	0.00521	0.00513

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00657	-0.00660	-0.00660
	(A2 * B1 * D1 * !Y)	0.00867	0.00873	0.00874
	(A2 * B1 * C1 * !D1 * !Y)	-0.00661	-0.00659	-0.00660
	(A2 * B1 * C1 * !D1 * !Y)	0.00876	0.00873	0.00874
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00653	-0.00659	-0.00655
	(A2 * B1 * !C1 * !D1 * !Y)	0.00881	0.00895	0.00888
	(A2 * !B1 * C1 * D1 * !Y)	-0.00661	-0.00661	-0.00659
	(A2 * !B1 * C1 * D1 * !Y)	0.00852	0.00853	0.00849
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00649	-0.00653	-0.00646
	(A2 * !B1 * C1 * !D1 * !Y)	0.00869	0.00877	0.00870
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00635	-0.00638	-0.00631
	(A2 * !B1 * !C1 * D1 * !Y)	0.00868	0.00875	0.00875
	(!A2 * B1 * D1 * !Y)	-0.00627	-0.00636	-0.00635
	(!A2 * B1 * D1 * !Y)	0.00893	0.00897	0.00891
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00626	-0.00636	-0.00635
	(!A2 * B1 * C1 * !D1 * !Y)	0.00893	0.00898	0.00892
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00612	-0.00628	-0.00631
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00901	0.00912	0.00903
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00624	-0.00637	-0.00635
	(!A2 * !B1 * C1 * D1 * !Y)	0.00890	0.00896	0.00892
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00611	-0.00627	-0.00630
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00901	0.00914	0.00904
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00600	-0.00617	-0.00620
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00912	0.00924	0.00915
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00194	-0.00198	-0.00195
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01031	0.01051	0.01035

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)**	0.00174	0.00176	0.00174
	(A1 * B1 * D1 * !Y)	-0.00214	-0.00221	-0.00220
	(A1 * B1 * C1 * !D1 * !Y)	0.00174	0.00176	0.00174
	(A1 * B1 * C1 * !D1 * !Y)	-0.00213	-0.00221	-0.00220
	(A1 * B1 * !C1 * !D1 * !Y)	0.00205	0.00181	0.00179
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00184	-0.00216	-0.00217
	(A1 * !B1 * C1 * D1 * !Y)	0.00175	0.00176	0.00174
	(A1 * !B1 * C1 * D1 * !Y)	-0.00200	-0.00216	-0.00214
	(A1 * !B1 * C1 * !D1 * !Y)	0.00199	0.00181	0.00178
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00182	-0.00213	-0.00216
	(A1 * !B1 * !C1 * D1 * !Y)	0.00205	0.00186	0.00181
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00174	-0.00207	-0.00213
	(!A1 * B1 * !Y)	0.00168	0.00170	0.00168
	(!A1 * B1 * !Y)	-0.00223	-0.00224	-0.00223
	(!A1 * !B1 * C1 * !Y)	0.00169	0.00169	0.00169
	(!A1 * !B1 * C1 * !Y)	-0.00223	-0.00224	-0.00223
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00175	0.00177	0.00174
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00218	-0.00219	-0.00217
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00170	0.00172	0.00170
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00222	-0.00224	-0.00222

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00331	0.00335	0.00332
	(A1 * B1 * D1 * !Y)	-0.00422	-0.00438	-0.00434
	(A1 * B1 * C1 * !D1 * !Y)	0.00332	0.00335	0.00332
	(A1 * B1 * C1 * !D1 * !Y)	-0.00420	-0.00437	-0.00435
	(A1 * B1 * !C1 * !D1 * !Y)	0.00387	0.00345	0.00340
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00370	-0.00429	-0.00430
	(A1 * !B1 * C1 * D1 * !Y)	0.00334	0.00335	0.00332
	(A1 * !B1 * C1 * D1 * !Y)	-0.00396	-0.00423	-0.00422
	(A1 * !B1 * C1 * !D1 * !Y)	0.00376	0.00345	0.00340
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00364	-0.00422	-0.00426
	(A1 * !B1 * !C1 * D1 * !Y)	0.00391	0.00354	0.00345
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00346	-0.00411	-0.00420
	(!A1 * B1 * !Y)	0.00318	0.00322	0.00318
	(!A1 * B1 * !Y)	-0.00441	-0.00443	-0.00441
	(!A1 * !B1 * C1 * !Y)	0.00319	0.00322	0.00319
	(!A1 * !B1 * C1 * !Y)	-0.00441	-0.00443	-0.00441
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00330	0.00330	0.00330
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00429	-0.00430	-0.00429
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00321	0.00324	0.00321
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00440	-0.00441	-0.00439

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00665	0.00672	0.00666
	(A1 * B1 * D1 * !Y)	-0.00850	-0.00879	-0.00872
	(A1 * B1 * C1 * !D1 * !Y)	0.00669	0.00672	0.00667
	(A1 * B1 * C1 * !D1 * !Y)	-0.00850	-0.00879	-0.00873
	(A1 * B1 * !C1 * !D1 * !Y)	0.00785	0.00693	0.00684
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00740	-0.00860	-0.00863
	(A1 * !B1 * C1 * D1 * !Y)	0.00670	0.00673	0.00667
	(A1 * !B1 * C1 * D1 * !Y)	-0.00795	-0.00855	-0.00848
	(A1 * !B1 * C1 * !D1 * !Y)	0.00759	0.00694	0.00682
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00730	-0.00847	-0.00857
	(A1 * !B1 * !C1 * D1 * !Y)	0.00786	0.00713	0.00692
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00699	-0.00825	-0.00844
	(!A1 * B1 * !Y)	0.00639	0.00639	0.00639
	(!A1 * B1 * !Y)	-0.00886	-0.00887	-0.00887
	(!A1 * !B1 * C1 * !Y)	0.00639	0.00645	0.00638
	(!A1 * !B1 * C1 * !Y)	-0.00887	-0.00891	-0.00886
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00660	0.00671	0.00664
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00858	-0.00868	-0.00863
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00646	0.00652	0.00647
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00884	-0.00887	-0.00882

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)**	-0.00173	-0.00175	-0.00174
	(A1 * B1 * D1 * !Y)	0.00219	0.00221	0.00220
	(A1 * B1 * C1 * !D1 * !Y)	-0.00173	-0.00175	-0.00174
	(A1 * B1 * C1 * !D1 * !Y)	0.00219	0.00221	0.00220
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * B1 * !C1 * !D1 * !Y)	0.00222	0.00225	0.00223
	(A1 * !B1 * C1 * D1 * !Y)	-0.00173	-0.00175	-0.00174
	(A1 * !B1 * C1 * D1 * !Y)	0.00213	0.00216	0.00214
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00169	-0.00171	-0.00169
	(A1 * !B1 * C1 * !D1 * !Y)	0.00218	0.00221	0.00220
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00167	-0.00168	-0.00166
	(A1 * !B1 * !C1 * D1 * !Y)	0.00218	0.00219	0.00220
	(!A1 * B1 * !Y)	-0.00167	-0.00169	-0.00168
	(!A1 * B1 * !Y)	0.00225	0.00225	0.00224
	(!A1 * !B1 * C1 * !Y)	-0.00167	-0.00169	-0.00169
	(!A1 * !B1 * C1 * !Y)	0.00225	0.00227	0.00224
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00161	-0.00164	-0.00164
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00230	0.00233	0.00230
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00153	-0.00165	-0.00168
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00240	0.00230	0.00225

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00331	-0.00332	-0.00331
	(A1 * B1 * D1 * !Y)	0.00435	0.00438	0.00434
	(A1 * B1 * C1 * !D1 * !Y)	-0.00331	-0.00332	-0.00330
	(A1 * B1 * C1 * !D1 * !Y)	0.00435	0.00438	0.00435
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00329	-0.00330	-0.00328
	(A1 * B1 * !C1 * !D1 * !Y)	0.00440	0.00443	0.00440
	(A1 * !B1 * C1 * D1 * !Y)	-0.00331	-0.00331	-0.00330
	(A1 * !B1 * C1 * D1 * !Y)	0.00422	0.00423	0.00422
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00326	-0.00327	-0.00325
	(A1 * !B1 * C1 * !D1 * !Y)	0.00431	0.00435	0.00431
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00319	-0.00319	-0.00316
	(A1 * !B1 * !C1 * D1 * !Y)	0.00433	0.00434	0.00435
	(!A1 * B1 * !Y)	-0.00312	-0.00321	-0.00318
	(!A1 * B1 * !Y)	0.00441	0.00447	0.00443
	(!A1 * !B1 * C1 * !Y)	-0.00312	-0.00321	-0.00319
	(!A1 * !B1 * C1 * !Y)	0.00441	0.00447	0.00443
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00301	-0.00309	-0.00310
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00453	0.00458	0.00454
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00283	-0.00315	-0.00321
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00474	0.00450	0.00444

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00665	-0.00667	-0.00664
	(A1 * B1 * D1 * !Y)	0.00874	0.00880	0.00872
	(A1 * B1 * C1 * !D1 * !Y)	-0.00665	-0.00667	-0.00664
	(A1 * B1 * C1 * !D1 * !Y)	0.00874	0.00880	0.00873
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00658	-0.00660	-0.00658
	(A1 * B1 * !C1 * !D1 * !Y)	0.00883	0.00888	0.00886
	(A1 * !B1 * C1 * D1 * !Y)	-0.00664	-0.00667	-0.00663
	(A1 * !B1 * C1 * D1 * !Y)	0.00849	0.00855	0.00848
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00653	-0.00656	-0.00651
	(A1 * !B1 * C1 * !D1 * !Y)	0.00868	0.00874	0.00869
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00641	-0.00640	-0.00635
	(A1 * !B1 * !C1 * D1 * !Y)	0.00871	0.00871	0.00874
	(!A1 * B1 * !Y)	-0.00628	-0.00639	-0.00639
	(!A1 * B1 * !Y)	0.00886	0.00898	0.00890
	(!A1 * !B1 * C1 * !Y)	-0.00627	-0.00643	-0.00638
	(!A1 * !B1 * C1 * !Y)	0.00887	0.00898	0.00890
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00604	-0.00620	-0.00622
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00910	0.00921	0.00913
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00567	-0.00630	-0.00643
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00957	0.00907	0.00892

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)**	0.00188	0.00185	0.00177
	(A1 * A2 * C1 * D1 * !Y)	-0.00153	-0.00155	-0.00153
	(A1 * A2 * C1 * !D1 * !Y)	0.00198	0.00193	0.00179
	(A1 * A2 * C1 * !D1 * !Y)	-0.00145	-0.00150	-0.00151
	(A1 * A2 * !C1 * D1 * !Y)	0.00192	0.00203	0.00187
	(A1 * A2 * !C1 * D1 * !Y)	-0.00143	-0.00138	-0.00142
	(A1 * A2 * !C1 * !D1 * !Y)	0.00181	0.00184	0.00177
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00100	-0.00102	-0.00103
	(A1 * !A2 * C1 * D1 * !Y)	0.00186	0.00171	0.00171
	(A1 * !A2 * C1 * D1 * !Y)	-0.00199	-0.00215	-0.00216
	(A1 * !A2 * C1 * !D1 * !Y)	0.00223	0.00180	0.00175
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00166	-0.00208	-0.00212
	(A1 * !A2 * !C1 * D1 * !Y)	0.00229	0.00185	0.00177
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00153	-0.00203	-0.00208
	(!A1 * C1 * D1 * !Y)	0.00186	0.00173	0.00171
	(!A1 * C1 * D1 * !Y)	-0.00200	-0.00216	-0.00216
	(!A1 * C1 * !D1 * !Y)	0.00221	0.00182	0.00175
	(!A1 * C1 * !D1 * !Y)	-0.00168	-0.00209	-0.00212
	(!A1 * !C1 * D1 * !Y)	0.00227	0.00185	0.00177
	(!A1 * !C1 * D1 * !Y)	-0.00155	-0.00203	-0.00209

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00226	0.00222	0.00207
	(A1 * A2 * C1 * D1 * !Y)	-0.00305	-0.00304	-0.00303
	(A1 * A2 * C1 * !D1 * !Y)	0.00250	0.00240	0.00212
	(A1 * A2 * C1 * !D1 * !Y)	-0.00279	-0.00294	-0.00298
	(A1 * A2 * !C1 * D1 * !Y)	0.00232	0.00254	0.00226
	(A1 * A2 * !C1 * D1 * !Y)	-0.00288	-0.00274	-0.00287
	(A1 * A2 * !C1 * !D1 * !Y)	0.00217	0.00221	0.00208
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00197	-0.00202	-0.00205
	(A1 * !A2 * C1 * D1 * !Y)	0.00214	0.00195	0.00194
	(A1 * !A2 * C1 * D1 * !Y)	-0.00403	-0.00434	-0.00434
	(A1 * !A2 * C1 * !D1 * !Y)	0.00297	0.00212	0.00204
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00328	-0.00419	-0.00426
	(A1 * !A2 * !C1 * D1 * !Y)	0.00302	0.00222	0.00206
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00309	-0.00406	-0.00420
	(!A1 * C1 * D1 * !Y)	0.00213	0.00195	0.00194
	(!A1 * C1 * D1 * !Y)	-0.00404	-0.00433	-0.00434
	(!A1 * C1 * !D1 * !Y)	0.00296	0.00213	0.00204
	(!A1 * C1 * !D1 * !Y)	-0.00330	-0.00419	-0.00426
	(!A1 * !C1 * D1 * !Y)	0.00300	0.00222	0.00206
	(!A1 * !C1 * D1 * !Y)	-0.00311	-0.00406	-0.00420

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00435	0.00426	0.00399
	(A1 * A2 * C1 * D1 * !Y)	-0.00616	-0.00621	-0.00616
	(A1 * A2 * C1 * !D1 * !Y)	0.00468	0.00456	0.00404
	(A1 * A2 * C1 * !D1 * !Y)	-0.00575	-0.00600	-0.00607
	(A1 * A2 * !C1 * D1 * !Y)	0.00450	0.00496	0.00438
	(A1 * A2 * !C1 * D1 * !Y)	-0.00581	-0.00551	-0.00576
	(A1 * A2 * !C1 * !D1 * !Y)	0.00418	0.00423	0.00399
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00413	-0.00420	-0.00424
	(A1 * !A2 * C1 * D1 * !Y)	0.00428	0.00375	0.00373
	(A1 * !A2 * C1 * D1 * !Y)	-0.00820	-0.00885	-0.00887
	(A1 * !A2 * C1 * !D1 * !Y)	0.00594	0.00411	0.00393
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00672	-0.00854	-0.00870
	(A1 * !A2 * !C1 * D1 * !Y)	0.00602	0.00430	0.00398
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00634	-0.00831	-0.00857
	(!A1 * C1 * D1 * !Y)	0.00425	0.00376	0.00373
	(!A1 * C1 * D1 * !Y)	-0.00823	-0.00887	-0.00887
	(!A1 * C1 * !D1 * !Y)	0.00589	0.00412	0.00393
	(!A1 * C1 * !D1 * !Y)	-0.00677	-0.00856	-0.00870
	(!A1 * !C1 * D1 * !Y)	0.00591	0.00430	0.00398
	(!A1 * !C1 * D1 * !Y)	-0.00632	-0.00831	-0.00857

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)**	-0.00172	-0.00173	-0.00172
	(A1 * A2 * C1 * D1 * !Y)	0.00153	0.00155	0.00153
	(A1 * A2 * C1 * !D1 * !Y)	-0.00171	-0.00173	-0.00172
	(A1 * A2 * C1 * !D1 * !Y)	0.00151	0.00153	0.00151
	(A1 * A2 * !C1 * D1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * !C1 * D1 * !Y)	0.00143	0.00144	0.00143
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00156	-0.00158	-0.00163
	(A1 * A2 * !C1 * !D1 * !Y)	0.00122	0.00123	0.00117
	(A1 * !A2 * C1 * D1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * C1 * D1 * !Y)	0.00215	0.00217	0.00216
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * C1 * !D1 * !Y)	0.00222	0.00223	0.00222
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00163	-0.00164	-0.00162
	(A1 * !A2 * !C1 * D1 * !Y)	0.00216	0.00219	0.00219
	(!A1 * C1 * D1 * !Y)	-0.00169	-0.00170	-0.00169
	(!A1 * C1 * D1 * !Y)	0.00216	0.00217	0.00216
	(!A1 * C1 * !D1 * !Y)	-0.00163	-0.00164	-0.00163
	(!A1 * C1 * !D1 * !Y)	0.00221	0.00223	0.00222
	(!A1 * !C1 * D1 * !Y)	-0.00163	-0.00164	-0.00162
	(!A1 * !C1 * D1 * !Y)	0.00217	0.00219	0.00219

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00193	-0.00193	-0.00193
	(A1 * A2 * C1 * D1 * !Y)	0.00305	0.00304	0.00303
	(A1 * A2 * C1 * !D1 * !Y)	-0.00193	-0.00192	-0.00192
	(A1 * A2 * C1 * !D1 * !Y)	0.00300	0.00297	0.00298
	(A1 * A2 * !C1 * D1 * !Y)	-0.00195	-0.00196	-0.00195
	(A1 * A2 * !C1 * D1 * !Y)	0.00288	0.00291	0.00289
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00168	-0.00169	-0.00173
	(A1 * A2 * !C1 * !D1 * !Y)	0.00245	0.00245	0.00238
	(A1 * !A2 * C1 * D1 * !Y)	-0.00191	-0.00193	-0.00192
	(A1 * !A2 * C1 * D1 * !Y)	0.00432	0.00436	0.00434
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00184	-0.00183	-0.00184
	(A1 * !A2 * C1 * !D1 * !Y)	0.00443	0.00442	0.00445
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00180	-0.00180	-0.00177
	(A1 * !A2 * !C1 * D1 * !Y)	0.00435	0.00438	0.00439
	(!A1 * C1 * D1 * !Y)	-0.00191	-0.00193	-0.00192
	(!A1 * C1 * D1 * !Y)	0.00431	0.00436	0.00434
	(!A1 * C1 * !D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A1 * C1 * !D1 * !Y)	0.00443	0.00447	0.00445
	(!A1 * !C1 * D1 * !Y)	-0.00180	-0.00180	-0.00177
	(!A1 * !C1 * D1 * !Y)	0.00435	0.00438	0.00439

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00370	-0.00372	-0.00370
	(A1 * A2 * C1 * D1 * !Y)	0.00616	0.00621	0.00616
	(A1 * A2 * C1 * !D1 * !Y)	-0.00369	-0.00372	-0.00370
	(A1 * A2 * C1 * !D1 * !Y)	0.00606	0.00611	0.00607
	(A1 * A2 * !C1 * D1 * !Y)	-0.00375	-0.00377	-0.00375
	(A1 * A2 * !C1 * D1 * !Y)	0.00581	0.00586	0.00580
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00321	-0.00323	-0.00332
	(A1 * A2 * !C1 * !D1 * !Y)	0.00496	0.00495	0.00486
	(A1 * !A2 * C1 * D1 * !Y)	-0.00367	-0.00370	-0.00369
	(A1 * !A2 * C1 * D1 * !Y)	0.00881	0.00888	0.00887
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00352	-0.00353	-0.00351
	(A1 * !A2 * C1 * !D1 * !Y)	0.00906	0.00911	0.00909
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00345	-0.00347	-0.00339
	(A1 * !A2 * !C1 * D1 * !Y)	0.00884	0.00894	0.00894
	(!A1 * C1 * D1 * !Y)	-0.00368	-0.00370	-0.00369
	(!A1 * C1 * D1 * !Y)	0.00882	0.00888	0.00887
	(!A1 * C1 * !D1 * !Y)	-0.00352	-0.00353	-0.00351
	(!A1 * C1 * !D1 * !Y)	0.00906	0.00911	0.00909
	(!A1 * !C1 * D1 * !Y)	-0.00345	-0.00347	-0.00339
	(!A1 * !C1 * D1 * !Y)	0.00886	0.00895	0.00895

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)**	0.00200	0.00201	0.00191
	(A1 * B1 * D1 * !Y)	-0.00131	-0.00133	-0.00136
	(A1 * B1 * !D1 * !Y)	0.00183	0.00185	0.00181
	(A1 * B1 * !D1 * !Y)	-0.00099	-0.00101	-0.00101
	(A1 * A2 * !B1 * D1 * !Y)	0.00224	0.00203	0.00196
	(A1 * A2 * !B1 * D1 * !Y)	-0.00116	-0.00135	-0.00137
	(A1 * A2 * !B1 * !D1 * !Y)	0.00186	0.00187	0.00183
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00096	-0.00096	-0.00098
	(A1 * !A2 * !B1 * D1 * !Y)	0.00242	0.00192	0.00186
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00150	-0.00199	-0.00204
	(!A1 * B1 * D1 * !Y)	0.00199	0.00199	0.00189
	(!A1 * B1 * D1 * !Y)	-0.00132	-0.00134	-0.00136
	(!A1 * B1 * !D1 * !Y)	0.00186	0.00189	0.00183
	(!A1 * B1 * !D1 * !Y)	-0.00098	-0.00100	-0.00100
	(!A1 * !B1 * D1 * !Y)	0.00242	0.00192	0.00186
	(!A1 * !B1 * D1 * !Y)	-0.00151	-0.00199	-0.00204

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00228	0.00235	0.00211
	(A1 * B1 * D1 * !Y)	-0.00287	-0.00283	-0.00290
	(A1 * B1 * !D1 * !Y)	0.00193	0.00195	0.00188
	(A1 * B1 * !D1 * !Y)	-0.00215	-0.00217	-0.00219
	(A1 * A2 * !B1 * D1 * !Y)	0.00284	0.00236	0.00217
	(A1 * A2 * !B1 * D1 * !Y)	-0.00249	-0.00281	-0.00291
	(A1 * A2 * !B1 * !D1 * !Y)	0.00201	0.00203	0.00195
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00205	-0.00207	-0.00211
	(A1 * !A2 * !B1 * D1 * !Y)	0.00333	0.00212	0.00197
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00301	-0.00421	-0.00432
	(!A1 * B1 * D1 * !Y)	0.00226	0.00232	0.00209
	(!A1 * B1 * D1 * !Y)	-0.00291	-0.00286	-0.00293
	(!A1 * B1 * !D1 * !Y)	0.00202	0.00204	0.00194
	(!A1 * B1 * !D1 * !Y)	-0.00210	-0.00213	-0.00215
	(!A1 * !B1 * D1 * !Y)	0.00333	0.00212	0.00197
	(!A1 * !B1 * D1 * !Y)	-0.00301	-0.00421	-0.00432

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00453	0.00457	0.00412
	(A1 * B1 * D1 * !Y)	-0.00555	-0.00553	-0.00569
	(A1 * B1 * !D1 * !Y)	0.00381	0.00384	0.00367
	(A1 * B1 * !D1 * !Y)	-0.00418	-0.00423	-0.00429
	(A1 * A2 * !B1 * D1 * !Y)	0.00561	0.00463	0.00425
	(A1 * A2 * !B1 * D1 * !Y)	-0.00468	-0.00545	-0.00564
	(A1 * A2 * !B1 * !D1 * !Y)	0.00397	0.00396	0.00379
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00399	-0.00400	-0.00412
	(A1 * !A2 * !B1 * D1 * !Y)	0.00658	0.00416	0.00384
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00587	-0.00828	-0.00850
	(!A1 * B1 * D1 * !Y)	0.00448	0.00452	0.00406
	(!A1 * B1 * D1 * !Y)	-0.00560	-0.00558	-0.00573
	(!A1 * B1 * !D1 * !Y)	0.00395	0.00401	0.00377
	(!A1 * B1 * !D1 * !Y)	-0.00411	-0.00418	-0.00423
	(!A1 * !B1 * D1 * !Y)	0.00657	0.00416	0.00384
	(!A1 * !B1 * D1 * !Y)	-0.00587	-0.00828	-0.00850

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)**	-0.00178	-0.00179	-0.00179
	(A1 * B1 * D1 * !Y)	0.00135	0.00136	0.00136
	(A1 * B1 * !D1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * B1 * !D1 * !Y)	0.00105	0.00107	0.00106
	(A1 * A2 * !B1 * D1 * !Y)	-0.00178	-0.00179	-0.00178
	(A1 * A2 * !B1 * D1 * !Y)	0.00140	0.00141	0.00141
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00160	-0.00162	-0.00177
	(A1 * A2 * !B1 * !D1 * !Y)	0.00117	0.00117	0.00106
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !B1 * D1 * !Y)	0.00217	0.00219	0.00217
	(!A1 * B1 * D1 * !Y)	-0.00178	-0.00179	-0.00179
	(!A1 * B1 * D1 * !Y)	0.00135	0.00137	0.00136
	(!A1 * B1 * !D1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A1 * B1 * !D1 * !Y)	0.00107	0.00108	0.00106
	(!A1 * !B1 * D1 * !Y)	-0.00172	-0.00173	-0.00172
	(!A1 * !B1 * D1 * !Y)	0.00217	0.00219	0.00217

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00187	-0.00188	-0.00187
	(A1 * B1 * D1 * !Y)	0.00290	0.00293	0.00290
	(A1 * B1 * !D1 * !Y)	-0.00179	-0.00179	-0.00177
	(A1 * B1 * !D1 * !Y)	0.00227	0.00229	0.00230
	(A1 * A2 * !B1 * D1 * !Y)	-0.00184	-0.00186	-0.00183
	(A1 * A2 * !B1 * D1 * !Y)	0.00298	0.00302	0.00300
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00152	-0.00154	-0.00176
	(A1 * A2 * !B1 * !D1 * !Y)	0.00246	0.00246	0.00230
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00170	-0.00172	-0.00170
	(A1 * !A2 * !B1 * D1 * !Y)	0.00457	0.00462	0.00459
	(!A1 * B1 * D1 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * B1 * D1 * !Y)	0.00293	0.00295	0.00293
	(!A1 * B1 * !D1 * !Y)	-0.00177	-0.00178	-0.00177
	(!A1 * B1 * !D1 * !Y)	0.00229	0.00231	0.00232
	(!A1 * !B1 * D1 * !Y)	-0.00170	-0.00172	-0.00170
	(!A1 * !B1 * D1 * !Y)	0.00458	0.00462	0.00459

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00361	-0.00364	-0.00363
	(A1 * B1 * D1 * !Y)	0.00565	0.00571	0.00569
	(A1 * B1 * !D1 * !Y)	-0.00350	-0.00351	-0.00346
	(A1 * B1 * !D1 * !Y)	0.00449	0.00451	0.00451
	(A1 * A2 * !B1 * D1 * !Y)	-0.00358	-0.00359	-0.00354
	(A1 * A2 * !B1 * D1 * !Y)	0.00582	0.00585	0.00581
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00303	-0.00309	-0.00345
	(A1 * A2 * !B1 * !D1 * !Y)	0.00470	0.00475	0.00449
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00328	-0.00330	-0.00328
	(A1 * !A2 * !B1 * D1 * !Y)	0.00904	0.00910	0.00906
	(!A1 * B1 * D1 * !Y)	-0.00362	-0.00364	-0.00363
	(!A1 * B1 * D1 * !Y)	0.00571	0.00577	0.00573
	(!A1 * B1 * !D1 * !Y)	-0.00346	-0.00350	-0.00346
	(!A1 * B1 * !D1 * !Y)	0.00449	0.00456	0.00454
	(!A1 * !B1 * D1 * !Y)	-0.00328	-0.00330	-0.00328
	(!A1 * !B1 * D1 * !Y)	0.00904	0.00910	0.00906

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00198	0.00200	0.00199
	(A1 * C1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * B1 * !C1 * !Y)	0.00198	0.00200	0.00199
	(A1 * B1 * !C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	0.00200	0.00200	0.00200
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00093	-0.00092	-0.00092
	(!A1 * C1 * !Y)	0.00198	0.00201	0.00199
	(!A1 * C1 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * !C1 * !Y)	0.00200	0.00203	0.00199
	(!A1 * B1 * !C1 * !Y)	-0.00094	-0.00094	-0.00093

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00225	0.00227	0.00226
	(A1 * C1 * !Y)	-0.00191	-0.00193	-0.00191
	(A1 * B1 * !C1 * !Y)	0.00225	0.00227	0.00225
	(A1 * B1 * !C1 * !Y)	-0.00190	-0.00191	-0.00190
	(A1 * A2 * !B1 * !C1 * !Y)	0.00226	0.00230	0.00227
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00186	-0.00189	-0.00186
	(!A1 * C1 * !Y)	0.00225	0.00227	0.00226
	(!A1 * C1 * !Y)	-0.00191	-0.00193	-0.00191
	(!A1 * B1 * !C1 * !Y)	0.00225	0.00229	0.00226
	(!A1 * B1 * !C1 * !Y)	-0.00188	-0.00191	-0.00188
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00447	0.00451	0.00447
	(A1 * C1 * !Y)	-0.00376	-0.00378	-0.00375
	(A1 * B1 * !C1 * !Y)	0.00448	0.00450	0.00447
	(A1 * B1 * !C1 * !Y)	-0.00378	-0.00377	-0.00373
	(A1 * A2 * !B1 * !C1 * !Y)	0.00449	0.00455	0.00448
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00370	-0.00373	-0.00366
	(!A1 * C1 * !Y)	0.00447	0.00451	0.00447
	(!A1 * C1 * !Y)	-0.00376	-0.00378	-0.00375
	(!A1 * B1 * !C1 * !Y)	0.00449	0.00455	0.00448
	(!A1 * B1 * !C1 * !Y)	-0.00375	-0.00378	-0.00371

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00192	-0.00193	-0.00198
	(A1 * C1 * !Y)	0.00100	0.00100	0.00096
	(A1 * B1 * !C1 * !Y)	-0.00181	-0.00183	-0.00196
	(A1 * B1 * !C1 * !Y)	0.00105	0.00106	0.00096
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00156	-0.00159	-0.00189
	(A1 * A2 * !B1 * !C1 * !Y)	0.00123	0.00123	0.00102
	(!A1 * C1 * !Y)	-0.00191	-0.00193	-0.00197
	(!A1 * C1 * !Y)	0.00099	0.00101	0.00096
	(!A1 * B1 * !C1 * !Y)	-0.00180	-0.00182	-0.00195
	(!A1 * B1 * !C1 * !Y)	0.00107	0.00107	0.00097
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00205	-0.00207	-0.00223
	(A1 * C1 * !Y)	0.00210	0.00211	0.00196
	(A1 * B1 * !C1 * !Y)	-0.00182	-0.00185	-0.00218
	(A1 * B1 * !C1 * !Y)	0.00218	0.00220	0.00196
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00133	-0.00137	-0.00203
	(A1 * A2 * !B1 * !C1 * !Y)	0.00253	0.00254	0.00208
	(!A1 * C1 * !Y)	-0.00204	-0.00207	-0.00223
	(!A1 * C1 * !Y)	0.00209	0.00211	0.00196
	(!A1 * B1 * !C1 * !Y)	-0.00179	-0.00182	-0.00217
	(!A1 * B1 * !C1 * !Y)	0.00223	0.00224	0.00198
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00411	-0.00414	-0.00442
	(A1 * C1 * !Y)	0.00408	0.00408	0.00384
	(A1 * B1 * !C1 * !Y)	-0.00363	-0.00370	-0.00432
	(A1 * B1 * !C1 * !Y)	0.00428	0.00432	0.00386
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00271	-0.00278	-0.00404
	(A1 * A2 * !B1 * !C1 * !Y)	0.00492	0.00494	0.00409
	(!A1 * C1 * !Y)	-0.00407	-0.00414	-0.00442
	(!A1 * C1 * !Y)	0.00404	0.00409	0.00384
	(!A1 * B1 * !C1 * !Y)	-0.00358	-0.00364	-0.00429
	(!A1 * B1 * !C1 * !Y)	0.00436	0.00439	0.00391

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00264	0.00278	0.00265	0.00270	0.00266	1.27428
sky130_fd_sc_hs__a2111o_2	0.00294	0.00307	0.00289	0.00297	0.00310	2.41500
sky130_fd_sc_hs__a2111o_4	0.00499	0.00494	0.00511	0.00512	0.00505	4.65833

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	3.66466	11.29460
sky130_fd_sc_hs__a2111o_2	0.00000	3.66374	15.06440
sky130_fd_sc_hs__a2111o_4	0.00000	9.14260	30.86440

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)	0.08628	0.59557	6.30106
	A2->X (RR)	0.09066	0.58268	6.18438
	B1->X (RR)	0.06800	0.54485	5.93551
	C1->X (RR)	0.06570	0.53051	5.81838
	D1->X (RR)	0.05881	0.50966	5.75333
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.08920	0.52325	6.20695
	A2->X (RR)	0.09352	0.50533	6.07645
	B1->X (RR)	0.06784	0.46737	5.85032
	C1->X (RR)	0.06469	0.45202	5.72586
	D1->X (RR)	0.05928	0.43509	5.66190
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.09607	0.47072	6.36102
	A2->X (RR)	0.10189	0.45475	6.22308
	B1->X (RR)	0.06704	0.39814	5.88982
	C1->X (RR)	0.06482	0.38417	5.75712
	D1->X (RR)	0.05755	0.36412	5.68846

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.25057	0.65133	5.25897
	A2->X (FF)	0.27035	0.68234	5.32696
	B1->X (FF)	0.25009	0.68569	5.54603
	C1->X (FF)	0.22324	0.69761	5.66085
	D1->X (FF)	0.18154	0.68566	5.68331
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.29605	0.67440	5.27389
	A2->X (FF)	0.31278	0.70433	5.35260
	B1->X (FF)	0.29287	0.70539	5.56919
	C1->X (FF)	0.26357	0.71762	5.70994
	D1->X (FF)	0.22301	0.71104	5.73674
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.31690	0.65316	5.40456
	A2->X (FF)	0.35687	0.70568	5.52433
	B1->X (FF)	0.33854	0.71084	5.79418
	C1->X (FF)	0.30734	0.72869	5.96357
	D1->X (FF)	0.24279	0.70708	5.94538

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01659	0.01840	0.07018
	A1	0.00788	0.00970	0.06188
	A2	0.01749	0.01885	0.06828
	A2	0.00788	0.00923	0.05915
	B1	0.01318	0.01566	0.06856
	B1	0.00586	0.00836	0.06179
	C1	0.01107	0.01380	0.06235
	C1	0.00485	0.00758	0.05628
	D1	0.00904	0.01210	0.06759
	D1	0.00387	0.00694	0.06256
sky130_fd_sc_hs__a2111o_2	A1	0.02127	0.02294	0.07634
	A1	0.01150	0.01320	0.06755
	A2	0.02250	0.02381	0.07526
	A2	0.01155	0.01289	0.06539
	B1	0.01720	0.01972	0.07451
	B1	0.00901	0.01156	0.06646
	C1	0.01462	0.01739	0.06737
	C1	0.00761	0.01044	0.06074
	D1	0.01247	0.01563	0.07119
	D1	0.00654	0.00979	0.06577

sky130_fd_sc_hs__a2111o_4	**A1**	0.04043	0.04356	0.14289
	A1	0.02334	0.02656	0.12704
	A2	0.04263	0.04476	0.13854
	A2	0.02331	0.02551	0.12104
	B1	0.03322	0.03821	0.14190
	B1	0.01844	0.02348	0.12712
	C1	0.02867	0.03378	0.12509
	C1	0.01622	0.02144	0.11320
	D1	0.02311	0.02917	0.13171
	D1	0.01309	0.01928	0.12241

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00554	0.00533	0.05693
	A1	0.01426	0.01405	0.06415
	A2	0.00634	0.00592	0.05526
	A2	0.01595	0.01562	0.06462
	B1	0.00529	0.00625	0.05871
	B1	0.01259	0.01356	0.06476
	C1	0.00531	0.00675	0.05326
	C1	0.01154	0.01298	0.05947
	D1	0.00533	0.00806	0.06402
	D1	0.01051	0.01323	0.06716

sky130_fd_sc_hs__a2111o_2	**A1**	0.01194	0.00909	0.06140
	A1	0.02175	0.01889	0.06966
	A2	0.01269	0.00971	0.06069
	A2	0.02363	0.02065	0.07105
	B1	0.01095	0.00984	0.06270
	B1	0.01913	0.01803	0.06993
	C1	0.01102	0.01046	0.05910
	C1	0.01802	0.01748	0.06429
	D1	0.01082	0.01161	0.06638
	D1	0.01674	0.01753	0.07092
sky130_fd_sc_hs__a2111o_4	**A1**	0.02450	0.01785	0.11488
	A1	0.04161	0.03499	0.12872
	A2	0.02777	0.01890	0.11295
	A2	0.04706	0.03901	0.13056
	B1	0.02260	0.01874	0.11868
	B1	0.03738	0.03351	0.13140
	C1	0.02261	0.01940	0.10524
	C1	0.03504	0.03223	0.11726
	D1	0.02249	0.02258	0.11841
	D1	0.03251	0.03260	0.12839

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)**	0.00170	0.00171	0.00170
	(A2 * B1 * D1 * X)	-0.00191	-0.00197	-0.00196
	(A2 * B1 * C1 * !D1 * X)	0.00170	0.00171	0.00170
	(A2 * B1 * C1 * !D1 * X)	-0.00190	-0.00197	-0.00197
	(A2 * B1 * !C1 * !D1 * X)	0.00205	0.00179	0.00176
	(A2 * B1 * !C1 * !D1 * X)	-0.00159	-0.00190	-0.00191
	(A2 * !B1 * C1 * D1 * X)	0.00171	0.00172	0.00170
	(A2 * !B1 * C1 * D1 * X)	-0.00179	-0.00192	-0.00191
	(A2 * !B1 * C1 * !D1 * X)	0.00199	0.00179	0.00175
	(A2 * !B1 * C1 * !D1 * X)	-0.00158	-0.00188	-0.00190
	(A2 * !B1 * !C1 * D1 * X)	0.00206	0.00185	0.00180
	(A2 * !B1 * !C1 * D1 * X)	-0.00150	-0.00182	-0.00186
	(!A2 * B1 * D1 * X)	0.00164	0.00166	0.00164
	(!A2 * B1 * D1 * X)	-0.00198	-0.00200	-0.00199
	(!A2 * B1 * C1 * !D1 * X)	0.00164	0.00166	0.00164
	(!A2 * B1 * C1 * !D1 * X)	-0.00198	-0.00200	-0.00198
	(!A2 * B1 * !C1 * !D1 * X)	0.00168	0.00170	0.00169
	(!A2 * B1 * !C1 * !D1 * X)	-0.00194	-0.00195	-0.00194
	(!A2 * !B1 * C1 * D1 * X)	0.00164	0.00166	0.00164
	(!A2 * !B1 * C1 * D1 * X)	-0.00198	-0.00200	-0.00198
	(!A2 * !B1 * C1 * !D1 * X)	0.00169	0.00171	0.00169
	(!A2 * !B1 * C1 * !D1 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * !B1 * !C1 * D1 * X)	0.00173	0.00175	0.00173
	(!A2 * !B1 * !C1 * D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00076	0.00076	0.00074
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00221	-0.00222	-0.00225

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00173	0.00175	0.00174
	(A2 * B1 * D1 * X)	-0.00215	-0.00223	-0.00222
	(A2 * B1 * C1 * !D1 * X)	0.00174	0.00175	0.00174
	(A2 * B1 * C1 * !D1 * X)	-0.00214	-0.00222	-0.00222
	(A2 * B1 * !C1 * !D1 * X)	0.00203	0.00181	0.00179
	(A2 * B1 * !C1 * !D1 * X)	-0.00187	-0.00218	-0.00219
	(A2 * !B1 * C1 * D1 * X)	0.00174	0.00175	0.00174
	(A2 * !B1 * C1 * D1 * X)	-0.00201	-0.00218	-0.00216
	(A2 * !B1 * C1 * !D1 * X)	0.00197	0.00181	0.00178
	(A2 * !B1 * C1 * !D1 * X)	-0.00184	-0.00214	-0.00217
	(A2 * !B1 * !C1 * D1 * X)	0.00203	0.00185	0.00181
	(A2 * !B1 * !C1 * D1 * X)	-0.00176	-0.00209	-0.00214
	(!A2 * B1 * D1 * X)	0.00167	0.00169	0.00168
	(!A2 * B1 * D1 * X)	-0.00224	-0.00226	-0.00224
	(!A2 * B1 * C1 * !D1 * X)	0.00167	0.00169	0.00168
	(!A2 * B1 * C1 * !D1 * X)	-0.00224	-0.00225	-0.00224
	(!A2 * B1 * !C1 * !D1 * X)	0.00170	0.00172	0.00171
	(!A2 * B1 * !C1 * !D1 * X)	-0.00221	-0.00223	-0.00221
	(!A2 * !B1 * C1 * D1 * X)	0.00167	0.00170	0.00168
	(!A2 * !B1 * C1 * D1 * X)	-0.00223	-0.00225	-0.00224
	(!A2 * !B1 * C1 * !D1 * X)	0.00170	0.00172	0.00171
	(!A2 * !B1 * C1 * !D1 * X)	-0.00220	-0.00222	-0.00221
	(!A2 * !B1 * !C1 * D1 * X)	0.00173	0.00176	0.00174
	(!A2 * !B1 * !C1 * D1 * X)	-0.00218	-0.00220	-0.00219
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00071	0.00071	0.00069
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00245	-0.00246	-0.00249

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00291	0.00294	0.00291
	(A2 * B1 * D1 * X)	-0.00386	-0.00400	-0.00400
	(A2 * B1 * C1 * !D1 * X)	0.00292	0.00294	0.00292
	(A2 * B1 * C1 * !D1 * X)	-0.00384	-0.00400	-0.00400
	(A2 * B1 * !C1 * !D1 * X)	0.00358	0.00309	0.00304
	(A2 * B1 * !C1 * !D1 * X)	-0.00323	-0.00387	-0.00389
	(A2 * !B1 * C1 * D1 * X)	0.00292	0.00294	0.00292
	(A2 * !B1 * C1 * D1 * X)	-0.00361	-0.00390	-0.00388
	(A2 * !B1 * C1 * !D1 * X)	0.00347	0.00309	0.00303
	(A2 * !B1 * C1 * !D1 * X)	-0.00319	-0.00381	-0.00386
	(A2 * !B1 * !C1 * D1 * X)	0.00365	0.00323	0.00311
	(A2 * !B1 * !C1 * D1 * X)	-0.00301	-0.00368	-0.00377
	(!A2 * B1 * D1 * X)	0.00279	0.00283	0.00280
	(!A2 * B1 * D1 * X)	-0.00402	-0.00406	-0.00403
	(!A2 * B1 * C1 * !D1 * X)	0.00279	0.00283	0.00280
	(!A2 * B1 * C1 * !D1 * X)	-0.00401	-0.00405	-0.00403
	(!A2 * B1 * !C1 * !D1 * X)	0.00288	0.00291	0.00289
	(!A2 * B1 * !C1 * !D1 * X)	-0.00394	-0.00397	-0.00394
	(!A2 * !B1 * C1 * D1 * X)	0.00280	0.00283	0.00280
	(!A2 * !B1 * C1 * D1 * X)	-0.00404	-0.00406	-0.00403
	(!A2 * !B1 * C1 * !D1 * X)	0.00290	0.00293	0.00290
	(!A2 * !B1 * C1 * !D1 * X)	-0.00394	-0.00396	-0.00394
	(!A2 * !B1 * !C1 * D1 * X)	0.00299	0.00301	0.00299
	(!A2 * !B1 * !C1 * D1 * X)	-0.00385	-0.00387	-0.00385
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00126	0.00127	0.00121
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00428	-0.00432	-0.00440

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)**	-0.00169	-0.00170	-0.00169
	(A2 * B1 * D1 * X)	0.00196	0.00198	0.00196
	(A2 * B1 * C1 * !D1 * X)	-0.00169	-0.00169	-0.00169
	(A2 * B1 * C1 * !D1 * X)	0.00196	0.00198	0.00197
	(A2 * B1 * !C1 * !D1 * X)	-0.00164	-0.00166	-0.00165
	(A2 * B1 * !C1 * !D1 * X)	0.00201	0.00204	0.00202
	(A2 * !B1 * C1 * D1 * X)	-0.00169	-0.00169	-0.00168
	(A2 * !B1 * C1 * D1 * X)	0.00191	0.00192	0.00191
	(A2 * !B1 * C1 * !D1 * X)	-0.00162	-0.00163	-0.00161
	(A2 * !B1 * C1 * !D1 * X)	0.00199	0.00201	0.00200
	(A2 * !B1 * !C1 * D1 * X)	-0.00159	-0.00159	-0.00158
	(A2 * !B1 * !C1 * D1 * X)	0.00201	0.00202	0.00203
	(!A2 * B1 * D1 * X)	-0.00162	-0.00165	-0.00164
	(!A2 * B1 * D1 * X)	0.00199	0.00201	0.00200
	(!A2 * B1 * C1 * !D1 * X)	-0.00162	-0.00164	-0.00164
	(!A2 * B1 * C1 * !D1 * X)	0.00199	0.00201	0.00200
	(!A2 * B1 * !C1 * !D1 * X)	-0.00158	-0.00161	-0.00160
	(!A2 * B1 * !C1 * !D1 * X)	0.00204	0.00205	0.00204
	(!A2 * !B1 * C1 * D1 * X)	-0.00162	-0.00164	-0.00164
	(!A2 * !B1 * C1 * D1 * X)	0.00199	0.00200	0.00200
	(!A2 * !B1 * C1 * !D1 * X)	-0.00157	-0.00160	-0.00160
	(!A2 * !B1 * C1 * !D1 * X)	0.00204	0.00205	0.00205
	(!A2 * !B1 * !C1 * D1 * X)	-0.00153	-0.00156	-0.00155
	(!A2 * !B1 * !C1 * D1 * X)	0.00208	0.00210	0.00209
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00059	-0.00060	-0.00059
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00238	0.00243	0.00239

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00172	-0.00174	-0.00173
	(A2 * B1 * D1 * X)	0.00221	0.00224	0.00222
	(A2 * B1 * C1 * !D1 * X)	-0.00172	-0.00173	-0.00173
	(A2 * B1 * C1 * !D1 * X)	0.00222	0.00224	0.00222
	(A2 * B1 * !C1 * !D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * B1 * !C1 * !D1 * X)	0.00225	0.00226	0.00226
	(A2 * !B1 * C1 * D1 * X)	-0.00172	-0.00174	-0.00173
	(A2 * !B1 * C1 * D1 * X)	0.00216	0.00219	0.00216
	(A2 * !B1 * C1 * !D1 * X)	-0.00168	-0.00169	-0.00168
	(A2 * !B1 * C1 * !D1 * X)	0.00221	0.00223	0.00222
	(A2 * !B1 * !C1 * D1 * X)	-0.00166	-0.00166	-0.00165
	(A2 * !B1 * !C1 * D1 * X)	0.00221	0.00221	0.00223
	(!A2 * B1 * D1 * X)	-0.00165	-0.00168	-0.00168
	(!A2 * B1 * D1 * X)	0.00225	0.00229	0.00226
	(!A2 * B1 * C1 * !D1 * X)	-0.00165	-0.00168	-0.00168
	(!A2 * B1 * C1 * !D1 * X)	0.00226	0.00229	0.00226
	(!A2 * B1 * !C1 * !D1 * X)	-0.00162	-0.00164	-0.00165
	(!A2 * B1 * !C1 * !D1 * X)	0.00228	0.00229	0.00229
	(!A2 * !B1 * C1 * D1 * X)	-0.00165	-0.00168	-0.00168
	(!A2 * !B1 * C1 * D1 * X)	0.00226	0.00229	0.00226
	(!A2 * !B1 * C1 * !D1 * X)	-0.00162	-0.00164	-0.00165
	(!A2 * !B1 * C1 * !D1 * X)	0.00228	0.00229	0.00230
	(!A2 * !B1 * !C1 * D1 * X)	-0.00159	-0.00161	-0.00162
	(!A2 * !B1 * !C1 * D1 * X)	0.00231	0.00232	0.00232
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00275	0.00279	0.00275

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00287	-0.00289	-0.00288
	(A2 * B1 * D1 * X)	0.00397	0.00403	0.00400
	(A2 * B1 * C1 * !D1 * X)	-0.00288	-0.00289	-0.00288
	(A2 * B1 * C1 * !D1 * X)	0.00401	0.00403	0.00400
	(A2 * B1 * !C1 * !D1 * X)	-0.00284	-0.00285	-0.00284
	(A2 * B1 * !C1 * !D1 * X)	0.00409	0.00410	0.00408
	(A2 * !B1 * C1 * D1 * X)	-0.00288	-0.00289	-0.00288
	(A2 * !B1 * C1 * D1 * X)	0.00388	0.00390	0.00388
	(A2 * !B1 * C1 * !D1 * X)	-0.00279	-0.00280	-0.00278
	(A2 * !B1 * C1 * !D1 * X)	0.00401	0.00405	0.00403
	(A2 * !B1 * !C1 * D1 * X)	-0.00268	-0.00270	-0.00266
	(A2 * !B1 * !C1 * D1 * X)	0.00408	0.00413	0.00411
	(!A2 * B1 * D1 * X)	-0.00272	-0.00281	-0.00280
	(!A2 * B1 * D1 * X)	0.00406	0.00408	0.00407
	(!A2 * B1 * C1 * !D1 * X)	-0.00272	-0.00280	-0.00280
	(!A2 * B1 * C1 * !D1 * X)	0.00406	0.00409	0.00407
	(!A2 * B1 * !C1 * !D1 * X)	-0.00263	-0.00272	-0.00272
	(!A2 * B1 * !C1 * !D1 * X)	0.00414	0.00417	0.00416
	(!A2 * !B1 * C1 * D1 * X)	-0.00272	-0.00280	-0.00280
	(!A2 * !B1 * C1 * D1 * X)	0.00406	0.00409	0.00408
	(!A2 * !B1 * C1 * !D1 * X)	-0.00262	-0.00271	-0.00271
	(!A2 * !B1 * C1 * !D1 * X)	0.00414	0.00418	0.00417
	(!A2 * !B1 * !C1 * D1 * X)	-0.00253	-0.00262	-0.00262
	(!A2 * !B1 * !C1 * D1 * X)	0.00423	0.00427	0.00426
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00066	-0.00067	-0.00065
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00496	0.00501	0.00494

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)**	0.00156	0.00156	0.00155
	(A1 * B1 * D1 * X)	-0.00199	-0.00204	-0.00204
	(A1 * B1 * C1 * !D1 * X)	0.00157	0.00156	0.00155
	(A1 * B1 * C1 * !D1 * X)	-0.00198	-0.00204	-0.00204
	(A1 * B1 * !C1 * !D1 * X)	0.00194	0.00165	0.00162
	(A1 * B1 * !C1 * !D1 * X)	-0.00165	-0.00197	-0.00199
	(A1 * !B1 * C1 * D1 * X)	0.00158	0.00156	0.00155
	(A1 * !B1 * C1 * D1 * X)	-0.00186	-0.00200	-0.00199
	(A1 * !B1 * C1 * !D1 * X)	0.00187	0.00165	0.00161
	(A1 * !B1 * C1 * !D1 * X)	-0.00161	-0.00194	-0.00198
	(A1 * !B1 * !C1 * D1 * X)	0.00195	0.00171	0.00165
	(A1 * !B1 * !C1 * D1 * X)	-0.00153	-0.00188	-0.00193
	(!A1 * B1 * X)	0.00149	0.00152	0.00150
	(!A1 * B1 * X)	-0.00206	-0.00207	-0.00206
	(!A1 * !B1 * C1 * X)	0.00150	0.00151	0.00150
	(!A1 * !B1 * C1 * X)	-0.00206	-0.00207	-0.00206
	(!A1 * !B1 * !C1 * D1 * X)	0.00159	0.00161	0.00159
	(!A1 * !B1 * !C1 * D1 * X)	-0.00196	-0.00198	-0.00197
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00140	0.00142	0.00140
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00217	-0.00219	-0.00217

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00176	0.00176	0.00175
	(A1 * B1 * D1 * X)	-0.00217	-0.00223	-0.00223
	(A1 * B1 * C1 * !D1 * X)	0.00176	0.00176	0.00175
	(A1 * B1 * C1 * !D1 * X)	-0.00216	-0.00223	-0.00223
	(A1 * B1 * !C1 * !D1 * X)	0.00208	0.00182	0.00180
	(A1 * B1 * !C1 * !D1 * X)	-0.00187	-0.00218	-0.00219
	(A1 * !B1 * C1 * D1 * X)	0.00175	0.00176	0.00175
	(A1 * !B1 * C1 * D1 * X)	-0.00201	-0.00219	-0.00217
	(A1 * !B1 * C1 * !D1 * X)	0.00200	0.00182	0.00179
	(A1 * !B1 * C1 * !D1 * X)	-0.00181	-0.00215	-0.00218
	(A1 * !B1 * !C1 * D1 * X)	0.00207	0.00187	0.00182
	(A1 * !B1 * !C1 * D1 * X)	-0.00173	-0.00209	-0.00214
	(!A1 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * B1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * !B1 * C1 * X)	0.00169	0.00171	0.00169
	(!A1 * !B1 * C1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * !B1 * !C1 * D1 * X)	0.00175	0.00177	0.00175
	(!A1 * !B1 * !C1 * D1 * X)	-0.00219	-0.00221	-0.00219
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00170	0.00172	0.00171
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00225	-0.00226	-0.00225

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00298	0.00301	0.00299
	(A1 * B1 * D1 * X)	-0.00388	-0.00403	-0.00402
	(A1 * B1 * C1 * !D1 * X)	0.00299	0.00302	0.00299
	(A1 * B1 * C1 * !D1 * X)	-0.00386	-0.00402	-0.00402
	(A1 * B1 * !C1 * !D1 * X)	0.00368	0.00317	0.00312
	(A1 * B1 * !C1 * !D1 * X)	-0.00324	-0.00389	-0.00391
	(A1 * !B1 * C1 * D1 * X)	0.00301	0.00302	0.00299
	(A1 * !B1 * C1 * D1 * X)	-0.00364	-0.00391	-0.00390
	(A1 * !B1 * C1 * !D1 * X)	0.00355	0.00317	0.00311
	(A1 * !B1 * C1 * !D1 * X)	-0.00322	-0.00384	-0.00388
	(A1 * !B1 * !C1 * D1 * X)	0.00373	0.00331	0.00319
	(A1 * !B1 * !C1 * D1 * X)	-0.00304	-0.00370	-0.00379
	(!A1 * B1 * X)	0.00288	0.00290	0.00288
	(!A1 * B1 * X)	-0.00406	-0.00408	-0.00406
	(!A1 * !B1 * C1 * X)	0.00289	0.00290	0.00288
	(!A1 * !B1 * C1 * X)	-0.00406	-0.00407	-0.00405
	(!A1 * !B1 * !C1 * D1 * X)	0.00307	0.00310	0.00307
	(!A1 * !B1 * !C1 * D1 * X)	-0.00387	-0.00389	-0.00387
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00315	0.00317	0.00316
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00381	-0.00382	-0.00380

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)**	-0.00154	-0.00155	-0.00154
	(A1 * B1 * D1 * X)	0.00203	0.00206	0.00204
	(A1 * B1 * C1 * !D1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * B1 * C1 * !D1 * X)	0.00204	0.00205	0.00204
	(A1 * B1 * !C1 * !D1 * X)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * !C1 * !D1 * X)	0.00209	0.00212	0.00210
	(A1 * !B1 * C1 * D1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * !B1 * C1 * D1 * X)	0.00198	0.00200	0.00199
	(A1 * !B1 * C1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !B1 * C1 * !D1 * X)	0.00206	0.00208	0.00208
	(A1 * !B1 * !C1 * D1 * X)	-0.00144	-0.00144	-0.00143
	(A1 * !B1 * !C1 * D1 * X)	0.00207	0.00208	0.00210
	(!A1 * B1 * X)	-0.00148	-0.00150	-0.00150
	(!A1 * B1 * X)	0.00206	0.00210	0.00208
	(!A1 * !B1 * C1 * X)	-0.00147	-0.00150	-0.00150
	(!A1 * !B1 * C1 * X)	0.00207	0.00210	0.00208
	(!A1 * !B1 * !C1 * D1 * X)	-0.00138	-0.00141	-0.00141
	(!A1 * !B1 * !C1 * D1 * X)	0.00216	0.00220	0.00217
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00110	-0.00123	-0.00125
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00246	0.00237	0.00233

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00173	-0.00174	-0.00174
	(A1 * B1 * D1 * X)	0.00222	0.00224	0.00223
	(A1 * B1 * C1 * !D1 * X)	-0.00173	-0.00174	-0.00174
	(A1 * B1 * C1 * !D1 * X)	0.00222	0.00225	0.00223
	(A1 * B1 * !C1 * !D1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * B1 * !C1 * !D1 * X)	0.00226	0.00227	0.00226
	(A1 * !B1 * C1 * D1 * X)	-0.00173	-0.00174	-0.00173
	(A1 * !B1 * C1 * D1 * X)	0.00216	0.00219	0.00217
	(A1 * !B1 * C1 * !D1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * C1 * !D1 * X)	0.00222	0.00224	0.00223
	(A1 * !B1 * !C1 * D1 * X)	-0.00167	-0.00167	-0.00166
	(A1 * !B1 * !C1 * D1 * X)	0.00221	0.00222	0.00223
	(!A1 * B1 * X)	-0.00166	-0.00169	-0.00168
	(!A1 * B1 * X)	0.00226	0.00230	0.00227
	(!A1 * !B1 * C1 * X)	-0.00166	-0.00169	-0.00169
	(!A1 * !B1 * C1 * X)	0.00227	0.00230	0.00227
	(!A1 * !B1 * !C1 * D1 * X)	-0.00160	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * D1 * X)	0.00232	0.00236	0.00233
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00128	-0.00141	-0.00144
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00267	0.00257	0.00252

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00296	-0.00297	-0.00296
	(A1 * B1 * D1 * X)	0.00402	0.00405	0.00402
	(A1 * B1 * C1 * !D1 * X)	-0.00296	-0.00297	-0.00295
	(A1 * B1 * C1 * !D1 * X)	0.00403	0.00405	0.00402
	(A1 * B1 * !C1 * !D1 * X)	-0.00291	-0.00292	-0.00291
	(A1 * B1 * !C1 * !D1 * X)	0.00411	0.00413	0.00411
	(A1 * !B1 * C1 * D1 * X)	-0.00295	-0.00296	-0.00295
	(A1 * !B1 * C1 * D1 * X)	0.00389	0.00391	0.00390
	(A1 * !B1 * C1 * !D1 * X)	-0.00286	-0.00288	-0.00285
	(A1 * !B1 * C1 * !D1 * X)	0.00403	0.00407	0.00405
	(A1 * !B1 * !C1 * D1 * X)	-0.00276	-0.00278	-0.00274
	(A1 * !B1 * !C1 * D1 * X)	0.00409	0.00415	0.00413
	(!A1 * B1 * X)	-0.00280	-0.00287	-0.00288
	(!A1 * B1 * X)	0.00408	0.00413	0.00410
	(!A1 * !B1 * C1 * X)	-0.00279	-0.00286	-0.00288
	(!A1 * !B1 * C1 * X)	0.00408	0.00413	0.00410
	(!A1 * !B1 * !C1 * D1 * X)	-0.00261	-0.00268	-0.00269
	(!A1 * !B1 * !C1 * D1 * X)	0.00426	0.00432	0.00428
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00225	-0.00254	-0.00261
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00467	0.00445	0.00436

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)**	0.00172	0.00169	0.00163
	(A1 * A2 * C1 * D1 * X)	-0.00136	-0.00137	-0.00137
	(A1 * A2 * C1 * !D1 * X)	0.00183	0.00176	0.00165
	(A1 * A2 * C1 * !D1 * X)	-0.00126	-0.00132	-0.00135
	(A1 * A2 * !C1 * D1 * X)	0.00179	0.00186	0.00174
	(A1 * A2 * !C1 * D1 * X)	-0.00127	-0.00119	-0.00124
	(A1 * A2 * !C1 * !D1 * X)	0.00170	0.00171	0.00166
	(A1 * A2 * !C1 * !D1 * X)	-0.00088	-0.00089	-0.00091
	(A1 * !A2 * C1 * D1 * X)	0.00173	0.00159	0.00159
	(A1 * !A2 * C1 * D1 * X)	-0.00175	-0.00192	-0.00192
	(A1 * !A2 * C1 * !D1 * X)	0.00208	0.00169	0.00164
	(A1 * !A2 * C1 * !D1 * X)	-0.00146	-0.00184	-0.00187
	(A1 * !A2 * !C1 * D1 * X)	0.00218	0.00174	0.00168
	(A1 * !A2 * !C1 * D1 * X)	-0.00131	-0.00177	-0.00182
	(!A1 * C1 * D1 * X)	0.00174	0.00160	0.00159
	(!A1 * C1 * D1 * X)	-0.00175	-0.00192	-0.00192
	(!A1 * C1 * !D1 * X)	0.00209	0.00169	0.00164
	(!A1 * C1 * !D1 * X)	-0.00144	-0.00185	-0.00187
	(!A1 * !C1 * D1 * X)	0.00219	0.00175	0.00168
	(!A1 * !C1 * D1 * X)	-0.00130	-0.00177	-0.00182

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00185	0.00182	0.00174
	(A1 * A2 * C1 * D1 * X)	-0.00153	-0.00155	-0.00153
	(A1 * A2 * C1 * !D1 * X)	0.00195	0.00189	0.00175
	(A1 * A2 * C1 * !D1 * X)	-0.00144	-0.00149	-0.00151
	(A1 * A2 * !C1 * D1 * X)	0.00189	0.00200	0.00184
	(A1 * A2 * !C1 * D1 * X)	-0.00143	-0.00137	-0.00141
	(A1 * A2 * !C1 * !D1 * X)	0.00179	0.00182	0.00175
	(A1 * A2 * !C1 * !D1 * X)	-0.00099	-0.00101	-0.00102
	(A1 * !A2 * C1 * D1 * X)	0.00184	0.00171	0.00169
	(A1 * !A2 * C1 * D1 * X)	-0.00199	-0.00216	-0.00216
	(A1 * !A2 * C1 * !D1 * X)	0.00220	0.00180	0.00174
	(A1 * !A2 * C1 * !D1 * X)	-0.00167	-0.00208	-0.00212
	(A1 * !A2 * !C1 * D1 * X)	0.00226	0.00183	0.00176
	(A1 * !A2 * !C1 * D1 * X)	-0.00154	-0.00203	-0.00208
	(!A1 * C1 * D1 * X)	0.00185	0.00170	0.00169
	(!A1 * C1 * D1 * X)	-0.00198	-0.00215	-0.00216
	(!A1 * C1 * !D1 * X)	0.00222	0.00179	0.00174
	(!A1 * C1 * !D1 * X)	-0.00166	-0.00207	-0.00212
	(!A1 * !C1 * D1 * X)	0.00228	0.00184	0.00176
	(!A1 * !C1 * D1 * X)	-0.00153	-0.00202	-0.00208

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00345	0.00340	0.00325
	(A1 * A2 * C1 * D1 * X)	-0.00282	-0.00282	-0.00281
	(A1 * A2 * C1 * !D1 * X)	0.00368	0.00357	0.00330
	(A1 * A2 * C1 * !D1 * X)	-0.00256	-0.00267	-0.00277
	(A1 * A2 * !C1 * D1 * X)	0.00348	0.00368	0.00343
	(A1 * A2 * !C1 * D1 * X)	-0.00267	-0.00248	-0.00261
	(A1 * A2 * !C1 * !D1 * X)	0.00343	0.00345	0.00329
	(A1 * A2 * !C1 * !D1 * X)	-0.00184	-0.00186	-0.00189
	(A1 * !A2 * C1 * D1 * X)	0.00336	0.00313	0.00312
	(A1 * !A2 * C1 * D1 * X)	-0.00369	-0.00396	-0.00398
	(A1 * !A2 * C1 * !D1 * X)	0.00420	0.00337	0.00325
	(A1 * !A2 * C1 * !D1 * X)	-0.00294	-0.00378	-0.00385
	(A1 * !A2 * !C1 * D1 * X)	0.00428	0.00350	0.00331
	(A1 * !A2 * !C1 * D1 * X)	-0.00270	-0.00364	-0.00376
	(!A1 * C1 * D1 * X)	0.00335	0.00314	0.00312
	(!A1 * C1 * D1 * X)	-0.00370	-0.00397	-0.00398
	(!A1 * C1 * !D1 * X)	0.00419	0.00337	0.00325
	(!A1 * C1 * !D1 * X)	-0.00296	-0.00378	-0.00385
	(!A1 * !C1 * D1 * X)	0.00427	0.00350	0.00331
	(!A1 * !C1 * D1 * X)	-0.00272	-0.00365	-0.00376

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)**	-0.00157	-0.00158	-0.00158
	(A1 * A2 * C1 * D1 * X)	0.00136	0.00137	0.00137
	(A1 * A2 * C1 * !D1 * X)	-0.00158	-0.00158	-0.00157
	(A1 * A2 * C1 * !D1 * X)	0.00135	0.00136	0.00135
	(A1 * A2 * !C1 * D1 * X)	-0.00158	-0.00158	-0.00157
	(A1 * A2 * !C1 * D1 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * !C1 * !D1 * X)	-0.00145	-0.00145	-0.00151
	(A1 * A2 * !C1 * !D1 * X)	0.00113	0.00113	0.00107
	(A1 * !A2 * C1 * D1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * C1 * D1 * X)	0.00193	0.00195	0.00194
	(A1 * !A2 * C1 * !D1 * X)	-0.00149	-0.00150	-0.00150
	(A1 * !A2 * C1 * !D1 * X)	0.00200	0.00201	0.00201
	(A1 * !A2 * !C1 * D1 * X)	-0.00147	-0.00148	-0.00146
	(A1 * !A2 * !C1 * D1 * X)	0.00200	0.00202	0.00201
	(!A1 * C1 * D1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * C1 * D1 * X)	0.00193	0.00195	0.00194
	(!A1 * C1 * !D1 * X)	-0.00149	-0.00150	-0.00150
	(!A1 * C1 * !D1 * X)	0.00200	0.00201	0.00201
	(!A1 * !C1 * D1 * X)	-0.00147	-0.00148	-0.00146
	(!A1 * !C1 * D1 * X)	0.00200	0.00202	0.00201

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00167	-0.00168	-0.00167
	(A1 * A2 * C1 * D1 * X)	0.00153	0.00155	0.00153
	(A1 * A2 * C1 * !D1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * C1 * !D1 * X)	0.00151	0.00153	0.00151
	(A1 * A2 * !C1 * D1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * !C1 * D1 * X)	0.00143	0.00144	0.00143
	(A1 * A2 * !C1 * !D1 * X)	-0.00153	-0.00155	-0.00159
	(A1 * A2 * !C1 * !D1 * X)	0.00122	0.00123	0.00117
	(A1 * !A2 * C1 * D1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * C1 * D1 * X)	0.00215	0.00218	0.00217
	(A1 * !A2 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * C1 * !D1 * X)	0.00222	0.00224	0.00223
	(A1 * !A2 * !C1 * D1 * X)	-0.00161	-0.00162	-0.00160
	(A1 * !A2 * !C1 * D1 * X)	0.00218	0.00220	0.00219
	(!A1 * C1 * D1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * C1 * D1 * X)	0.00215	0.00218	0.00217
	(!A1 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * C1 * !D1 * X)	0.00222	0.00224	0.00223
	(!A1 * !C1 * D1 * X)	-0.00161	-0.00162	-0.00160
	(!A1 * !C1 * D1 * X)	0.00218	0.00220	0.00219

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00308	-0.00308	-0.00308
	(A1 * A2 * C1 * D1 * X)	0.00282	0.00282	0.00281
	(A1 * A2 * C1 * !D1 * X)	-0.00307	-0.00310	-0.00308
	(A1 * A2 * C1 * !D1 * X)	0.00277	0.00280	0.00277
	(A1 * A2 * !C1 * D1 * X)	-0.00309	-0.00311	-0.00309
	(A1 * A2 * !C1 * D1 * X)	0.00268	0.00271	0.00269
	(A1 * A2 * !C1 * !D1 * X)	-0.00283	-0.00285	-0.00289
	(A1 * A2 * !C1 * !D1 * X)	0.00234	0.00235	0.00228
	(A1 * !A2 * C1 * D1 * X)	-0.00306	-0.00307	-0.00307
	(A1 * !A2 * C1 * D1 * X)	0.00398	0.00400	0.00399
	(A1 * !A2 * C1 * !D1 * X)	-0.00294	-0.00296	-0.00295
	(A1 * !A2 * C1 * !D1 * X)	0.00412	0.00416	0.00414
	(A1 * !A2 * !C1 * D1 * X)	-0.00287	-0.00290	-0.00286
	(A1 * !A2 * !C1 * D1 * X)	0.00410	0.00415	0.00415
	(!A1 * C1 * D1 * X)	-0.00306	-0.00308	-0.00307
	(!A1 * C1 * D1 * X)	0.00398	0.00400	0.00399
	(!A1 * C1 * !D1 * X)	-0.00295	-0.00297	-0.00296
	(!A1 * C1 * !D1 * X)	0.00413	0.00416	0.00414
	(!A1 * !C1 * D1 * X)	-0.00287	-0.00290	-0.00286
	(!A1 * !C1 * D1 * X)	0.00410	0.00415	0.00415

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)**	0.00176	0.00176	0.00169
	(A1 * B1 * D1 * X)	-0.00118	-0.00118	-0.00123
	(A1 * B1 * !D1 * X)	0.00164	0.00166	0.00161
	(A1 * B1 * !D1 * X)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * !B1 * D1 * X)	0.00202	0.00182	0.00176
	(A1 * A2 * !B1 * D1 * X)	-0.00105	-0.00120	-0.00122
	(A1 * A2 * !B1 * !D1 * X)	0.00169	0.00171	0.00165
	(A1 * A2 * !B1 * !D1 * X)	-0.00087	-0.00089	-0.00089
	(A1 * !A2 * !B1 * D1 * X)	0.00221	0.00174	0.00170
	(A1 * !A2 * !B1 * D1 * X)	-0.00132	-0.00180	-0.00181
	(!A1 * B1 * D1 * X)	0.00174	0.00175	0.00167
	(!A1 * B1 * D1 * X)	-0.00119	-0.00119	-0.00124
	(!A1 * B1 * !D1 * X)	0.00166	0.00167	0.00164
	(!A1 * B1 * !D1 * X)	-0.00090	-0.00091	-0.00092
	(!A1 * !B1 * D1 * X)	0.00221	0.00174	0.00170
	(!A1 * !B1 * D1 * X)	-0.00132	-0.00180	-0.00181

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00188	0.00189	0.00179
	(A1 * B1 * D1 * X)	-0.00141	-0.00143	-0.00146
	(A1 * B1 * !D1 * X)	0.00171	0.00173	0.00169
	(A1 * B1 * !D1 * X)	-0.00109	-0.00111	-0.00111
	(A1 * A2 * !B1 * D1 * X)	0.00212	0.00191	0.00185
	(A1 * A2 * !B1 * D1 * X)	-0.00125	-0.00143	-0.00144
	(A1 * A2 * !B1 * !D1 * X)	0.00175	0.00175	0.00172
	(A1 * A2 * !B1 * !D1 * X)	-0.00104	-0.00105	-0.00107
	(A1 * !A2 * !B1 * D1 * X)	0.00231	0.00181	0.00175
	(A1 * !A2 * !B1 * D1 * X)	-0.00162	-0.00211	-0.00215
	(!A1 * B1 * D1 * X)	0.00186	0.00187	0.00177
	(!A1 * B1 * D1 * X)	-0.00143	-0.00145	-0.00148
	(!A1 * B1 * !D1 * X)	0.00175	0.00178	0.00172
	(!A1 * B1 * !D1 * X)	-0.00109	-0.00111	-0.00111
	(!A1 * !B1 * D1 * X)	0.00232	0.00181	0.00175
	(!A1 * !B1 * D1 * X)	-0.00162	-0.00211	-0.00215

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00345	0.00352	0.00330
	(A1 * B1 * D1 * X)	-0.00262	-0.00257	-0.00270
	(A1 * B1 * !D1 * X)	0.00314	0.00316	0.00308
	(A1 * B1 * !D1 * X)	-0.00202	-0.00203	-0.00205
	(A1 * A2 * !B1 * D1 * X)	0.00395	0.00355	0.00337
	(A1 * A2 * !B1 * D1 * X)	-0.00221	-0.00256	-0.00264
	(A1 * A2 * !B1 * !D1 * X)	0.00324	0.00327	0.00318
	(A1 * A2 * !B1 * !D1 * X)	-0.00187	-0.00190	-0.00194
	(A1 * !A2 * !B1 * D1 * X)	0.00452	0.00338	0.00324
	(A1 * !A2 * !B1 * D1 * X)	-0.00266	-0.00378	-0.00387
	(!A1 * B1 * D1 * X)	0.00343	0.00350	0.00328
	(!A1 * B1 * D1 * X)	-0.00266	-0.00261	-0.00272
	(!A1 * B1 * !D1 * X)	0.00324	0.00329	0.00316
	(!A1 * B1 * !D1 * X)	-0.00195	-0.00198	-0.00200
	(!A1 * !B1 * D1 * X)	0.00452	0.00338	0.00324
	(!A1 * !B1 * D1 * X)	-0.00266	-0.00377	-0.00387

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)**	-0.00158	-0.00158	-0.00158
	(A1 * B1 * D1 * X)	0.00123	0.00124	0.00123
	(A1 * B1 * !D1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * B1 * !D1 * X)	0.00098	0.00099	0.00099
	(A1 * A2 * !B1 * D1 * X)	-0.00157	-0.00158	-0.00157
	(A1 * A2 * !B1 * D1 * X)	0.00128	0.00129	0.00129
	(A1 * A2 * !B1 * !D1 * X)	-0.00141	-0.00142	-0.00157
	(A1 * A2 * !B1 * !D1 * X)	0.00110	0.00110	0.00099
	(A1 * !A2 * !B1 * D1 * X)	-0.00148	-0.00149	-0.00150
	(A1 * !A2 * !B1 * D1 * X)	0.00202	0.00203	0.00201
	(!A1 * B1 * D1 * X)	-0.00158	-0.00158	-0.00157
	(!A1 * B1 * D1 * X)	0.00124	0.00125	0.00124
	(!A1 * B1 * !D1 * X)	-0.00156	-0.00156	-0.00156
	(!A1 * B1 * !D1 * X)	0.00100	0.00101	0.00100
	(!A1 * !B1 * D1 * X)	-0.00148	-0.00150	-0.00150
	(!A1 * !B1 * D1 * X)	0.00202	0.00203	0.00201

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00166	-0.00166	-0.00166
	(A1 * B1 * D1 * X)	0.00147	0.00147	0.00146
	(A1 * B1 * !D1 * X)	-0.00165	-0.00165	-0.00164
	(A1 * B1 * !D1 * X)	0.00117	0.00117	0.00117
	(A1 * A2 * !B1 * D1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !B1 * D1 * X)	0.00149	0.00150	0.00150
	(A1 * A2 * !B1 * !D1 * X)	-0.00148	-0.00149	-0.00165
	(A1 * A2 * !B1 * !D1 * X)	0.00127	0.00127	0.00115
	(A1 * !A2 * !B1 * D1 * X)	-0.00160	-0.00161	-0.00161
	(A1 * !A2 * !B1 * D1 * X)	0.00229	0.00232	0.00230
	(!A1 * B1 * D1 * X)	-0.00166	-0.00166	-0.00166
	(!A1 * B1 * D1 * X)	0.00149	0.00149	0.00148
	(!A1 * B1 * !D1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !D1 * X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * D1 * X)	-0.00160	-0.00161	-0.00161
	(!A1 * !B1 * D1 * X)	0.00230	0.00232	0.00230

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00303	-0.00305	-0.00303
	(A1 * B1 * D1 * X)	0.00269	0.00272	0.00270
	(A1 * B1 * !D1 * X)	-0.00297	-0.00298	-0.00294
	(A1 * B1 * !D1 * X)	0.00216	0.00217	0.00219
	(A1 * A2 * !B1 * D1 * X)	-0.00301	-0.00303	-0.00299
	(A1 * A2 * !B1 * D1 * X)	0.00278	0.00280	0.00279
	(A1 * A2 * !B1 * !D1 * X)	-0.00270	-0.00273	-0.00293
	(A1 * A2 * !B1 * !D1 * X)	0.00236	0.00236	0.00221
	(A1 * !A2 * !B1 * D1 * X)	-0.00280	-0.00282	-0.00282
	(A1 * !A2 * !B1 * D1 * X)	0.00430	0.00433	0.00430
	(!A1 * B1 * D1 * X)	-0.00303	-0.00305	-0.00303
	(!A1 * B1 * D1 * X)	0.00272	0.00275	0.00272
	(!A1 * B1 * !D1 * X)	-0.00295	-0.00297	-0.00294
	(!A1 * B1 * !D1 * X)	0.00220	0.00221	0.00221
	(!A1 * !B1 * D1 * X)	-0.00280	-0.00282	-0.00282
	(!A1 * !B1 * D1 * X)	0.00430	0.00433	0.00430

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00171	0.00172	0.00170
	(A1 * C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !C1 * X)	0.00171	0.00172	0.00170
	(A1 * B1 * !C1 * X)	-0.00090	-0.00090	-0.00089
	(A1 * A2 * !B1 * !C1 * X)	0.00170	0.00172	0.00171
	(A1 * A2 * !B1 * !C1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * C1 * X)	0.00171	0.00172	0.00170
	(!A1 * C1 * X)	-0.00091	-0.00090	-0.00090
	(!A1 * B1 * !C1 * X)	0.00170	0.00172	0.00171
	(!A1 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00087

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00204	0.00206	0.00205
	(A1 * C1 * X)	-0.00096	-0.00097	-0.00096
	(A1 * B1 * !C1 * X)	0.00204	0.00206	0.00205
	(A1 * B1 * !C1 * X)	-0.00095	-0.00097	-0.00096
	(A1 * A2 * !B1 * !C1 * X)	0.00205	0.00205	0.00205
	(A1 * A2 * !B1 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(!A1 * C1 * X)	0.00204	0.00206	0.00205
	(!A1 * C1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * B1 * !C1 * X)	0.00205	0.00208	0.00205
	(!A1 * B1 * !C1 * X)	-0.00095	-0.00097	-0.00095
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00332	0.00335	0.00333
	(A1 * C1 * X)	-0.00182	-0.00183	-0.00182
	(A1 * B1 * !C1 * X)	0.00332	0.00335	0.00333
	(A1 * B1 * !C1 * X)	-0.00181	-0.00182	-0.00181
	(A1 * A2 * !B1 * !C1 * X)	0.00333	0.00339	0.00334
	(A1 * A2 * !B1 * !C1 * X)	-0.00176	-0.00178	-0.00175
	(!A1 * C1 * X)	0.00332	0.00335	0.00333
	(!A1 * C1 * X)	-0.00182	-0.00184	-0.00182
	(!A1 * B1 * !C1 * X)	0.00333	0.00336	0.00334
	(!A1 * B1 * !C1 * X)	-0.00179	-0.00180	-0.00178

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00163	-0.00164	-0.00169
	(A1 * C1 * X)	0.00096	0.00096	0.00092
	(A1 * B1 * !C1 * X)	-0.00155	-0.00156	-0.00167
	(A1 * B1 * !C1 * X)	0.00100	0.00101	0.00092
	(A1 * A2 * !B1 * !C1 * X)	-0.00131	-0.00132	-0.00159
	(A1 * A2 * !B1 * !C1 * X)	0.00118	0.00118	0.00099
	(!A1 * C1 * X)	-0.00163	-0.00164	-0.00168
	(!A1 * C1 * X)	0.00097	0.00097	0.00092
	(!A1 * B1 * !C1 * X)	-0.00153	-0.00154	-0.00166
	(!A1 * B1 * !C1 * X)	0.00103	0.00103	0.00094
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00197	-0.00198	-0.00202
	(A1 * C1 * X)	0.00104	0.00104	0.00099
	(A1 * B1 * !C1 * X)	-0.00187	-0.00188	-0.00200
	(A1 * B1 * !C1 * X)	0.00109	0.00109	0.00099
	(A1 * A2 * !B1 * !C1 * X)	-0.00161	-0.00163	-0.00193
	(A1 * A2 * !B1 * !C1 * X)	0.00127	0.00127	0.00105
	(!A1 * C1 * X)	-0.00197	-0.00198	-0.00202
	(!A1 * C1 * X)	0.00104	0.00104	0.00099
	(!A1 * B1 * !C1 * X)	-0.00186	-0.00187	-0.00200
	(!A1 * B1 * !C1 * X)	0.00110	0.00110	0.00100
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00310	-0.00313	-0.00327
	(A1 * C1 * X)	0.00203	0.00203	0.00189
	(A1 * B1 * !C1 * X)	-0.00290	-0.00293	-0.00323
	(A1 * B1 * !C1 * X)	0.00211	0.00211	0.00188
	(A1 * A2 * !B1 * !C1 * X)	-0.00241	-0.00244	-0.00307
	(A1 * A2 * !B1 * !C1 * X)	0.00247	0.00248	0.00203
	(!A1 * C1 * X)	-0.00310	-0.00312	-0.00327
	(!A1 * C1 * X)	0.00203	0.00203	0.00189
	(!A1 * B1 * !C1 * X)	-0.00285	-0.00288	-0.00320
	(!A1 * B1 * !C1 * X)	0.00217	0.00218	0.00192

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00294	0.00280	0.00293	0.00298	0.41472
sky130_fd_sc_hs__a211oi_2	0.00539	0.00567	0.00454	0.00433	0.75357
sky130_fd_sc_hs__a211oi_4	0.01085	0.01092	0.00868	0.00881	1.33746

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	2.75513	6.96469
sky130_fd_sc_hs__a211oi_2	0.00000	5.40203	13.92310
sky130_fd_sc_hs__a211oi_4	0.00000	10.80050	27.84340

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)	0.12021	0.89836	8.69510
	A2->Y (FR)	0.14326	0.93987	8.90213
	B1->Y (FR)	0.12653	0.96777	9.60920
	C1->Y (FR)	0.09600	0.96281	9.85953
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.10708	0.75187	8.56522
	A2->Y (FR)	0.13720	0.78087	8.59930
	B1->Y (FR)	0.11699	0.80961	9.27507
	C1->Y (FR)	0.07455	0.79405	9.52883
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.10324	0.62839	8.22488
	A2->Y (FR)	0.13706	0.67220	8.43585
	B1->Y (FR)	0.11356	0.69865	9.15166
	C1->Y (FR)	0.07206	0.69272	9.48518

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.03412	0.38420	3.71019
	A2->Y (RF)	0.03756	0.34387	3.22599
	B1->Y (RF)	0.02402	0.29552	2.89041
	C1->Y (RF)	0.02046	0.28692	2.87766
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.03024	0.33988	3.78140
	A2->Y (RF)	0.03676	0.30392	3.26483
	B1->Y (RF)	0.03589	0.39316	4.57737
	C1->Y (RF)	0.02448	0.36638	4.45232
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.03073	0.29888	3.74718
	A2->Y (RF)	0.03608	0.24872	3.00800
	B1->Y (RF)	0.03428	0.33706	4.45093
	C1->Y (RF)	0.02377	0.31577	4.41149

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00054	0.00076	0.02206
	A1	0.00848	0.00870	0.02998
	A2	0.00097	0.00124	0.02302
	A2	0.01007	0.01033	0.03217
	B1	0.00039	0.00123	0.02461
	B1	0.00693	0.00778	0.03120
	C1	0.00016	0.00211	0.03127
	C1	0.00561	0.00757	0.03677
sky130_fd_sc_hs__a211oi_2	A1	-0.00011	0.00056	0.04118
	A1	0.01510	0.01576	0.05646
	A2	0.00185	0.00232	0.04416
	A2	0.01966	0.02016	0.06200
	B1	0.00084	0.00180	0.03072
	B1	0.01189	0.01288	0.04187
	C1	0.00063	0.00354	0.04128
	C1	0.00898	0.01193	0.04972
sky130_fd_sc_hs__a211oi_4	A1	-0.00074	0.00065	0.07933
	A1	0.02955	0.03094	0.10969
	A2	0.00241	0.00359	0.08394
	A2	0.03783	0.03902	0.11931
	B1	0.00119	0.00354	0.06120
	B1	0.02275	0.02512	0.08327
	C1	0.00082	0.00700	0.07977
	C1	0.01720	0.02341	0.09616

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01103	0.01170	0.03040
	A1	0.00313	0.00381	0.02250
	A2	0.01218	0.01270	0.03093
	A2	0.00309	0.00358	0.02182
	B1	0.00755	0.00871	0.03051
	B1	0.00102	0.00216	0.02398
	C1	0.00526	0.00656	0.02719
	C1	-0.00018	0.00111	0.02173
sky130_fd_sc_hs__a211oi_2	A1	0.02072	0.02228	0.05798
	A1	0.00553	0.00707	0.04257
	A2	0.02334	0.02437	0.05960
	A2	0.00552	0.00650	0.04182
	B1	0.01340	0.01487	0.04219
	B1	0.00238	0.00377	0.03111
	C1	0.00720	0.00927	0.03582
	C1	-0.00114	0.00084	0.02735
sky130_fd_sc_hs__a211oi_4	A1	0.04110	0.04417	0.11374
	A1	0.01091	0.01395	0.08327
	A2	0.04619	0.04856	0.12046
	A2	0.01081	0.01311	0.08501
	B1	0.02504	0.02834	0.08242
	B1	0.00355	0.00678	0.06080
	C1	0.01353	0.01779	0.06953
	C1	-0.00278	0.00141	0.05267

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)**	0.00169	0.00167	0.00166
	(A2 * B1 * C1 * !Y)	-0.00208	-0.00219	-0.00218
	(A2 * B1 * !C1 * !Y)	0.00204	0.00174	0.00171
	(A2 * B1 * !C1 * !Y)	-0.00176	-0.00213	-0.00215
	(A2 * !B1 * C1 * !Y)	0.00210	0.00178	0.00173
	(A2 * !B1 * C1 * !Y)	-0.00165	-0.00207	-0.00212
	(!A2 * B1 * C1 * !Y)	0.00159	0.00161	0.00160
	(!A2 * B1 * C1 * !Y)	-0.00221	-0.00222	-0.00221
	(!A2 * B1 * !C1 * !Y)	0.00163	0.00164	0.00163
	(!A2 * B1 * !C1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A2 * !B1 * C1 * !Y)	0.00165	0.00167	0.00166
	(!A2 * !B1 * C1 * !Y)	-0.00215	-0.00216	-0.00215
	(!A2 * !B1 * !C1 * Y)	0.00051	0.00051	0.00050
	(!A2 * !B1 * !C1 * Y)	-0.00253	-0.00253	-0.00256
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00343	0.00342	0.00339
	(A2 * B1 * C1 * !Y)	-0.00416	-0.00430	-0.00430
	(A2 * B1 * !C1 * !Y)	0.00407	0.00354	0.00348
	(A2 * B1 * !C1 * !Y)	-0.00358	-0.00422	-0.00424
	(A2 * !B1 * C1 * !Y)	0.00414	0.00362	0.00351
	(A2 * !B1 * C1 * !Y)	-0.00340	-0.00410	-0.00417
	(!A2 * B1 * C1 * !Y)	0.00324	0.00329	0.00325
	(!A2 * B1 * C1 * !Y)	-0.00435	-0.00438	-0.00436
	(!A2 * B1 * !C1 * !Y)	0.00330	0.00329	0.00331
	(!A2 * B1 * !C1 * !Y)	-0.00428	-0.00428	-0.00430
	(!A2 * !B1 * C1 * !Y)	0.00335	0.00336	0.00337
	(!A2 * !B1 * C1 * !Y)	-0.00423	-0.00424	-0.00424
	(!A2 * !B1 * !C1 * Y)	0.00122	0.00123	0.00116
	(!A2 * !B1 * !C1 * Y)	-0.00489	-0.00492	-0.00501

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00672	0.00665	0.00660
	(A2 * B1 * C1 * !Y)	-0.00838	-0.00871	-0.00873
	(A2 * B1 * !C1 * !Y)	0.00816	0.00692	0.00678
	(A2 * B1 * !C1 * !Y)	-0.00709	-0.00855	-0.00861
	(A2 * !B1 * C1 * !Y)	0.00830	0.00710	0.00685
	(A2 * !B1 * C1 * !Y)	-0.00670	-0.00831	-0.00847
	(!A2 * B1 * C1 * !Y)	0.00631	0.00633	0.00632
	(!A2 * B1 * C1 * !Y)	-0.00888	-0.00887	-0.00886
	(!A2 * B1 * !C1 * !Y)	0.00641	0.00645	0.00644
	(!A2 * B1 * !C1 * !Y)	-0.00871	-0.00875	-0.00873
	(!A2 * !B1 * C1 * !Y)	0.00652	0.00655	0.00654
	(!A2 * !B1 * C1 * !Y)	-0.00861	-0.00864	-0.00863
	(!A2 * !B1 * !C1 * Y)	0.00212	0.00213	0.00202
	(!A2 * !B1 * !C1 * Y)	-0.01001	-0.01009	-0.01026

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)**	-0.00165	-0.00166	-0.00165
	(A2 * B1 * C1 * !Y)	0.00218	0.00220	0.00218
	(A2 * B1 * !C1 * !Y)	-0.00159	-0.00160	-0.00159
	(A2 * B1 * !C1 * !Y)	0.00224	0.00226	0.00225
	(A2 * !B1 * C1 * !Y)	-0.00159	-0.00160	-0.00158
	(A2 * !B1 * C1 * !Y)	0.00221	0.00223	0.00222
	(!A2 * B1 * C1 * !Y)	-0.00158	-0.00161	-0.00160
	(!A2 * B1 * C1 * !Y)	0.00221	0.00225	0.00222
	(!A2 * B1 * !C1 * !Y)	-0.00155	-0.00157	-0.00158
	(!A2 * B1 * !C1 * !Y)	0.00226	0.00225	0.00225
	(!A2 * !B1 * C1 * !Y)	-0.00153	-0.00155	-0.00155
	(!A2 * !B1 * C1 * !Y)	0.00229	0.00229	0.00228
	(!A2 * !B1 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * !C1 * Y)	0.00257	0.00262	0.00258
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00338	-0.00338	-0.00337
	(A2 * B1 * C1 * !Y)	0.00430	0.00430	0.00430
	(A2 * B1 * !C1 * !Y)	-0.00329	-0.00332	-0.00330
	(A2 * B1 * !C1 * !Y)	0.00437	0.00444	0.00440
	(A2 * !B1 * C1 * !Y)	-0.00325	-0.00327	-0.00323
	(A2 * !B1 * C1 * !Y)	0.00435	0.00439	0.00438
	(!A2 * B1 * C1 * !Y)	-0.00320	-0.00329	-0.00325
	(!A2 * B1 * C1 * !Y)	0.00439	0.00441	0.00438
	(!A2 * B1 * !C1 * !Y)	-0.00313	-0.00320	-0.00323
	(!A2 * B1 * !C1 * !Y)	0.00443	0.00446	0.00444
	(!A2 * !B1 * C1 * !Y)	-0.00307	-0.00315	-0.00317
	(!A2 * !B1 * C1 * !Y)	0.00448	0.00451	0.00450
	(!A2 * !B1 * !C1 * Y)	-0.00111	-0.00114	-0.00112
	(!A2 * !B1 * !C1 * Y)	0.00502	0.00513	0.00504

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00657	-0.00655	-0.00656
	(A2 * B1 * C1 * !Y)	0.00875	0.00871	0.00873
	(A2 * B1 * !C1 * !Y)	-0.00638	-0.00644	-0.00639
	(A2 * B1 * !C1 * !Y)	0.00888	0.00902	0.00895
	(A2 * !B1 * C1 * !Y)	-0.00631	-0.00636	-0.00627
	(A2 * !B1 * C1 * !Y)	0.00882	0.00893	0.00889
	(!A2 * B1 * C1 * !Y)	-0.00622	-0.00633	-0.00632
	(!A2 * B1 * C1 * !Y)	0.00892	0.00897	0.00890
	(!A2 * B1 * !C1 * !Y)	-0.00608	-0.00624	-0.00627
	(!A2 * B1 * !C1 * !Y)	0.00900	0.00912	0.00903
	(!A2 * !B1 * C1 * !Y)	-0.00596	-0.00613	-0.00616
	(!A2 * !B1 * C1 * !Y)	0.00910	0.00923	0.00913
	(!A2 * !B1 * !C1 * Y)	-0.00193	-0.00197	-0.00194
	(!A2 * !B1 * !C1 * Y)	0.01027	0.01049	0.01032

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)**	0.00171	0.00169	0.00168
	(A1 * B1 * C1 * !Y)	-0.00210	-0.00221	-0.00220
	(A1 * B1 * !C1 * !Y)	0.00208	0.00176	0.00172
	(A1 * B1 * !C1 * !Y)	-0.00180	-0.00215	-0.00217
	(A1 * !B1 * C1 * !Y)	0.00211	0.00181	0.00174
	(A1 * !B1 * C1 * !Y)	-0.00168	-0.00209	-0.00213
	(!A1 * B1 * !Y)	0.00161	0.00163	0.00161
	(!A1 * B1 * !Y)	-0.00222	-0.00224	-0.00223
	(!A1 * !B1 * C1 * !Y)	0.00167	0.00169	0.00168
	(!A1 * !B1 * C1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * !C1 * Y)	0.00163	0.00164	0.00164
	(!A1 * !B1 * !C1 * Y)	-0.00222	-0.00223	-0.00222

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00352	0.00350	0.00347
	(A1 * B1 * C1 * !Y)	-0.00428	-0.00446	-0.00444
	(A1 * B1 * !C1 * !Y)	0.00423	0.00364	0.00356
	(A1 * B1 * !C1 * !Y)	-0.00365	-0.00434	-0.00437
	(A1 * !B1 * C1 * !Y)	0.00431	0.00372	0.00360
	(A1 * !B1 * C1 * !Y)	-0.00345	-0.00421	-0.00430
	(!A1 * B1 * !Y)	0.00336	0.00340	0.00337
	(!A1 * B1 * !Y)	-0.00449	-0.00453	-0.00450
	(!A1 * !B1 * C1 * !Y)	0.00348	0.00352	0.00348
	(!A1 * !B1 * C1 * !Y)	-0.00439	-0.00441	-0.00438
	(!A1 * !B1 * !C1 * Y)	0.00312	0.00314	0.00313
	(!A1 * !B1 * !C1 * Y)	-0.00475	-0.00476	-0.00474
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00693	0.00683	0.00677
	(A1 * B1 * C1 * !Y)	-0.00849	-0.00886	-0.00881
	(A1 * B1 * !C1 * !Y)	0.00841	0.00712	0.00695
	(A1 * B1 * !C1 * !Y)	-0.00717	-0.00863	-0.00869
	(A1 * !B1 * C1 * !Y)	0.00852	0.00729	0.00703
	(A1 * !B1 * C1 * !Y)	-0.00681	-0.00838	-0.00855
	(!A1 * B1 * !Y)	0.00648	0.00655	0.00647
	(!A1 * B1 * !Y)	-0.00896	-0.00900	-0.00895
	(!A1 * !B1 * C1 * !Y)	0.00671	0.00676	0.00674
	(!A1 * !B1 * C1 * !Y)	-0.00869	-0.00873	-0.00871
	(!A1 * !B1 * !C1 * Y)	0.00655	0.00661	0.00656
	(!A1 * !B1 * !C1 * Y)	-0.00894	-0.00897	-0.00891

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)**	-0.00167	-0.00168	-0.00167
	(A1 * B1 * C1 * !Y)	0.00219	0.00222	0.00220
	(A1 * B1 * !C1 * !Y)	-0.00162	-0.00162	-0.00162
	(A1 * B1 * !C1 * !Y)	0.00225	0.00226	0.00226
	(A1 * !B1 * C1 * !Y)	-0.00161	-0.00162	-0.00160
	(A1 * !B1 * C1 * !Y)	0.00222	0.00225	0.00224
	(!A1 * B1 * !Y)	-0.00159	-0.00163	-0.00161
	(!A1 * B1 * !Y)	0.00223	0.00227	0.00224
	(!A1 * !B1 * C1 * !Y)	-0.00154	-0.00157	-0.00157
	(!A1 * !B1 * C1 * !Y)	0.00228	0.00232	0.00230
	(!A1 * !B1 * !C1 * Y)	-0.00146	-0.00160	-0.00162
	(!A1 * !B1 * !C1 * Y)	0.00238	0.00229	0.00225
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00346	-0.00347	-0.00345
	(A1 * B1 * C1 * !Y)	0.00445	0.00447	0.00444
	(A1 * B1 * !C1 * !Y)	-0.00337	-0.00340	-0.00337
	(A1 * B1 * !C1 * !Y)	0.00453	0.00459	0.00455
	(A1 * !B1 * C1 * !Y)	-0.00333	-0.00335	-0.00331
	(A1 * !B1 * C1 * !Y)	0.00448	0.00453	0.00451
	(!A1 * B1 * !Y)	-0.00328	-0.00337	-0.00337
	(!A1 * B1 * !Y)	0.00451	0.00456	0.00452
	(!A1 * !B1 * C1 * !Y)	-0.00316	-0.00325	-0.00326
	(!A1 * !B1 * C1 * !Y)	0.00463	0.00468	0.00464
	(!A1 * !B1 * !C1 * Y)	-0.00276	-0.00307	-0.00311
	(!A1 * !B1 * !C1 * Y)	0.00507	0.00484	0.00478

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00674	-0.00676	-0.00673
	(A1 * B1 * C1 * !Y)	0.00883	0.00889	0.00881
	(A1 * B1 * !C1 * !Y)	-0.00654	-0.00658	-0.00655
	(A1 * B1 * !C1 * !Y)	0.00899	0.00906	0.00905
	(A1 * !B1 * C1 * !Y)	-0.00650	-0.00652	-0.00644
	(A1 * !B1 * C1 * !Y)	0.00893	0.00899	0.00896
	(!A1 * B1 * !Y)	-0.00637	-0.00652	-0.00647
	(!A1 * B1 * !Y)	0.00896	0.00907	0.00899
	(!A1 * !B1 * C1 * !Y)	-0.00614	-0.00629	-0.00631
	(!A1 * !B1 * C1 * !Y)	0.00919	0.00930	0.00922
	(!A1 * !B1 * !C1 * Y)	-0.00575	-0.00640	-0.00652
	(!A1 * !B1 * !C1 * Y)	0.00967	0.00916	0.00900

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)	0.00206	0.00200	0.00190
	(A1 * A2 * C1 * !Y)	-0.00139	-0.00144	-0.00148
	(A1 * A2 * !C1 * !Y)	0.00185	0.00188	0.00181
	(A1 * A2 * !C1 * !Y)	-0.00100	-0.00101	-0.00102
	(A1 * !A2 * C1 * !Y)	0.00238	0.00189	0.00182
	(A1 * !A2 * C1 * !Y)	-0.00157	-0.00203	-0.00209
	(!A1 * C1 * !Y)	0.00236	0.00191	0.00182
	(!A1 * C1 * !Y)	-0.00159	-0.00204	-0.00209
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00260	0.00260	0.00235
	(A1 * A2 * C1 * !Y)	-0.00273	-0.00282	-0.00292
	(A1 * A2 * !C1 * !Y)	0.00227	0.00229	0.00218
	(A1 * A2 * !C1 * !Y)	-0.00192	-0.00195	-0.00198
	(A1 * !A2 * C1 * !Y)	0.00344	0.00232	0.00217
	(A1 * !A2 * C1 * !Y)	-0.00291	-0.00402	-0.00414
	(!A1 * C1 * !Y)	0.00344	0.00232	0.00216
	(!A1 * C1 * !Y)	-0.00290	-0.00402	-0.00414
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00482	0.00470	0.00425
	(A1 * A2 * C1 * !Y)	-0.00557	-0.00577	-0.00598
	(A1 * A2 * !C1 * !Y)	0.00412	0.00417	0.00394
	(A1 * A2 * !C1 * !Y)	-0.00404	-0.00412	-0.00416
	(A1 * !A2 * C1 * !Y)	0.00651	0.00425	0.00394
	(A1 * !A2 * C1 * !Y)	-0.00607	-0.00830	-0.00855
	(!A1 * C1 * !Y)	0.00647	0.00426	0.00394
	(!A1 * C1 * !Y)	-0.00612	-0.00831	-0.00855

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)	-0.00174	-0.00176	-0.00174
	(A1 * A2 * C1 * !Y)	0.00149	0.00151	0.00150
	(A1 * A2 * !C1 * !Y)	-0.00167	-0.00168	-0.00173
	(A1 * A2 * !C1 * !Y)	0.00116	0.00117	0.00112
	(A1 * !A2 * C1 * !Y)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * C1 * !Y)	0.00222	0.00224	0.00222
	(!A1 * C1 * !Y)	-0.00168	-0.00168	-0.00169
	(!A1 * C1 * !Y)	0.00222	0.00222	0.00222
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00207	-0.00207	-0.00207
	(A1 * A2 * C1 * !Y)	0.00291	0.00292	0.00293
	(A1 * A2 * !C1 * !Y)	-0.00189	-0.00192	-0.00196
	(A1 * A2 * !C1 * !Y)	0.00223	0.00225	0.00221
	(A1 * !A2 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * C1 * !Y)	0.00440	0.00440	0.00442
	(!A1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(!A1 * C1 * !Y)	0.00440	0.00441	0.00442
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00369	-0.00370	-0.00369
	(A1 * A2 * C1 * !Y)	0.00598	0.00601	0.00599
	(A1 * A2 * !C1 * !Y)	-0.00341	-0.00345	-0.00354
	(A1 * A2 * !C1 * !Y)	0.00466	0.00470	0.00459
	(A1 * !A2 * C1 * !Y)	-0.00339	-0.00341	-0.00339
	(A1 * !A2 * C1 * !Y)	0.00908	0.00913	0.00910
	(!A1 * C1 * !Y)	-0.00339	-0.00342	-0.00339
	(!A1 * C1 * !Y)	0.00908	0.00916	0.00910

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00206	0.00208	0.00206
	(A1 * B1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * !B1 * !Y)	0.00208	0.00207	0.00207
	(A1 * A2 * !B1 * !Y)	-0.00093	-0.00092	-0.00092
	(!A1 * B1 * !Y)	0.00206	0.00210	0.00207
	(!A1 * B1 * !Y)	-0.00094	-0.00095	-0.00094
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00217	0.00220	0.00218
	(A1 * B1 * !Y)	-0.00192	-0.00194	-0.00192
	(A1 * A2 * !B1 * !Y)	0.00218	0.00222	0.00219
	(A1 * A2 * !B1 * !Y)	-0.00188	-0.00191	-0.00187
	(!A1 * B1 * !Y)	0.00218	0.00221	0.00219
	(!A1 * B1 * !Y)	-0.00192	-0.00194	-0.00192
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00440	0.00444	0.00440
	(A1 * B1 * !Y)	-0.00386	-0.00389	-0.00386
	(A1 * A2 * !B1 * !Y)	0.00442	0.00448	0.00442
	(A1 * A2 * !B1 * !Y)	-0.00381	-0.00384	-0.00377
	(!A1 * B1 * !Y)	0.00441	0.00449	0.00442
	(!A1 * B1 * !Y)	-0.00386	-0.00393	-0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00197	-0.00199	-0.00205
	(A1 * B1 * !Y)	0.00100	0.00101	0.00096
	(A1 * A2 * !B1 * !Y)	-0.00177	-0.00179	-0.00200
	(A1 * A2 * !B1 * !Y)	0.00115	0.00115	0.00100
	(!A1 * B1 * !Y)	-0.00196	-0.00198	-0.00204
	(!A1 * B1 * !Y)	0.00102	0.00103	0.00097
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00196	-0.00198	-0.00215
	(A1 * B1 * !Y)	0.00212	0.00212	0.00197
	(A1 * A2 * !B1 * !Y)	-0.00158	-0.00161	-0.00205
	(A1 * A2 * !B1 * !Y)	0.00234	0.00236	0.00204
	(!A1 * B1 * !Y)	-0.00191	-0.00194	-0.00213
	(!A1 * B1 * !Y)	0.00215	0.00217	0.00200
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00399	-0.00404	-0.00434
	(A1 * B1 * !Y)	0.00418	0.00422	0.00396
	(A1 * A2 * !B1 * !Y)	-0.00321	-0.00326	-0.00413
	(A1 * A2 * !B1 * !Y)	0.00471	0.00473	0.00410
	(!A1 * B1 * !Y)	-0.00392	-0.00398	-0.00431
	(!A1 * B1 * !Y)	0.00430	0.00432	0.00402

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00270	0.00257	0.00274	0.00272	1.27688
sky130_fd_sc_hs__a211o_2	0.00295	0.00295	0.00291	0.00281	2.42628
sky130_fd_sc_hs__a211o_4	0.00504	0.00518	0.00544	0.00495	4.65671

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	5.70779	11.29900
sky130_fd_sc_hs__a211o_2	0.00000	7.19655	14.78040
sky130_fd_sc_hs__a211o_4	0.00000	14.47880	30.11270

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)	0.08045	0.57091	6.29268
	A2->X (RR)	0.08415	0.55816	6.16023
	B1->X (RR)	0.06385	0.52487	5.91567
	C1->X (RR)	0.05815	0.50574	5.85169
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.08102	0.49406	6.14687
	A2->X (RR)	0.08509	0.47745	6.00770
	B1->X (RR)	0.06298	0.44693	5.79146
	C1->X (RR)	0.05795	0.43189	5.73285
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.08453	0.43394	6.28334
	A2->X (RR)	0.08977	0.42225	6.16564
	B1->X (RR)	0.06147	0.37429	5.85211
	C1->X (RR)	0.05810	0.36582	5.84524

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.17143	0.56383	4.99885
	A2->X (FF)	0.19588	0.59876	5.11825
	B1->X (FF)	0.17689	0.62077	5.44438
	C1->X (FF)	0.14739	0.61624	5.50028
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.22063	0.60125	5.14328
	A2->X (FF)	0.25162	0.64328	5.27117
	B1->X (FF)	0.23247	0.67110	5.60260
	C1->X (FF)	0.20031	0.67017	5.64906
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.20676	0.53223	5.10483
	A2->X (FF)	0.22134	0.55936	5.17416
	B1->X (FF)	0.20478	0.58530	5.40446
	C1->X (FF)	0.17160	0.58131	5.47710

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01411	0.01612	0.07064
	A1	0.00692	0.00896	0.06387
	A2	0.01507	0.01663	0.06846
	A2	0.00691	0.00847	0.06079
	B1	0.01100	0.01421	0.07162
	B1	0.00496	0.00817	0.06611
	C1	0.00909	0.01270	0.07718
	C1	0.00409	0.00771	0.07218
sky130_fd_sc_hs__a211o_2	A1	0.01757	0.01951	0.07302
	A1	0.00982	0.01181	0.06628
	A2	0.01883	0.02029	0.07159
	A2	0.00979	0.01125	0.06364
	B1	0.01435	0.01739	0.07374
	B1	0.00779	0.01089	0.06744
	C1	0.01232	0.01586	0.07895
	C1	0.00683	0.01044	0.07371
sky130_fd_sc_hs__a211o_4	A1	0.03332	0.03775	0.14785
	A1	0.01916	0.02387	0.13537
	A2	0.03582	0.03939	0.14492
	A2	0.01921	0.02288	0.13024
	B1	0.02657	0.03254	0.14440
	B1	0.01467	0.02067	0.13274
	C1	0.02168	0.02932	0.15391
	C1	0.01244	0.02012	0.14493

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00485	0.00579	0.05497
	A1	0.01204	0.01295	0.06214
	A2	0.00548	0.00632	0.05583
	A2	0.01362	0.01446	0.06289
	B1	0.00430	0.00662	0.06372
	B1	0.01034	0.01266	0.06828
	C1	0.00420	0.00795	0.07198
	C1	0.00920	0.01295	0.07589
sky130_fd_sc_hs__a211o_2	A1	0.00996	0.00910	0.05863
	A1	0.01772	0.01684	0.06453
	A2	0.01102	0.00959	0.05875
	A2	0.02002	0.01859	0.06640
	B1	0.00920	0.00998	0.06657
	B1	0.01575	0.01648	0.07004
	C1	0.00911	0.01144	0.07544
	C1	0.01461	0.01691	0.07805
sky130_fd_sc_hs__a211o_4	A1	0.01941	0.01764	0.12796
	A1	0.03358	0.03178	0.13746
	A2	0.02024	0.01834	0.12538
	A2	0.03680	0.03475	0.13837
	B1	0.01754	0.01971	0.12594
	B1	0.02945	0.03120	0.13375
	C1	0.01757	0.02207	0.14487
	C1	0.02681	0.03127	0.15196

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)**	0.00154	0.00148	0.00147
	(A2 * B1 * C1 * X)	-0.00192	-0.00203	-0.00203
	(A2 * B1 * !C1 * X)	0.00192	0.00158	0.00153
	(A2 * B1 * !C1 * X)	-0.00159	-0.00195	-0.00198
	(A2 * !B1 * C1 * X)	0.00200	0.00164	0.00157
	(A2 * !B1 * C1 * X)	-0.00147	-0.00188	-0.00192
	(!A2 * B1 * C1 * X)	0.00141	0.00142	0.00142
	(!A2 * B1 * C1 * X)	-0.00205	-0.00206	-0.00205
	(!A2 * B1 * !C1 * X)	0.00146	0.00147	0.00147
	(!A2 * B1 * !C1 * X)	-0.00199	-0.00201	-0.00200
	(!A2 * !B1 * C1 * X)	0.00151	0.00152	0.00151
	(!A2 * !B1 * C1 * X)	-0.00196	-0.00197	-0.00196
	(!A2 * !B1 * !C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00234	-0.00234	-0.00237
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00185	0.00181	0.00180
	(A2 * B1 * C1 * X)	-0.00184	-0.00195	-0.00194
	(A2 * B1 * !C1 * X)	0.00220	0.00189	0.00185
	(A2 * B1 * !C1 * X)	-0.00152	-0.00187	-0.00189
	(A2 * !B1 * C1 * X)	0.00228	0.00195	0.00189
	(A2 * !B1 * C1 * X)	-0.00141	-0.00181	-0.00184
	(!A2 * B1 * C1 * X)	0.00172	0.00174	0.00173
	(!A2 * B1 * C1 * X)	-0.00196	-0.00197	-0.00196
	(!A2 * B1 * !C1 * X)	0.00177	0.00179	0.00178
	(!A2 * B1 * !C1 * X)	-0.00191	-0.00192	-0.00191
	(!A2 * !B1 * C1 * X)	0.00181	0.00183	0.00182
	(!A2 * !B1 * C1 * X)	-0.00186	-0.00188	-0.00187
	(!A2 * !B1 * !C1 * !X)	0.00065	0.00065	0.00063
	(!A2 * !B1 * !C1 * !X)	-0.00227	-0.00228	-0.00231

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00296	0.00290	0.00288
	(A2 * B1 * C1 * X)	-0.00383	-0.00403	-0.00403
	(A2 * B1 * !C1 * X)	0.00370	0.00309	0.00300
	(A2 * B1 * !C1 * X)	-0.00318	-0.00388	-0.00392
	(A2 * !B1 * C1 * X)	0.00382	0.00321	0.00308
	(A2 * !B1 * C1 * X)	-0.00298	-0.00374	-0.00382
	(!A2 * B1 * C1 * X)	0.00278	0.00279	0.00278
	(!A2 * B1 * C1 * X)	-0.00408	-0.00409	-0.00407
	(!A2 * B1 * !C1 * X)	0.00285	0.00286	0.00286
	(!A2 * B1 * !C1 * X)	-0.00398	-0.00398	-0.00398
	(!A2 * !B1 * C1 * X)	0.00295	0.00297	0.00295
	(!A2 * !B1 * C1 * X)	-0.00390	-0.00391	-0.00389
	(!A2 * !B1 * !C1 * !X)	0.00110	0.00110	0.00107
	(!A2 * !B1 * !C1 * !X)	-0.00442	-0.00443	-0.00451

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)**	-0.00145	-0.00146	-0.00146
	(A2 * B1 * C1 * X)	0.00202	0.00204	0.00203
	(A2 * B1 * !C1 * X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !C1 * X)	0.00210	0.00213	0.00212
	(A2 * !B1 * C1 * X)	-0.00136	-0.00136	-0.00135
	(A2 * !B1 * C1 * X)	0.00211	0.00212	0.00212
	(!A2 * B1 * C1 * X)	-0.00140	-0.00142	-0.00142
	(!A2 * B1 * C1 * X)	0.00208	0.00209	0.00207
	(!A2 * B1 * !C1 * X)	-0.00135	-0.00137	-0.00137
	(!A2 * B1 * !C1 * X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * C1 * X)	-0.00130	-0.00133	-0.00133
	(!A2 * !B1 * C1 * X)	0.00217	0.00219	0.00216
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00251	0.00255	0.00251
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00178	-0.00178	-0.00178
	(A2 * B1 * C1 * X)	0.00194	0.00196	0.00195
	(A2 * B1 * !C1 * X)	-0.00170	-0.00172	-0.00170
	(A2 * B1 * !C1 * X)	0.00202	0.00204	0.00203
	(A2 * !B1 * C1 * X)	-0.00168	-0.00168	-0.00167
	(A2 * !B1 * C1 * X)	0.00202	0.00204	0.00204
	(!A2 * B1 * C1 * X)	-0.00170	-0.00173	-0.00173
	(!A2 * B1 * C1 * X)	0.00199	0.00201	0.00198
	(!A2 * B1 * !C1 * X)	-0.00166	-0.00168	-0.00168
	(!A2 * B1 * !C1 * X)	0.00203	0.00206	0.00203
	(!A2 * !B1 * C1 * X)	-0.00161	-0.00163	-0.00164
	(!A2 * !B1 * C1 * X)	0.00208	0.00208	0.00207
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00256	0.00260	0.00257

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00285	-0.00286	-0.00284
	(A2 * B1 * C1 * X)	0.00405	0.00407	0.00404
	(A2 * B1 * !C1 * X)	-0.00270	-0.00271	-0.00269
	(A2 * B1 * !C1 * X)	0.00419	0.00424	0.00421
	(A2 * !B1 * C1 * X)	-0.00265	-0.00266	-0.00263
	(A2 * !B1 * C1 * X)	0.00419	0.00423	0.00422
	(!A2 * B1 * C1 * X)	-0.00270	-0.00276	-0.00276
	(!A2 * B1 * C1 * X)	0.00410	0.00413	0.00412
	(!A2 * B1 * !C1 * X)	-0.00261	-0.00267	-0.00267
	(!A2 * B1 * !C1 * X)	0.00420	0.00423	0.00421
	(!A2 * !B1 * C1 * X)	-0.00252	-0.00258	-0.00258
	(!A2 * !B1 * C1 * X)	0.00429	0.00431	0.00430
	(!A2 * !B1 * !C1 * !X)	-0.00053	-0.00055	-0.00053
	(!A2 * !B1 * !C1 * !X)	0.00504	0.00511	0.00504

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)**	0.00156	0.00151	0.00150
	(A1 * B1 * C1 * X)	-0.00191	-0.00201	-0.00201
	(A1 * B1 * !C1 * X)	0.00193	0.00160	0.00156
	(A1 * B1 * !C1 * X)	-0.00159	-0.00193	-0.00196
	(A1 * !B1 * C1 * X)	0.00199	0.00167	0.00160
	(A1 * !B1 * C1 * X)	-0.00147	-0.00186	-0.00190
	(!A1 * B1 * X)	0.00145	0.00147	0.00145
	(!A1 * B1 * X)	-0.00202	-0.00204	-0.00203
	(!A1 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A1 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * !C1 * !X)	0.00139	0.00141	0.00140
	(!A1 * !B1 * !C1 * !X)	-0.00209	-0.00211	-0.00209

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00197	0.00194	0.00192
	(A1 * B1 * C1 * X)	-0.00185	-0.00196	-0.00196
	(A1 * B1 * !C1 * X)	0.00233	0.00202	0.00198
	(A1 * B1 * !C1 * X)	-0.00154	-0.00189	-0.00191
	(A1 * !B1 * C1 * X)	0.00240	0.00208	0.00202
	(A1 * !B1 * C1 * X)	-0.00143	-0.00182	-0.00185
	(!A1 * B1 * X)	0.00184	0.00187	0.00185
	(!A1 * B1 * X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * C1 * X)	0.00194	0.00196	0.00195
	(!A1 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00172	0.00172	0.00172
	(!A1 * !B1 * !C1 * !X)	-0.00212	-0.00212	-0.00212
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00350	0.00347	0.00344
	(A1 * B1 * C1 * X)	-0.00372	-0.00391	-0.00391
	(A1 * B1 * !C1 * X)	0.00420	0.00365	0.00355
	(A1 * B1 * !C1 * X)	-0.00311	-0.00377	-0.00380
	(A1 * !B1 * C1 * X)	0.00433	0.00378	0.00363
	(A1 * !B1 * C1 * X)	-0.00291	-0.00363	-0.00370
	(!A1 * B1 * X)	0.00333	0.00336	0.00333
	(!A1 * B1 * X)	-0.00394	-0.00396	-0.00394
	(!A1 * !B1 * C1 * X)	0.00351	0.00356	0.00352
	(!A1 * !B1 * C1 * X)	-0.00375	-0.00378	-0.00376
	(!A1 * !B1 * !C1 * !X)	0.00351	0.00354	0.00354
	(!A1 * !B1 * !C1 * !X)	-0.00375	-0.00377	-0.00376

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)**	-0.00148	-0.00149	-0.00149
	(A1 * B1 * C1 * X)	0.00200	0.00202	0.00201
	(A1 * B1 * !C1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * B1 * !C1 * X)	0.00208	0.00211	0.00209
	(A1 * !B1 * C1 * X)	-0.00139	-0.00139	-0.00138
	(A1 * !B1 * C1 * X)	0.00207	0.00209	0.00210
	(!A1 * B1 * X)	-0.00143	-0.00145	-0.00145
	(!A1 * B1 * X)	0.00205	0.00206	0.00204
	(!A1 * !B1 * C1 * X)	-0.00134	-0.00136	-0.00136
	(!A1 * !B1 * C1 * X)	0.00214	0.00215	0.00214
	(!A1 * !B1 * !C1 * !X)	-0.00111	-0.00121	-0.00125
	(!A1 * !B1 * !C1 * !X)	0.00239	0.00229	0.00225
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00190	-0.00191	-0.00190
	(A1 * B1 * C1 * X)	0.00196	0.00198	0.00196
	(A1 * B1 * !C1 * X)	-0.00183	-0.00184	-0.00183
	(A1 * B1 * !C1 * X)	0.00203	0.00206	0.00204
	(A1 * !B1 * C1 * X)	-0.00180	-0.00181	-0.00180
	(A1 * !B1 * C1 * X)	0.00203	0.00205	0.00205
	(!A1 * B1 * X)	-0.00182	-0.00185	-0.00185
	(!A1 * B1 * X)	0.00198	0.00202	0.00200
	(!A1 * !B1 * C1 * X)	-0.00172	-0.00176	-0.00176
	(!A1 * !B1 * C1 * X)	0.00207	0.00211	0.00209
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00144	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00252	0.00242	0.00238

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00340	-0.00341	-0.00340
	(A1 * B1 * C1 * X)	0.00390	0.00393	0.00392
	(A1 * B1 * !C1 * X)	-0.00326	-0.00328	-0.00326
	(A1 * B1 * !C1 * X)	0.00405	0.00410	0.00407
	(A1 * !B1 * C1 * X)	-0.00320	-0.00322	-0.00319
	(A1 * !B1 * C1 * X)	0.00406	0.00410	0.00410
	(!A1 * B1 * X)	-0.00327	-0.00330	-0.00332
	(!A1 * B1 * X)	0.00398	0.00399	0.00399
	(!A1 * !B1 * C1 * X)	-0.00309	-0.00312	-0.00314
	(!A1 * !B1 * C1 * X)	0.00416	0.00417	0.00417
	(!A1 * !B1 * !C1 * !X)	-0.00272	-0.00298	-0.00300
	(!A1 * !B1 * !C1 * !X)	0.00458	0.00437	0.00430

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)	0.00204	0.00198	0.00190
	(A1 * A2 * C1 * X)	-0.00120	-0.00127	-0.00129
	(A1 * A2 * !C1 * X)	0.00185	0.00187	0.00182
	(A1 * A2 * !C1 * X)	-0.00088	-0.00089	-0.00090
	(A1 * !A2 * C1 * X)	0.00232	0.00189	0.00185
	(A1 * !A2 * C1 * X)	-0.00137	-0.00182	-0.00183
	(!A1 * C1 * X)	0.00231	0.00189	0.00185
	(!A1 * C1 * X)	-0.00138	-0.00181	-0.00183
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00212	0.00209	0.00199
	(A1 * A2 * C1 * X)	-0.00119	-0.00128	-0.00130
	(A1 * A2 * !C1 * X)	0.00193	0.00196	0.00190
	(A1 * A2 * !C1 * X)	-0.00088	-0.00090	-0.00090
	(A1 * !A2 * C1 * X)	0.00241	0.00196	0.00191
	(A1 * !A2 * C1 * X)	-0.00137	-0.00180	-0.00182
	(!A1 * C1 * X)	0.00237	0.00195	0.00191
	(!A1 * C1 * X)	-0.00136	-0.00178	-0.00182
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00382	0.00371	0.00353
	(A1 * A2 * C1 * X)	-0.00255	-0.00265	-0.00272
	(A1 * A2 * !C1 * X)	0.00345	0.00350	0.00338
	(A1 * A2 * !C1 * X)	-0.00188	-0.00191	-0.00192
	(A1 * !A2 * C1 * X)	0.00446	0.00352	0.00341
	(A1 * !A2 * C1 * X)	-0.00282	-0.00371	-0.00379
	(!A1 * C1 * X)	0.00448	0.00352	0.00341
	(!A1 * C1 * X)	-0.00280	-0.00372	-0.00379

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)	-0.00174	-0.00174	-0.00173
	(A1 * A2 * C1 * X)	0.00134	0.00134	0.00134
	(A1 * A2 * !C1 * X)	-0.00164	-0.00164	-0.00172
	(A1 * A2 * !C1 * X)	0.00109	0.00109	0.00103
	(A1 * !A2 * C1 * X)	-0.00163	-0.00165	-0.00165
	(A1 * !A2 * C1 * X)	0.00204	0.00206	0.00204
	(!A1 * C1 * X)	-0.00163	-0.00165	-0.00165
	(!A1 * C1 * X)	0.00204	0.00206	0.00204
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00183	-0.00183	-0.00182
	(A1 * A2 * C1 * X)	0.00135	0.00135	0.00134
	(A1 * A2 * !C1 * X)	-0.00172	-0.00173	-0.00179
	(A1 * A2 * !C1 * X)	0.00110	0.00110	0.00103
	(A1 * !A2 * C1 * X)	-0.00169	-0.00170	-0.00171
	(A1 * !A2 * C1 * X)	0.00204	0.00205	0.00204
	(!A1 * C1 * X)	-0.00169	-0.00170	-0.00171
	(!A1 * C1 * X)	0.00204	0.00206	0.00204
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00319	-0.00321	-0.00319
	(A1 * A2 * C1 * X)	0.00281	0.00283	0.00281
	(A1 * A2 * !C1 * X)	-0.00303	-0.00305	-0.00314
	(A1 * A2 * !C1 * X)	0.00229	0.00229	0.00218
	(A1 * !A2 * C1 * X)	-0.00296	-0.00299	-0.00300
	(A1 * !A2 * C1 * X)	0.00421	0.00425	0.00421
	(!A1 * C1 * X)	-0.00296	-0.00299	-0.00300
	(!A1 * C1 * X)	0.00421	0.00425	0.00421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00190	0.00193	0.00190
	(A1 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * X)	0.00192	0.00192	0.00191
	(A1 * A2 * !B1 * X)	-0.00086	-0.00087	-0.00085
	(!A1 * B1 * X)	0.00190	0.00191	0.00191
	(!A1 * B1 * X)	-0.00088	-0.00089	-0.00088
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00192	0.00194	0.00193
	(A1 * B1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * X)	0.00193	0.00195	0.00194
	(A1 * A2 * !B1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * B1 * X)	0.00193	0.00196	0.00193
	(!A1 * B1 * X)	-0.00092	-0.00093	-0.00091
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00312	0.00315	0.00313
	(A1 * B1 * X)	-0.00178	-0.00179	-0.00177
	(A1 * A2 * !B1 * X)	0.00313	0.00314	0.00315
	(A1 * A2 * !B1 * X)	-0.00171	-0.00172	-0.00170
	(!A1 * B1 * X)	0.00313	0.00318	0.00314
	(!A1 * B1 * X)	-0.00179	-0.00181	-0.00178

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00182	-0.00182	-0.00188
	(A1 * B1 * X)	0.00095	0.00096	0.00091
	(A1 * A2 * !B1 * X)	-0.00161	-0.00161	-0.00182
	(A1 * A2 * !B1 * X)	0.00111	0.00111	0.00097
	(!A1 * B1 * X)	-0.00180	-0.00180	-0.00187
	(!A1 * B1 * X)	0.00098	0.00098	0.00093
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00184	-0.00185	-0.00190
	(A1 * B1 * X)	0.00100	0.00100	0.00095
	(A1 * A2 * !B1 * X)	-0.00164	-0.00165	-0.00184
	(A1 * A2 * !B1 * X)	0.00115	0.00115	0.00101
	(!A1 * B1 * X)	-0.00182	-0.00183	-0.00189
	(!A1 * B1 * X)	0.00103	0.00103	0.00097
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00294	-0.00296	-0.00307
	(A1 * B1 * X)	0.00194	0.00195	0.00184
	(A1 * A2 * !B1 * X)	-0.00253	-0.00255	-0.00295
	(A1 * A2 * !B1 * X)	0.00225	0.00225	0.00194
	(!A1 * B1 * X)	-0.00288	-0.00290	-0.00304
	(!A1 * B1 * X)	0.00203	0.00203	0.00189

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00288	0.00281	0.00263	0.60992
sky130_fd_sc_hs__a21boi_2	0.00548	0.00534	0.00260	1.17767
sky130_fd_sc_hs__a21boi_4	0.01087	0.01086	0.00384	2.11484

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	12.91630	25.47490
sky130_fd_sc_hs__a21boi_2	0.00000	13.27190	25.78420
sky130_fd_sc_hs__a21boi_4	0.00000	33.37400	65.69740

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)	0.06685	0.79741	9.15099
	A2->Y (FR)	0.08376	0.83638	9.41490
	B1_N->Y (RR)	0.08816	0.67584	6.38955
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.06146	0.68936	9.36018
	A2->Y (FR)	0.07890	0.70403	9.33054
	B1_N->Y (RR)	0.08449	0.55217	6.26868
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.06226	0.58617	9.14504
	A2->Y (FR)	0.07870	0.59591	8.98198
	B1_N->Y (RR)	0.08063	0.50740	6.76134

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.03064	0.43062	4.89020
	A2->Y (RF)	0.03419	0.38649	4.28891
	B1_N->Y (FF)	0.06419	0.36351	2.90513
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02850	0.38633	5.16612
	A2->Y (RF)	0.03374	0.34358	4.50143
	B1_N->Y (FF)	0.06893	0.36498	3.01685
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02939	0.33710	5.16761
	A2->Y (RF)	0.03458	0.28224	4.26506
	B1_N->Y (FF)	0.07213	0.32975	2.60846

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00173	0.00236	0.02126
	A1	0.00639	0.00703	0.02604
	A2	0.00237	0.00299	0.02226
	A2	0.00817	0.00880	0.02810
	B1_N	0.00826	0.01269	0.09032
	B1_N	0.00633	0.01070	0.08862
sky130_fd_sc_hs__a21boi_2	A1	0.00290	0.00436	0.03944
	A1	0.01195	0.01346	0.04866
	A2	0.00485	0.00624	0.04259
	A2	0.01622	0.01762	0.05412
	B1_N	0.01139	0.01619	0.10365
	B1_N	0.01237	0.01708	0.10493
sky130_fd_sc_hs__a21boi_4	A1	0.00630	0.00960	0.07722
	A1	0.02466	0.02805	0.09602
	A2	0.00937	0.01236	0.08218
	A2	0.03248	0.03552	0.10529
	B1_N	0.02050	0.02785	0.16454
	B1_N	0.02423	0.03138	0.16864

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00687	0.00776	0.02395
	A1	0.00222	0.00306	0.01926
	A2	0.00798	0.00866	0.02463
	A2	0.00218	0.00281	0.01849
	B1_N	0.00515	0.01025	0.08208
	B1_N	0.00786	0.01294	0.08479
sky130_fd_sc_hs__a21boi_2	A1	0.01225	0.01406	0.04504
	A1	0.00320	0.00496	0.03493
	A2	0.01453	0.01589	0.04572
	A2	0.00313	0.00444	0.03425
	B1_N	0.00997	0.01548	0.09467
	B1_N	0.01086	0.01635	0.09544
sky130_fd_sc_hs__a21boi_4	A1	0.02410	0.02814	0.08777
	A1	0.00574	0.00972	0.06779
	A2	0.02902	0.03229	0.09479
	A2	0.00589	0.00908	0.07079
	B1_N	0.02049	0.02919	0.15598
	B1_N	0.02004	0.02870	0.15553

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)	0.00224	0.00183	0.00177
	(A2 * !B1_N * !Y)	-0.00175	-0.00217	-0.00221
	(!A2 * B1_N * Y)	0.00081	0.00081	0.00078
	(!A2 * B1_N * Y)	-0.00236	-0.00237	-0.00240
	(!A2 * !B1_N * !Y)	0.00169	0.00170	0.00170
	(!A2 * !B1_N * !Y)	-0.00222	-0.00223	-0.00222
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00449	0.00363	0.00350
	(A2 * !B1_N * !Y)	-0.00325	-0.00419	-0.00427
	(!A2 * B1_N * Y)	0.00126	0.00127	0.00120
	(!A2 * B1_N * Y)	-0.00489	-0.00493	-0.00502
	(!A2 * !B1_N * !Y)	0.00334	0.00338	0.00334
	(!A2 * !B1_N * !Y)	-0.00431	-0.00433	-0.00431
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00886	0.00719	0.00690
	(A2 * !B1_N * !Y)	-0.00661	-0.00844	-0.00860
	(!A2 * B1_N * Y)	0.00248	0.00250	0.00238
	(!A2 * B1_N * Y)	-0.00977	-0.00983	-0.01000
	(!A2 * !B1_N * !Y)	0.00655	0.00661	0.00659
	(!A2 * !B1_N * !Y)	-0.00864	-0.00870	-0.00868

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)	-0.00163	-0.00164	-0.00163
	(A2 * !B1_N * !Y)	0.00234	0.00237	0.00235
	(!A2 * B1_N * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * B1_N * Y)	0.00273	0.00277	0.00273
	(!A2 * !B1_N * !Y)	-0.00155	-0.00159	-0.00159
	(!A2 * !B1_N * !Y)	0.00234	0.00236	0.00235
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00322	-0.00323	-0.00321
	(A2 * !B1_N * !Y)	0.00455	0.00457	0.00456
	(!A2 * B1_N * Y)	-0.00097	-0.00099	-0.00097
	(!A2 * B1_N * Y)	0.00522	0.00533	0.00524
	(!A2 * !B1_N * !Y)	-0.00305	-0.00315	-0.00314
	(!A2 * !B1_N * !Y)	0.00457	0.00459	0.00457
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00632	-0.00637	-0.00633
	(A2 * !B1_N * !Y)	0.00911	0.00921	0.00917
	(!A2 * B1_N * Y)	-0.00167	-0.00167	-0.00167
	(!A2 * B1_N * Y)	0.01064	0.01067	0.01068
	(!A2 * !B1_N * !Y)	-0.00604	-0.00615	-0.00619
	(!A2 * !B1_N * !Y)	0.00921	0.00922	0.00919

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)	0.00232	0.00191	0.00184
	(A1 * !B1_N * !Y)	-0.00165	-0.00209	-0.00213
	(!A1 * B1_N * Y)	0.00186	0.00189	0.00187
	(!A1 * B1_N * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !B1_N * !Y)	0.00177	0.00178	0.00177
	(!A1 * !B1_N * !Y)	-0.00215	-0.00216	-0.00215
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00443	0.00358	0.00344
	(A1 * !B1_N * !Y)	-0.00329	-0.00418	-0.00426
	(!A1 * B1_N * Y)	0.00329	0.00331	0.00330
	(!A1 * B1_N * Y)	-0.00431	-0.00432	-0.00430
	(!A1 * !B1_N * !Y)	0.00330	0.00333	0.00329
	(!A1 * !B1_N * !Y)	-0.00430	-0.00432	-0.00430
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00901	0.00726	0.00697
	(A1 * !B1_N * !Y)	-0.00657	-0.00840	-0.00856
	(!A1 * B1_N * Y)	0.00653	0.00656	0.00653
	(!A1 * B1_N * Y)	-0.00884	-0.00885	-0.00882
	(!A1 * !B1_N * !Y)	0.00668	0.00675	0.00667
	(!A1 * !B1_N * !Y)	-0.00865	-0.00868	-0.00863

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)	-0.00169	-0.00171	-0.00170
	(A1 * !B1_N * !Y)	0.00226	0.00230	0.00228
	(!A1 * B1_N * Y)	-0.00140	-0.00151	-0.00155
	(!A1 * B1_N * Y)	0.00254	0.00244	0.00239
	(!A1 * !B1_N * !Y)	-0.00163	-0.00165	-0.00166
	(!A1 * !B1_N * !Y)	0.00229	0.00229	0.00228
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00317	-0.00317	-0.00315
	(A1 * !B1_N * !Y)	0.00454	0.00455	0.00455
	(!A1 * B1_N * Y)	-0.00273	-0.00304	-0.00310
	(!A1 * B1_N * Y)	0.00483	0.00460	0.00454
	(!A1 * !B1_N * !Y)	-0.00299	-0.00307	-0.00308
	(!A1 * !B1_N * !Y)	0.00454	0.00459	0.00456
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00642	-0.00643	-0.00640
	(A1 * !B1_N * !Y)	0.00913	0.00915	0.00913
	(!A1 * B1_N * Y)	-0.00518	-0.00577	-0.00588
	(!A1 * B1_N * Y)	0.01010	0.00966	0.00953
	(!A1 * !B1_N * !Y)	-0.00609	-0.00625	-0.00627
	(!A1 * !B1_N * !Y)	0.00911	0.00922	0.00914

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)	0.00541	0.00979	0.08721
	(A1 * A2 * !Y)	0.00100	0.00537	0.08282
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00632	0.01081	0.09766
	(A1 * A2 * !Y)	0.00198	0.00643	0.09331
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00991	0.01623	0.15158
	(A1 * A2 * !Y)	0.00347	0.00975	0.14516

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)	0.00108	0.00621	0.08406
	(A1 * A2 * !Y)	0.00546	0.01061	0.08846
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00315	0.00854	0.09559
	(A1 * A2 * !Y)	0.00747	0.01288	0.09991
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00674	0.01528	0.15205
	(A1 * A2 * !Y)	0.01316	0.02170	0.15845

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00267	0.00258	0.00224	1.15175
sky130_fd_sc_hs__a21bo_2	0.00284	0.00270	0.00234	2.12144
sky130_fd_sc_hs__a21bo_4	0.00494	0.00525	0.00271	3.99989

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	17.75400	29.35730
sky130_fd_sc_hs__a21bo_2	0.00000	20.48500	32.58330
sky130_fd_sc_hs__a21bo_4	0.00000	28.52070	40.37970

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)	0.07888	0.57537	6.35516
	A2->X (RR)	0.08227	0.56614	6.23436
	B1_N->X (FR)	0.10677	0.68422	7.72520
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.07563	0.48170	6.01080
	A2->X (RR)	0.07931	0.46800	5.88333
	B1_N->X (FR)	0.11053	0.59350	7.50320
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.07825	0.42197	6.16125
	A2->X (RR)	0.08442	0.41307	6.05247
	B1_N->X (FR)	0.12439	0.55941	7.68151

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.11302	0.49633	4.71685
	A2->X (FF)	0.12916	0.52383	4.81918
	B1_N->X (RF)	0.13301	0.39365	2.81236
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.14074	0.50428	4.63986
	A2->X (FF)	0.16048	0.53706	4.75584
	B1_N->X (RF)	0.17024	0.40360	2.59568
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.13535	0.45107	4.52872
	A2->X (FF)	0.14767	0.47642	4.61145
	B1_N->X (RF)	0.15609	0.35569	2.48380

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.01070	0.01367	0.07332
	A1	0.00624	0.00923	0.06916
	A2	0.01175	0.01428	0.07110
	A2	0.00626	0.00879	0.06603
	B1_N	0.00825	0.01375	0.09613
	B1_N	0.01143	0.01694	0.09971
sky130_fd_sc_hs__a21bo_2	A1	0.01387	0.01689	0.07624
	A1	0.00924	0.01229	0.07262
	A2	0.01489	0.01740	0.07439
	A2	0.00919	0.01170	0.06878
	B1_N	0.01160	0.01694	0.09875
	B1_N	0.01498	0.02037	0.10276
sky130_fd_sc_hs__a21bo_4	A1	0.02530	0.03140	0.15048
	A1	0.01721	0.02344	0.14367
	A2	0.02806	0.03304	0.14711
	A2	0.01725	0.02237	0.13816
	B1_N	0.02101	0.02728	0.12728
	B1_N	0.02465	0.03096	0.13251

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00587	0.00811	0.06685
	A1	0.01033	0.01252	0.07111
	A2	0.00612	0.00837	0.06515
	A2	0.01160	0.01381	0.07054
	B1_N	0.01154	0.01595	0.09496
	B1_N	0.00835	0.01271	0.09166
sky130_fd_sc_hs__a21bo_2	A1	0.00954	0.01116	0.06856
	A1	0.01417	0.01560	0.07313
	A2	0.01052	0.01179	0.06832
	A2	0.01620	0.01732	0.07387
	B1_N	0.01741	0.02026	0.09456
	B1_N	0.01514	0.01794	0.09205
sky130_fd_sc_hs__a21bo_4	A1	0.01866	0.02151	0.13789
	A1	0.02678	0.02946	0.14461
	A2	0.01941	0.02200	0.13465
	A2	0.03016	0.03273	0.14530
	B1_N	0.02936	0.03214	0.12152
	B1_N	0.02770	0.03047	0.11872

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)	0.00208	0.00165	0.00158
	(A2 * !B1_N * X)	-0.00156	-0.00200	-0.00204
	(!A2 * B1_N * !X)	0.00075	0.00075	0.00074
	(!A2 * B1_N * !X)	-0.00217	-0.00217	-0.00219
	(!A2 * !B1_N * X)	0.00151	0.00152	0.00152
	(!A2 * !B1_N * X)	-0.00205	-0.00207	-0.00206
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00232	0.00191	0.00185
	(A2 * !B1_N * X)	-0.00152	-0.00196	-0.00199
	(!A2 * B1_N * !X)	0.00094	0.00095	0.00093
	(!A2 * B1_N * !X)	-0.00208	-0.00209	-0.00213
	(!A2 * !B1_N * X)	0.00178	0.00179	0.00178
	(!A2 * !B1_N * X)	-0.00202	-0.00202	-0.00201
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00395	0.00315	0.00302
	(A2 * !B1_N * X)	-0.00288	-0.00374	-0.00381
	(!A2 * B1_N * !X)	0.00120	0.00120	0.00116
	(!A2 * B1_N * !X)	-0.00423	-0.00425	-0.00434
	(!A2 * !B1_N * X)	0.00289	0.00291	0.00290
	(!A2 * !B1_N * X)	-0.00384	-0.00387	-0.00385

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)	-0.00136	-0.00136	-0.00137
	(A2 * !B1_N * X)	0.00226	0.00226	0.00226
	(!A2 * B1_N * !X)	-0.00028	-0.00030	-0.00028
	(!A2 * B1_N * !X)	0.00264	0.00268	0.00264
	(!A2 * !B1_N * X)	-0.00131	-0.00133	-0.00133
	(!A2 * !B1_N * X)	0.00227	0.00229	0.00226
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00163	-0.00163	-0.00163
	(A2 * !B1_N * X)	0.00222	0.00222	0.00221
	(!A2 * B1_N * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * B1_N * !X)	0.00269	0.00273	0.00269
	(!A2 * !B1_N * X)	-0.00156	-0.00159	-0.00159
	(!A2 * !B1_N * X)	0.00223	0.00225	0.00222
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00257	-0.00260	-0.00258
	(A2 * !B1_N * X)	0.00424	0.00430	0.00425
	(!A2 * B1_N * !X)	-0.00044	-0.00046	-0.00044
	(!A2 * B1_N * !X)	0.00504	0.00512	0.00504
	(!A2 * !B1_N * X)	-0.00243	-0.00250	-0.00251
	(!A2 * !B1_N * X)	0.00424	0.00428	0.00427

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)	0.00227	0.00187	0.00181
	(A1 * !B1_N * X)	-0.00144	-0.00185	-0.00188
	(!A1 * B1_N * !X)	0.00188	0.00191	0.00189
	(!A1 * B1_N * !X)	-0.00176	-0.00178	-0.00176
	(!A1 * !B1_N * X)	0.00174	0.00176	0.00174
	(!A1 * !B1_N * X)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00229	0.00187	0.00181
	(A1 * !B1_N * X)	-0.00146	-0.00191	-0.00195
	(!A1 * B1_N * !X)	0.00192	0.00194	0.00193
	(!A1 * B1_N * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !B1_N * X)	0.00173	0.00175	0.00174
	(!A1 * !B1_N * X)	-0.00196	-0.00197	-0.00197
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00452	0.00379	0.00366
	(A1 * !B1_N * X)	-0.00291	-0.00372	-0.00379
	(!A1 * B1_N * !X)	0.00369	0.00369	0.00370
	(!A1 * B1_N * !X)	-0.00366	-0.00366	-0.00366
	(!A1 * !B1_N * X)	0.00350	0.00354	0.00351
	(!A1 * !B1_N * X)	-0.00381	-0.00384	-0.00382

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)	-0.00159	-0.00160	-0.00160
	(A1 * !B1_N * X)	0.00208	0.00209	0.00209
	(!A1 * B1_N * !X)	-0.00129	-0.00141	-0.00143
	(!A1 * B1_N * !X)	0.00236	0.00226	0.00222
	(!A1 * !B1_N * X)	-0.00154	-0.00155	-0.00156
	(!A1 * !B1_N * X)	0.00209	0.00210	0.00210
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1_N * X)	0.00216	0.00219	0.00217
	(!A1 * B1_N * !X)	-0.00120	-0.00133	-0.00136
	(!A1 * B1_N * !X)	0.00249	0.00240	0.00236
	(!A1 * !B1_N * X)	-0.00151	-0.00154	-0.00155
	(!A1 * !B1_N * X)	0.00217	0.00219	0.00217
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00322	-0.00324	-0.00322
	(A1 * !B1_N * X)	0.00422	0.00426	0.00423
	(!A1 * B1_N * !X)	-0.00267	-0.00296	-0.00299
	(!A1 * B1_N * !X)	0.00469	0.00446	0.00438
	(!A1 * !B1_N * X)	-0.00308	-0.00311	-0.00314
	(!A1 * !B1_N * X)	0.00423	0.00423	0.00424

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)	0.00460	0.00903	0.08467
	(A1 * A2 * X)	0.00085	0.00526	0.08093
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00516	0.00943	0.08514
	(A1 * A2 * X)	0.00124	0.00549	0.08121
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00687	0.01130	0.09596
	(A1 * A2 * X)	0.00232	0.00676	0.09145

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)	0.00131	0.00642	0.08251
	(A1 * A2 * X)	0.00505	0.01018	0.08626
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00158	0.00657	0.08280
	(A1 * A2 * X)	0.00550	0.01051	0.08672
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00255	0.00790	0.09267
	(A1 * A2 * X)	0.00708	0.01243	0.09718

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00298	0.00281	0.00291	0.59413
sky130_fd_sc_hs__a21oi_2	0.00543	0.00566	0.00438	1.04991
sky130_fd_sc_hs__a21oi_4	0.01105	0.01084	0.00864	2.00772

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	3.78777	7.38374
sky130_fd_sc_hs__a21oi_2	0.00000	7.46715	14.76210
sky130_fd_sc_hs__a21oi_4	0.00000	14.93180	29.51990

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)	0.06661	0.79048	8.99840
	A2->Y (FR)	0.08209	0.82715	9.25128
	B1->Y (FR)	0.06301	0.85289	9.86647
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.06415	0.70669	9.30317
	A2->Y (FR)	0.08379	0.71535	9.15153
	B1->Y (FR)	0.03483	0.71512	9.75057
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.05976	0.59420	9.13993
	A2->Y (FR)	0.07726	0.59834	8.93416
	B1->Y (FR)	0.03186	0.61022	9.64418

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.03092	0.42596	4.79153
	A2->Y (RF)	0.03390	0.38245	4.21019
	B1->Y (RF)	0.01786	0.32197	3.71424
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02933	0.37328	4.82679
	A2->Y (RF)	0.03596	0.33254	4.17065
	B1->Y (RF)	0.02226	0.41110	5.56037
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02841	0.32868	4.97805
	A2->Y (RF)	0.03298	0.27333	4.07536
	B1->Y (RF)	0.02203	0.36665	5.80609

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00022	0.00040	0.01956
	A1	0.00613	0.00676	0.02595
	A2	0.00021	0.00084	0.02040
	A2	0.00771	0.00835	0.02799
	B1	-0.00057	0.00181	0.03153
	B1	0.00444	0.00683	0.03656
sky130_fd_sc_hs__a21oi_2	A1	-0.00061	0.00080	0.03591
	A1	0.01135	0.01277	0.04803
	A2	0.00111	0.00236	0.03837
	A2	0.01583	0.01708	0.05326
	B1	-0.00002	0.00357	0.04080
	B1	0.00777	0.01142	0.04905
sky130_fd_sc_hs__a21oi_4	A1	-0.00203	0.00152	0.07167
	A1	0.02242	0.02603	0.09655
	A2	0.00141	0.00474	0.07981
	A2	0.03076	0.03416	0.10929
	B1	-0.00032	0.00623	0.07582
	B1	0.01526	0.02192	0.09198

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00816	0.00900	0.02540
	A1	0.00183	0.00265	0.01906
	A2	0.00931	0.01000	0.02615
	A2	0.00181	0.00244	0.01830
	B1	0.00474	0.00613	0.02596
	B1	-0.00026	0.00111	0.02082
sky130_fd_sc_hs__a21oi_2	A1	0.01490	0.01686	0.04803
	A1	0.00298	0.00486	0.03549
	A2	0.01783	0.01915	0.05052
	A2	0.00305	0.00429	0.03529
	B1	0.00618	0.00847	0.03528
	B1	-0.00161	0.00060	0.02584
sky130_fd_sc_hs__a21oi_4	A1	0.02978	0.03367	0.09257
	A1	0.00537	0.00927	0.06694
	A2	0.03452	0.03764	0.10069
	A2	0.00511	0.00815	0.06991
	B1	0.01274	0.01705	0.06466
	B1	-0.00283	0.00142	0.04835

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00228	0.00186	0.00180
	(A2 * B1 * !Y)	-0.00165	-0.00209	-0.00212
	(!A2 * B1 * !Y)	0.00171	0.00173	0.00172
	(!A2 * B1 * !Y)	-0.00214	-0.00216	-0.00215
	(!A2 * !B1 * Y)	0.00052	0.00052	0.00050
	(!A2 * !B1 * Y)	-0.00258	-0.00259	-0.00261
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00461	0.00371	0.00357
	(A2 * B1 * !Y)	-0.00313	-0.00409	-0.00416
	(!A2 * B1 * !Y)	0.00335	0.00335	0.00336
	(!A2 * B1 * !Y)	-0.00421	-0.00421	-0.00423
	(!A2 * !B1 * Y)	0.00112	0.00113	0.00106
	(!A2 * !B1 * Y)	-0.00490	-0.00494	-0.00504
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00924	0.00747	0.00718
	(A2 * B1 * !Y)	-0.00629	-0.00818	-0.00832
	(!A2 * B1 * !Y)	0.00685	0.00687	0.00686
	(!A2 * B1 * !Y)	-0.00842	-0.00843	-0.00841
	(!A2 * !B1 * Y)	0.00212	0.00213	0.00201
	(!A2 * !B1 * Y)	-0.01014	-0.01020	-0.01037

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00166	-0.00166	-0.00166
	(A2 * B1 * !Y)	0.00226	0.00227	0.00226
	(!A2 * B1 * !Y)	-0.00158	-0.00162	-0.00162
	(!A2 * B1 * !Y)	0.00227	0.00228	0.00228
	(!A2 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * Y)	0.00262	0.00263	0.00263
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00330	-0.00331	-0.00329
	(A2 * B1 * !Y)	0.00443	0.00446	0.00443
	(!A2 * B1 * !Y)	-0.00305	-0.00315	-0.00319
	(!A2 * B1 * !Y)	0.00447	0.00450	0.00447
	(!A2 * !B1 * Y)	-0.00102	-0.00103	-0.00103
	(!A2 * !B1 * Y)	0.00504	0.00506	0.00507
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00662	-0.00668	-0.00662
	(A2 * B1 * !Y)	0.00879	0.00892	0.00886
	(!A2 * B1 * !Y)	-0.00629	-0.00645	-0.00648
	(!A2 * B1 * !Y)	0.00890	0.00901	0.00892
	(!A2 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A2 * !B1 * Y)	0.01038	0.01046	0.01042

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00228	0.00187	0.00180
	(A1 * B1 * !Y)	-0.00164	-0.00209	-0.00213
	(!A1 * B1 * !Y)	0.00172	0.00174	0.00173
	(!A1 * B1 * !Y)	-0.00214	-0.00216	-0.00215
	(!A1 * !B1 * Y)	0.00168	0.00170	0.00169
	(!A1 * !B1 * Y)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00474	0.00383	0.00369
	(A1 * B1 * !Y)	-0.00314	-0.00410	-0.00417
	(!A1 * B1 * !Y)	0.00349	0.00352	0.00349
	(!A1 * B1 * !Y)	-0.00424	-0.00426	-0.00424
	(!A1 * !B1 * Y)	0.00327	0.00328	0.00327
	(!A1 * !B1 * Y)	-0.00448	-0.00448	-0.00447
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00904	0.00730	0.00701
	(A1 * B1 * !Y)	-0.00656	-0.00840	-0.00854
	(!A1 * B1 * !Y)	0.00668	0.00676	0.00667
	(!A1 * B1 * !Y)	-0.00866	-0.00870	-0.00865
	(!A1 * !B1 * Y)	0.00647	0.00652	0.00648
	(!A1 * !B1 * Y)	-0.00892	-0.00895	-0.00890

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00166	-0.00168	-0.00166
	(A1 * B1 * !Y)	0.00225	0.00228	0.00226
	(!A1 * B1 * !Y)	-0.00160	-0.00162	-0.00162
	(!A1 * B1 * !Y)	0.00228	0.00230	0.00228
	(!A1 * !B1 * Y)	-0.00153	-0.00166	-0.00167
	(!A1 * !B1 * Y)	0.00238	0.00226	0.00222
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00342	-0.00342	-0.00340
	(A1 * B1 * !Y)	0.00444	0.00445	0.00444
	(!A1 * B1 * !Y)	-0.00318	-0.00329	-0.00330
	(!A1 * B1 * !Y)	0.00448	0.00452	0.00448
	(!A1 * !B1 * Y)	-0.00287	-0.00323	-0.00327
	(!A1 * !B1 * Y)	0.00484	0.00456	0.00450
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00648	-0.00648	-0.00645
	(A1 * B1 * !Y)	0.00910	0.00912	0.00910
	(!A1 * B1 * !Y)	-0.00611	-0.00626	-0.00628
	(!A1 * B1 * !Y)	0.00912	0.00923	0.00915
	(!A1 * !B1 * Y)	-0.00569	-0.00634	-0.00645
	(!A1 * !B1 * Y)	0.00963	0.00912	0.00898

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00204	0.00206	0.00203
	(A1 * A2 * !Y)	-0.00095	-0.00096	-0.00094
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00224	0.00229	0.00226
	(A1 * A2 * !Y)	-0.00195	-0.00199	-0.00195
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00437	0.00443	0.00437
	(A1 * A2 * !Y)	-0.00379	-0.00382	-0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00183	-0.00185	-0.00198
	(A1 * A2 * !Y)	0.00112	0.00112	0.00101
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00186	-0.00187	-0.00216
	(A1 * A2 * !Y)	0.00230	0.00230	0.00209
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00360	-0.00366	-0.00417
	(A1 * A2 * !Y)	0.00443	0.00445	0.00403

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00250	0.00257	0.00256	1.28309
sky130_fd_sc_hs__a21o_2	0.00278	0.00269	0.00282	2.46094
sky130_fd_sc_hs__a21o_4	0.00505	0.00485	0.00515	4.63885

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	8.62646	11.30340
sky130_fd_sc_hs__a21o_2	0.00000	11.35800	14.49510
sky130_fd_sc_hs__a21o_4	0.00000	22.82290	29.36040

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)	0.07446	0.55434	6.38810
	A2->X (RR)	0.07886	0.54649	6.26977
	B1->X (RR)	0.05330	0.49881	6.02330
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.07333	0.47004	6.19873
	A2->X (RR)	0.07713	0.45636	6.06838
	B1->X (RR)	0.05241	0.41585	5.84766
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.08357	0.42758	6.36001
	A2->X (RR)	0.08893	0.41406	6.22545
	B1->X (RR)	0.05427	0.35797	5.92596

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.10751	0.50395	5.05574
	A2->X (FF)	0.12567	0.53392	5.16690
	B1->X (FF)	0.10552	0.54332	5.20377
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.13090	0.50041	4.96379
	A2->X (FF)	0.15011	0.53237	5.08459
	B1->X (FF)	0.13186	0.55224	5.21081
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.13523	0.46850	4.99454
	A2->X (FF)	0.15454	0.50047	5.10898
	B1->X (FF)	0.13287	0.51826	5.27343

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01125	0.01421	0.07388
	A1	0.00579	0.00876	0.06873
	A2	0.01253	0.01498	0.07201
	A2	0.00578	0.00824	0.06567
	B1	0.00806	0.01231	0.08771
	B1	0.00378	0.00805	0.08379
sky130_fd_sc_hs__a21o_2	A1	0.01479	0.01785	0.07870
	A1	0.00883	0.01191	0.07350
	A2	0.01601	0.01855	0.07717
	A2	0.00881	0.01136	0.07072
	B1	0.01147	0.01593	0.09365
	B1	0.00674	0.01126	0.09003
sky130_fd_sc_hs__a21o_4	A1	0.02865	0.03422	0.14925
	A1	0.01725	0.02302	0.13908
	A2	0.03066	0.03501	0.14484
	A2	0.01723	0.02158	0.13326
	B1	0.02148	0.03007	0.17974
	B1	0.01252	0.02118	0.17285

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00410	0.00649	0.06602
	A1	0.00956	0.01184	0.07039
	A2	0.00433	0.00658	0.06386
	A2	0.01107	0.01329	0.06994
	B1	0.00379	0.00870	0.07504
	B1	0.00809	0.01293	0.07801
sky130_fd_sc_hs__a21o_2	A1	0.00778	0.00942	0.06984
	A1	0.01374	0.01531	0.07446
	A2	0.00861	0.01001	0.06998
	A2	0.01577	0.01705	0.07510
	B1	0.00702	0.01177	0.08786
	B1	0.01177	0.01639	0.08798
sky130_fd_sc_hs__a21o_4	A1	0.01600	0.01845	0.13330
	A1	0.02739	0.02982	0.14123
	A2	0.01830	0.02022	0.13154
	A2	0.03168	0.03340	0.14231
	B1	0.01444	0.02333	0.16493
	B1	0.02343	0.03213	0.17059

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00197	0.00155	0.00150
	(A2 * B1 * X)	-0.00144	-0.00187	-0.00190
	(!A2 * B1 * X)	0.00143	0.00144	0.00143
	(!A2 * B1 * X)	-0.00193	-0.00193	-0.00192
	(!A2 * !B1 * !X)	0.00053	0.00052	0.00051
	(!A2 * !B1 * !X)	-0.00219	-0.00219	-0.00222
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00224	0.00183	0.00177
	(A2 * B1 * X)	-0.00145	-0.00189	-0.00192
	(!A2 * B1 * X)	0.00168	0.00168	0.00169
	(!A2 * B1 * X)	-0.00194	-0.00194	-0.00195
	(!A2 * !B1 * !X)	0.00068	0.00068	0.00066
	(!A2 * !B1 * !X)	-0.00219	-0.00220	-0.00224
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00419	0.00333	0.00320
	(A2 * B1 * X)	-0.00281	-0.00373	-0.00379
	(!A2 * B1 * X)	0.00306	0.00309	0.00307
	(!A2 * B1 * X)	-0.00385	-0.00386	-0.00384
	(!A2 * !B1 * !X)	0.00126	0.00126	0.00120
	(!A2 * !B1 * !X)	-0.00436	-0.00439	-0.00449

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00128	-0.00129	-0.00129
	(A2 * B1 * X)	0.00211	0.00212	0.00211
	(!A2 * B1 * X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * X)	0.00213	0.00215	0.00212
	(!A2 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !X)	0.00235	0.00240	0.00236
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00154	-0.00155	-0.00155
	(A2 * B1 * X)	0.00214	0.00215	0.00214
	(!A2 * B1 * X)	-0.00148	-0.00150	-0.00151
	(!A2 * B1 * X)	0.00216	0.00218	0.00215
	(!A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !X)	0.00249	0.00253	0.00249
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00277	-0.00278	-0.00277
	(A2 * B1 * X)	0.00424	0.00427	0.00423
	(!A2 * B1 * X)	-0.00263	-0.00270	-0.00270
	(!A2 * B1 * X)	0.00426	0.00427	0.00425
	(!A2 * !B1 * !X)	-0.00068	-0.00070	-0.00067
	(!A2 * !B1 * !X)	0.00502	0.00508	0.00500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00229	0.00190	0.00184
	(A1 * B1 * X)	-0.00143	-0.00185	-0.00187
	(!A1 * B1 * X)	0.00177	0.00178	0.00178
	(!A1 * B1 * X)	-0.00189	-0.00190	-0.00190
	(!A1 * !B1 * !X)	0.00175	0.00177	0.00176
	(!A1 * !B1 * !X)	-0.00192	-0.00193	-0.00192
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00232	0.00192	0.00185
	(A1 * B1 * X)	-0.00145	-0.00189	-0.00192
	(!A1 * B1 * X)	0.00178	0.00180	0.00178
	(!A1 * B1 * X)	-0.00194	-0.00196	-0.00194
	(!A1 * !B1 * !X)	0.00181	0.00183	0.00182
	(!A1 * !B1 * !X)	-0.00191	-0.00193	-0.00191
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00411	0.00328	0.00315
	(A1 * B1 * X)	-0.00282	-0.00373	-0.00379
	(!A1 * B1 * X)	0.00301	0.00304	0.00301
	(!A1 * B1 * X)	-0.00383	-0.00385	-0.00383
	(!A1 * !B1 * !X)	0.00308	0.00310	0.00309
	(!A1 * !B1 * !X)	-0.00378	-0.00379	-0.00377

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00163	-0.00163	-0.00163
	(A1 * B1 * X)	0.00209	0.00209	0.00209
	(!A1 * B1 * X)	-0.00156	-0.00159	-0.00159
	(!A1 * B1 * X)	0.00209	0.00210	0.00210
	(!A1 * !B1 * !X)	-0.00147	-0.00160	-0.00162
	(!A1 * !B1 * !X)	0.00220	0.00210	0.00207
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00163	-0.00164	-0.00164
	(A1 * B1 * X)	0.00214	0.00214	0.00214
	(!A1 * B1 * X)	-0.00157	-0.00159	-0.00159
	(!A1 * B1 * X)	0.00215	0.00216	0.00215
	(!A1 * !B1 * !X)	-0.00142	-0.00154	-0.00156
	(!A1 * !B1 * !X)	0.00232	0.00221	0.00218
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00272	-0.00273	-0.00272
	(A1 * B1 * X)	0.00423	0.00426	0.00422
	(!A1 * B1 * X)	-0.00256	-0.00264	-0.00265
	(!A1 * B1 * X)	0.00422	0.00428	0.00424
	(!A1 * !B1 * !X)	-0.00223	-0.00252	-0.00258
	(!A1 * !B1 * !X)	0.00461	0.00439	0.00430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00167	0.00170	0.00168
	(A1 * A2 * X)	-0.00089	-0.00091	-0.00089
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00198	0.00202	0.00199
	(A1 * A2 * X)	-0.00088	-0.00090	-0.00087
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00346	0.00352	0.00347
	(A1 * A2 * X)	-0.00184	-0.00187	-0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00145	-0.00146	-0.00160
	(A1 * A2 * X)	0.00111	0.00111	0.00099
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00175	-0.00176	-0.00191
	(A1 * A2 * X)	0.00110	0.00110	0.00098
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00298	-0.00303	-0.00331
	(A1 * A2 * X)	0.00226	0.00229	0.00204

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00287	0.00284	0.00292	0.00302	0.00301	0.39107
sky130_fd_sc_hs__a221oi_2	0.00607	0.00551	0.00597	0.00547	0.00556	0.66181
sky130_fd_sc_hs__a221oi_4	0.01120	0.01119	0.01111	0.01086	0.01101	1.15558

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	3.62971	7.38265
sky130_fd_sc_hs__a221oi_2	0.00000	7.25179	14.75900
sky130_fd_sc_hs__a221oi_4	0.00000	14.50140	29.51300

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)	0.17436	0.96993	8.72718
	A2->Y (FR)	0.19503	0.99532	8.78545
	B1->Y (FR)	0.14944	0.97958	9.35112
	B2->Y (FR)	0.17307	1.01320	9.46199
	C1->Y (FR)	0.12838	1.00210	9.83431
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.16146	0.79477	8.18009
	A2->Y (FR)	0.20462	0.87427	8.69475
	B1->Y (FR)	0.14491	0.83998	9.13709
	B2->Y (FR)	0.17749	0.89041	9.38100
	C1->Y (FR)	0.12483	0.88186	9.83638
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.18028	0.72211	8.23436
	A2->Y (FR)	0.21579	0.76618	8.41674
	B1->Y (FR)	0.14885	0.72902	8.86725
	B2->Y (FR)	0.18710	0.78520	9.17315
	C1->Y (FR)	0.13348	0.79552	9.83916

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.03715	0.39115	3.58353
	A2->Y (RF)	0.04058	0.34954	3.10821
	B1->Y (RF)	0.03684	0.37791	3.61612
	B2->Y (RF)	0.04128	0.34007	3.15158
	C1->Y (RF)	0.02159	0.28266	2.75805
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.03271	0.32940	3.35143
	A2->Y (RF)	0.03858	0.29903	2.93646
	B1->Y (RF)	0.03199	0.30651	3.30035
	B2->Y (RF)	0.03687	0.27794	2.89422
	C1->Y (RF)	0.01883	0.22550	2.53650
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03480	0.29953	3.37299
	A2->Y (RF)	0.03985	0.24874	2.67860
	B1->Y (RF)	0.03617	0.27681	3.35862
	B2->Y (RF)	0.04121	0.23078	2.65907
	C1->Y (RF)	0.01729	0.17114	2.24537

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00134	0.00135	0.02297
	A1	0.01065	0.01066	0.03230
	A2	0.00168	0.00176	0.02395
	A2	0.01227	0.01235	0.03466
	B1	0.00135	0.00181	0.02311
	B1	0.00805	0.00853	0.02987
	B2	0.00181	0.00228	0.02358
	B2	0.00976	0.01024	0.03161
	C1	0.00103	0.00314	0.03469
	C1	0.00654	0.00855	0.04035
sky130_fd_sc_hs__a221oi_2	A1	0.00078	0.00102	0.04591
	A1	0.01984	0.02011	0.06494
	A2	0.00255	0.00269	0.04602
	A2	0.02343	0.02356	0.06691
	B1	0.00086	0.00208	0.04450
	B1	0.01451	0.01573	0.05842
	B2	0.00221	0.00340	0.04673
	B2	0.01780	0.01892	0.06244
	C1	0.00033	0.00506	0.06691
	C1	0.01108	0.01587	0.07764

sky130_fd_sc_hs__a221oi_4	**A1**	0.00071	0.00106	0.08212
	A1	0.03833	0.03864	0.11965
	A2	0.00357	0.00390	0.08745
	A2	0.04595	0.04631	0.13015
	B1	0.00062	0.00316	0.08044
	B1	0.02817	0.03074	0.10830
	B2	0.00364	0.00598	0.08373
	B2	0.03604	0.03840	0.11644
	C1	-0.00046	0.00894	0.12551
	C1	0.02069	0.03016	0.14715

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01436	0.01497	0.03465
	A1	0.00512	0.00569	0.02533
	A2	0.01562	0.01604	0.03514
	A2	0.00508	0.00548	0.02464
	B1	0.00870	0.00955	0.02864
	B1	0.00202	0.00287	0.02184
	B2	0.00995	0.01061	0.02885
	B2	0.00200	0.00262	0.02086
	C1	0.00521	0.00661	0.02882
	C1	-0.00029	0.00108	0.02331

sky130_fd_sc_hs__a221oi_2	**A1**	0.02697	0.02837	0.06842
	A1	0.00803	0.00944	0.04955
	A2	0.02914	0.03002	0.06734
	A2	0.00834	0.00915	0.04663
	B1	0.01658	0.01868	0.05715
	B1	0.00301	0.00505	0.04334
	B2	0.01873	0.02017	0.05691
	B2	0.00312	0.00455	0.04118
	C1	0.00935	0.01267	0.05711
	C1	-0.00137	0.00190	0.04638
sky130_fd_sc_hs__a221oi_4	**A1**	0.05412	0.05680	0.13091
	A1	0.01678	0.01940	0.09338
	A2	0.05884	0.06063	0.13736
	A2	0.01664	0.01831	0.09502
	B1	0.03303	0.03725	0.10990
	B1	0.00559	0.00971	0.08224
	B2	0.03807	0.04116	0.11447
	B2	0.00561	0.00864	0.08211
	C1	0.01949	0.02657	0.11347
	C1	-0.00167	0.00531	0.09223

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)**	0.00168	0.00166	0.00165
	(A2 * B1 * B2 * C1 * !Y)	-0.00205	-0.00217	-0.00216
	(A2 * B1 * B2 * !C1 * !Y)	0.00210	0.00176	0.00172
	(A2 * B1 * B2 * !C1 * !Y)	-0.00168	-0.00208	-0.00210
	(A2 * B1 * !B2 * C1 * !Y)	0.00199	0.00176	0.00171
	(A2 * B1 * !B2 * C1 * !Y)	-0.00172	-0.00205	-0.00210
	(A2 * !B1 * C1 * !Y)	0.00200	0.00176	0.00171
	(A2 * !B1 * C1 * !Y)	-0.00171	-0.00205	-0.00210
	(!A2 * B1 * B2 * C1 * !Y)	0.00157	0.00159	0.00158
	(!A2 * B1 * B2 * C1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * B2 * !C1 * !Y)	0.00164	0.00165	0.00164
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A2 * B1 * !B2 * C1 * !Y)	0.00163	0.00166	0.00164
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00213	-0.00215	-0.00213
	(!A2 * B1 * !B2 * !C1 * Y)	0.00053	0.00052	0.00051
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00247	-0.00248	-0.00251
	(!A2 * !B1 * C1 * !Y)	0.00164	0.00166	0.00164
	(!A2 * !B1 * C1 * !Y)	-0.00214	-0.00215	-0.00213
	(!A2 * !B1 * !C1 * Y)	0.00053	0.00053	0.00051
	(!A2 * !B1 * !C1 * Y)	-0.00247	-0.00248	-0.00251

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00358	0.00352	0.00349
	(A2 * B1 * B2 * C1 * !Y)	-0.00430	-0.00457	-0.00455
	(A2 * B1 * B2 * !C1 * !Y)	0.00451	0.00376	0.00365
	(A2 * B1 * B2 * !C1 * !Y)	-0.00350	-0.00439	-0.00443
	(A2 * B1 * !B2 * C1 * !Y)	0.00424	0.00374	0.00362
	(A2 * B1 * !B2 * C1 * !Y)	-0.00360	-0.00434	-0.00443
	(A2 * !B1 * C1 * !Y)	0.00424	0.00374	0.00362
	(A2 * !B1 * C1 * !Y)	-0.00360	-0.00434	-0.00443
	(!A2 * B1 * B2 * C1 * !Y)	0.00337	0.00341	0.00339
	(!A2 * B1 * B2 * C1 * !Y)	-0.00462	-0.00465	-0.00463
	(!A2 * B1 * B2 * !C1 * !Y)	0.00348	0.00352	0.00349
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00451	-0.00454	-0.00451
	(!A2 * B1 * !B2 * C1 * !Y)	0.00347	0.00351	0.00348
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00451	-0.00454	-0.00452
	(!A2 * B1 * !B2 * !C1 * Y)	0.00120	0.00120	0.00114
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00532	-0.00535	-0.00545
	(!A2 * !B1 * C1 * !Y)	0.00347	0.00351	0.00348
	(!A2 * !B1 * C1 * !Y)	-0.00450	-0.00454	-0.00452
	(!A2 * !B1 * !C1 * Y)	0.00120	0.00120	0.00114
	(!A2 * !B1 * !C1 * Y)	-0.00532	-0.00535	-0.00545

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00707	0.00684	0.00676
	(A2 * B1 * B2 * C1 * !Y)	-0.00806	-0.00877	-0.00876
	(A2 * B1 * B2 * !C1 * !Y)	0.00903	0.00740	0.00713
	(A2 * B1 * B2 * !C1 * !Y)	-0.00645	-0.00830	-0.00845
	(A2 * B1 * !B2 * C1 * !Y)	0.00841	0.00726	0.00698
	(A2 * B1 * !B2 * C1 * !Y)	-0.00668	-0.00835	-0.00856
	(A2 * !B1 * C1 * !Y)	0.00847	0.00726	0.00698
	(A2 * !B1 * C1 * !Y)	-0.00668	-0.00835	-0.00856
	(!A2 * B1 * B2 * C1 * !Y)	0.00654	0.00657	0.00653
	(!A2 * B1 * B2 * C1 * !Y)	-0.00886	-0.00887	-0.00886
	(!A2 * B1 * B2 * !C1 * !Y)	0.00683	0.00685	0.00677
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00853	-0.00855	-0.00856
	(!A2 * B1 * !B2 * C1 * !Y)	0.00666	0.00670	0.00669
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00870	-0.00874	-0.00873
	(!A2 * B1 * !B2 * !C1 * Y)	0.00215	0.00215	0.00204
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01028	-0.01034	-0.01051
	(!A2 * !B1 * C1 * !Y)	0.00668	0.00671	0.00669
	(!A2 * !B1 * C1 * !Y)	-0.00873	-0.00875	-0.00873
	(!A2 * !B1 * !C1 * Y)	0.00215	0.00216	0.00205
	(!A2 * !B1 * !C1 * Y)	-0.01027	-0.01034	-0.01050

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)**	-0.00163	-0.00164	-0.00163
	(A2 * B1 * B2 * C1 * !Y)	0.00215	0.00217	0.00216
	(A2 * B1 * B2 * !C1 * !Y)	-0.00158	-0.00160	-0.00159
	(A2 * B1 * B2 * !C1 * !Y)	0.00222	0.00225	0.00223
	(A2 * B1 * !B2 * C1 * !Y)	-0.00157	-0.00158	-0.00156
	(A2 * B1 * !B2 * C1 * !Y)	0.00218	0.00220	0.00220
	(A2 * !B1 * C1 * !Y)	-0.00157	-0.00158	-0.00156
	(A2 * !B1 * C1 * !Y)	0.00218	0.00220	0.00220
	(!A2 * B1 * B2 * C1 * !Y)	-0.00155	-0.00159	-0.00158
	(!A2 * B1 * B2 * C1 * !Y)	0.00219	0.00223	0.00221
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00150	-0.00153	-0.00153
	(!A2 * B1 * B2 * !C1 * !Y)	0.00226	0.00227	0.00227
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00151	-0.00152	-0.00153
	(!A2 * B1 * !B2 * C1 * !Y)	0.00227	0.00226	0.00226
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * B1 * !B2 * !C1 * Y)	0.00252	0.00257	0.00253
	(!A2 * !B1 * C1 * !Y)	-0.00151	-0.00153	-0.00153
	(!A2 * !B1 * C1 * !Y)	0.00227	0.00227	0.00226
	(!A2 * !B1 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * !C1 * Y)	0.00252	0.00257	0.00253

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00347	-0.00348	-0.00346
	(A2 * B1 * B2 * C1 * !Y)	0.00456	0.00459	0.00455
	(A2 * B1 * B2 * !C1 * !Y)	-0.00334	-0.00336	-0.00335
	(A2 * B1 * B2 * !C1 * !Y)	0.00469	0.00474	0.00472
	(A2 * B1 * !B2 * C1 * !Y)	-0.00335	-0.00336	-0.00332
	(A2 * B1 * !B2 * C1 * !Y)	0.00458	0.00461	0.00462
	(A2 * !B1 * C1 * !Y)	-0.00335	-0.00336	-0.00332
	(A2 * !B1 * C1 * !Y)	0.00459	0.00462	0.00462
	(!A2 * B1 * B2 * C1 * !Y)	-0.00329	-0.00339	-0.00339
	(!A2 * B1 * B2 * C1 * !Y)	0.00463	0.00467	0.00466
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00318	-0.00328	-0.00328
	(!A2 * B1 * B2 * !C1 * !Y)	0.00477	0.00481	0.00478
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00320	-0.00329	-0.00328
	(!A2 * B1 * !B2 * C1 * !Y)	0.00478	0.00479	0.00477
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00108	-0.00111	-0.00109
	(!A2 * B1 * !B2 * !C1 * Y)	0.00545	0.00557	0.00548
	(!A2 * !B1 * C1 * !Y)	-0.00320	-0.00329	-0.00328
	(!A2 * !B1 * C1 * !Y)	0.00478	0.00479	0.00477
	(!A2 * !B1 * !C1 * Y)	-0.00108	-0.00111	-0.00109
	(!A2 * !B1 * !C1 * Y)	0.00546	0.00557	0.00548

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00671	-0.00672	-0.00669
	(A2 * B1 * B2 * C1 * !Y)	0.00878	0.00881	0.00876
	(A2 * B1 * B2 * !C1 * !Y)	-0.00658	-0.00659	-0.00651
	(A2 * B1 * B2 * !C1 * !Y)	0.00900	0.00903	0.00903
	(A2 * B1 * !B2 * C1 * !Y)	-0.00645	-0.00649	-0.00639
	(A2 * B1 * !B2 * C1 * !Y)	0.00885	0.00895	0.00892
	(A2 * !B1 * C1 * !Y)	-0.00645	-0.00649	-0.00639
	(A2 * !B1 * C1 * !Y)	0.00885	0.00895	0.00892
	(!A2 * B1 * B2 * C1 * !Y)	-0.00639	-0.00654	-0.00653
	(!A2 * B1 * B2 * C1 * !Y)	0.00895	0.00896	0.00893
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00623	-0.00635	-0.00635
	(!A2 * B1 * B2 * !C1 * !Y)	0.00906	0.00912	0.00911
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00615	-0.00626	-0.00630
	(!A2 * B1 * !B2 * C1 * !Y)	0.00925	0.00928	0.00923
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00194	-0.00198	-0.00194
	(!A2 * B1 * !B2 * !C1 * Y)	0.01053	0.01074	0.01057
	(!A2 * !B1 * C1 * !Y)	-0.00613	-0.00627	-0.00630
	(!A2 * !B1 * C1 * !Y)	0.00921	0.00929	0.00923
	(!A2 * !B1 * !C1 * Y)	-0.00194	-0.00199	-0.00195
	(!A2 * !B1 * !C1 * Y)	0.01053	0.01074	0.01058

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)**	0.00179	0.00176	0.00175
	(A1 * B1 * B2 * C1 * !Y)	-0.00209	-0.00220	-0.00220
	(A1 * B1 * B2 * !C1 * !Y)	0.00222	0.00187	0.00183
	(A1 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00212	-0.00214
	(A1 * B1 * !B2 * C1 * !Y)	0.00210	0.00187	0.00181
	(A1 * B1 * !B2 * C1 * !Y)	-0.00174	-0.00209	-0.00214
	(A1 * !B1 * C1 * !Y)	0.00210	0.00187	0.00181
	(A1 * !B1 * C1 * !Y)	-0.00174	-0.00209	-0.00214
	(!A1 * B1 * B2 * !Y)	0.00168	0.00171	0.00169
	(!A1 * B1 * B2 * !Y)	-0.00222	-0.00224	-0.00223
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00173	0.00176	0.00174
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00216	-0.00219	-0.00217
	(!A1 * B1 * !B2 * !C1 * Y)	0.00170	0.00170	0.00171
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00222	-0.00222	-0.00222
	(!A1 * !B1 * !C1 * Y)	0.00170	0.00171	0.00171
	(!A1 * !B1 * !C1 * Y)	-0.00222	-0.00223	-0.00222

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00344	0.00336	0.00333
	(A1 * B1 * B2 * C1 * !Y)	-0.00400	-0.00427	-0.00425
	(A1 * B1 * B2 * !C1 * !Y)	0.00438	0.00358	0.00349
	(A1 * B1 * B2 * !C1 * !Y)	-0.00319	-0.00409	-0.00413
	(A1 * B1 * !B2 * C1 * !Y)	0.00409	0.00357	0.00345
	(A1 * B1 * !B2 * C1 * !Y)	-0.00328	-0.00405	-0.00414
	(A1 * !B1 * C1 * !Y)	0.00409	0.00357	0.00345
	(A1 * !B1 * C1 * !Y)	-0.00328	-0.00405	-0.00414
	(!A1 * B1 * B2 * !Y)	0.00321	0.00322	0.00321
	(!A1 * B1 * B2 * !Y)	-0.00432	-0.00432	-0.00431
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00332	0.00336	0.00332
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00421	-0.00423	-0.00420
	(!A1 * B1 * !B2 * !C1 * Y)	0.00308	0.00312	0.00309
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00445	-0.00448	-0.00444
	(!A1 * !B1 * !C1 * Y)	0.00308	0.00312	0.00309
	(!A1 * !B1 * !C1 * Y)	-0.00445	-0.00447	-0.00444

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00721	0.00693	0.00683
	(A1 * B1 * B2 * C1 * !Y)	-0.00813	-0.00879	-0.00879
	(A1 * B1 * B2 * !C1 * !Y)	0.00912	0.00753	0.00722
	(A1 * B1 * B2 * !C1 * !Y)	-0.00650	-0.00830	-0.00846
	(A1 * B1 * !B2 * C1 * !Y)	0.00851	0.00734	0.00705
	(A1 * B1 * !B2 * C1 * !Y)	-0.00678	-0.00839	-0.00860
	(A1 * !B1 * C1 * !Y)	0.00853	0.00734	0.00705
	(A1 * !B1 * C1 * !Y)	-0.00676	-0.00839	-0.00860
	(!A1 * B1 * B2 * !Y)	0.00659	0.00663	0.00661
	(!A1 * B1 * B2 * !Y)	-0.00885	-0.00888	-0.00890
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00679	0.00686	0.00678
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00879	-0.00883	-0.00878
	(!A1 * B1 * !B2 * !C1 * Y)	0.00617	0.00628	0.00623
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00934	-0.00943	-0.00937
	(!A1 * !B1 * !C1 * Y)	0.00623	0.00629	0.00623
	(!A1 * !B1 * !C1 * Y)	-0.00940	-0.00943	-0.00937

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)**	-0.00173	-0.00174	-0.00174
	(A1 * B1 * B2 * C1 * !Y)	0.00218	0.00221	0.00220
	(A1 * B1 * B2 * !C1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * !C1 * !Y)	0.00226	0.00228	0.00227
	(A1 * B1 * !B2 * C1 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * B1 * !B2 * C1 * !Y)	0.00222	0.00223	0.00223
	(A1 * !B1 * C1 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * !B1 * C1 * !Y)	0.00222	0.00223	0.00223
	(!A1 * B1 * B2 * !Y)	-0.00167	-0.00169	-0.00169
	(!A1 * B1 * B2 * !Y)	0.00225	0.00227	0.00225
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00162	-0.00164	-0.00164
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00231	0.00233	0.00230
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00154	-0.00167	-0.00169
	(!A1 * B1 * !B2 * !C1 * Y)	0.00240	0.00229	0.00225
	(!A1 * !B1 * !C1 * Y)	-0.00154	-0.00167	-0.00169
	(!A1 * !B1 * !C1 * Y)	0.00240	0.00229	0.00225

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00331	-0.00332	-0.00330
	(A1 * B1 * B2 * C1 * !Y)	0.00425	0.00428	0.00425
	(A1 * B1 * B2 * !C1 * !Y)	-0.00320	-0.00321	-0.00319
	(A1 * B1 * B2 * !C1 * !Y)	0.00441	0.00442	0.00441
	(A1 * B1 * !B2 * C1 * !Y)	-0.00319	-0.00319	-0.00316
	(A1 * B1 * !B2 * C1 * !Y)	0.00430	0.00431	0.00432
	(A1 * !B1 * C1 * !Y)	-0.00319	-0.00319	-0.00316
	(A1 * !B1 * C1 * !Y)	0.00430	0.00431	0.00432
	(!A1 * B1 * B2 * !Y)	-0.00313	-0.00322	-0.00321
	(!A1 * B1 * B2 * !Y)	0.00433	0.00438	0.00435
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00302	-0.00311	-0.00312
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00444	0.00449	0.00446
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00273	-0.00303	-0.00308
	(!A1 * B1 * !B2 * !C1 * Y)	0.00478	0.00457	0.00449
	(!A1 * !B1 * !C1 * Y)	-0.00272	-0.00303	-0.00308
	(!A1 * !B1 * !C1 * Y)	0.00478	0.00457	0.00449

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00678	-0.00680	-0.00677
	(A1 * B1 * B2 * C1 * !Y)	0.00881	0.00885	0.00879
	(A1 * B1 * B2 * !C1 * !Y)	-0.00667	-0.00669	-0.00659
	(A1 * B1 * B2 * !C1 * !Y)	0.00902	0.00907	0.00905
	(A1 * B1 * !B2 * C1 * !Y)	-0.00653	-0.00654	-0.00646
	(A1 * B1 * !B2 * C1 * !Y)	0.00893	0.00896	0.00897
	(A1 * !B1 * C1 * !Y)	-0.00653	-0.00654	-0.00646
	(A1 * !B1 * C1 * !Y)	0.00893	0.00896	0.00897
	(!A1 * B1 * B2 * !Y)	-0.00643	-0.00659	-0.00661
	(!A1 * B1 * B2 * !Y)	0.00892	0.00904	0.00896
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00620	-0.00636	-0.00638
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00925	0.00936	0.00929
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00548	-0.00606	-0.00618
	(!A1 * B1 * !B2 * !C1 * Y)	0.01005	0.00960	0.00947
	(!A1 * !B1 * !C1 * Y)	-0.00548	-0.00606	-0.00618
	(!A1 * !B1 * !C1 * Y)	0.01005	0.00960	0.00947

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)**	0.00203	0.00201	0.00186
	(A1 * A2 * B2 * C1 * !Y)	-0.00146	-0.00149	-0.00157
	(A1 * A2 * B2 * !C1 * !Y)	0.00179	0.00180	0.00175
	(A1 * A2 * B2 * !C1 * !Y)	-0.00101	-0.00103	-0.00104
	(A1 * A2 * !B2 * C1 * !Y)	0.00195	0.00195	0.00177
	(A1 * A2 * !B2 * C1 * !Y)	-0.00133	-0.00135	-0.00146
	(A1 * A2 * !B2 * !C1 * !Y)	0.00179	0.00182	0.00173
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00095	-0.00098	-0.00100
	(A1 * !A2 * B2 * C1 * !Y)	0.00230	0.00183	0.00175
	(A1 * !A2 * B2 * C1 * !Y)	-0.00157	-0.00208	-0.00213
	(A1 * !A2 * !B2 * C1 * !Y)	0.00168	0.00168	0.00168
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * !B2 * !C1 * Y)	0.00052	0.00052	0.00050
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00252	-0.00254	-0.00257
	(!A1 * B2 * C1 * !Y)	0.00228	0.00183	0.00175
	(!A1 * B2 * C1 * !Y)	-0.00159	-0.00208	-0.00213
	(!A1 * !B2 * C1 * !Y)	0.00167	0.00169	0.00168
	(!A1 * !B2 * C1 * !Y)	-0.00214	-0.00216	-0.00215
	(!A1 * !B2 * !C1 * Y)	0.00052	0.00052	0.00050
	(!A1 * !B2 * !C1 * Y)	-0.00252	-0.00254	-0.00257

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00406	0.00408	0.00374
	(A1 * A2 * B2 * C1 * !Y)	-0.00299	-0.00302	-0.00315
	(A1 * A2 * B2 * !C1 * !Y)	0.00364	0.00367	0.00355
	(A1 * A2 * B2 * !C1 * !Y)	-0.00210	-0.00212	-0.00216
	(A1 * A2 * !B2 * C1 * !Y)	0.00404	0.00404	0.00362
	(A1 * A2 * !B2 * C1 * !Y)	-0.00267	-0.00269	-0.00291
	(A1 * A2 * !B2 * !C1 * !Y)	0.00370	0.00374	0.00351
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00195	-0.00198	-0.00206
	(A1 * !A2 * B2 * C1 * !Y)	0.00475	0.00370	0.00353
	(A1 * !A2 * B2 * C1 * !Y)	-0.00322	-0.00428	-0.00440
	(A1 * !A2 * !B2 * C1 * !Y)	0.00337	0.00341	0.00337
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00442	-0.00447	-0.00445
	(A1 * !A2 * !B2 * !C1 * Y)	0.00107	0.00107	0.00102
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00527	-0.00529	-0.00535
	(!A1 * B2 * C1 * !Y)	0.00474	0.00369	0.00353
	(!A1 * B2 * C1 * !Y)	-0.00323	-0.00427	-0.00440
	(!A1 * !B2 * C1 * !Y)	0.00338	0.00341	0.00337
	(!A1 * !B2 * C1 * !Y)	-0.00445	-0.00447	-0.00445
	(!A1 * !B2 * !C1 * Y)	0.00107	0.00107	0.00102
	(!A1 * !B2 * !C1 * Y)	-0.00527	-0.00529	-0.00535

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00806	0.00799	0.00738
	(A1 * A2 * B2 * C1 * !Y)	-0.00552	-0.00573	-0.00601
	(A1 * A2 * B2 * !C1 * !Y)	0.00726	0.00733	0.00700
	(A1 * A2 * B2 * !C1 * !Y)	-0.00402	-0.00405	-0.00411
	(A1 * A2 * !B2 * C1 * !Y)	0.00790	0.00792	0.00711
	(A1 * A2 * !B2 * C1 * !Y)	-0.00506	-0.00514	-0.00556
	(A1 * A2 * !B2 * !C1 * !Y)	0.00719	0.00722	0.00689
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00374	-0.00376	-0.00391
	(A1 * !A2 * B2 * C1 * !Y)	0.00940	0.00734	0.00696
	(A1 * !A2 * B2 * C1 * !Y)	-0.00618	-0.00826	-0.00853
	(A1 * !A2 * !B2 * C1 * !Y)	0.00666	0.00669	0.00664
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00864	-0.00869	-0.00865
	(A1 * !A2 * !B2 * !C1 * Y)	0.00214	0.00214	0.00202
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01017	-0.01021	-0.01038
	(!A1 * B2 * C1 * !Y)	0.00936	0.00734	0.00696
	(!A1 * B2 * C1 * !Y)	-0.00623	-0.00825	-0.00853
	(!A1 * !B2 * C1 * !Y)	0.00665	0.00669	0.00664
	(!A1 * !B2 * C1 * !Y)	-0.00865	-0.00869	-0.00865
	(!A1 * !B2 * !C1 * Y)	0.00215	0.00215	0.00203
	(!A1 * !B2 * !C1 * Y)	-0.01017	-0.01021	-0.01037

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)**	-0.00168	-0.00168	-0.00168
	(A1 * A2 * B2 * C1 * !Y)	0.00158	0.00159	0.00159
	(A1 * A2 * B2 * !C1 * !Y)	-0.00154	-0.00156	-0.00161
	(A1 * A2 * B2 * !C1 * !Y)	0.00122	0.00124	0.00118
	(A1 * A2 * !B2 * C1 * !Y)	-0.00161	-0.00163	-0.00164
	(A1 * A2 * !B2 * C1 * !Y)	0.00145	0.00146	0.00146
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00159	-0.00162	-0.00160
	(A1 * A2 * !B2 * !C1 * !Y)	0.00112	0.00113	0.00114
	(A1 * !A2 * B2 * C1 * !Y)	-0.00161	-0.00161	-0.00160
	(A1 * !A2 * B2 * C1 * !Y)	0.00225	0.00226	0.00226
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00154	-0.00157	-0.00157
	(A1 * !A2 * !B2 * C1 * !Y)	0.00228	0.00228	0.00227
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(A1 * !A2 * !B2 * !C1 * Y)	0.00258	0.00262	0.00258
	(!A1 * B2 * C1 * !Y)	-0.00161	-0.00162	-0.00160
	(!A1 * B2 * C1 * !Y)	0.00225	0.00227	0.00226
	(!A1 * !B2 * C1 * !Y)	-0.00154	-0.00157	-0.00157
	(!A1 * !B2 * C1 * !Y)	0.00228	0.00228	0.00227
	(!A1 * !B2 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A1 * !B2 * !C1 * Y)	0.00258	0.00262	0.00258

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00340	-0.00341	-0.00340
	(A1 * A2 * B2 * C1 * !Y)	0.00318	0.00319	0.00319
	(A1 * A2 * B2 * !C1 * !Y)	-0.00320	-0.00324	-0.00328
	(A1 * A2 * B2 * !C1 * !Y)	0.00245	0.00248	0.00243
	(A1 * A2 * !B2 * C1 * !Y)	-0.00324	-0.00332	-0.00332
	(A1 * A2 * !B2 * C1 * !Y)	0.00291	0.00293	0.00291
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00321	-0.00327	-0.00325
	(A1 * A2 * !B2 * !C1 * !Y)	0.00233	0.00234	0.00235
	(A1 * !A2 * B2 * C1 * !Y)	-0.00325	-0.00326	-0.00324
	(A1 * !A2 * B2 * C1 * !Y)	0.00465	0.00468	0.00467
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00311	-0.00318	-0.00318
	(A1 * !A2 * !B2 * C1 * !Y)	0.00471	0.00471	0.00470
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00097
	(A1 * !A2 * !B2 * !C1 * Y)	0.00540	0.00545	0.00538
	(!A1 * B2 * C1 * !Y)	-0.00325	-0.00326	-0.00324
	(!A1 * B2 * C1 * !Y)	0.00465	0.00468	0.00467
	(!A1 * !B2 * C1 * !Y)	-0.00311	-0.00318	-0.00317
	(!A1 * !B2 * C1 * !Y)	0.00471	0.00471	0.00470
	(!A1 * !B2 * !C1 * Y)	-0.00099	-0.00097	-0.00097
	(!A1 * !B2 * !C1 * Y)	0.00540	0.00537	0.00538

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00669	-0.00672	-0.00668
	(A1 * A2 * B2 * C1 * !Y)	0.00607	0.00611	0.00607
	(A1 * A2 * B2 * !C1 * !Y)	-0.00643	-0.00646	-0.00651
	(A1 * A2 * B2 * !C1 * !Y)	0.00473	0.00474	0.00459
	(A1 * A2 * !B2 * C1 * !Y)	-0.00635	-0.00647	-0.00652
	(A1 * A2 * !B2 * C1 * !Y)	0.00559	0.00559	0.00557
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00630	-0.00643	-0.00641
	(A1 * A2 * !B2 * !C1 * !Y)	0.00441	0.00443	0.00445
	(A1 * !A2 * B2 * C1 * !Y)	-0.00640	-0.00644	-0.00639
	(A1 * !A2 * B2 * C1 * !Y)	0.00904	0.00912	0.00907
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00608	-0.00620	-0.00625
	(A1 * !A2 * !B2 * C1 * !Y)	0.00917	0.00917	0.00915
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00191	-0.00196	-0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	0.01040	0.01057	0.01044
	(!A1 * B2 * C1 * !Y)	-0.00640	-0.00644	-0.00639
	(!A1 * B2 * C1 * !Y)	0.00904	0.00911	0.00907
	(!A1 * !B2 * C1 * !Y)	-0.00606	-0.00622	-0.00625
	(!A1 * !B2 * C1 * !Y)	0.00913	0.00922	0.00915
	(!A1 * !B2 * !C1 * Y)	-0.00192	-0.00197	-0.00193
	(!A1 * !B2 * !C1 * Y)	0.01040	0.01057	0.01044

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)**	0.00210	0.00207	0.00191
	(A1 * A2 * B1 * C1 * !Y)	-0.00150	-0.00153	-0.00161
	(A1 * A2 * B1 * !C1 * !Y)	0.00186	0.00187	0.00181
	(A1 * A2 * B1 * !C1 * !Y)	-0.00106	-0.00107	-0.00109
	(A1 * A2 * !B1 * C1 * !Y)	0.00202	0.00202	0.00183
	(A1 * A2 * !B1 * C1 * !Y)	-0.00138	-0.00139	-0.00150
	(A1 * A2 * !B1 * !C1 * !Y)	0.00186	0.00187	0.00179
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00099	-0.00099	-0.00104
	(A1 * !A2 * B1 * C1 * !Y)	0.00238	0.00189	0.00180
	(A1 * !A2 * B1 * C1 * !Y)	-0.00162	-0.00213	-0.00219
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00172	0.00173	0.00173
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00221	-0.00221	-0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * B1 * C1 * !Y)	0.00238	0.00189	0.00180
	(!A1 * B1 * C1 * !Y)	-0.00162	-0.00213	-0.00219
	(!A1 * !B1 * !C1 * Y)	0.00156	0.00158	0.00157
	(!A1 * !B1 * !C1 * Y)	-0.00238	-0.00239	-0.00238

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00391	0.00397	0.00365
	(A1 * A2 * B1 * C1 * !Y)	-0.00277	-0.00283	-0.00297
	(A1 * A2 * B1 * !C1 * !Y)	0.00350	0.00357	0.00345
	(A1 * A2 * B1 * !C1 * !Y)	-0.00190	-0.00195	-0.00197
	(A1 * A2 * !B1 * C1 * !Y)	0.00387	0.00387	0.00350
	(A1 * A2 * !B1 * C1 * !Y)	-0.00250	-0.00253	-0.00275
	(A1 * A2 * !B1 * !C1 * !Y)	0.00350	0.00352	0.00338
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00182	-0.00183	-0.00190
	(A1 * !A2 * B1 * C1 * !Y)	0.00453	0.00359	0.00343
	(A1 * !A2 * B1 * C1 * !Y)	-0.00301	-0.00403	-0.00414
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00329	0.00331	0.00328
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00417	-0.00420	-0.00418
	(A1 * !A2 * !B1 * !C1 * Y)	0.00309	0.00312	0.00310
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00439	-0.00441	-0.00438
	(!A1 * B1 * C1 * !Y)	0.00452	0.00359	0.00343
	(!A1 * B1 * C1 * !Y)	-0.00302	-0.00403	-0.00414
	(!A1 * !B1 * !C1 * Y)	0.00309	0.00313	0.00310
	(!A1 * !B1 * !C1 * Y)	-0.00439	-0.00441	-0.00438

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00813	0.00806	0.00739
	(A1 * A2 * B1 * C1 * !Y)	-0.00559	-0.00577	-0.00601
	(A1 * A2 * B1 * !C1 * !Y)	0.00720	0.00734	0.00702
	(A1 * A2 * B1 * !C1 * !Y)	-0.00395	-0.00406	-0.00411
	(A1 * A2 * !B1 * C1 * !Y)	0.00792	0.00792	0.00709
	(A1 * A2 * !B1 * C1 * !Y)	-0.00510	-0.00515	-0.00557
	(A1 * A2 * !B1 * !C1 * !Y)	0.00721	0.00728	0.00693
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00371	-0.00378	-0.00392
	(A1 * !A2 * B1 * C1 * !Y)	0.00943	0.00733	0.00698
	(A1 * !A2 * B1 * C1 * !Y)	-0.00613	-0.00827	-0.00853
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00670	0.00674	0.00667
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00863	-0.00869	-0.00865
	(A1 * !A2 * !B1 * !C1 * Y)	0.00647	0.00652	0.00650
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00884	-0.00887	-0.00884
	(!A1 * B1 * C1 * !Y)	0.00941	0.00732	0.00698
	(!A1 * B1 * C1 * !Y)	-0.00616	-0.00827	-0.00853
	(!A1 * !B1 * !C1 * Y)	0.00647	0.00656	0.00650
	(!A1 * !B1 * !C1 * Y)	-0.00884	-0.00889	-0.00884

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)**	-0.00173	-0.00174	-0.00173
	(A1 * A2 * B1 * C1 * !Y)	0.00163	0.00164	0.00164
	(A1 * A2 * B1 * !C1 * !Y)	-0.00162	-0.00163	-0.00167
	(A1 * A2 * B1 * !C1 * !Y)	0.00127	0.00127	0.00123
	(A1 * A2 * !B1 * C1 * !Y)	-0.00166	-0.00168	-0.00169
	(A1 * A2 * !B1 * C1 * !Y)	0.00150	0.00150	0.00150
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00164	-0.00167	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00117	0.00118	0.00118
	(A1 * !A2 * B1 * C1 * !Y)	-0.00166	-0.00167	-0.00165
	(A1 * !A2 * B1 * C1 * !Y)	0.00231	0.00233	0.00232
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00159	-0.00161	-0.00162
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00233	0.00234	0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00139	-0.00153	-0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	0.00255	0.00244	0.00240
	(!A1 * B1 * C1 * !Y)	-0.00166	-0.00167	-0.00165
	(!A1 * B1 * C1 * !Y)	0.00231	0.00233	0.00232
	(!A1 * !B1 * !C1 * Y)	-0.00139	-0.00153	-0.00155
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00244	0.00240

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00331	-0.00332	-0.00331
	(A1 * A2 * B1 * C1 * !Y)	0.00300	0.00302	0.00301
	(A1 * A2 * B1 * !C1 * !Y)	-0.00307	-0.00311	-0.00318
	(A1 * A2 * B1 * !C1 * !Y)	0.00228	0.00231	0.00224
	(A1 * A2 * !B1 * C1 * !Y)	-0.00314	-0.00321	-0.00322
	(A1 * A2 * !B1 * C1 * !Y)	0.00274	0.00276	0.00275
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00311	-0.00318	-0.00315
	(A1 * A2 * !B1 * !C1 * !Y)	0.00214	0.00216	0.00217
	(A1 * !A2 * B1 * C1 * !Y)	-0.00317	-0.00317	-0.00315
	(A1 * !A2 * B1 * C1 * !Y)	0.00440	0.00441	0.00441
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00300	-0.00307	-0.00308
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00441	0.00444	0.00443
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00273	-0.00303	-0.00308
	(A1 * !A2 * !B1 * !C1 * Y)	0.00473	0.00449	0.00443
	(!A1 * B1 * C1 * !Y)	-0.00317	-0.00317	-0.00315
	(!A1 * B1 * C1 * !Y)	0.00440	0.00442	0.00441
	(!A1 * !B1 * !C1 * Y)	-0.00273	-0.00303	-0.00308
	(!A1 * !B1 * !C1 * Y)	0.00473	0.00449	0.00443

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00672	-0.00673	-0.00670
	(A1 * A2 * B1 * C1 * !Y)	0.00609	0.00610	0.00607
	(A1 * A2 * B1 * !C1 * !Y)	-0.00643	-0.00649	-0.00652
	(A1 * A2 * B1 * !C1 * !Y)	0.00475	0.00478	0.00460
	(A1 * A2 * !B1 * C1 * !Y)	-0.00634	-0.00650	-0.00651
	(A1 * A2 * !B1 * C1 * !Y)	0.00555	0.00559	0.00557
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00631	-0.00645	-0.00641
	(A1 * A2 * !B1 * !C1 * !Y)	0.00440	0.00445	0.00446
	(A1 * !A2 * B1 * C1 * !Y)	-0.00643	-0.00646	-0.00640
	(A1 * !A2 * B1 * C1 * !Y)	0.00906	0.00912	0.00907
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00607	-0.00625	-0.00625
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00912	0.00917	0.00915
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00568	-0.00635	-0.00645
	(A1 * !A2 * !B1 * !C1 * Y)	0.00960	0.00907	0.00894
	(!A1 * B1 * C1 * !Y)	-0.00643	-0.00646	-0.00640
	(!A1 * B1 * C1 * !Y)	0.00906	0.00913	0.00907
	(!A1 * !B1 * !C1 * Y)	-0.00568	-0.00635	-0.00645
	(!A1 * !B1 * !C1 * Y)	0.00960	0.00907	0.00894

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)	0.00200	0.00202	0.00200
	(A1 * B1 * B2 * !Y)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * B1 * !B2 * !Y)	0.00200	0.00204	0.00201
	(A1 * A2 * B1 * !B2 * !Y)	-0.00103	-0.00104	-0.00102
	(A1 * A2 * !B1 * !Y)	0.00200	0.00204	0.00201
	(A1 * A2 * !B1 * !Y)	-0.00103	-0.00104	-0.00102
	(!A1 * B1 * B2 * !Y)	0.00201	0.00204	0.00201
	(!A1 * B1 * B2 * !Y)	-0.00104	-0.00106	-0.00104
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00376	0.00379	0.00376
	(A1 * B1 * B2 * !Y)	-0.00191	-0.00192	-0.00190
	(A1 * A2 * B1 * !B2 * !Y)	0.00378	0.00383	0.00377
	(A1 * A2 * B1 * !B2 * !Y)	-0.00188	-0.00190	-0.00186
	(A1 * A2 * !B1 * !Y)	0.00378	0.00383	0.00377
	(A1 * A2 * !B1 * !Y)	-0.00188	-0.00190	-0.00186
	(!A1 * B1 * B2 * !Y)	0.00379	0.00384	0.00378
	(!A1 * B1 * B2 * !Y)	-0.00191	-0.00193	-0.00189
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00739	0.00751	0.00744
	(A1 * B1 * B2 * !Y)	-0.00378	-0.00385	-0.00381
	(A1 * A2 * B1 * !B2 * !Y)	0.00742	0.00758	0.00746
	(A1 * A2 * B1 * !B2 * !Y)	-0.00376	-0.00384	-0.00376
	(A1 * A2 * !B1 * !Y)	0.00743	0.00758	0.00746
	(A1 * A2 * !B1 * !Y)	-0.00377	-0.00384	-0.00376
	(!A1 * B1 * B2 * !Y)	0.00744	0.00745	0.00747
	(!A1 * B1 * B2 * !Y)	-0.00378	-0.00378	-0.00377

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)	-0.00184	-0.00187	-0.00198
	(A1 * B1 * B2 * !Y)	0.00117	0.00118	0.00108
	(A1 * A2 * B1 * !B2 * !Y)	-0.00158	-0.00161	-0.00191
	(A1 * A2 * B1 * !B2 * !Y)	0.00135	0.00136	0.00113
	(A1 * A2 * !B1 * !Y)	-0.00159	-0.00161	-0.00191
	(A1 * A2 * !B1 * !Y)	0.00135	0.00136	0.00113
	(!A1 * B1 * B2 * !Y)	-0.00180	-0.00182	-0.00196
	(!A1 * B1 * B2 * !Y)	0.00122	0.00123	0.00111
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00345	-0.00350	-0.00371
	(A1 * B1 * B2 * !Y)	0.00215	0.00217	0.00197
	(A1 * A2 * B1 * !B2 * !Y)	-0.00301	-0.00307	-0.00360
	(A1 * A2 * B1 * !B2 * !Y)	0.00244	0.00245	0.00205
	(A1 * A2 * !B1 * !Y)	-0.00302	-0.00307	-0.00360
	(A1 * A2 * !B1 * !Y)	0.00244	0.00245	0.00205
	(!A1 * B1 * B2 * !Y)	-0.00337	-0.00342	-0.00368
	(!A1 * B1 * B2 * !Y)	0.00225	0.00227	0.00203
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00689	-0.00697	-0.00735
	(A1 * B1 * B2 * !Y)	0.00420	0.00422	0.00392
	(A1 * A2 * B1 * !B2 * !Y)	-0.00601	-0.00608	-0.00712
	(A1 * A2 * B1 * !B2 * !Y)	0.00491	0.00490	0.00415
	(A1 * A2 * !B1 * !Y)	-0.00602	-0.00608	-0.00712
	(A1 * A2 * !B1 * !Y)	0.00491	0.00490	0.00415
	(!A1 * B1 * B2 * !Y)	-0.00673	-0.00679	-0.00727
	(!A1 * B1 * B2 * !Y)	0.00444	0.00444	0.00406

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00269	0.00279	0.00266	0.00269	0.00264	1.29004
sky130_fd_sc_hs__a221o_2	0.00281	0.00290	0.00288	0.00291	0.00280	2.39322
sky130_fd_sc_hs__a221o_4	0.00498	0.00500	0.00512	0.00525	0.00508	3.69238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	7.67644	11.30070
sky130_fd_sc_hs__a221o_2	0.00000	9.78073	14.78330
sky130_fd_sc_hs__a221o_4	0.00000	19.66850	30.11140

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)	0.08898	0.59694	6.35887
	A2->X (RR)	0.09323	0.58013	6.17880
	B1->X (RR)	0.08457	0.57313	6.10851
	B2->X (RR)	0.08872	0.56074	6.00865
	C1->X (RR)	0.06101	0.51689	5.83873
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.09168	0.52372	6.17724
	A2->X (RR)	0.09611	0.50387	6.00272
	B1->X (RR)	0.08801	0.50353	5.94978
	B2->X (RR)	0.09201	0.48774	5.84822
	C1->X (RR)	0.06256	0.44648	5.68853
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.10981	0.50543	6.14752
	A2->X (RR)	0.11557	0.46726	5.82103
	B1->X (RR)	0.10227	0.47340	5.78329
	B2->X (RR)	0.10304	0.42996	5.60697
	C1->X (RR)	0.05932	0.36923	5.35784

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.21370	0.61687	5.09900
	A2->X (FF)	0.23192	0.64270	5.18235
	B1->X (FF)	0.19579	0.63465	5.38061
	B2->X (FF)	0.21035	0.66282	5.45959
	C1->X (FF)	0.16565	0.65340	5.55530
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.26772	0.65901	5.20089
	A2->X (FF)	0.28716	0.68759	5.30097
	B1->X (FF)	0.25714	0.68869	5.55508
	B2->X (FF)	0.26707	0.71344	5.63285
	C1->X (FF)	0.20926	0.69282	5.72785
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.27564	0.59274	4.46959
	A2->X (FF)	0.30055	0.63180	4.65700
	B1->X (FF)	0.25911	0.62699	4.88111
	B2->X (FF)	0.28006	0.66367	5.00335
	C1->X (FF)	0.22329	0.65180	5.07922

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01686	0.01875	0.07401
	A1	0.00822	0.01012	0.06568
	A2	0.01804	0.01924	0.06408
	A2	0.00824	0.00944	0.05478
	B1	0.01219	0.01455	0.06441
	B1	0.00587	0.00825	0.05860
	B2	0.01327	0.01516	0.06223
	B2	0.00596	0.00787	0.05545
	C1	0.00914	0.01280	0.07695
	C1	0.00390	0.00758	0.07172
sky130_fd_sc_hs__a221o_2	A1	0.02054	0.02218	0.07621
	A1	0.01146	0.01315	0.06814
	A2	0.02184	0.02284	0.06716
	A2	0.01148	0.01251	0.05789
	B1	0.01596	0.01840	0.06798
	B1	0.00907	0.01154	0.06218
	B2	0.01720	0.01918	0.06643
	B2	0.00922	0.01120	0.05858
	C1	0.01260	0.01619	0.07958
	C1	0.00698	0.01066	0.07433

sky130_fd_sc_hs__a221o_4	**A1**	0.04133	0.04471	0.14928
	A1	0.02466	0.02807	0.13431
	A2	0.04346	0.04557	0.13301
	A2	0.02471	0.02688	0.11454
	B1	0.03114	0.03551	0.12630
	B1	0.01905	0.02355	0.11470
	B2	0.03361	0.03703	0.12471
	B2	0.01917	0.02263	0.11113
	C1	0.02306	0.03050	0.14799
	C1	0.01356	0.02104	0.13926

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00506	0.00570	0.05707
	A1	0.01373	0.01434	0.06495
	A2	0.00533	0.00563	0.05479
	A2	0.01512	0.01541	0.06385
	B1	0.00500	0.00652	0.05866
	B1	0.01131	0.01282	0.06414
	B2	0.00543	0.00689	0.05681
	B2	0.01272	0.01416	0.06406
	C1	0.00443	0.00847	0.07523
	C1	0.00967	0.01367	0.08021

sky130_fd_sc_hs__a221o_2	**A1**	0.01059	0.00974	0.05772
	A1	0.01968	0.01882	0.06596
	A2	0.01115	0.00962	0.05729
	A2	0.02149	0.02011	0.06664
	B1	0.01056	0.01036	0.06332
	B1	0.01747	0.01722	0.06741
	B2	0.01112	0.01085	0.06210
	B2	0.01908	0.01879	0.06849
	C1	0.00947	0.01238	0.07944
	C1	0.01510	0.01799	0.08321
sky130_fd_sc_hs__a221o_4	**A1**	0.01971	0.01736	0.11357
	A1	0.03640	0.03404	0.12819
	A2	0.02180	0.01834	0.11411
	A2	0.04050	0.03704	0.13067
	B1	0.01986	0.01888	0.11261
	B1	0.03192	0.03070	0.12291
	B2	0.02123	0.01986	0.11358
	B2	0.03559	0.03420	0.12642
	C1	0.01789	0.02295	0.14311
	C1	0.02740	0.03228	0.15072

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)**	0.00155	0.00150	0.00149
	(A2 * B1 * B2 * C1 * X)	-0.00192	-0.00204	-0.00204
	(A2 * B1 * B2 * !C1 * X)	0.00203	0.00165	0.00160
	(A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00192	-0.00194
	(A2 * B1 * !B2 * C1 * X)	0.00193	0.00165	0.00159
	(A2 * B1 * !B2 * C1 * X)	-0.00155	-0.00189	-0.00194
	(A2 * !B1 * C1 * X)	0.00193	0.00165	0.00159
	(A2 * !B1 * C1 * X)	-0.00155	-0.00189	-0.00194
	(!A2 * B1 * B2 * C1 * X)	0.00143	0.00145	0.00144
	(!A2 * B1 * B2 * C1 * X)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * B2 * !C1 * X)	0.00152	0.00154	0.00153
	(!A2 * B1 * B2 * !C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * B1 * !B2 * C1 * X)	0.00152	0.00154	0.00153
	(!A2 * B1 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * B1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00052
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00230	-0.00231	-0.00233
	(!A2 * !B1 * C1 * X)	0.00152	0.00154	0.00153
	(!A2 * !B1 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * !B1 * !C1 * !X)	0.00054	0.00054	0.00052
	(!A2 * !B1 * !C1 * !X)	-0.00230	-0.00231	-0.00233

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00176	0.00171	0.00170
	(A2 * B1 * B2 * C1 * X)	-0.00190	-0.00202	-0.00202
	(A2 * B1 * B2 * !C1 * X)	0.00223	0.00186	0.00180
	(A2 * B1 * B2 * !C1 * X)	-0.00149	-0.00190	-0.00192
	(A2 * B1 * !B2 * C1 * X)	0.00214	0.00185	0.00179
	(A2 * B1 * !B2 * C1 * X)	-0.00153	-0.00187	-0.00192
	(A2 * !B1 * C1 * X)	0.00214	0.00185	0.00179
	(A2 * !B1 * C1 * X)	-0.00153	-0.00187	-0.00192
	(!A2 * B1 * B2 * C1 * X)	0.00163	0.00165	0.00163
	(!A2 * B1 * B2 * C1 * X)	-0.00204	-0.00205	-0.00204
	(!A2 * B1 * B2 * !C1 * X)	0.00172	0.00174	0.00172
	(!A2 * B1 * B2 * !C1 * X)	-0.00195	-0.00197	-0.00195
	(!A2 * B1 * !B2 * C1 * X)	0.00171	0.00172	0.00172
	(!A2 * B1 * !B2 * C1 * X)	-0.00194	-0.00195	-0.00195
	(!A2 * B1 * !B2 * !C1 * !X)	0.00065	0.00065	0.00063
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00226	-0.00227	-0.00229
	(!A2 * !B1 * C1 * X)	0.00171	0.00172	0.00172
	(!A2 * !B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A2 * !B1 * !C1 * !X)	0.00065	0.00065	0.00063
	(!A2 * !B1 * !C1 * !X)	-0.00226	-0.00227	-0.00229

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00340	0.00336	0.00332
	(A2 * B1 * B2 * C1 * X)	-0.00376	-0.00395	-0.00396
	(A2 * B1 * B2 * !C1 * X)	0.00423	0.00363	0.00353
	(A2 * B1 * B2 * !C1 * X)	-0.00305	-0.00373	-0.00376
	(A2 * B1 * !B2 * C1 * X)	0.00404	0.00362	0.00351
	(A2 * B1 * !B2 * C1 * X)	-0.00313	-0.00370	-0.00376
	(A2 * !B1 * C1 * X)	0.00404	0.00362	0.00351
	(A2 * !B1 * C1 * X)	-0.00313	-0.00370	-0.00376
	(!A2 * B1 * B2 * C1 * X)	0.00318	0.00321	0.00319
	(!A2 * B1 * B2 * C1 * X)	-0.00401	-0.00403	-0.00401
	(!A2 * B1 * B2 * !C1 * X)	0.00336	0.00339	0.00336
	(!A2 * B1 * B2 * !C1 * X)	-0.00383	-0.00386	-0.00383
	(!A2 * B1 * !B2 * C1 * X)	0.00336	0.00337	0.00336
	(!A2 * B1 * !B2 * C1 * X)	-0.00383	-0.00384	-0.00383
	(!A2 * B1 * !B2 * !C1 * !X)	0.00174	0.00173	0.00167
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00417	-0.00419	-0.00427
	(!A2 * !B1 * C1 * X)	0.00336	0.00337	0.00336
	(!A2 * !B1 * C1 * X)	-0.00383	-0.00384	-0.00383
	(!A2 * !B1 * !C1 * !X)	0.00174	0.00173	0.00167
	(!A2 * !B1 * !C1 * !X)	-0.00417	-0.00418	-0.00427

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)**	-0.00147	-0.00147	-0.00147
	(A2 * B1 * B2 * C1 * X)	0.00203	0.00205	0.00204
	(A2 * B1 * B2 * !C1 * X)	-0.00138	-0.00139	-0.00139
	(A2 * B1 * B2 * !C1 * X)	0.00214	0.00216	0.00215
	(A2 * B1 * !B2 * C1 * X)	-0.00138	-0.00138	-0.00137
	(A2 * B1 * !B2 * C1 * X)	0.00211	0.00213	0.00212
	(A2 * !B1 * C1 * X)	-0.00138	-0.00138	-0.00137
	(A2 * !B1 * C1 * X)	0.00211	0.00212	0.00212
	(!A2 * B1 * B2 * C1 * X)	-0.00140	-0.00143	-0.00143
	(!A2 * B1 * B2 * C1 * X)	0.00207	0.00211	0.00208
	(!A2 * B1 * B2 * !C1 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * B1 * B2 * !C1 * X)	0.00218	0.00218	0.00217
	(!A2 * B1 * !B2 * C1 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * B1 * !B2 * C1 * X)	0.00218	0.00218	0.00217
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * !C1 * !X)	0.00247	0.00251	0.00247
	(!A2 * !B1 * C1 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * !B1 * C1 * X)	0.00218	0.00218	0.00217
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00247	0.00251	0.00247

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00167	-0.00168	-0.00167
	(A2 * B1 * B2 * C1 * X)	0.00202	0.00204	0.00203
	(A2 * B1 * B2 * !C1 * X)	-0.00159	-0.00159	-0.00158
	(A2 * B1 * B2 * !C1 * X)	0.00215	0.00215	0.00214
	(A2 * B1 * !B2 * C1 * X)	-0.00158	-0.00158	-0.00157
	(A2 * B1 * !B2 * C1 * X)	0.00209	0.00211	0.00211
	(A2 * !B1 * C1 * X)	-0.00158	-0.00158	-0.00157
	(A2 * !B1 * C1 * X)	0.00209	0.00211	0.00211
	(!A2 * B1 * B2 * C1 * X)	-0.00160	-0.00162	-0.00162
	(!A2 * B1 * B2 * C1 * X)	0.00208	0.00210	0.00207
	(!A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00154	-0.00154
	(!A2 * B1 * B2 * !C1 * X)	0.00217	0.00217	0.00216
	(!A2 * B1 * !B2 * C1 * X)	-0.00151	-0.00152	-0.00154
	(!A2 * B1 * !B2 * C1 * X)	0.00217	0.00215	0.00216
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00038	-0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	0.00255	0.00259	0.00255
	(!A2 * !B1 * C1 * X)	-0.00151	-0.00154	-0.00154
	(!A2 * !B1 * C1 * X)	0.00217	0.00219	0.00216
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00038	-0.00037
	(!A2 * !B1 * !C1 * !X)	0.00255	0.00259	0.00255

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00327	-0.00330	-0.00328
	(A2 * B1 * B2 * C1 * X)	0.00394	0.00399	0.00396
	(A2 * B1 * B2 * !C1 * X)	-0.00311	-0.00312	-0.00311
	(A2 * B1 * B2 * !C1 * X)	0.00415	0.00419	0.00418
	(A2 * B1 * !B2 * C1 * X)	-0.00308	-0.00311	-0.00306
	(A2 * B1 * !B2 * C1 * X)	0.00410	0.00416	0.00414
	(A2 * !B1 * C1 * X)	-0.00308	-0.00311	-0.00306
	(A2 * !B1 * C1 * X)	0.00410	0.00416	0.00414
	(!A2 * B1 * B2 * C1 * X)	-0.00309	-0.00318	-0.00318
	(!A2 * B1 * B2 * C1 * X)	0.00405	0.00408	0.00406
	(!A2 * B1 * B2 * !C1 * X)	-0.00291	-0.00299	-0.00300
	(!A2 * B1 * B2 * !C1 * X)	0.00422	0.00429	0.00424
	(!A2 * B1 * !B2 * C1 * X)	-0.00291	-0.00298	-0.00300
	(!A2 * B1 * !B2 * C1 * X)	0.00422	0.00425	0.00424
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A2 * B1 * !B2 * !C1 * !X)	0.00478	0.00481	0.00480
	(!A2 * !B1 * C1 * X)	-0.00291	-0.00300	-0.00300
	(!A2 * !B1 * C1 * X)	0.00422	0.00427	0.00424
	(!A2 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * !C1 * !X)	0.00478	0.00481	0.00480

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)**	0.00178	0.00173	0.00172
	(A1 * B1 * B2 * C1 * X)	-0.00187	-0.00197	-0.00198
	(A1 * B1 * B2 * !C1 * X)	0.00223	0.00187	0.00183
	(A1 * B1 * B2 * !C1 * X)	-0.00148	-0.00186	-0.00188
	(A1 * B1 * !B2 * C1 * X)	0.00212	0.00187	0.00182
	(A1 * B1 * !B2 * C1 * X)	-0.00150	-0.00184	-0.00188
	(A1 * !B1 * C1 * X)	0.00212	0.00187	0.00182
	(A1 * !B1 * C1 * X)	-0.00150	-0.00184	-0.00188
	(!A1 * B1 * B2 * X)	0.00166	0.00168	0.00167
	(!A1 * B1 * B2 * X)	-0.00199	-0.00201	-0.00200
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00175	0.00177	0.00176
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00190	-0.00192	-0.00191
	(!A1 * B1 * !B2 * !C1 * !X)	0.00149	0.00149	0.00150
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00218	-0.00218	-0.00218
	(!A1 * !B1 * !C1 * !X)	0.00149	0.00150	0.00150
	(!A1 * !B1 * !C1 * !X)	-0.00218	-0.00218	-0.00218

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00194	0.00190	0.00189
	(A1 * B1 * B2 * C1 * X)	-0.00185	-0.00196	-0.00196
	(A1 * B1 * B2 * !C1 * X)	0.00237	0.00204	0.00199
	(A1 * B1 * B2 * !C1 * X)	-0.00145	-0.00185	-0.00186
	(A1 * B1 * !B2 * C1 * X)	0.00229	0.00204	0.00198
	(A1 * B1 * !B2 * C1 * X)	-0.00149	-0.00182	-0.00186
	(A1 * !B1 * C1 * X)	0.00229	0.00204	0.00198
	(A1 * !B1 * C1 * X)	-0.00149	-0.00182	-0.00186
	(!A1 * B1 * B2 * X)	0.00181	0.00183	0.00182
	(!A1 * B1 * B2 * X)	-0.00198	-0.00199	-0.00198
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00191	0.00193	0.00191
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * B1 * !B2 * !C1 * !X)	0.00171	0.00173	0.00171
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00210	-0.00212	-0.00210
	(!A1 * !B1 * !C1 * !X)	0.00171	0.00173	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00210	-0.00212	-0.00210

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00336	0.00332	0.00328
	(A1 * B1 * B2 * C1 * X)	-0.00372	-0.00392	-0.00393
	(A1 * B1 * B2 * !C1 * X)	0.00422	0.00360	0.00349
	(A1 * B1 * B2 * !C1 * X)	-0.00298	-0.00369	-0.00373
	(A1 * B1 * !B2 * C1 * X)	0.00403	0.00359	0.00347
	(A1 * B1 * !B2 * C1 * X)	-0.00307	-0.00367	-0.00374
	(A1 * !B1 * C1 * X)	0.00403	0.00359	0.00347
	(A1 * !B1 * C1 * X)	-0.00307	-0.00367	-0.00374
	(!A1 * B1 * B2 * X)	0.00315	0.00318	0.00315
	(!A1 * B1 * B2 * X)	-0.00398	-0.00400	-0.00398
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00332	0.00336	0.00333
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00380	-0.00383	-0.00380
	(!A1 * B1 * !B2 * !C1 * !X)	0.00333	0.00335	0.00333
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00382	-0.00383	-0.00381
	(!A1 * !B1 * !C1 * !X)	0.00333	0.00335	0.00334
	(!A1 * !B1 * !C1 * !X)	-0.00382	-0.00383	-0.00381

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)**	-0.00170	-0.00170	-0.00170
	(A1 * B1 * B2 * C1 * X)	0.00197	0.00199	0.00198
	(A1 * B1 * B2 * !C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * B1 * B2 * !C1 * X)	0.00209	0.00211	0.00209
	(A1 * B1 * !B2 * C1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00205	0.00206	0.00207
	(A1 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * C1 * X)	0.00205	0.00206	0.00207
	(!A1 * B1 * B2 * X)	-0.00164	-0.00166	-0.00166
	(!A1 * B1 * B2 * X)	0.00203	0.00205	0.00202
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00156	-0.00158	-0.00157
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00212	0.00214	0.00211
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00133	-0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	0.00248	0.00238	0.00233
	(!A1 * !B1 * !C1 * !X)	-0.00121	-0.00133	-0.00135
	(!A1 * !B1 * !C1 * !X)	0.00248	0.00238	0.00234

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00186	-0.00187	-0.00186
	(A1 * B1 * B2 * C1 * X)	0.00196	0.00197	0.00197
	(A1 * B1 * B2 * !C1 * X)	-0.00178	-0.00178	-0.00178
	(A1 * B1 * B2 * !C1 * X)	0.00208	0.00208	0.00208
	(A1 * B1 * !B2 * C1 * X)	-0.00176	-0.00177	-0.00176
	(A1 * B1 * !B2 * C1 * X)	0.00203	0.00205	0.00205
	(A1 * !B1 * C1 * X)	-0.00176	-0.00177	-0.00176
	(A1 * !B1 * C1 * X)	0.00203	0.00205	0.00205
	(!A1 * B1 * B2 * X)	-0.00178	-0.00182	-0.00181
	(!A1 * B1 * B2 * X)	0.00200	0.00204	0.00201
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00169	-0.00173	-0.00173
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00209	0.00212	0.00210
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00129	-0.00142	-0.00145
	(!A1 * B1 * !B2 * !C1 * !X)	0.00251	0.00242	0.00237
	(!A1 * !B1 * !C1 * !X)	-0.00129	-0.00142	-0.00145
	(!A1 * !B1 * !C1 * !X)	0.00251	0.00242	0.00237

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00323	-0.00325	-0.00324
	(A1 * B1 * B2 * C1 * X)	0.00391	0.00396	0.00393
	(A1 * B1 * B2 * !C1 * X)	-0.00306	-0.00308	-0.00307
	(A1 * B1 * B2 * !C1 * X)	0.00413	0.00417	0.00415
	(A1 * B1 * !B2 * C1 * X)	-0.00303	-0.00306	-0.00302
	(A1 * B1 * !B2 * C1 * X)	0.00407	0.00414	0.00411
	(A1 * !B1 * C1 * X)	-0.00303	-0.00306	-0.00302
	(A1 * !B1 * C1 * X)	0.00407	0.00414	0.00411
	(!A1 * B1 * B2 * X)	-0.00305	-0.00315	-0.00314
	(!A1 * B1 * B2 * X)	0.00402	0.00405	0.00403
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00287	-0.00297	-0.00297
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00420	0.00423	0.00421
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00250	-0.00280	-0.00282
	(!A1 * B1 * !B2 * !C1 * !X)	0.00462	0.00441	0.00436
	(!A1 * !B1 * !C1 * !X)	-0.00250	-0.00280	-0.00282
	(!A1 * !B1 * !C1 * !X)	0.00462	0.00441	0.00436

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)**	0.00179	0.00180	0.00167
	(A1 * A2 * B2 * C1 * X)	-0.00133	-0.00134	-0.00141
	(A1 * A2 * B2 * !C1 * X)	0.00162	0.00165	0.00159
	(A1 * A2 * B2 * !C1 * X)	-0.00094	-0.00096	-0.00097
	(A1 * A2 * !B2 * C1 * X)	0.00179	0.00181	0.00161
	(A1 * A2 * !B2 * C1 * X)	-0.00119	-0.00121	-0.00131
	(A1 * A2 * !B2 * !C1 * X)	0.00167	0.00170	0.00159
	(A1 * A2 * !B2 * !C1 * X)	-0.00086	-0.00088	-0.00091
	(A1 * !A2 * B2 * C1 * X)	0.00214	0.00167	0.00160
	(A1 * !A2 * B2 * C1 * X)	-0.00140	-0.00189	-0.00193
	(A1 * !A2 * !B2 * C1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B2 * C1 * X)	-0.00194	-0.00196	-0.00195
	(A1 * !A2 * !B2 * !C1 * !X)	0.00051	0.00052	0.00050
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00230	-0.00232	-0.00234
	(!A1 * B2 * C1 * X)	0.00214	0.00167	0.00160
	(!A1 * B2 * C1 * X)	-0.00139	-0.00189	-0.00193
	(!A1 * !B2 * C1 * X)	0.00153	0.00154	0.00153
	(!A1 * !B2 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * !B2 * !C1 * !X)	0.00051	0.00052	0.00050
	(!A1 * !B2 * !C1 * !X)	-0.00230	-0.00232	-0.00234

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00210	0.00211	0.00198
	(A1 * A2 * B2 * C1 * X)	-0.00134	-0.00135	-0.00142
	(A1 * A2 * B2 * !C1 * X)	0.00193	0.00196	0.00189
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00098	-0.00099
	(A1 * A2 * !B2 * C1 * X)	0.00209	0.00211	0.00191
	(A1 * A2 * !B2 * C1 * X)	-0.00120	-0.00123	-0.00133
	(A1 * A2 * !B2 * !C1 * X)	0.00196	0.00199	0.00189
	(A1 * A2 * !B2 * !C1 * X)	-0.00087	-0.00090	-0.00093
	(A1 * !A2 * B2 * C1 * X)	0.00244	0.00198	0.00190
	(A1 * !A2 * B2 * C1 * X)	-0.00142	-0.00191	-0.00195
	(A1 * !A2 * !B2 * C1 * X)	0.00183	0.00183	0.00183
	(A1 * !A2 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(A1 * !A2 * !B2 * !C1 * !X)	0.00066	0.00066	0.00064
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00237	-0.00237	-0.00240
	(!A1 * B2 * C1 * X)	0.00244	0.00198	0.00190
	(!A1 * B2 * C1 * X)	-0.00142	-0.00191	-0.00195
	(!A1 * !B2 * C1 * X)	0.00183	0.00183	0.00183
	(!A1 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B2 * !C1 * !X)	0.00066	0.00066	0.00064
	(!A1 * !B2 * !C1 * !X)	-0.00237	-0.00237	-0.00240

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00387	0.00387	0.00357
	(A1 * A2 * B2 * C1 * X)	-0.00266	-0.00277	-0.00290
	(A1 * A2 * B2 * !C1 * X)	0.00350	0.00354	0.00340
	(A1 * A2 * B2 * !C1 * X)	-0.00191	-0.00194	-0.00197
	(A1 * A2 * !B2 * C1 * X)	0.00377	0.00377	0.00342
	(A1 * A2 * !B2 * C1 * X)	-0.00247	-0.00251	-0.00272
	(A1 * A2 * !B2 * !C1 * X)	0.00350	0.00351	0.00337
	(A1 * A2 * !B2 * !C1 * X)	-0.00177	-0.00179	-0.00188
	(A1 * !A2 * B2 * C1 * X)	0.00457	0.00355	0.00339
	(A1 * !A2 * B2 * C1 * X)	-0.00274	-0.00376	-0.00388
	(A1 * !A2 * !B2 * C1 * X)	0.00328	0.00329	0.00327
	(A1 * !A2 * !B2 * C1 * X)	-0.00392	-0.00393	-0.00391
	(A1 * !A2 * !B2 * !C1 * !X)	0.00142	0.00143	0.00136
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00448	-0.00451	-0.00460
	(!A1 * B2 * C1 * X)	0.00458	0.00355	0.00339
	(!A1 * B2 * C1 * X)	-0.00274	-0.00376	-0.00388
	(!A1 * !B2 * C1 * X)	0.00328	0.00329	0.00327
	(!A1 * !B2 * C1 * X)	-0.00392	-0.00393	-0.00391
	(!A1 * !B2 * !C1 * !X)	0.00142	0.00143	0.00136
	(!A1 * !B2 * !C1 * !X)	-0.00448	-0.00451	-0.00460

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)**	-0.00150	-0.00151	-0.00149
	(A1 * A2 * B2 * C1 * X)	0.00146	0.00147	0.00145
	(A1 * A2 * B2 * !C1 * X)	-0.00138	-0.00139	-0.00143
	(A1 * A2 * B2 * !C1 * X)	0.00117	0.00117	0.00113
	(A1 * A2 * !B2 * C1 * X)	-0.00144	-0.00146	-0.00145
	(A1 * A2 * !B2 * C1 * X)	0.00134	0.00135	0.00133
	(A1 * A2 * !B2 * !C1 * X)	-0.00141	-0.00143	-0.00140
	(A1 * A2 * !B2 * !C1 * X)	0.00110	0.00110	0.00111
	(A1 * !A2 * B2 * C1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B2 * C1 * X)	0.00214	0.00216	0.00214
	(A1 * !A2 * !B2 * C1 * X)	-0.00133	-0.00134	-0.00135
	(A1 * !A2 * !B2 * C1 * X)	0.00216	0.00215	0.00215
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00035	-0.00037	-0.00035
	(A1 * !A2 * !B2 * !C1 * !X)	0.00247	0.00251	0.00248
	(!A1 * B2 * C1 * X)	-0.00138	-0.00139	-0.00138
	(!A1 * B2 * C1 * X)	0.00214	0.00216	0.00214
	(!A1 * !B2 * C1 * X)	-0.00133	-0.00135	-0.00135
	(!A1 * !B2 * C1 * X)	0.00216	0.00216	0.00215
	(!A1 * !B2 * !C1 * !X)	-0.00035	-0.00037	-0.00035
	(!A1 * !B2 * !C1 * !X)	0.00247	0.00251	0.00248

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00181	-0.00180	-0.00180
	(A1 * A2 * B2 * C1 * X)	0.00149	0.00147	0.00147
	(A1 * A2 * B2 * !C1 * X)	-0.00169	-0.00170	-0.00173
	(A1 * A2 * B2 * !C1 * X)	0.00119	0.00119	0.00115
	(A1 * A2 * !B2 * C1 * X)	-0.00172	-0.00175	-0.00175
	(A1 * A2 * !B2 * C1 * X)	0.00135	0.00137	0.00135
	(A1 * A2 * !B2 * !C1 * X)	-0.00170	-0.00172	-0.00169
	(A1 * A2 * !B2 * !C1 * X)	0.00112	0.00112	0.00113
	(A1 * !A2 * B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(A1 * !A2 * B2 * C1 * X)	0.00216	0.00218	0.00217
	(A1 * !A2 * !B2 * C1 * X)	-0.00161	-0.00163	-0.00164
	(A1 * !A2 * !B2 * C1 * X)	0.00218	0.00218	0.00218
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	0.00266	0.00269	0.00266
	(!A1 * B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A1 * B2 * C1 * X)	0.00216	0.00218	0.00217
	(!A1 * !B2 * C1 * X)	-0.00161	-0.00163	-0.00164
	(!A1 * !B2 * C1 * X)	0.00218	0.00218	0.00218
	(!A1 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * !C1 * !X)	0.00266	0.00269	0.00266

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00320	-0.00321	-0.00320
	(A1 * A2 * B2 * C1 * X)	0.00301	0.00303	0.00302
	(A1 * A2 * B2 * !C1 * X)	-0.00298	-0.00302	-0.00307
	(A1 * A2 * B2 * !C1 * X)	0.00237	0.00239	0.00232
	(A1 * A2 * !B2 * C1 * X)	-0.00303	-0.00313	-0.00313
	(A1 * A2 * !B2 * C1 * X)	0.00276	0.00279	0.00277
	(A1 * A2 * !B2 * !C1 * X)	-0.00298	-0.00304	-0.00301
	(A1 * A2 * !B2 * !C1 * X)	0.00226	0.00226	0.00228
	(A1 * !A2 * B2 * C1 * X)	-0.00296	-0.00297	-0.00296
	(A1 * !A2 * B2 * C1 * X)	0.00432	0.00434	0.00431
	(A1 * !A2 * !B2 * C1 * X)	-0.00279	-0.00290	-0.00290
	(A1 * !A2 * !B2 * C1 * X)	0.00430	0.00434	0.00432
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00083	-0.00084	-0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	0.00514	0.00518	0.00513
	(!A1 * B2 * C1 * X)	-0.00296	-0.00297	-0.00295
	(!A1 * B2 * C1 * X)	0.00432	0.00434	0.00431
	(!A1 * !B2 * C1 * X)	-0.00282	-0.00290	-0.00290
	(!A1 * !B2 * C1 * X)	0.00434	0.00434	0.00432
	(!A1 * !B2 * !C1 * !X)	-0.00082	-0.00084	-0.00082
	(!A1 * !B2 * !C1 * !X)	0.00514	0.00518	0.00513

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)**	0.00187	0.00186	0.00172
	(A1 * A2 * B1 * C1 * X)	-0.00129	-0.00131	-0.00138
	(A1 * A2 * B1 * !C1 * X)	0.00170	0.00171	0.00164
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00092	-0.00094
	(A1 * A2 * !B1 * C1 * X)	0.00184	0.00184	0.00165
	(A1 * A2 * !B1 * C1 * X)	-0.00117	-0.00118	-0.00128
	(A1 * A2 * !B1 * !C1 * X)	0.00171	0.00172	0.00164
	(A1 * A2 * !B1 * !C1 * X)	-0.00083	-0.00084	-0.00089
	(A1 * !A2 * B1 * C1 * X)	0.00222	0.00173	0.00165
	(A1 * !A2 * B1 * C1 * X)	-0.00135	-0.00184	-0.00189
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00208	-0.00209	-0.00208
	(!A1 * B1 * C1 * X)	0.00222	0.00174	0.00165
	(!A1 * B1 * C1 * X)	-0.00135	-0.00184	-0.00189
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !B1 * !C1 * !X)	-0.00208	-0.00209	-0.00208

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00217	0.00216	0.00203
	(A1 * A2 * B1 * C1 * X)	-0.00124	-0.00125	-0.00132
	(A1 * A2 * B1 * !C1 * X)	0.00199	0.00201	0.00194
	(A1 * A2 * B1 * !C1 * X)	-0.00086	-0.00087	-0.00088
	(A1 * A2 * !B1 * C1 * X)	0.00211	0.00213	0.00195
	(A1 * A2 * !B1 * C1 * X)	-0.00111	-0.00114	-0.00123
	(A1 * A2 * !B1 * !C1 * X)	0.00198	0.00199	0.00193
	(A1 * A2 * !B1 * !C1 * X)	-0.00079	-0.00080	-0.00084
	(A1 * !A2 * B1 * C1 * X)	0.00250	0.00203	0.00195
	(A1 * !A2 * B1 * C1 * X)	-0.00131	-0.00178	-0.00183
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00188	0.00187	0.00187
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00184	-0.00184	-0.00185
	(A1 * !A2 * !B1 * !C1 * !X)	0.00168	0.00170	0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00204	-0.00205	-0.00204
	(!A1 * B1 * C1 * X)	0.00250	0.00203	0.00195
	(!A1 * B1 * C1 * X)	-0.00131	-0.00178	-0.00183
	(!A1 * !B1 * !C1 * !X)	0.00168	0.00171	0.00169
	(!A1 * !B1 * !C1 * !X)	-0.00204	-0.00205	-0.00204

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00420	0.00418	0.00391
	(A1 * A2 * B1 * C1 * X)	-0.00257	-0.00264	-0.00279
	(A1 * A2 * B1 * !C1 * X)	0.00381	0.00384	0.00373
	(A1 * A2 * B1 * !C1 * X)	-0.00179	-0.00182	-0.00186
	(A1 * A2 * !B1 * C1 * X)	0.00412	0.00411	0.00376
	(A1 * A2 * !B1 * C1 * X)	-0.00237	-0.00239	-0.00261
	(A1 * A2 * !B1 * !C1 * X)	0.00387	0.00391	0.00373
	(A1 * A2 * !B1 * !C1 * X)	-0.00167	-0.00171	-0.00177
	(A1 * !A2 * B1 * C1 * X)	0.00484	0.00389	0.00373
	(A1 * !A2 * B1 * C1 * X)	-0.00263	-0.00367	-0.00376
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00361	0.00363	0.00360
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00378	-0.00381	-0.00380
	(A1 * !A2 * !B1 * !C1 * !X)	0.00360	0.00363	0.00360
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00382	-0.00384	-0.00382
	(!A1 * B1 * C1 * X)	0.00484	0.00389	0.00373
	(!A1 * B1 * C1 * X)	-0.00263	-0.00367	-0.00376
	(!A1 * !B1 * !C1 * !X)	0.00360	0.00363	0.00360
	(!A1 * !B1 * !C1 * !X)	-0.00381	-0.00384	-0.00382

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)**	-0.00155	-0.00156	-0.00154
	(A1 * A2 * B1 * C1 * X)	0.00143	0.00144	0.00143
	(A1 * A2 * B1 * !C1 * X)	-0.00145	-0.00146	-0.00148
	(A1 * A2 * B1 * !C1 * X)	0.00113	0.00113	0.00110
	(A1 * A2 * !B1 * C1 * X)	-0.00148	-0.00151	-0.00150
	(A1 * A2 * !B1 * C1 * X)	0.00130	0.00132	0.00131
	(A1 * A2 * !B1 * !C1 * X)	-0.00146	-0.00148	-0.00145
	(A1 * A2 * !B1 * !C1 * X)	0.00106	0.00108	0.00108
	(A1 * !A2 * B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * B1 * C1 * X)	0.00210	0.00212	0.00211
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00137	-0.00139	-0.00140
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00210	0.00211	0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00113	-0.00126	-0.00128
	(A1 * !A2 * !B1 * !C1 * !X)	0.00236	0.00227	0.00223
	(!A1 * B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(!A1 * B1 * C1 * X)	0.00210	0.00212	0.00211
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00126	-0.00128
	(!A1 * !B1 * !C1 * !X)	0.00236	0.00227	0.00223

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00185	-0.00186	-0.00184
	(A1 * A2 * B1 * C1 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * B1 * !C1 * X)	-0.00173	-0.00174	-0.00178
	(A1 * A2 * B1 * !C1 * X)	0.00109	0.00109	0.00105
	(A1 * A2 * !B1 * C1 * X)	-0.00177	-0.00179	-0.00180
	(A1 * A2 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * !C1 * X)	-0.00173	-0.00177	-0.00174
	(A1 * A2 * !B1 * !C1 * X)	0.00102	0.00103	0.00104
	(A1 * !A2 * B1 * C1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * !A2 * B1 * C1 * X)	0.00203	0.00206	0.00204
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00165	-0.00168	-0.00168
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00140	-0.00143
	(A1 * !A2 * !B1 * !C1 * !X)	0.00245	0.00235	0.00230
	(!A1 * B1 * C1 * X)	-0.00172	-0.00174	-0.00173
	(!A1 * B1 * C1 * X)	0.00203	0.00206	0.00204
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00140	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00245	0.00235	0.00231

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00353	-0.00356	-0.00353
	(A1 * A2 * B1 * C1 * X)	0.00289	0.00293	0.00291
	(A1 * A2 * B1 * !C1 * X)	-0.00329	-0.00332	-0.00339
	(A1 * A2 * B1 * !C1 * X)	0.00227	0.00229	0.00221
	(A1 * A2 * !B1 * C1 * X)	-0.00337	-0.00345	-0.00346
	(A1 * A2 * !B1 * C1 * X)	0.00265	0.00268	0.00266
	(A1 * A2 * !B1 * !C1 * X)	-0.00330	-0.00337	-0.00334
	(A1 * A2 * !B1 * !C1 * X)	0.00213	0.00214	0.00217
	(A1 * !A2 * B1 * C1 * X)	-0.00328	-0.00330	-0.00329
	(A1 * !A2 * B1 * C1 * X)	0.00417	0.00420	0.00419
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00314	-0.00322	-0.00323
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00419	0.00422	0.00421
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00276	-0.00304	-0.00307
	(A1 * !A2 * !B1 * !C1 * !X)	0.00462	0.00443	0.00436
	(!A1 * B1 * C1 * X)	-0.00328	-0.00330	-0.00329
	(!A1 * B1 * C1 * X)	0.00417	0.00420	0.00419
	(!A1 * !B1 * !C1 * !X)	-0.00276	-0.00304	-0.00307
	(!A1 * !B1 * !C1 * !X)	0.00462	0.00443	0.00436

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)	0.00188	0.00190	0.00187
	(A1 * B1 * B2 * X)	-0.00090	-0.00091	-0.00089
	(A1 * A2 * B1 * !B2 * X)	0.00188	0.00191	0.00188
	(A1 * A2 * B1 * !B2 * X)	-0.00087	-0.00088	-0.00086
	(A1 * A2 * !B1 * X)	0.00186	0.00191	0.00188
	(A1 * A2 * !B1 * X)	-0.00086	-0.00088	-0.00086
	(!A1 * B1 * B2 * X)	0.00187	0.00191	0.00188
	(!A1 * B1 * B2 * X)	-0.00088	-0.00090	-0.00088
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00196	0.00198	0.00197
	(A1 * B1 * B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * B1 * !B2 * X)	0.00197	0.00200	0.00198
	(A1 * A2 * B1 * !B2 * X)	-0.00086	-0.00088	-0.00086
	(A1 * A2 * !B1 * X)	0.00197	0.00200	0.00198
	(A1 * A2 * !B1 * X)	-0.00086	-0.00088	-0.00086
	(!A1 * B1 * B2 * X)	0.00197	0.00201	0.00198
	(!A1 * B1 * B2 * X)	-0.00088	-0.00090	-0.00088
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00332	0.00335	0.00333
	(A1 * B1 * B2 * X)	-0.00190	-0.00191	-0.00189
	(A1 * A2 * B1 * !B2 * X)	0.00334	0.00340	0.00335
	(A1 * A2 * B1 * !B2 * X)	-0.00185	-0.00188	-0.00183
	(A1 * A2 * !B1 * X)	0.00336	0.00340	0.00335
	(A1 * A2 * !B1 * X)	-0.00186	-0.00188	-0.00183
	(!A1 * B1 * B2 * X)	0.00335	0.00339	0.00334
	(!A1 * B1 * B2 * X)	-0.00193	-0.00194	-0.00190

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)	-0.00171	-0.00172	-0.00184
	(A1 * B1 * B2 * X)	0.00102	0.00102	0.00093
	(A1 * A2 * B1 * !B2 * X)	-0.00149	-0.00150	-0.00177
	(A1 * A2 * B1 * !B2 * X)	0.00118	0.00118	0.00099
	(A1 * A2 * !B1 * X)	-0.00149	-0.00150	-0.00177
	(A1 * A2 * !B1 * X)	0.00118	0.00118	0.00099
	(!A1 * B1 * B2 * X)	-0.00164	-0.00165	-0.00180
	(!A1 * B1 * B2 * X)	0.00110	0.00110	0.00098
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00181	-0.00183	-0.00193
	(A1 * B1 * B2 * X)	0.00102	0.00102	0.00093
	(A1 * A2 * B1 * !B2 * X)	-0.00159	-0.00161	-0.00187
	(A1 * A2 * B1 * !B2 * X)	0.00118	0.00118	0.00099
	(A1 * A2 * !B1 * X)	-0.00159	-0.00161	-0.00187
	(A1 * A2 * !B1 * X)	0.00118	0.00118	0.00099
	(!A1 * B1 * B2 * X)	-0.00174	-0.00176	-0.00190
	(!A1 * B1 * B2 * X)	0.00111	0.00111	0.00098
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00300	-0.00303	-0.00326
	(A1 * B1 * B2 * X)	0.00219	0.00219	0.00198
	(A1 * A2 * B1 * !B2 * X)	-0.00253	-0.00256	-0.00312
	(A1 * A2 * B1 * !B2 * X)	0.00254	0.00254	0.00209
	(A1 * A2 * !B1 * X)	-0.00251	-0.00256	-0.00312
	(A1 * A2 * !B1 * X)	0.00251	0.00254	0.00209
	(!A1 * B1 * B2 * X)	-0.00285	-0.00288	-0.00318
	(!A1 * B1 * B2 * X)	0.00238	0.00238	0.00210

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00272	0.00258	0.00266	0.00269	0.00269	0.00278	0.35122
sky130_fd_sc_hs__a222oi_2	0.00546	0.00488	0.00540	0.00500	0.00492	0.00555	0.61527

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	6.55313	22.01980
sky130_fd_sc_hs__a222oi_2	0.00000	13.09850	44.02260

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)	0.21356	1.02745	8.68714
	A2->Y (FR)	0.23320	1.05254	8.74278
	B1->Y (FR)	0.18766	1.03455	9.30121
	B2->Y (FR)	0.21063	1.06625	9.40260
	C1->Y (FR)	0.14050	1.02362	9.66270
	C2->Y (FR)	0.16153	1.04578	9.69404
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.20802	0.86872	8.38666
	A2->Y (FR)	0.23619	0.90849	8.56719
	B1->Y (FR)	0.17903	0.86886	8.92739
	B2->Y (FR)	0.21342	0.93794	9.38397
	C1->Y (FR)	0.12925	0.88485	9.64710
	C2->Y (FR)	0.15823	0.91280	9.67289

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.05641	0.42245	3.63984
	A2->Y (RF)	0.06009	0.38325	3.20423
	B1->Y (RF)	0.04836	0.39668	3.56456
	B2->Y (RF)	0.05258	0.35898	3.12815
	C1->Y (RF)	0.03297	0.37086	3.52427
	C2->Y (RF)	0.03688	0.33527	3.09230
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.05376	0.36529	3.48304
	A2->Y (RF)	0.05783	0.33344	3.08952
	B1->Y (RF)	0.04675	0.34125	3.44460
	B2->Y (RF)	0.05167	0.31264	3.05912
	C1->Y (RF)	0.02743	0.29511	3.23247
	C2->Y (RF)	0.03248	0.26869	2.84473

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00104	0.00105	0.02221
	A1	0.01087	0.01089	0.03214
	A2	0.00136	0.00147	0.02328
	A2	0.01221	0.01233	0.03413
	B1	0.00107	0.00150	0.02302
	B1	0.00844	0.00889	0.03039
	B2	0.00143	0.00189	0.02346
	B2	0.00991	0.01037	0.03204
	C1	0.00092	0.00267	0.03098
	C1	0.00620	0.00792	0.03634
	C2	0.00135	0.00306	0.03218
	C2	0.00767	0.00938	0.03861
sky130_fd_sc_hs__a222oi_2	A1	0.00091	0.00111	0.04414
	A1	0.02055	0.02077	0.06390
	A2	0.00208	0.00235	0.04605
	A2	0.02322	0.02352	0.06751
	B1	0.00096	0.00206	0.04482
	B1	0.01587	0.01701	0.05980
	B2	0.00198	0.00302	0.04450
	B2	0.01852	0.01946	0.06123
	C1	0.00077	0.00450	0.05944
	C1	0.01080	0.01454	0.06942
	C2	0.00174	0.00550	0.06167
	C2	0.01433	0.01812	0.07422

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01637	0.01707	0.03728
	A1	0.00658	0.00722	0.02738
	A2	0.01735	0.01780	0.03706
	A2	0.00654	0.00699	0.02618
	B1	0.01102	0.01193	0.03180
	B1	0.00365	0.00449	0.02436
	B2	0.01215	0.01278	0.03151
	B2	0.00366	0.00430	0.02301
	C1	0.00633	0.00743	0.02646
	C1	0.00109	0.00217	0.02112
	C2	0.00738	0.00825	0.02659
	C2	0.00105	0.00189	0.02022
sky130_fd_sc_hs__a222oi_2	A1	0.03083	0.03235	0.07349
	A1	0.01129	0.01274	0.05400
	A2	0.03239	0.03349	0.07244
	A2	0.01130	0.01236	0.05122
	B1	0.02096	0.02297	0.06305
	B1	0.00609	0.00805	0.04793
	B2	0.02299	0.02439	0.06076
	B2	0.00642	0.00778	0.04405
	C1	0.01122	0.01380	0.05189
	C1	0.00122	0.00379	0.04189
	C2	0.01373	0.01569	0.05287
	C2	0.00109	0.00306	0.04022

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)**	0.00152	0.00149	0.00148
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00191	-0.00203	-0.00202
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00200	0.00163	0.00158
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00151	-0.00191	-0.00193
	(A2 * B1 * B2 * !C1 * !Y)	0.00200	0.00163	0.00158
	(A2 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00191	-0.00193
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00208	0.00174	0.00167
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00141	-0.00180	-0.00184
	(A2 * !B1 * C1 * C2 * !Y)	0.00209	0.00174	0.00167
	(A2 * !B1 * C1 * C2 * !Y)	-0.00140	-0.00180	-0.00184
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00141	0.00142	0.00142
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00151	0.00151	0.00151
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00196	-0.00197	-0.00197
	(!A2 * B1 * B2 * !C1 * !Y)	0.00151	0.00152	0.00151
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00196	-0.00197	-0.00197
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00160	0.00162	0.00161
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00188	-0.00187
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00051	0.00050	0.00049
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00231	-0.00231	-0.00235
	(!A2 * B1 * !B2 * !C1 * Y)	0.00051	0.00050	0.00049
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00231	-0.00231	-0.00234
	(!A2 * !B1 * C1 * C2 * !Y)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * C1 * !C2 * Y)	0.00051	0.00050	0.00049
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00231	-0.00231	-0.00234
	(!A2 * !B1 * !C1 * Y)	0.00051	0.00050	0.00049
	(!A2 * !B1 * !C1 * Y)	-0.00231	-0.00231	-0.00234

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00316	0.00308	0.00305
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00383	-0.00411	-0.00411
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00415	0.00338	0.00327
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00298	-0.00386	-0.00392
	(A2 * B1 * B2 * !C1 * !Y)	0.00415	0.00338	0.00327
	(A2 * B1 * B2 * !C1 * !Y)	-0.00298	-0.00386	-0.00391
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00430	0.00359	0.00344
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00281	-0.00366	-0.00373
	(A2 * !B1 * C1 * C2 * !Y)	0.00433	0.00359	0.00344
	(A2 * !B1 * C1 * C2 * !Y)	-0.00278	-0.00366	-0.00373
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00293	0.00295	0.00294
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00416	-0.00418	-0.00416
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00310	0.00312	0.00311
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00397	-0.00400	-0.00399
	(!A2 * B1 * B2 * !C1 * !Y)	0.00311	0.00312	0.00311
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00399	-0.00400	-0.00399
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00330	0.00331	0.00330
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00380	-0.00380	-0.00379
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00100	0.00100	0.00096
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00481	-0.00484	-0.00491
	(!A2 * B1 * !B2 * !C1 * Y)	0.00100	0.00100	0.00096
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00481	-0.00484	-0.00491
	(!A2 * !B1 * C1 * C2 * !Y)	0.00330	0.00332	0.00331
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00380	-0.00381	-0.00379
	(!A2 * !B1 * C1 * !C2 * Y)	0.00101	0.00100	0.00096
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00483	-0.00484	-0.00491
	(!A2 * !B1 * !C1 * Y)	0.00101	0.00100	0.00096
	(!A2 * !B1 * !C1 * Y)	-0.00483	-0.00484	-0.00491

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)	-0.00146	-0.00147	-0.00146
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00203	0.00203	0.00202
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00139	-0.00139	-0.00138
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00213	0.00214	0.00213
	(A2 * B1 * B2 * !C1 * !Y)	-0.00139	-0.00139	-0.00138
	(A2 * B1 * B2 * !C1 * !Y)	0.00213	0.00214	0.00213
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00126
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00222	0.00224	0.00222
	(A2 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00126
	(A2 * !B1 * C1 * C2 * !Y)	0.00222	0.00224	0.00222
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00140	-0.00142	-0.00142
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00208	0.00210	0.00207
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00131	-0.00133	-0.00133
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00216	0.00217	0.00216
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00131	-0.00133	-0.00133
	(!A2 * B1 * B2 * !C1 * !Y)	0.00216	0.00217	0.00216
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00225	0.00227	0.00226
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00236	0.00240	0.00236
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * B1 * !B2 * !C1 * Y)	0.00236	0.00240	0.00236
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00121	-0.00124	-0.00124
	(!A2 * !B1 * C1 * C2 * !Y)	0.00225	0.00226	0.00226
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * C1 * !C2 * Y)	0.00236	0.00240	0.00236
	(!A2 * !B1 * !C1 * Y)	-0.00046	-0.00047	-0.00047
	(!A2 * !B1 * !C1 * Y)	0.00236	0.00240	0.00236

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00303	-0.00303	-0.00302
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00412	0.00413	0.00411
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00286	-0.00287	-0.00285
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00434	0.00437	0.00433
	(A2 * B1 * B2 * !C1 * !Y)	-0.00285	-0.00287	-0.00285
	(A2 * B1 * B2 * !C1 * !Y)	0.00433	0.00437	0.00433
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00264	-0.00265	-0.00263
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00448	0.00451	0.00450
	(A2 * !B1 * C1 * C2 * !Y)	-0.00264	-0.00265	-0.00263
	(A2 * !B1 * C1 * C2 * !Y)	0.00447	0.00451	0.00450
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00287	-0.00294	-0.00294
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00417	0.00422	0.00420
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00271	-0.00277	-0.00277
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00439	0.00440	0.00438
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00271	-0.00277	-0.00277
	(!A2 * B1 * B2 * !C1 * !Y)	0.00439	0.00440	0.00438
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00252	-0.00258	-0.00258
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00458	0.00460	0.00457
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00092	-0.00093	-0.00091
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00494	0.00502	0.00495
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00091	-0.00093	-0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	0.00494	0.00502	0.00495
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00251	-0.00257	-0.00258
	(!A2 * !B1 * C1 * C2 * !Y)	0.00456	0.00459	0.00457
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00091	-0.00093	-0.00091
	(!A2 * !B1 * C1 * !C2 * Y)	0.00494	0.00502	0.00495
	(!A2 * !B1 * !C1 * Y)	-0.00091	-0.00093	-0.00091
	(!A2 * !B1 * !C1 * Y)	0.00495	0.00502	0.00495

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)	0.00157	0.00154	0.00153
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00190	-0.00202	-0.00202
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00202	0.00168	0.00164
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00151	-0.00191	-0.00193
	(A1 * B1 * B2 * !C1 * !Y)	0.00203	0.00168	0.00164
	(A1 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00191	-0.00193
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00211	0.00179	0.00172
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00141	-0.00180	-0.00184
	(A1 * !B1 * C1 * C2 * !Y)	0.00212	0.00179	0.00172
	(A1 * !B1 * C1 * C2 * !Y)	-0.00141	-0.00180	-0.00184
	(!A1 * B1 * B2 * !Y)	0.00147	0.00149	0.00148
	(!A1 * B1 * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00166	0.00168	0.00166
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00186	-0.00188	-0.00186
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00204	-0.00205	-0.00204
	(!A1 * B1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00204	-0.00205	-0.00204
	(!A1 * !B1 * C1 * !C2 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00204	-0.00205	-0.00204
	(!A1 * !B1 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !C1 * Y)	-0.00204	-0.00205	-0.00204

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00295	0.00290	0.00288
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00361	-0.00384	-0.00384
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00381	0.00316	0.00308
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00287	-0.00362	-0.00365
	(A1 * B1 * B2 * !C1 * !Y)	0.00381	0.00316	0.00308
	(A1 * B1 * B2 * !C1 * !Y)	-0.00287	-0.00362	-0.00365
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00396	0.00337	0.00326
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00271	-0.00344	-0.00347
	(A1 * !B1 * C1 * C2 * !Y)	0.00398	0.00337	0.00326
	(A1 * !B1 * C1 * C2 * !Y)	-0.00269	-0.00343	-0.00347
	(!A1 * B1 * B2 * !Y)	0.00276	0.00280	0.00276
	(!A1 * B1 * B2 * !Y)	-0.00388	-0.00390	-0.00388
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00313	0.00315	0.00313
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00351	-0.00352	-0.00351
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00270	0.00272	0.00270
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00397	-0.00398	-0.00396
	(!A1 * B1 * !B2 * !C1 * Y)	0.00270	0.00272	0.00271
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00396	-0.00398	-0.00395
	(!A1 * !B1 * C1 * !C2 * Y)	0.00270	0.00272	0.00271
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00396	-0.00398	-0.00395
	(!A1 * !B1 * !C1 * Y)	0.00270	0.00272	0.00271
	(!A1 * !B1 * !C1 * Y)	-0.00396	-0.00398	-0.00395

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)**	-0.00151	-0.00152	-0.00152
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00201	0.00203	0.00202
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00212	0.00214	0.00213
	(A1 * B1 * B2 * !C1 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * B2 * !C1 * !Y)	0.00212	0.00214	0.00213
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00133	-0.00133	-0.00132
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00221	0.00224	0.00222
	(A1 * !B1 * C1 * C2 * !Y)	-0.00133	-0.00134	-0.00132
	(A1 * !B1 * C1 * C2 * !Y)	0.00221	0.00224	0.00222
	(!A1 * B1 * B2 * !Y)	-0.00146	-0.00147	-0.00147
	(!A1 * B1 * B2 * !Y)	0.00207	0.00208	0.00207
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00129	-0.00129
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00226	0.00228	0.00225
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00133	-0.00145	-0.00147
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00222	0.00211	0.00207
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00133	-0.00145	-0.00147
	(!A1 * B1 * !B2 * !C1 * Y)	0.00222	0.00211	0.00207
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00133	-0.00145	-0.00147
	(!A1 * !B1 * C1 * !C2 * Y)	0.00222	0.00211	0.00207
	(!A1 * !B1 * !C1 * Y)	-0.00133	-0.00145	-0.00147
	(!A1 * !B1 * !C1 * Y)	0.00222	0.00212	0.00207

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00285	-0.00285	-0.00284
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00384	0.00385	0.00384
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00270	-0.00271	-0.00270
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00404	0.00407	0.00404
	(A1 * B1 * B2 * !C1 * !Y)	-0.00270	-0.00271	-0.00270
	(A1 * B1 * B2 * !C1 * !Y)	0.00403	0.00407	0.00404
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00247	-0.00247	-0.00246
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00423	0.00424	0.00423
	(A1 * !B1 * C1 * C2 * !Y)	-0.00246	-0.00247	-0.00246
	(A1 * !B1 * C1 * C2 * !Y)	0.00421	0.00423	0.00423
	(!A1 * B1 * B2 * !Y)	-0.00270	-0.00276	-0.00276
	(!A1 * B1 * B2 * !Y)	0.00390	0.00395	0.00392
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00233	-0.00239	-0.00240
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00427	0.00432	0.00429
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00235	-0.00260	-0.00267
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00430	0.00410	0.00401
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00235	-0.00260	-0.00267
	(!A1 * B1 * !B2 * !C1 * Y)	0.00430	0.00410	0.00401
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00235	-0.00260	-0.00267
	(!A1 * !B1 * C1 * !C2 * Y)	0.00430	0.00410	0.00401
	(!A1 * !B1 * !C1 * Y)	-0.00235	-0.00260	-0.00267
	(!A1 * !B1 * !C1 * Y)	0.00430	0.00410	0.00402

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)**	0.00179	0.00179	0.00167
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00130	-0.00133	-0.00139
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00159	0.00160	0.00156
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00093	-0.00095	-0.00096
	(A1 * A2 * B2 * !C1 * !Y)	0.00159	0.00160	0.00156
	(A1 * A2 * B2 * !C1 * !Y)	-0.00093	-0.00095	-0.00096
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00175	0.00177	0.00157
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00119	-0.00122	-0.00132
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00161	0.00161	0.00155
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00086	-0.00087	-0.00091
	(A1 * A2 * !B2 * !C1 * !Y)	0.00161	0.00164	0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00086	-0.00088	-0.00091
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00221	0.00172	0.00166
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00127	-0.00180	-0.00181
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00160	0.00160	0.00160
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00182	-0.00184	-0.00183
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00047	0.00047	0.00045
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00229	-0.00231	-0.00233
	(A1 * !A2 * !B2 * !C1 * Y)	0.00047	0.00047	0.00046
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00229	-0.00231	-0.00233
	(!A1 * B2 * C1 * C2 * !Y)	0.00220	0.00171	0.00166
	(!A1 * B2 * C1 * C2 * !Y)	-0.00128	-0.00181	-0.00181
	(!A1 * !B2 * C1 * C2 * !Y)	0.00160	0.00161	0.00160
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00182	-0.00184	-0.00183
	(!A1 * !B2 * C1 * !C2 * Y)	0.00047	0.00047	0.00046
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00229	-0.00231	-0.00233
	(!A1 * !B2 * !C1 * Y)	0.00047	0.00047	0.00046
	(!A1 * !B2 * !C1 * Y)	-0.00229	-0.00231	-0.00233

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00367	0.00373	0.00346
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00270	-0.00270	-0.00281
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00330	0.00334	0.00322
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00195	-0.00198	-0.00200
	(A1 * A2 * B2 * !C1 * !Y)	0.00330	0.00334	0.00322
	(A1 * A2 * B2 * !C1 * !Y)	-0.00196	-0.00198	-0.00200
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00369	0.00368	0.00329
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00239	-0.00241	-0.00265
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00339	0.00340	0.00323
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00176	-0.00178	-0.00188
	(A1 * A2 * !B2 * !C1 * !Y)	0.00338	0.00343	0.00323
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00175	-0.00180	-0.00188
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00459	0.00357	0.00343
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00264	-0.00370	-0.00374
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00330	0.00329	0.00330
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00374	-0.00377	-0.00377
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00097	0.00097	0.00093
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00484	-0.00486	-0.00492
	(A1 * !A2 * !B2 * !C1 * Y)	0.00097	0.00097	0.00093
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00484	-0.00486	-0.00491
	(!A1 * B2 * C1 * C2 * !Y)	0.00457	0.00356	0.00343
	(!A1 * B2 * C1 * C2 * !Y)	-0.00267	-0.00371	-0.00374
	(!A1 * !B2 * C1 * C2 * !Y)	0.00331	0.00332	0.00330
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00377	-0.00380	-0.00377
	(!A1 * !B2 * C1 * !C2 * Y)	0.00098	0.00097	0.00093
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00485	-0.00486	-0.00491
	(!A1 * !B2 * !C1 * Y)	0.00098	0.00097	0.00093
	(!A1 * !B2 * !C1 * Y)	-0.00485	-0.00486	-0.00491

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)	-0.00148	-0.00149	-0.00147
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00147	0.00148	0.00147
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00131	-0.00132	-0.00140
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00120	0.00120	0.00112
	(A1 * A2 * B2 * !C1 * !Y)	-0.00131	-0.00132	-0.00140
	(A1 * A2 * B2 * !C1 * !Y)	0.00120	0.00120	0.00112
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00142	-0.00144	-0.00144
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00135	0.00135	0.00135
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00138	-0.00140	-0.00137
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00108	0.00109	0.00110
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00137	-0.00140	-0.00137
	(A1 * A2 * !B2 * !C1 * !Y)	0.00108	0.00109	0.00110
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00126	-0.00127	-0.00128
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00221	0.00222	0.00220
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00120	-0.00123	-0.00123
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00221	0.00222	0.00221
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00234	0.00238	0.00235
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * !C1 * Y)	0.00234	0.00238	0.00235
	(!A1 * B2 * C1 * C2 * !Y)	-0.00126	-0.00127	-0.00128
	(!A1 * B2 * C1 * C2 * !Y)	0.00222	0.00223	0.00220
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00120	-0.00123	-0.00123
	(!A1 * !B2 * C1 * C2 * !Y)	0.00221	0.00222	0.00221
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * C1 * !C2 * Y)	0.00234	0.00238	0.00235
	(!A1 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * !C1 * Y)	0.00234	0.00238	0.00235

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00305	-0.00306	-0.00305
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00294	0.00295	0.00296
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00277	-0.00278	-0.00291
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00240	0.00239	0.00232
	(A1 * A2 * B2 * !C1 * !Y)	-0.00277	-0.00281	-0.00291
	(A1 * A2 * B2 * !C1 * !Y)	0.00240	0.00242	0.00232
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00291	-0.00298	-0.00298
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00270	0.00273	0.00272
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00287	-0.00292	-0.00287
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00225	0.00225	0.00227
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00286	-0.00292	-0.00287
	(A1 * A2 * !B2 * !C1 * !Y)	0.00223	0.00225	0.00227
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00263	-0.00266	-0.00267
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00453	0.00458	0.00451
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00251	-0.00255	-0.00257
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00456	0.00456	0.00455
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00088	-0.00090	-0.00088
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00495	0.00501	0.00495
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00088	-0.00090	-0.00088
	(A1 * !A2 * !B2 * !C1 * Y)	0.00495	0.00501	0.00495
	(!A1 * B2 * C1 * C2 * !Y)	-0.00263	-0.00265	-0.00267
	(!A1 * B2 * C1 * C2 * !Y)	0.00454	0.00457	0.00451
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00250	-0.00255	-0.00257
	(!A1 * !B2 * C1 * C2 * !Y)	0.00454	0.00457	0.00455
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00088	-0.00090	-0.00088
	(!A1 * !B2 * C1 * !C2 * Y)	0.00495	0.00501	0.00495
	(!A1 * !B2 * !C1 * Y)	-0.00088	-0.00090	-0.00088
	(!A1 * !B2 * !C1 * Y)	0.00495	0.00502	0.00495

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)	0.00194	0.00192	0.00180
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00131	-0.00133	-0.00139
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00172	0.00175	0.00169
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00094	-0.00095	-0.00096
	(A1 * A2 * B1 * !C1 * !Y)	0.00172	0.00174	0.00169
	(A1 * A2 * B1 * !C1 * !Y)	-0.00094	-0.00095	-0.00096
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00189	0.00189	0.00171
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00119	-0.00121	-0.00132
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00175	0.00178	0.00168
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00086	-0.00088	-0.00091
	(A1 * A2 * !B1 * !C1 * !Y)	0.00175	0.00178	0.00168
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00086	-0.00088	-0.00091
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00237	0.00185	0.00179
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00128	-0.00180	-0.00182
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00173	0.00173	0.00173
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00183	-0.00184	-0.00183
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00138	0.00140	0.00138
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * !B1 * !C1 * Y)	0.00138	0.00140	0.00138
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00218	-0.00220	-0.00219
	(!A1 * B1 * C1 * C2 * !Y)	0.00237	0.00185	0.00179
	(!A1 * B1 * C1 * C2 * !Y)	-0.00128	-0.00180	-0.00182
	(!A1 * !B1 * C1 * !C2 * Y)	0.00138	0.00140	0.00138
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00219	-0.00220	-0.00219
	(!A1 * !B1 * !C1 * Y)	0.00138	0.00140	0.00138
	(!A1 * !B1 * !C1 * Y)	-0.00218	-0.00220	-0.00219

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00361	0.00364	0.00337
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00243	-0.00250	-0.00261
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00323	0.00327	0.00315
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00175	-0.00177	-0.00178
	(A1 * A2 * B1 * !C1 * !Y)	0.00320	0.00327	0.00315
	(A1 * A2 * B1 * !C1 * !Y)	-0.00172	-0.00177	-0.00178
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00354	0.00355	0.00319
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00222	-0.00226	-0.00247
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00324	0.00328	0.00313
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00162	-0.00165	-0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	0.00324	0.00328	0.00313
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00162	-0.00165	-0.00170
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00456	0.00346	0.00336
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00229	-0.00343	-0.00347
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00322	0.00323	0.00322
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00348	-0.00351	-0.00351
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00274	0.00279	0.00276
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00398	-0.00402	-0.00399
	(A1 * !A2 * !B1 * !C1 * Y)	0.00274	0.00279	0.00276
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00398	-0.00402	-0.00399
	(!A1 * B1 * C1 * C2 * !Y)	0.00455	0.00346	0.00336
	(!A1 * B1 * C1 * C2 * !Y)	-0.00231	-0.00343	-0.00347
	(!A1 * !B1 * C1 * !C2 * Y)	0.00274	0.00279	0.00276
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00398	-0.00402	-0.00399
	(!A1 * !B1 * !C1 * Y)	0.00274	0.00279	0.00276
	(!A1 * !B1 * !C1 * Y)	-0.00398	-0.00402	-0.00399

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)	-0.00161	-0.00162	-0.00160
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00148	0.00149	0.00147
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00144	-0.00145	-0.00153
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00119	0.00120	0.00113
	(A1 * A2 * B1 * !C1 * !Y)	-0.00144	-0.00145	-0.00153
	(A1 * A2 * B1 * !C1 * !Y)	0.00119	0.00120	0.00113
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00155	-0.00156	-0.00157
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00136	0.00136	0.00135
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00151	-0.00153	-0.00150
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00109	0.00109	0.00110
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00151	-0.00153	-0.00150
	(A1 * A2 * !B1 * !C1 * !Y)	0.00109	0.00109	0.00110
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00139	-0.00140	-0.00141
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00222	0.00223	0.00220
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00134	-0.00136	-0.00135
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00223	0.00224	0.00222
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00123	-0.00134	-0.00136
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00236	0.00225	0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00123	-0.00134	-0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	0.00236	0.00225	0.00222
	(!A1 * B1 * C1 * C2 * !Y)	-0.00139	-0.00140	-0.00141
	(!A1 * B1 * C1 * C2 * !Y)	0.00222	0.00223	0.00220
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00123	-0.00134	-0.00136
	(!A1 * !B1 * C1 * !C2 * Y)	0.00236	0.00225	0.00222
	(!A1 * !B1 * !C1 * Y)	-0.00123	-0.00134	-0.00136
	(!A1 * !B1 * !C1 * Y)	0.00236	0.00225	0.00222

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00298	-0.00298	-0.00297
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00275	0.00275	0.00276
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00269	-0.00272	-0.00283
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00220	0.00222	0.00211
	(A1 * A2 * B1 * !C1 * !Y)	-0.00269	-0.00272	-0.00283
	(A1 * A2 * B1 * !C1 * !Y)	0.00220	0.00222	0.00211
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00284	-0.00290	-0.00290
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00252	0.00255	0.00253
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00277	-0.00282	-0.00278
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00203	0.00205	0.00207
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00277	-0.00282	-0.00278
	(A1 * A2 * !B1 * !C1 * !Y)	0.00203	0.00205	0.00207
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00255	-0.00258	-0.00260
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00427	0.00430	0.00424
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00243	-0.00246	-0.00249
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00427	0.00426	0.00428
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00240	-0.00267	-0.00272
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00434	0.00413	0.00405
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00240	-0.00266	-0.00272
	(A1 * !A2 * !B1 * !C1 * Y)	0.00434	0.00414	0.00405
	(!A1 * B1 * C1 * C2 * !Y)	-0.00255	-0.00258	-0.00260
	(!A1 * B1 * C1 * C2 * !Y)	0.00427	0.00430	0.00424
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00240	-0.00266	-0.00272
	(!A1 * !B1 * C1 * !C2 * Y)	0.00434	0.00412	0.00405
	(!A1 * !B1 * !C1 * Y)	-0.00240	-0.00266	-0.00272
	(!A1 * !B1 * !C1 * Y)	0.00434	0.00412	0.00405

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)	0.00175	0.00177	0.00175
	(A1 * B1 * B2 * C2 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * B1 * B2 * !C2 * !Y)	0.00172	0.00172	0.00171
	(A1 * B1 * B2 * !C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00176	0.00179	0.00176
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00180	0.00181	0.00179
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !B1 * C2 * !Y)	0.00176	0.00179	0.00176
	(A1 * A2 * !B1 * C2 * !Y)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * !B1 * !C2 * !Y)	0.00181	0.00182	0.00179
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00053	0.00053	0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00235	-0.00236	-0.00239
	(A1 * !A2 * !B1 * !C2 * Y)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00235	-0.00236	-0.00239
	(!A1 * B1 * B2 * C2 * !Y)	0.00176	0.00179	0.00177
	(!A1 * B1 * B2 * C2 * !Y)	-0.00090	-0.00091	-0.00089
	(!A1 * B1 * B2 * !C2 * !Y)	0.00183	0.00184	0.00181
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00079	-0.00079	-0.00081
	(!A1 * B1 * !B2 * !C2 * Y)	0.00053	0.00053	0.00051
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00235	-0.00236	-0.00239
	(!A1 * !B1 * !C2 * Y)	0.00053	0.00053	0.00051
	(!A1 * !B1 * !C2 * Y)	-0.00235	-0.00236	-0.00238

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00311	0.00313	0.00310
	(A1 * B1 * B2 * C2 * !Y)	-0.00179	-0.00178	-0.00177
	(A1 * B1 * B2 * !C2 * !Y)	0.00302	0.00307	0.00301
	(A1 * B1 * B2 * !C2 * !Y)	-0.00173	-0.00176	-0.00175
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00312	0.00316	0.00312
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00174	-0.00175	-0.00171
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00322	0.00324	0.00318
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00152	-0.00154	-0.00157
	(A1 * A2 * !B1 * C2 * !Y)	0.00312	0.00316	0.00312
	(A1 * A2 * !B1 * C2 * !Y)	-0.00174	-0.00175	-0.00171
	(A1 * A2 * !B1 * !C2 * !Y)	0.00322	0.00326	0.00318
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00152	-0.00155	-0.00157
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00094	0.00094	0.00090
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00440	-0.00442	-0.00447
	(A1 * !A2 * !B1 * !C2 * Y)	0.00095	0.00094	0.00090
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00440	-0.00442	-0.00447
	(!A1 * B1 * B2 * C2 * !Y)	0.00313	0.00317	0.00313
	(!A1 * B1 * B2 * C2 * !Y)	-0.00177	-0.00178	-0.00174
	(!A1 * B1 * B2 * !C2 * !Y)	0.00328	0.00329	0.00322
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00151	-0.00152	-0.00155
	(!A1 * B1 * !B2 * !C2 * Y)	0.00095	0.00095	0.00090
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00440	-0.00442	-0.00447
	(!A1 * !B1 * !C2 * Y)	0.00095	0.00095	0.00090
	(!A1 * !B1 * !C2 * Y)	-0.00440	-0.00442	-0.00447

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)**	-0.00158	-0.00160	-0.00172
	(A1 * B1 * B2 * C2 * !Y)	0.00106	0.00106	0.00095
	(A1 * B1 * B2 * !C2 * !Y)	-0.00169	-0.00171	-0.00171
	(A1 * B1 * B2 * !C2 * !Y)	0.00091	0.00091	0.00091
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00132	-0.00134	-0.00165
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00126	0.00126	0.00101
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00163	-0.00165	-0.00165
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * !B1 * C2 * !Y)	-0.00132	-0.00134	-0.00165
	(A1 * A2 * !B1 * C2 * !Y)	0.00126	0.00126	0.00101
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00163	-0.00165	-0.00165
	(A1 * A2 * !B1 * !C2 * !Y)	0.00097	0.00098	0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00240	0.00243	0.00240
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * !B1 * !C2 * Y)	0.00240	0.00243	0.00240
	(!A1 * B1 * B2 * C2 * !Y)	-0.00152	-0.00154	-0.00169
	(!A1 * B1 * B2 * C2 * !Y)	0.00113	0.00113	0.00099
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00162	-0.00165	-0.00165
	(!A1 * B1 * B2 * !C2 * !Y)	0.00099	0.00099	0.00099
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * B1 * !B2 * !C2 * Y)	0.00240	0.00243	0.00240
	(!A1 * !B1 * !C2 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !B1 * !C2 * Y)	0.00240	0.00243	0.00240

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00277	-0.00281	-0.00305
	(A1 * B1 * B2 * C2 * !Y)	0.00203	0.00205	0.00184
	(A1 * B1 * B2 * !C2 * !Y)	-0.00295	-0.00302	-0.00301
	(A1 * B1 * B2 * !C2 * !Y)	0.00176	0.00178	0.00177
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00230	-0.00235	-0.00291
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00238	0.00239	0.00196
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00287	-0.00291	-0.00291
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00189	0.00189	0.00189
	(A1 * A2 * !B1 * C2 * !Y)	-0.00230	-0.00235	-0.00291
	(A1 * A2 * !B1 * C2 * !Y)	0.00238	0.00239	0.00196
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00286	-0.00291	-0.00291
	(A1 * A2 * !B1 * !C2 * !Y)	0.00188	0.00189	0.00189
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00084	-0.00087	-0.00085
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00448	0.00456	0.00451
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00084	-0.00087	-0.00085
	(A1 * !A2 * !B1 * !C2 * Y)	0.00448	0.00456	0.00451
	(!A1 * B1 * B2 * C2 * !Y)	-0.00264	-0.00268	-0.00298
	(!A1 * B1 * B2 * C2 * !Y)	0.00218	0.00219	0.00193
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00285	-0.00289	-0.00290
	(!A1 * B1 * B2 * !C2 * !Y)	0.00191	0.00192	0.00191
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00084	-0.00087	-0.00085
	(!A1 * B1 * !B2 * !C2 * Y)	0.00448	0.00456	0.00451
	(!A1 * !B1 * !C2 * Y)	-0.00084	-0.00087	-0.00085
	(!A1 * !B1 * !C2 * Y)	0.00448	0.00456	0.00451

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)**	0.00182	0.00184	0.00182
	(A1 * B1 * B2 * C1 * !Y)	-0.00092	-0.00093	-0.00093
	(A1 * B1 * B2 * !C1 * !Y)	0.00178	0.00181	0.00178
	(A1 * B1 * B2 * !C1 * !Y)	-0.00090	-0.00091	-0.00091
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00183	0.00186	0.00183
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00090	-0.00092	-0.00090
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00189	0.00192	0.00187
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00080	-0.00082	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00183	0.00186	0.00183
	(A1 * A2 * !B1 * C1 * !Y)	-0.00090	-0.00092	-0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	0.00190	0.00191	0.00187
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00080	-0.00081	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00140	0.00143	0.00141
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00223	-0.00225	-0.00223
	(A1 * !A2 * !B1 * !C1 * Y)	0.00140	0.00143	0.00141
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00225	-0.00223
	(!A1 * B1 * B2 * C1 * !Y)	0.00184	0.00186	0.00184
	(!A1 * B1 * B2 * C1 * !Y)	-0.00092	-0.00093	-0.00091
	(!A1 * B1 * B2 * !C1 * !Y)	0.00192	0.00193	0.00189
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00079	-0.00080	-0.00081
	(!A1 * B1 * !B2 * !C1 * Y)	0.00140	0.00143	0.00141
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00223	-0.00225	-0.00223
	(!A1 * !B1 * !C1 * Y)	0.00140	0.00141	0.00141
	(!A1 * !B1 * !C1 * Y)	-0.00223	-0.00223	-0.00223

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00366	0.00371	0.00365
	(A1 * B1 * B2 * C1 * !Y)	-0.00185	-0.00187	-0.00184
	(A1 * B1 * B2 * !C1 * !Y)	0.00357	0.00361	0.00356
	(A1 * B1 * B2 * !C1 * !Y)	-0.00179	-0.00181	-0.00182
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00368	0.00373	0.00367
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00181	-0.00182	-0.00178
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00378	0.00386	0.00374
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00159	-0.00164	-0.00164
	(A1 * A2 * !B1 * C1 * !Y)	0.00368	0.00373	0.00367
	(A1 * A2 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00178
	(A1 * A2 * !B1 * !C1 * !Y)	0.00378	0.00383	0.00374
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00159	-0.00162	-0.00164
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00280	0.00283	0.00281
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00446	-0.00449	-0.00446
	(A1 * !A2 * !B1 * !C1 * Y)	0.00280	0.00284	0.00281
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00446	-0.00449	-0.00446
	(!A1 * B1 * B2 * C1 * !Y)	0.00368	0.00373	0.00368
	(!A1 * B1 * B2 * C1 * !Y)	-0.00183	-0.00185	-0.00181
	(!A1 * B1 * B2 * !C1 * !Y)	0.00382	0.00390	0.00377
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00157	-0.00161	-0.00162
	(!A1 * B1 * !B2 * !C1 * Y)	0.00280	0.00284	0.00281
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00446	-0.00449	-0.00446
	(!A1 * !B1 * !C1 * Y)	0.00280	0.00284	0.00281
	(!A1 * !B1 * !C1 * Y)	-0.00446	-0.00449	-0.00446

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)**	-0.00165	-0.00167	-0.00179
	(A1 * B1 * B2 * C1 * !Y)	0.00107	0.00107	0.00097
	(A1 * B1 * B2 * !C1 * !Y)	-0.00176	-0.00178	-0.00178
	(A1 * B1 * B2 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00139	-0.00141	-0.00172
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00127	0.00127	0.00103
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00099	0.00099	0.00099
	(A1 * A2 * !B1 * C1 * !Y)	-0.00139	-0.00141	-0.00172
	(A1 * A2 * !B1 * C1 * !Y)	0.00127	0.00127	0.00103
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * A2 * !B1 * !C1 * !Y)	0.00099	0.00099	0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00126	-0.00136	-0.00139
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00240	0.00230	0.00226
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00126	-0.00136	-0.00139
	(A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00230	0.00226
	(!A1 * B1 * B2 * C1 * !Y)	-0.00159	-0.00161	-0.00176
	(!A1 * B1 * B2 * C1 * !Y)	0.00114	0.00114	0.00101
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00171	-0.00173	-0.00172
	(!A1 * B1 * B2 * !C1 * !Y)	0.00100	0.00100	0.00100
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00126	-0.00136	-0.00139
	(!A1 * B1 * !B2 * !C1 * Y)	0.00240	0.00230	0.00226
	(!A1 * !B1 * !C1 * Y)	-0.00126	-0.00136	-0.00139
	(!A1 * !B1 * !C1 * Y)	0.00240	0.00230	0.00226

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00330	-0.00336	-0.00360
	(A1 * B1 * B2 * C1 * !Y)	0.00209	0.00212	0.00191
	(A1 * B1 * B2 * !C1 * !Y)	-0.00352	-0.00356	-0.00356
	(A1 * B1 * B2 * !C1 * !Y)	0.00185	0.00185	0.00184
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00284	-0.00289	-0.00346
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00244	0.00246	0.00203
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00343	-0.00347	-0.00346
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00197	0.00197	0.00196
	(A1 * A2 * !B1 * C1 * !Y)	-0.00284	-0.00289	-0.00346
	(A1 * A2 * !B1 * C1 * !Y)	0.00244	0.00245	0.00203
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00343	-0.00347	-0.00346
	(A1 * A2 * !B1 * !C1 * !Y)	0.00197	0.00197	0.00196
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00250	-0.00273	-0.00277
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00480	0.00458	0.00452
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00273	-0.00277
	(A1 * !A2 * !B1 * !C1 * Y)	0.00480	0.00458	0.00452
	(!A1 * B1 * B2 * C1 * !Y)	-0.00318	-0.00323	-0.00353
	(!A1 * B1 * B2 * C1 * !Y)	0.00224	0.00226	0.00201
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00342	-0.00346	-0.00345
	(!A1 * B1 * B2 * !C1 * !Y)	0.00199	0.00199	0.00199
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00250	-0.00273	-0.00277
	(!A1 * B1 * !B2 * !C1 * Y)	0.00480	0.00458	0.00452
	(!A1 * !B1 * !C1 * Y)	-0.00250	-0.00273	-0.00277
	(!A1 * !B1 * !C1 * Y)	0.00480	0.00458	0.00452

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00263	0.00269	0.00272	0.00263	0.00270	0.00276	1.27396
sky130_fd_sc_hs__a222o_2	0.00267	0.00253	0.00265	0.00262	0.00267	0.00282	2.14712

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	9.65608	22.30150
sky130_fd_sc_hs__a222o_2	0.00000	12.75620	22.58550

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)	0.10543	0.63602	6.47844
	A2->X (RR)	0.11134	0.61763	6.29587
	B1->X (RR)	0.09815	0.61047	6.20804
	B2->X (RR)	0.10179	0.59366	6.10029
	C1->X (RR)	0.08139	0.57187	6.07700
	C2->X (RR)	0.08517	0.55968	5.99419
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.12376	0.60039	6.35500
	A2->X (RR)	0.12944	0.57007	6.27512
	B1->X (RR)	0.10896	0.56266	6.16923
	B2->X (RR)	0.11273	0.54416	6.08888
	C1->X (RR)	0.09082	0.53009	6.06496
	C2->X (RR)	0.09527	0.51329	5.95089

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.26151	0.69292	5.26357
	A2->X (FF)	0.27844	0.71699	5.35118
	B1->X (FF)	0.24264	0.71078	5.62446
	B2->X (FF)	0.25367	0.73510	5.70192
	C1->X (FF)	0.18203	0.69137	5.66608
	C2->X (FF)	0.19540	0.71448	5.73051
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.31152	0.70349	5.03180
	A2->X (FF)	0.31597	0.72309	5.12056
	B1->X (FF)	0.29225	0.73031	5.31830
	B2->X (FF)	0.27810	0.71958	5.35508
	C1->X (FF)	0.21810	0.69236	5.24408
	C2->X (FF)	0.24058	0.72655	5.36603

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.02003	0.02138	0.07537
	A1	0.01003	0.01150	0.06560
	A2	0.02114	0.02186	0.06596
	A2	0.01004	0.01077	0.05519
	B1	0.01528	0.01743	0.06821
	B1	0.00750	0.00966	0.06087
	B2	0.01624	0.01798	0.06582
	B2	0.00761	0.00936	0.05770
	C1	0.00981	0.01291	0.07269
	C1	0.00429	0.00741	0.06768
	C2	0.01080	0.01346	0.07164
	C2	0.00435	0.00712	0.06572
sky130_fd_sc_hs__a222o_2	A1	0.02372	0.02516	0.06570
	A1	0.01401	0.01549	0.05659
	A2	0.02478	0.02592	0.07903
	A2	0.01391	0.01505	0.06896
	B1	0.01817	0.02039	0.06656
	B1	0.01074	0.01299	0.06010
	B2	0.01914	0.02092	0.06548
	B2	0.01075	0.01255	0.05810
	C1	0.01332	0.01578	0.06868
	C1	0.00814	0.01063	0.06448
	C2	0.01441	0.01636	0.06646
	C2	0.00810	0.01008	0.06014

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00560	0.00592	0.05467
	A1	0.01562	0.01594	0.06340
	A2	0.00593	0.00592	0.05317
	A2	0.01701	0.01703	0.06344
	B1	0.00548	0.00658	0.06047
	B1	0.01327	0.01436	0.06672
	B2	0.00596	0.00710	0.05937
	B2	0.01457	0.01570	0.06686
	C1	0.00528	0.00872	0.07233
	C1	0.01078	0.01420	0.07647
	C2	0.00576	0.00930	0.07254
	C2	0.01217	0.01571	0.07755
sky130_fd_sc_hs__a222o_2	A1	0.00963	0.00823	0.05855
	A1	0.01937	0.01794	0.06706
	A2	0.01113	0.01021	0.06635
	A2	0.02197	0.02104	0.07415
	B1	0.00952	0.00977	0.06274
	B1	0.01695	0.01711	0.06788
	B2	0.01009	0.01019	0.06151
	B2	0.01847	0.01854	0.06867
	C1	0.00914	0.01149	0.06459
	C1	0.01435	0.01665	0.06978
	C2	0.00983	0.01200	0.06766
	C2	0.01612	0.01821	0.07192

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)**	0.00152	0.00150	0.00149
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00190	-0.00201	-0.00201
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00196	0.00164	0.00160
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00151	-0.00189	-0.00191
	(A2 * B1 * B2 * !C1 * X)	0.00196	0.00164	0.00160
	(A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00189	-0.00191
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00205	0.00175	0.00168
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00141	-0.00178	-0.00182
	(A2 * !B1 * C1 * C2 * X)	0.00205	0.00175	0.00168
	(A2 * !B1 * C1 * C2 * X)	-0.00141	-0.00178	-0.00182
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00143	0.00144	0.00144
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00202	-0.00203	-0.00203
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00152	0.00152	0.00152
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * B1 * B2 * !C1 * X)	0.00152	0.00153	0.00153
	(!A2 * B1 * B2 * !C1 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00162	0.00163	0.00162
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00184	-0.00186	-0.00184
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00055	0.00056	0.00054
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00225	-0.00227	-0.00229
	(!A2 * B1 * !B2 * !C1 * !X)	0.00055	0.00056	0.00054
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00225	-0.00227	-0.00229
	(!A2 * !B1 * C1 * C2 * X)	0.00161	0.00162	0.00162
	(!A2 * !B1 * C1 * C2 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !C2 * !X)	0.00055	0.00056	0.00054
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00225	-0.00227	-0.00229
	(!A2 * !B1 * !C1 * !X)	0.00055	0.00056	0.00054
	(!A2 * !B1 * !C1 * !X)	-0.00225	-0.00227	-0.00229

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00166	0.00162	0.00160
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00186	-0.00198	-0.00198
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00211	0.00177	0.00172
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00147	-0.00184	-0.00187
	(A2 * B1 * B2 * !C1 * X)	0.00211	0.00177	0.00172
	(A2 * B1 * B2 * !C1 * X)	-0.00147	-0.00184	-0.00187
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00219	0.00186	0.00179
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00138	-0.00176	-0.00180
	(A2 * !B1 * C1 * C2 * X)	0.00221	0.00186	0.00179
	(A2 * !B1 * C1 * C2 * X)	-0.00136	-0.00176	-0.00180
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00156	0.00157	0.00155
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00200	-0.00200	-0.00199
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00166	0.00166	0.00165
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00188	-0.00189	-0.00189
	(!A2 * B1 * B2 * !C1 * X)	0.00166	0.00167	0.00165
	(!A2 * B1 * B2 * !C1 * X)	-0.00188	-0.00189	-0.00189
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00173	0.00173	0.00173
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00182	-0.00182	-0.00182
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00070	0.00070	0.00065
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00223	-0.00224	-0.00230
	(!A2 * B1 * !B2 * !C1 * !X)	0.00070	0.00070	0.00065
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00223	-0.00224	-0.00230
	(!A2 * !B1 * C1 * C2 * X)	0.00173	0.00174	0.00173
	(!A2 * !B1 * C1 * C2 * X)	-0.00182	-0.00184	-0.00182
	(!A2 * !B1 * C1 * !C2 * !X)	0.00070	0.00070	0.00065
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00223	-0.00224	-0.00230
	(!A2 * !B1 * !C1 * !X)	0.00070	0.00070	0.00065
	(!A2 * !B1 * !C1 * !X)	-0.00223	-0.00224	-0.00230

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)	-0.00147	-0.00147	-0.00147
	(A2 * B1 * B2 * C1 * C2 * X)	0.00200	0.00201	0.00201
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00142	-0.00142	-0.00142
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00209	0.00210	0.00210
	(A2 * B1 * B2 * !C1 * X)	-0.00142	-0.00143	-0.00142
	(A2 * B1 * B2 * !C1 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00219	0.00222	0.00220
	(A2 * !B1 * C1 * C2 * X)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * C1 * C2 * X)	0.00219	0.00222	0.00220
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00141	-0.00143	-0.00143
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00206	0.00208	0.00205
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00214	0.00215	0.00214
	(!A2 * B1 * B2 * !C1 * X)	-0.00132	-0.00134	-0.00134
	(!A2 * B1 * B2 * !C1 * X)	0.00214	0.00215	0.00214
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00224	0.00224	0.00224
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00243	0.00247	0.00243
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * B1 * !B2 * !C1 * !X)	0.00243	0.00247	0.00243
	(!A2 * !B1 * C1 * C2 * X)	-0.00122	-0.00125	-0.00125
	(!A2 * !B1 * C1 * C2 * X)	0.00223	0.00224	0.00224
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * C1 * !C2 * !X)	0.00243	0.00247	0.00243
	(!A2 * !B1 * !C1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * !C1 * !X)	0.00243	0.00247	0.00243

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00157	-0.00158	-0.00157
	(A2 * B1 * B2 * C1 * C2 * X)	0.00199	0.00200	0.00199
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00153	-0.00154	-0.00152
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00206	0.00208	0.00207
	(A2 * B1 * B2 * !C1 * X)	-0.00153	-0.00154	-0.00152
	(A2 * B1 * B2 * !C1 * X)	0.00206	0.00208	0.00207
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00218	0.00221	0.00219
	(A2 * !B1 * C1 * C2 * X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * C1 * C2 * X)	0.00218	0.00221	0.00219
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00148	-0.00154	-0.00154
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00202	0.00204	0.00202
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00142	-0.00147	-0.00147
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00209	0.00210	0.00210
	(!A2 * B1 * B2 * !C1 * X)	-0.00142	-0.00147	-0.00147
	(!A2 * B1 * B2 * !C1 * X)	0.00209	0.00210	0.00210
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00129	-0.00135	-0.00135
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00222	0.00223	0.00222
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00256	0.00260	0.00257
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * !C1 * !X)	0.00256	0.00261	0.00257
	(!A2 * !B1 * C1 * C2 * X)	-0.00129	-0.00135	-0.00135
	(!A2 * !B1 * C1 * C2 * X)	0.00222	0.00223	0.00222
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * C1 * !C2 * !X)	0.00256	0.00260	0.00257
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00256	0.00261	0.00257

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)	0.00168	0.00167	0.00166
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00184	-0.00194	-0.00194
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00210	0.00180	0.00177
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00148	-0.00183	-0.00184
	(A1 * B1 * B2 * !C1 * X)	0.00210	0.00180	0.00177
	(A1 * B1 * B2 * !C1 * X)	-0.00148	-0.00183	-0.00184
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00219	0.00191	0.00185
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00138	-0.00172	-0.00175
	(A1 * !B1 * C1 * C2 * X)	0.00219	0.00191	0.00185
	(A1 * !B1 * C1 * C2 * X)	-0.00138	-0.00172	-0.00175
	(!A1 * B1 * B2 * X)	0.00161	0.00163	0.00161
	(!A1 * B1 * B2 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00179	0.00181	0.00179
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00177	-0.00179	-0.00178
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00144	0.00144	0.00145
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00213	-0.00213	-0.00213
	(!A1 * B1 * !B2 * !C1 * !X)	0.00144	0.00144	0.00145
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00213	-0.00213	-0.00213
	(!A1 * !B1 * C1 * !C2 * !X)	0.00144	0.00144	0.00145
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00213	-0.00213	-0.00213
	(!A1 * !B1 * !C1 * !X)	0.00145	0.00144	0.00145
	(!A1 * !B1 * !C1 * !X)	-0.00213	-0.00212	-0.00213

	(A1 * B1 * B2 * C1 * C2 * X)	0.00160	0.00157	0.00156
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00188	-0.00198	-0.00199
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00202	0.00170	0.00167
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00152	-0.00187	-0.00189
	(A1 * B1 * B2 * !C1 * X)	0.00202	0.00170	0.00167
	(A1 * B1 * B2 * !C1 * X)	-0.00152	-0.00187	-0.00189
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00212	0.00181	0.00175
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00141	-0.00177	-0.00179
	(A1 * !B1 * C1 * C2 * X)	0.00209	0.00181	0.00175
	(A1 * !B1 * C1 * C2 * X)	-0.00142	-0.00177	-0.00179
	(!A1 * B1 * B2 * X)	0.00151	0.00151	0.00151
sky130_fd_sc_hs__a222o_2	**(!A1 * B1 * B2 * X)**	-0.00200	-0.00200	-0.00200
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00169	0.00170	0.00169
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00181	-0.00182	-0.00181
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00162	0.00164	0.00162
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00189	-0.00190	-0.00188
	(!A1 * B1 * !B2 * !C1 * !X)	0.00162	0.00164	0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00188	-0.00190	-0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	0.00161	0.00164	0.00162
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00187	-0.00190	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00161	0.00164	0.00163
	(!A1 * !B1 * !C1 * !X)	-0.00187	-0.00189	-0.00188

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00163	-0.00164	-0.00164
	(A1 * B1 * B2 * C1 * C2 * X)	0.00194	0.00195	0.00195
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00203	0.00202	0.00203
	(A1 * B1 * B2 * !C1 * X)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * B2 * !C1 * X)	0.00203	0.00202	0.00203
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00145	-0.00146	-0.00145
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00213	0.00216	0.00214
	(A1 * !B1 * C1 * C2 * X)	-0.00145	-0.00146	-0.00145
	(A1 * !B1 * C1 * C2 * X)	0.00213	0.00216	0.00214
	(!A1 * B1 * B2 * X)	-0.00157	-0.00160	-0.00160
	(!A1 * B1 * B2 * X)	0.00198	0.00201	0.00199
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00139	-0.00142	-0.00142
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00216	0.00219	0.00217
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00116	-0.00127	-0.00130
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00241	0.00233	0.00228
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00116	-0.00127	-0.00130
	(!A1 * B1 * !B2 * !C1 * !X)	0.00241	0.00233	0.00228
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00127	-0.00130
	(!A1 * !B1 * C1 * !C2 * !X)	0.00241	0.00233	0.00228
	(!A1 * !B1 * !C1 * !X)	-0.00115	-0.00127	-0.00130
	(!A1 * !B1 * !C1 * !X)	0.00241	0.00233	0.00228

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00153	-0.00154	-0.00153
	(A1 * B1 * B2 * C1 * C2 * X)	0.00199	0.00201	0.00200
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00147	-0.00148	-0.00147
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00208	0.00210	0.00209
	(A1 * B1 * B2 * !C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * B1 * B2 * !C1 * X)	0.00208	0.00210	0.00209
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00134	-0.00136	-0.00135
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00217	0.00220	0.00218
	(A1 * !B1 * C1 * C2 * X)	-0.00135	-0.00136	-0.00135
	(A1 * !B1 * C1 * C2 * X)	0.00218	0.00221	0.00218
	(!A1 * B1 * B2 * X)	-0.00145	-0.00149	-0.00150
	(!A1 * B1 * B2 * X)	0.00204	0.00204	0.00203
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00126	-0.00131	-0.00131
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00222	0.00223	0.00221
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00119	-0.00134	-0.00137
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00231	0.00218	0.00215
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00134	-0.00137
	(!A1 * B1 * !B2 * !C1 * !X)	0.00231	0.00218	0.00215
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00134	-0.00137
	(!A1 * !B1 * C1 * !C2 * !X)	0.00231	0.00219	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00134	-0.00137
	(!A1 * !B1 * !C1 * !X)	0.00231	0.00219	0.00215

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)**	0.00183	0.00189	0.00174
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00141	-0.00138	-0.00145
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00167	0.00168	0.00163
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00098	-0.00100	-0.00101
	(A1 * A2 * B2 * !C1 * X)	0.00167	0.00168	0.00163
	(A1 * A2 * B2 * !C1 * X)	-0.00098	-0.00100	-0.00101
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00184	0.00184	0.00165
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00124	-0.00126	-0.00137
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00172	0.00174	0.00163
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00089	-0.00092	-0.00096
	(A1 * A2 * !B2 * !C1 * X)	0.00172	0.00174	0.00163
	(A1 * A2 * !B2 * !C1 * X)	-0.00089	-0.00092	-0.00096
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00234	0.00182	0.00174
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00131	-0.00185	-0.00188
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00189	-0.00191	-0.00190
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00057	0.00057	0.00055
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00235	-0.00236	-0.00238
	(A1 * !A2 * !B2 * !C1 * !X)	0.00057	0.00057	0.00055
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00235	-0.00235	-0.00238
	(!A1 * B2 * C1 * C2 * X)	0.00234	0.00182	0.00174
	(!A1 * B2 * C1 * C2 * X)	-0.00131	-0.00185	-0.00188
	(!A1 * !B2 * C1 * C2 * X)	0.00167	0.00168	0.00167
	(!A1 * !B2 * C1 * C2 * X)	-0.00189	-0.00191	-0.00190
	(!A1 * !B2 * C1 * !C2 * !X)	0.00057	0.00057	0.00055
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00235	-0.00235	-0.00238
	(!A1 * !B2 * !C1 * !X)	0.00057	0.00057	0.00055
	(!A1 * !B2 * !C1 * !X)	-0.00235	-0.00235	-0.00238

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00182	0.00182	0.00170
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00127	-0.00129	-0.00135
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00162	0.00165	0.00158
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00090	-0.00092	-0.00093
	(A1 * A2 * B2 * !C1 * X)	0.00162	0.00165	0.00158
	(A1 * A2 * B2 * !C1 * X)	-0.00090	-0.00092	-0.00093
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00178	0.00180	0.00161
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00114	-0.00118	-0.00127
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00164	0.00165	0.00158
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00082	-0.00084	-0.00087
	(A1 * A2 * !B2 * !C1 * X)	0.00164	0.00166	0.00158
	(A1 * A2 * !B2 * !C1 * X)	-0.00082	-0.00085	-0.00087
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00228	0.00176	0.00169
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00119	-0.00175	-0.00177
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00162	0.00163	0.00162
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00178	-0.00180	-0.00179
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00061	0.00061	0.00059
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00213	-0.00214	-0.00217
	(A1 * !A2 * !B2 * !C1 * !X)	0.00061	0.00061	0.00059
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00217
	(!A1 * B2 * C1 * C2 * X)	0.00226	0.00175	0.00169
	(!A1 * B2 * C1 * C2 * X)	-0.00121	-0.00175	-0.00177
	(!A1 * !B2 * C1 * C2 * X)	0.00162	0.00162	0.00162
	(!A1 * !B2 * C1 * C2 * X)	-0.00178	-0.00180	-0.00179
	(!A1 * !B2 * C1 * !C2 * !X)	0.00062	0.00062	0.00060
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00213	-0.00214	-0.00217
	(!A1 * !B2 * !C1 * !X)	0.00062	0.00062	0.00060
	(!A1 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00217

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)	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B2 * C1 * C2 * X)	0.00153	0.00153	0.00152
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00139	-0.00140	-0.00144
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00124	0.00124	0.00120
	(A1 * A2 * B2 * !C1 * X)	-0.00139	-0.00140	-0.00144
	(A1 * A2 * B2 * !C1 * X)	0.00124	0.00124	0.00120
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00148	-0.00150	-0.00150
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00141	0.00141	0.00141
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00145	-0.00147	-0.00144
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00115	0.00115	0.00116
	(A1 * A2 * !B2 * !C1 * X)	-0.00145	-0.00147	-0.00144
	(A1 * A2 * !B2 * !C1 * X)	0.00114	0.00115	0.00116
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00133	-0.00134	-0.00134
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00229	0.00229	0.00227
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00128	-0.00130	-0.00130
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00229	0.00230	0.00229
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00251	0.00255	0.00252
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * !C1 * !X)	0.00251	0.00255	0.00252
	(!A1 * B2 * C1 * C2 * X)	-0.00133	-0.00134	-0.00134
	(!A1 * B2 * C1 * C2 * X)	0.00229	0.00229	0.00227
	(!A1 * !B2 * C1 * C2 * X)	-0.00127	-0.00130	-0.00130
	(!A1 * !B2 * C1 * C2 * X)	0.00229	0.00230	0.00229
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * C1 * !C2 * !X)	0.00251	0.00255	0.00252
	(!A1 * !B2 * !C1 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * !C1 * !X)	0.00251	0.00255	0.00252

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00150	-0.00150	-0.00149
	(A1 * A2 * B2 * C1 * C2 * X)	0.00144	0.00145	0.00143
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00135	-0.00136	-0.00141
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00116	0.00116	0.00110
	(A1 * A2 * B2 * !C1 * X)	-0.00135	-0.00136	-0.00141
	(A1 * A2 * B2 * !C1 * X)	0.00116	0.00116	0.00110
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00143	-0.00145	-0.00145
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00132	0.00132	0.00131
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00140	-0.00142	-0.00139
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00105	0.00105	0.00107
	(A1 * A2 * !B2 * !C1 * X)	-0.00140	-0.00142	-0.00139
	(A1 * A2 * !B2 * !C1 * X)	0.00105	0.00105	0.00107
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00127	-0.00128	-0.00129
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00218	0.00219	0.00217
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00122	-0.00124	-0.00124
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00219	0.00219	0.00219
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00032	-0.00034	-0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00242	0.00246	0.00243
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00032	-0.00034	-0.00032
	(A1 * !A2 * !B2 * !C1 * !X)	0.00242	0.00246	0.00243
	(!A1 * B2 * C1 * C2 * X)	-0.00127	-0.00128	-0.00129
	(!A1 * B2 * C1 * C2 * X)	0.00218	0.00219	0.00217
	(!A1 * !B2 * C1 * C2 * X)	-0.00122	-0.00124	-0.00124
	(!A1 * !B2 * C1 * C2 * X)	0.00219	0.00219	0.00219
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00035	-0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	0.00242	0.00245	0.00243
	(!A1 * !B2 * !C1 * !X)	-0.00033	-0.00035	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00242	0.00245	0.00243

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)	0.00178	0.00181	0.00167
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00133	-0.00131	-0.00139
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00162	0.00164	0.00158
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00091	-0.00093	-0.00094
	(A1 * A2 * B1 * !C1 * X)	0.00162	0.00164	0.00158
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00093	-0.00094
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00176	0.00176	0.00159
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00119	-0.00121	-0.00132
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00163	0.00164	0.00157
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00085	-0.00086	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00163	0.00163	0.00156
	(A1 * A2 * !B1 * !C1 * X)	-0.00085	-0.00086	-0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00229	0.00176	0.00168
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00122	-0.00176	-0.00179
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00162	0.00163	0.00162
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00180	-0.00182	-0.00181
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00143	0.00146	0.00144
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00199	-0.00201	-0.00200
	(A1 * !A2 * !B1 * !C1 * !X)	0.00144	0.00145	0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00200	-0.00201	-0.00199
	(!A1 * B1 * C1 * C2 * X)	0.00229	0.00176	0.00168
	(!A1 * B1 * C1 * C2 * X)	-0.00122	-0.00176	-0.00179
	(!A1 * !B1 * C1 * !C2 * !X)	0.00143	0.00145	0.00144
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00199	-0.00201	-0.00200
	(!A1 * !B1 * !C1 * !X)	0.00143	0.00146	0.00144
	(!A1 * !B1 * !C1 * !X)	-0.00199	-0.00201	-0.00199

	(A1 * A2 * B1 * C1 * C2 * X)	0.00184	0.00184	0.00172
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00128	-0.00129	-0.00135
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00164	0.00166	0.00160
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00091	-0.00092	-0.00093
	(A1 * A2 * B1 * !C1 * X)	0.00164	0.00166	0.00160
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00092	-0.00093
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00181	0.00180	0.00163
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00114	-0.00115	-0.00127
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00166	0.00167	0.00160
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00082	-0.00083	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00166	0.00167	0.00160
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00083	-0.00087
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00227	0.00176	0.00170
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00124	-0.00176	-0.00177
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00178	-0.00180	-0.00179
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00154	0.00155	0.00154
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	0.00153	0.00156	0.00155
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00185	-0.00187	-0.00186
	(!A1 * B1 * C1 * C2 * X)	0.00230	0.00177	0.00170
	(!A1 * B1 * C1 * C2 * X)	-0.00121	-0.00175	-0.00177
	(!A1 * !B1 * C1 * !C2 * !X)	0.00158	0.00160	0.00159
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !B1 * !C1 * !X)	-0.00185	-0.00186	-0.00185

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)	-0.00149	-0.00148	-0.00148
	(A1 * A2 * B1 * C1 * C2 * X)	0.00147	0.00146	0.00146
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00133	-0.00134	-0.00138
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00117	0.00117	0.00113
	(A1 * A2 * B1 * !C1 * X)	-0.00133	-0.00134	-0.00138
	(A1 * A2 * B1 * !C1 * X)	0.00117	0.00117	0.00113
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00143	-0.00144	-0.00144
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00136	0.00136	0.00135
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00139	-0.00141	-0.00138
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00108	0.00108	0.00109
	(A1 * A2 * !B1 * !C1 * X)	-0.00139	-0.00141	-0.00138
	(A1 * A2 * !B1 * !C1 * X)	0.00108	0.00108	0.00109
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00128	-0.00128	-0.00129
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00220	0.00221	0.00219
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00122	-0.00124	-0.00124
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00221	0.00222	0.00220
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00128	-0.00130
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00229	0.00218	0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00128	-0.00130
	(A1 * !A2 * !B1 * !C1 * !X)	0.00229	0.00218	0.00215
	(!A1 * B1 * C1 * C2 * X)	-0.00128	-0.00128	-0.00129
	(!A1 * B1 * C1 * C2 * X)	0.00220	0.00221	0.00219
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00128	-0.00130
	(!A1 * !B1 * C1 * !C2 * !X)	0.00229	0.00218	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00128	-0.00130
	(!A1 * !B1 * !C1 * !X)	0.00229	0.00218	0.00215

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00151	-0.00152	-0.00151
	(A1 * A2 * B1 * C1 * C2 * X)	0.00144	0.00145	0.00143
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00136	-0.00137	-0.00143
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00117	0.00117	0.00110
	(A1 * A2 * B1 * !C1 * X)	-0.00136	-0.00137	-0.00143
	(A1 * A2 * B1 * !C1 * X)	0.00117	0.00117	0.00110
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00144	-0.00146	-0.00147
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00131	0.00131	0.00131
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00141	-0.00143	-0.00141
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00105	0.00106	0.00107
	(A1 * A2 * !B1 * !C1 * X)	-0.00141	-0.00143	-0.00141
	(A1 * A2 * !B1 * !C1 * X)	0.00105	0.00106	0.00107
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00129	-0.00130	-0.00131
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00218	0.00220	0.00217
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00123	-0.00126	-0.00126
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00218	0.00220	0.00218
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00113	-0.00124	-0.00128
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00227	0.00218	0.00213
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00112	-0.00124	-0.00128
	(A1 * !A2 * !B1 * !C1 * !X)	0.00227	0.00218	0.00213
	(!A1 * B1 * C1 * C2 * X)	-0.00129	-0.00130	-0.00131
	(!A1 * B1 * C1 * C2 * X)	0.00218	0.00219	0.00216
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00117	-0.00130	-0.00132
	(!A1 * !B1 * C1 * !C2 * !X)	0.00226	0.00216	0.00212
	(!A1 * !B1 * !C1 * !X)	-0.00117	-0.00129	-0.00132
	(!A1 * !B1 * !C1 * !X)	0.00226	0.00217	0.00212

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)	0.00177	0.00179	0.00178
	(A1 * B1 * B2 * C2 * X)	-0.00096	-0.00097	-0.00096
	(A1 * B1 * B2 * !C2 * X)	0.00174	0.00175	0.00174
	(A1 * B1 * B2 * !C2 * X)	-0.00093	-0.00095	-0.00095
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00178	0.00181	0.00179
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00094	-0.00095	-0.00093
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00186	0.00186	0.00183
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00084	-0.00083	-0.00086
	(A1 * A2 * !B1 * C2 * X)	0.00178	0.00181	0.00179
	(A1 * A2 * !B1 * C2 * X)	-0.00094	-0.00095	-0.00093
	(A1 * A2 * !B1 * !C2 * X)	0.00186	0.00186	0.00183
	(A1 * A2 * !B1 * !C2 * X)	-0.00083	-0.00084	-0.00086
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00060	0.00060	0.00058
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00237	-0.00238	-0.00241
	(A1 * !A2 * !B1 * !C2 * !X)	0.00060	0.00060	0.00058
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00237	-0.00238	-0.00241
	(!A1 * B1 * B2 * C2 * X)	0.00179	0.00182	0.00179
	(!A1 * B1 * B2 * C2 * X)	-0.00095	-0.00097	-0.00095
	(!A1 * B1 * B2 * !C2 * X)	0.00189	0.00191	0.00184
	(!A1 * B1 * B2 * !C2 * X)	-0.00082	-0.00084	-0.00085
	(!A1 * B1 * !B2 * !C2 * !X)	0.00060	0.00060	0.00058
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00237	-0.00238	-0.00241
	(!A1 * !B1 * !C2 * !X)	0.00060	0.00060	0.00058
	(!A1 * !B1 * !C2 * !X)	-0.00237	-0.00238	-0.00241

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00173	0.00175	0.00174
	(A1 * B1 * B2 * C2 * X)	-0.00089	-0.00090	-0.00090
	(A1 * B1 * B2 * !C2 * X)	0.00169	0.00172	0.00169
	(A1 * B1 * B2 * !C2 * X)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00174	0.00177	0.00175
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00088	-0.00089	-0.00087
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00179	0.00181	0.00177
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00078	-0.00081	-0.00081
	(A1 * A2 * !B1 * C2 * X)	0.00174	0.00177	0.00175
	(A1 * A2 * !B1 * C2 * X)	-0.00088	-0.00089	-0.00087
	(A1 * A2 * !B1 * !C2 * X)	0.00180	0.00182	0.00177
	(A1 * A2 * !B1 * !C2 * X)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00065	0.00065	0.00063
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00221	-0.00221	-0.00224
	(A1 * !A2 * !B1 * !C2 * !X)	0.00065	0.00065	0.00064
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00221	-0.00221	-0.00224
	(!A1 * B1 * B2 * C2 * X)	0.00175	0.00178	0.00175
	(!A1 * B1 * B2 * C2 * X)	-0.00088	-0.00090	-0.00087
	(!A1 * B1 * B2 * !C2 * X)	0.00181	0.00184	0.00179
	(!A1 * B1 * B2 * !C2 * X)	-0.00077	-0.00080	-0.00080
	(!A1 * B1 * !B2 * !C2 * !X)	0.00065	0.00065	0.00064
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00221	-0.00221	-0.00224
	(!A1 * !B1 * !C2 * !X)	0.00066	0.00065	0.00064
	(!A1 * !B1 * !C2 * !X)	-0.00220	-0.00221	-0.00224

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)**	-0.00156	-0.00158	-0.00174
	(A1 * B1 * B2 * C2 * X)	0.00115	0.00115	0.00101
	(A1 * B1 * B2 * !C2 * X)	-0.00171	-0.00173	-0.00173
	(A1 * B1 * B2 * !C2 * X)	0.00097	0.00097	0.00097
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00133	-0.00135	-0.00167
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00132	0.00132	0.00107
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00167	-0.00169	-0.00168
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * !B1 * C2 * X)	-0.00133	-0.00135	-0.00167
	(A1 * A2 * !B1 * C2 * X)	0.00132	0.00132	0.00107
	(A1 * A2 * !B1 * !C2 * X)	-0.00167	-0.00169	-0.00168
	(A1 * A2 * !B1 * !C2 * X)	0.00102	0.00102	0.00102
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00044	-0.00046	-0.00044
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00254	0.00257	0.00254
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B1 * !C2 * !X)	0.00254	0.00257	0.00255
	(!A1 * B1 * B2 * C2 * X)	-0.00150	-0.00152	-0.00171
	(!A1 * B1 * B2 * C2 * X)	0.00122	0.00123	0.00105
	(!A1 * B1 * B2 * !C2 * X)	-0.00166	-0.00169	-0.00168
	(!A1 * B1 * B2 * !C2 * X)	0.00103	0.00103	0.00104
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * B1 * !B2 * !C2 * !X)	0.00254	0.00257	0.00255
	(!A1 * !B1 * !C2 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !B1 * !C2 * !X)	0.00254	0.00257	0.00255

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00156	-0.00157	-0.00170
	(A1 * B1 * B2 * C2 * X)	0.00105	0.00105	0.00094
	(A1 * B1 * B2 * !C2 * X)	-0.00166	-0.00168	-0.00168
	(A1 * B1 * B2 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00132	-0.00133	-0.00163
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00124	0.00124	0.00101
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00160	-0.00163	-0.00163
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00098	0.00098	0.00098
	(A1 * A2 * !B1 * C2 * X)	-0.00131	-0.00133	-0.00163
	(A1 * A2 * !B1 * C2 * X)	0.00124	0.00124	0.00101
	(A1 * A2 * !B1 * !C2 * X)	-0.00160	-0.00163	-0.00163
	(A1 * A2 * !B1 * !C2 * X)	0.00098	0.00098	0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00039	-0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00249	0.00252	0.00250
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00037	-0.00039	-0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	0.00250	0.00252	0.00250
	(!A1 * B1 * B2 * C2 * X)	-0.00150	-0.00151	-0.00167
	(!A1 * B1 * B2 * C2 * X)	0.00112	0.00112	0.00099
	(!A1 * B1 * B2 * !C2 * X)	-0.00160	-0.00162	-0.00162
	(!A1 * B1 * B2 * !C2 * X)	0.00099	0.00099	0.00098
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00039	-0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	0.00250	0.00252	0.00250
	(!A1 * !B1 * !C2 * !X)	-0.00037	-0.00039	-0.00037
	(!A1 * !B1 * !C2 * !X)	0.00250	0.00252	0.00250

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)**	0.00179	0.00179	0.00178
	(A1 * B1 * B2 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * B2 * !C1 * X)	0.00174	0.00176	0.00174
	(A1 * B1 * B2 * !C1 * X)	-0.00090	-0.00091	-0.00091
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00179	0.00181	0.00179
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00090	-0.00091	-0.00089
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00185	0.00186	0.00182
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !B1 * C1 * X)	0.00179	0.00181	0.00179
	(A1 * A2 * !B1 * C1 * X)	-0.00090	-0.00091	-0.00089
	(A1 * A2 * !B1 * !C1 * X)	0.00185	0.00186	0.00182
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00146	0.00148	0.00147
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00212	-0.00214	-0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	0.00146	0.00148	0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00212	-0.00214	-0.00212
	(!A1 * B1 * B2 * C1 * X)	0.00180	0.00182	0.00179
	(!A1 * B1 * B2 * C1 * X)	-0.00092	-0.00092	-0.00090
	(!A1 * B1 * B2 * !C1 * X)	0.00187	0.00188	0.00183
	(!A1 * B1 * B2 * !C1 * X)	-0.00079	-0.00080	-0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	0.00146	0.00148	0.00147
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00212	-0.00214	-0.00212
	(!A1 * !B1 * !C1 * !X)	0.00146	0.00149	0.00147
	(!A1 * !B1 * !C1 * !X)	-0.00212	-0.00214	-0.00212

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00183	0.00185	0.00184
	(A1 * B1 * B2 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * B2 * !C1 * X)	0.00180	0.00181	0.00180
	(A1 * B1 * B2 * !C1 * X)	-0.00090	-0.00090	-0.00091
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00185	0.00187	0.00185
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00091	-0.00092	-0.00090
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00191	0.00191	0.00188
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * A2 * !B1 * C1 * X)	0.00185	0.00187	0.00185
	(A1 * A2 * !B1 * C1 * X)	-0.00091	-0.00092	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00191	0.00191	0.00188
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00081	-0.00082
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00150	0.00152	0.00151
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00214	-0.00216	-0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	0.00150	0.00152	0.00151
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00214	-0.00216	-0.00215
	(!A1 * B1 * B2 * C1 * X)	0.00185	0.00188	0.00185
	(!A1 * B1 * B2 * C1 * X)	-0.00091	-0.00092	-0.00090
	(!A1 * B1 * B2 * !C1 * X)	0.00193	0.00194	0.00190
	(!A1 * B1 * B2 * !C1 * X)	-0.00078	-0.00079	-0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	0.00150	0.00152	0.00151
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00214	-0.00216	-0.00215
	(!A1 * !B1 * !C1 * !X)	0.00150	0.00152	0.00151
	(!A1 * !B1 * !C1 * !X)	-0.00214	-0.00216	-0.00215

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)**	-0.00156	-0.00158	-0.00174
	(A1 * B1 * B2 * C1 * X)	0.00111	0.00111	0.00097
	(A1 * B1 * B2 * !C1 * X)	-0.00171	-0.00173	-0.00173
	(A1 * B1 * B2 * !C1 * X)	0.00093	0.00093	0.00093
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00133	-0.00135	-0.00167
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00128	0.00128	0.00102
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00166	-0.00168	-0.00168
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !B1 * C1 * X)	-0.00133	-0.00135	-0.00167
	(A1 * A2 * !B1 * C1 * X)	0.00128	0.00128	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00166	-0.00168	-0.00168
	(A1 * A2 * !B1 * !C1 * X)	0.00099	0.00099	0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00129	-0.00132
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00241	0.00231	0.00227
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00129	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00241	0.00231	0.00227
	(!A1 * B1 * B2 * C1 * X)	-0.00150	-0.00151	-0.00171
	(!A1 * B1 * B2 * C1 * X)	0.00118	0.00118	0.00101
	(!A1 * B1 * B2 * !C1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * B1 * B2 * !C1 * X)	0.00100	0.00100	0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00129	-0.00132
	(!A1 * B1 * !B2 * !C1 * !X)	0.00241	0.00231	0.00227
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00129	-0.00132
	(!A1 * !B1 * !C1 * !X)	0.00241	0.00231	0.00227

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00166	-0.00167	-0.00180
	(A1 * B1 * B2 * C1 * X)	0.00107	0.00107	0.00097
	(A1 * B1 * B2 * !C1 * X)	-0.00175	-0.00179	-0.00178
	(A1 * B1 * B2 * !C1 * X)	0.00092	0.00094	0.00093
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00142	-0.00143	-0.00173
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00127	0.00126	0.00103
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00170	-0.00174	-0.00173
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00098	0.00100	0.00099
	(A1 * A2 * !B1 * C1 * X)	-0.00142	-0.00143	-0.00173
	(A1 * A2 * !B1 * C1 * X)	0.00127	0.00126	0.00103
	(A1 * A2 * !B1 * !C1 * X)	-0.00170	-0.00174	-0.00173
	(A1 * A2 * !B1 * !C1 * X)	0.00098	0.00100	0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00121	-0.00124
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00257	0.00246	0.00242
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00122	-0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	0.00257	0.00245	0.00242
	(!A1 * B1 * B2 * C1 * X)	-0.00160	-0.00161	-0.00177
	(!A1 * B1 * B2 * C1 * X)	0.00114	0.00114	0.00101
	(!A1 * B1 * B2 * !C1 * X)	-0.00170	-0.00173	-0.00172
	(!A1 * B1 * B2 * !C1 * X)	0.00099	0.00101	0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00122	-0.00124
	(!A1 * B1 * !B2 * !C1 * !X)	0.00257	0.00245	0.00242
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00121	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00257	0.00246	0.00242

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00285	0.00285	0.00295	0.00297	0.58910
sky130_fd_sc_hs__a22oi_2	0.00622	0.00551	0.00595	0.00545	1.04140
sky130_fd_sc_hs__a22oi_4	0.01096	0.01087	0.01106	0.01091	1.91106

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	4.27720	13.92530
sky130_fd_sc_hs__a22oi_2	0.00000	8.55465	27.84760
sky130_fd_sc_hs__a22oi_4	0.00000	17.10320	55.69140

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)	0.09135	0.83523	9.21699
	A2->Y (FR)	0.10698	0.85545	9.27394
	B1->Y (FR)	0.06601	0.84570	9.73202
	B2->Y (FR)	0.08171	0.86823	9.87551
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.09653	0.71028	8.90111
	A2->Y (FR)	0.11533	0.74079	9.11043
	B1->Y (FR)	0.06764	0.73327	9.58064
	B2->Y (FR)	0.08849	0.77159	9.85957
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.08952	0.60000	8.64683
	A2->Y (FR)	0.11205	0.63249	8.86095
	B1->Y (FR)	0.06290	0.63268	9.39399
	B2->Y (FR)	0.08616	0.67275	9.70946

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.03999	0.43987	4.80638
	A2->Y (RF)	0.04425	0.39491	4.20779
	B1->Y (RF)	0.02500	0.41828	4.83574
	B2->Y (RF)	0.02924	0.37825	4.26675
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.04097	0.37534	4.62045
	A2->Y (RF)	0.04498	0.34073	4.10622
	B1->Y (RF)	0.02442	0.34699	4.59194
	B2->Y (RF)	0.02992	0.31477	4.07267
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.04128	0.34163	4.82071
	A2->Y (RF)	0.04616	0.28684	3.96606
	B1->Y (RF)	0.02316	0.30891	4.81297
	B2->Y (RF)	0.02843	0.25535	3.91815

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00016	0.00035	0.02001
	A1	0.00750	0.00800	0.02778
	A2	0.00043	0.00094	0.02102
	A2	0.00938	0.00963	0.03000
	B1	-0.00025	0.00181	0.02787
	B1	0.00481	0.00690	0.03302
	B2	0.00013	0.00213	0.02839
	B2	0.00651	0.00835	0.03481
sky130_fd_sc_hs__a22oi_2	A1	0.00020	0.00143	0.04167
	A1	0.01627	0.01751	0.05820
	A2	0.00164	0.00288	0.04399
	A2	0.01937	0.02058	0.06196
	B1	-0.00017	0.00457	0.05763
	B1	0.01041	0.01517	0.06845
	B2	0.00169	0.00566	0.05878
	B2	0.01420	0.01815	0.07135
sky130_fd_sc_hs__a22oi_4	A1	-0.00166	0.00140	0.07761
	A1	0.02877	0.03190	0.10861
	A2	0.00150	0.00455	0.08322
	A2	0.03687	0.03986	0.11944
	B1	-0.00209	0.00665	0.10417
	B1	0.01780	0.02659	0.12503
	B2	0.00126	0.00947	0.10719
	B2	0.02590	0.03413	0.13217

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01099	0.01183	0.02956
	A1	0.00336	0.00415	0.02149
	A2	0.01225	0.01293	0.02998
	A2	0.00330	0.00392	0.02078
	B1	0.00503	0.00628	0.02306
	B1	-0.00004	0.00112	0.01770
	B2	0.00637	0.00729	0.02333
	B2	-0.00002	0.00084	0.01670
sky130_fd_sc_hs__a22oi_2	A1	0.02199	0.02385	0.05954
	A1	0.00597	0.00781	0.04267
	A2	0.02379	0.02533	0.05841
	A2	0.00604	0.00741	0.04066
	B1	0.01066	0.01323	0.04866
	B1	0.00012	0.00259	0.03714
	B2	0.01281	0.01474	0.04756
	B2	0.00023	0.00216	0.03468
sky130_fd_sc_hs__a22oi_4	A1	0.04177	0.04587	0.11220
	A1	0.01142	0.01548	0.08129
	A2	0.04671	0.04982	0.11744
	A2	0.01128	0.01440	0.08153
	B1	0.01954	0.02480	0.08802
	B1	-0.00028	0.00487	0.06819
	B2	0.02471	0.02906	0.09276
	B2	-0.00013	0.00409	0.06702

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)	0.00232	0.00184	0.00178
	(A2 * B1 * B2 * !Y)	-0.00151	-0.00201	-0.00205
	(!A2 * B1 * B2 * !Y)	0.00170	0.00171	0.00171
	(!A2 * B1 * B2 * !Y)	-0.00207	-0.00208	-0.00207
	(!A2 * B1 * !B2 * Y)	0.00056	0.00056	0.00054
	(!A2 * B1 * !B2 * Y)	-0.00246	-0.00247	-0.00251
	(!A2 * !B1 * Y)	0.00056	0.00056	0.00054
	(!A2 * !B1 * Y)	-0.00246	-0.00247	-0.00251
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00510	0.00403	0.00385
	(A2 * B1 * B2 * !Y)	-0.00312	-0.00427	-0.00436
	(!A2 * B1 * B2 * !Y)	0.00366	0.00370	0.00368
	(!A2 * B1 * B2 * !Y)	-0.00441	-0.00445	-0.00443
	(!A2 * B1 * !B2 * Y)	0.00111	0.00112	0.00107
	(!A2 * B1 * !B2 * Y)	-0.00548	-0.00552	-0.00559
	(!A2 * !B1 * Y)	0.00111	0.00112	0.00107
	(!A2 * !B1 * Y)	-0.00547	-0.00552	-0.00558
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00948	0.00748	0.00719
	(A2 * B1 * B2 * !Y)	-0.00606	-0.00816	-0.00829
	(!A2 * B1 * B2 * !Y)	0.00683	0.00685	0.00684
	(!A2 * B1 * B2 * !Y)	-0.00841	-0.00842	-0.00840
	(!A2 * B1 * !B2 * Y)	0.00214	0.00215	0.00203
	(!A2 * B1 * !B2 * Y)	-0.01009	-0.01015	-0.01032
	(!A2 * !B1 * Y)	0.00215	0.00215	0.00204
	(!A2 * !B1 * Y)	-0.01008	-0.01015	-0.01031

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)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * B2 * !Y)	0.00230	0.00232	0.00231
	(!A2 * B1 * B2 * !Y)	-0.00144	-0.00148	-0.00148
	(!A2 * B1 * B2 * !Y)	0.00231	0.00233	0.00232
	(!A2 * B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * Y)	0.00252	0.00256	0.00252
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00251	0.00256	0.00252
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00333	-0.00334	-0.00332
	(A2 * B1 * B2 * !Y)	0.00490	0.00493	0.00489
	(!A2 * B1 * B2 * !Y)	-0.00316	-0.00322	-0.00324
	(!A2 * B1 * B2 * !Y)	0.00492	0.00495	0.00492
	(!A2 * B1 * !B2 * Y)	-0.00105	-0.00104	-0.00104
	(!A2 * B1 * !B2 * Y)	0.00562	0.00562	0.00561
	(!A2 * !B1 * Y)	-0.00105	-0.00104	-0.00104
	(!A2 * !B1 * Y)	0.00562	0.00562	0.00561
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00612	-0.00617	-0.00615
	(A2 * B1 * B2 * !Y)	0.00930	0.00940	0.00933
	(!A2 * B1 * B2 * !Y)	-0.00578	-0.00594	-0.00598
	(!A2 * B1 * B2 * !Y)	0.00937	0.00948	0.00939
	(!A2 * B1 * !B2 * Y)	-0.00195	-0.00196	-0.00195
	(!A2 * B1 * !B2 * Y)	0.01033	0.01041	0.01037
	(!A2 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(!A2 * !B1 * Y)	0.01033	0.01041	0.01037

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)	0.00243	0.00195	0.00187
	(A1 * B1 * B2 * !Y)	-0.00155	-0.00208	-0.00212
	(!A1 * B1 * B2 * !Y)	0.00180	0.00181	0.00179
	(!A1 * B1 * B2 * !Y)	-0.00215	-0.00216	-0.00215
	(!A1 * B1 * !B2 * Y)	0.00168	0.00170	0.00169
	(!A1 * B1 * !B2 * Y)	-0.00226	-0.00228	-0.00227
	(!A1 * !B1 * Y)	0.00168	0.00170	0.00169
	(!A1 * !B1 * Y)	-0.00226	-0.00228	-0.00227
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00462	0.00368	0.00355
	(A1 * B1 * B2 * !Y)	-0.00300	-0.00400	-0.00405
	(!A1 * B1 * B2 * !Y)	0.00340	0.00340	0.00339
	(!A1 * B1 * B2 * !Y)	-0.00410	-0.00410	-0.00410
	(!A1 * B1 * !B2 * Y)	0.00306	0.00310	0.00309
	(!A1 * B1 * !B2 * Y)	-0.00441	-0.00444	-0.00442
	(!A1 * !B1 * Y)	0.00307	0.00310	0.00309
	(!A1 * !B1 * Y)	-0.00441	-0.00444	-0.00442
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00949	0.00752	0.00723
	(A1 * B1 * B2 * !Y)	-0.00613	-0.00819	-0.00832
	(!A1 * B1 * B2 * !Y)	0.00689	0.00696	0.00688
	(!A1 * B1 * B2 * !Y)	-0.00844	-0.00848	-0.00843
	(!A1 * B1 * !B2 * Y)	0.00648	0.00655	0.00648
	(!A1 * B1 * !B2 * Y)	-0.00889	-0.00893	-0.00887
	(!A1 * !B1 * Y)	0.00648	0.00655	0.00649
	(!A1 * !B1 * Y)	-0.00889	-0.00893	-0.00887

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)	-0.00160	-0.00162	-0.00161
	(A1 * B1 * B2 * !Y)	0.00238	0.00240	0.00239
	(!A1 * B1 * B2 * !Y)	-0.00154	-0.00156	-0.00157
	(!A1 * B1 * B2 * !Y)	0.00241	0.00242	0.00240
	(!A1 * B1 * !B2 * Y)	-0.00153	-0.00165	-0.00168
	(!A1 * B1 * !B2 * Y)	0.00243	0.00233	0.00229
	(!A1 * !B1 * Y)	-0.00153	-0.00165	-0.00168
	(!A1 * !B1 * Y)	0.00243	0.00233	0.00229
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00304	-0.00305	-0.00304
	(A1 * B1 * B2 * !Y)	0.00457	0.00459	0.00456
	(!A1 * B1 * B2 * !Y)	-0.00287	-0.00294	-0.00295
	(!A1 * B1 * B2 * !Y)	0.00457	0.00463	0.00459
	(!A1 * B1 * !B2 * Y)	-0.00273	-0.00301	-0.00308
	(!A1 * B1 * !B2 * Y)	0.00476	0.00455	0.00446
	(!A1 * !B1 * Y)	-0.00273	-0.00301	-0.00308
	(!A1 * !B1 * Y)	0.00476	0.00455	0.00446
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00615	-0.00620	-0.00619
	(A1 * B1 * B2 * !Y)	0.00930	0.00941	0.00936
	(!A1 * B1 * B2 * !Y)	-0.00582	-0.00598	-0.00600
	(!A1 * B1 * B2 * !Y)	0.00939	0.00950	0.00942
	(!A1 * B1 * !B2 * Y)	-0.00567	-0.00633	-0.00645
	(!A1 * B1 * !B2 * Y)	0.00963	0.00911	0.00896
	(!A1 * !B1 * Y)	-0.00567	-0.00633	-0.00645
	(!A1 * !B1 * Y)	0.00963	0.00912	0.00896

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)	0.00189	0.00192	0.00189
	(A1 * A2 * B2 * !Y)	-0.00097	-0.00098	-0.00096
	(A1 * A2 * !B2 * !Y)	0.00193	0.00196	0.00190
	(A1 * A2 * !B2 * !Y)	-0.00087	-0.00089	-0.00090
	(A1 * !A2 * !B2 * Y)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * Y)	-0.00257	-0.00258	-0.00261
	(!A1 * !B2 * Y)	0.00051	0.00051	0.00049
	(!A1 * !B2 * Y)	-0.00257	-0.00258	-0.00261
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00403	0.00410	0.00404
	(A1 * A2 * B2 * !Y)	-0.00187	-0.00190	-0.00186
	(A1 * A2 * !B2 * !Y)	0.00409	0.00414	0.00402
	(A1 * A2 * !B2 * !Y)	-0.00170	-0.00173	-0.00174
	(A1 * !A2 * !B2 * Y)	0.00121	0.00121	0.00115
	(A1 * !A2 * !B2 * Y)	-0.00512	-0.00515	-0.00522
	(!A1 * !B2 * Y)	0.00121	0.00121	0.00115
	(!A1 * !B2 * Y)	-0.00512	-0.00515	-0.00522
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00747	0.00762	0.00751
	(A1 * A2 * B2 * !Y)	-0.00375	-0.00384	-0.00375
	(A1 * A2 * !B2 * !Y)	0.00762	0.00773	0.00750
	(A1 * A2 * !B2 * !Y)	-0.00343	-0.00349	-0.00350
	(A1 * !A2 * !B2 * Y)	0.00213	0.00213	0.00201
	(A1 * !A2 * !B2 * Y)	-0.01016	-0.01020	-0.01036
	(!A1 * !B2 * Y)	0.00211	0.00214	0.00202
	(!A1 * !B2 * Y)	-0.01008	-0.01020	-0.01035

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)	-0.00163	-0.00165	-0.00183
	(A1 * A2 * B2 * !Y)	0.00119	0.00120	0.00104
	(A1 * A2 * !B2 * !Y)	-0.00177	-0.00180	-0.00179
	(A1 * A2 * !B2 * !Y)	0.00101	0.00102	0.00102
	(A1 * !A2 * !B2 * Y)	-0.00048	-0.00048	-0.00048
	(A1 * !A2 * !B2 * Y)	0.00261	0.00263	0.00262
	(!A1 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(!A1 * !B2 * Y)	0.00261	0.00263	0.00262
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00356	-0.00361	-0.00393
	(A1 * A2 * B2 * !Y)	0.00227	0.00229	0.00201
	(A1 * A2 * !B2 * !Y)	-0.00377	-0.00383	-0.00384
	(A1 * A2 * !B2 * !Y)	0.00197	0.00198	0.00198
	(A1 * !A2 * !B2 * Y)	-0.00113	-0.00112	-0.00111
	(A1 * !A2 * !B2 * Y)	0.00525	0.00525	0.00524
	(!A1 * !B2 * Y)	-0.00113	-0.00112	-0.00111
	(!A1 * !B2 * Y)	0.00525	0.00526	0.00524
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00658	-0.00662	-0.00729
	(A1 * A2 * B2 * !Y)	0.00456	0.00456	0.00406
	(A1 * A2 * !B2 * !Y)	-0.00696	-0.00714	-0.00713
	(A1 * A2 * !B2 * !Y)	0.00397	0.00401	0.00399
	(A1 * !A2 * !B2 * Y)	-0.00192	-0.00194	-0.00193
	(A1 * !A2 * !B2 * Y)	0.01036	0.01041	0.01040
	(!A1 * !B2 * Y)	-0.00193	-0.00194	-0.00193
	(!A1 * !B2 * Y)	0.01036	0.01042	0.01040

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)	0.00207	0.00209	0.00206
	(A1 * A2 * B1 * !Y)	-0.00098	-0.00099	-0.00097
	(A1 * A2 * !B1 * !Y)	0.00209	0.00210	0.00206
	(A1 * A2 * !B1 * !Y)	-0.00088	-0.00089	-0.00091
	(A1 * !A2 * !B1 * Y)	0.00170	0.00172	0.00170
	(A1 * !A2 * !B1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * Y)	0.00170	0.00172	0.00170
	(!A1 * !B1 * Y)	-0.00233	-0.00235	-0.00233
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00356	0.00364	0.00359
	(A1 * A2 * B1 * !Y)	-0.00186	-0.00191	-0.00187
	(A1 * A2 * !B1 * !Y)	0.00364	0.00366	0.00358
	(A1 * A2 * !B1 * !Y)	-0.00170	-0.00172	-0.00175
	(A1 * !A2 * !B1 * Y)	0.00307	0.00310	0.00307
	(A1 * !A2 * !B1 * Y)	-0.00440	-0.00441	-0.00439
	(!A1 * !B1 * Y)	0.00307	0.00310	0.00307
	(!A1 * !B1 * Y)	-0.00440	-0.00441	-0.00439
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00745	0.00747	0.00751
	(A1 * A2 * B1 * !Y)	-0.00374	-0.00376	-0.00376
	(A1 * A2 * !B1 * !Y)	0.00762	0.00771	0.00753
	(A1 * A2 * !B1 * !Y)	-0.00340	-0.00346	-0.00351
	(A1 * !A2 * !B1 * Y)	0.00643	0.00651	0.00646
	(A1 * !A2 * !B1 * Y)	-0.00882	-0.00888	-0.00883
	(!A1 * !B1 * Y)	0.00643	0.00651	0.00646
	(!A1 * !B1 * Y)	-0.00882	-0.00888	-0.00883

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)	-0.00179	-0.00182	-0.00200
	(A1 * A2 * B1 * !Y)	0.00120	0.00120	0.00105
	(A1 * A2 * !B1 * !Y)	-0.00193	-0.00197	-0.00196
	(A1 * A2 * !B1 * !Y)	0.00102	0.00103	0.00103
	(A1 * !A2 * !B1 * Y)	-0.00153	-0.00168	-0.00169
	(A1 * !A2 * !B1 * Y)	0.00250	0.00238	0.00235
	(!A1 * !B1 * Y)	-0.00153	-0.00167	-0.00169
	(!A1 * !B1 * Y)	0.00250	0.00239	0.00236
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00310	-0.00315	-0.00347
	(A1 * A2 * B1 * !Y)	0.00228	0.00230	0.00202
	(A1 * A2 * !B1 * !Y)	-0.00331	-0.00339	-0.00339
	(A1 * A2 * !B1 * !Y)	0.00198	0.00199	0.00199
	(A1 * !A2 * !B1 * Y)	-0.00272	-0.00303	-0.00306
	(A1 * !A2 * !B1 * Y)	0.00472	0.00448	0.00443
	(!A1 * !B1 * Y)	-0.00271	-0.00302	-0.00306
	(!A1 * !B1 * Y)	0.00472	0.00448	0.00443
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00658	-0.00666	-0.00728
	(A1 * A2 * B1 * !Y)	0.00457	0.00459	0.00407
	(A1 * A2 * !B1 * !Y)	-0.00696	-0.00712	-0.00711
	(A1 * A2 * !B1 * !Y)	0.00397	0.00401	0.00400
	(A1 * !A2 * !B1 * Y)	-0.00567	-0.00637	-0.00643
	(A1 * !A2 * !B1 * Y)	0.00955	0.00901	0.00891
	(!A1 * !B1 * Y)	-0.00567	-0.00637	-0.00643
	(!A1 * !B1 * Y)	0.00955	0.00901	0.00891

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00277	0.00257	0.00271	0.00278	1.26092
sky130_fd_sc_hs__a22o_2	0.00289	0.00268	0.00284	0.00278	2.40125
sky130_fd_sc_hs__a22o_4	0.00493	0.00520	0.00494	0.00541	4.91495

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	10.60530	22.31350
sky130_fd_sc_hs__a22o_2	0.00000	14.58410	22.59450
sky130_fd_sc_hs__a22o_4	0.00000	29.28670	45.17960

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)	0.09120	0.59895	6.50522
	A2->X (RR)	0.09664	0.58184	6.42544
	B1->X (RR)	0.07264	0.55788	6.36629
	B2->X (RR)	0.07686	0.54911	6.28849
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.09123	0.51606	6.32130
	A2->X (RR)	0.09698	0.49375	6.21887
	B1->X (RR)	0.07375	0.47920	6.17410
	B2->X (RR)	0.07757	0.46635	6.08762
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.09030	0.44205	6.50862
	A2->X (RR)	0.09577	0.42902	6.39304
	B1->X (RR)	0.07369	0.40609	6.28321
	B2->X (RR)	0.07827	0.39610	6.23999

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.13280	0.53305	4.98333
	A2->X (FF)	0.14417	0.56186	5.11592
	B1->X (FF)	0.11526	0.55200	5.18876
	B2->X (FF)	0.12315	0.56740	5.23279
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.16144	0.53951	4.96135
	A2->X (FF)	0.17469	0.57125	5.10902
	B1->X (FF)	0.14588	0.56949	5.17862
	B2->X (FF)	0.15263	0.58292	5.23321
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.15744	0.50615	5.25256
	A2->X (FF)	0.16723	0.52699	5.32843
	B1->X (FF)	0.14085	0.53561	5.39060
	B2->X (FF)	0.14324	0.53883	5.41202

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01378	0.01621	0.06572
	A1	0.00675	0.00920	0.05889
	A2	0.01500	0.01719	0.07592
	A2	0.00675	0.00894	0.06793
	B1	0.00895	0.01274	0.07853
	B1	0.00435	0.00815	0.07422
	B2	0.01000	0.01318	0.07791
	B2	0.00430	0.00749	0.07262
sky130_fd_sc_hs__a22o_2	A1	0.01717	0.01965	0.06930
	A1	0.00988	0.01243	0.06267
	A2	0.01839	0.02054	0.07966
	A2	0.00981	0.01201	0.07180
	B1	0.01212	0.01577	0.08192
	B1	0.00725	0.01093	0.07804
	B2	0.01325	0.01641	0.08155
	B2	0.00724	0.01043	0.07659
sky130_fd_sc_hs__a22o_4	A1	0.03384	0.03919	0.16087
	A1	0.02020	0.02566	0.14805
	A2	0.03643	0.04091	0.15730
	A2	0.02025	0.02486	0.14233
	B1	0.02384	0.03064	0.16265
	B1	0.01510	0.02190	0.15516
	B2	0.02603	0.03197	0.16721
	B2	0.01478	0.02079	0.15751

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00380	0.00571	0.06296
	A1	0.01083	0.01266	0.06962
	A2	0.00467	0.00728	0.06688
	A2	0.01288	0.01505	0.07415
	B1	0.00379	0.00820	0.07972
	B1	0.00839	0.01278	0.08370
	B2	0.00414	0.00854	0.07939
	B2	0.00982	0.01420	0.08423
sky130_fd_sc_hs__a22o_2	A1	0.00749	0.00893	0.06556
	A1	0.01476	0.01608	0.07282
	A2	0.00907	0.01067	0.06997
	A2	0.01759	0.01904	0.07830
	B1	0.00732	0.01148	0.08367
	B1	0.01217	0.01629	0.08738
	B2	0.00795	0.01223	0.08370
	B2	0.01391	0.01801	0.08882
sky130_fd_sc_hs__a22o_4	A1	0.01554	0.01838	0.14010
	A1	0.02919	0.03187	0.15060
	A2	0.01604	0.01926	0.13709
	A2	0.03216	0.03492	0.15115
	B1	0.01533	0.02203	0.14651
	B1	0.02409	0.03071	0.15247
	B2	0.01621	0.02321	0.15412
	B2	0.02739	0.03438	0.16465

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)	0.00238	0.00195	0.00193
	(A2 * B1 * B2 * X)	-0.00131	-0.00176	-0.00175
	(!A2 * B1 * B2 * X)	0.00186	0.00187	0.00186
	(!A2 * B1 * B2 * X)	-0.00176	-0.00178	-0.00176
	(!A2 * B1 * !B2 * !X)	0.00062	0.00062	0.00058
	(!A2 * B1 * !B2 * !X)	-0.00236	-0.00236	-0.00243
	(!A2 * !B1 * !X)	0.00063	0.00062	0.00058
	(!A2 * !B1 * !X)	-0.00236	-0.00236	-0.00243
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00256	0.00213	0.00211
	(A2 * B1 * B2 * X)	-0.00129	-0.00173	-0.00172
	(!A2 * B1 * B2 * X)	0.00203	0.00205	0.00204
	(!A2 * B1 * B2 * X)	-0.00174	-0.00175	-0.00174
	(!A2 * B1 * !B2 * !X)	0.00074	0.00074	0.00069
	(!A2 * B1 * !B2 * !X)	-0.00230	-0.00231	-0.00239
	(!A2 * !B1 * !X)	0.00074	0.00074	0.00069
	(!A2 * !B1 * !X)	-0.00230	-0.00231	-0.00238
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00419	0.00331	0.00322
	(A2 * B1 * B2 * X)	-0.00267	-0.00362	-0.00362
	(!A2 * B1 * B2 * X)	0.00307	0.00308	0.00308
	(!A2 * B1 * B2 * X)	-0.00366	-0.00368	-0.00367
	(!A2 * B1 * !B2 * !X)	0.00109	0.00110	0.00106
	(!A2 * B1 * !B2 * !X)	-0.00433	-0.00435	-0.00443
	(!A2 * !B1 * !X)	0.00109	0.00110	0.00106
	(!A2 * !B1 * !X)	-0.00433	-0.00436	-0.00443

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)	-0.00152	-0.00154	-0.00154
	(A2 * B1 * B2 * X)	0.00215	0.00217	0.00214
	(!A2 * B1 * B2 * X)	-0.00142	-0.00149	-0.00149
	(!A2 * B1 * B2 * X)	0.00215	0.00216	0.00216
	(!A2 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * !X)	0.00256	0.00256	0.00257
	(!A2 * !B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !X)	0.00256	0.00256	0.00257
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00169	-0.00171	-0.00172
	(A2 * B1 * B2 * X)	0.00213	0.00215	0.00212
	(!A2 * B1 * B2 * X)	-0.00159	-0.00166	-0.00166
	(!A2 * B1 * B2 * X)	0.00213	0.00214	0.00214
	(!A2 * B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * B1 * !B2 * !X)	0.00264	0.00268	0.00264
	(!A2 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !X)	0.00264	0.00268	0.00264
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00240	-0.00242	-0.00243
	(A2 * B1 * B2 * X)	0.00447	0.00449	0.00442
	(!A2 * B1 * B2 * X)	-0.00226	-0.00232	-0.00232
	(!A2 * B1 * B2 * X)	0.00444	0.00449	0.00446
	(!A2 * B1 * !B2 * !X)	-0.00054	-0.00056	-0.00054
	(!A2 * B1 * !B2 * !X)	0.00493	0.00501	0.00494
	(!A2 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !X)	0.00494	0.00501	0.00494

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)	0.00235	0.00193	0.00190
	(A1 * B1 * B2 * X)	-0.00131	-0.00176	-0.00175
	(!A1 * B1 * B2 * X)	0.00183	0.00184	0.00183
	(!A1 * B1 * B2 * X)	-0.00176	-0.00177	-0.00176
	(!A1 * B1 * !B2 * !X)	0.00171	0.00170	0.00171
	(!A1 * B1 * !B2 * !X)	-0.00189	-0.00189	-0.00189
	(!A1 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !B1 * !X)	-0.00189	-0.00191	-0.00189
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00241	0.00198	0.00195
	(A1 * B1 * B2 * X)	-0.00137	-0.00182	-0.00181
	(!A1 * B1 * B2 * X)	0.00189	0.00190	0.00188
	(!A1 * B1 * B2 * X)	-0.00183	-0.00183	-0.00182
	(!A1 * B1 * !B2 * !X)	0.00181	0.00183	0.00181
	(!A1 * B1 * !B2 * !X)	-0.00189	-0.00191	-0.00189
	(!A1 * !B1 * !X)	0.00181	0.00181	0.00181
	(!A1 * !B1 * !X)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00474	0.00392	0.00382
	(A1 * B1 * B2 * X)	-0.00264	-0.00355	-0.00355
	(!A1 * B1 * B2 * X)	0.00369	0.00372	0.00369
	(!A1 * B1 * B2 * X)	-0.00358	-0.00361	-0.00359
	(!A1 * B1 * !B2 * !X)	0.00349	0.00351	0.00350
	(!A1 * B1 * !B2 * !X)	-0.00378	-0.00380	-0.00379
	(!A1 * !B1 * !X)	0.00349	0.00351	0.00350
	(!A1 * !B1 * !X)	-0.00378	-0.00380	-0.00379

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)	-0.00150	-0.00149	-0.00151
	(A1 * B1 * B2 * X)	0.00216	0.00214	0.00214
	(!A1 * B1 * B2 * X)	-0.00140	-0.00145	-0.00146
	(!A1 * B1 * B2 * X)	0.00215	0.00216	0.00216
	(!A1 * B1 * !B2 * !X)	-0.00141	-0.00156	-0.00158
	(!A1 * B1 * !B2 * !X)	0.00217	0.00206	0.00203
	(!A1 * !B1 * !X)	-0.00141	-0.00156	-0.00158
	(!A1 * !B1 * !X)	0.00217	0.00206	0.00204
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00154	-0.00155	-0.00157
	(A1 * B1 * B2 * X)	0.00222	0.00222	0.00220
	(!A1 * B1 * B2 * X)	-0.00145	-0.00150	-0.00151
	(!A1 * B1 * B2 * X)	0.00223	0.00224	0.00222
	(!A1 * B1 * !B2 * !X)	-0.00139	-0.00154	-0.00157
	(!A1 * B1 * !B2 * !X)	0.00230	0.00218	0.00215
	(!A1 * !B1 * !X)	-0.00139	-0.00154	-0.00157
	(!A1 * !B1 * !X)	0.00230	0.00218	0.00215
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00300	-0.00302	-0.00303
	(A1 * B1 * B2 * X)	0.00438	0.00441	0.00435
	(!A1 * B1 * B2 * X)	-0.00287	-0.00290	-0.00293
	(!A1 * B1 * B2 * X)	0.00438	0.00438	0.00439
	(!A1 * B1 * !B2 * !X)	-0.00270	-0.00297	-0.00299
	(!A1 * B1 * !B2 * !X)	0.00459	0.00439	0.00432
	(!A1 * !B1 * !X)	-0.00270	-0.00297	-0.00299
	(!A1 * !B1 * !X)	0.00460	0.00439	0.00432

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)	0.00167	0.00170	0.00167
	(A1 * A2 * B2 * X)	-0.00087	-0.00089	-0.00087
	(A1 * A2 * !B2 * X)	0.00174	0.00175	0.00171
	(A1 * A2 * !B2 * X)	-0.00075	-0.00076	-0.00078
	(A1 * !A2 * !B2 * !X)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B2 * !X)	-0.00221	-0.00222	-0.00224
	(!A1 * !B2 * !X)	0.00056	0.00056	0.00054
	(!A1 * !B2 * !X)	-0.00221	-0.00221	-0.00224
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00186	0.00190	0.00187
	(A1 * A2 * B2 * X)	-0.00086	-0.00088	-0.00085
	(A1 * A2 * !B2 * X)	0.00194	0.00195	0.00191
	(A1 * A2 * !B2 * X)	-0.00074	-0.00075	-0.00076
	(A1 * !A2 * !B2 * !X)	0.00064	0.00064	0.00062
	(A1 * !A2 * !B2 * !X)	-0.00218	-0.00220	-0.00223
	(!A1 * !B2 * !X)	0.00065	0.00065	0.00063
	(!A1 * !B2 * !X)	-0.00218	-0.00219	-0.00223
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00311	0.00316	0.00312
	(A1 * A2 * B2 * X)	-0.00170	-0.00173	-0.00169
	(A1 * A2 * !B2 * X)	0.00324	0.00325	0.00319
	(A1 * A2 * !B2 * X)	-0.00148	-0.00150	-0.00153
	(A1 * !A2 * !B2 * !X)	0.00114	0.00114	0.00109
	(A1 * !A2 * !B2 * !X)	-0.00417	-0.00418	-0.00424
	(!A1 * !B2 * !X)	0.00114	0.00114	0.00109
	(!A1 * !B2 * !X)	-0.00417	-0.00418	-0.00424

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)	-0.00143	-0.00144	-0.00159
	(A1 * A2 * B2 * X)	0.00110	0.00110	0.00097
	(A1 * A2 * !B2 * X)	-0.00153	-0.00156	-0.00155
	(A1 * A2 * !B2 * X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(A1 * !A2 * !B2 * !X)	0.00237	0.00236	0.00237
	(!A1 * !B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !B2 * !X)	0.00236	0.00236	0.00237
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00162	-0.00164	-0.00179
	(A1 * A2 * B2 * X)	0.00109	0.00109	0.00096
	(A1 * A2 * !B2 * X)	-0.00172	-0.00175	-0.00174
	(A1 * A2 * !B2 * X)	0.00096	0.00096	0.00095
	(A1 * !A2 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B2 * !X)	0.00247	0.00251	0.00248
	(!A1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !B2 * !X)	0.00247	0.00251	0.00248
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00259	-0.00263	-0.00295
	(A1 * A2 * B2 * X)	0.00216	0.00218	0.00191
	(A1 * A2 * !B2 * X)	-0.00281	-0.00286	-0.00286
	(A1 * A2 * !B2 * X)	0.00192	0.00192	0.00191
	(A1 * !A2 * !B2 * !X)	-0.00057	-0.00060	-0.00057
	(A1 * !A2 * !B2 * !X)	0.00474	0.00480	0.00475
	(!A1 * !B2 * !X)	-0.00057	-0.00060	-0.00057
	(!A1 * !B2 * !X)	0.00475	0.00480	0.00475

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)	0.00175	0.00177	0.00175
	(A1 * A2 * B1 * X)	-0.00096	-0.00097	-0.00095
	(A1 * A2 * !B1 * X)	0.00183	0.00184	0.00180
	(A1 * A2 * !B1 * X)	-0.00082	-0.00083	-0.00085
	(A1 * !A2 * !B1 * !X)	0.00151	0.00152	0.00152
	(A1 * !A2 * !B1 * !X)	-0.00199	-0.00200	-0.00200
	(!A1 * !B1 * !X)	0.00160	0.00161	0.00161
	(!A1 * !B1 * !X)	-0.00198	-0.00199	-0.00199
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00184	0.00186	0.00184
	(A1 * A2 * B1 * X)	-0.00091	-0.00092	-0.00090
	(A1 * A2 * !B1 * X)	0.00193	0.00193	0.00189
	(A1 * A2 * !B1 * X)	-0.00076	-0.00076	-0.00079
	(A1 * !A2 * !B1 * !X)	0.00173	0.00175	0.00173
	(A1 * !A2 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(!A1 * !B1 * !X)	0.00177	0.00179	0.00178
	(!A1 * !B1 * !X)	-0.00185	-0.00187	-0.00185
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00339	0.00344	0.00339
	(A1 * A2 * B1 * X)	-0.00190	-0.00191	-0.00187
	(A1 * A2 * !B1 * X)	0.00362	0.00366	0.00353
	(A1 * A2 * !B1 * X)	-0.00158	-0.00161	-0.00166
	(A1 * !A2 * !B1 * !X)	0.00289	0.00293	0.00291
	(A1 * !A2 * !B1 * !X)	-0.00418	-0.00422	-0.00419
	(!A1 * !B1 * !X)	0.00289	0.00293	0.00291
	(!A1 * !B1 * !X)	-0.00418	-0.00422	-0.00419

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)	-0.00151	-0.00152	-0.00167
	(A1 * A2 * B1 * X)	0.00118	0.00118	0.00105
	(A1 * A2 * !B1 * X)	-0.00161	-0.00164	-0.00163
	(A1 * A2 * !B1 * X)	0.00103	0.00105	0.00104
	(A1 * !A2 * !B1 * !X)	-0.00121	-0.00133	-0.00137
	(A1 * !A2 * !B1 * !X)	0.00231	0.00221	0.00215
	(!A1 * !B1 * !X)	-0.00132	-0.00144	-0.00147
	(!A1 * !B1 * !X)	0.00227	0.00217	0.00213
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00159	-0.00160	-0.00175
	(A1 * A2 * B1 * X)	0.00114	0.00114	0.00100
	(A1 * A2 * !B1 * X)	-0.00169	-0.00173	-0.00171
	(A1 * A2 * !B1 * X)	0.00098	0.00099	0.00099
	(A1 * !A2 * !B1 * !X)	-0.00131	-0.00144	-0.00148
	(A1 * !A2 * !B1 * !X)	0.00227	0.00216	0.00212
	(!A1 * !B1 * !X)	-0.00136	-0.00149	-0.00152
	(!A1 * !B1 * !X)	0.00226	0.00216	0.00212
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00289	-0.00290	-0.00323
	(A1 * A2 * B1 * X)	0.00236	0.00235	0.00209
	(A1 * A2 * !B1 * X)	-0.00314	-0.00319	-0.00316
	(A1 * A2 * !B1 * X)	0.00205	0.00205	0.00206
	(A1 * !A2 * !B1 * !X)	-0.00212	-0.00235	-0.00239
	(A1 * !A2 * !B1 * !X)	0.00501	0.00479	0.00472
	(!A1 * !B1 * !X)	-0.00211	-0.00235	-0.00239
	(!A1 * !B1 * !X)	0.00501	0.00479	0.00472

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00240	0.00260	0.00281	0.00298	0.56792
sky130_fd_sc_hs__a2bb2oi_2	0.00263	0.00272	0.00547	0.00549	1.13392
sky130_fd_sc_hs__a2bb2oi_4	0.00417	0.00437	0.01088	0.01102	2.06880

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	7.39920	18.40080
sky130_fd_sc_hs__a2bb2oi_2	0.00000	10.49730	25.77970
sky130_fd_sc_hs__a2bb2oi_4	0.00000	20.75630	51.54790

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)	0.10160	0.72164	6.32500
	A2_N->Y (RR)	0.09517	0.69501	6.19792
	B1->Y (FR)	0.08830	0.85156	9.36576
	B2->Y (FR)	0.06924	0.80021	8.99196
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.09388	0.57376	6.06301
	A2_N->Y (RR)	0.08859	0.55504	5.96514
	B1->Y (FR)	0.08097	0.70946	9.28871
	B2->Y (FR)	0.06061	0.67984	9.12772
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.11804	0.55908	6.60073
	A2_N->Y (RR)	0.10495	0.52611	6.45569
	B1->Y (FR)	0.08092	0.60518	9.09097
	B2->Y (FR)	0.05926	0.57216	8.82795

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)	0.10199	0.40518	3.02535
	A2_N->Y (FF)	0.09075	0.41101	3.04913
	B1->Y (RF)	0.03405	0.37572	4.07307
	B2->Y (RF)	0.03063	0.41968	4.65543
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.12822	0.43728	3.34453
	A2_N->Y (FF)	0.11606	0.45081	3.30877
	B1->Y (RF)	0.03462	0.34155	4.41200
	B2->Y (RF)	0.02867	0.38349	5.06856
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.12880	0.39197	2.74386
	A2_N->Y (FF)	0.10986	0.39936	2.99998
	B1->Y (RF)	0.03359	0.27931	4.18942
	B2->Y (RF)	0.02853	0.33279	5.06936

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	0.01007	0.01326	0.07063
	A1_N	0.00711	0.01022	0.06794
	A2_N	0.00818	0.01157	0.07569
	A2_N	0.00627	0.00958	0.07401
	B1	0.00201	0.00262	0.02226
	B1	0.00777	0.00839	0.02808
	B2	0.00131	0.00194	0.02121
	B2	0.00607	0.00670	0.02598
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01398	0.01776	0.08234
	A1_N	0.01352	0.01713	0.08240
	A2_N	0.01184	0.01564	0.08518
	A2_N	0.01254	0.01624	0.08595
	B1	0.00455	0.00590	0.04244
	B1	0.01608	0.01744	0.05415
	B2	0.00262	0.00411	0.03986
	B2	0.01165	0.01319	0.04915
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02612	0.03083	0.12706
	A1_N	0.02643	0.03100	0.12791
	A2_N	0.02133	0.02730	0.13909
	A2_N	0.02394	0.02962	0.14236
	B1	0.00841	0.01160	0.08464
	B1	0.03168	0.03492	0.10782
	B2	0.00510	0.00857	0.07961
	B2	0.02346	0.02690	0.09826

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00582	0.00857	0.06485
	A1_N	0.00949	0.01220	0.06855
	A2_N	0.00576	0.00981	0.06906
	A2_N	0.00842	0.01244	0.07170
	B1	0.00752	0.00816	0.02440
	B1	0.00175	0.00238	0.01844
	B2	0.00650	0.00739	0.02459
	B2	0.00176	0.00260	0.01931
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01042	0.01304	0.07522
	A1_N	0.01285	0.01533	0.07757
	A2_N	0.01062	0.01462	0.07547
	A2_N	0.01188	0.01569	0.07652
	B1	0.01450	0.01580	0.04580
	B1	0.00293	0.00417	0.03405
	B2	0.01202	0.01381	0.04510
	B2	0.00297	0.00473	0.03516
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02187	0.02527	0.10619
	A1_N	0.02492	0.02785	0.10878
	A2_N	0.01638	0.02231	0.13214
	A2_N	0.02238	0.02827	0.13809
	B1	0.02855	0.03177	0.09346
	B1	0.00520	0.00830	0.06921
	B2	0.02361	0.02758	0.08799
	B2	0.00527	0.00920	0.06868

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)	0.00187	0.00152	0.00150
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00150	-0.00185	-0.00185
	(!A2_N * B1 * B2 * !Y)	0.00715	0.00987	0.06636
	(!A2_N * B1 * B2 * !Y)	0.00177	0.00450	0.06100
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00237	0.00203	0.00199
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00138	-0.00173	-0.00173
	(!A2_N * B1 * B2 * !Y)	0.00892	0.01208	0.07492
	(!A2_N * B1 * B2 * !Y)	0.00308	0.00624	0.06911
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00330	0.00242	0.00232
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00258	-0.00350	-0.00355
	(!A2_N * B1 * B2 * !Y)	0.01588	0.01983	0.11555
	(!A2_N * B1 * B2 * !Y)	0.00613	0.01007	0.10591

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)	-0.00116	-0.00117	-0.00117
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00220	0.00221	0.00218
	(!A2_N * B1 * B2 * !Y)	0.00180	0.00443	0.06099
	(!A2_N * B1 * B2 * !Y)	0.00715	0.00979	0.06634
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00152	-0.00154	-0.00154
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00219	0.00222	0.00219
	(!A2_N * B1 * B2 * !Y)	0.00313	0.00578	0.06834
	(!A2_N * B1 * B2 * !Y)	0.00892	0.01160	0.07414
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00138	-0.00140	-0.00140
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00448	0.00453	0.00448
	(!A2_N * B1 * B2 * !Y)	0.00714	0.01065	0.10714
	(!A2_N * B1 * B2 * !Y)	0.01678	0.02034	0.11679

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)	0.00163	0.00166	0.00163
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00085	-0.00086	-0.00084
	(!A1_N * B1 * B2 * !Y)	0.00523	0.00851	0.07230
	(!A1_N * B1 * B2 * !Y)	0.00088	0.00415	0.06795
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00190	0.00193	0.00190
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00078	-0.00079	-0.00078
	(!A1_N * B1 * B2 * !Y)	0.00682	0.01031	0.07964
	(!A1_N * B1 * B2 * !Y)	0.00218	0.00565	0.07501
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00279	0.00283	0.00280
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00159	-0.00162	-0.00158
	(!A1_N * B1 * B2 * !Y)	0.01108	0.01585	0.12504
	(!A1_N * B1 * B2 * !Y)	0.00332	0.00809	0.11732

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)	-0.00139	-0.00141	-0.00147
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00107	0.00108	0.00102
	(!A1_N * B1 * B2 * !Y)	0.00174	0.00576	0.06966
	(!A1_N * B1 * B2 * !Y)	0.00608	0.01011	0.07400
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00154	-0.00155	-0.00161
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00114	0.00114	0.00108
	(!A1_N * B1 * B2 * !Y)	0.00334	0.00735	0.07666
	(!A1_N * B1 * B2 * !Y)	0.00796	0.01198	0.08128
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00201	-0.00203	-0.00221
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00236	0.00237	0.00220
	(!A1_N * B1 * B2 * !Y)	0.00660	0.01309	0.12308
	(!A1_N * B1 * B2 * !Y)	0.01428	0.02077	0.13076

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)	0.00169	0.00169	0.00170
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00219	-0.00218	-0.00219
	(!A1_N * !A2_N * B2 * !Y)	0.00232	0.00189	0.00182
	(!A1_N * !A2_N * B2 * !Y)	-0.00163	-0.00208	-0.00212
	(!A1_N * !A2_N * !B2 * !Y)	0.00174	0.00176	0.00175
	(!A1_N * !A2_N * !B2 * !Y)	-0.00213	-0.00214	-0.00214
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00325	0.00328	0.00326
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00444	-0.00445	-0.00443
	(!A1_N * !A2_N * B2 * !Y)	0.00453	0.00366	0.00351
	(!A1_N * !A2_N * B2 * !Y)	-0.00328	-0.00421	-0.00429
	(!A1_N * !A2_N * !B2 * !Y)	0.00335	0.00338	0.00335
	(!A1_N * !A2_N * !B2 * !Y)	-0.00433	-0.00435	-0.00433
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00653	0.00660	0.00653
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00890	-0.00894	-0.00888
	(!A1_N * !A2_N * B2 * !Y)	0.00905	0.00731	0.00702
	(!A1_N * !A2_N * B2 * !Y)	-0.00660	-0.00843	-0.00860
	(!A1_N * !A2_N * !B2 * !Y)	0.00670	0.00672	0.00669
	(!A1_N * !A2_N * !B2 * !Y)	-0.00869	-0.00870	-0.00868

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)	-0.00154	-0.00165	-0.00168
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00236	0.00226	0.00222
	(!A1_N * !A2_N * B2 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1_N * !A2_N * B2 * !Y)	0.00225	0.00228	0.00227
	(!A1_N * !A2_N * !B2 * !Y)	-0.00161	-0.00163	-0.00163
	(!A1_N * !A2_N * !B2 * !Y)	0.00227	0.00228	0.00227
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00286	-0.00319	-0.00325
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00481	0.00455	0.00448
	(!A1_N * !A2_N * B2 * !Y)	-0.00321	-0.00324	-0.00321
	(!A1_N * !A2_N * B2 * !Y)	0.00454	0.00460	0.00458
	(!A1_N * !A2_N * !B2 * !Y)	-0.00304	-0.00313	-0.00314
	(!A1_N * !A2_N * !B2 * !Y)	0.00458	0.00463	0.00459
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00570	-0.00637	-0.00648
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00965	0.00913	0.00898
	(!A1_N * !A2_N * B2 * !Y)	-0.00647	-0.00650	-0.00644
	(!A1_N * !A2_N * B2 * !Y)	0.00917	0.00924	0.00917
	(!A1_N * !A2_N * !B2 * !Y)	-0.00610	-0.00625	-0.00627
	(!A1_N * !A2_N * !B2 * !Y)	0.00916	0.00928	0.00919

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)	0.00070	0.00070	0.00068
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00255	-0.00256	-0.00259
	(!A1_N * !A2_N * B1 * !Y)	0.00230	0.00188	0.00181
	(!A1_N * !A2_N * B1 * !Y)	-0.00175	-0.00222	-0.00225
	(!A1_N * !A2_N * !B1 * !Y)	0.00174	0.00176	0.00174
	(!A1_N * !A2_N * !B1 * !Y)	-0.00228	-0.00229	-0.00227
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00116	0.00117	0.00110
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00496	-0.00500	-0.00510
	(!A1_N * !A2_N * B1 * !Y)	0.00448	0.00363	0.00350
	(!A1_N * !A2_N * B1 * !Y)	-0.00325	-0.00418	-0.00426
	(!A1_N * !A2_N * !B1 * !Y)	0.00334	0.00337	0.00334
	(!A1_N * !A2_N * !B1 * !Y)	-0.00430	-0.00432	-0.00429
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00218	0.00220	0.00208
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01014	-0.01021	-0.01039
	(!A1_N * !A2_N * B1 * !Y)	0.00897	0.00726	0.00697
	(!A1_N * !A2_N * B1 * !Y)	-0.00660	-0.00847	-0.00863
	(!A1_N * !A2_N * !B1 * !Y)	0.00661	0.00666	0.00665
	(!A1_N * !A2_N * !B1 * !Y)	-0.00867	-0.00873	-0.00871

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)	-0.00065	-0.00065	-0.00065
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00261	0.00261	0.00261
	(!A1_N * !A2_N * B1 * !Y)	-0.00166	-0.00167	-0.00166
	(!A1_N * !A2_N * B1 * !Y)	0.00239	0.00242	0.00240
	(!A1_N * !A2_N * !B1 * !Y)	-0.00160	-0.00162	-0.00162
	(!A1_N * !A2_N * !B1 * !Y)	0.00241	0.00241	0.00241
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00511	0.00512	0.00514
	(!A1_N * !A2_N * B1 * !Y)	-0.00322	-0.00322	-0.00320
	(!A1_N * !A2_N * B1 * !Y)	0.00454	0.00455	0.00455
	(!A1_N * !A2_N * !B1 * !Y)	-0.00304	-0.00314	-0.00314
	(!A1_N * !A2_N * !B1 * !Y)	0.00456	0.00458	0.00456
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00197	-0.00200	-0.00198
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01039	0.01048	0.01046
	(!A1_N * !A2_N * B1 * !Y)	-0.00643	-0.00644	-0.00640
	(!A1_N * !A2_N * B1 * !Y)	0.00921	0.00924	0.00920
	(!A1_N * !A2_N * !B1 * !Y)	-0.00608	-0.00625	-0.00625
	(!A1_N * !A2_N * !B1 * !Y)	0.00925	0.00929	0.00923

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00238	0.00245	0.00261	0.00252	1.26006
sky130_fd_sc_hs__a2bb2o_2	0.00250	0.00255	0.00274	0.00291	2.16555
sky130_fd_sc_hs__a2bb2o_4	0.00274	0.00289	0.00495	0.00496	4.67533

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	12.97190	22.28430
sky130_fd_sc_hs__a2bb2o_2	0.00000	16.92830	25.51120
sky130_fd_sc_hs__a2bb2o_4	0.00000	27.93510	35.85950

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)	0.14663	0.70677	7.87310
	A2_N->X (FR)	0.13404	0.71433	7.98676
	B1->X (RR)	0.08196	0.55673	6.30457
	B2->X (RR)	0.07736	0.56524	6.42708
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.15226	0.62868	7.70224
	A2_N->X (FR)	0.13940	0.63615	7.83340
	B1->X (RR)	0.08106	0.47504	6.00375
	B2->X (RR)	0.07797	0.48936	6.13323
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.19091	0.60948	8.00754
	A2_N->X (FR)	0.17958	0.62196	8.12813
	B1->X (RR)	0.09155	0.42086	6.32308
	B2->X (RR)	0.08582	0.43495	6.46607

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)	0.14463	0.42687	2.92731
	A2_N->X (RF)	0.13704	0.40265	2.75468
	B1->X (FF)	0.13111	0.53125	4.97229
	B2->X (FF)	0.11210	0.50028	4.86234
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.17147	0.41693	2.60051
	A2_N->X (RF)	0.16356	0.38792	2.39938
	B1->X (FF)	0.15717	0.53388	4.76451
	B2->X (FF)	0.13936	0.50395	4.65604
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.16827	0.38865	2.95765
	A2_N->X (RF)	0.15963	0.36356	2.77042
	B1->X (FF)	0.15979	0.50640	5.12755
	B2->X (FF)	0.13869	0.47276	5.00073

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	0.01003	0.01293	0.07179
	A1_N	0.01345	0.01645	0.07667
	A2_N	0.00888	0.01339	0.08239
	A2_N	0.01230	0.01684	0.08605
	B1	0.01150	0.01388	0.07082
	B1	0.00584	0.00822	0.06553
	B2	0.01031	0.01322	0.07278
	B2	0.00585	0.00877	0.06860
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01333	0.01650	0.07452
	A1_N	0.01693	0.02023	0.08033
	A2_N	0.01206	0.01686	0.08672
	A2_N	0.01575	0.02055	0.09121
	B1	0.01499	0.01757	0.07576
	B1	0.00924	0.01184	0.07067
	B2	0.01395	0.01698	0.07747
	B2	0.00925	0.01231	0.07347
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02319	0.02624	0.09183
	A1_N	0.02608	0.02927	0.09564
	A2_N	0.02306	0.02752	0.10147
	A2_N	0.02422	0.02923	0.10545
	B1	0.02806	0.03246	0.14238
	B1	0.01734	0.02175	0.13287
	B2	0.02585	0.03153	0.14693
	B2	0.01736	0.02308	0.13933

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01375	0.01678	0.07639
	A1_N	0.01111	0.01387	0.07211
	A2_N	0.01167	0.01525	0.08211
	A2_N	0.01006	0.01336	0.07892
	B1	0.00593	0.00810	0.06529
	B1	0.01158	0.01372	0.07037
	B2	0.00552	0.00773	0.06697
	B2	0.00999	0.01218	0.07062
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01899	0.02114	0.07715
	A1_N	0.01522	0.01718	0.07330
	A2_N	0.01685	0.01918	0.08358
	A2_N	0.01427	0.01660	0.08100
	B1	0.01012	0.01150	0.07028
	B1	0.01583	0.01707	0.07467
	B2	0.00933	0.01101	0.07104
	B2	0.01403	0.01552	0.07405
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03298	0.03446	0.10384
	A1_N	0.03000	0.03136	0.10083
	A2_N	0.03041	0.03254	0.10896
	A2_N	0.02863	0.03061	0.10602
	B1	0.02168	0.02369	0.13642
	B1	0.03236	0.03402	0.14252
	B2	0.01953	0.02184	0.13804
	B2	0.02805	0.03031	0.14181

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)	0.00200	0.00165	0.00162
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00135	-0.00172	-0.00172
	(!A2_N * B1 * B2 * X)	0.00696	0.00969	0.06595
	(!A2_N * B1 * B2 * X)	0.00177	0.00450	0.06078
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00207	0.00170	0.00167
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00144	-0.00182	-0.00181
	(!A2_N * B1 * B2 * X)	0.00711	0.00997	0.06520
	(!A2_N * B1 * B2 * X)	0.00168	0.00452	0.05979
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00235	0.00198	0.00193
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00151	-0.00189	-0.00191
	(!A2_N * B1 * B2 * X)	0.00917	0.01232	0.07670
	(!A2_N * B1 * B2 * X)	0.00306	0.00619	0.07061

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)	-0.00122	-0.00123	-0.00123
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00212	0.00214	0.00211
	(!A2_N * B1 * B2 * X)	0.00177	0.00438	0.06075
	(!A2_N * B1 * B2 * X)	0.00693	0.00957	0.06592
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00127	-0.00128	-0.00128
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00222	0.00224	0.00221
	(!A2_N * B1 * B2 * X)	0.00167	0.00425	0.05976
	(!A2_N * B1 * B2 * X)	0.00708	0.00968	0.06518
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00139	-0.00140	-0.00139
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00246	0.00248	0.00245
	(!A2_N * B1 * B2 * X)	0.00154	0.00432	0.06852
	(!A2_N * B1 * B2 * X)	0.00762	0.01041	0.07462

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)	0.00165	0.00168	0.00166
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00077	-0.00078	-0.00076
	(!A1_N * B1 * B2 * X)	0.00494	0.00827	0.07139
	(!A1_N * B1 * B2 * X)	0.00082	0.00414	0.06728
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00167	0.00170	0.00168
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00076	-0.00078	-0.00076
	(!A1_N * B1 * B2 * X)	0.00504	0.00835	0.07127
	(!A1_N * B1 * B2 * X)	0.00081	0.00410	0.06704
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00206	0.00209	0.00207
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00076	-0.00078	-0.00076
	(!A1_N * B1 * B2 * X)	0.00697	0.01061	0.08061
	(!A1_N * B1 * B2 * X)	0.00205	0.00566	0.07569

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)	-0.00136	-0.00137	-0.00143
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00106	0.00107	0.00101
	(!A1_N * B1 * B2 * X)	0.00172	0.00571	0.06894
	(!A1_N * B1 * B2 * X)	0.00583	0.00984	0.07305
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00137	-0.00138	-0.00144
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00106	0.00106	0.00101
	(!A1_N * B1 * B2 * X)	0.00169	0.00569	0.06873
	(!A1_N * B1 * B2 * X)	0.00592	0.00992	0.07295
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00157	-0.00158	-0.00164
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00125	0.00125	0.00120
	(!A1_N * B1 * B2 * X)	0.00149	0.00571	0.07551
	(!A1_N * B1 * B2 * X)	0.00641	0.01061	0.08042

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)	0.00182	0.00184	0.00183
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00192	-0.00193	-0.00192
	(!A1_N * !A2_N * B2 * X)	0.00235	0.00196	0.00191
	(!A1_N * !A2_N * B2 * X)	-0.00144	-0.00185	-0.00188
	(!A1_N * !A2_N * !B2 * X)	0.00184	0.00187	0.00185
	(!A1_N * !A2_N * !B2 * X)	-0.00189	-0.00191	-0.00190
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00182	0.00185	0.00183
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00190	-0.00191	-0.00190
	(!A1_N * !A2_N * B2 * X)	0.00233	0.00193	0.00187
	(!A1_N * !A2_N * B2 * X)	-0.00145	-0.00188	-0.00191
	(!A1_N * !A2_N * !B2 * X)	0.00179	0.00180	0.00179
	(!A1_N * !A2_N * !B2 * X)	-0.00193	-0.00194	-0.00193
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00313	0.00315	0.00313
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00382	-0.00383	-0.00381
	(!A1_N * !A2_N * B2 * X)	0.00420	0.00334	0.00320
	(!A1_N * !A2_N * B2 * X)	-0.00283	-0.00375	-0.00382
	(!A1_N * !A2_N * !B2 * X)	0.00306	0.00308	0.00305
	(!A1_N * !A2_N * !B2 * X)	-0.00386	-0.00388	-0.00386

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)	-0.00154	-0.00167	-0.00168
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00221	0.00211	0.00207
	(!A1_N * !A2_N * B2 * X)	-0.00168	-0.00169	-0.00169
	(!A1_N * !A2_N * B2 * X)	0.00209	0.00210	0.00210
	(!A1_N * !A2_N * !B2 * X)	-0.00162	-0.00165	-0.00166
	(!A1_N * !A2_N * !B2 * X)	0.00209	0.00211	0.00210
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00141	-0.00155	-0.00157
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00231	0.00221	0.00217
	(!A1_N * !A2_N * B2 * X)	-0.00164	-0.00165	-0.00165
	(!A1_N * !A2_N * B2 * X)	0.00214	0.00215	0.00214
	(!A1_N * !A2_N * !B2 * X)	-0.00157	-0.00160	-0.00160
	(!A1_N * !A2_N * !B2 * X)	0.00213	0.00217	0.00214
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00225	-0.00255	-0.00262
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00466	0.00442	0.00434
	(!A1_N * !A2_N * B2 * X)	-0.00274	-0.00277	-0.00276
	(!A1_N * !A2_N * B2 * X)	0.00425	0.00431	0.00428
	(!A1_N * !A2_N * !B2 * X)	-0.00259	-0.00266	-0.00268
	(!A1_N * !A2_N * !B2 * X)	0.00427	0.00432	0.00429

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)	0.00071	0.00071	0.00068
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00217	-0.00217	-0.00221
	(!A1_N * !A2_N * B1 * X)	0.00198	0.00157	0.00151
	(!A1_N * !A2_N * B1 * X)	-0.00159	-0.00201	-0.00204
	(!A1_N * !A2_N * !B1 * X)	0.00145	0.00147	0.00145
	(!A1_N * !A2_N * !B1 * X)	-0.00206	-0.00208	-0.00206
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00074	0.00075	0.00073
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00229	-0.00230	-0.00233
	(!A1_N * !A2_N * B1 * X)	0.00233	0.00191	0.00184
	(!A1_N * !A2_N * B1 * X)	-0.00154	-0.00199	-0.00203
	(!A1_N * !A2_N * !B1 * X)	0.00176	0.00178	0.00176
	(!A1_N * !A2_N * !B1 * X)	-0.00205	-0.00206	-0.00205
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00131	0.00131	0.00126
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00426	-0.00428	-0.00438
	(!A1_N * !A2_N * B1 * X)	0.00418	0.00333	0.00320
	(!A1_N * !A2_N * B1 * X)	-0.00284	-0.00375	-0.00382
	(!A1_N * !A2_N * !B1 * X)	0.00305	0.00308	0.00306
	(!A1_N * !A2_N * !B1 * X)	-0.00385	-0.00389	-0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00053	-0.00055	-0.00053
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00235	0.00239	0.00235
	(!A1_N * !A2_N * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1_N * !A2_N * B1 * X)	0.00226	0.00227	0.00226
	(!A1_N * !A2_N * !B1 * X)	-0.00124	-0.00126	-0.00126
	(!A1_N * !A2_N * !B1 * X)	0.00227	0.00230	0.00227
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00259	0.00263	0.00259
	(!A1_N * !A2_N * B1 * X)	-0.00161	-0.00162	-0.00162
	(!A1_N * !A2_N * B1 * X)	0.00225	0.00227	0.00225
	(!A1_N * !A2_N * !B1 * X)	-0.00154	-0.00157	-0.00157
	(!A1_N * !A2_N * !B1 * X)	0.00225	0.00229	0.00226
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00074	-0.00076	-0.00073
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00490	0.00496	0.00489
	(!A1_N * !A2_N * B1 * X)	-0.00276	-0.00277	-0.00276
	(!A1_N * !A2_N * B1 * X)	0.00428	0.00432	0.00427
	(!A1_N * !A2_N * !B1 * X)	-0.00260	-0.00268	-0.00268
	(!A1_N * !A2_N * !B1 * X)	0.00429	0.00431	0.00428

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00298	0.00304	0.00295	0.00311	0.00296	0.39927
sky130_fd_sc_hs__a311oi_2	0.00567	0.00549	0.00530	0.00454	0.00444	0.73650
sky130_fd_sc_hs__a311oi_4	0.01097	0.01072	0.01074	0.00856	0.00868	1.30339

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	2.97031	9.87312
sky130_fd_sc_hs__a311oi_2	0.00000	5.81509	19.74600
sky130_fd_sc_hs__a311oi_4	0.00000	11.62600	39.48700

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)	0.13314	0.91483	8.62947
	A2->Y (FR)	0.16498	0.97121	8.91078
	A3->Y (FR)	0.17809	0.96973	8.75163
	B1->Y (FR)	0.14261	0.99854	9.67030
	C1->Y (FR)	0.10805	0.98664	9.90228
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.11288	0.75377	8.40411
	A2->Y (FR)	0.13984	0.78411	8.49302
	A3->Y (FR)	0.16467	0.81209	8.53329
	B1->Y (FR)	0.14046	0.83809	9.27890
	C1->Y (FR)	0.09866	0.82245	9.53517
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.10678	0.62338	7.96160
	A2->Y (FR)	0.13799	0.66111	8.14087
	A3->Y (FR)	0.16749	0.70099	8.30444
	B1->Y (FR)	0.14117	0.73105	9.16398
	C1->Y (FR)	0.09874	0.72308	9.47274

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.05032	0.46671	4.45613
	A2->Y (RF)	0.05837	0.43663	4.04393
	A3->Y (RF)	0.06147	0.39152	3.44241
	B1->Y (RF)	0.02550	0.29425	2.81948
	C1->Y (RF)	0.02182	0.28585	2.80840
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.04595	0.43922	4.84759
	A2->Y (RF)	0.05396	0.38514	4.10490
	A3->Y (RF)	0.05921	0.34545	3.48980
	B1->Y (RF)	0.03626	0.38815	4.41060
	C1->Y (RF)	0.02548	0.36926	4.37563
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.04627	0.38591	4.77508
	A2->Y (RF)	0.05494	0.33509	4.01026
	A3->Y (RF)	0.05984	0.28730	3.26413
	B1->Y (RF)	0.03299	0.32015	4.08972
	C1->Y (RF)	0.02428	0.32046	4.33825

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00071	0.00086	0.01992
	A1	0.00918	0.00932	0.02840
	A2	0.00145	0.00155	0.02108
	A2	0.01112	0.01120	0.03079
	A3	0.00177	0.00195	0.02238
	A3	0.01262	0.01280	0.03331
	B1	0.00047	0.00130	0.02575
	B1	0.00757	0.00842	0.03302
	C1	0.00035	0.00235	0.03233
	C1	0.00622	0.00824	0.03821
sky130_fd_sc_hs__a311oi_2	A1	0.00015	0.00050	0.03652
	A1	0.01586	0.01622	0.05263
	A2	0.00164	0.00189	0.03909
	A2	0.01956	0.01984	0.05705
	A3	0.00326	0.00354	0.04174
	A3	0.02338	0.02368	0.06183
	B1	0.00094	0.00202	0.03252
	B1	0.01189	0.01301	0.04372
	C1	0.00074	0.00382	0.04301
	C1	0.00899	0.01209	0.05137

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00044	0.00056	0.07020
	A1	0.03033	0.03133	0.10132
	A2	0.00263	0.00325	0.07524
	A2	0.03790	0.03853	0.11067
	A3	0.00543	0.00615	0.08009
	A3	0.04555	0.04631	0.12004
	B1	0.00118	0.00388	0.06644
	B1	0.02242	0.02557	0.08768
	C1	0.00079	0.00729	0.08196
	C1	0.01696	0.02342	0.09855

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01177	0.01226	0.02884
	A1	0.00332	0.00380	0.02019
	A2	0.01297	0.01326	0.02878
	A2	0.00329	0.00356	0.01900
	A3	0.01415	0.01445	0.03196
	A3	0.00323	0.00353	0.02089
	B1	0.00826	0.00937	0.03200
	B1	0.00116	0.00227	0.02488
	C1	0.00582	0.00713	0.02845
	C1	-0.00006	0.00121	0.02254

sky130_fd_sc_hs__a311oi_2	**A1**	0.02232	0.02332	0.05362
	A1	0.00667	0.00766	0.03734
	A2	0.02464	0.02539	0.05597
	A2	0.00670	0.00736	0.03759
	A3	0.02691	0.02757	0.06157
	A3	0.00666	0.00726	0.04117
	B1	0.01307	0.01462	0.04371
	B1	0.00213	0.00362	0.03247
	C1	0.00695	0.00899	0.03673
	C1	-0.00129	0.00074	0.02812
sky130_fd_sc_hs__a311oi_4	**A1**	0.04315	0.04558	0.10461
	A1	0.01249	0.01485	0.07327
	A2	0.04777	0.04928	0.10964
	A2	0.01241	0.01393	0.07355
	A3	0.05268	0.05423	0.12357
	A3	0.01230	0.01374	0.08300
	B1	0.02473	0.02834	0.08732
	B1	0.00352	0.00707	0.06603
	C1	0.01344	0.01774	0.07146
	C1	-0.00267	0.00160	0.05440

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)**	0.00177	0.00176	0.00174
	(A2 * A3 * B1 * C1 * !Y)	-0.00206	-0.00215	-0.00214
	(A2 * A3 * B1 * !C1 * !Y)	0.00208	0.00181	0.00178
	(A2 * A3 * B1 * !C1 * !Y)	-0.00177	-0.00210	-0.00211
	(A2 * A3 * !B1 * C1 * !Y)	0.00215	0.00186	0.00180
	(A2 * A3 * !B1 * C1 * !Y)	-0.00164	-0.00204	-0.00208
	(A2 * !A3 * B1 * C1 * !Y)	0.00165	0.00166	0.00165
	(A2 * !A3 * B1 * C1 * !Y)	-0.00217	-0.00218	-0.00217
	(A2 * !A3 * B1 * !C1 * !Y)	0.00168	0.00169	0.00168
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00214	-0.00215	-0.00214
	(A2 * !A3 * !B1 * C1 * !Y)	0.00171	0.00172	0.00171
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00211	-0.00212	-0.00211
	(A2 * !A3 * !B1 * !C1 * Y)	0.00052	0.00053	0.00049
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00248	-0.00251	-0.00260
	(!A2 * B1 * C1 * !Y)	0.00168	0.00169	0.00168
	(!A2 * B1 * C1 * !Y)	-0.00216	-0.00217	-0.00217
	(!A2 * B1 * !C1 * !Y)	0.00171	0.00172	0.00172
	(!A2 * B1 * !C1 * !Y)	-0.00213	-0.00214	-0.00214
	(!A2 * !B1 * C1 * !Y)	0.00174	0.00175	0.00174
	(!A2 * !B1 * C1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A2 * !B1 * !C1 * Y)	0.00054	0.00054	0.00052
	(!A2 * !B1 * !C1 * Y)	-0.00256	-0.00257	-0.00260

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00344	0.00343	0.00341
	(A2 * A3 * B1 * C1 * !Y)	-0.00431	-0.00446	-0.00443
	(A2 * A3 * B1 * !C1 * !Y)	0.00406	0.00356	0.00350
	(A2 * A3 * B1 * !C1 * !Y)	-0.00376	-0.00436	-0.00439
	(A2 * A3 * !B1 * C1 * !Y)	0.00416	0.00365	0.00354
	(A2 * A3 * !B1 * C1 * !Y)	-0.00350	-0.00422	-0.00431
	(A2 * !A3 * B1 * C1 * !Y)	0.00323	0.00325	0.00323
	(A2 * !A3 * B1 * C1 * !Y)	-0.00451	-0.00453	-0.00451
	(A2 * !A3 * B1 * !C1 * !Y)	0.00329	0.00330	0.00329
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00445	-0.00446	-0.00445
	(A2 * !A3 * !B1 * C1 * !Y)	0.00333	0.00335	0.00334
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00440	-0.00441	-0.00439
	(A2 * !A3 * !B1 * !C1 * Y)	0.00116	0.00117	0.00106
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00497	-0.00501	-0.00523
	(!A2 * B1 * C1 * !Y)	0.00328	0.00330	0.00330
	(!A2 * B1 * C1 * !Y)	-0.00450	-0.00452	-0.00451
	(!A2 * B1 * !C1 * !Y)	0.00332	0.00335	0.00334
	(!A2 * B1 * !C1 * !Y)	-0.00443	-0.00446	-0.00445
	(!A2 * !B1 * C1 * !Y)	0.00338	0.00340	0.00339
	(!A2 * !B1 * C1 * !Y)	-0.00439	-0.00440	-0.00439
	(!A2 * !B1 * !C1 * Y)	0.00115	0.00114	0.00109
	(!A2 * !B1 * !C1 * Y)	-0.00516	-0.00517	-0.00525

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00676	0.00673	0.00667
	(A2 * A3 * B1 * C1 * !Y)	-0.00854	-0.00883	-0.00877
	(A2 * A3 * B1 * !C1 * !Y)	0.00803	0.00699	0.00685
	(A2 * A3 * B1 * !C1 * !Y)	-0.00739	-0.00863	-0.00869
	(A2 * A3 * !B1 * C1 * !Y)	0.00824	0.00718	0.00693
	(A2 * A3 * !B1 * C1 * !Y)	-0.00691	-0.00838	-0.00855
	(A2 * !A3 * B1 * C1 * !Y)	0.00622	0.00631	0.00625
	(A2 * !A3 * B1 * C1 * !Y)	-0.00892	-0.00899	-0.00894
	(A2 * !A3 * B1 * !C1 * !Y)	0.00634	0.00642	0.00636
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00878	-0.00886	-0.00881
	(A2 * !A3 * !B1 * C1 * !Y)	0.00642	0.00649	0.00645
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00869	-0.00875	-0.00870
	(A2 * !A3 * !B1 * !C1 * Y)	0.00219	0.00220	0.00199
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00986	-0.00992	-0.01032
	(!A2 * B1 * C1 * !Y)	0.00638	0.00646	0.00641
	(!A2 * B1 * C1 * !Y)	-0.00892	-0.00898	-0.00894
	(!A2 * B1 * !C1 * !Y)	0.00653	0.00658	0.00653
	(!A2 * B1 * !C1 * !Y)	-0.00883	-0.00886	-0.00881
	(!A2 * !B1 * C1 * !Y)	0.00663	0.00668	0.00663
	(!A2 * !B1 * C1 * !Y)	-0.00872	-0.00875	-0.00870
	(!A2 * !B1 * !C1 * Y)	0.00218	0.00218	0.00207
	(!A2 * !B1 * !C1 * Y)	-0.01017	-0.01023	-0.01037

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)**	-0.00173	-0.00174	-0.00174
	(A2 * A3 * B1 * C1 * !Y)	0.00213	0.00215	0.00214
	(A2 * A3 * B1 * !C1 * !Y)	-0.00169	-0.00169	-0.00169
	(A2 * A3 * B1 * !C1 * !Y)	0.00218	0.00220	0.00219
	(A2 * A3 * !B1 * C1 * !Y)	-0.00167	-0.00168	-0.00166
	(A2 * A3 * !B1 * C1 * !Y)	0.00216	0.00218	0.00218
	(A2 * !A3 * B1 * C1 * !Y)	-0.00151	-0.00165	-0.00165
	(A2 * !A3 * B1 * C1 * !Y)	0.00217	0.00219	0.00218
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00147	-0.00162	-0.00164
	(A2 * !A3 * B1 * !C1 * !Y)	0.00220	0.00222	0.00221
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00144	-0.00160	-0.00161
	(A2 * !A3 * !B1 * C1 * !Y)	0.00222	0.00225	0.00224
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(A2 * !A3 * !B1 * !C1 * Y)	0.00261	0.00265	0.00262
	(!A2 * B1 * C1 * !Y)	-0.00165	-0.00169	-0.00168
	(!A2 * B1 * C1 * !Y)	0.00216	0.00220	0.00218
	(!A2 * B1 * !C1 * !Y)	-0.00163	-0.00166	-0.00166
	(!A2 * B1 * !C1 * !Y)	0.00221	0.00222	0.00221
	(!A2 * !B1 * C1 * !Y)	-0.00160	-0.00163	-0.00163
	(!A2 * !B1 * C1 * !Y)	0.00224	0.00224	0.00224
	(!A2 * !B1 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * !C1 * Y)	0.00261	0.00266	0.00262

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00339	-0.00340	-0.00339
	(A2 * A3 * B1 * C1 * !Y)	0.00442	0.00446	0.00443
	(A2 * A3 * B1 * !C1 * !Y)	-0.00332	-0.00333	-0.00331
	(A2 * A3 * B1 * !C1 * !Y)	0.00451	0.00456	0.00454
	(A2 * A3 * !B1 * C1 * !Y)	-0.00326	-0.00328	-0.00325
	(A2 * A3 * !B1 * C1 * !Y)	0.00447	0.00451	0.00451
	(A2 * !A3 * B1 * C1 * !Y)	-0.00294	-0.00325	-0.00323
	(A2 * !A3 * B1 * C1 * !Y)	0.00454	0.00456	0.00453
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00284	-0.00320	-0.00321
	(A2 * !A3 * B1 * !C1 * !Y)	0.00459	0.00463	0.00459
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00278	-0.00315	-0.00316
	(A2 * !A3 * !B1 * C1 * !Y)	0.00464	0.00468	0.00465
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00102	-0.00104	-0.00102
	(A2 * !A3 * !B1 * !C1 * Y)	0.00527	0.00536	0.00527
	(!A2 * B1 * C1 * !Y)	-0.00324	-0.00330	-0.00330
	(!A2 * B1 * C1 * !Y)	0.00454	0.00455	0.00453
	(!A2 * B1 * !C1 * !Y)	-0.00317	-0.00325	-0.00325
	(!A2 * B1 * !C1 * !Y)	0.00458	0.00462	0.00459
	(!A2 * !B1 * C1 * !Y)	-0.00311	-0.00317	-0.00319
	(!A2 * !B1 * C1 * !Y)	0.00463	0.00467	0.00465
	(!A2 * !B1 * !C1 * Y)	-0.00105	-0.00107	-0.00105
	(!A2 * !B1 * !C1 * Y)	0.00528	0.00537	0.00528

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00661	-0.00666	-0.00663
	(A2 * A3 * B1 * C1 * !Y)	0.00872	0.00883	0.00877
	(A2 * A3 * B1 * !C1 * !Y)	-0.00648	-0.00650	-0.00645
	(A2 * A3 * B1 * !C1 * !Y)	0.00900	0.00905	0.00901
	(A2 * A3 * !B1 * C1 * !Y)	-0.00640	-0.00639	-0.00635
	(A2 * A3 * !B1 * C1 * !Y)	0.00887	0.00887	0.00894
	(A2 * !A3 * B1 * C1 * !Y)	-0.00568	-0.00631	-0.00625
	(A2 * !A3 * B1 * C1 * !Y)	0.00900	0.00904	0.00898
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00551	-0.00623	-0.00627
	(A2 * !A3 * B1 * !C1 * !Y)	0.00912	0.00919	0.00910
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00537	-0.00607	-0.00617
	(A2 * !A3 * !B1 * C1 * !Y)	0.00923	0.00931	0.00921
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00193	-0.00193	-0.00193
	(A2 * !A3 * !B1 * !C1 * Y)	0.01038	0.01041	0.01041
	(!A2 * B1 * C1 * !Y)	-0.00631	-0.00646	-0.00641
	(!A2 * B1 * C1 * !Y)	0.00895	0.00904	0.00898
	(!A2 * B1 * !C1 * !Y)	-0.00621	-0.00631	-0.00635
	(!A2 * B1 * !C1 * !Y)	0.00912	0.00914	0.00910
	(!A2 * !B1 * C1 * !Y)	-0.00609	-0.00622	-0.00624
	(!A2 * !B1 * C1 * !Y)	0.00919	0.00931	0.00921
	(!A2 * !B1 * !C1 * Y)	-0.00200	-0.00200	-0.00199
	(!A2 * !B1 * !C1 * Y)	0.01040	0.01044	0.01043

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)**	0.00184	0.00183	0.00182
	(A1 * A3 * B1 * C1 * !Y)	-0.00206	-0.00215	-0.00214
	(A1 * A3 * B1 * !C1 * !Y)	0.00216	0.00189	0.00186
	(A1 * A3 * B1 * !C1 * !Y)	-0.00177	-0.00210	-0.00211
	(A1 * A3 * !B1 * C1 * !Y)	0.00221	0.00193	0.00188
	(A1 * A3 * !B1 * C1 * !Y)	-0.00165	-0.00204	-0.00208
	(A1 * !A3 * B1 * C1 * !Y)	0.00175	0.00176	0.00175
	(A1 * !A3 * B1 * C1 * !Y)	-0.00216	-0.00218	-0.00217
	(A1 * !A3 * B1 * !C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00213	-0.00214	-0.00214
	(A1 * !A3 * !B1 * C1 * !Y)	0.00180	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00210	-0.00212	-0.00211
	(A1 * !A3 * !B1 * !C1 * Y)	0.00062	0.00063	0.00063
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00237	-0.00239	-0.00237
	(!A1 * A3 * B1 * !Y)	0.00174	0.00177	0.00175
	(!A1 * A3 * B1 * !Y)	-0.00216	-0.00218	-0.00217
	(!A1 * A3 * !B1 * C1 * !Y)	0.00181	0.00182	0.00182
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A1 * A3 * !B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * !A3 * B1 * !Y)	0.00104	0.00106	0.00105
	(!A1 * !A3 * B1 * !Y)	-0.00216	-0.00218	-0.00217
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00110	0.00112	0.00110
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00238	-0.00240	-0.00239

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00340	0.00338	0.00336
	(A1 * A3 * B1 * C1 * !Y)	-0.00427	-0.00442	-0.00439
	(A1 * A3 * B1 * !C1 * !Y)	0.00400	0.00351	0.00344
	(A1 * A3 * B1 * !C1 * !Y)	-0.00368	-0.00431	-0.00434
	(A1 * A3 * !B1 * C1 * !Y)	0.00412	0.00360	0.00349
	(A1 * A3 * !B1 * C1 * !Y)	-0.00345	-0.00417	-0.00427
	(A1 * !A3 * B1 * C1 * !Y)	0.00320	0.00322	0.00321
	(A1 * !A3 * B1 * C1 * !Y)	-0.00447	-0.00448	-0.00447
	(A1 * !A3 * B1 * !C1 * !Y)	0.00326	0.00328	0.00327
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00440	-0.00442	-0.00441
	(A1 * !A3 * !B1 * C1 * !Y)	0.00330	0.00332	0.00332
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00433	-0.00436	-0.00435
	(A1 * !A3 * !B1 * !C1 * Y)	0.00140	0.00140	0.00141
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00446	-0.00447	-0.00447
	(!A1 * A3 * B1 * !Y)	0.00321	0.00323	0.00322
	(!A1 * A3 * B1 * !Y)	-0.00446	-0.00448	-0.00447
	(!A1 * A3 * !B1 * C1 * !Y)	0.00335	0.00338	0.00336
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00435	-0.00437	-0.00435
	(!A1 * A3 * !B1 * !C1 * Y)	0.00325	0.00328	0.00326
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00446	-0.00448	-0.00446
	(!A1 * !A3 * B1 * !Y)	0.00185	0.00188	0.00186
	(!A1 * !A3 * B1 * !Y)	-0.00446	-0.00450	-0.00447
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00197	0.00200	0.00197
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00435	-0.00438	-0.00436
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00177	0.00180	0.00178
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00448	-0.00453	-0.00450

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00674	0.00674	0.00669
	(A1 * A3 * B1 * C1 * !Y)	-0.00843	-0.00878	-0.00872
	(A1 * A3 * B1 * !C1 * !Y)	0.00799	0.00699	0.00686
	(A1 * A3 * B1 * !C1 * !Y)	-0.00731	-0.00858	-0.00863
	(A1 * A3 * !B1 * C1 * !Y)	0.00821	0.00718	0.00695
	(A1 * A3 * !B1 * C1 * !Y)	-0.00689	-0.00833	-0.00849
	(A1 * !A3 * B1 * C1 * !Y)	0.00635	0.00639	0.00636
	(A1 * !A3 * B1 * C1 * !Y)	-0.00887	-0.00891	-0.00887
	(A1 * !A3 * B1 * !C1 * !Y)	0.00647	0.00651	0.00648
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00875	-0.00878	-0.00875
	(A1 * !A3 * !B1 * C1 * !Y)	0.00657	0.00664	0.00659
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00863	-0.00869	-0.00864
	(A1 * !A3 * !B1 * !C1 * Y)	0.00267	0.00268	0.00270
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00886	-0.00888	-0.00885
	(!A1 * A3 * B1 * !Y)	0.00639	0.00645	0.00642
	(!A1 * A3 * B1 * !Y)	-0.00884	-0.00889	-0.00887
	(!A1 * A3 * !B1 * C1 * !Y)	0.00662	0.00670	0.00666
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00861	-0.00868	-0.00864
	(!A1 * A3 * !B1 * !C1 * Y)	0.00645	0.00654	0.00649
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00884	-0.00890	-0.00884
	(!A1 * !A3 * B1 * !Y)	0.00353	0.00354	0.00354
	(!A1 * !A3 * B1 * !Y)	-0.00886	-0.00887	-0.00888
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00376	0.00378	0.00377
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00863	-0.00866	-0.00865
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00340	0.00345	0.00341
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00891	-0.00898	-0.00893

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)**	-0.00181	-0.00182	-0.00181
	(A1 * A3 * B1 * C1 * !Y)	0.00214	0.00215	0.00214
	(A1 * A3 * B1 * !C1 * !Y)	-0.00176	-0.00176	-0.00175
	(A1 * A3 * B1 * !C1 * !Y)	0.00219	0.00220	0.00220
	(A1 * A3 * !B1 * C1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * A3 * !B1 * C1 * !Y)	0.00216	0.00218	0.00218
	(A1 * !A3 * B1 * C1 * !Y)	-0.00172	-0.00176	-0.00175
	(A1 * !A3 * B1 * C1 * !Y)	0.00217	0.00219	0.00218
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00170	-0.00173	-0.00173
	(A1 * !A3 * B1 * !C1 * !Y)	0.00222	0.00222	0.00221
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00168	-0.00169	-0.00170
	(A1 * !A3 * !B1 * C1 * !Y)	0.00224	0.00224	0.00224
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00058	-0.00059	-0.00060
	(A1 * !A3 * !B1 * !C1 * Y)	0.00245	0.00249	0.00241
	(!A1 * A3 * B1 * !Y)	-0.00172	-0.00177	-0.00175
	(!A1 * A3 * B1 * !Y)	0.00217	0.00219	0.00218
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00167	-0.00171	-0.00171
	(!A1 * A3 * !B1 * C1 * !Y)	0.00223	0.00224	0.00224
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00134	-0.00153	-0.00154
	(!A1 * A3 * !B1 * !C1 * Y)	0.00258	0.00243	0.00240
	(!A1 * !A3 * B1 * !Y)	-0.00104	-0.00106	-0.00105
	(!A1 * !A3 * B1 * !Y)	0.00218	0.00220	0.00218
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00110	-0.00112	-0.00106
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00223	0.00226	0.00224
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00250	0.00253	0.00243

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00333	-0.00335	-0.00334
	(A1 * A3 * B1 * C1 * !Y)	0.00438	0.00442	0.00439
	(A1 * A3 * B1 * !C1 * !Y)	-0.00326	-0.00328	-0.00326
	(A1 * A3 * B1 * !C1 * !Y)	0.00448	0.00451	0.00449
	(A1 * A3 * !B1 * C1 * !Y)	-0.00322	-0.00323	-0.00320
	(A1 * A3 * !B1 * C1 * !Y)	0.00443	0.00448	0.00447
	(A1 * !A3 * B1 * C1 * !Y)	-0.00315	-0.00322	-0.00321
	(A1 * !A3 * B1 * C1 * !Y)	0.00448	0.00451	0.00449
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00309	-0.00316	-0.00319
	(A1 * !A3 * B1 * !C1 * !Y)	0.00454	0.00458	0.00455
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00304	-0.00312	-0.00313
	(A1 * !A3 * !B1 * C1 * !Y)	0.00459	0.00465	0.00461
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00130	-0.00133	-0.00134
	(A1 * !A3 * !B1 * !C1 * Y)	0.00462	0.00470	0.00454
	(!A1 * A3 * B1 * !Y)	-0.00319	-0.00323	-0.00322
	(!A1 * A3 * B1 * !Y)	0.00450	0.00451	0.00449
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00307	-0.00315	-0.00314
	(!A1 * A3 * !B1 * C1 * !Y)	0.00461	0.00462	0.00461
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00281	-0.00322	-0.00324
	(!A1 * A3 * !B1 * !C1 * Y)	0.00492	0.00455	0.00450
	(!A1 * !A3 * B1 * !Y)	-0.00185	-0.00188	-0.00186
	(!A1 * !A3 * B1 * !Y)	0.00449	0.00454	0.00449
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00197	-0.00200	-0.00190
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00460	0.00466	0.00461
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00177	-0.00180	-0.00178
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00478	0.00482	0.00460

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00667	-0.00668	-0.00665
	(A1 * A3 * B1 * C1 * !Y)	0.00874	0.00878	0.00872
	(A1 * A3 * B1 * !C1 * !Y)	-0.00651	-0.00653	-0.00649
	(A1 * A3 * B1 * !C1 * !Y)	0.00895	0.00899	0.00894
	(A1 * A3 * !B1 * C1 * !Y)	-0.00641	-0.00645	-0.00637
	(A1 * A3 * !B1 * C1 * !Y)	0.00882	0.00893	0.00889
	(A1 * !A3 * B1 * C1 * !Y)	-0.00627	-0.00639	-0.00636
	(A1 * !A3 * B1 * C1 * !Y)	0.00890	0.00901	0.00892
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00615	-0.00630	-0.00633
	(A1 * !A3 * B1 * !C1 * !Y)	0.00902	0.00914	0.00904
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00604	-0.00620	-0.00622
	(A1 * !A3 * !B1 * C1 * !Y)	0.00913	0.00925	0.00915
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00250	-0.00254	-0.00257
	(A1 * !A3 * !B1 * !C1 * Y)	0.00916	0.00931	0.00900
	(!A1 * A3 * B1 * !Y)	-0.00635	-0.00645	-0.00642
	(!A1 * A3 * B1 * !Y)	0.00894	0.00897	0.00892
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00612	-0.00627	-0.00626
	(!A1 * A3 * !B1 * C1 * !Y)	0.00917	0.00920	0.00915
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00554	-0.00643	-0.00647
	(!A1 * A3 * !B1 * !C1 * Y)	0.00983	0.00906	0.00893
	(!A1 * !A3 * B1 * !Y)	-0.00353	-0.00354	-0.00354
	(!A1 * !A3 * B1 * !Y)	0.00892	0.00902	0.00892
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00376	-0.00378	-0.00361
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00915	0.00925	0.00915
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00340	-0.00345	-0.00341
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00947	0.00955	0.00910

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)**	0.00194	0.00194	0.00192
	(A1 * A2 * B1 * C1 * !Y)	-0.00207	-0.00216	-0.00214
	(A1 * A2 * B1 * !C1 * !Y)	0.00224	0.00199	0.00196
	(A1 * A2 * B1 * !C1 * !Y)	-0.00180	-0.00211	-0.00212
	(A1 * A2 * !B1 * C1 * !Y)	0.00230	0.00203	0.00198
	(A1 * A2 * !B1 * C1 * !Y)	-0.00170	-0.00205	-0.00209
	(A1 * !A2 * !B1 * !C1 * Y)	0.00169	0.00172	0.00170
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00236	-0.00235
	(!A2 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * B1 * !Y)	-0.00217	-0.00219	-0.00218
	(!A2 * !B1 * C1 * !Y)	0.00190	0.00192	0.00191
	(!A2 * !B1 * C1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A2 * B1 * !Y)	0.00184	0.00184	0.00184
	(!A1 * A2 * B1 * !Y)	-0.00218	-0.00218	-0.00218
	(!A1 * A2 * !B1 * C1 * !Y)	0.00189	0.00190	0.00189
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A2 * !B1 * !C1 * Y)	0.00166	0.00167	0.00166
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00168	0.00171	0.00169
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00236	-0.00235

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00332	0.00332	0.00329
	(A1 * A2 * B1 * C1 * !Y)	-0.00417	-0.00433	-0.00430
	(A1 * A2 * B1 * !C1 * !Y)	0.00389	0.00344	0.00338
	(A1 * A2 * B1 * !C1 * !Y)	-0.00365	-0.00423	-0.00425
	(A1 * A2 * !B1 * C1 * !Y)	0.00401	0.00353	0.00342
	(A1 * A2 * !B1 * C1 * !Y)	-0.00344	-0.00411	-0.00419
	(A1 * !A2 * !B1 * !C1 * Y)	0.00319	0.00321	0.00318
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00438	-0.00439	-0.00437
	(!A2 * B1 * !Y)	0.00318	0.00320	0.00317
	(!A2 * B1 * !Y)	-0.00438	-0.00439	-0.00437
	(!A2 * !B1 * C1 * !Y)	0.00329	0.00328	0.00329
	(!A2 * !B1 * C1 * !Y)	-0.00426	-0.00425	-0.00426
	(!A1 * A2 * B1 * !Y)	0.00312	0.00313	0.00312
	(!A1 * A2 * B1 * !Y)	-0.00437	-0.00439	-0.00437
	(!A1 * A2 * !B1 * C1 * !Y)	0.00323	0.00325	0.00323
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00426	-0.00427	-0.00426
	(!A1 * A2 * !B1 * !C1 * Y)	0.00312	0.00313	0.00312
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00437	-0.00438	-0.00437
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00317	0.00319	0.00317
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00438	-0.00439	-0.00438

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00675	0.00672	0.00667
	(A1 * A2 * B1 * C1 * !Y)	-0.00844	-0.00875	-0.00868
	(A1 * A2 * B1 * !C1 * !Y)	0.00796	0.00697	0.00684
	(A1 * A2 * B1 * !C1 * !Y)	-0.00736	-0.00855	-0.00860
	(A1 * A2 * !B1 * C1 * !Y)	0.00815	0.00716	0.00693
	(A1 * A2 * !B1 * C1 * !Y)	-0.00696	-0.00830	-0.00845
	(A1 * !A2 * !B1 * !C1 * Y)	0.00643	0.00649	0.00643
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00884	-0.00888	-0.00883
	(!A2 * B1 * !Y)	0.00637	0.00644	0.00636
	(!A2 * B1 * !Y)	-0.00884	-0.00889	-0.00883
	(!A2 * !B1 * C1 * !Y)	0.00661	0.00666	0.00660
	(!A2 * !B1 * C1 * !Y)	-0.00861	-0.00865	-0.00860
	(!A1 * A2 * B1 * !Y)	0.00628	0.00630	0.00627
	(!A1 * A2 * B1 * !Y)	-0.00886	-0.00887	-0.00883
	(!A1 * A2 * !B1 * C1 * !Y)	0.00650	0.00654	0.00650
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00861	-0.00864	-0.00860
	(!A1 * A2 * !B1 * !C1 * Y)	0.00628	0.00631	0.00629
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00882	-0.00884	-0.00882
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00637	0.00642	0.00636
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00885	-0.00888	-0.00884

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)**	-0.00191	-0.00192	-0.00192
	(A1 * A2 * B1 * C1 * !Y)	0.00214	0.00216	0.00214
	(A1 * A2 * B1 * !C1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * A2 * B1 * !C1 * !Y)	0.00219	0.00221	0.00220
	(A1 * A2 * !B1 * C1 * !Y)	-0.00185	-0.00186	-0.00184
	(A1 * A2 * !B1 * C1 * !Y)	0.00217	0.00219	0.00219
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00158	-0.00167	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00237	0.00237
	(!A2 * B1 * !Y)	-0.00183	-0.00186	-0.00185
	(!A2 * B1 * !Y)	0.00218	0.00222	0.00219
	(!A2 * !B1 * C1 * !Y)	-0.00178	-0.00181	-0.00181
	(!A2 * !B1 * C1 * !Y)	0.00224	0.00227	0.00225
	(!A1 * A2 * B1 * !Y)	-0.00172	-0.00183	-0.00184
	(!A1 * A2 * B1 * !Y)	0.00218	0.00220	0.00219
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00166	-0.00178	-0.00179
	(!A1 * A2 * !B1 * C1 * !Y)	0.00224	0.00227	0.00225
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00150	-0.00165	-0.00166
	(!A1 * A2 * !B1 * !C1 * Y)	0.00242	0.00240	0.00236
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00163	-0.00168	-0.00169
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00235	0.00237	0.00236

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00328	-0.00329	-0.00327
	(A1 * A2 * B1 * C1 * !Y)	0.00430	0.00433	0.00430
	(A1 * A2 * B1 * !C1 * !Y)	-0.00320	-0.00321	-0.00320
	(A1 * A2 * B1 * !C1 * !Y)	0.00438	0.00441	0.00440
	(A1 * A2 * !B1 * C1 * !Y)	-0.00315	-0.00316	-0.00313
	(A1 * A2 * !B1 * C1 * !Y)	0.00435	0.00439	0.00439
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00293	-0.00314	-0.00318
	(A1 * !A2 * !B1 * !C1 * Y)	0.00446	0.00442	0.00440
	(!A2 * B1 * !Y)	-0.00309	-0.00318	-0.00317
	(!A2 * B1 * !Y)	0.00438	0.00443	0.00440
	(!A2 * !B1 * C1 * !Y)	-0.00297	-0.00306	-0.00307
	(!A2 * !B1 * C1 * !Y)	0.00449	0.00455	0.00451
	(!A1 * A2 * B1 * !Y)	-0.00287	-0.00311	-0.00312
	(!A1 * A2 * B1 * !Y)	0.00440	0.00445	0.00440
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00274	-0.00299	-0.00304
	(!A1 * A2 * !B1 * C1 * !Y)	0.00450	0.00457	0.00451
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00276	-0.00307	-0.00312
	(!A1 * A2 * !B1 * !C1 * Y)	0.00453	0.00441	0.00440
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00303	-0.00315	-0.00317
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00438	0.00441	0.00440

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00664	-0.00666	-0.00663
	(A1 * A2 * B1 * C1 * !Y)	0.00870	0.00875	0.00868
	(A1 * A2 * B1 * !C1 * !Y)	-0.00645	-0.00649	-0.00647
	(A1 * A2 * B1 * !C1 * !Y)	0.00883	0.00891	0.00890
	(A1 * A2 * !B1 * C1 * !Y)	-0.00641	-0.00642	-0.00635
	(A1 * A2 * !B1 * C1 * !Y)	0.00883	0.00887	0.00886
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00589	-0.00635	-0.00642
	(A1 * !A2 * !B1 * !C1 * Y)	0.00905	0.00892	0.00889
	(!A2 * B1 * !Y)	-0.00625	-0.00641	-0.00636
	(!A2 * B1 * !Y)	0.00884	0.00896	0.00888
	(!A2 * !B1 * C1 * !Y)	-0.00602	-0.00618	-0.00621
	(!A2 * !B1 * C1 * !Y)	0.00907	0.00919	0.00911
	(!A1 * A2 * B1 * !Y)	-0.00578	-0.00627	-0.00627
	(!A1 * A2 * B1 * !Y)	0.00890	0.00899	0.00888
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00555	-0.00599	-0.00614
	(!A1 * A2 * !B1 * C1 * !Y)	0.00913	0.00907	0.00911
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00556	-0.00619	-0.00629
	(!A1 * A2 * !B1 * !C1 * Y)	0.00923	0.00891	0.00889
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00612	-0.00637	-0.00636
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00885	0.00891	0.00888

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)**	0.00219	0.00214	0.00203
	(A1 * A2 * A3 * C1 * !Y)	-0.00133	-0.00143	-0.00146
	(A1 * A2 * A3 * !C1 * !Y)	0.00198	0.00198	0.00194
	(A1 * A2 * A3 * !C1 * !Y)	-0.00096	-0.00096	-0.00098
	(A1 * A2 * !A3 * C1 * !Y)	0.00247	0.00199	0.00191
	(A1 * A2 * !A3 * C1 * !Y)	-0.00155	-0.00202	-0.00207
	(A1 * !A2 * C1 * !Y)	0.00247	0.00199	0.00191
	(A1 * !A2 * C1 * !Y)	-0.00155	-0.00202	-0.00207
	(!A1 * C1 * !Y)	0.00245	0.00198	0.00191
	(!A1 * C1 * !Y)	-0.00157	-0.00201	-0.00207
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00257	0.00243	0.00220
	(A1 * A2 * A3 * C1 * !Y)	-0.00283	-0.00296	-0.00306
	(A1 * A2 * A3 * !C1 * !Y)	0.00215	0.00218	0.00205
	(A1 * A2 * A3 * !C1 * !Y)	-0.00199	-0.00203	-0.00206
	(A1 * A2 * !A3 * C1 * !Y)	0.00329	0.00217	0.00200
	(A1 * A2 * !A3 * C1 * !Y)	-0.00305	-0.00415	-0.00429
	(A1 * !A2 * C1 * !Y)	0.00329	0.00217	0.00200
	(A1 * !A2 * C1 * !Y)	-0.00305	-0.00415	-0.00429
	(!A1 * C1 * !Y)	0.00328	0.00217	0.00200
	(!A1 * C1 * !Y)	-0.00306	-0.00415	-0.00429
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00495	0.00468	0.00422
	(A1 * A2 * A3 * C1 * !Y)	-0.00553	-0.00583	-0.00597
	(A1 * A2 * A3 * !C1 * !Y)	0.00412	0.00417	0.00393
	(A1 * A2 * A3 * !C1 * !Y)	-0.00391	-0.00397	-0.00402
	(A1 * A2 * !A3 * C1 * !Y)	0.00644	0.00416	0.00386
	(A1 * A2 * !A3 * C1 * !Y)	-0.00600	-0.00824	-0.00848
	(A1 * !A2 * C1 * !Y)	0.00636	0.00416	0.00385
	(A1 * !A2 * C1 * !Y)	-0.00593	-0.00824	-0.00848
	(!A1 * C1 * !Y)	0.00633	0.00416	0.00385
	(!A1 * C1 * !Y)	-0.00600	-0.00823	-0.00848

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)	-0.00187	-0.00189	-0.00187
	(A1 * A2 * A3 * C1 * !Y)	0.00148	0.00149	0.00148
	(A1 * A2 * A3 * !C1 * !Y)	-0.00175	-0.00177	-0.00183
	(A1 * A2 * A3 * !C1 * !Y)	0.00116	0.00117	0.00110
	(A1 * A2 * !A3 * C1 * !Y)	-0.00177	-0.00178	-0.00178
	(A1 * A2 * !A3 * C1 * !Y)	0.00220	0.00221	0.00221
	(A1 * !A2 * C1 * !Y)	-0.00177	-0.00178	-0.00178
	(A1 * !A2 * C1 * !Y)	0.00220	0.00221	0.00221
	(!A1 * C1 * !Y)	-0.00177	-0.00179	-0.00178
	(!A1 * C1 * !Y)	0.00220	0.00223	0.00221
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00188	-0.00189	-0.00188
	(A1 * A2 * A3 * C1 * !Y)	0.00310	0.00312	0.00311
	(A1 * A2 * A3 * !C1 * !Y)	-0.00168	-0.00170	-0.00179
	(A1 * A2 * A3 * !C1 * !Y)	0.00243	0.00243	0.00234
	(A1 * A2 * !A3 * C1 * !Y)	-0.00173	-0.00173	-0.00172
	(A1 * A2 * !A3 * C1 * !Y)	0.00455	0.00456	0.00457
	(A1 * !A2 * C1 * !Y)	-0.00173	-0.00173	-0.00172
	(A1 * !A2 * C1 * !Y)	0.00455	0.00456	0.00457
	(!A1 * C1 * !Y)	-0.00173	-0.00173	-0.00172
	(!A1 * C1 * !Y)	0.00456	0.00456	0.00457

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00362	-0.00364	-0.00361
	(A1 * A2 * A3 * C1 * !Y)	0.00604	0.00609	0.00605
	(A1 * A2 * A3 * !C1 * !Y)	-0.00316	-0.00322	-0.00345
	(A1 * A2 * A3 * !C1 * !Y)	0.00473	0.00478	0.00456
	(A1 * A2 * !A3 * C1 * !Y)	-0.00331	-0.00333	-0.00331
	(A1 * A2 * !A3 * C1 * !Y)	0.00901	0.00910	0.00903
	(A1 * !A2 * C1 * !Y)	-0.00331	-0.00333	-0.00331
	(A1 * !A2 * C1 * !Y)	0.00901	0.00910	0.00903
	(!A1 * C1 * !Y)	-0.00330	-0.00333	-0.00331
	(!A1 * C1 * !Y)	0.00901	0.00910	0.00903

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)	0.00195	0.00197	0.00196
	(A1 * A2 * B1 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * A3 * !B1 * !Y)	0.00196	0.00198	0.00197
	(A1 * A2 * A3 * !B1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * !A2 * B1 * !Y)	0.00196	0.00199	0.00196
	(A1 * !A2 * B1 * !Y)	-0.00099	-0.00100	-0.00098
	(!A1 * B1 * !Y)	0.00196	0.00199	0.00196
	(!A1 * B1 * !Y)	-0.00099	-0.00100	-0.00098
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00219	0.00222	0.00220
	(A1 * A2 * B1 * !Y)	-0.00192	-0.00194	-0.00192
	(A1 * A2 * A3 * !B1 * !Y)	0.00221	0.00224	0.00221
	(A1 * A2 * A3 * !B1 * !Y)	-0.00188	-0.00190	-0.00186
	(A1 * !A2 * B1 * !Y)	0.00220	0.00224	0.00221
	(A1 * !A2 * B1 * !Y)	-0.00192	-0.00195	-0.00192
	(!A1 * B1 * !Y)	0.00220	0.00224	0.00221
	(!A1 * B1 * !Y)	-0.00192	-0.00195	-0.00192
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00437	0.00441	0.00437
	(A1 * A2 * B1 * !Y)	-0.00381	-0.00384	-0.00381
	(A1 * A2 * A3 * !B1 * !Y)	0.00437	0.00440	0.00439
	(A1 * A2 * A3 * !B1 * !Y)	-0.00369	-0.00372	-0.00368
	(A1 * !A2 * B1 * !Y)	0.00439	0.00446	0.00439
	(A1 * !A2 * B1 * !Y)	-0.00382	-0.00387	-0.00380
	(!A1 * B1 * !Y)	0.00438	0.00446	0.00439
	(!A1 * B1 * !Y)	-0.00381	-0.00387	-0.00380

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)	-0.00187	-0.00189	-0.00194
	(A1 * A2 * B1 * !Y)	0.00106	0.00106	0.00101
	(A1 * A2 * A3 * !B1 * !Y)	-0.00164	-0.00166	-0.00188
	(A1 * A2 * A3 * !B1 * !Y)	0.00122	0.00123	0.00107
	(A1 * !A2 * B1 * !Y)	-0.00186	-0.00188	-0.00194
	(A1 * !A2 * B1 * !Y)	0.00107	0.00108	0.00102
	(!A1 * B1 * !Y)	-0.00186	-0.00188	-0.00194
	(!A1 * B1 * !Y)	0.00107	0.00108	0.00102
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00195	-0.00199	-0.00216
	(A1 * A2 * B1 * !Y)	0.00211	0.00213	0.00198
	(A1 * A2 * A3 * !B1 * !Y)	-0.00144	-0.00148	-0.00201
	(A1 * A2 * A3 * !B1 * !Y)	0.00247	0.00249	0.00209
	(A1 * !A2 * B1 * !Y)	-0.00194	-0.00196	-0.00215
	(A1 * !A2 * B1 * !Y)	0.00217	0.00217	0.00200
	(!A1 * B1 * !Y)	-0.00193	-0.00196	-0.00215
	(!A1 * B1 * !Y)	0.00216	0.00217	0.00200
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00393	-0.00399	-0.00430
	(A1 * A2 * B1 * !Y)	0.00415	0.00419	0.00392
	(A1 * A2 * A3 * !B1 * !Y)	-0.00294	-0.00299	-0.00401
	(A1 * A2 * A3 * !B1 * !Y)	0.00486	0.00488	0.00414
	(A1 * !A2 * B1 * !Y)	-0.00388	-0.00394	-0.00428
	(A1 * !A2 * B1 * !Y)	0.00422	0.00426	0.00396
	(!A1 * B1 * !Y)	-0.00390	-0.00394	-0.00428
	(!A1 * B1 * !Y)	0.00424	0.00426	0.00396

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00271	0.00258	0.00259	0.00266	0.00275	1.27690
sky130_fd_sc_hs__a311o_2	0.00280	0.00280	0.00296	0.00299	0.00284	2.13732
sky130_fd_sc_hs__a311o_4	0.00513	0.00480	0.00508	0.00494	0.00493	3.61623

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	6.25928	14.76950
sky130_fd_sc_hs__a311o_2	0.00000	7.95409	15.05030
sky130_fd_sc_hs__a311o_4	0.00000	16.00050	30.11140

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)	0.10076	0.61478	6.55766
	A2->X (RR)	0.10772	0.60935	6.45823
	A3->X (RR)	0.11216	0.58743	6.24445
	B1->X (RR)	0.06451	0.53650	5.94389
	C1->X (RR)	0.05899	0.51877	5.88134
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.10891	0.55834	6.27255
	A2->X (RR)	0.11624	0.54810	6.16451
	A3->X (RR)	0.12120	0.52344	5.87139
	B1->X (RR)	0.06772	0.47123	5.63078
	C1->X (RR)	0.06243	0.45619	5.56965
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.13271	0.53473	6.27273
	A2->X (RR)	0.14429	0.53062	6.18081
	A3->X (RR)	0.14899	0.48100	5.77194
	B1->X (RR)	0.06643	0.38996	5.36257
	C1->X (RR)	0.06008	0.37103	5.28305

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.17156	0.56779	4.92751
	A2->X (FF)	0.19650	0.60410	5.05174
	A3->X (FF)	0.21423	0.62856	5.18058
	B1->X (FF)	0.19447	0.65374	5.60262
	C1->X (FF)	0.16602	0.65202	5.65689
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.22768	0.59663	4.62719
	A2->X (FF)	0.26115	0.64037	4.76870
	A3->X (FF)	0.28306	0.66861	4.88394
	B1->X (FF)	0.26317	0.69849	5.27543
	C1->X (FF)	0.22990	0.69826	5.33137
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.24077	0.54303	4.23204
	A2->X (FF)	0.27220	0.58461	4.32904
	A3->X (FF)	0.29832	0.62295	4.56580
	B1->X (FF)	0.27713	0.66189	4.95440
	C1->X (FF)	0.23086	0.65677	5.06428

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01436	0.01612	0.06607
	A1	0.00696	0.00873	0.05883
	A2	0.01517	0.01617	0.06392
	A2	0.00694	0.00796	0.05593
	A3	0.01622	0.01686	0.05923
	A3	0.00692	0.00757	0.05038
	B1	0.01074	0.01398	0.07064
	B1	0.00474	0.00798	0.06518
	C1	0.00903	0.01260	0.07616
	C1	0.00389	0.00747	0.07157
sky130_fd_sc_hs__a311o_2	A1	0.01862	0.01996	0.07021
	A1	0.01071	0.01207	0.06313
	A2	0.01975	0.02061	0.06840
	A2	0.01071	0.01158	0.06029
	A3	0.02111	0.02149	0.05488
	A3	0.01071	0.01111	0.04457
	B1	0.01494	0.01799	0.06998
	B1	0.00815	0.01124	0.06369
	C1	0.01288	0.01626	0.07453
	C1	0.00719	0.01062	0.06943

sky130_fd_sc_hs__a311o_4	**A1**	0.03770	0.03989	0.13611
	A1	0.02362	0.02587	0.12350
	A2	0.03956	0.04066	0.13314
	A2	0.02349	0.02461	0.11872
	A3	0.04205	0.04280	0.12606
	A3	0.02366	0.02442	0.10808
	B1	0.02843	0.03380	0.13469
	B1	0.01699	0.02239	0.12404
	C1	0.02306	0.02987	0.14321
	C1	0.01384	0.02069	0.13470

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00439	0.00524	0.04903
	A1	0.01179	0.01261	0.05560
	A2	0.00533	0.00596	0.04989
	A2	0.01353	0.01415	0.05694
	A3	0.00582	0.00609	0.05031
	A3	0.01504	0.01531	0.05870
	B1	0.00407	0.00647	0.06374
	B1	0.01007	0.01246	0.06965
	C1	0.00380	0.00774	0.07352
	C1	0.00893	0.01286	0.07717

sky130_fd_sc_hs__a311o_2	**A1**	0.01032	0.00929	0.05385
	A1	0.01823	0.01713	0.06061
	A2	0.01166	0.00993	0.05505
	A2	0.02067	0.01892	0.06277
	A3	0.01216	0.00922	0.05150
	A3	0.02244	0.01976	0.06170
	B1	0.00902	0.00983	0.06528
	B1	0.01579	0.01659	0.07108
	C1	0.00892	0.01140	0.07319
	C1	0.01461	0.01707	0.07873
sky130_fd_sc_hs__a311o_4	**A1**	0.02162	0.01817	0.10655
	A1	0.03573	0.03218	0.12024
	A2	0.02530	0.02062	0.10787
	A2	0.04129	0.03657	0.12382
	A3	0.02641	0.02063	0.11253
	A3	0.04460	0.03885	0.12818
	B1	0.01916	0.01963	0.11642
	B1	0.03648	0.03508	0.12557
	C1	0.01903	0.02265	0.13782
	C1	0.03412	0.03561	0.14410

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)**	0.00167	0.00165	0.00164
	(A2 * A3 * B1 * C1 * X)	-0.00186	-0.00195	-0.00195
	(A2 * A3 * B1 * !C1 * X)	0.00201	0.00173	0.00169
	(A2 * A3 * B1 * !C1 * X)	-0.00157	-0.00188	-0.00190
	(A2 * A3 * !B1 * C1 * X)	0.00210	0.00179	0.00173
	(A2 * A3 * !B1 * C1 * X)	-0.00144	-0.00182	-0.00185
	(A2 * !A3 * B1 * C1 * X)	0.00154	0.00156	0.00155
	(A2 * !A3 * B1 * C1 * X)	-0.00197	-0.00198	-0.00197
	(A2 * !A3 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A2 * !A3 * B1 * !C1 * X)	-0.00192	-0.00193	-0.00192
	(A2 * !A3 * !B1 * C1 * X)	0.00163	0.00165	0.00163
	(A2 * !A3 * !B1 * C1 * X)	-0.00187	-0.00189	-0.00188
	(A2 * !A3 * !B1 * !C1 * !X)	0.00071	0.00071	0.00067
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00214	-0.00216	-0.00223
	(!A2 * B1 * C1 * X)	0.00157	0.00159	0.00158
	(!A2 * B1 * C1 * X)	-0.00196	-0.00198	-0.00197
	(!A2 * B1 * !C1 * X)	0.00162	0.00164	0.00163
	(!A2 * B1 * !C1 * X)	-0.00192	-0.00193	-0.00192
	(!A2 * !B1 * C1 * X)	0.00167	0.00169	0.00168
	(!A2 * !B1 * C1 * X)	-0.00187	-0.00188	-0.00188
	(!A2 * !B1 * !C1 * !X)	0.00070	0.00070	0.00068
	(!A2 * !B1 * !C1 * !X)	-0.00220	-0.00221	-0.00224

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00176	0.00175	0.00173
	(A2 * A3 * B1 * C1 * X)	-0.00184	-0.00194	-0.00194
	(A2 * A3 * B1 * !C1 * X)	0.00209	0.00182	0.00179
	(A2 * A3 * B1 * !C1 * X)	-0.00154	-0.00187	-0.00188
	(A2 * A3 * !B1 * C1 * X)	0.00219	0.00188	0.00183
	(A2 * A3 * !B1 * C1 * X)	-0.00142	-0.00180	-0.00183
	(A2 * !A3 * B1 * C1 * X)	0.00163	0.00165	0.00164
	(A2 * !A3 * B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(A2 * !A3 * B1 * !C1 * X)	0.00168	0.00169	0.00168
	(A2 * !A3 * B1 * !C1 * X)	-0.00190	-0.00191	-0.00190
	(A2 * !A3 * !B1 * C1 * X)	0.00172	0.00174	0.00173
	(A2 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(A2 * !A3 * !B1 * !C1 * !X)	0.00066	0.00066	0.00062
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00214	-0.00215	-0.00224
	(!A2 * B1 * C1 * X)	0.00167	0.00168	0.00168
	(!A2 * B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A2 * B1 * !C1 * X)	0.00172	0.00173	0.00172
	(!A2 * B1 * !C1 * X)	-0.00190	-0.00191	-0.00191
	(!A2 * !B1 * C1 * X)	0.00176	0.00177	0.00177
	(!A2 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * !C1 * !X)	0.00067	0.00067	0.00065
	(!A2 * !B1 * !C1 * !X)	-0.00221	-0.00220	-0.00225

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00302	0.00301	0.00299
	(A2 * A3 * B1 * C1 * X)	-0.00388	-0.00403	-0.00403
	(A2 * A3 * B1 * !C1 * X)	0.00373	0.00319	0.00311
	(A2 * A3 * B1 * !C1 * X)	-0.00324	-0.00389	-0.00392
	(A2 * A3 * !B1 * C1 * X)	0.00388	0.00331	0.00318
	(A2 * A3 * !B1 * C1 * X)	-0.00303	-0.00375	-0.00382
	(A2 * !A3 * B1 * C1 * X)	0.00281	0.00284	0.00281
	(A2 * !A3 * B1 * C1 * X)	-0.00407	-0.00410	-0.00407
	(A2 * !A3 * B1 * !C1 * X)	0.00290	0.00293	0.00290
	(A2 * !A3 * B1 * !C1 * X)	-0.00398	-0.00401	-0.00398
	(A2 * !A3 * !B1 * C1 * X)	0.00299	0.00302	0.00300
	(A2 * !A3 * !B1 * C1 * X)	-0.00389	-0.00392	-0.00389
	(A2 * !A3 * !B1 * !C1 * !X)	0.00128	0.00129	0.00117
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00421	-0.00424	-0.00445
	(!A2 * B1 * C1 * X)	0.00287	0.00290	0.00289
	(!A2 * B1 * C1 * X)	-0.00406	-0.00409	-0.00407
	(!A2 * B1 * !C1 * X)	0.00297	0.00299	0.00298
	(!A2 * B1 * !C1 * X)	-0.00396	-0.00400	-0.00398
	(!A2 * !B1 * C1 * X)	0.00306	0.00308	0.00307
	(!A2 * !B1 * C1 * X)	-0.00388	-0.00390	-0.00389
	(!A2 * !B1 * !C1 * !X)	0.00135	0.00135	0.00127
	(!A2 * !B1 * !C1 * !X)	-0.00432	-0.00433	-0.00446

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)**	-0.00163	-0.00162	-0.00162
	(A2 * A3 * B1 * C1 * X)	0.00194	0.00195	0.00195
	(A2 * A3 * B1 * !C1 * X)	-0.00155	-0.00156	-0.00154
	(A2 * A3 * B1 * !C1 * X)	0.00202	0.00204	0.00203
	(A2 * A3 * !B1 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * A3 * !B1 * C1 * X)	0.00202	0.00204	0.00204
	(A2 * !A3 * B1 * C1 * X)	-0.00145	-0.00156	-0.00155
	(A2 * !A3 * B1 * C1 * X)	0.00199	0.00200	0.00199
	(A2 * !A3 * B1 * !C1 * X)	-0.00139	-0.00152	-0.00152
	(A2 * !A3 * B1 * !C1 * X)	0.00203	0.00204	0.00203
	(A2 * !A3 * !B1 * C1 * X)	-0.00134	-0.00147	-0.00148
	(A2 * !A3 * !B1 * C1 * X)	0.00207	0.00209	0.00208
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00052	-0.00053	-0.00052
	(A2 * !A3 * !B1 * !C1 * !X)	0.00237	0.00238	0.00238
	(!A2 * B1 * C1 * X)	-0.00155	-0.00159	-0.00158
	(!A2 * B1 * C1 * X)	0.00198	0.00201	0.00199
	(!A2 * B1 * !C1 * X)	-0.00151	-0.00154	-0.00154
	(!A2 * B1 * !C1 * X)	0.00202	0.00204	0.00203
	(!A2 * !B1 * C1 * X)	-0.00146	-0.00149	-0.00149
	(!A2 * !B1 * C1 * X)	0.00207	0.00208	0.00208
	(!A2 * !B1 * !C1 * !X)	-0.00054	-0.00054	-0.00054
	(!A2 * !B1 * !C1 * !X)	0.00237	0.00238	0.00238

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00171	-0.00172	-0.00172
	(A2 * A3 * B1 * C1 * X)	0.00193	0.00195	0.00194
	(A2 * A3 * B1 * !C1 * X)	-0.00164	-0.00165	-0.00164
	(A2 * A3 * B1 * !C1 * X)	0.00201	0.00203	0.00202
	(A2 * A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A2 * A3 * !B1 * C1 * X)	0.00201	0.00203	0.00203
	(A2 * !A3 * B1 * C1 * X)	-0.00150	-0.00163	-0.00164
	(A2 * !A3 * B1 * C1 * X)	0.00197	0.00200	0.00197
	(A2 * !A3 * B1 * !C1 * X)	-0.00144	-0.00158	-0.00160
	(A2 * !A3 * B1 * !C1 * X)	0.00202	0.00203	0.00202
	(A2 * !A3 * !B1 * C1 * X)	-0.00140	-0.00154	-0.00156
	(A2 * !A3 * !B1 * C1 * X)	0.00206	0.00207	0.00207
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !C1 * !X)	0.00250	0.00253	0.00251
	(!A2 * B1 * C1 * X)	-0.00163	-0.00167	-0.00167
	(!A2 * B1 * C1 * X)	0.00196	0.00199	0.00197
	(!A2 * B1 * !C1 * X)	-0.00159	-0.00162	-0.00162
	(!A2 * B1 * !C1 * X)	0.00203	0.00204	0.00202
	(!A2 * !B1 * C1 * X)	-0.00155	-0.00158	-0.00158
	(!A2 * !B1 * C1 * X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00251	0.00254	0.00251

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00295	-0.00296	-0.00295
	(A2 * A3 * B1 * C1 * X)	0.00404	0.00406	0.00403
	(A2 * A3 * B1 * !C1 * X)	-0.00282	-0.00283	-0.00282
	(A2 * A3 * B1 * !C1 * X)	0.00417	0.00421	0.00419
	(A2 * A3 * !B1 * C1 * X)	-0.00275	-0.00276	-0.00273
	(A2 * A3 * !B1 * C1 * X)	0.00418	0.00422	0.00421
	(A2 * !A3 * B1 * C1 * X)	-0.00253	-0.00282	-0.00281
	(A2 * !A3 * B1 * C1 * X)	0.00411	0.00413	0.00412
	(A2 * !A3 * B1 * !C1 * X)	-0.00243	-0.00273	-0.00274
	(A2 * !A3 * B1 * !C1 * X)	0.00420	0.00424	0.00421
	(A2 * !A3 * !B1 * C1 * X)	-0.00234	-0.00264	-0.00265
	(A2 * !A3 * !B1 * C1 * X)	0.00429	0.00433	0.00430
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	0.00501	0.00507	0.00500
	(!A2 * B1 * C1 * X)	-0.00279	-0.00287	-0.00288
	(!A2 * B1 * C1 * X)	0.00413	0.00413	0.00412
	(!A2 * B1 * !C1 * X)	-0.00269	-0.00278	-0.00278
	(!A2 * B1 * !C1 * X)	0.00422	0.00423	0.00421
	(!A2 * !B1 * C1 * X)	-0.00261	-0.00270	-0.00270
	(!A2 * !B1 * C1 * X)	0.00431	0.00432	0.00430
	(!A2 * !B1 * !C1 * !X)	-0.00074	-0.00075	-0.00073
	(!A2 * !B1 * !C1 * !X)	0.00501	0.00507	0.00500

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)**	0.00147	0.00144	0.00143
	(A1 * A3 * B1 * C1 * X)	-0.00192	-0.00200	-0.00200
	(A1 * A3 * B1 * !C1 * X)	0.00182	0.00152	0.00148
	(A1 * A3 * B1 * !C1 * X)	-0.00160	-0.00192	-0.00195
	(A1 * A3 * !B1 * C1 * X)	0.00189	0.00159	0.00152
	(A1 * A3 * !B1 * C1 * X)	-0.00147	-0.00185	-0.00189
	(A1 * !A3 * B1 * C1 * X)	0.00137	0.00139	0.00137
	(A1 * !A3 * B1 * C1 * X)	-0.00201	-0.00203	-0.00202
	(A1 * !A3 * B1 * !C1 * X)	0.00141	0.00143	0.00142
	(A1 * !A3 * B1 * !C1 * X)	-0.00197	-0.00199	-0.00197
	(A1 * !A3 * !B1 * C1 * X)	0.00146	0.00148	0.00147
	(A1 * !A3 * !B1 * C1 * X)	-0.00192	-0.00194	-0.00193
	(A1 * !A3 * !B1 * !C1 * !X)	0.00059	0.00059	0.00059
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00204	-0.00205	-0.00203
	(!A1 * A3 * B1 * X)	0.00137	0.00139	0.00137
	(!A1 * A3 * B1 * X)	-0.00202	-0.00203	-0.00202
	(!A1 * A3 * !B1 * C1 * X)	0.00146	0.00147	0.00147
	(!A1 * A3 * !B1 * C1 * X)	-0.00192	-0.00193	-0.00193
	(!A1 * A3 * !B1 * !C1 * !X)	0.00136	0.00138	0.00137
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00203	-0.00205	-0.00203
	(!A1 * !A3 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * !A3 * B1 * X)	-0.00203	-0.00203	-0.00202
	(!A1 * !A3 * !B1 * C1 * X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00205	-0.00206	-0.00205

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00175	0.00173	0.00172
	(A1 * A3 * B1 * C1 * X)	-0.00184	-0.00194	-0.00194
	(A1 * A3 * B1 * !C1 * X)	0.00208	0.00181	0.00178
	(A1 * A3 * B1 * !C1 * X)	-0.00155	-0.00187	-0.00188
	(A1 * A3 * !B1 * C1 * X)	0.00216	0.00187	0.00182
	(A1 * A3 * !B1 * C1 * X)	-0.00143	-0.00180	-0.00183
	(A1 * !A3 * B1 * C1 * X)	0.00165	0.00166	0.00166
	(A1 * !A3 * B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(A1 * !A3 * B1 * !C1 * X)	0.00170	0.00171	0.00170
	(A1 * !A3 * B1 * !C1 * X)	-0.00190	-0.00191	-0.00191
	(A1 * !A3 * !B1 * C1 * X)	0.00175	0.00175	0.00175
	(A1 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(A1 * !A3 * !B1 * !C1 * !X)	0.00075	0.00076	0.00076
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00195	-0.00196	-0.00194
	(!A1 * A3 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A3 * !B1 * C1 * X)	0.00175	0.00177	0.00176
	(!A1 * A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * !B1 * !C1 * !X)	0.00168	0.00169	0.00168
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00195	-0.00195	-0.00194
	(!A1 * !A3 * B1 * X)	0.00095	0.00097	0.00096
	(!A1 * !A3 * B1 * X)	-0.00195	-0.00197	-0.00195
	(!A1 * !A3 * !B1 * C1 * X)	0.00105	0.00106	0.00105
	(!A1 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00092	0.00094	0.00093
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00195	-0.00197	-0.00196

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00288	0.00288	0.00286
	(A1 * A3 * B1 * C1 * X)	-0.00383	-0.00398	-0.00398
	(A1 * A3 * B1 * !C1 * X)	0.00349	0.00304	0.00298
	(A1 * A3 * B1 * !C1 * X)	-0.00329	-0.00385	-0.00387
	(A1 * A3 * !B1 * C1 * X)	0.00363	0.00316	0.00306
	(A1 * A3 * !B1 * C1 * X)	-0.00310	-0.00372	-0.00377
	(A1 * !A3 * B1 * C1 * X)	0.00275	0.00276	0.00275
	(A1 * !A3 * B1 * C1 * X)	-0.00402	-0.00402	-0.00401
	(A1 * !A3 * B1 * !C1 * X)	0.00284	0.00284	0.00284
	(A1 * !A3 * B1 * !C1 * X)	-0.00392	-0.00393	-0.00392
	(A1 * !A3 * !B1 * C1 * X)	0.00292	0.00295	0.00293
	(A1 * !A3 * !B1 * C1 * X)	-0.00382	-0.00385	-0.00383
	(A1 * !A3 * !B1 * !C1 * !X)	0.00146	0.00148	0.00149
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00377	-0.00380	-0.00375
	(!A1 * A3 * B1 * X)	0.00274	0.00277	0.00275
	(!A1 * A3 * B1 * X)	-0.00400	-0.00403	-0.00401
	(!A1 * A3 * !B1 * C1 * X)	0.00293	0.00296	0.00294
	(!A1 * A3 * !B1 * C1 * X)	-0.00382	-0.00385	-0.00383
	(!A1 * A3 * !B1 * !C1 * !X)	0.00300	0.00302	0.00302
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00375	-0.00376	-0.00375
	(!A1 * !A3 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * !A3 * B1 * X)	-0.00401	-0.00404	-0.00401
	(!A1 * !A3 * !B1 * C1 * X)	0.00187	0.00189	0.00187
	(!A1 * !A3 * !B1 * C1 * X)	-0.00382	-0.00385	-0.00383
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00379	-0.00380	-0.00379

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)**	-0.00141	-0.00142	-0.00141
	(A1 * A3 * B1 * C1 * X)	0.00199	0.00201	0.00200
	(A1 * A3 * B1 * !C1 * X)	-0.00133	-0.00135	-0.00133
	(A1 * A3 * B1 * !C1 * X)	0.00207	0.00210	0.00208
	(A1 * A3 * !B1 * C1 * X)	-0.00131	-0.00132	-0.00131
	(A1 * A3 * !B1 * C1 * X)	0.00207	0.00209	0.00209
	(A1 * !A3 * B1 * C1 * X)	-0.00135	-0.00137	-0.00137
	(A1 * !A3 * B1 * C1 * X)	0.00204	0.00204	0.00204
	(A1 * !A3 * B1 * !C1 * X)	-0.00130	-0.00133	-0.00133
	(A1 * !A3 * B1 * !C1 * X)	0.00209	0.00209	0.00208
	(A1 * !A3 * !B1 * C1 * X)	-0.00125	-0.00128	-0.00128
	(A1 * !A3 * !B1 * C1 * X)	0.00213	0.00214	0.00213
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00042	-0.00043	-0.00043
	(A1 * !A3 * !B1 * !C1 * !X)	0.00222	0.00224	0.00219
	(!A1 * A3 * B1 * X)	-0.00135	-0.00137	-0.00137
	(!A1 * A3 * B1 * X)	0.00204	0.00204	0.00204
	(!A1 * A3 * !B1 * C1 * X)	-0.00126	-0.00128	-0.00128
	(!A1 * A3 * !B1 * C1 * X)	0.00214	0.00214	0.00213
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00105	-0.00121	-0.00122
	(!A1 * A3 * !B1 * !C1 * !X)	0.00237	0.00221	0.00218
	(!A1 * !A3 * B1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A3 * B1 * X)	0.00203	0.00206	0.00204
	(!A1 * !A3 * !B1 * C1 * X)	-0.00080	-0.00081	-0.00075
	(!A1 * !A3 * !B1 * C1 * X)	0.00212	0.00215	0.00213
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00062	-0.00063	-0.00065
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00228	0.00231	0.00221

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00171	-0.00171	-0.00170
	(A1 * A3 * B1 * C1 * X)	0.00194	0.00195	0.00194
	(A1 * A3 * B1 * !C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * A3 * B1 * !C1 * X)	0.00201	0.00203	0.00202
	(A1 * A3 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * A3 * !B1 * C1 * X)	0.00202	0.00203	0.00203
	(A1 * !A3 * B1 * C1 * X)	-0.00162	-0.00165	-0.00165
	(A1 * !A3 * B1 * C1 * X)	0.00197	0.00198	0.00197
	(A1 * !A3 * B1 * !C1 * X)	-0.00157	-0.00161	-0.00160
	(A1 * !A3 * B1 * !C1 * X)	0.00201	0.00203	0.00202
	(A1 * !A3 * !B1 * C1 * X)	-0.00153	-0.00156	-0.00156
	(A1 * !A3 * !B1 * C1 * X)	0.00206	0.00208	0.00207
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00046	-0.00048	-0.00048
	(A1 * !A3 * !B1 * !C1 * !X)	0.00226	0.00230	0.00222
	(!A1 * A3 * B1 * X)	-0.00162	-0.00166	-0.00166
	(!A1 * A3 * B1 * X)	0.00197	0.00198	0.00197
	(!A1 * A3 * !B1 * C1 * X)	-0.00153	-0.00157	-0.00157
	(!A1 * A3 * !B1 * C1 * X)	0.00206	0.00207	0.00207
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00122	-0.00141	-0.00142
	(!A1 * A3 * !B1 * !C1 * !X)	0.00239	0.00223	0.00221
	(!A1 * !A3 * B1 * X)	-0.00095	-0.00097	-0.00096
	(!A1 * !A3 * B1 * X)	0.00197	0.00200	0.00197
	(!A1 * !A3 * !B1 * C1 * X)	-0.00099	-0.00099	-0.00093
	(!A1 * !A3 * !B1 * C1 * X)	0.00206	0.00209	0.00207
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00071	-0.00072	-0.00074
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00232	0.00235	0.00224

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00283	-0.00284	-0.00283
	(A1 * A3 * B1 * C1 * X)	0.00398	0.00400	0.00398
	(A1 * A3 * B1 * !C1 * X)	-0.00272	-0.00272	-0.00271
	(A1 * A3 * B1 * !C1 * X)	0.00412	0.00413	0.00412
	(A1 * A3 * !B1 * C1 * X)	-0.00263	-0.00264	-0.00262
	(A1 * A3 * !B1 * C1 * X)	0.00414	0.00417	0.00416
	(A1 * !A3 * B1 * C1 * X)	-0.00269	-0.00274	-0.00275
	(A1 * !A3 * B1 * C1 * X)	0.00406	0.00408	0.00405
	(A1 * !A3 * B1 * !C1 * X)	-0.00259	-0.00264	-0.00266
	(A1 * !A3 * B1 * !C1 * X)	0.00416	0.00417	0.00415
	(A1 * !A3 * !B1 * C1 * X)	-0.00250	-0.00255	-0.00257
	(A1 * !A3 * !B1 * C1 * X)	0.00425	0.00426	0.00424
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00085	-0.00088	-0.00091
	(A1 * !A3 * !B1 * !C1 * !X)	0.00442	0.00451	0.00434
	(!A1 * A3 * B1 * X)	-0.00266	-0.00276	-0.00275
	(!A1 * A3 * B1 * X)	0.00405	0.00408	0.00406
	(!A1 * A3 * !B1 * C1 * X)	-0.00247	-0.00257	-0.00257
	(!A1 * A3 * !B1 * C1 * X)	0.00423	0.00427	0.00424
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00200	-0.00248	-0.00251
	(!A1 * A3 * !B1 * !C1 * !X)	0.00475	0.00436	0.00430
	(!A1 * !A3 * B1 * X)	-0.00168	-0.00170	-0.00168
	(!A1 * !A3 * B1 * X)	0.00403	0.00410	0.00406
	(!A1 * !A3 * !B1 * C1 * X)	-0.00171	-0.00173	-0.00160
	(!A1 * !A3 * !B1 * C1 * X)	0.00422	0.00429	0.00424
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00135	-0.00136	-0.00143
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00453	0.00461	0.00439

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)**	0.00160	0.00157	0.00156
	(A1 * A2 * B1 * C1 * X)	-0.00189	-0.00196	-0.00196
	(A1 * A2 * B1 * !C1 * X)	0.00192	0.00165	0.00162
	(A1 * A2 * B1 * !C1 * X)	-0.00160	-0.00189	-0.00192
	(A1 * A2 * !B1 * C1 * X)	0.00200	0.00172	0.00166
	(A1 * A2 * !B1 * C1 * X)	-0.00148	-0.00183	-0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00211	-0.00212	-0.00212
	(!A2 * B1 * X)	0.00151	0.00153	0.00151
	(!A2 * B1 * X)	-0.00198	-0.00199	-0.00198
	(!A2 * !B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * X)	-0.00188	-0.00190	-0.00189
	(!A1 * A2 * B1 * X)	0.00147	0.00149	0.00147
	(!A1 * A2 * B1 * X)	-0.00198	-0.00199	-0.00198
	(!A1 * A2 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * !B1 * !C1 * !X)	0.00135	0.00134	0.00135
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00211	-0.00211	-0.00211
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00137	0.00139	0.00138
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00211	-0.00213	-0.00212

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00199	0.00197	0.00196
	(A1 * A2 * B1 * C1 * X)	-0.00183	-0.00192	-0.00192
	(A1 * A2 * B1 * !C1 * X)	0.00232	0.00205	0.00201
	(A1 * A2 * B1 * !C1 * X)	-0.00154	-0.00186	-0.00187
	(A1 * A2 * !B1 * C1 * X)	0.00240	0.00211	0.00205
	(A1 * A2 * !B1 * C1 * X)	-0.00143	-0.00179	-0.00182
	(A1 * !A2 * !B1 * !C1 * !X)	0.00169	0.00171	0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00215	-0.00216	-0.00215
	(!A2 * B1 * X)	0.00189	0.00190	0.00189
	(!A2 * B1 * X)	-0.00194	-0.00194	-0.00194
	(!A2 * !B1 * C1 * X)	0.00198	0.00201	0.00199
	(!A2 * !B1 * C1 * X)	-0.00184	-0.00186	-0.00185
	(!A1 * A2 * B1 * X)	0.00187	0.00188	0.00187
	(!A1 * A2 * B1 * X)	-0.00194	-0.00194	-0.00194
	(!A1 * A2 * !B1 * C1 * X)	0.00195	0.00196	0.00195
	(!A1 * A2 * !B1 * C1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * A2 * !B1 * !C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00215	-0.00215	-0.00215
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00215	-0.00216	-0.00215

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00331	0.00329	0.00326
	(A1 * A2 * B1 * C1 * X)	-0.00374	-0.00387	-0.00387
	(A1 * A2 * B1 * !C1 * X)	0.00395	0.00345	0.00338
	(A1 * A2 * B1 * !C1 * X)	-0.00316	-0.00374	-0.00376
	(A1 * A2 * !B1 * C1 * X)	0.00409	0.00357	0.00346
	(A1 * A2 * !B1 * C1 * X)	-0.00296	-0.00361	-0.00367
	(A1 * !A2 * !B1 * !C1 * !X)	0.00304	0.00309	0.00306
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00399	-0.00402	-0.00400
	(!A2 * B1 * X)	0.00315	0.00315	0.00315
	(!A2 * B1 * X)	-0.00391	-0.00391	-0.00390
	(!A2 * !B1 * C1 * X)	0.00334	0.00337	0.00333
	(!A2 * !B1 * C1 * X)	-0.00372	-0.00374	-0.00372
	(!A1 * A2 * B1 * X)	0.00311	0.00313	0.00312
	(!A1 * A2 * B1 * X)	-0.00390	-0.00391	-0.00390
	(!A1 * A2 * !B1 * C1 * X)	0.00330	0.00332	0.00330
	(!A1 * A2 * !B1 * C1 * X)	-0.00371	-0.00373	-0.00372
	(!A1 * A2 * !B1 * !C1 * !X)	0.00303	0.00305	0.00303
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00399	-0.00401	-0.00399
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00302	0.00306	0.00304
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00398	-0.00403	-0.00400

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)**	-0.00155	-0.00155	-0.00155
	(A1 * A2 * B1 * C1 * X)	0.00195	0.00197	0.00196
	(A1 * A2 * B1 * !C1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * B1 * !C1 * X)	0.00203	0.00206	0.00204
	(A1 * A2 * !B1 * C1 * X)	-0.00145	-0.00145	-0.00145
	(A1 * A2 * !B1 * C1 * X)	0.00203	0.00205	0.00205
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00123	-0.00125
	(A1 * !A2 * !B1 * !C1 * !X)	0.00233	0.00227	0.00226
	(!A2 * B1 * X)	-0.00148	-0.00151	-0.00151
	(!A2 * B1 * X)	0.00199	0.00202	0.00200
	(!A2 * !B1 * C1 * X)	-0.00139	-0.00142	-0.00142
	(!A2 * !B1 * C1 * X)	0.00208	0.00211	0.00209
	(!A1 * A2 * B1 * X)	-0.00138	-0.00148	-0.00147
	(!A1 * A2 * B1 * X)	0.00199	0.00202	0.00200
	(!A1 * A2 * !B1 * C1 * X)	-0.00129	-0.00139	-0.00141
	(!A1 * A2 * !B1 * C1 * X)	0.00209	0.00212	0.00209
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00108	-0.00122	-0.00124
	(!A1 * A2 * !B1 * !C1 * !X)	0.00232	0.00229	0.00226
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00121	-0.00124	-0.00125
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00226	0.00227	0.00226

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00194	-0.00194	-0.00194
	(A1 * A2 * B1 * C1 * X)	0.00192	0.00193	0.00193
	(A1 * A2 * B1 * !C1 * X)	-0.00186	-0.00188	-0.00187
	(A1 * A2 * B1 * !C1 * X)	0.00199	0.00202	0.00200
	(A1 * A2 * !B1 * C1 * X)	-0.00184	-0.00185	-0.00183
	(A1 * A2 * !B1 * C1 * X)	0.00200	0.00202	0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00142	-0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	0.00244	0.00242	0.00241
	(!A2 * B1 * X)	-0.00186	-0.00189	-0.00189
	(!A2 * B1 * X)	0.00195	0.00199	0.00196
	(!A2 * !B1 * C1 * X)	-0.00176	-0.00180	-0.00180
	(!A2 * !B1 * C1 * X)	0.00205	0.00208	0.00205
	(!A1 * A2 * B1 * X)	-0.00174	-0.00186	-0.00187
	(!A1 * A2 * B1 * X)	0.00196	0.00198	0.00196
	(!A1 * A2 * !B1 * C1 * X)	-0.00165	-0.00177	-0.00178
	(!A1 * A2 * !B1 * C1 * X)	0.00205	0.00208	0.00205
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00125	-0.00140	-0.00142
	(!A1 * A2 * !B1 * !C1 * !X)	0.00247	0.00244	0.00241
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00143	-0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00240	0.00242	0.00241

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00323	-0.00324	-0.00323
	(A1 * A2 * B1 * C1 * X)	0.00388	0.00389	0.00387
	(A1 * A2 * B1 * !C1 * X)	-0.00311	-0.00312	-0.00311
	(A1 * A2 * B1 * !C1 * X)	0.00400	0.00402	0.00402
	(A1 * A2 * !B1 * C1 * X)	-0.00303	-0.00304	-0.00301
	(A1 * A2 * !B1 * C1 * X)	0.00402	0.00406	0.00405
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00237	-0.00252	-0.00256
	(A1 * !A2 * !B1 * !C1 * !X)	0.00458	0.00455	0.00453
	(!A2 * B1 * X)	-0.00308	-0.00314	-0.00315
	(!A2 * B1 * X)	0.00393	0.00398	0.00395
	(!A2 * !B1 * C1 * X)	-0.00289	-0.00296	-0.00297
	(!A2 * !B1 * C1 * X)	0.00411	0.00416	0.00413
	(!A1 * A2 * B1 * X)	-0.00292	-0.00310	-0.00312
	(!A1 * A2 * B1 * X)	0.00395	0.00399	0.00395
	(!A1 * A2 * !B1 * C1 * X)	-0.00274	-0.00291	-0.00294
	(!A1 * A2 * !B1 * C1 * X)	0.00414	0.00418	0.00413
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00227	-0.00250	-0.00254
	(!A1 * A2 * !B1 * !C1 * !X)	0.00464	0.00459	0.00453
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00245	-0.00254	-0.00256
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00451	0.00454	0.00453

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)**	0.00192	0.00183	0.00177
	(A1 * A2 * A3 * C1 * X)	-0.00120	-0.00128	-0.00129
	(A1 * A2 * A3 * !C1 * X)	0.00174	0.00175	0.00171
	(A1 * A2 * A3 * !C1 * X)	-0.00085	-0.00086	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00217	0.00174	0.00170
	(A1 * A2 * !A3 * C1 * X)	-0.00138	-0.00182	-0.00183
	(A1 * !A2 * C1 * X)	0.00218	0.00174	0.00170
	(A1 * !A2 * C1 * X)	-0.00138	-0.00182	-0.00183
	(!A1 * C1 * X)	0.00216	0.00174	0.00170
	(!A1 * C1 * X)	-0.00139	-0.00182	-0.00183
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00220	0.00215	0.00205
	(A1 * A2 * A3 * C1 * X)	-0.00119	-0.00128	-0.00130
	(A1 * A2 * A3 * !C1 * X)	0.00202	0.00202	0.00199
	(A1 * A2 * A3 * !C1 * X)	-0.00085	-0.00085	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00246	0.00202	0.00197
	(A1 * A2 * !A3 * C1 * X)	-0.00137	-0.00180	-0.00182
	(A1 * !A2 * C1 * X)	0.00244	0.00202	0.00197
	(A1 * !A2 * C1 * X)	-0.00135	-0.00180	-0.00182
	(!A1 * C1 * X)	0.00243	0.00201	0.00197
	(!A1 * C1 * X)	-0.00137	-0.00179	-0.00182
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00366	0.00355	0.00332
	(A1 * A2 * A3 * C1 * X)	-0.00257	-0.00276	-0.00283
	(A1 * A2 * A3 * !C1 * X)	0.00330	0.00335	0.00322
	(A1 * A2 * A3 * !C1 * X)	-0.00184	-0.00187	-0.00189
	(A1 * A2 * !A3 * C1 * X)	0.00434	0.00331	0.00319
	(A1 * A2 * !A3 * C1 * X)	-0.00262	-0.00372	-0.00380
	(A1 * !A2 * C1 * X)	0.00437	0.00332	0.00319
	(A1 * !A2 * C1 * X)	-0.00267	-0.00372	-0.00380
	(!A1 * C1 * X)	0.00434	0.00332	0.00319
	(!A1 * C1 * X)	-0.00263	-0.00372	-0.00380

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)	-0.00160	-0.00160	-0.00159
	(A1 * A2 * A3 * C1 * X)	0.00135	0.00135	0.00135
	(A1 * A2 * A3 * !C1 * X)	-0.00146	-0.00147	-0.00158
	(A1 * A2 * A3 * !C1 * X)	0.00112	0.00112	0.00103
	(A1 * A2 * !A3 * C1 * X)	-0.00148	-0.00150	-0.00150
	(A1 * A2 * !A3 * C1 * X)	0.00204	0.00206	0.00204
	(A1 * !A2 * C1 * X)	-0.00148	-0.00150	-0.00150
	(A1 * !A2 * C1 * X)	0.00204	0.00206	0.00204
	(!A1 * C1 * X)	-0.00148	-0.00150	-0.00150
	(!A1 * C1 * X)	0.00204	0.00206	0.00204
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00188	-0.00189	-0.00188
	(A1 * A2 * A3 * C1 * X)	0.00135	0.00136	0.00135
	(A1 * A2 * A3 * !C1 * X)	-0.00174	-0.00175	-0.00185
	(A1 * A2 * A3 * !C1 * X)	0.00113	0.00113	0.00104
	(A1 * A2 * !A3 * C1 * X)	-0.00174	-0.00175	-0.00176
	(A1 * A2 * !A3 * C1 * X)	0.00204	0.00204	0.00204
	(A1 * !A2 * C1 * X)	-0.00174	-0.00175	-0.00176
	(A1 * !A2 * C1 * X)	0.00204	0.00204	0.00204
	(!A1 * C1 * X)	-0.00175	-0.00175	-0.00176
	(!A1 * C1 * X)	0.00204	0.00205	0.00204

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00297	-0.00298	-0.00296
	(A1 * A2 * A3 * C1 * X)	0.00295	0.00298	0.00295
	(A1 * A2 * A3 * !C1 * X)	-0.00269	-0.00274	-0.00289
	(A1 * A2 * A3 * !C1 * X)	0.00238	0.00241	0.00225
	(A1 * A2 * !A3 * C1 * X)	-0.00275	-0.00275	-0.00276
	(A1 * A2 * !A3 * C1 * X)	0.00425	0.00425	0.00423
	(A1 * !A2 * C1 * X)	-0.00275	-0.00275	-0.00276
	(A1 * !A2 * C1 * X)	0.00425	0.00425	0.00423
	(!A1 * C1 * X)	-0.00275	-0.00275	-0.00276
	(!A1 * C1 * X)	0.00425	0.00425	0.00423

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)	0.00195	0.00197	0.00194
	(A1 * A2 * B1 * X)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * A3 * !B1 * X)	0.00196	0.00198	0.00196
	(A1 * A2 * A3 * !B1 * X)	-0.00085	-0.00086	-0.00083
	(A1 * !A2 * B1 * X)	0.00193	0.00194	0.00194
	(A1 * !A2 * B1 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * B1 * X)	0.00193	0.00194	0.00194
	(!A1 * B1 * X)	-0.00088	-0.00088	-0.00088
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00192	0.00194	0.00192
	(A1 * A2 * B1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * A3 * !B1 * X)	0.00193	0.00194	0.00195
	(A1 * A2 * A3 * !B1 * X)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * B1 * X)	0.00192	0.00196	0.00193
	(A1 * !A2 * B1 * X)	-0.00094	-0.00095	-0.00093
	(!A1 * B1 * X)	0.00192	0.00196	0.00193
	(!A1 * B1 * X)	-0.00094	-0.00095	-0.00093
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00316	0.00319	0.00317
	(A1 * A2 * B1 * X)	-0.00201	-0.00202	-0.00200
	(A1 * A2 * A3 * !B1 * X)	0.00317	0.00319	0.00320
	(A1 * A2 * A3 * !B1 * X)	-0.00192	-0.00193	-0.00191
	(A1 * !A2 * B1 * X)	0.00317	0.00322	0.00318
	(A1 * !A2 * B1 * X)	-0.00201	-0.00203	-0.00199
	(!A1 * B1 * X)	0.00317	0.00322	0.00318
	(!A1 * B1 * X)	-0.00201	-0.00203	-0.00199

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)	-0.00185	-0.00185	-0.00191
	(A1 * A2 * B1 * X)	0.00095	0.00096	0.00091
	(A1 * A2 * A3 * !B1 * X)	-0.00160	-0.00160	-0.00183
	(A1 * A2 * A3 * !B1 * X)	0.00115	0.00115	0.00099
	(A1 * !A2 * B1 * X)	-0.00183	-0.00184	-0.00190
	(A1 * !A2 * B1 * X)	0.00098	0.00098	0.00093
	(!A1 * B1 * X)	-0.00183	-0.00184	-0.00190
	(!A1 * B1 * X)	0.00098	0.00098	0.00093
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00183	-0.00184	-0.00189
	(A1 * A2 * B1 * X)	0.00102	0.00102	0.00097
	(A1 * A2 * A3 * !B1 * X)	-0.00159	-0.00160	-0.00181
	(A1 * A2 * A3 * !B1 * X)	0.00121	0.00122	0.00105
	(A1 * !A2 * B1 * X)	-0.00181	-0.00182	-0.00188
	(A1 * !A2 * B1 * X)	0.00105	0.00105	0.00099
	(!A1 * B1 * X)	-0.00181	-0.00182	-0.00188
	(!A1 * B1 * X)	0.00105	0.00105	0.00099
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00290	-0.00294	-0.00310
	(A1 * A2 * B1 * X)	0.00221	0.00224	0.00208
	(A1 * A2 * A3 * !B1 * X)	-0.00239	-0.00242	-0.00294
	(A1 * A2 * A3 * !B1 * X)	0.00262	0.00264	0.00224
	(A1 * !A2 * B1 * X)	-0.00286	-0.00290	-0.00308
	(A1 * !A2 * B1 * X)	0.00226	0.00229	0.00212
	(!A1 * B1 * X)	-0.00286	-0.00290	-0.00308
	(!A1 * B1 * X)	0.00227	0.00229	0.00212

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00293	0.00302	0.00292	0.00297	0.61048
sky130_fd_sc_hs__a31oi_2	0.00560	0.00549	0.00583	0.00448	1.16644
sky130_fd_sc_hs__a31oi_4	0.01134	0.01083	0.01081	0.00903	1.88269

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	3.95212	10.68990
sky130_fd_sc_hs__a31oi_2	0.00000	7.77924	21.37930
sky130_fd_sc_hs__a31oi_4	0.00000	15.55560	42.75460

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)	0.07298	0.80501	9.15069
	A2->Y (FR)	0.09280	0.84240	9.37584
	A3->Y (FR)	0.10199	0.84613	9.29704
	B1->Y (FR)	0.06832	0.85844	9.98871
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.06611	0.69255	9.28086
	A2->Y (FR)	0.08033	0.70151	9.23042
	A3->Y (FR)	0.09129	0.70304	9.04535
	B1->Y (FR)	0.05257	0.71526	9.80472
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.06660	0.58484	8.66814
	A2->Y (FR)	0.08464	0.59148	8.52918
	A3->Y (FR)	0.10305	0.62015	8.68112
	B1->Y (FR)	0.07431	0.65279	9.47287

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.04380	0.52384	5.92463
	A2->Y (RF)	0.05193	0.49149	5.41178
	A3->Y (RF)	0.05485	0.44393	4.73431
	B1->Y (RF)	0.01910	0.32782	3.79688
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.04241	0.48669	6.43697
	A2->Y (RF)	0.04831	0.41944	5.44496
	A3->Y (RF)	0.05326	0.38328	4.85665
	B1->Y (RF)	0.02454	0.44677	6.10467
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.04474	0.42819	6.23599
	A2->Y (RF)	0.05333	0.36988	5.28540
	A3->Y (RF)	0.05800	0.31923	4.47107
	B1->Y (RF)	0.02257	0.34443	5.22335

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00009	0.00059	0.01730
	A1	0.00674	0.00725	0.02406
	A2	0.00088	0.00128	0.01829
	A2	0.00877	0.00919	0.02625
	A3	0.00122	0.00168	0.01915
	A3	0.01031	0.01079	0.02832
	B1	-0.00039	0.00200	0.03217
	B1	0.00496	0.00738	0.03785
sky130_fd_sc_hs__a31oi_2	A1	0.00018	0.00129	0.03233
	A1	0.01274	0.01388	0.04510
	A2	0.00156	0.00262	0.03519
	A2	0.01638	0.01746	0.05019
	A3	0.00277	0.00376	0.03692
	A3	0.02011	0.02111	0.05421
	B1	0.00075	0.00394	0.04120
	B1	0.00850	0.01172	0.04894
sky130_fd_sc_hs__a31oi_4	A1	-0.00139	0.00121	0.06244
	A1	0.02431	0.02699	0.08832
	A2	0.00247	0.00467	0.07003
	A2	0.03273	0.03498	0.10028
	A3	0.00525	0.00750	0.07365
	A3	0.04030	0.04253	0.10846
	B1	-0.00012	0.00714	0.08403
	B1	0.01618	0.02350	0.10032

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00896	0.00966	0.02423
	A1	0.00232	0.00297	0.01717
	A2	0.01021	0.01062	0.02412
	A2	0.00230	0.00271	0.01604
	A3	0.01138	0.01188	0.02735
	A3	0.00221	0.00263	0.01763
	B1	0.00533	0.00671	0.02715
	B1	-0.00002	0.00135	0.02158
sky130_fd_sc_hs__a31oi_2	A1	0.01670	0.01809	0.04318
	A1	0.00418	0.00552	0.03067
	A2	0.01893	0.01998	0.04724
	A2	0.00407	0.00506	0.03138
	A3	0.02163	0.02258	0.05272
	A3	0.00413	0.00501	0.03469
	B1	0.00626	0.00826	0.03336
	B1	-0.00149	0.00048	0.02501
sky130_fd_sc_hs__a31oi_4	A1	0.03370	0.03640	0.08675
	A1	0.00800	0.01073	0.05997
	A2	0.03806	0.03999	0.09157
	A2	0.00776	0.00961	0.06131
	A3	0.04301	0.04494	0.10573
	A3	0.00762	0.00946	0.06972
	B1	0.01323	0.01783	0.07410
	B1	-0.00307	0.00143	0.05408

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)**	0.00221	0.00184	0.00178
	(A2 * A3 * B1 * !Y)	-0.00164	-0.00206	-0.00209
	(A2 * !A3 * B1 * !Y)	0.00169	0.00169	0.00169
	(A2 * !A3 * B1 * !Y)	-0.00211	-0.00211	-0.00211
	(A2 * !A3 * !B1 * Y)	0.00054	0.00054	0.00050
	(A2 * !A3 * !B1 * Y)	-0.00244	-0.00247	-0.00256
	(!A2 * B1 * !Y)	0.00171	0.00171	0.00171
	(!A2 * B1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A2 * !B1 * Y)	0.00056	0.00055	0.00053
	(!A2 * !B1 * Y)	-0.00252	-0.00253	-0.00257
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00450	0.00372	0.00359
	(A2 * A3 * B1 * !Y)	-0.00331	-0.00419	-0.00426
	(A2 * !A3 * B1 * !Y)	0.00337	0.00340	0.00337
	(A2 * !A3 * B1 * !Y)	-0.00431	-0.00433	-0.00430
	(A2 * !A3 * !B1 * Y)	0.00107	0.00107	0.00097
	(A2 * !A3 * !B1 * Y)	-0.00501	-0.00506	-0.00525
	(!A2 * B1 * !Y)	0.00342	0.00343	0.00342
	(!A2 * B1 * !Y)	-0.00431	-0.00431	-0.00430
	(!A2 * !B1 * Y)	0.00103	0.00103	0.00098
	(!A2 * !B1 * Y)	-0.00517	-0.00521	-0.00529
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00935	0.00771	0.00740
	(A2 * A3 * B1 * !Y)	-0.00646	-0.00824	-0.00841
	(A2 * !A3 * B1 * !Y)	0.00689	0.00697	0.00693
	(A2 * !A3 * B1 * !Y)	-0.00845	-0.00853	-0.00849
	(A2 * !A3 * !B1 * Y)	0.00228	0.00229	0.00205
	(A2 * !A3 * !B1 * Y)	-0.01002	-0.01010	-0.01052
	(!A2 * B1 * !Y)	0.00710	0.00712	0.00711
	(!A2 * B1 * !Y)	-0.00850	-0.00851	-0.00849
	(!A2 * !B1 * Y)	0.00230	0.00231	0.00217
	(!A2 * !B1 * Y)	-0.01034	-0.01041	-0.01057

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)	-0.00164	-0.00165	-0.00164
	(A2 * A3 * B1 * !Y)	0.00221	0.00223	0.00222
	(A2 * !A3 * B1 * !Y)	-0.00142	-0.00157	-0.00159
	(A2 * !A3 * B1 * !Y)	0.00223	0.00225	0.00224
	(A2 * !A3 * !B1 * Y)	-0.00049	-0.00050	-0.00049
	(A2 * !A3 * !B1 * Y)	0.00257	0.00261	0.00258
	(!A2 * B1 * !Y)	-0.00157	-0.00160	-0.00161
	(!A2 * B1 * !Y)	0.00224	0.00224	0.00224
	(!A2 * !B1 * Y)	-0.00051	-0.00051	-0.00051
	(!A2 * !B1 * Y)	0.00257	0.00257	0.00258
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00331	-0.00332	-0.00330
	(A2 * A3 * B1 * !Y)	0.00450	0.00453	0.00452
	(A2 * !A3 * B1 * !Y)	-0.00282	-0.00318	-0.00320
	(A2 * !A3 * B1 * !Y)	0.00456	0.00460	0.00456
	(A2 * !A3 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(A2 * !A3 * !B1 * Y)	0.00527	0.00530	0.00530
	(!A2 * B1 * !Y)	-0.00314	-0.00321	-0.00323
	(!A2 * B1 * !Y)	0.00454	0.00457	0.00456
	(!A2 * !B1 * Y)	-0.00095	-0.00095	-0.00095
	(!A2 * !B1 * Y)	0.00529	0.00533	0.00531

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00688	-0.00688	-0.00683
	(A2 * A3 * B1 * !Y)	0.00892	0.00892	0.00893
	(A2 * !A3 * B1 * !Y)	-0.00585	-0.00657	-0.00663
	(A2 * !A3 * B1 * !Y)	0.00902	0.00909	0.00900
	(A2 * !A3 * !B1 * Y)	-0.00202	-0.00202	-0.00202
	(A2 * !A3 * !B1 * Y)	0.01057	0.01063	0.01061
	(!A2 * B1 * !Y)	-0.00653	-0.00668	-0.00672
	(!A2 * B1 * !Y)	0.00898	0.00904	0.00900
	(!A2 * !B1 * Y)	-0.00210	-0.00211	-0.00210
	(!A2 * !B1 * Y)	0.01059	0.01065	0.01062

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)**	0.00232	0.00195	0.00189
	(A1 * A3 * B1 * !Y)	-0.00164	-0.00205	-0.00209
	(A1 * !A3 * B1 * !Y)	0.00181	0.00182	0.00181
	(A1 * !A3 * B1 * !Y)	-0.00210	-0.00211	-0.00211
	(A1 * !A3 * !B1 * Y)	0.00063	0.00064	0.00064
	(A1 * !A3 * !B1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * A3 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A1 * A3 * B1 * !Y)	-0.00210	-0.00212	-0.00211
	(!A1 * A3 * !B1 * Y)	0.00155	0.00158	0.00156
	(!A1 * A3 * !B1 * Y)	-0.00237	-0.00239	-0.00238
	(!A1 * !A3 * B1 * !Y)	0.00113	0.00114	0.00113
	(!A1 * !A3 * B1 * !Y)	-0.00210	-0.00212	-0.00211
	(!A1 * !A3 * !B1 * Y)	0.00082	0.00083	0.00082
	(!A1 * !A3 * !B1 * Y)	-0.00239	-0.00240	-0.00239

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00422	0.00347	0.00334
	(A1 * A3 * B1 * !Y)	-0.00336	-0.00420	-0.00428
	(A1 * !A3 * B1 * !Y)	0.00318	0.00319	0.00318
	(A1 * !A3 * B1 * !Y)	-0.00434	-0.00434	-0.00433
	(A1 * !A3 * !B1 * Y)	0.00127	0.00127	0.00126
	(A1 * !A3 * !B1 * Y)	-0.00447	-0.00447	-0.00445
	(!A1 * A3 * B1 * !Y)	0.00319	0.00323	0.00320
	(!A1 * A3 * B1 * !Y)	-0.00432	-0.00435	-0.00433
	(!A1 * A3 * !B1 * Y)	0.00309	0.00312	0.00310
	(!A1 * A3 * !B1 * Y)	-0.00444	-0.00446	-0.00444
	(!A1 * !A3 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !A3 * B1 * !Y)	-0.00432	-0.00434	-0.00433
	(!A1 * !A3 * !B1 * Y)	0.00162	0.00163	0.00161
	(!A1 * !A3 * !B1 * Y)	-0.00451	-0.00452	-0.00450
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00893	0.00733	0.00705
	(A1 * A3 * B1 * !Y)	-0.00664	-0.00843	-0.00858
	(A1 * !A3 * B1 * !Y)	0.00667	0.00671	0.00667
	(A1 * !A3 * B1 * !Y)	-0.00870	-0.00872	-0.00868
	(A1 * !A3 * !B1 * Y)	0.00272	0.00274	0.00277
	(A1 * !A3 * !B1 * Y)	-0.00897	-0.00900	-0.00896
	(!A1 * A3 * B1 * !Y)	0.00676	0.00678	0.00676
	(!A1 * A3 * B1 * !Y)	-0.00870	-0.00871	-0.00868
	(!A1 * A3 * !B1 * Y)	0.00648	0.00656	0.00652
	(!A1 * A3 * !B1 * Y)	-0.00894	-0.00900	-0.00894
	(!A1 * !A3 * B1 * !Y)	0.00398	0.00402	0.00399
	(!A1 * !A3 * B1 * !Y)	-0.00868	-0.00874	-0.00869
	(!A1 * !A3 * !B1 * Y)	0.00353	0.00356	0.00354
	(!A1 * !A3 * !B1 * Y)	-0.00903	-0.00907	-0.00904

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)	-0.00175	-0.00177	-0.00175
	(A1 * A3 * B1 * !Y)	0.00221	0.00223	0.00222
	(A1 * !A3 * B1 * !Y)	-0.00169	-0.00172	-0.00171
	(A1 * !A3 * B1 * !Y)	0.00224	0.00225	0.00224
	(A1 * !A3 * !B1 * Y)	-0.00060	-0.00061	-0.00061
	(A1 * !A3 * !B1 * Y)	0.00245	0.00249	0.00241
	(!A1 * A3 * B1 * !Y)	-0.00168	-0.00172	-0.00172
	(!A1 * A3 * B1 * !Y)	0.00224	0.00224	0.00224
	(!A1 * A3 * !B1 * Y)	-0.00136	-0.00154	-0.00155
	(!A1 * A3 * !B1 * Y)	0.00259	0.00242	0.00240
	(!A1 * !A3 * B1 * !Y)	-0.00113	-0.00114	-0.00109
	(!A1 * !A3 * B1 * !Y)	0.00223	0.00226	0.00224
	(!A1 * !A3 * !B1 * Y)	-0.00082	-0.00083	-0.00082
	(!A1 * !A3 * !B1 * Y)	0.00251	0.00254	0.00243
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00306	-0.00308	-0.00305
	(A1 * A3 * B1 * !Y)	0.00452	0.00456	0.00455
	(A1 * !A3 * B1 * !Y)	-0.00290	-0.00297	-0.00299
	(A1 * !A3 * B1 * !Y)	0.00457	0.00463	0.00458
	(A1 * !A3 * !B1 * Y)	-0.00117	-0.00119	-0.00120
	(A1 * !A3 * !B1 * Y)	0.00460	0.00467	0.00452
	(!A1 * A3 * B1 * !Y)	-0.00288	-0.00299	-0.00298
	(!A1 * A3 * B1 * !Y)	0.00456	0.00460	0.00458
	(!A1 * A3 * !B1 * Y)	-0.00267	-0.00307	-0.00309
	(!A1 * A3 * !B1 * Y)	0.00482	0.00452	0.00447
	(!A1 * !A3 * B1 * !Y)	-0.00181	-0.00183	-0.00174
	(!A1 * !A3 * B1 * !Y)	0.00458	0.00463	0.00458
	(!A1 * !A3 * !B1 * Y)	-0.00162	-0.00163	-0.00161
	(!A1 * !A3 * !B1 * Y)	0.00475	0.00480	0.00458

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00652	-0.00653	-0.00648
	(A1 * A3 * B1 * !Y)	0.00911	0.00914	0.00912
	(A1 * !A3 * B1 * !Y)	-0.00612	-0.00628	-0.00631
	(A1 * !A3 * B1 * !Y)	0.00917	0.00929	0.00919
	(A1 * !A3 * !B1 * Y)	-0.00255	-0.00260	-0.00264
	(A1 * !A3 * !B1 * Y)	0.00928	0.00943	0.00911
	(!A1 * A3 * B1 * !Y)	-0.00620	-0.00637	-0.00637
	(!A1 * A3 * B1 * !Y)	0.00921	0.00925	0.00919
	(!A1 * A3 * !B1 * Y)	-0.00556	-0.00649	-0.00652
	(!A1 * A3 * !B1 * Y)	0.00993	0.00914	0.00902
	(!A1 * !A3 * B1 * !Y)	-0.00398	-0.00402	-0.00384
	(!A1 * !A3 * B1 * !Y)	0.00919	0.00929	0.00920
	(!A1 * !A3 * !B1 * Y)	-0.00353	-0.00356	-0.00354
	(!A1 * !A3 * !B1 * Y)	0.00957	0.00968	0.00922

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)**	0.00237	0.00201	0.00195
	(A1 * A2 * B1 * !Y)	-0.00172	-0.00212	-0.00215
	(A1 * !A2 * !B1 * Y)	0.00170	0.00173	0.00171
	(A1 * !A2 * !B1 * Y)	-0.00235	-0.00237	-0.00236
	(!A2 * B1 * !Y)	0.00188	0.00191	0.00188
	(!A2 * B1 * !Y)	-0.00216	-0.00218	-0.00217
	(!A1 * A2 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A1 * A2 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * !B1 * Y)	0.00167	0.00168	0.00167
	(!A1 * A2 * !B1 * Y)	-0.00235	-0.00236	-0.00235
	(!A1 * !A2 * !B1 * Y)	0.00169	0.00172	0.00170
	(!A1 * !A2 * !B1 * Y)	-0.00235	-0.00237	-0.00236

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00456	0.00379	0.00366
	(A1 * A2 * B1 * !Y)	-0.00332	-0.00417	-0.00424
	(A1 * !A2 * !B1 * Y)	0.00333	0.00337	0.00335
	(A1 * !A2 * !B1 * Y)	-0.00440	-0.00443	-0.00441
	(!A2 * B1 * !Y)	0.00352	0.00356	0.00352
	(!A2 * B1 * !Y)	-0.00428	-0.00431	-0.00429
	(!A1 * A2 * B1 * !Y)	0.00344	0.00346	0.00344
	(!A1 * A2 * B1 * !Y)	-0.00429	-0.00430	-0.00429
	(!A1 * A2 * !B1 * Y)	0.00332	0.00335	0.00332
	(!A1 * A2 * !B1 * Y)	-0.00440	-0.00442	-0.00440
	(!A1 * !A2 * !B1 * Y)	0.00333	0.00336	0.00334
	(!A1 * !A2 * !B1 * Y)	-0.00440	-0.00442	-0.00441
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00885	0.00727	0.00700
	(A1 * A2 * B1 * !Y)	-0.00671	-0.00841	-0.00855
	(A1 * !A2 * !B1 * Y)	0.00646	0.00650	0.00646
	(A1 * !A2 * !B1 * Y)	-0.00890	-0.00892	-0.00889
	(!A2 * B1 * !Y)	0.00666	0.00673	0.00665
	(!A2 * B1 * !Y)	-0.00866	-0.00870	-0.00865
	(!A1 * A2 * B1 * !Y)	0.00659	0.00662	0.00658
	(!A1 * A2 * B1 * !Y)	-0.00867	-0.00868	-0.00865
	(!A1 * A2 * !B1 * Y)	0.00635	0.00640	0.00635
	(!A1 * A2 * !B1 * Y)	-0.00888	-0.00891	-0.00887
	(!A1 * !A2 * !B1 * Y)	0.00640	0.00651	0.00644
	(!A1 * !A2 * !B1 * Y)	-0.00886	-0.00894	-0.00889

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)**	-0.00181	-0.00183	-0.00181
	(A1 * A2 * B1 * !Y)	0.00227	0.00230	0.00228
	(A1 * !A2 * !B1 * Y)	-0.00159	-0.00168	-0.00170
	(A1 * !A2 * !B1 * Y)	0.00239	0.00238	0.00237
	(!A2 * B1 * !Y)	-0.00174	-0.00178	-0.00178
	(!A2 * B1 * !Y)	0.00228	0.00232	0.00230
	(!A1 * A2 * B1 * !Y)	-0.00163	-0.00174	-0.00176
	(!A1 * A2 * B1 * !Y)	0.00229	0.00231	0.00230
	(!A1 * A2 * !B1 * Y)	-0.00152	-0.00167	-0.00167
	(!A1 * A2 * !B1 * Y)	0.00242	0.00240	0.00237
	(!A1 * !A2 * !B1 * Y)	-0.00164	-0.00169	-0.00170
	(!A1 * !A2 * !B1 * Y)	0.00236	0.00238	0.00237
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00338	-0.00339	-0.00338
	(A1 * A2 * B1 * !Y)	0.00447	0.00450	0.00451
	(A1 * !A2 * !B1 * Y)	-0.00307	-0.00329	-0.00334
	(A1 * !A2 * !B1 * Y)	0.00457	0.00448	0.00444
	(!A2 * B1 * !Y)	-0.00323	-0.00330	-0.00331
	(!A2 * B1 * !Y)	0.00452	0.00458	0.00454
	(!A1 * A2 * B1 * !Y)	-0.00296	-0.00321	-0.00326
	(!A1 * A2 * B1 * !Y)	0.00453	0.00459	0.00454
	(!A1 * A2 * !B1 * Y)	-0.00296	-0.00330	-0.00332
	(!A1 * A2 * !B1 * Y)	0.00458	0.00450	0.00443
	(!A1 * !A2 * !B1 * Y)	-0.00322	-0.00333	-0.00334
	(!A1 * !A2 * !B1 * Y)	0.00442	0.00445	0.00443

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00644	-0.00649	-0.00643
	(A1 * A2 * B1 * !Y)	0.00900	0.00913	0.00909
	(A1 * !A2 * !B1 * Y)	-0.00598	-0.00642	-0.00646
	(A1 * !A2 * !B1 * Y)	0.00906	0.00897	0.00893
	(!A2 * B1 * !Y)	-0.00608	-0.00624	-0.00627
	(!A2 * B1 * !Y)	0.00912	0.00924	0.00916
	(!A1 * A2 * B1 * !Y)	-0.00562	-0.00611	-0.00621
	(!A1 * A2 * B1 * !Y)	0.00917	0.00927	0.00916
	(!A1 * A2 * !B1 * Y)	-0.00565	-0.00631	-0.00635
	(!A1 * A2 * !B1 * Y)	0.00924	0.00907	0.00893
	(!A1 * !A2 * !B1 * Y)	-0.00618	-0.00644	-0.00644
	(!A1 * !A2 * !B1 * Y)	0.00889	0.00895	0.00892

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)**	0.00209	0.00212	0.00209
	(A1 * A2 * A3 * !Y)	-0.00094	-0.00095	-0.00092
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00222	0.00226	0.00223
	(A1 * A2 * A3 * !Y)	-0.00185	-0.00188	-0.00184
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00464	0.00460	0.00464
	(A1 * A2 * A3 * !Y)	-0.00382	-0.00376	-0.00376

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)	-0.00183	-0.00186	-0.00201
	(A1 * A2 * A3 * !Y)	0.00115	0.00116	0.00103
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00169	-0.00171	-0.00208
	(A1 * A2 * A3 * !Y)	0.00234	0.00234	0.00204
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00358	-0.00364	-0.00435
	(A1 * A2 * A3 * !Y)	0.00472	0.00474	0.00417

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00261	0.00260	0.00260	0.00280	1.27370
sky130_fd_sc_hs__a31o_2	0.00289	0.00281	0.00283	0.00273	2.45377
sky130_fd_sc_hs__a31o_4	0.00513	0.00502	0.00500	0.00512	4.83703

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	9.32796	16.14010
sky130_fd_sc_hs__a31o_2	0.00000	12.47710	16.42090
sky130_fd_sc_hs__a31o_4	0.00000	25.06300	32.84280

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)	0.09094	0.59049	6.57102
	A2->X (RR)	0.09797	0.58566	6.47264
	A3->X (RR)	0.10184	0.56533	6.25443
	B1->X (RR)	0.05709	0.51660	6.02090
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.09441	0.51567	6.40388
	A2->X (RR)	0.10125	0.50761	6.29595
	A3->X (RR)	0.10506	0.48488	6.09800
	B1->X (RR)	0.05500	0.43303	5.84880
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.10915	0.48560	6.71852
	A2->X (RR)	0.11682	0.46731	6.55419
	A3->X (RR)	0.12188	0.44321	6.36326
	B1->X (RR)	0.05487	0.37162	6.02990

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.11061	0.49613	4.70677
	A2->X (FF)	0.12901	0.52660	4.82490
	A3->X (FF)	0.13899	0.54525	4.94792
	B1->X (FF)	0.11912	0.56063	5.25256
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.14426	0.51955	4.84498
	A2->X (FF)	0.16775	0.55344	4.97950
	A3->X (FF)	0.17433	0.56490	5.06003
	B1->X (FF)	0.15292	0.59031	5.35764
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.14222	0.47510	4.91322
	A2->X (FF)	0.16026	0.50533	5.05134
	A3->X (FF)	0.17700	0.53222	5.20548
	B1->X (FF)	0.15046	0.55109	5.45674

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01171	0.01410	0.06971
	A1	0.00581	0.00820	0.06395
	A2	0.01267	0.01447	0.06735
	A2	0.00581	0.00762	0.06072
	A3	0.01372	0.01514	0.06225
	A3	0.00578	0.00719	0.05475
	B1	0.00868	0.01313	0.09024
	B1	0.00374	0.00821	0.08580
sky130_fd_sc_hs__a31o_2	A1	0.01564	0.01778	0.07322
	A1	0.00925	0.01145	0.06745
	A2	0.01671	0.01835	0.07116
	A2	0.00924	0.01092	0.06451
	A3	0.01792	0.01923	0.06722
	A3	0.00921	0.01054	0.05955
	B1	0.01193	0.01625	0.09262
	B1	0.00683	0.01121	0.08864
sky130_fd_sc_hs__a31o_4	A1	0.03115	0.03498	0.14214
	A1	0.01927	0.02320	0.13031
	A2	0.03318	0.03608	0.13950
	A2	0.01927	0.02217	0.12620
	A3	0.03540	0.03797	0.14535
	A3	0.01923	0.02190	0.13042
	B1	0.02142	0.03054	0.18801
	B1	0.01242	0.02165	0.18048

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00408	0.00620	0.05641
	A1	0.00999	0.01194	0.06231
	A2	0.00478	0.00668	0.05697
	A2	0.01162	0.01348	0.06265
	A3	0.00510	0.00668	0.05717
	A3	0.01297	0.01454	0.06441
	B1	0.00331	0.00841	0.08719
	B1	0.00826	0.01328	0.09202
sky130_fd_sc_hs__a31o_2	A1	0.00814	0.00919	0.06052
	A1	0.01453	0.01554	0.06594
	A2	0.00933	0.01006	0.05993
	A2	0.01676	0.01748	0.06728
	A3	0.00978	0.01023	0.06376
	A3	0.01839	0.01877	0.07004
	B1	0.00702	0.01174	0.09139
	B1	0.01210	0.01678	0.09478
sky130_fd_sc_hs__a31o_4	A1	0.01687	0.01835	0.12690
	A1	0.02876	0.03012	0.13428
	A2	0.01873	0.02000	0.12537
	A2	0.03260	0.03354	0.13630
	A3	0.02071	0.02119	0.12955
	A3	0.03667	0.03713	0.14394
	B1	0.01472	0.02409	0.18102
	B1	0.02368	0.03291	0.18708

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)**	0.00199	0.00160	0.00154
	(A2 * A3 * B1 * X)	-0.00147	-0.00188	-0.00190
	(A2 * !A3 * B1 * X)	0.00144	0.00145	0.00144
	(A2 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00193
	(A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00221	-0.00222	-0.00229
	(!A2 * B1 * X)	0.00148	0.00150	0.00148
	(!A2 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A2 * !B1 * !X)	0.00051	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00226	-0.00226	-0.00230
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00235	0.00196	0.00191
	(A2 * A3 * B1 * X)	-0.00140	-0.00181	-0.00183
	(A2 * !A3 * B1 * X)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * X)	-0.00185	-0.00186	-0.00185
	(A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00063
	(A2 * !A3 * !B1 * !X)	-0.00221	-0.00221	-0.00230
	(!A2 * B1 * X)	0.00184	0.00186	0.00184
	(!A2 * B1 * X)	-0.00185	-0.00187	-0.00185
	(!A2 * !B1 * !X)	0.00069	0.00069	0.00066
	(!A2 * !B1 * !X)	-0.00227	-0.00227	-0.00231
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00424	0.00341	0.00328
	(A2 * A3 * B1 * X)	-0.00288	-0.00375	-0.00382
	(A2 * !A3 * B1 * X)	0.00308	0.00309	0.00308
	(A2 * !A3 * B1 * X)	-0.00386	-0.00387	-0.00387
	(A2 * !A3 * !B1 * !X)	0.00129	0.00129	0.00118
	(A2 * !A3 * !B1 * !X)	-0.00433	-0.00434	-0.00454
	(!A2 * B1 * X)	0.00313	0.00316	0.00314
	(!A2 * B1 * X)	-0.00386	-0.00389	-0.00387
	(!A2 * !B1 * !X)	0.00128	0.00127	0.00122
	(!A2 * !B1 * !X)	-0.00447	-0.00447	-0.00456

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)	-0.00133	-0.00134	-0.00133
	(A2 * A3 * B1 * X)	0.00211	0.00214	0.00212
	(A2 * !A3 * B1 * X)	-0.00114	-0.00126	-0.00128
	(A2 * !A3 * B1 * X)	0.00211	0.00214	0.00213
	(A2 * !A3 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * !X)	0.00242	0.00244	0.00243
	(!A2 * B1 * X)	-0.00127	-0.00129	-0.00130
	(!A2 * B1 * X)	0.00213	0.00215	0.00213
	(!A2 * !B1 * !X)	-0.00034	-0.00035	-0.00034
	(!A2 * !B1 * !X)	0.00243	0.00247	0.00243
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00169	-0.00171	-0.00170
	(A2 * A3 * B1 * X)	0.00204	0.00207	0.00205
	(A2 * !A3 * B1 * X)	-0.00147	-0.00161	-0.00164
	(A2 * !A3 * B1 * X)	0.00205	0.00207	0.00206
	(A2 * !A3 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(A2 * !A3 * !B1 * !X)	0.00256	0.00259	0.00257
	(!A2 * B1 * X)	-0.00162	-0.00165	-0.00166
	(!A2 * B1 * X)	0.00207	0.00208	0.00206
	(!A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !X)	0.00256	0.00260	0.00257

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00284	-0.00285	-0.00284
	(A2 * A3 * B1 * X)	0.00423	0.00427	0.00425
	(A2 * !A3 * B1 * X)	-0.00245	-0.00271	-0.00275
	(A2 * !A3 * B1 * X)	0.00426	0.00429	0.00428
	(A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00066
	(A2 * !A3 * !B1 * !X)	0.00505	0.00514	0.00507
	(!A2 * B1 * X)	-0.00272	-0.00277	-0.00278
	(!A2 * B1 * X)	0.00429	0.00432	0.00428
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00069
	(!A2 * !B1 * !X)	0.00506	0.00515	0.00508

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)**	0.00197	0.00157	0.00152
	(A1 * A3 * B1 * X)	-0.00146	-0.00187	-0.00190
	(A1 * !A3 * B1 * X)	0.00145	0.00146	0.00145
	(A1 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * !A3 * !B1 * !X)	0.00058	0.00057	0.00058
	(A1 * !A3 * !B1 * !X)	-0.00202	-0.00201	-0.00201
	(!A1 * A3 * B1 * X)	0.00145	0.00147	0.00146
	(!A1 * A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * !B1 * !X)	0.00136	0.00138	0.00137
	(!A1 * A3 * !B1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * !A3 * B1 * X)	0.00085	0.00086	0.00086
	(!A1 * !A3 * B1 * X)	-0.00192	-0.00192	-0.00192
	(!A1 * !A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !X)	-0.00202	-0.00202	-0.00203

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00228	0.00190	0.00185
	(A1 * A3 * B1 * X)	-0.00140	-0.00181	-0.00183
	(A1 * !A3 * B1 * X)	0.00176	0.00177	0.00177
	(A1 * !A3 * B1 * X)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * !B1 * !X)	0.00076	0.00077	0.00077
	(A1 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00196
	(!A1 * A3 * B1 * X)	0.00178	0.00179	0.00178
	(!A1 * A3 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * !B1 * !X)	0.00168	0.00169	0.00168
	(!A1 * A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A3 * B1 * X)	0.00109	0.00109	0.00109
	(!A1 * !A3 * B1 * X)	-0.00185	-0.00185	-0.00185
	(!A1 * !A3 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00197
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00423	0.00338	0.00324
	(A1 * A3 * B1 * X)	-0.00289	-0.00378	-0.00385
	(A1 * !A3 * B1 * X)	0.00307	0.00310	0.00308
	(A1 * !A3 * B1 * X)	-0.00390	-0.00393	-0.00390
	(A1 * !A3 * !B1 * !X)	0.00154	0.00156	0.00156
	(A1 * !A3 * !B1 * !X)	-0.00387	-0.00390	-0.00387
	(!A1 * A3 * B1 * X)	0.00313	0.00314	0.00313
	(!A1 * A3 * B1 * X)	-0.00391	-0.00391	-0.00390
	(!A1 * A3 * !B1 * !X)	0.00319	0.00321	0.00320
	(!A1 * A3 * !B1 * !X)	-0.00385	-0.00386	-0.00384
	(!A1 * !A3 * B1 * X)	0.00192	0.00194	0.00192
	(!A1 * !A3 * B1 * X)	-0.00390	-0.00393	-0.00391
	(!A1 * !A3 * !B1 * !X)	0.00190	0.00190	0.00189
	(!A1 * !A3 * !B1 * !X)	-0.00391	-0.00393	-0.00390

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)	-0.00130	-0.00130	-0.00131
	(A1 * A3 * B1 * X)	0.00211	0.00210	0.00211
	(A1 * !A3 * B1 * X)	-0.00125	-0.00127	-0.00127
	(A1 * !A3 * B1 * X)	0.00213	0.00213	0.00212
	(A1 * !A3 * !B1 * !X)	-0.00042	-0.00043	-0.00043
	(A1 * !A3 * !B1 * !X)	0.00219	0.00224	0.00217
	(!A1 * A3 * B1 * X)	-0.00125	-0.00127	-0.00127
	(!A1 * A3 * B1 * X)	0.00213	0.00213	0.00212
	(!A1 * A3 * !B1 * !X)	-0.00106	-0.00122	-0.00124
	(!A1 * A3 * !B1 * !X)	0.00234	0.00219	0.00216
	(!A1 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00073
	(!A1 * !A3 * B1 * X)	0.00212	0.00215	0.00212
	(!A1 * !A3 * !B1 * !X)	-0.00063	-0.00063	-0.00065
	(!A1 * !A3 * !B1 * !X)	0.00224	0.00228	0.00218
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * A3 * B1 * X)	0.00205	0.00206	0.00205
	(A1 * !A3 * B1 * X)	-0.00156	-0.00159	-0.00159
	(A1 * !A3 * B1 * X)	0.00207	0.00207	0.00206
	(A1 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00050
	(A1 * !A3 * !B1 * !X)	0.00227	0.00231	0.00223
	(!A1 * A3 * B1 * X)	-0.00156	-0.00159	-0.00159
	(!A1 * A3 * B1 * X)	0.00206	0.00207	0.00206
	(!A1 * A3 * !B1 * !X)	-0.00124	-0.00142	-0.00143
	(!A1 * A3 * !B1 * !X)	0.00241	0.00224	0.00222
	(!A1 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00097
	(!A1 * !A3 * B1 * X)	0.00205	0.00208	0.00206
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00074	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00233	0.00236	0.00225

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00280	-0.00282	-0.00280
	(A1 * A3 * B1 * X)	0.00427	0.00431	0.00428
	(A1 * !A3 * B1 * X)	-0.00265	-0.00272	-0.00273
	(A1 * !A3 * B1 * X)	0.00433	0.00434	0.00432
	(A1 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00100
	(A1 * !A3 * !B1 * !X)	0.00450	0.00457	0.00442
	(!A1 * A3 * B1 * X)	-0.00266	-0.00274	-0.00274
	(!A1 * A3 * B1 * X)	0.00429	0.00433	0.00431
	(!A1 * A3 * !B1 * !X)	-0.00226	-0.00266	-0.00268
	(!A1 * A3 * !B1 * !X)	0.00474	0.00443	0.00437
	(!A1 * !A3 * B1 * X)	-0.00178	-0.00179	-0.00166
	(!A1 * !A3 * B1 * X)	0.00432	0.00436	0.00432
	(!A1 * !A3 * !B1 * !X)	-0.00141	-0.00142	-0.00147
	(!A1 * !A3 * !B1 * !X)	0.00467	0.00470	0.00449

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)	0.00207	0.00171	0.00166
	(A1 * A2 * B1 * X)	-0.00147	-0.00185	-0.00187
	(A1 * !A2 * !B1 * !X)	0.00139	0.00140	0.00140
	(A1 * !A2 * !B1 * !X)	-0.00210	-0.00211	-0.00210
	(!A2 * B1 * X)	0.00159	0.00161	0.00160
	(!A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * !B1 * !X)	0.00135	0.00136	0.00136
	(!A1 * A2 * !B1 * !X)	-0.00210	-0.00210	-0.00209
	(!A1 * !A2 * !B1 * !X)	0.00138	0.00140	0.00138
	(!A1 * !A2 * !B1 * !X)	-0.00210	-0.00211	-0.00210

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00236	0.00202	0.00197
	(A1 * A2 * B1 * X)	-0.00141	-0.00179	-0.00181
	(A1 * !A2 * !B1 * !X)	0.00168	0.00170	0.00169
	(A1 * !A2 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(!A2 * B1 * X)	0.00189	0.00191	0.00189
	(!A2 * B1 * X)	-0.00182	-0.00184	-0.00183
	(!A1 * A2 * B1 * X)	0.00186	0.00187	0.00186
	(!A1 * A2 * B1 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * !B1 * !X)	0.00164	0.00165	0.00164
	(!A1 * A2 * !B1 * !X)	-0.00205	-0.00205	-0.00205
	(!A1 * !A2 * !B1 * !X)	0.00167	0.00169	0.00168
	(!A1 * !A2 * !B1 * !X)	-0.00205	-0.00206	-0.00205
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00417	0.00335	0.00321
	(A1 * A2 * B1 * X)	-0.00289	-0.00379	-0.00386
	(A1 * !A2 * !B1 * !X)	0.00312	0.00316	0.00313
	(A1 * !A2 * !B1 * !X)	-0.00386	-0.00389	-0.00387
	(!A2 * B1 * X)	0.00307	0.00310	0.00307
	(!A2 * B1 * X)	-0.00392	-0.00394	-0.00391
	(!A1 * A2 * B1 * X)	0.00302	0.00302	0.00301
	(!A1 * A2 * B1 * X)	-0.00392	-0.00392	-0.00391
	(!A1 * A2 * !B1 * !X)	0.00306	0.00310	0.00307
	(!A1 * A2 * !B1 * !X)	-0.00386	-0.00388	-0.00386
	(!A1 * !A2 * !B1 * !X)	0.00310	0.00311	0.00310
	(!A1 * !A2 * !B1 * !X)	-0.00388	-0.00389	-0.00387

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)**	-0.00144	-0.00145	-0.00145
	(A1 * A2 * B1 * X)	0.00208	0.00209	0.00208
	(A1 * !A2 * !B1 * !X)	-0.00116	-0.00125	-0.00126
	(A1 * !A2 * !B1 * !X)	0.00228	0.00226	0.00224
	(!A2 * B1 * X)	-0.00139	-0.00141	-0.00141
	(!A2 * B1 * X)	0.00210	0.00212	0.00209
	(!A1 * A2 * B1 * X)	-0.00129	-0.00138	-0.00140
	(!A1 * A2 * B1 * X)	0.00209	0.00212	0.00209
	(!A1 * A2 * !B1 * !X)	-0.00110	-0.00123	-0.00125
	(!A1 * A2 * !B1 * !X)	0.00230	0.00227	0.00224
	(!A1 * !A2 * !B1 * !X)	-0.00121	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00222	0.00225	0.00223
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00175	-0.00176	-0.00175
	(A1 * A2 * B1 * X)	0.00203	0.00204	0.00203
	(A1 * !A2 * !B1 * !X)	-0.00134	-0.00142	-0.00144
	(A1 * !A2 * !B1 * !X)	0.00235	0.00232	0.00231
	(!A2 * B1 * X)	-0.00169	-0.00171	-0.00171
	(!A2 * B1 * X)	0.00204	0.00206	0.00204
	(!A1 * A2 * B1 * X)	-0.00157	-0.00168	-0.00170
	(!A1 * A2 * B1 * X)	0.00203	0.00206	0.00204
	(!A1 * A2 * !B1 * !X)	-0.00126	-0.00141	-0.00142
	(!A1 * A2 * !B1 * !X)	0.00236	0.00235	0.00231
	(!A1 * !A2 * !B1 * !X)	-0.00139	-0.00143	-0.00144
	(!A1 * !A2 * !B1 * !X)	0.00231	0.00232	0.00230

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00277	-0.00279	-0.00277
	(A1 * A2 * B1 * X)	0.00428	0.00432	0.00430
	(A1 * !A2 * !B1 * !X)	-0.00239	-0.00259	-0.00263
	(A1 * !A2 * !B1 * !X)	0.00448	0.00440	0.00439
	(!A2 * B1 * X)	-0.00261	-0.00268	-0.00270
	(!A2 * B1 * X)	0.00431	0.00436	0.00433
	(!A1 * A2 * B1 * X)	-0.00242	-0.00263	-0.00267
	(!A1 * A2 * B1 * X)	0.00432	0.00438	0.00433
	(!A1 * A2 * !B1 * !X)	-0.00225	-0.00256	-0.00261
	(!A1 * A2 * !B1 * !X)	0.00454	0.00445	0.00439
	(!A1 * !A2 * !B1 * !X)	-0.00250	-0.00261	-0.00264
	(!A1 * !A2 * !B1 * !X)	0.00437	0.00440	0.00438

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)**	0.00206	0.00208	0.00208
	(A1 * A2 * A3 * X)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00197	0.00201	0.00198
	(A1 * A2 * A3 * X)	-0.00084	-0.00085	-0.00083
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00342	0.00348	0.00343
	(A1 * A2 * A3 * X)	-0.00184	-0.00187	-0.00182

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)	-0.00179	-0.00179	-0.00197
	(A1 * A2 * A3 * X)	0.00113	0.00112	0.00100
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00169	-0.00170	-0.00186
	(A1 * A2 * A3 * X)	0.00112	0.00112	0.00098
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00279	-0.00281	-0.00321
	(A1 * A2 * A3 * X)	0.00244	0.00244	0.00212

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00299	0.00300	0.00272	0.00305	0.00283	0.60293
sky130_fd_sc_hs__a32oi_2	0.00564	0.00552	0.00543	0.00568	0.00555	1.09932
sky130_fd_sc_hs__a32oi_4	0.01115	0.01089	0.01085	0.01135	0.01100	1.76327

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	4.31222	13.92690
sky130_fd_sc_hs__a32oi_2	0.00000	8.62284	27.85200
sky130_fd_sc_hs__a32oi_4	0.00000	17.23890	55.69490

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)	0.10234	0.85233	9.33763
	A2->Y (FR)	0.11646	0.86518	9.34499
	A3->Y (FR)	0.12723	0.87319	9.29633
	B1->Y (FR)	0.07236	0.86055	9.94682
	B2->Y (FR)	0.06892	0.85867	9.95232
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.09184	0.69638	8.81904
	A2->Y (FR)	0.11779	0.74300	9.20020
	A3->Y (FR)	0.12866	0.74944	9.09953
	B1->Y (FR)	0.06227	0.72824	9.70824
	B2->Y (FR)	0.08304	0.75748	9.84047
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.10544	0.62580	8.64257
	A2->Y (FR)	0.12555	0.64235	8.59414
	A3->Y (FR)	0.14164	0.65717	8.59212
	B1->Y (FR)	0.08512	0.65721	9.24426
	B2->Y (FR)	0.11162	0.69880	9.55065

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.05814	0.53735	5.87667
	A2->Y (RF)	0.06464	0.50448	5.38400
	A3->Y (RF)	0.06787	0.45526	4.68544
	B1->Y (RF)	0.02702	0.41956	4.84398
	B2->Y (RF)	0.03129	0.38038	4.25643
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.05942	0.49729	6.23572
	A2->Y (RF)	0.07041	0.46736	5.69756
	A3->Y (RF)	0.07380	0.39692	4.67575
	B1->Y (RF)	0.02418	0.37194	4.96172
	B2->Y (RF)	0.03050	0.32968	4.29191
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.06005	0.42692	5.79045
	A2->Y (RF)	0.06968	0.38956	5.15229
	A3->Y (RF)	0.07310	0.31893	4.11193
	B1->Y (RF)	0.02383	0.30111	4.56879
	B2->Y (RF)	0.02931	0.24873	3.69223

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00048	0.00087	0.01876
	A1	0.00851	0.00890	0.02684
	A2	0.00100	0.00138	0.01960
	A2	0.01024	0.01059	0.02879
	A3	0.00169	0.00211	0.02085
	A3	0.01191	0.01232	0.03108
	B1	0.00032	0.00242	0.03003
	B1	0.00568	0.00779	0.03570
	B2	0.00082	0.00292	0.03102
	B2	0.00729	0.00941	0.03775
sky130_fd_sc_hs__a32oi_2	A1	-0.00075	0.00029	0.03333
	A1	0.01497	0.01606	0.04955
	A2	0.00160	0.00226	0.03515
	A2	0.01972	0.02040	0.05332
	A3	0.00251	0.00338	0.03780
	A3	0.02294	0.02386	0.05842
	B1	-0.00107	0.00359	0.05436
	B1	0.00908	0.01381	0.06446
	B2	0.00097	0.00486	0.05684
	B2	0.01357	0.01751	0.06984

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00130	0.00092	0.06743
	A1	0.03023	0.03241	0.09962
	A2	0.00229	0.00401	0.07358
	A2	0.03850	0.04019	0.11041
	A3	0.00430	0.00648	0.07996
	A3	0.04526	0.04740	0.12137
	B1	-0.00205	0.00682	0.10877
	B1	0.01863	0.02744	0.12937
	B2	0.00155	0.00968	0.11226
	B2	0.02693	0.03512	0.13839

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01203	0.01269	0.02833
	A1	0.00402	0.00463	0.02002
	A2	0.01324	0.01369	0.02814
	A2	0.00400	0.00445	0.01887
	A3	0.01424	0.01473	0.03120
	A3	0.00395	0.00441	0.02060
	B1	0.00551	0.00672	0.02436
	B1	0.00016	0.00127	0.01872
	B2	0.00665	0.00758	0.02462
	B2	0.00014	0.00103	0.01789

sky130_fd_sc_hs__a32oi_2	**A1**	0.02344	0.02486	0.05382
	A1	0.00775	0.00916	0.03743
	A2	0.02595	0.02675	0.05360
	A2	0.00776	0.00853	0.03474
	A3	0.02834	0.02923	0.06155
	A3	0.00771	0.00861	0.04058
	B1	0.01008	0.01263	0.04641
	B1	-0.00004	0.00250	0.03551
	B2	0.01269	0.01464	0.04686
	B2	-0.00001	0.00185	0.03401
sky130_fd_sc_hs__a32oi_4	**A1**	0.04585	0.04854	0.10411
	A1	0.01438	0.01698	0.07197
	A2	0.05048	0.05225	0.10737
	A2	0.01419	0.01584	0.06994
	A3	0.05525	0.05728	0.12406
	A3	0.01389	0.01589	0.08191
	B1	0.02043	0.02561	0.09274
	B1	-0.00019	0.00489	0.07109
	B2	0.02557	0.02981	0.09576
	B2	-0.00000	0.00418	0.07021

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)**	0.00242	0.00198	0.00191
	(A2 * A3 * B1 * B2 * !Y)	-0.00152	-0.00199	-0.00203
	(A2 * !A3 * B1 * B2 * !Y)	0.00180	0.00181	0.00180
	(A2 * !A3 * B1 * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(A2 * !A3 * B1 * !B2 * Y)	0.00058	0.00057	0.00053
	(A2 * !A3 * B1 * !B2 * Y)	-0.00249	-0.00250	-0.00259
	(A2 * !A3 * !B1 * Y)	0.00058	0.00057	0.00053
	(A2 * !A3 * !B1 * Y)	-0.00249	-0.00250	-0.00259
	(!A2 * B1 * B2 * !Y)	0.00182	0.00183	0.00183
	(!A2 * B1 * B2 * !Y)	-0.00204	-0.00205	-0.00205
	(!A2 * B1 * !B2 * Y)	0.00056	0.00055	0.00053
	(!A2 * B1 * !B2 * Y)	-0.00256	-0.00257	-0.00260
	(!A2 * !B1 * Y)	0.00056	0.00055	0.00053
	(!A2 * !B1 * Y)	-0.00256	-0.00257	-0.00260
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00476	0.00391	0.00378
	(A2 * A3 * B1 * B2 * !Y)	-0.00304	-0.00398	-0.00405
	(A2 * !A3 * B1 * B2 * !Y)	0.00354	0.00355	0.00354
	(A2 * !A3 * B1 * B2 * !Y)	-0.00409	-0.00410	-0.00409
	(A2 * !A3 * B1 * !B2 * Y)	0.00120	0.00121	0.00108
	(A2 * !A3 * B1 * !B2 * Y)	-0.00487	-0.00492	-0.00514
	(A2 * !A3 * !B1 * Y)	0.00121	0.00121	0.00109
	(A2 * !A3 * !B1 * Y)	-0.00487	-0.00492	-0.00513
	(!A2 * B1 * B2 * !Y)	0.00362	0.00366	0.00363
	(!A2 * B1 * B2 * !Y)	-0.00408	-0.00411	-0.00409
	(!A2 * B1 * !B2 * Y)	0.00122	0.00123	0.00115
	(!A2 * B1 * !B2 * Y)	-0.00501	-0.00506	-0.00516
	(!A2 * !B1 * Y)	0.00123	0.00123	0.00116
	(!A2 * !B1 * Y)	-0.00501	-0.00505	-0.00515

sky130_fd_sc_hs__a32oi_4	(A2 * A3 * B1 * B2 * !Y)	0.00967	0.00776	0.00749
	(A2 * A3 * B1 * B2 * !Y)	-0.00588	-0.00798	-0.00811
	(A2 * !A3 * B1 * B2 * !Y)	0.00698	0.00702	0.00698
	(A2 * !A3 * B1 * B2 * !Y)	-0.00822	-0.00825	-0.00820
	(A2 * !A3 * B1 * !B2 * Y)	0.00214	0.00216	0.00195
	(A2 * !A3 * B1 * !B2 * Y)	-0.00991	-0.00999	-0.01039
	(A2 * !A3 * !B1 * Y)	0.00215	0.00216	0.00195
	(A2 * !A3 * !B1 * Y)	-0.00990	-0.00999	-0.01038
	(!A2 * B1 * B2 * !Y)	0.00716	0.00719	0.00717
	(!A2 * B1 * B2 * !Y)	-0.00820	-0.00823	-0.00820
	(!A2 * B1 * !B2 * Y)	0.00218	0.00219	0.00207
	(!A2 * B1 * !B2 * Y)	-0.01021	-0.01028	-0.01044
	(!A2 * !B1 * Y)	0.00218	0.00220	0.00208
	(!A2 * !B1 * Y)	-0.01020	-0.01028	-0.01044

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)**	-0.00166	-0.00166	-0.00165
	(A2 * A3 * B1 * B2 * !Y)	0.00229	0.00229	0.00228
	(A2 * !A3 * B1 * B2 * !Y)	-0.00142	-0.00159	-0.00160
	(A2 * !A3 * B1 * B2 * !Y)	0.00229	0.00231	0.00230
	(A2 * !A3 * B1 * !B2 * Y)	-0.00051	-0.00052	-0.00051
	(A2 * !A3 * B1 * !B2 * Y)	0.00260	0.00264	0.00261
	(A2 * !A3 * !B1 * Y)	-0.00051	-0.00052	-0.00051
	(A2 * !A3 * !B1 * Y)	0.00260	0.00264	0.00261
	(!A2 * B1 * B2 * !Y)	-0.00158	-0.00161	-0.00161
	(!A2 * B1 * B2 * !Y)	0.00229	0.00231	0.00230
	(!A2 * B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * Y)	0.00261	0.00266	0.00261
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00260	0.00266	0.00261
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00326	-0.00329	-0.00326
	(A2 * A3 * B1 * B2 * !Y)	0.00454	0.00460	0.00456
	(A2 * !A3 * B1 * B2 * !Y)	-0.00274	-0.00312	-0.00315
	(A2 * !A3 * B1 * B2 * !Y)	0.00457	0.00463	0.00459
	(A2 * !A3 * B1 * !B2 * Y)	-0.00106	-0.00107	-0.00107
	(A2 * !A3 * B1 * !B2 * Y)	0.00516	0.00519	0.00518
	(A2 * !A3 * !B1 * Y)	-0.00106	-0.00107	-0.00107
	(A2 * !A3 * !B1 * Y)	0.00516	0.00519	0.00518
	(!A2 * B1 * B2 * !Y)	-0.00309	-0.00317	-0.00320
	(!A2 * B1 * B2 * !Y)	0.00457	0.00461	0.00458
	(!A2 * B1 * !B2 * Y)	-0.00110	-0.00111	-0.00110
	(!A2 * B1 * !B2 * Y)	0.00516	0.00519	0.00519
	(!A2 * !B1 * Y)	-0.00110	-0.00111	-0.00111
	(!A2 * !B1 * Y)	0.00516	0.00519	0.00519

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00644	-0.00646	-0.00644
	(A2 * A3 * B1 * B2 * !Y)	0.00910	0.00914	0.00913
	(A2 * !A3 * B1 * B2 * !Y)	-0.00539	-0.00614	-0.00622
	(A2 * !A3 * B1 * B2 * !Y)	0.00917	0.00928	0.00919
	(A2 * !A3 * B1 * !B2 * Y)	-0.00191	-0.00192	-0.00192
	(A2 * !A3 * B1 * !B2 * Y)	0.01044	0.01048	0.01048
	(A2 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(A2 * !A3 * !B1 * Y)	0.01043	0.01047	0.01048
	(!A2 * B1 * B2 * !Y)	-0.00612	-0.00628	-0.00630
	(!A2 * B1 * B2 * !Y)	0.00917	0.00928	0.00919
	(!A2 * B1 * !B2 * Y)	-0.00199	-0.00199	-0.00199
	(!A2 * B1 * !B2 * Y)	0.01046	0.01050	0.01049
	(!A2 * !B1 * Y)	-0.00199	-0.00200	-0.00199
	(!A2 * !B1 * Y)	0.01046	0.01049	0.01050

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)**	0.00247	0.00203	0.00196
	(A1 * A3 * B1 * B2 * !Y)	-0.00152	-0.00199	-0.00203
	(A1 * !A3 * B1 * B2 * !Y)	0.00189	0.00191	0.00189
	(A1 * !A3 * B1 * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(A1 * !A3 * B1 * !B2 * Y)	0.00076	0.00076	0.00076
	(A1 * !A3 * B1 * !B2 * Y)	-0.00228	-0.00227	-0.00227
	(A1 * !A3 * !B1 * Y)	0.00076	0.00076	0.00076
	(A1 * !A3 * !B1 * Y)	-0.00228	-0.00227	-0.00227
	(!A1 * A3 * B1 * B2 * !Y)	0.00188	0.00189	0.00189
	(!A1 * A3 * B1 * B2 * !Y)	-0.00204	-0.00206	-0.00205
	(!A1 * A3 * B1 * !B2 * Y)	0.00167	0.00169	0.00168
	(!A1 * A3 * B1 * !B2 * Y)	-0.00227	-0.00229	-0.00227
	(!A1 * A3 * !B1 * Y)	0.00167	0.00169	0.00168
	(!A1 * A3 * !B1 * Y)	-0.00227	-0.00229	-0.00227
	(!A1 * !A3 * B1 * B2 * !Y)	0.00118	0.00119	0.00118
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A1 * !A3 * B1 * !B2 * Y)	0.00093	0.00093	0.00093
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00227	-0.00228	-0.00228
	(!A1 * !A3 * !B1 * Y)	0.00093	0.00093	0.00093
	(!A1 * !A3 * !B1 * Y)	-0.00227	-0.00228	-0.00228

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00478	0.00380	0.00365
	(A1 * A3 * B1 * B2 * !Y)	-0.00304	-0.00410	-0.00419
	(A1 * !A3 * B1 * B2 * !Y)	0.00345	0.00347	0.00347
	(A1 * !A3 * B1 * B2 * !Y)	-0.00422	-0.00426	-0.00425
	(A1 * !A3 * B1 * !B2 * Y)	0.00138	0.00139	0.00141
	(A1 * !A3 * B1 * !B2 * Y)	-0.00453	-0.00455	-0.00452
	(A1 * !A3 * !B1 * Y)	0.00138	0.00140	0.00142
	(A1 * !A3 * !B1 * Y)	-0.00453	-0.00455	-0.00452
	(!A1 * A3 * B1 * B2 * !Y)	0.00350	0.00353	0.00350
	(!A1 * A3 * B1 * B2 * !Y)	-0.00425	-0.00427	-0.00424
	(!A1 * A3 * B1 * !B2 * Y)	0.00323	0.00326	0.00324
	(!A1 * A3 * B1 * !B2 * Y)	-0.00452	-0.00454	-0.00451
	(!A1 * A3 * !B1 * Y)	0.00323	0.00326	0.00324
	(!A1 * A3 * !B1 * Y)	-0.00452	-0.00454	-0.00451
	(!A1 * !A3 * B1 * B2 * !Y)	0.00217	0.00219	0.00217
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00426	-0.00429	-0.00426
	(!A1 * !A3 * B1 * !B2 * Y)	0.00182	0.00183	0.00182
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00456	-0.00458	-0.00456
	(!A1 * !A3 * !B1 * Y)	0.00183	0.00183	0.00183
	(!A1 * !A3 * !B1 * Y)	-0.00456	-0.00457	-0.00456

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00959	0.00763	0.00732
	(A1 * A3 * B1 * B2 * !Y)	-0.00606	-0.00816	-0.00832
	(A1 * !A3 * B1 * B2 * !Y)	0.00690	0.00694	0.00692
	(A1 * !A3 * B1 * B2 * !Y)	-0.00840	-0.00845	-0.00842
	(A1 * !A3 * B1 * !B2 * Y)	0.00265	0.00266	0.00269
	(A1 * !A3 * B1 * !B2 * Y)	-0.00898	-0.00901	-0.00896
	(A1 * !A3 * !B1 * Y)	0.00265	0.00267	0.00270
	(A1 * !A3 * !B1 * Y)	-0.00897	-0.00901	-0.00896
	(!A1 * A3 * B1 * B2 * !Y)	0.00698	0.00704	0.00701
	(!A1 * A3 * B1 * B2 * !Y)	-0.00839	-0.00846	-0.00842
	(!A1 * A3 * B1 * !B2 * Y)	0.00648	0.00651	0.00652
	(!A1 * A3 * B1 * !B2 * Y)	-0.00894	-0.00896	-0.00894
	(!A1 * A3 * !B1 * Y)	0.00648	0.00655	0.00652
	(!A1 * A3 * !B1 * Y)	-0.00894	-0.00899	-0.00893
	(!A1 * !A3 * B1 * B2 * !Y)	0.00413	0.00416	0.00412
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00843	-0.00848	-0.00842
	(!A1 * !A3 * B1 * !B2 * Y)	0.00341	0.00342	0.00340
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00904	-0.00908	-0.00904
	(!A1 * !A3 * !B1 * Y)	0.00342	0.00343	0.00341
	(!A1 * !A3 * !B1 * Y)	-0.00904	-0.00907	-0.00904

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)**	-0.00170	-0.00171	-0.00170
	(A1 * A3 * B1 * B2 * !Y)	0.00228	0.00229	0.00229
	(A1 * !A3 * B1 * B2 * !Y)	-0.00163	-0.00165	-0.00166
	(A1 * !A3 * B1 * B2 * !Y)	0.00230	0.00231	0.00230
	(A1 * !A3 * B1 * !B2 * Y)	-0.00071	-0.00073	-0.00073
	(A1 * !A3 * B1 * !B2 * Y)	0.00233	0.00237	0.00230
	(A1 * !A3 * !B1 * Y)	-0.00071	-0.00073	-0.00073
	(A1 * !A3 * !B1 * Y)	0.00233	0.00237	0.00230
	(!A1 * A3 * B1 * B2 * !Y)	-0.00163	-0.00166	-0.00166
	(!A1 * A3 * B1 * B2 * !Y)	0.00229	0.00231	0.00230
	(!A1 * A3 * B1 * !B2 * Y)	-0.00146	-0.00165	-0.00166
	(!A1 * A3 * B1 * !B2 * Y)	0.00247	0.00232	0.00229
	(!A1 * A3 * !B1 * Y)	-0.00146	-0.00165	-0.00166
	(!A1 * A3 * !B1 * Y)	0.00247	0.00232	0.00229
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00108	-0.00109	-0.00102
	(!A1 * !A3 * B1 * B2 * !Y)	0.00229	0.00232	0.00230
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A3 * B1 * !B2 * Y)	0.00241	0.00243	0.00232
	(!A1 * !A3 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A3 * !B1 * Y)	0.00241	0.00243	0.00232

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00312	-0.00314	-0.00312
	(A1 * A3 * B1 * B2 * !Y)	0.00469	0.00474	0.00471
	(A1 * !A3 * B1 * B2 * !Y)	-0.00295	-0.00302	-0.00304
	(A1 * !A3 * B1 * B2 * !Y)	0.00473	0.00479	0.00474
	(A1 * !A3 * B1 * !B2 * Y)	-0.00129	-0.00131	-0.00134
	(A1 * !A3 * B1 * !B2 * Y)	0.00470	0.00477	0.00460
	(A1 * !A3 * !B1 * Y)	-0.00129	-0.00131	-0.00134
	(A1 * !A3 * !B1 * Y)	0.00470	0.00478	0.00460
	(!A1 * A3 * B1 * B2 * !Y)	-0.00296	-0.00306	-0.00306
	(!A1 * A3 * B1 * B2 * !Y)	0.00475	0.00476	0.00474
	(!A1 * A3 * B1 * !B2 * Y)	-0.00273	-0.00322	-0.00324
	(!A1 * A3 * B1 * !B2 * Y)	0.00502	0.00460	0.00455
	(!A1 * A3 * !B1 * Y)	-0.00273	-0.00322	-0.00324
	(!A1 * A3 * !B1 * Y)	0.00502	0.00460	0.00455
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00201	-0.00200	-0.00186
	(!A1 * !A3 * B1 * B2 * !Y)	0.00478	0.00480	0.00476
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * !A3 * B1 * !B2 * Y)	0.00484	0.00489	0.00466
	(!A1 * !A3 * !B1 * Y)	-0.00183	-0.00183	-0.00183
	(!A1 * !A3 * !B1 * Y)	0.00484	0.00489	0.00466

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00627	-0.00629	-0.00626
	(A1 * A3 * B1 * B2 * !Y)	0.00933	0.00937	0.00935
	(A1 * !A3 * B1 * B2 * !Y)	-0.00591	-0.00604	-0.00607
	(A1 * !A3 * B1 * B2 * !Y)	0.00940	0.00952	0.00942
	(A1 * !A3 * B1 * !B2 * Y)	-0.00246	-0.00253	-0.00256
	(A1 * !A3 * B1 * !B2 * Y)	0.00923	0.00942	0.00910
	(A1 * !A3 * !B1 * Y)	-0.00249	-0.00253	-0.00257
	(A1 * !A3 * !B1 * Y)	0.00928	0.00942	0.00911
	(!A1 * A3 * B1 * B2 * !Y)	-0.00597	-0.00613	-0.00613
	(!A1 * A3 * B1 * B2 * !Y)	0.00944	0.00948	0.00942
	(!A1 * A3 * B1 * !B2 * Y)	-0.00550	-0.00647	-0.00651
	(!A1 * A3 * B1 * !B2 * Y)	0.01000	0.00915	0.00902
	(!A1 * A3 * !B1 * Y)	-0.00550	-0.00647	-0.00651
	(!A1 * A3 * !B1 * Y)	0.01000	0.00915	0.00902
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00372	-0.00377	-0.00348
	(!A1 * !A3 * B1 * B2 * !Y)	0.00936	0.00952	0.00942
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00341	-0.00342	-0.00340
	(!A1 * !A3 * B1 * !B2 * Y)	0.00949	0.00966	0.00921
	(!A1 * !A3 * !B1 * Y)	-0.00342	-0.00343	-0.00341
	(!A1 * !A3 * !B1 * Y)	0.00949	0.00966	0.00921

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)**	0.00233	0.00191	0.00185
	(A1 * A2 * B1 * B2 * !Y)	-0.00155	-0.00201	-0.00205
	(A1 * !A2 * B1 * !B2 * Y)	0.00166	0.00168	0.00167
	(A1 * !A2 * B1 * !B2 * Y)	-0.00218	-0.00220	-0.00219
	(A1 * !A2 * !B1 * Y)	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * Y)	-0.00218	-0.00220	-0.00219
	(!A2 * B1 * B2 * !Y)	0.00177	0.00180	0.00178
	(!A2 * B1 * B2 * !Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A2 * B1 * B2 * !Y)	0.00173	0.00174	0.00173
	(!A1 * A2 * B1 * B2 * !Y)	-0.00207	-0.00207	-0.00207
	(!A1 * A2 * B1 * !B2 * Y)	0.00162	0.00163	0.00162
	(!A1 * A2 * B1 * !B2 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * !B1 * Y)	0.00162	0.00163	0.00162
	(!A1 * A2 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * B1 * !B2 * Y)	0.00166	0.00168	0.00166
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00219	-0.00220	-0.00219
	(!A1 * !A2 * !B1 * Y)	0.00166	0.00168	0.00166
	(!A1 * !A2 * !B1 * Y)	-0.00219	-0.00220	-0.00219

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00481	0.00388	0.00372
	(A1 * A2 * B1 * B2 * !Y)	-0.00307	-0.00406	-0.00414
	(A1 * !A2 * B1 * !B2 * Y)	0.00333	0.00337	0.00334
	(A1 * !A2 * B1 * !B2 * Y)	-0.00442	-0.00445	-0.00443
	(A1 * !A2 * !B1 * Y)	0.00333	0.00337	0.00334
	(A1 * !A2 * !B1 * Y)	-0.00442	-0.00445	-0.00443
	(!A2 * B1 * B2 * !Y)	0.00354	0.00360	0.00355
	(!A2 * B1 * B2 * !Y)	-0.00418	-0.00422	-0.00419
	(!A1 * A2 * B1 * B2 * !Y)	0.00353	0.00354	0.00352
	(!A1 * A2 * B1 * B2 * !Y)	-0.00420	-0.00421	-0.00419
	(!A1 * A2 * B1 * !B2 * Y)	0.00329	0.00332	0.00329
	(!A1 * A2 * B1 * !B2 * Y)	-0.00442	-0.00445	-0.00442
	(!A1 * A2 * !B1 * Y)	0.00329	0.00333	0.00329
	(!A1 * A2 * !B1 * Y)	-0.00442	-0.00444	-0.00442
	(!A1 * !A2 * B1 * !B2 * Y)	0.00330	0.00331	0.00332
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00442	-0.00443	-0.00443
	(!A1 * !A2 * !B1 * Y)	0.00330	0.00331	0.00332
	(!A1 * !A2 * !B1 * Y)	-0.00442	-0.00442	-0.00443

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00937	0.00756	0.00725
	(A1 * A2 * B1 * B2 * !Y)	-0.00618	-0.00821	-0.00836
	(A1 * !A2 * B1 * !B2 * Y)	0.00642	0.00653	0.00646
	(A1 * !A2 * B1 * !B2 * Y)	-0.00892	-0.00899	-0.00894
	(A1 * !A2 * !B1 * Y)	0.00643	0.00653	0.00646
	(A1 * !A2 * !B1 * Y)	-0.00892	-0.00900	-0.00894
	(!A2 * B1 * B2 * !Y)	0.00687	0.00692	0.00688
	(!A2 * B1 * B2 * !Y)	-0.00845	-0.00849	-0.00847
	(!A1 * A2 * B1 * B2 * !Y)	0.00682	0.00686	0.00682
	(!A1 * A2 * B1 * B2 * !Y)	-0.00847	-0.00851	-0.00847
	(!A1 * A2 * B1 * !B2 * Y)	0.00635	0.00640	0.00635
	(!A1 * A2 * B1 * !B2 * Y)	-0.00894	-0.00898	-0.00893
	(!A1 * A2 * !B1 * Y)	0.00636	0.00640	0.00636
	(!A1 * A2 * !B1 * Y)	-0.00894	-0.00897	-0.00893
	(!A1 * !A2 * B1 * !B2 * Y)	0.00637	0.00644	0.00640
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00893	-0.00898	-0.00895
	(!A1 * !A2 * !B1 * Y)	0.00637	0.00645	0.00640
	(!A1 * !A2 * !B1 * Y)	-0.00892	-0.00899	-0.00895

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)**	-0.00159	-0.00160	-0.00159
	(A1 * A2 * B1 * B2 * !Y)	0.00229	0.00232	0.00231
	(A1 * !A2 * B1 * !B2 * Y)	-0.00156	-0.00165	-0.00167
	(A1 * !A2 * B1 * !B2 * Y)	0.00224	0.00221	0.00220
	(A1 * !A2 * !B1 * Y)	-0.00156	-0.00165	-0.00167
	(A1 * !A2 * !B1 * Y)	0.00224	0.00221	0.00220
	(!A2 * B1 * B2 * !Y)	-0.00152	-0.00155	-0.00155
	(!A2 * B1 * B2 * !Y)	0.00232	0.00234	0.00232
	(!A1 * A2 * B1 * B2 * !Y)	-0.00140	-0.00152	-0.00153
	(!A1 * A2 * B1 * B2 * !Y)	0.00231	0.00234	0.00232
	(!A1 * A2 * B1 * !B2 * Y)	-0.00148	-0.00163	-0.00162
	(!A1 * A2 * B1 * !B2 * Y)	0.00225	0.00223	0.00220
	(!A1 * A2 * !B1 * Y)	-0.00148	-0.00163	-0.00162
	(!A1 * A2 * !B1 * Y)	0.00225	0.00223	0.00220
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00161	-0.00165	-0.00166
	(!A1 * !A2 * B1 * !B2 * Y)	0.00221	0.00220	0.00220
	(!A1 * !A2 * !B1 * Y)	-0.00161	-0.00165	-0.00166
	(!A1 * !A2 * !B1 * Y)	0.00221	0.00220	0.00220

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00319	-0.00322	-0.00319
	(A1 * A2 * B1 * B2 * !Y)	0.00463	0.00469	0.00465
	(A1 * !A2 * B1 * !B2 * Y)	-0.00315	-0.00332	-0.00334
	(A1 * !A2 * B1 * !B2 * Y)	0.00449	0.00448	0.00446
	(A1 * !A2 * !B1 * Y)	-0.00315	-0.00332	-0.00334
	(A1 * !A2 * !B1 * Y)	0.00449	0.00448	0.00446
	(!A2 * B1 * B2 * !Y)	-0.00303	-0.00311	-0.00312
	(!A2 * B1 * B2 * !Y)	0.00467	0.00473	0.00469
	(!A1 * A2 * B1 * B2 * !Y)	-0.00283	-0.00305	-0.00309
	(!A1 * A2 * B1 * B2 * !Y)	0.00468	0.00474	0.00469
	(!A1 * A2 * B1 * !B2 * Y)	-0.00300	-0.00327	-0.00329
	(!A1 * A2 * B1 * !B2 * Y)	0.00454	0.00452	0.00445
	(!A1 * A2 * !B1 * Y)	-0.00300	-0.00327	-0.00329
	(!A1 * A2 * !B1 * Y)	0.00454	0.00452	0.00445
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00322	-0.00331	-0.00332
	(!A1 * !A2 * B1 * !B2 * Y)	0.00444	0.00448	0.00445
	(!A1 * !A2 * !B1 * Y)	-0.00322	-0.00331	-0.00332
	(!A1 * !A2 * !B1 * Y)	0.00444	0.00448	0.00445

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00618	-0.00622	-0.00619
	(A1 * A2 * B1 * B2 * !Y)	0.00934	0.00943	0.00940
	(A1 * !A2 * B1 * !B2 * Y)	-0.00599	-0.00639	-0.00646
	(A1 * !A2 * B1 * !B2 * Y)	0.00914	0.00906	0.00900
	(A1 * !A2 * !B1 * Y)	-0.00599	-0.00638	-0.00646
	(A1 * !A2 * !B1 * Y)	0.00914	0.00906	0.00900
	(!A2 * B1 * B2 * !Y)	-0.00584	-0.00599	-0.00601
	(!A2 * B1 * B2 * !Y)	0.00943	0.00957	0.00946
	(!A1 * A2 * B1 * B2 * !Y)	-0.00541	-0.00586	-0.00595
	(!A1 * A2 * B1 * B2 * !Y)	0.00948	0.00957	0.00946
	(!A1 * A2 * B1 * !B2 * Y)	-0.00570	-0.00630	-0.00635
	(!A1 * A2 * B1 * !B2 * Y)	0.00927	0.00914	0.00900
	(!A1 * A2 * !B1 * Y)	-0.00570	-0.00630	-0.00636
	(!A1 * A2 * !B1 * Y)	0.00927	0.00914	0.00900
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00619	-0.00641	-0.00640
	(!A1 * !A2 * B1 * !B2 * Y)	0.00897	0.00904	0.00899
	(!A1 * !A2 * !B1 * Y)	-0.00619	-0.00641	-0.00640
	(!A1 * !A2 * !B1 * Y)	0.00897	0.00904	0.00899

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)**	0.00201	0.00205	0.00202
	(A1 * A2 * A3 * B2 * !Y)	-0.00093	-0.00094	-0.00092
	(A1 * A2 * A3 * !B2 * !Y)	0.00206	0.00209	0.00203
	(A1 * A2 * A3 * !B2 * !Y)	-0.00083	-0.00084	-0.00085
	(A1 * A2 * !A3 * !B2 * Y)	0.00055	0.00055	0.00053
	(A1 * A2 * !A3 * !B2 * Y)	-0.00262	-0.00263	-0.00266
	(A1 * !A2 * !B2 * Y)	0.00055	0.00055	0.00053
	(A1 * !A2 * !B2 * Y)	-0.00262	-0.00263	-0.00266
	(!A1 * !B2 * Y)	0.00055	0.00055	0.00053
	(!A1 * !B2 * Y)	-0.00262	-0.00263	-0.00266
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00383	0.00382	0.00383
	(A1 * A2 * A3 * B2 * !Y)	-0.00188	-0.00185	-0.00185
	(A1 * A2 * A3 * !B2 * !Y)	0.00392	0.00395	0.00387
	(A1 * A2 * A3 * !B2 * !Y)	-0.00164	-0.00167	-0.00169
	(A1 * A2 * !A3 * !B2 * Y)	0.00116	0.00116	0.00109
	(A1 * A2 * !A3 * !B2 * Y)	-0.00505	-0.00507	-0.00517
	(A1 * !A2 * !B2 * Y)	0.00116	0.00116	0.00109
	(A1 * !A2 * !B2 * Y)	-0.00505	-0.00508	-0.00517
	(!A1 * !B2 * Y)	0.00117	0.00117	0.00109
	(!A1 * !B2 * Y)	-0.00505	-0.00507	-0.00517
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00768	0.00775	0.00774
	(A1 * A2 * A3 * B2 * !Y)	-0.00373	-0.00378	-0.00374
	(A1 * A2 * A3 * !B2 * !Y)	0.00791	0.00795	0.00781
	(A1 * A2 * A3 * !B2 * !Y)	-0.00333	-0.00337	-0.00343
	(A1 * A2 * !A3 * !B2 * Y)	0.00220	0.00221	0.00208
	(A1 * A2 * !A3 * !B2 * Y)	-0.01028	-0.01033	-0.01049
	(A1 * !A2 * !B2 * Y)	0.00221	0.00221	0.00208
	(A1 * !A2 * !B2 * Y)	-0.01028	-0.01033	-0.01049
	(!A1 * !B2 * Y)	0.00222	0.00222	0.00209
	(!A1 * !B2 * Y)	-0.01028	-0.01032	-0.01049

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)	-0.00169	-0.00172	-0.00194
	(A1 * A2 * A3 * B2 * !Y)	0.00121	0.00122	0.00103
	(A1 * A2 * A3 * !B2 * !Y)	-0.00185	-0.00188	-0.00189
	(A1 * A2 * A3 * !B2 * !Y)	0.00102	0.00102	0.00101
	(A1 * A2 * !A3 * !B2 * Y)	-0.00051	-0.00052	-0.00051
	(A1 * A2 * !A3 * !B2 * Y)	0.00266	0.00267	0.00267
	(A1 * !A2 * !B2 * Y)	-0.00051	-0.00052	-0.00051
	(A1 * !A2 * !B2 * Y)	0.00266	0.00267	0.00267
	(!A1 * !B2 * Y)	-0.00051	-0.00052	-0.00051
	(!A1 * !B2 * Y)	0.00266	0.00267	0.00267
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00319	-0.00321	-0.00367
	(A1 * A2 * A3 * B2 * !Y)	0.00242	0.00241	0.00206
	(A1 * A2 * A3 * !B2 * !Y)	-0.00348	-0.00357	-0.00360
	(A1 * A2 * A3 * !B2 * !Y)	0.00203	0.00205	0.00203
	(A1 * A2 * !A3 * !B2 * Y)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * !A3 * !B2 * Y)	0.00519	0.00520	0.00519
	(A1 * !A2 * !B2 * Y)	-0.00105	-0.00105	-0.00104
	(A1 * !A2 * !B2 * Y)	0.00519	0.00521	0.00519
	(!A1 * !B2 * Y)	-0.00105	-0.00105	-0.00105
	(!A1 * !B2 * Y)	0.00519	0.00520	0.00519

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00653	-0.00660	-0.00743
	(A1 * A2 * A3 * B2 * !Y)	0.00482	0.00482	0.00417
	(A1 * A2 * A3 * !B2 * !Y)	-0.00704	-0.00722	-0.00725
	(A1 * A2 * A3 * !B2 * !Y)	0.00411	0.00415	0.00412
	(A1 * A2 * !A3 * !B2 * Y)	-0.00199	-0.00201	-0.00199
	(A1 * A2 * !A3 * !B2 * Y)	0.01050	0.01055	0.01054
	(A1 * !A2 * !B2 * Y)	-0.00199	-0.00201	-0.00199
	(A1 * !A2 * !B2 * Y)	0.01050	0.01055	0.01054
	(!A1 * !B2 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !B2 * Y)	0.01050	0.01055	0.01054

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)**	0.00193	0.00197	0.00194
	(A1 * A2 * A3 * B1 * !Y)	-0.00098	-0.00100	-0.00098
	(A1 * A2 * A3 * !B1 * !Y)	0.00201	0.00202	0.00197
	(A1 * A2 * A3 * !B1 * !Y)	-0.00086	-0.00086	-0.00089
	(A1 * A2 * !A3 * !B1 * Y)	0.00167	0.00168	0.00168
	(A1 * A2 * !A3 * !B1 * Y)	-0.00225	-0.00226	-0.00225
	(A1 * !A2 * !B1 * Y)	0.00167	0.00168	0.00168
	(A1 * !A2 * !B1 * Y)	-0.00225	-0.00226	-0.00225
	(!A1 * !B1 * Y)	0.00167	0.00168	0.00168
	(!A1 * !B1 * Y)	-0.00225	-0.00226	-0.00225

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00383	0.00388	0.00382
	(A1 * A2 * A3 * B1 * !Y)	-0.00192	-0.00194	-0.00190
	(A1 * A2 * A3 * !B1 * !Y)	0.00396	0.00398	0.00388
	(A1 * A2 * A3 * !B1 * !Y)	-0.00169	-0.00170	-0.00173
	(A1 * A2 * !A3 * !B1 * Y)	0.00330	0.00334	0.00332
	(A1 * A2 * !A3 * !B1 * Y)	-0.00442	-0.00445	-0.00442
	(A1 * !A2 * !B1 * Y)	0.00330	0.00334	0.00332
	(A1 * !A2 * !B1 * Y)	-0.00442	-0.00445	-0.00442
	(!A1 * !B1 * Y)	0.00330	0.00335	0.00332
	(!A1 * !B1 * Y)	-0.00442	-0.00445	-0.00442
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00754	0.00758	0.00758
	(A1 * A2 * A3 * B1 * !Y)	-0.00378	-0.00380	-0.00377
	(A1 * A2 * A3 * !B1 * !Y)	0.00778	0.00794	0.00769
	(A1 * A2 * A3 * !B1 * !Y)	-0.00333	-0.00342	-0.00344
	(A1 * A2 * !A3 * !B1 * Y)	0.00653	0.00658	0.00654
	(A1 * A2 * !A3 * !B1 * Y)	-0.00886	-0.00889	-0.00885
	(A1 * !A2 * !B1 * Y)	0.00653	0.00658	0.00654
	(A1 * !A2 * !B1 * Y)	-0.00886	-0.00889	-0.00885
	(!A1 * !B1 * Y)	0.00653	0.00658	0.00654
	(!A1 * !B1 * Y)	-0.00886	-0.00889	-0.00884

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)**	-0.00162	-0.00164	-0.00186
	(A1 * A2 * A3 * B1 * !Y)	0.00127	0.00127	0.00108
	(A1 * A2 * A3 * !B1 * !Y)	-0.00180	-0.00183	-0.00182
	(A1 * A2 * A3 * !B1 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * !A3 * !B1 * Y)	-0.00152	-0.00164	-0.00166
	(A1 * A2 * !A3 * !B1 * Y)	0.00242	0.00231	0.00227
	(A1 * !A2 * !B1 * Y)	-0.00152	-0.00164	-0.00166
	(A1 * !A2 * !B1 * Y)	0.00242	0.00231	0.00227
	(!A1 * !B1 * Y)	-0.00152	-0.00164	-0.00166
	(!A1 * !B1 * Y)	0.00242	0.00231	0.00227
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00318	-0.00323	-0.00366
	(A1 * A2 * A3 * B1 * !Y)	0.00247	0.00248	0.00211
	(A1 * A2 * A3 * !B1 * !Y)	-0.00348	-0.00357	-0.00358
	(A1 * A2 * A3 * !B1 * !Y)	0.00207	0.00209	0.00208
	(A1 * A2 * !A3 * !B1 * Y)	-0.00292	-0.00327	-0.00331
	(A1 * A2 * !A3 * !B1 * Y)	0.00478	0.00451	0.00446
	(A1 * !A2 * !B1 * Y)	-0.00292	-0.00327	-0.00331
	(A1 * !A2 * !B1 * Y)	0.00478	0.00451	0.00446
	(!A1 * !B1 * Y)	-0.00292	-0.00327	-0.00331
	(!A1 * !B1 * Y)	0.00478	0.00451	0.00446
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00639	-0.00646	-0.00727
	(A1 * A2 * A3 * B1 * !Y)	0.00486	0.00486	0.00419
	(A1 * A2 * A3 * !B1 * !Y)	-0.00690	-0.00706	-0.00707
	(A1 * A2 * A3 * !B1 * !Y)	0.00412	0.00416	0.00413
	(A1 * A2 * !A3 * !B1 * Y)	-0.00573	-0.00645	-0.00650
	(A1 * A2 * !A3 * !B1 * Y)	0.00958	0.00902	0.00892
	(A1 * !A2 * !B1 * Y)	-0.00573	-0.00645	-0.00650
	(A1 * !A2 * !B1 * Y)	0.00958	0.00902	0.00892
	(!A1 * !B1 * Y)	-0.00573	-0.00644	-0.00650
	(!A1 * !B1 * Y)	0.00958	0.00903	0.00892

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00266	0.00264	0.00273	0.00265	0.00247	1.25165
sky130_fd_sc_hs__a32o_2	0.00284	0.00281	0.00289	0.00279	0.00266	2.15616
sky130_fd_sc_hs__a32o_4	0.00489	0.00550	0.00496	0.00508	0.00577	4.69355

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	11.31670	22.31480
sky130_fd_sc_hs__a32o_2	0.00000	15.92470	22.59540
sky130_fd_sc_hs__a32o_4	0.00000	31.96200	45.18710

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)	0.11251	0.63779	6.69191
	A2->X (RR)	0.11965	0.62970	6.59311
	A3->X (RR)	0.12408	0.60572	6.35898
	B1->X (RR)	0.07532	0.56691	6.24643
	B2->X (RR)	0.07850	0.55336	6.12983
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.11282	0.56427	6.45653
	A2->X (RR)	0.12027	0.55359	6.34754
	A3->X (RR)	0.12280	0.52925	6.03540
	B1->X (RR)	0.07674	0.49688	5.96343
	B2->X (RR)	0.08081	0.48110	5.83975
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.12530	0.51431	6.80596
	A2->X (RR)	0.13519	0.50863	6.72910
	A3->X (RR)	0.14028	0.48140	6.52051
	B1->X (RR)	0.07577	0.42886	6.32239
	B2->X (RR)	0.08014	0.41561	6.22872

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.14925	0.55920	4.84014
	A2->X (FF)	0.16536	0.58619	4.95576
	A3->X (FF)	0.17204	0.59741	5.04277
	B1->X (FF)	0.12930	0.58164	5.24107
	B2->X (FF)	0.14082	0.60679	5.32902
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.17992	0.55866	4.56389
	A2->X (FF)	0.19807	0.58767	4.68466
	A3->X (FF)	0.21130	0.60836	4.80356
	B1->X (FF)	0.16212	0.59347	4.96932
	B2->X (FF)	0.17899	0.62516	5.08688
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.16896	0.51124	4.94073
	A2->X (FF)	0.17836	0.53172	5.00508
	A3->X (FF)	0.20018	0.56354	5.17552
	B1->X (FF)	0.15949	0.56085	5.28395
	B2->X (FF)	0.16888	0.57841	5.35012

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01497	0.01673	0.07086
	A1	0.00768	0.00944	0.06363
	A2	0.01591	0.01706	0.06855
	A2	0.00767	0.00882	0.06043
	A3	0.01701	0.01779	0.06137
	A3	0.00764	0.00843	0.05230
	B1	0.00933	0.01302	0.08262
	B1	0.00447	0.00817	0.07806
	B2	0.01033	0.01349	0.07982
	B2	0.00447	0.00763	0.07442
sky130_fd_sc_hs__a32o_2	A1	0.01870	0.02039	0.07552
	A1	0.01118	0.01289	0.06848
	A2	0.01981	0.02092	0.07352
	A2	0.01117	0.01229	0.06548
	A3	0.02111	0.02173	0.05933
	A3	0.01117	0.01180	0.05036
	B1	0.01281	0.01638	0.08330
	B1	0.00773	0.01130	0.07920
	B2	0.01402	0.01703	0.08037
	B2	0.00770	0.01071	0.07506

sky130_fd_sc_hs__a32o_4	**A1**	0.03673	0.04034	0.15073
	A1	0.02273	0.02642	0.14842
	A2	0.03923	0.04155	0.14623
	A2	0.02272	0.02505	0.12971
	A3	0.04127	0.04323	0.15227
	A3	0.02275	0.02479	0.13448
	B1	0.02394	0.03119	0.17128
	B1	0.01475	0.02206	0.16326
	B2	0.02694	0.03321	0.17303
	B2	0.01462	0.02095	0.16193

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00449	0.00607	0.05410
	A1	0.01178	0.01335	0.06064
	A2	0.00516	0.00672	0.05533
	A2	0.01339	0.01491	0.06190
	A3	0.00538	0.00663	0.05499
	A3	0.01467	0.01591	0.06344
	B1	0.00426	0.00865	0.08181
	B1	0.00912	0.01349	0.08629
	B2	0.00462	0.00911	0.08048
	B2	0.01046	0.01492	0.08552

sky130_fd_sc_hs__a32o_2	**A1**	0.00793	0.00900	0.05825
	A1	0.01543	0.01650	0.06472
	A2	0.00896	0.00981	0.05860
	A2	0.01756	0.01836	0.06703
	A3	0.00918	0.01002	0.05733
	A3	0.01901	0.01925	0.06616
	B1	0.00728	0.01145	0.08411
	B1	0.01236	0.01646	0.08883
	B2	0.00810	0.01218	0.08323
	B2	0.01438	0.01829	0.08885
sky130_fd_sc_hs__a32o_4	**A1**	0.01584	0.01778	0.12944
	A1	0.02982	0.03163	0.13999
	A2	0.01712	0.01967	0.12772
	A2	0.03357	0.03527	0.14070
	A3	0.01938	0.02060	0.13384
	A3	0.03770	0.03879	0.14822
	B1	0.01472	0.02258	0.15863
	B1	0.02394	0.03164	0.16426
	B2	0.01482	0.02268	0.16194
	B2	0.02707	0.03490	0.17117

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)**	0.00224	0.00179	0.00174
	(A2 * A3 * B1 * B2 * X)	-0.00128	-0.00174	-0.00175
	(A2 * !A3 * B1 * B2 * X)	0.00164	0.00165	0.00165
	(A2 * !A3 * B1 * B2 * X)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * B1 * !B2 * !X)	0.00056	0.00056	0.00052
	(A2 * !A3 * B1 * !B2 * !X)	-0.00219	-0.00220	-0.00228
	(A2 * !A3 * !B1 * !X)	0.00056	0.00056	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00219	-0.00220	-0.00228
	(!A2 * B1 * B2 * X)	0.00168	0.00168	0.00168
	(!A2 * B1 * B2 * X)	-0.00176	-0.00176	-0.00177
	(!A2 * B1 * !B2 * !X)	0.00056	0.00056	0.00054
	(!A2 * B1 * !B2 * !X)	-0.00225	-0.00225	-0.00229
	(!A2 * !B1 * !X)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !X)	-0.00225	-0.00225	-0.00228
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00244	0.00200	0.00196
	(A2 * A3 * B1 * B2 * X)	-0.00128	-0.00174	-0.00174
	(A2 * !A3 * B1 * B2 * X)	0.00184	0.00186	0.00185
	(A2 * !A3 * B1 * B2 * X)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * B1 * !B2 * !X)	0.00067	0.00067	0.00062
	(A2 * !A3 * B1 * !B2 * !X)	-0.00216	-0.00217	-0.00226
	(A2 * !A3 * !B1 * !X)	0.00067	0.00067	0.00062
	(A2 * !A3 * !B1 * !X)	-0.00216	-0.00217	-0.00226
	(!A2 * B1 * B2 * X)	0.00188	0.00190	0.00189
	(!A2 * B1 * B2 * X)	-0.00176	-0.00177	-0.00176
	(!A2 * B1 * !B2 * !X)	0.00068	0.00068	0.00065
	(!A2 * B1 * !B2 * !X)	-0.00223	-0.00223	-0.00227
	(!A2 * !B1 * !X)	0.00068	0.00068	0.00065
	(!A2 * !B1 * !X)	-0.00223	-0.00223	-0.00227

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00411	0.00329	0.00321
	(A2 * A3 * B1 * B2 * X)	-0.00259	-0.00349	-0.00349
	(A2 * !A3 * B1 * B2 * X)	0.00301	0.00304	0.00302
	(A2 * !A3 * B1 * B2 * X)	-0.00352	-0.00355	-0.00352
	(A2 * !A3 * B1 * !B2 * !X)	0.00118	0.00119	0.00108
	(A2 * !A3 * B1 * !B2 * !X)	-0.00401	-0.00404	-0.00424
	(A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00108
	(A2 * !A3 * !B1 * !X)	-0.00401	-0.00404	-0.00424
	(!A2 * B1 * B2 * X)	0.00307	0.00308	0.00308
	(!A2 * B1 * B2 * X)	-0.00351	-0.00353	-0.00352
	(!A2 * B1 * !B2 * !X)	0.00112	0.00113	0.00109
	(!A2 * B1 * !B2 * !X)	-0.00416	-0.00419	-0.00427
	(!A2 * !B1 * !X)	0.00112	0.00113	0.00109
	(!A2 * !B1 * !X)	-0.00416	-0.00419	-0.00427

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)**	-0.00133	-0.00135	-0.00135
	(A2 * A3 * B1 * B2 * X)	0.00215	0.00217	0.00214
	(A2 * !A3 * B1 * B2 * X)	-0.00115	-0.00128	-0.00129
	(A2 * !A3 * B1 * B2 * X)	0.00216	0.00217	0.00216
	(A2 * !A3 * B1 * !B2 * !X)	-0.00039	-0.00038	-0.00039
	(A2 * !A3 * B1 * !B2 * !X)	0.00241	0.00241	0.00242
	(A2 * !A3 * !B1 * !X)	-0.00038	-0.00039	-0.00039
	(A2 * !A3 * !B1 * !X)	0.00241	0.00241	0.00242
	(!A2 * B1 * B2 * X)	-0.00127	-0.00130	-0.00131
	(!A2 * B1 * B2 * X)	0.00216	0.00217	0.00216
	(!A2 * B1 * !B2 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * B1 * !B2 * !X)	0.00241	0.00246	0.00242
	(!A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !X)	0.00241	0.00246	0.00242
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00154	-0.00156	-0.00156
	(A2 * A3 * B1 * B2 * X)	0.00215	0.00217	0.00214
	(A2 * !A3 * B1 * B2 * X)	-0.00132	-0.00148	-0.00149
	(A2 * !A3 * B1 * B2 * X)	0.00215	0.00217	0.00216
	(A2 * !A3 * B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * B1 * !B2 * !X)	0.00252	0.00255	0.00252
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00252	0.00255	0.00252
	(!A2 * B1 * B2 * X)	-0.00148	-0.00151	-0.00151
	(!A2 * B1 * B2 * X)	0.00216	0.00217	0.00216
	(!A2 * B1 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * B1 * !B2 * !X)	0.00252	0.00256	0.00253
	(!A2 * !B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * !X)	0.00252	0.00256	0.00253

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00239	-0.00241	-0.00241
	(A2 * A3 * B1 * B2 * X)	0.00430	0.00434	0.00429
	(A2 * !A3 * B1 * B2 * X)	-0.00198	-0.00228	-0.00230
	(A2 * !A3 * B1 * B2 * X)	0.00431	0.00434	0.00432
	(A2 * !A3 * B1 * !B2 * !X)	-0.00052	-0.00055	-0.00052
	(A2 * !A3 * B1 * !B2 * !X)	0.00475	0.00484	0.00478
	(A2 * !A3 * !B1 * !X)	-0.00052	-0.00055	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00475	0.00484	0.00478
	(!A2 * B1 * B2 * X)	-0.00225	-0.00232	-0.00232
	(!A2 * B1 * B2 * X)	0.00430	0.00434	0.00432
	(!A2 * B1 * !B2 * !X)	-0.00056	-0.00058	-0.00056
	(!A2 * B1 * !B2 * !X)	0.00475	0.00485	0.00478
	(!A2 * !B1 * !X)	-0.00056	-0.00058	-0.00056
	(!A2 * !B1 * !X)	0.00475	0.00485	0.00478

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)**	0.00220	0.00175	0.00171
	(A1 * A3 * B1 * B2 * X)	-0.00128	-0.00174	-0.00175
	(A1 * !A3 * B1 * B2 * X)	0.00164	0.00164	0.00165
	(A1 * !A3 * B1 * B2 * X)	-0.00177	-0.00177	-0.00177
	(A1 * !A3 * B1 * !B2 * !X)	0.00063	0.00062	0.00063
	(A1 * !A3 * B1 * !B2 * !X)	-0.00203	-0.00202	-0.00202
	(A1 * !A3 * !B1 * !X)	0.00063	0.00062	0.00063
	(A1 * !A3 * !B1 * !X)	-0.00202	-0.00202	-0.00202
	(!A1 * A3 * B1 * B2 * X)	0.00165	0.00165	0.00165
	(!A1 * A3 * B1 * B2 * X)	-0.00176	-0.00177	-0.00177
	(!A1 * A3 * B1 * !B2 * !X)	0.00141	0.00142	0.00141
	(!A1 * A3 * B1 * !B2 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * !B1 * !X)	0.00140	0.00142	0.00141
	(!A1 * A3 * !B1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * !A3 * B1 * B2 * X)	0.00106	0.00106	0.00106
	(!A1 * !A3 * B1 * B2 * X)	-0.00176	-0.00177	-0.00177
	(!A1 * !A3 * B1 * !B2 * !X)	0.00077	0.00078	0.00078
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00202	-0.00203	-0.00203
	(!A1 * !A3 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A3 * !B1 * !X)	-0.00202	-0.00204	-0.00203

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00241	0.00197	0.00193
	(A1 * A3 * B1 * B2 * X)	-0.00128	-0.00174	-0.00174
	(A1 * !A3 * B1 * B2 * X)	0.00184	0.00185	0.00185
	(A1 * !A3 * B1 * B2 * X)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * B1 * !B2 * !X)	0.00076	0.00076	0.00076
	(A1 * !A3 * B1 * !B2 * !X)	-0.00196	-0.00197	-0.00195
	(A1 * !A3 * !B1 * !X)	0.00076	0.00076	0.00076
	(A1 * !A3 * !B1 * !X)	-0.00196	-0.00197	-0.00195
	(!A1 * A3 * B1 * B2 * X)	0.00186	0.00187	0.00186
	(!A1 * A3 * B1 * B2 * X)	-0.00175	-0.00177	-0.00176
	(!A1 * A3 * B1 * !B2 * !X)	0.00167	0.00168	0.00168
	(!A1 * A3 * B1 * !B2 * !X)	-0.00196	-0.00196	-0.00195
	(!A1 * A3 * !B1 * !X)	0.00168	0.00168	0.00168
	(!A1 * A3 * !B1 * !X)	-0.00196	-0.00196	-0.00195
	(!A1 * !A3 * B1 * B2 * X)	0.00117	0.00118	0.00117
	(!A1 * !A3 * B1 * B2 * X)	-0.00175	-0.00177	-0.00176
	(!A1 * !A3 * B1 * !B2 * !X)	0.00095	0.00094	0.00094
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00197	-0.00197	-0.00197
	(!A1 * !A3 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !B1 * !X)	-0.00196	-0.00196	-0.00197

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00451	0.00353	0.00339
	(A1 * A3 * B1 * B2 * X)	-0.00268	-0.00375	-0.00380
	(A1 * !A3 * B1 * B2 * X)	0.00323	0.00326	0.00324
	(A1 * !A3 * B1 * B2 * X)	-0.00384	-0.00389	-0.00386
	(A1 * !A3 * B1 * !B2 * !X)	0.00143	0.00143	0.00142
	(A1 * !A3 * B1 * !B2 * !X)	-0.00418	-0.00419	-0.00418
	(A1 * !A3 * !B1 * !X)	0.00143	0.00144	0.00142
	(A1 * !A3 * !B1 * !X)	-0.00418	-0.00419	-0.00418
	(!A1 * A3 * B1 * B2 * X)	0.00323	0.00326	0.00324
	(!A1 * A3 * B1 * B2 * X)	-0.00385	-0.00388	-0.00386
	(!A1 * A3 * B1 * !B2 * !X)	0.00294	0.00297	0.00295
	(!A1 * A3 * B1 * !B2 * !X)	-0.00417	-0.00419	-0.00417
	(!A1 * A3 * !B1 * !X)	0.00294	0.00297	0.00295
	(!A1 * A3 * !B1 * !X)	-0.00417	-0.00419	-0.00416
	(!A1 * !A3 * B1 * B2 * X)	0.00218	0.00218	0.00217
	(!A1 * !A3 * B1 * B2 * X)	-0.00387	-0.00388	-0.00386
	(!A1 * !A3 * B1 * !B2 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00421	-0.00423	-0.00421
	(!A1 * !A3 * !B1 * !X)	0.00179	0.00179	0.00178
	(!A1 * !A3 * !B1 * !X)	-0.00421	-0.00422	-0.00421

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)**	-0.00130	-0.00130	-0.00132
	(A1 * A3 * B1 * B2 * X)	0.00215	0.00215	0.00214
	(A1 * !A3 * B1 * B2 * X)	-0.00125	-0.00127	-0.00127
	(A1 * !A3 * B1 * B2 * X)	0.00217	0.00217	0.00216
	(A1 * !A3 * B1 * !B2 * !X)	-0.00046	-0.00048	-0.00048
	(A1 * !A3 * B1 * !B2 * !X)	0.00220	0.00224	0.00217
	(A1 * !A3 * !B1 * !X)	-0.00046	-0.00048	-0.00048
	(A1 * !A3 * !B1 * !X)	0.00220	0.00224	0.00217
	(!A1 * A3 * B1 * B2 * X)	-0.00125	-0.00127	-0.00127
	(!A1 * A3 * B1 * B2 * X)	0.00217	0.00217	0.00216
	(!A1 * A3 * B1 * !B2 * !X)	-0.00110	-0.00126	-0.00128
	(!A1 * A3 * B1 * !B2 * !X)	0.00234	0.00218	0.00216
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00126	-0.00128
	(!A1 * A3 * !B1 * !X)	0.00234	0.00218	0.00216
	(!A1 * !A3 * B1 * B2 * X)	-0.00079	-0.00080	-0.00074
	(!A1 * !A3 * B1 * B2 * X)	0.00215	0.00218	0.00216
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00067	-0.00068	-0.00070
	(!A1 * !A3 * B1 * !B2 * !X)	0.00225	0.00228	0.00219
	(!A1 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00070
	(!A1 * !A3 * !B1 * !X)	0.00225	0.00228	0.00219

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00152	-0.00153	-0.00153
	(A1 * A3 * B1 * B2 * X)	0.00215	0.00217	0.00214
	(A1 * !A3 * B1 * B2 * X)	-0.00145	-0.00148	-0.00147
	(A1 * !A3 * B1 * B2 * X)	0.00217	0.00217	0.00216
	(A1 * !A3 * B1 * !B2 * !X)	-0.00047	-0.00049	-0.00049
	(A1 * !A3 * B1 * !B2 * !X)	0.00226	0.00230	0.00223
	(A1 * !A3 * !B1 * !X)	-0.00047	-0.00049	-0.00049
	(A1 * !A3 * !B1 * !X)	0.00226	0.00230	0.00223
	(!A1 * A3 * B1 * B2 * X)	-0.00144	-0.00148	-0.00148
	(!A1 * A3 * B1 * B2 * X)	0.00215	0.00217	0.00216
	(!A1 * A3 * B1 * !B2 * !X)	-0.00122	-0.00141	-0.00142
	(!A1 * A3 * B1 * !B2 * !X)	0.00239	0.00224	0.00221
	(!A1 * A3 * !B1 * !X)	-0.00122	-0.00141	-0.00142
	(!A1 * A3 * !B1 * !X)	0.00239	0.00224	0.00221
	(!A1 * !A3 * B1 * B2 * X)	-0.00092	-0.00092	-0.00086
	(!A1 * !A3 * B1 * B2 * X)	0.00216	0.00218	0.00216
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00073	-0.00074	-0.00076
	(!A1 * !A3 * B1 * !B2 * !X)	0.00232	0.00235	0.00224
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00074	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00232	0.00235	0.00225

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00255	-0.00256	-0.00258
	(A1 * A3 * B1 * B2 * X)	0.00463	0.00463	0.00462
	(A1 * !A3 * B1 * B2 * X)	-0.00239	-0.00249	-0.00250
	(A1 * !A3 * B1 * B2 * X)	0.00465	0.00469	0.00466
	(A1 * !A3 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00087
	(A1 * !A3 * B1 * !B2 * !X)	0.00483	0.00483	0.00473
	(A1 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00087
	(A1 * !A3 * !B1 * !X)	0.00483	0.00483	0.00473
	(!A1 * A3 * B1 * B2 * X)	-0.00241	-0.00249	-0.00249
	(!A1 * A3 * B1 * B2 * X)	0.00463	0.00467	0.00466
	(!A1 * A3 * B1 * !B2 * !X)	-0.00203	-0.00242	-0.00244
	(!A1 * A3 * B1 * !B2 * !X)	0.00506	0.00475	0.00470
	(!A1 * A3 * !B1 * !X)	-0.00203	-0.00241	-0.00244
	(!A1 * A3 * !B1 * !X)	0.00506	0.00476	0.00470
	(!A1 * !A3 * B1 * B2 * X)	-0.00165	-0.00165	-0.00153
	(!A1 * !A3 * B1 * B2 * X)	0.00468	0.00470	0.00466
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00127	-0.00131	-0.00136
	(!A1 * !A3 * B1 * !B2 * !X)	0.00501	0.00502	0.00481
	(!A1 * !A3 * !B1 * !X)	-0.00127	-0.00131	-0.00136
	(!A1 * !A3 * !B1 * !X)	0.00501	0.00502	0.00481

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)**	0.00233	0.00193	0.00189
	(A1 * A2 * B1 * B2 * X)	-0.00128	-0.00172	-0.00172
	(A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * B1 * !B2 * !X)	-0.00215	-0.00217	-0.00215
	(A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * !B1 * !X)	-0.00215	-0.00217	-0.00215
	(!A2 * B1 * B2 * X)	0.00183	0.00184	0.00183
	(!A2 * B1 * B2 * X)	-0.00174	-0.00175	-0.00174
	(!A1 * A2 * B1 * B2 * X)	0.00179	0.00181	0.00179
	(!A1 * A2 * B1 * B2 * X)	-0.00174	-0.00175	-0.00174
	(!A1 * A2 * B1 * !B2 * !X)	0.00139	0.00140	0.00139
	(!A1 * A2 * B1 * !B2 * !X)	-0.00215	-0.00216	-0.00215
	(!A1 * A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(!A1 * A2 * !B1 * !X)	-0.00215	-0.00216	-0.00215
	(!A1 * !A2 * B1 * !B2 * !X)	0.00141	0.00143	0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00215	-0.00217	-0.00216
	(!A1 * !A2 * !B1 * !X)	0.00141	0.00143	0.00141
	(!A1 * !A2 * !B1 * !X)	-0.00215	-0.00217	-0.00215

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00257	0.00215	0.00211
	(A1 * A2 * B1 * B2 * X)	-0.00127	-0.00173	-0.00173
	(A1 * !A2 * B1 * !B2 * !X)	0.00169	0.00172	0.00170
	(A1 * !A2 * B1 * !B2 * !X)	-0.00209	-0.00210	-0.00209
	(A1 * !A2 * !B1 * !X)	0.00169	0.00172	0.00170
	(A1 * !A2 * !B1 * !X)	-0.00209	-0.00210	-0.00209
	(!A2 * B1 * B2 * X)	0.00203	0.00206	0.00204
	(!A2 * B1 * B2 * X)	-0.00174	-0.00176	-0.00174
	(!A1 * A2 * B1 * B2 * X)	0.00201	0.00202	0.00201
	(!A1 * A2 * B1 * B2 * X)	-0.00174	-0.00175	-0.00174
	(!A1 * A2 * B1 * !B2 * !X)	0.00168	0.00168	0.00168
	(!A1 * A2 * B1 * !B2 * !X)	-0.00209	-0.00210	-0.00209
	(!A1 * A2 * !B1 * !X)	0.00168	0.00168	0.00168
	(!A1 * A2 * !B1 * !X)	-0.00209	-0.00210	-0.00209
	(!A1 * !A2 * B1 * !B2 * !X)	0.00168	0.00170	0.00169
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00209	-0.00210	-0.00209
	(!A1 * !A2 * !B1 * !X)	0.00168	0.00171	0.00169
	(!A1 * !A2 * !B1 * !X)	-0.00209	-0.00210	-0.00209

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00442	0.00348	0.00336
	(A1 * A2 * B1 * B2 * X)	-0.00263	-0.00363	-0.00367
	(A1 * !A2 * B1 * !B2 * !X)	0.00307	0.00309	0.00308
	(A1 * !A2 * B1 * !B2 * !X)	-0.00386	-0.00387	-0.00387
	(A1 * !A2 * !B1 * !X)	0.00307	0.00309	0.00308
	(A1 * !A2 * !B1 * !X)	-0.00386	-0.00387	-0.00386
	(!A2 * B1 * B2 * X)	0.00321	0.00325	0.00322
	(!A2 * B1 * B2 * X)	-0.00371	-0.00374	-0.00372
	(!A1 * A2 * B1 * B2 * X)	0.00318	0.00318	0.00317
	(!A1 * A2 * B1 * B2 * X)	-0.00373	-0.00373	-0.00372
	(!A1 * A2 * B1 * !B2 * !X)	0.00302	0.00306	0.00303
	(!A1 * A2 * B1 * !B2 * !X)	-0.00386	-0.00388	-0.00386
	(!A1 * A2 * !B1 * !X)	0.00302	0.00305	0.00303
	(!A1 * A2 * !B1 * !X)	-0.00386	-0.00388	-0.00385
	(!A1 * !A2 * B1 * !B2 * !X)	0.00306	0.00308	0.00307
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00386	-0.00388	-0.00387
	(!A1 * !A2 * !B1 * !X)	0.00306	0.00308	0.00307
	(!A1 * !A2 * !B1 * !X)	-0.00386	-0.00387	-0.00387

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)**	-0.00148	-0.00149	-0.00150
	(A1 * A2 * B1 * B2 * X)	0.00212	0.00214	0.00212
	(A1 * !A2 * B1 * !B2 * !X)	-0.00120	-0.00128	-0.00129
	(A1 * !A2 * B1 * !B2 * !X)	0.00236	0.00230	0.00229
	(A1 * !A2 * !B1 * !X)	-0.00120	-0.00128	-0.00129
	(A1 * !A2 * !B1 * !X)	0.00236	0.00230	0.00229
	(!A2 * B1 * B2 * X)	-0.00142	-0.00145	-0.00145
	(!A2 * B1 * B2 * X)	0.00212	0.00216	0.00213
	(!A1 * A2 * B1 * B2 * X)	-0.00133	-0.00143	-0.00144
	(!A1 * A2 * B1 * B2 * X)	0.00213	0.00216	0.00213
	(!A1 * A2 * B1 * !B2 * !X)	-0.00112	-0.00126	-0.00128
	(!A1 * A2 * B1 * !B2 * !X)	0.00236	0.00233	0.00229
	(!A1 * A2 * !B1 * !X)	-0.00112	-0.00126	-0.00128
	(!A1 * A2 * !B1 * !X)	0.00236	0.00233	0.00229
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00126	-0.00129	-0.00130
	(!A1 * !A2 * B1 * !B2 * !X)	0.00229	0.00229	0.00229
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00129	-0.00130
	(!A1 * !A2 * !B1 * !X)	0.00229	0.00229	0.00229

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00170	-0.00170	-0.00172
	(A1 * A2 * B1 * B2 * X)	0.00214	0.00213	0.00213
	(A1 * !A2 * B1 * !B2 * !X)	-0.00135	-0.00144	-0.00145
	(A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00236	0.00235
	(A1 * !A2 * !B1 * !X)	-0.00135	-0.00144	-0.00145
	(A1 * !A2 * !B1 * !X)	0.00238	0.00236	0.00235
	(!A2 * B1 * B2 * X)	-0.00163	-0.00166	-0.00166
	(!A2 * B1 * B2 * X)	0.00214	0.00216	0.00214
	(!A1 * A2 * B1 * B2 * X)	-0.00151	-0.00163	-0.00165
	(!A1 * A2 * B1 * B2 * X)	0.00214	0.00217	0.00214
	(!A1 * A2 * B1 * !B2 * !X)	-0.00127	-0.00142	-0.00144
	(!A1 * A2 * B1 * !B2 * !X)	0.00240	0.00238	0.00235
	(!A1 * A2 * !B1 * !X)	-0.00127	-0.00142	-0.00144
	(!A1 * A2 * !B1 * !X)	0.00240	0.00238	0.00235
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00140	-0.00144	-0.00145
	(!A1 * !A2 * B1 * !B2 * !X)	0.00234	0.00235	0.00235
	(!A1 * !A2 * !B1 * !X)	-0.00140	-0.00144	-0.00145
	(!A1 * !A2 * !B1 * !X)	0.00234	0.00235	0.00235

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00253	-0.00254	-0.00256
	(A1 * A2 * B1 * B2 * X)	0.00450	0.00451	0.00448
	(A1 * !A2 * B1 * !B2 * !X)	-0.00230	-0.00255	-0.00259
	(A1 * !A2 * B1 * !B2 * !X)	0.00450	0.00441	0.00438
	(A1 * !A2 * !B1 * !X)	-0.00230	-0.00255	-0.00259
	(A1 * !A2 * !B1 * !X)	0.00450	0.00441	0.00438
	(!A2 * B1 * B2 * X)	-0.00237	-0.00245	-0.00246
	(!A2 * B1 * B2 * X)	0.00450	0.00455	0.00452
	(!A1 * A2 * B1 * B2 * X)	-0.00217	-0.00239	-0.00242
	(!A1 * A2 * B1 * B2 * X)	0.00451	0.00456	0.00452
	(!A1 * A2 * B1 * !B2 * !X)	-0.00217	-0.00251	-0.00256
	(!A1 * A2 * B1 * !B2 * !X)	0.00455	0.00445	0.00438
	(!A1 * A2 * !B1 * !X)	-0.00217	-0.00251	-0.00255
	(!A1 * A2 * !B1 * !X)	0.00456	0.00445	0.00438
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00244	-0.00257	-0.00260
	(!A1 * !A2 * B1 * !B2 * !X)	0.00436	0.00440	0.00437
	(!A1 * !A2 * !B1 * !X)	-0.00244	-0.00257	-0.00260
	(!A1 * !A2 * !B1 * !X)	0.00436	0.00440	0.00438

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)**	0.00168	0.00171	0.00169
	(A1 * A2 * A3 * B2 * X)	-0.00084	-0.00086	-0.00084
	(A1 * A2 * A3 * !B2 * X)	0.00179	0.00180	0.00176
	(A1 * A2 * A3 * !B2 * X)	-0.00069	-0.00070	-0.00072
	(A1 * A2 * !A3 * !B2 * !X)	0.00054	0.00054	0.00052
	(A1 * A2 * !A3 * !B2 * !X)	-0.00222	-0.00223	-0.00226
	(A1 * !A2 * !B2 * !X)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B2 * !X)	-0.00222	-0.00223	-0.00226
	(!A1 * !B2 * !X)	0.00054	0.00054	0.00052
	(!A1 * !B2 * !X)	-0.00222	-0.00223	-0.00226
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00187	0.00190	0.00188
	(A1 * A2 * A3 * B2 * X)	-0.00085	-0.00087	-0.00084
	(A1 * A2 * A3 * !B2 * X)	0.00198	0.00198	0.00195
	(A1 * A2 * A3 * !B2 * X)	-0.00071	-0.00071	-0.00073
	(A1 * A2 * !A3 * !B2 * !X)	0.00071	0.00071	0.00068
	(A1 * A2 * !A3 * !B2 * !X)	-0.00215	-0.00216	-0.00220
	(A1 * !A2 * !B2 * !X)	0.00071	0.00071	0.00068
	(A1 * !A2 * !B2 * !X)	-0.00215	-0.00216	-0.00220
	(!A1 * !B2 * !X)	0.00071	0.00071	0.00068
	(!A1 * !B2 * !X)	-0.00215	-0.00216	-0.00220
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00335	0.00341	0.00337
	(A1 * A2 * A3 * B2 * X)	-0.00170	-0.00173	-0.00168
	(A1 * A2 * A3 * !B2 * X)	0.00354	0.00356	0.00349
	(A1 * A2 * A3 * !B2 * X)	-0.00141	-0.00144	-0.00146
	(A1 * A2 * !A3 * !B2 * !X)	0.00112	0.00112	0.00108
	(A1 * A2 * !A3 * !B2 * !X)	-0.00438	-0.00438	-0.00444
	(A1 * !A2 * !B2 * !X)	0.00112	0.00112	0.00108
	(A1 * !A2 * !B2 * !X)	-0.00438	-0.00438	-0.00444
	(!A1 * !B2 * !X)	0.00112	0.00112	0.00108
	(!A1 * !B2 * !X)	-0.00437	-0.00438	-0.00444

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)	-0.00134	-0.00136	-0.00157
	(A1 * A2 * A3 * B2 * X)	0.00116	0.00116	0.00098
	(A1 * A2 * A3 * !B2 * X)	-0.00149	-0.00152	-0.00152
	(A1 * A2 * A3 * !B2 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * !A3 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * A2 * !A3 * !B2 * !X)	0.00238	0.00242	0.00239
	(A1 * !A2 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * !X)	0.00238	0.00242	0.00239
	(!A1 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * !X)	0.00238	0.00242	0.00239
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00153	-0.00155	-0.00176
	(A1 * A2 * A3 * B2 * X)	0.00118	0.00117	0.00100
	(A1 * A2 * A3 * !B2 * X)	-0.00166	-0.00170	-0.00170
	(A1 * A2 * A3 * !B2 * X)	0.00101	0.00101	0.00100
	(A1 * A2 * !A3 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(A1 * A2 * !A3 * !B2 * !X)	0.00245	0.00248	0.00245
	(A1 * !A2 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !B2 * !X)	0.00245	0.00248	0.00245
	(!A1 * !B2 * !X)	-0.00041	-0.00043	-0.00042
	(!A1 * !B2 * !X)	0.00245	0.00248	0.00245

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00264	-0.00269	-0.00314
	(A1 * A2 * A3 * B2 * X)	0.00234	0.00236	0.00199
	(A1 * A2 * A3 * !B2 * X)	-0.00295	-0.00299	-0.00302
	(A1 * A2 * A3 * !B2 * X)	0.00202	0.00203	0.00200
	(A1 * A2 * !A3 * !B2 * !X)	-0.00056	-0.00058	-0.00056
	(A1 * A2 * !A3 * !B2 * !X)	0.00495	0.00501	0.00495
	(A1 * !A2 * !B2 * !X)	-0.00056	-0.00058	-0.00056
	(A1 * !A2 * !B2 * !X)	0.00495	0.00501	0.00495
	(!A1 * !B2 * !X)	-0.00056	-0.00058	-0.00055
	(!A1 * !B2 * !X)	0.00495	0.00501	0.00495

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)**	0.00164	0.00167	0.00165
	(A1 * A2 * A3 * B1 * X)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * A3 * !B1 * X)	0.00178	0.00179	0.00174
	(A1 * A2 * A3 * !B1 * X)	-0.00072	-0.00073	-0.00075
	(A1 * A2 * !A3 * !B1 * !X)	0.00152	0.00152	0.00153
	(A1 * A2 * !A3 * !B1 * !X)	-0.00192	-0.00192	-0.00192
	(A1 * !A2 * !B1 * !X)	0.00152	0.00152	0.00153
	(A1 * !A2 * !B1 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * !B1 * !X)	0.00152	0.00152	0.00153
	(!A1 * !B1 * !X)	-0.00191	-0.00192	-0.00192

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00189	0.00191	0.00190
	(A1 * A2 * A3 * B1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * A3 * !B1 * X)	0.00203	0.00204	0.00199
	(A1 * A2 * A3 * !B1 * X)	-0.00073	-0.00074	-0.00077
	(A1 * A2 * !A3 * !B1 * !X)	0.00181	0.00184	0.00182
	(A1 * A2 * !A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * !B1 * !X)	0.00181	0.00184	0.00182
	(A1 * !A2 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !B1 * !X)	0.00181	0.00184	0.00183
	(!A1 * !B1 * !X)	-0.00186	-0.00188	-0.00187
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00421	0.00425	0.00424
	(A1 * A2 * A3 * B1 * X)	-0.00177	-0.00179	-0.00176
	(A1 * A2 * A3 * !B1 * X)	0.00444	0.00447	0.00438
	(A1 * A2 * A3 * !B1 * X)	-0.00148	-0.00150	-0.00153
	(A1 * A2 * !A3 * !B1 * !X)	0.00387	0.00389	0.00387
	(A1 * A2 * !A3 * !B1 * !X)	-0.00395	-0.00396	-0.00394
	(A1 * !A2 * !B1 * !X)	0.00387	0.00389	0.00387
	(A1 * !A2 * !B1 * !X)	-0.00395	-0.00396	-0.00394
	(!A1 * !B1 * !X)	0.00387	0.00389	0.00387
	(!A1 * !B1 * !X)	-0.00395	-0.00396	-0.00394

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)**	-0.00131	-0.00132	-0.00154
	(A1 * A2 * A3 * B1 * X)	0.00121	0.00121	0.00103
	(A1 * A2 * A3 * !B1 * X)	-0.00148	-0.00150	-0.00149
	(A1 * A2 * A3 * !B1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !A3 * !B1 * !X)	-0.00125	-0.00137	-0.00139
	(A1 * A2 * !A3 * !B1 * !X)	0.00220	0.00210	0.00206
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00137	-0.00139
	(A1 * !A2 * !B1 * !X)	0.00220	0.00210	0.00206
	(!A1 * !B1 * !X)	-0.00125	-0.00137	-0.00139
	(!A1 * !B1 * !X)	0.00220	0.00210	0.00206
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00156	-0.00157	-0.00178
	(A1 * A2 * A3 * B1 * X)	0.00122	0.00122	0.00105
	(A1 * A2 * A3 * !B1 * X)	-0.00171	-0.00174	-0.00173
	(A1 * A2 * A3 * !B1 * X)	0.00104	0.00104	0.00104
	(A1 * A2 * !A3 * !B1 * !X)	-0.00143	-0.00154	-0.00158
	(A1 * A2 * !A3 * !B1 * !X)	0.00227	0.00216	0.00213
	(A1 * !A2 * !B1 * !X)	-0.00143	-0.00154	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00227	0.00216	0.00213
	(!A1 * !B1 * !X)	-0.00143	-0.00154	-0.00157
	(!A1 * !B1 * !X)	0.00227	0.00216	0.00213
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00354	-0.00355	-0.00401
	(A1 * A2 * A3 * B1 * X)	0.00243	0.00242	0.00207
	(A1 * A2 * A3 * !B1 * X)	-0.00384	-0.00389	-0.00389
	(A1 * A2 * A3 * !B1 * X)	0.00208	0.00209	0.00207
	(A1 * A2 * !A3 * !B1 * !X)	-0.00303	-0.00332	-0.00334
	(A1 * A2 * !A3 * !B1 * !X)	0.00480	0.00453	0.00447
	(A1 * !A2 * !B1 * !X)	-0.00303	-0.00333	-0.00335
	(A1 * !A2 * !B1 * !X)	0.00480	0.00453	0.00447
	(!A1 * !B1 * !X)	-0.00303	-0.00333	-0.00335
	(!A1 * !B1 * !X)	0.00480	0.00453	0.00447

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00294	0.00299	0.00294	0.00297	0.00299	0.55994
sky130_fd_sc_hs__a41oi_2	0.00569	0.00559	0.00549	0.00548	0.00441	1.06982
sky130_fd_sc_hs__a41oi_4	0.01112	0.01084	0.01096	0.01086	0.00871	1.82681

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	3.91357	13.89620
sky130_fd_sc_hs__a41oi_2	0.00000	7.69035	27.78770
sky130_fd_sc_hs__a41oi_4	0.00000	15.37700	55.56920

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)	0.08684	0.83460	9.10472
	A2->Y (FR)	0.10712	0.86713	9.27002
	A3->Y (FR)	0.11750	0.85973	9.05149
	A4->Y (FR)	0.11929	0.83099	8.69950
	B1->Y (FR)	0.07402	0.88203	9.98226
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.07179	0.71011	9.21594
	A2->Y (FR)	0.08917	0.70522	8.92753
	A3->Y (FR)	0.10376	0.72585	9.00027
	A4->Y (FR)	0.11809	0.74504	9.04771
	B1->Y (FR)	0.08216	0.75466	9.63657
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.06656	0.58160	8.51500
	A2->Y (FR)	0.08791	0.58756	8.29848
	A3->Y (FR)	0.10653	0.61648	8.47574
	A4->Y (FR)	0.12409	0.64711	8.67390
	B1->Y (FR)	0.08926	0.67922	9.55006

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.05706	0.58941	6.44060
	A2->Y (RF)	0.06795	0.56764	6.02009
	A3->Y (RF)	0.07461	0.53145	5.43850
	A4->Y (RF)	0.07896	0.49705	4.89643
	B1->Y (RF)	0.01985	0.31849	3.54058
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.05340	0.55750	7.17470
	A2->Y (RF)	0.06796	0.53914	6.74860
	A3->Y (RF)	0.07569	0.48493	5.90095
	A4->Y (RF)	0.08132	0.45708	5.37432
	B1->Y (RF)	0.02292	0.42391	5.66390
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.05157	0.47914	6.91807
	A2->Y (RF)	0.06860	0.45915	6.42901
	A3->Y (RF)	0.07743	0.40951	5.61255
	A4->Y (RF)	0.08181	0.37082	4.94504
	B1->Y (RF)	0.02167	0.34620	5.20879

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00041	0.00078	0.01655
	A1	0.00751	0.00791	0.02375
	A2	0.00129	0.00158	0.01746
	A2	0.00947	0.00976	0.02571
	A3	0.00202	0.00229	0.01873
	A3	0.01124	0.01152	0.02804
	A4	0.00243	0.00275	0.01971
	A4	0.01282	0.01314	0.03010
	B1	-0.00000	0.00254	0.03503
	B1	0.00544	0.00786	0.04049
sky130_fd_sc_hs__a41oi_2	A1	-0.00077	0.00026	0.02782
	A1	0.01226	0.01331	0.04104
	A2	0.00146	0.00209	0.03087
	A2	0.01686	0.01751	0.04642
	A3	0.00275	0.00336	0.03290
	A3	0.02030	0.02092	0.05042
	A4	0.00438	0.00496	0.03499
	A4	0.02433	0.02470	0.05481
	B1	-0.00016	0.00323	0.04281
	B1	0.00778	0.01125	0.05118

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00226	0.00041	0.06021
	A1	0.02367	0.02641	0.08632
	A2	0.00273	0.00446	0.06628
	A2	0.03342	0.03515	0.09679
	A3	0.00529	0.00686	0.07029
	A3	0.04077	0.04233	0.10569
	A4	0.00791	0.00959	0.07416
	A4	0.04782	0.04953	0.11404
	B1	-0.00077	0.00710	0.09207
	B1	0.01494	0.02281	0.10868

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.01006	0.01055	0.02363
	A1	0.00296	0.00343	0.01649
	A2	0.01113	0.01140	0.02369
	A2	0.00294	0.00322	0.01528
	A3	0.01220	0.01244	0.02601
	A3	0.00290	0.00314	0.01649
	A4	0.01345	0.01370	0.02907
	A4	0.00293	0.00316	0.01850
	B1	0.00514	0.00658	0.02807
	B1	-0.00029	0.00113	0.02258

sky130_fd_sc_hs__a41oi_2	**A1**	0.01859	0.01959	0.04274
	A1	0.00557	0.00657	0.02941
	A2	0.02097	0.02140	0.04320
	A2	0.00548	0.00590	0.02754
	A3	0.02318	0.02359	0.04876
	A3	0.00545	0.00586	0.03079
	A4	0.02570	0.02604	0.05478
	A4	0.00538	0.00573	0.03350
	B1	0.00641	0.00859	0.03662
	B1	-0.00152	0.00052	0.02673
sky130_fd_sc_hs__a41oi_4	**A1**	0.03589	0.03857	0.08836
	A1	0.01003	0.01261	0.06107
	A2	0.04065	0.04193	0.09049
	A2	0.00988	0.01108	0.05788
	A3	0.04556	0.04662	0.10124
	A3	0.00974	0.01075	0.06379
	A4	0.05029	0.05143	0.11339
	A4	0.00965	0.01071	0.07214
	B1	0.01260	0.01770	0.07977
	B1	-0.00308	0.00200	0.06245

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)**	0.00227	0.00190	0.00183
	(A2 * A3 * A4 * B1 * !Y)	-0.00170	-0.00212	-0.00216
	(A2 * A3 * !A4 * B1 * !Y)	0.00171	0.00172	0.00171
	(A2 * A3 * !A4 * B1 * !Y)	-0.00218	-0.00219	-0.00219
	(A2 * A3 * !A4 * !B1 * Y)	0.00065	0.00064	0.00057
	(A2 * A3 * !A4 * !B1 * Y)	-0.00245	-0.00246	-0.00261
	(A2 * !A3 * B1 * !Y)	0.00173	0.00174	0.00174
	(A2 * !A3 * B1 * !Y)	-0.00218	-0.00219	-0.00219
	(A2 * !A3 * !B1 * Y)	0.00062	0.00063	0.00058
	(A2 * !A3 * !B1 * Y)	-0.00250	-0.00253	-0.00262
	(!A2 * B1 * !Y)	0.00176	0.00177	0.00176
	(!A2 * B1 * !Y)	-0.00218	-0.00219	-0.00219
	(!A2 * !B1 * Y)	0.00062	0.00062	0.00060
	(!A2 * !B1 * Y)	-0.00258	-0.00259	-0.00263
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00453	0.00378	0.00364
	(A2 * A3 * A4 * B1 * !Y)	-0.00327	-0.00415	-0.00422
	(A2 * A3 * !A4 * B1 * !Y)	0.00337	0.00340	0.00338
	(A2 * A3 * !A4 * B1 * !Y)	-0.00426	-0.00429	-0.00427
	(A2 * A3 * !A4 * !B1 * Y)	0.00119	0.00120	0.00102
	(A2 * A3 * !A4 * !B1 * Y)	-0.00481	-0.00487	-0.00521
	(A2 * !A3 * B1 * !Y)	0.00341	0.00344	0.00342
	(A2 * !A3 * B1 * !Y)	-0.00426	-0.00429	-0.00427
	(A2 * !A3 * !B1 * Y)	0.00113	0.00114	0.00102
	(A2 * !A3 * !B1 * Y)	-0.00499	-0.00504	-0.00525
	(!A2 * B1 * !Y)	0.00348	0.00353	0.00350
	(!A2 * B1 * !Y)	-0.00426	-0.00430	-0.00427
	(!A2 * !B1 * Y)	0.00112	0.00113	0.00106
	(!A2 * !B1 * Y)	-0.00514	-0.00519	-0.00528

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00902	0.00756	0.00729
	(A2 * A3 * A4 * B1 * !Y)	-0.00653	-0.00823	-0.00837
	(A2 * A3 * !A4 * B1 * !Y)	0.00672	0.00678	0.00672
	(A2 * A3 * !A4 * B1 * !Y)	-0.00845	-0.00850	-0.00846
	(A2 * A3 * !A4 * !B1 * Y)	0.00241	0.00242	0.00208
	(A2 * A3 * !A4 * !B1 * Y)	-0.00948	-0.00956	-0.01025
	(A2 * !A3 * B1 * !Y)	0.00679	0.00684	0.00680
	(A2 * !A3 * B1 * !Y)	-0.00846	-0.00850	-0.00846
	(A2 * !A3 * !B1 * Y)	0.00230	0.00231	0.00207
	(A2 * !A3 * !B1 * Y)	-0.00981	-0.00989	-0.01032
	(!A2 * B1 * !Y)	0.00699	0.00700	0.00700
	(!A2 * B1 * !Y)	-0.00846	-0.00846	-0.00846
	(!A2 * !B1 * Y)	0.00237	0.00238	0.00223
	(!A2 * !B1 * Y)	-0.01010	-0.01017	-0.01037

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)**	-0.00169	-0.00171	-0.00169
	(A2 * A3 * A4 * B1 * !Y)	0.00227	0.00231	0.00229
	(A2 * A3 * !A4 * B1 * !Y)	-0.00140	-0.00161	-0.00163
	(A2 * A3 * !A4 * B1 * !Y)	0.00230	0.00232	0.00231
	(A2 * A3 * !A4 * !B1 * Y)	-0.00056	-0.00057	-0.00056
	(A2 * A3 * !A4 * !B1 * Y)	0.00263	0.00268	0.00264
	(A2 * !A3 * B1 * !Y)	-0.00147	-0.00163	-0.00164
	(A2 * !A3 * B1 * !Y)	0.00231	0.00232	0.00231
	(A2 * !A3 * !B1 * Y)	-0.00056	-0.00057	-0.00056
	(A2 * !A3 * !B1 * Y)	0.00263	0.00267	0.00264
	(!A2 * B1 * !Y)	-0.00163	-0.00166	-0.00166
	(!A2 * B1 * !Y)	0.00232	0.00232	0.00231
	(!A2 * !B1 * Y)	-0.00058	-0.00057	-0.00058
	(!A2 * !B1 * Y)	0.00264	0.00263	0.00264
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00337	-0.00339	-0.00335
	(A2 * A3 * A4 * B1 * !Y)	0.00445	0.00450	0.00448
	(A2 * A3 * !A4 * B1 * !Y)	-0.00270	-0.00322	-0.00325
	(A2 * A3 * !A4 * B1 * !Y)	0.00451	0.00456	0.00452
	(A2 * A3 * !A4 * !B1 * Y)	-0.00098	-0.00099	-0.00099
	(A2 * A3 * !A4 * !B1 * Y)	0.00527	0.00531	0.00530
	(A2 * !A3 * B1 * !Y)	-0.00286	-0.00324	-0.00326
	(A2 * !A3 * B1 * !Y)	0.00451	0.00457	0.00452
	(A2 * !A3 * !B1 * Y)	-0.00099	-0.00100	-0.00099
	(A2 * !A3 * !B1 * Y)	0.00528	0.00531	0.00530
	(!A2 * B1 * !Y)	-0.00320	-0.00328	-0.00330
	(!A2 * B1 * !Y)	0.00451	0.00454	0.00452
	(!A2 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(!A2 * !B1 * Y)	0.00529	0.00532	0.00531

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00676	-0.00680	-0.00673
	(A2 * A3 * A4 * B1 * !Y)	0.00882	0.00893	0.00887
	(A2 * A3 * !A4 * B1 * !Y)	-0.00532	-0.00640	-0.00649
	(A2 * A3 * !A4 * B1 * !Y)	0.00895	0.00905	0.00896
	(A2 * A3 * !A4 * !B1 * Y)	-0.00205	-0.00206	-0.00206
	(A2 * A3 * !A4 * !B1 * Y)	0.01036	0.01042	0.01041
	(A2 * !A3 * B1 * !Y)	-0.00566	-0.00647	-0.00652
	(A2 * !A3 * B1 * !Y)	0.00894	0.00905	0.00896
	(A2 * !A3 * !B1 * Y)	-0.00205	-0.00206	-0.00206
	(A2 * !A3 * !B1 * Y)	0.01036	0.01042	0.01041
	(!A2 * B1 * !Y)	-0.00640	-0.00659	-0.00661
	(!A2 * B1 * !Y)	0.00893	0.00905	0.00896
	(!A2 * !B1 * Y)	-0.00214	-0.00216	-0.00215
	(!A2 * !B1 * Y)	0.01037	0.01044	0.01042

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)**	0.00220	0.00183	0.00176
	(A1 * A3 * A4 * B1 * !Y)	-0.00171	-0.00212	-0.00216
	(A1 * A3 * !A4 * B1 * !Y)	0.00166	0.00167	0.00167
	(A1 * A3 * !A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * A3 * !A4 * !B1 * Y)	0.00062	0.00063	0.00064
	(A1 * A3 * !A4 * !B1 * Y)	-0.00233	-0.00235	-0.00233
	(A1 * !A3 * B1 * !Y)	0.00170	0.00172	0.00170
	(A1 * !A3 * B1 * !Y)	-0.00218	-0.00220	-0.00218
	(A1 * !A3 * !B1 * Y)	0.00067	0.00068	0.00068
	(A1 * !A3 * !B1 * Y)	-0.00233	-0.00235	-0.00233
	(!A1 * A3 * A4 * B1 * !Y)	0.00170	0.00171	0.00170
	(!A1 * A3 * A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A3 * A4 * !B1 * Y)	0.00155	0.00157	0.00156
	(!A1 * A3 * A4 * !B1 * Y)	-0.00232	-0.00234	-0.00233
	(!A1 * A3 * !A4 * B1 * !Y)	0.00103	0.00103	0.00102
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00219	-0.00219	-0.00218
	(!A1 * A3 * !A4 * !B1 * Y)	0.00084	0.00085	0.00085
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !A3 * B1 * !Y)	0.00107	0.00106	0.00106
	(!A1 * !A3 * B1 * !Y)	-0.00219	-0.00218	-0.00218
	(!A1 * !A3 * !B1 * Y)	0.00088	0.00088	0.00087
	(!A1 * !A3 * !B1 * Y)	-0.00235	-0.00235	-0.00235

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00444	0.00369	0.00356
	(A1 * A3 * A4 * B1 * !Y)	-0.00333	-0.00422	-0.00430
	(A1 * A3 * !A4 * B1 * !Y)	0.00332	0.00334	0.00332
	(A1 * A3 * !A4 * B1 * !Y)	-0.00435	-0.00437	-0.00435
	(A1 * A3 * !A4 * !B1 * Y)	0.00138	0.00139	0.00141
	(A1 * A3 * !A4 * !B1 * Y)	-0.00450	-0.00451	-0.00450
	(A1 * !A3 * B1 * !Y)	0.00341	0.00342	0.00341
	(A1 * !A3 * B1 * !Y)	-0.00436	-0.00436	-0.00435
	(A1 * !A3 * !B1 * Y)	0.00146	0.00147	0.00148
	(A1 * !A3 * !B1 * Y)	-0.00450	-0.00453	-0.00450
	(!A1 * A3 * A4 * B1 * !Y)	0.00341	0.00343	0.00341
	(!A1 * A3 * A4 * B1 * !Y)	-0.00436	-0.00437	-0.00435
	(!A1 * A3 * A4 * !B1 * Y)	0.00327	0.00330	0.00328
	(!A1 * A3 * A4 * !B1 * Y)	-0.00451	-0.00453	-0.00450
	(!A1 * A3 * !A4 * B1 * !Y)	0.00207	0.00207	0.00206
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00435	-0.00437	-0.00435
	(!A1 * A3 * !A4 * !B1 * Y)	0.00185	0.00185	0.00185
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00453	-0.00454	-0.00453
	(!A1 * !A3 * B1 * !Y)	0.00212	0.00214	0.00212
	(!A1 * !A3 * B1 * !Y)	-0.00434	-0.00438	-0.00435
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00188	0.00187
	(!A1 * !A3 * !B1 * Y)	-0.00455	-0.00456	-0.00455

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00877	0.00730	0.00704
	(A1 * A3 * A4 * B1 * !Y)	-0.00669	-0.00838	-0.00853
	(A1 * A3 * !A4 * B1 * !Y)	0.00649	0.00653	0.00649
	(A1 * A3 * !A4 * B1 * !Y)	-0.00865	-0.00868	-0.00864
	(A1 * A3 * !A4 * !B1 * Y)	0.00261	0.00264	0.00272
	(A1 * A3 * !A4 * !B1 * Y)	-0.00888	-0.00892	-0.00886
	(A1 * !A3 * B1 * !Y)	0.00664	0.00670	0.00667
	(A1 * !A3 * B1 * !Y)	-0.00860	-0.00867	-0.00864
	(A1 * !A3 * !B1 * Y)	0.00272	0.00274	0.00279
	(A1 * !A3 * !B1 * Y)	-0.00888	-0.00892	-0.00887
	(!A1 * A3 * A4 * B1 * !Y)	0.00671	0.00681	0.00674
	(!A1 * A3 * A4 * B1 * !Y)	-0.00861	-0.00869	-0.00864
	(!A1 * A3 * A4 * !B1 * Y)	0.00648	0.00655	0.00652
	(!A1 * A3 * A4 * !B1 * Y)	-0.00887	-0.00894	-0.00888
	(!A1 * A3 * !A4 * B1 * !Y)	0.00395	0.00396	0.00393
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00864	-0.00868	-0.00864
	(!A1 * A3 * !A4 * !B1 * Y)	0.00357	0.00359	0.00356
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00893	-0.00898	-0.00893
	(!A1 * !A3 * B1 * !Y)	0.00399	0.00400	0.00399
	(!A1 * !A3 * B1 * !Y)	-0.00863	-0.00865	-0.00864
	(!A1 * !A3 * !B1 * Y)	0.00358	0.00360	0.00358
	(!A1 * !A3 * !B1 * Y)	-0.00895	-0.00899	-0.00895

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)**	-0.00163	-0.00163	-0.00162
	(A1 * A3 * A4 * B1 * !Y)	0.00227	0.00228	0.00229
	(A1 * A3 * !A4 * B1 * !Y)	-0.00139	-0.00157	-0.00157
	(A1 * A3 * !A4 * B1 * !Y)	0.00230	0.00232	0.00231
	(A1 * A3 * !A4 * !B1 * Y)	-0.00060	-0.00061	-0.00062
	(A1 * A3 * !A4 * !B1 * Y)	0.00240	0.00243	0.00236
	(A1 * !A3 * B1 * !Y)	-0.00155	-0.00160	-0.00159
	(A1 * !A3 * B1 * !Y)	0.00231	0.00232	0.00231
	(A1 * !A3 * !B1 * Y)	-0.00062	-0.00064	-0.00064
	(A1 * !A3 * !B1 * Y)	0.00240	0.00244	0.00237
	(!A1 * A3 * A4 * B1 * !Y)	-0.00155	-0.00160	-0.00159
	(!A1 * A3 * A4 * B1 * !Y)	0.00231	0.00232	0.00231
	(!A1 * A3 * A4 * !B1 * Y)	-0.00132	-0.00154	-0.00155
	(!A1 * A3 * A4 * !B1 * Y)	0.00256	0.00238	0.00235
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00103	-0.00103	-0.00100
	(!A1 * A3 * !A4 * B1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00081	-0.00085	-0.00085
	(!A1 * A3 * !A4 * !B1 * Y)	0.00256	0.00254	0.00242
	(!A1 * !A3 * B1 * !Y)	-0.00107	-0.00106	-0.00102
	(!A1 * !A3 * B1 * !Y)	0.00231	0.00233	0.00231
	(!A1 * !A3 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * !A3 * !B1 * Y)	0.00248	0.00250	0.00239

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00328	-0.00329	-0.00327
	(A1 * A3 * A4 * B1 * !Y)	0.00452	0.00454	0.00456
	(A1 * A3 * !A4 * B1 * !Y)	-0.00277	-0.00315	-0.00318
	(A1 * A3 * !A4 * B1 * !Y)	0.00458	0.00464	0.00460
	(A1 * A3 * !A4 * !B1 * Y)	-0.00131	-0.00133	-0.00136
	(A1 * A3 * !A4 * !B1 * Y)	0.00466	0.00472	0.00458
	(A1 * !A3 * B1 * !Y)	-0.00313	-0.00319	-0.00321
	(A1 * !A3 * B1 * !Y)	0.00459	0.00462	0.00460
	(A1 * !A3 * !B1 * Y)	-0.00136	-0.00139	-0.00141
	(A1 * !A3 * !B1 * Y)	0.00467	0.00475	0.00458
	(!A1 * A3 * A4 * B1 * !Y)	-0.00311	-0.00319	-0.00321
	(!A1 * A3 * A4 * B1 * !Y)	0.00459	0.00462	0.00460
	(!A1 * A3 * A4 * !B1 * Y)	-0.00268	-0.00324	-0.00328
	(!A1 * A3 * A4 * !B1 * Y)	0.00507	0.00462	0.00453
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00207	-0.00207	-0.00202
	(!A1 * A3 * !A4 * B1 * !Y)	0.00460	0.00466	0.00460
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00174	-0.00185	-0.00185
	(!A1 * A3 * !A4 * !B1 * Y)	0.00500	0.00492	0.00467
	(!A1 * !A3 * B1 * !Y)	-0.00212	-0.00214	-0.00204
	(!A1 * !A3 * B1 * !Y)	0.00460	0.00465	0.00460
	(!A1 * !A3 * !B1 * Y)	-0.00187	-0.00188	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00482	0.00487	0.00464

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00648	-0.00651	-0.00647
	(A1 * A3 * A4 * B1 * !Y)	0.00898	0.00905	0.00905
	(A1 * A3 * !A4 * B1 * !Y)	-0.00540	-0.00616	-0.00624
	(A1 * A3 * !A4 * B1 * !Y)	0.00911	0.00923	0.00915
	(A1 * A3 * !A4 * !B1 * Y)	-0.00250	-0.00253	-0.00259
	(A1 * A3 * !A4 * !B1 * Y)	0.00921	0.00931	0.00903
	(A1 * !A3 * B1 * !Y)	-0.00614	-0.00627	-0.00630
	(A1 * !A3 * B1 * !Y)	0.00912	0.00924	0.00915
	(A1 * !A3 * !B1 * Y)	-0.00255	-0.00260	-0.00265
	(A1 * !A3 * !B1 * Y)	0.00922	0.00937	0.00903
	(!A1 * A3 * A4 * B1 * !Y)	-0.00614	-0.00631	-0.00636
	(!A1 * A3 * A4 * B1 * !Y)	0.00911	0.00920	0.00914
	(!A1 * A3 * A4 * !B1 * Y)	-0.00530	-0.00644	-0.00652
	(!A1 * A3 * A4 * !B1 * Y)	0.01004	0.00915	0.00896
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00395	-0.00396	-0.00384
	(!A1 * A3 * !A4 * B1 * !Y)	0.00918	0.00924	0.00915
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00337	-0.00358	-0.00356
	(!A1 * A3 * !A4 * !B1 * Y)	0.00987	0.00972	0.00922
	(!A1 * !A3 * B1 * !Y)	-0.00399	-0.00400	-0.00385
	(!A1 * !A3 * B1 * !Y)	0.00914	0.00924	0.00915
	(!A1 * !A3 * !B1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * !A3 * !B1 * Y)	0.00946	0.00959	0.00913

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)**	0.00214	0.00180	0.00173
	(A1 * A2 * A4 * B1 * !Y)	-0.00172	-0.00212	-0.00216
	(A1 * A2 * !A4 * B1 * !Y)	0.00165	0.00166	0.00166
	(A1 * A2 * !A4 * B1 * !Y)	-0.00218	-0.00218	-0.00218
	(A1 * A2 * !A4 * !B1 * Y)	0.00066	0.00067	0.00067
	(A1 * A2 * !A4 * !B1 * Y)	-0.00227	-0.00228	-0.00226
	(A1 * !A2 * A4 * !B1 * Y)	0.00154	0.00156	0.00155
	(A1 * !A2 * A4 * !B1 * Y)	-0.00230	-0.00232	-0.00231
	(A1 * !A2 * !A4 * !B1 * Y)	0.00082	0.00083	0.00083
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00231
	(!A2 * A4 * B1 * !Y)	0.00166	0.00168	0.00167
	(!A2 * A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A2 * !A4 * B1 * !Y)	0.00098	0.00099	0.00098
	(!A2 * !A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * A4 * B1 * !Y)	0.00164	0.00165	0.00165
	(!A1 * A2 * A4 * B1 * !Y)	-0.00218	-0.00218	-0.00218
	(!A1 * A2 * A4 * !B1 * Y)	0.00152	0.00153	0.00152
	(!A1 * A2 * A4 * !B1 * Y)	-0.00230	-0.00231	-0.00230
	(!A1 * A2 * !A4 * B1 * !Y)	0.00098	0.00099	0.00098
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * !A4 * !B1 * Y)	0.00083	0.00083	0.00083
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * A4 * !B1 * Y)	0.00154	0.00156	0.00155
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00230	-0.00232	-0.00231
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00084	0.00084	0.00084
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00232

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00438	0.00363	0.00350
	(A1 * A2 * A4 * B1 * !Y)	-0.00336	-0.00420	-0.00428
	(A1 * A2 * !A4 * B1 * !Y)	0.00331	0.00335	0.00332
	(A1 * A2 * !A4 * B1 * !Y)	-0.00432	-0.00435	-0.00432
	(A1 * A2 * !A4 * !B1 * Y)	0.00146	0.00146	0.00148
	(A1 * A2 * !A4 * !B1 * Y)	-0.00434	-0.00434	-0.00432
	(A1 * !A2 * A4 * !B1 * Y)	0.00324	0.00325	0.00325
	(A1 * !A2 * A4 * !B1 * Y)	-0.00443	-0.00444	-0.00444
	(A1 * !A2 * !A4 * !B1 * Y)	0.00180	0.00181	0.00180
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00444	-0.00446	-0.00444
	(!A2 * A4 * B1 * !Y)	0.00333	0.00337	0.00335
	(!A2 * A4 * B1 * !Y)	-0.00431	-0.00435	-0.00432
	(!A2 * !A4 * B1 * !Y)	0.00198	0.00200	0.00198
	(!A2 * !A4 * B1 * !Y)	-0.00433	-0.00435	-0.00433
	(!A1 * A2 * A4 * B1 * !Y)	0.00329	0.00330	0.00329
	(!A1 * A2 * A4 * B1 * !Y)	-0.00433	-0.00433	-0.00432
	(!A1 * A2 * A4 * !B1 * Y)	0.00318	0.00320	0.00319
	(!A1 * A2 * A4 * !B1 * Y)	-0.00444	-0.00445	-0.00444
	(!A1 * A2 * !A4 * B1 * !Y)	0.00198	0.00200	0.00199
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00432	-0.00435	-0.00433
	(!A1 * A2 * !A4 * !B1 * Y)	0.00179	0.00182	0.00180
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00445	-0.00449	-0.00446
	(!A1 * !A2 * A4 * !B1 * Y)	0.00322	0.00324	0.00323
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00443	-0.00445	-0.00444
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00444	-0.00446	-0.00444

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00872	0.00723	0.00697
	(A1 * A2 * A4 * B1 * !Y)	-0.00678	-0.00847	-0.00862
	(A1 * A2 * !A4 * B1 * !Y)	0.00662	0.00664	0.00664
	(A1 * A2 * !A4 * B1 * !Y)	-0.00871	-0.00873	-0.00873
	(A1 * A2 * !A4 * !B1 * Y)	0.00278	0.00282	0.00279
	(A1 * A2 * !A4 * !B1 * Y)	-0.00876	-0.00882	-0.00871
	(A1 * !A2 * A4 * !B1 * Y)	0.00641	0.00644	0.00642
	(A1 * !A2 * A4 * !B1 * Y)	-0.00897	-0.00898	-0.00896
	(A1 * !A2 * !A4 * !B1 * Y)	0.00337	0.00339	0.00337
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00896	-0.00900	-0.00897
	(!A2 * A4 * B1 * !Y)	0.00659	0.00665	0.00661
	(!A2 * A4 * B1 * !Y)	-0.00872	-0.00876	-0.00873
	(!A2 * !A4 * B1 * !Y)	0.00372	0.00376	0.00373
	(!A2 * !A4 * B1 * !Y)	-0.00872	-0.00878	-0.00873
	(!A1 * A2 * A4 * B1 * !Y)	0.00653	0.00655	0.00652
	(!A1 * A2 * A4 * B1 * !Y)	-0.00875	-0.00876	-0.00873
	(!A1 * A2 * A4 * !B1 * Y)	0.00630	0.00633	0.00632
	(!A1 * A2 * A4 * !B1 * Y)	-0.00896	-0.00897	-0.00895
	(!A1 * A2 * !A4 * B1 * !Y)	0.00383	0.00387	0.00383
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00872	-0.00878	-0.00873
	(!A1 * A2 * !A4 * !B1 * Y)	0.00349	0.00352	0.00348
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00899	-0.00903	-0.00898
	(!A1 * !A2 * A4 * !B1 * Y)	0.00634	0.00639	0.00637
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00895	-0.00899	-0.00897
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00342	0.00346	0.00342
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00897	-0.00902	-0.00897

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)**	-0.00160	-0.00161	-0.00159
	(A1 * A2 * A4 * B1 * !Y)	0.00227	0.00230	0.00228
	(A1 * A2 * !A4 * B1 * !Y)	-0.00153	-0.00156	-0.00156
	(A1 * A2 * !A4 * B1 * !Y)	0.00230	0.00233	0.00231
	(A1 * A2 * !A4 * !B1 * Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !A4 * !B1 * Y)	0.00237	0.00241	0.00234
	(A1 * !A2 * A4 * !B1 * Y)	-0.00141	-0.00155	-0.00155
	(A1 * !A2 * A4 * !B1 * Y)	0.00237	0.00233	0.00232
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * !A4 * !B1 * Y)	0.00241	0.00244	0.00236
	(!A2 * A4 * B1 * !Y)	-0.00152	-0.00157	-0.00156
	(!A2 * A4 * B1 * !Y)	0.00230	0.00231	0.00231
	(!A2 * !A4 * B1 * !Y)	-0.00098	-0.00099	-0.00094
	(!A2 * !A4 * B1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A2 * A4 * B1 * !Y)	-0.00139	-0.00153	-0.00155
	(!A1 * A2 * A4 * B1 * !Y)	0.00230	0.00231	0.00231
	(!A1 * A2 * A4 * !B1 * Y)	-0.00131	-0.00152	-0.00152
	(!A1 * A2 * A4 * !B1 * Y)	0.00241	0.00233	0.00232
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00098	-0.00099	-0.00097
	(!A1 * A2 * !A4 * B1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * !A4 * !B1 * Y)	0.00245	0.00251	0.00237
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00148	-0.00155	-0.00155
	(!A1 * !A2 * A4 * !B1 * Y)	0.00231	0.00232	0.00232
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00084	-0.00084	-0.00084
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00239	0.00242	0.00236

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00323	-0.00325	-0.00321
	(A1 * A2 * A4 * B1 * !Y)	0.00452	0.00456	0.00453
	(A1 * A2 * !A4 * B1 * !Y)	-0.00303	-0.00313	-0.00314
	(A1 * A2 * !A4 * B1 * !Y)	0.00457	0.00463	0.00458
	(A1 * A2 * !A4 * !B1 * Y)	-0.00132	-0.00136	-0.00136
	(A1 * A2 * !A4 * !B1 * Y)	0.00454	0.00464	0.00451
	(A1 * !A2 * A4 * !B1 * Y)	-0.00297	-0.00325	-0.00325
	(A1 * !A2 * A4 * !B1 * Y)	0.00456	0.00449	0.00447
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00180	-0.00181	-0.00180
	(A1 * !A2 * !A4 * !B1 * Y)	0.00470	0.00476	0.00456
	(!A2 * A4 * B1 * !Y)	-0.00307	-0.00315	-0.00315
	(!A2 * A4 * B1 * !Y)	0.00456	0.00460	0.00458
	(!A2 * !A4 * B1 * !Y)	-0.00198	-0.00200	-0.00190
	(!A2 * !A4 * B1 * !Y)	0.00455	0.00463	0.00458
	(!A1 * A2 * A4 * B1 * !Y)	-0.00278	-0.00311	-0.00312
	(!A1 * A2 * A4 * B1 * !Y)	0.00458	0.00460	0.00458
	(!A1 * A2 * A4 * !B1 * Y)	-0.00274	-0.00320	-0.00319
	(!A1 * A2 * A4 * !B1 * Y)	0.00468	0.00450	0.00447
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00198	-0.00200	-0.00195
	(!A1 * A2 * !A4 * B1 * !Y)	0.00455	0.00463	0.00458
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00179	-0.00182	-0.00180
	(!A1 * A2 * !A4 * !B1 * Y)	0.00472	0.00486	0.00458
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00310	-0.00324	-0.00323
	(!A1 * !A2 * A4 * !B1 * Y)	0.00445	0.00448	0.00446
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00459	0.00465	0.00453

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00642	-0.00644	-0.00639
	(A1 * A2 * A4 * B1 * !Y)	0.00909	0.00914	0.00914
	(A1 * A2 * !A4 * B1 * !Y)	-0.00607	-0.00625	-0.00627
	(A1 * A2 * !A4 * B1 * !Y)	0.00922	0.00935	0.00924
	(A1 * A2 * !A4 * !B1 * Y)	-0.00248	-0.00251	-0.00254
	(A1 * A2 * !A4 * !B1 * Y)	0.00926	0.00936	0.00911
	(A1 * !A2 * A4 * !B1 * Y)	-0.00579	-0.00643	-0.00642
	(A1 * !A2 * A4 * !B1 * Y)	0.00938	0.00907	0.00901
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00337	-0.00339	-0.00337
	(A1 * !A2 * !A4 * !B1 * Y)	0.00953	0.00959	0.00920
	(!A2 * A4 * B1 * !Y)	-0.00609	-0.00623	-0.00623
	(!A2 * A4 * B1 * !Y)	0.00926	0.00929	0.00924
	(!A2 * !A4 * B1 * !Y)	-0.00372	-0.00376	-0.00357
	(!A2 * !A4 * B1 * !Y)	0.00924	0.00934	0.00924
	(!A1 * A2 * A4 * B1 * !Y)	-0.00543	-0.00614	-0.00617
	(!A1 * A2 * A4 * B1 * !Y)	0.00926	0.00929	0.00924
	(!A1 * A2 * A4 * !B1 * Y)	-0.00527	-0.00633	-0.00632
	(!A1 * A2 * A4 * !B1 * Y)	0.00958	0.00909	0.00901
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00383	-0.00387	-0.00377
	(!A1 * A2 * !A4 * B1 * !Y)	0.00924	0.00934	0.00924
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00349	-0.00352	-0.00348
	(!A1 * A2 * !A4 * !B1 * Y)	0.00955	0.00981	0.00923
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00614	-0.00639	-0.00637
	(!A1 * !A2 * A4 * !B1 * Y)	0.00903	0.00906	0.00900
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00342	-0.00346	-0.00342
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00932	0.00940	0.00915

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)**	0.00226	0.00191	0.00184
	(A1 * A2 * A3 * B1 * !Y)	-0.00171	-0.00211	-0.00215
	(A1 * A2 * !A3 * !B1 * Y)	0.00158	0.00160	0.00158
	(A1 * A2 * !A3 * !B1 * Y)	-0.00237	-0.00239	-0.00237
	(A1 * !A2 * A3 * !B1 * Y)	0.00154	0.00155	0.00154
	(A1 * !A2 * A3 * !B1 * Y)	-0.00237	-0.00238	-0.00238
	(A1 * !A2 * !A3 * !B1 * Y)	0.00156	0.00156	0.00157
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00237	-0.00237	-0.00238
	(!A3 * B1 * !Y)	0.00177	0.00178	0.00178
	(!A3 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A2 * A3 * B1 * !Y)	0.00174	0.00175	0.00174
	(!A2 * A3 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * A3 * B1 * !Y)	0.00175	0.00177	0.00175
	(!A1 * A2 * A3 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * A3 * !B1 * Y)	0.00152	0.00155	0.00153
	(!A1 * A2 * A3 * !B1 * Y)	-0.00237	-0.00239	-0.00237
	(!A1 * !A3 * !B1 * Y)	0.00156	0.00159	0.00157
	(!A1 * !A3 * !B1 * Y)	-0.00237	-0.00239	-0.00238
	(!A1 * !A2 * A3 * !B1 * Y)	0.00155	0.00157	0.00155
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00237	-0.00239	-0.00238

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00438	0.00365	0.00352
	(A1 * A2 * A3 * B1 * !Y)	-0.00339	-0.00422	-0.00429
	(A1 * A2 * !A3 * !B1 * Y)	0.00325	0.00326	0.00325
	(A1 * A2 * !A3 * !B1 * Y)	-0.00446	-0.00446	-0.00445
	(A1 * !A2 * A3 * !B1 * Y)	0.00319	0.00322	0.00320
	(A1 * !A2 * A3 * !B1 * Y)	-0.00445	-0.00447	-0.00445
	(A1 * !A2 * !A3 * !B1 * Y)	0.00322	0.00327	0.00323
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00445	-0.00448	-0.00445
	(!A3 * B1 * !Y)	0.00336	0.00339	0.00336
	(!A3 * B1 * !Y)	-0.00434	-0.00436	-0.00434
	(!A2 * A3 * B1 * !Y)	0.00331	0.00333	0.00331
	(!A2 * A3 * B1 * !Y)	-0.00434	-0.00435	-0.00434
	(!A1 * A2 * A3 * B1 * !Y)	0.00327	0.00332	0.00328
	(!A1 * A2 * A3 * B1 * !Y)	-0.00433	-0.00436	-0.00434
	(!A1 * A2 * A3 * !B1 * Y)	0.00316	0.00319	0.00317
	(!A1 * A2 * A3 * !B1 * Y)	-0.00444	-0.00447	-0.00445
	(!A1 * !A3 * !B1 * Y)	0.00322	0.00327	0.00323
	(!A1 * !A3 * !B1 * Y)	-0.00445	-0.00448	-0.00445
	(!A1 * !A2 * A3 * !B1 * Y)	0.00319	0.00321	0.00320
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00445	-0.00447	-0.00445

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00869	0.00725	0.00698
	(A1 * A2 * A3 * B1 * !Y)	-0.00680	-0.00842	-0.00857
	(A1 * A2 * !A3 * !B1 * Y)	0.00649	0.00651	0.00648
	(A1 * A2 * !A3 * !B1 * Y)	-0.00892	-0.00893	-0.00891
	(A1 * !A2 * A3 * !B1 * Y)	0.00630	0.00635	0.00630
	(A1 * !A2 * A3 * !B1 * Y)	-0.00891	-0.00892	-0.00891
	(A1 * !A2 * !A3 * !B1 * Y)	0.00642	0.00653	0.00645
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00888	-0.00896	-0.00891
	(!A3 * B1 * !Y)	0.00667	0.00674	0.00666
	(!A3 * B1 * !Y)	-0.00869	-0.00873	-0.00867
	(!A2 * A3 * B1 * !Y)	0.00653	0.00658	0.00653
	(!A2 * A3 * B1 * !Y)	-0.00868	-0.00871	-0.00867
	(!A1 * A2 * A3 * B1 * !Y)	0.00647	0.00648	0.00646
	(!A1 * A2 * A3 * B1 * !Y)	-0.00869	-0.00870	-0.00867
	(!A1 * A2 * A3 * !B1 * Y)	0.00623	0.00626	0.00624
	(!A1 * A2 * A3 * !B1 * Y)	-0.00890	-0.00892	-0.00889
	(!A1 * !A3 * !B1 * Y)	0.00642	0.00653	0.00645
	(!A1 * !A3 * !B1 * Y)	-0.00888	-0.00896	-0.00891
	(!A1 * !A2 * A3 * !B1 * Y)	0.00629	0.00633	0.00629
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00892	-0.00891	-0.00891

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)**	-0.00170	-0.00172	-0.00170
	(A1 * A2 * A3 * B1 * !Y)	0.00226	0.00229	0.00228
	(A1 * A2 * !A3 * !B1 * Y)	-0.00149	-0.00156	-0.00158
	(A1 * A2 * !A3 * !B1 * Y)	0.00238	0.00239	0.00239
	(A1 * !A2 * A3 * !B1 * Y)	-0.00142	-0.00155	-0.00154
	(A1 * !A2 * A3 * !B1 * Y)	0.00238	0.00243	0.00239
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00152	-0.00156	-0.00157
	(A1 * !A2 * !A3 * !B1 * Y)	0.00237	0.00240	0.00239
	(!A3 * B1 * !Y)	-0.00163	-0.00167	-0.00167
	(!A3 * B1 * !Y)	0.00228	0.00232	0.00230
	(!A2 * A3 * B1 * !Y)	-0.00153	-0.00164	-0.00165
	(!A2 * A3 * B1 * !Y)	0.00229	0.00234	0.00230
	(!A1 * A2 * A3 * B1 * !Y)	-0.00149	-0.00163	-0.00165
	(!A1 * A2 * A3 * B1 * !Y)	0.00229	0.00232	0.00230
	(!A1 * A2 * A3 * !B1 * Y)	-0.00138	-0.00153	-0.00153
	(!A1 * A2 * A3 * !B1 * Y)	0.00240	0.00242	0.00239
	(!A1 * !A3 * !B1 * Y)	-0.00151	-0.00157	-0.00157
	(!A1 * !A3 * !B1 * Y)	0.00237	0.00240	0.00239
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00143	-0.00155	-0.00155
	(!A1 * !A2 * A3 * !B1 * Y)	0.00238	0.00243	0.00239

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00326	-0.00327	-0.00323
	(A1 * A2 * A3 * B1 * !Y)	0.00453	0.00457	0.00454
	(A1 * A2 * !A3 * !B1 * Y)	-0.00304	-0.00324	-0.00325
	(A1 * A2 * !A3 * !B1 * Y)	0.00446	0.00449	0.00448
	(A1 * !A2 * A3 * !B1 * Y)	-0.00291	-0.00318	-0.00320
	(A1 * !A2 * A3 * !B1 * Y)	0.00449	0.00448	0.00448
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00311	-0.00325	-0.00323
	(A1 * !A2 * !A3 * !B1 * Y)	0.00445	0.00449	0.00447
	(!A3 * B1 * !Y)	-0.00306	-0.00315	-0.00316
	(!A3 * B1 * !Y)	0.00457	0.00463	0.00459
	(!A2 * A3 * B1 * !Y)	-0.00283	-0.00306	-0.00312
	(!A2 * A3 * B1 * !Y)	0.00460	0.00459	0.00459
	(!A1 * A2 * A3 * B1 * !Y)	-0.00275	-0.00306	-0.00311
	(!A1 * A2 * A3 * B1 * !Y)	0.00460	0.00465	0.00459
	(!A1 * A2 * A3 * !B1 * Y)	-0.00283	-0.00316	-0.00317
	(!A1 * A2 * A3 * !B1 * Y)	0.00454	0.00454	0.00448
	(!A1 * !A3 * !B1 * Y)	-0.00310	-0.00325	-0.00323
	(!A1 * !A3 * !B1 * Y)	0.00445	0.00449	0.00447
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00292	-0.00318	-0.00320
	(!A1 * !A2 * A3 * !B1 * Y)	0.00448	0.00448	0.00447

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00645	-0.00648	-0.00641
	(A1 * A2 * A3 * B1 * !Y)	0.00907	0.00914	0.00909
	(A1 * A2 * !A3 * !B1 * Y)	-0.00603	-0.00641	-0.00648
	(A1 * A2 * !A3 * !B1 * Y)	0.00892	0.00898	0.00895
	(A1 * !A2 * A3 * !B1 * Y)	-0.00576	-0.00625	-0.00630
	(A1 * !A2 * A3 * !B1 * Y)	0.00898	0.00892	0.00895
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00617	-0.00644	-0.00645
	(A1 * !A2 * !A3 * !B1 * Y)	0.00891	0.00898	0.00895
	(!A3 * B1 * !Y)	-0.00609	-0.00624	-0.00626
	(!A3 * B1 * !Y)	0.00915	0.00926	0.00918
	(!A2 * A3 * B1 * !Y)	-0.00558	-0.00608	-0.00618
	(!A2 * A3 * B1 * !Y)	0.00920	0.00929	0.00918
	(!A1 * A2 * A3 * B1 * !Y)	-0.00546	-0.00605	-0.00615
	(!A1 * A2 * A3 * B1 * !Y)	0.00920	0.00929	0.00918
	(!A1 * A2 * A3 * !B1 * Y)	-0.00562	-0.00626	-0.00624
	(!A1 * A2 * A3 * !B1 * Y)	0.00908	0.00908	0.00895
	(!A1 * !A3 * !B1 * Y)	-0.00617	-0.00644	-0.00645
	(!A1 * !A3 * !B1 * Y)	0.00891	0.00898	0.00895
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00578	-0.00625	-0.00629
	(!A1 * !A2 * A3 * !B1 * Y)	0.00896	0.00891	0.00895

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)	0.00209	0.00208	0.00209
	(A1 * A2 * A3 * A4 * !Y)	-0.00094	-0.00093	-0.00093
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00224	0.00226	0.00224
	(A1 * A2 * A3 * A4 * !Y)	-0.00194	-0.00195	-0.00191
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00438	0.00447	0.00442
	(A1 * A2 * A3 * A4 * !Y)	-0.00375	-0.00384	-0.00375

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)	-0.00175	-0.00177	-0.00199
	(A1 * A2 * A3 * A4 * !Y)	0.00123	0.00124	0.00106
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00155	-0.00158	-0.00205
	(A1 * A2 * A3 * A4 * !Y)	0.00252	0.00254	0.00217
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00309	-0.00316	-0.00405
	(A1 * A2 * A3 * A4 * !Y)	0.00494	0.00496	0.00427

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00275	0.00273	0.00276	0.00270	0.00283	1.28103
sky130_fd_sc_hs__a41o_2	0.00271	0.00280	0.00286	0.00270	0.00286	2.45818
sky130_fd_sc_hs__a41o_4	0.00535	0.00522	0.00538	0.00518	0.00529	4.05122

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	9.45059	20.85930
sky130_fd_sc_hs__a41o_2	0.00000	12.86220	21.13670
sky130_fd_sc_hs__a41o_4	0.00000	25.71900	42.26750

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)	0.10917	0.61989	6.63721
	A2->X (RR)	0.11916	0.61972	6.56742
	A3->X (RR)	0.12660	0.60852	6.45046
	A4->X (RR)	0.13054	0.59076	6.28801
	B1->X (RR)	0.05830	0.51734	5.96326
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.11585	0.56480	6.70448
	A2->X (RR)	0.12721	0.56199	6.61716
	A3->X (RR)	0.13445	0.54654	6.49020
	A4->X (RR)	0.13782	0.52510	6.31841
	B1->X (RR)	0.05496	0.44490	5.99113
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.13024	0.53528	6.69773
	A2->X (RR)	0.14469	0.53732	6.71507
	A3->X (RR)	0.15191	0.50260	6.45660
	A4->X (RR)	0.15657	0.48476	6.28153
	B1->X (RR)	0.05186	0.38019	5.83500

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.12137	0.50853	4.78126
	A2->X (FF)	0.14303	0.54203	4.89036
	A3->X (FF)	0.15785	0.56656	5.01422
	A4->X (FF)	0.17215	0.59237	5.15907
	B1->X (FF)	0.14511	0.60759	5.31374
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.14178	0.51006	4.76891
	A2->X (FF)	0.16512	0.54334	4.88218
	A3->X (FF)	0.17860	0.56546	4.99592
	A4->X (FF)	0.19124	0.58774	5.12531
	B1->X (FF)	0.16551	0.60837	5.29510
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.14782	0.46701	4.38173
	A2->X (FF)	0.16922	0.49933	4.47976
	A3->X (FF)	0.18574	0.52675	4.68025
	A4->X (FF)	0.20221	0.55300	4.82372
	B1->X (FF)	0.17292	0.58488	5.08802

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01440	0.01665	0.07129
	A1	0.00817	0.01042	0.06515
	A2	0.01559	0.01730	0.06954
	A2	0.00818	0.00989	0.06229
	A3	0.01674	0.01823	0.07244
	A3	0.00817	0.00966	0.06413
	A4	0.01795	0.01933	0.07561
	A4	0.00815	0.00953	0.06623
	B1	0.00965	0.01440	0.09691
	B1	0.00490	0.00967	0.09269
sky130_fd_sc_hs__a41o_2	A1	0.01712	0.01908	0.07347
	A1	0.01087	0.01284	0.06730
	A2	0.01835	0.01970	0.07180
	A2	0.01089	0.01224	0.06455
	A3	0.01955	0.02070	0.07452
	A3	0.01089	0.01207	0.06631
	A4	0.02068	0.02177	0.07767
	A4	0.01086	0.01197	0.06850
	B1	0.01174	0.01626	0.09834
	B1	0.00696	0.01153	0.09429

sky130_fd_sc_hs__a41o_4	**A1**	0.03380	0.03647	0.12603
	A1	0.02128	0.02410	0.11370
	A2	0.03611	0.03773	0.13593
	A2	0.02131	0.02302	0.12119
	A3	0.03869	0.04012	0.14504
	A3	0.02128	0.02274	0.12850
	A4	0.04100	0.04221	0.15158
	A4	0.02123	0.02245	0.13327
	B1	0.02162	0.03048	0.18039
	B1	0.01242	0.02135	0.17148

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00419	0.00586	0.05994
	A1	0.01043	0.01209	0.06617
	A2	0.00490	0.00641	0.05962
	A2	0.01227	0.01376	0.06635
	A3	0.00570	0.00719	0.06366
	A3	0.01417	0.01562	0.07008
	A4	0.00631	0.00773	0.06512
	A4	0.01592	0.01732	0.07380
	B1	0.00375	0.00924	0.08533
	B1	0.00852	0.01398	0.08948

sky130_fd_sc_hs__a41o_2	**A1**	0.00812	0.00901	0.06227
	A1	0.01437	0.01523	0.06847
	A2	0.00930	0.01001	0.06302
	A2	0.01672	0.01726	0.06911
	A3	0.01020	0.01051	0.06510
	A3	0.01875	0.01905	0.07292
	A4	0.01091	0.01104	0.06854
	A4	0.02053	0.02065	0.07640
	B1	0.00701	0.01216	0.08773
	B1	0.01180	0.01693	0.09185
sky130_fd_sc_hs__a41o_4	**A1**	0.01614	0.01671	0.11527
	A1	0.02863	0.02919	0.12621
	A2	0.01904	0.01922	0.11792
	A2	0.03374	0.03386	0.13245
	A3	0.02070	0.02084	0.12575
	A3	0.03786	0.03769	0.14248
	A4	0.02305	0.02249	0.13248
	A4	0.04233	0.04155	0.15073
	B1	0.01400	0.02360	0.17036
	B1	0.02320	0.03279	0.17828

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)**	0.00217	0.00181	0.00174
	(A2 * A3 * A4 * B1 * X)	-0.00148	-0.00188	-0.00191
	(A2 * A3 * !A4 * B1 * X)	0.00162	0.00164	0.00163
	(A2 * A3 * !A4 * B1 * X)	-0.00193	-0.00195	-0.00194
	(A2 * A3 * !A4 * !B1 * !X)	0.00064	0.00064	0.00057
	(A2 * A3 * !A4 * !B1 * !X)	-0.00211	-0.00212	-0.00228
	(A2 * !A3 * B1 * X)	0.00164	0.00165	0.00165
	(A2 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00194
	(A2 * !A3 * !B1 * !X)	0.00061	0.00061	0.00056
	(A2 * !A3 * !B1 * !X)	-0.00219	-0.00219	-0.00229
	(!A2 * B1 * X)	0.00167	0.00170	0.00168
	(!A2 * B1 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * !B1 * !X)	0.00060	0.00059	0.00057
	(!A2 * !B1 * !X)	-0.00226	-0.00226	-0.00230
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00217	0.00180	0.00173
	(A2 * A3 * A4 * B1 * X)	-0.00149	-0.00188	-0.00192
	(A2 * A3 * !A4 * B1 * X)	0.00161	0.00163	0.00162
	(A2 * A3 * !A4 * B1 * X)	-0.00193	-0.00195	-0.00194
	(A2 * A3 * !A4 * !B1 * !X)	0.00071	0.00070	0.00063
	(A2 * A3 * !A4 * !B1 * !X)	-0.00204	-0.00205	-0.00221
	(A2 * !A3 * B1 * X)	0.00163	0.00164	0.00164
	(A2 * !A3 * B1 * X)	-0.00194	-0.00195	-0.00194
	(A2 * !A3 * !B1 * !X)	0.00069	0.00069	0.00064
	(A2 * !A3 * !B1 * !X)	-0.00211	-0.00211	-0.00222
	(!A2 * B1 * X)	0.00166	0.00168	0.00166
	(!A2 * B1 * X)	-0.00193	-0.00196	-0.00194
	(!A2 * !B1 * !X)	0.00069	0.00069	0.00066
	(!A2 * !B1 * !X)	-0.00218	-0.00218	-0.00223

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00448	0.00377	0.00364
	(A2 * A3 * A4 * B1 * X)	-0.00303	-0.00383	-0.00390
	(A2 * A3 * !A4 * B1 * X)	0.00337	0.00337	0.00338
	(A2 * A3 * !A4 * B1 * X)	-0.00394	-0.00394	-0.00394
	(A2 * A3 * !A4 * !B1 * !X)	0.00151	0.00152	0.00135
	(A2 * A3 * !A4 * !B1 * !X)	-0.00411	-0.00416	-0.00452
	(A2 * !A3 * B1 * X)	0.00339	0.00343	0.00340
	(A2 * !A3 * B1 * X)	-0.00394	-0.00397	-0.00394
	(A2 * !A3 * !B1 * !X)	0.00143	0.00145	0.00134
	(A2 * !A3 * !B1 * !X)	-0.00429	-0.00433	-0.00455
	(!A2 * B1 * X)	0.00348	0.00348	0.00349
	(!A2 * B1 * X)	-0.00395	-0.00395	-0.00394
	(!A2 * !B1 * !X)	0.00146	0.00148	0.00141
	(!A2 * !B1 * !X)	-0.00443	-0.00447	-0.00458

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)**	-0.00154	-0.00154	-0.00153
	(A2 * A3 * A4 * B1 * X)	0.00213	0.00213	0.00212
	(A2 * A3 * !A4 * B1 * X)	-0.00127	-0.00144	-0.00147
	(A2 * A3 * !A4 * B1 * X)	0.00213	0.00214	0.00214
	(A2 * A3 * !A4 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(A2 * A3 * !A4 * !B1 * !X)	0.00242	0.00246	0.00243
	(A2 * !A3 * B1 * X)	-0.00132	-0.00145	-0.00148
	(A2 * !A3 * B1 * X)	0.00213	0.00214	0.00214
	(A2 * !A3 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(A2 * !A3 * !B1 * !X)	0.00242	0.00246	0.00243
	(!A2 * B1 * X)	-0.00146	-0.00149	-0.00149
	(!A2 * B1 * X)	0.00215	0.00216	0.00214
	(!A2 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !X)	0.00243	0.00247	0.00243
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00151	-0.00152	-0.00151
	(A2 * A3 * A4 * B1 * X)	0.00211	0.00213	0.00213
	(A2 * A3 * !A4 * B1 * X)	-0.00125	-0.00142	-0.00145
	(A2 * A3 * !A4 * B1 * X)	0.00214	0.00215	0.00215
	(A2 * A3 * !A4 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(A2 * A3 * !A4 * !B1 * !X)	0.00247	0.00252	0.00248
	(A2 * !A3 * B1 * X)	-0.00131	-0.00144	-0.00146
	(A2 * !A3 * B1 * X)	0.00214	0.00215	0.00215
	(A2 * !A3 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(A2 * !A3 * !B1 * !X)	0.00247	0.00252	0.00248
	(!A2 * B1 * X)	-0.00144	-0.00148	-0.00148
	(!A2 * B1 * X)	0.00216	0.00217	0.00215
	(!A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !X)	0.00248	0.00252	0.00248

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00321	-0.00323	-0.00320
	(A2 * A3 * A4 * B1 * X)	0.00430	0.00435	0.00432
	(A2 * A3 * !A4 * B1 * X)	-0.00259	-0.00304	-0.00307
	(A2 * A3 * !A4 * B1 * X)	0.00437	0.00439	0.00436
	(A2 * A3 * !A4 * !B1 * !X)	-0.00084	-0.00086	-0.00083
	(A2 * A3 * !A4 * !B1 * !X)	0.00509	0.00515	0.00508
	(A2 * !A3 * B1 * X)	-0.00270	-0.00307	-0.00309
	(A2 * !A3 * B1 * X)	0.00435	0.00439	0.00436
	(A2 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00084
	(A2 * !A3 * !B1 * !X)	0.00510	0.00516	0.00508
	(!A2 * B1 * X)	-0.00303	-0.00313	-0.00313
	(!A2 * B1 * X)	0.00433	0.00438	0.00436
	(!A2 * !B1 * !X)	-0.00089	-0.00091	-0.00088
	(!A2 * !B1 * !X)	0.00510	0.00516	0.00509

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)**	0.00220	0.00184	0.00177
	(A1 * A3 * A4 * B1 * X)	-0.00147	-0.00186	-0.00190
	(A1 * A3 * !A4 * B1 * X)	0.00167	0.00168	0.00167
	(A1 * A3 * !A4 * B1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * A3 * !A4 * !B1 * !X)	0.00074	0.00074	0.00075
	(A1 * A3 * !A4 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A3 * B1 * X)	0.00169	0.00171	0.00170
	(A1 * !A3 * B1 * X)	-0.00192	-0.00194	-0.00192
	(A1 * !A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00196
	(!A1 * A3 * A4 * B1 * X)	0.00170	0.00171	0.00171
	(!A1 * A3 * A4 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * A4 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A1 * A3 * A4 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * A3 * !A4 * B1 * X)	0.00103	0.00103	0.00102
	(!A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00193	-0.00192
	(!A1 * A3 * !A4 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00196	-0.00197	-0.00197
	(!A1 * !A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * !A3 * !B1 * !X)	0.00095	0.00097	0.00096
	(!A1 * !A3 * !B1 * !X)	-0.00196	-0.00198	-0.00197

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00223	0.00186	0.00179
	(A1 * A3 * A4 * B1 * X)	-0.00147	-0.00187	-0.00191
	(A1 * A3 * !A4 * B1 * X)	0.00169	0.00170	0.00169
	(A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * A3 * !A4 * !B1 * !X)	0.00081	0.00081	0.00083
	(A1 * A3 * !A4 * !B1 * !X)	-0.00192	-0.00191	-0.00190
	(A1 * !A3 * B1 * X)	0.00172	0.00174	0.00173
	(A1 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * !A3 * !B1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00191	-0.00192	-0.00190
	(!A1 * A3 * A4 * B1 * X)	0.00172	0.00172	0.00172
	(!A1 * A3 * A4 * B1 * X)	-0.00193	-0.00193	-0.00193
	(!A1 * A3 * A4 * !B1 * !X)	0.00174	0.00175	0.00175
	(!A1 * A3 * A4 * !B1 * !X)	-0.00191	-0.00192	-0.00191
	(!A1 * A3 * !A4 * B1 * X)	0.00105	0.00104	0.00104
	(!A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00192	-0.00193
	(!A1 * A3 * !A4 * !B1 * !X)	0.00104	0.00104	0.00104
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00191	-0.00191	-0.00191
	(!A1 * !A3 * B1 * X)	0.00109	0.00109	0.00108
	(!A1 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00108	0.00107
	(!A1 * !A3 * !B1 * !X)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00438	0.00369	0.00356
	(A1 * A3 * A4 * B1 * X)	-0.00298	-0.00376	-0.00383
	(A1 * A3 * !A4 * B1 * X)	0.00330	0.00333	0.00330
	(A1 * A3 * !A4 * B1 * X)	-0.00388	-0.00391	-0.00388
	(A1 * A3 * !A4 * !B1 * !X)	0.00155	0.00156	0.00158
	(A1 * A3 * !A4 * !B1 * !X)	-0.00382	-0.00384	-0.00382
	(A1 * !A3 * B1 * X)	0.00336	0.00339	0.00338
	(A1 * !A3 * B1 * X)	-0.00387	-0.00390	-0.00388
	(A1 * !A3 * !B1 * !X)	0.00157	0.00158	0.00160
	(A1 * !A3 * !B1 * !X)	-0.00382	-0.00383	-0.00382
	(!A1 * A3 * A4 * B1 * X)	0.00339	0.00344	0.00340
	(!A1 * A3 * A4 * B1 * X)	-0.00387	-0.00391	-0.00388
	(!A1 * A3 * A4 * !B1 * !X)	0.00346	0.00349	0.00348
	(!A1 * A3 * A4 * !B1 * !X)	-0.00382	-0.00384	-0.00382
	(!A1 * A3 * !A4 * B1 * X)	0.00201	0.00202	0.00201
	(!A1 * A3 * !A4 * B1 * X)	-0.00389	-0.00391	-0.00389
	(!A1 * A3 * !A4 * !B1 * !X)	0.00201	0.00201	0.00201
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00385	-0.00386	-0.00385
	(!A1 * !A3 * B1 * X)	0.00200	0.00201	0.00200
	(!A1 * !A3 * B1 * X)	-0.00389	-0.00390	-0.00389
	(!A1 * !A3 * !B1 * !X)	0.00198	0.00199	0.00198
	(!A1 * !A3 * !B1 * !X)	-0.00386	-0.00387	-0.00386

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)**	-0.00156	-0.00156	-0.00156
	(A1 * A3 * A4 * B1 * X)	0.00210	0.00211	0.00211
	(A1 * A3 * !A4 * B1 * X)	-0.00132	-0.00150	-0.00151
	(A1 * A3 * !A4 * B1 * X)	0.00211	0.00214	0.00213
	(A1 * A3 * !A4 * !B1 * !X)	-0.00059	-0.00059	-0.00060
	(A1 * A3 * !A4 * !B1 * !X)	0.00215	0.00215	0.00211
	(A1 * !A3 * B1 * X)	-0.00149	-0.00152	-0.00152
	(A1 * !A3 * B1 * X)	0.00213	0.00213	0.00213
	(A1 * !A3 * !B1 * !X)	-0.00060	-0.00060	-0.00062
	(A1 * !A3 * !B1 * !X)	0.00215	0.00216	0.00211
	(!A1 * A3 * A4 * B1 * X)	-0.00149	-0.00152	-0.00152
	(!A1 * A3 * A4 * B1 * X)	0.00212	0.00214	0.00213
	(!A1 * A3 * A4 * !B1 * !X)	-0.00131	-0.00153	-0.00154
	(!A1 * A3 * A4 * !B1 * !X)	0.00232	0.00213	0.00211
	(!A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00102	-0.00093
	(!A1 * A3 * !A4 * B1 * X)	0.00212	0.00215	0.00213
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00081	-0.00085	-0.00088
	(!A1 * A3 * !A4 * !B1 * !X)	0.00231	0.00228	0.00217
	(!A1 * !A3 * B1 * X)	-0.00097	-0.00098	-0.00091
	(!A1 * !A3 * B1 * X)	0.00212	0.00215	0.00213
	(!A1 * !A3 * !B1 * !X)	-0.00085	-0.00087	-0.00089
	(!A1 * !A3 * !B1 * !X)	0.00222	0.00224	0.00213

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00157	-0.00158	-0.00157
	(A1 * A3 * A4 * B1 * X)	0.00211	0.00212	0.00212
	(A1 * A3 * !A4 * B1 * X)	-0.00134	-0.00151	-0.00152
	(A1 * A3 * !A4 * B1 * X)	0.00213	0.00215	0.00214
	(A1 * A3 * !A4 * !B1 * !X)	-0.00055	-0.00055	-0.00057
	(A1 * A3 * !A4 * !B1 * !X)	0.00222	0.00224	0.00218
	(A1 * !A3 * B1 * X)	-0.00150	-0.00154	-0.00154
	(A1 * !A3 * B1 * X)	0.00214	0.00214	0.00214
	(A1 * !A3 * !B1 * !X)	-0.00057	-0.00058	-0.00059
	(A1 * !A3 * !B1 * !X)	0.00222	0.00226	0.00218
	(!A1 * A3 * A4 * B1 * X)	-0.00150	-0.00154	-0.00154
	(!A1 * A3 * A4 * B1 * X)	0.00213	0.00215	0.00214
	(!A1 * A3 * A4 * !B1 * !X)	-0.00126	-0.00149	-0.00150
	(!A1 * A3 * A4 * !B1 * !X)	0.00239	0.00220	0.00217
	(!A1 * A3 * !A4 * B1 * X)	-0.00104	-0.00103	-0.00094
	(!A1 * A3 * !A4 * B1 * X)	0.00215	0.00216	0.00214
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00075	-0.00080	-0.00083
	(!A1 * A3 * !A4 * !B1 * !X)	0.00237	0.00235	0.00223
	(!A1 * !A3 * B1 * X)	-0.00103	-0.00103	-0.00096
	(!A1 * !A3 * B1 * X)	0.00213	0.00216	0.00214
	(!A1 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00088
	(!A1 * !A3 * !B1 * !X)	0.00230	0.00232	0.00220

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00312	-0.00315	-0.00312
	(A1 * A3 * A4 * B1 * X)	0.00423	0.00429	0.00426
	(A1 * A3 * !A4 * B1 * X)	-0.00261	-0.00296	-0.00300
	(A1 * A3 * !A4 * B1 * X)	0.00430	0.00434	0.00430
	(A1 * A3 * !A4 * !B1 * !X)	-0.00098	-0.00099	-0.00102
	(A1 * A3 * !A4 * !B1 * !X)	0.00450	0.00452	0.00439
	(A1 * !A3 * B1 * X)	-0.00295	-0.00300	-0.00303
	(A1 * !A3 * B1 * X)	0.00429	0.00431	0.00430
	(A1 * !A3 * !B1 * !X)	-0.00099	-0.00103	-0.00105
	(A1 * !A3 * !B1 * !X)	0.00446	0.00454	0.00439
	(!A1 * A3 * A4 * B1 * X)	-0.00295	-0.00303	-0.00305
	(!A1 * A3 * A4 * B1 * X)	0.00429	0.00432	0.00429
	(!A1 * A3 * A4 * !B1 * !X)	-0.00241	-0.00295	-0.00299
	(!A1 * A3 * A4 * !B1 * !X)	0.00488	0.00444	0.00435
	(!A1 * A3 * !A4 * B1 * X)	-0.00199	-0.00199	-0.00181
	(!A1 * A3 * !A4 * B1 * X)	0.00428	0.00435	0.00430
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00142	-0.00154	-0.00159
	(!A1 * A3 * !A4 * !B1 * !X)	0.00482	0.00472	0.00448
	(!A1 * !A3 * B1 * X)	-0.00189	-0.00191	-0.00177
	(!A1 * !A3 * B1 * X)	0.00427	0.00435	0.00430
	(!A1 * !A3 * !B1 * !X)	-0.00155	-0.00156	-0.00160
	(!A1 * !A3 * !B1 * !X)	0.00461	0.00466	0.00444

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)**	0.00218	0.00181	0.00174
	(A1 * A2 * A4 * B1 * X)	-0.00148	-0.00190	-0.00194
	(A1 * A2 * !A4 * B1 * X)	0.00167	0.00168	0.00168
	(A1 * A2 * !A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(A1 * A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00079
	(A1 * A2 * !A4 * !B1 * !X)	-0.00194	-0.00196	-0.00194
	(A1 * !A2 * A4 * !B1 * !X)	0.00165	0.00166	0.00165
	(A1 * !A2 * A4 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * !A4 * !B1 * !X)	0.00098	0.00098	0.00097
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(!A2 * A4 * B1 * X)	0.00168	0.00170	0.00168
	(!A2 * A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A2 * !A4 * B1 * X)	0.00103	0.00104	0.00103
	(!A2 * !A4 * B1 * X)	-0.00197	-0.00197	-0.00196
	(!A1 * A2 * A4 * B1 * X)	0.00164	0.00165	0.00164
	(!A1 * A2 * A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * A4 * !B1 * !X)	0.00162	0.00164	0.00163
	(!A1 * A2 * A4 * !B1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * A2 * !A4 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * A2 * !A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * !A4 * !B1 * !X)	0.00094	0.00095	0.00095
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00199	-0.00201	-0.00200
	(!A1 * !A2 * A4 * !B1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00199	-0.00201	-0.00200

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00226	0.00188	0.00182
	(A1 * A2 * A4 * B1 * X)	-0.00148	-0.00188	-0.00192
	(A1 * A2 * !A4 * B1 * X)	0.00174	0.00175	0.00175
	(A1 * A2 * !A4 * B1 * X)	-0.00194	-0.00195	-0.00194
	(A1 * A2 * !A4 * !B1 * !X)	0.00087	0.00089	0.00089
	(A1 * A2 * !A4 * !B1 * !X)	-0.00187	-0.00189	-0.00187
	(A1 * !A2 * A4 * !B1 * !X)	0.00178	0.00180	0.00178
	(A1 * !A2 * A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(A1 * !A2 * !A4 * !B1 * !X)	0.00104	0.00105	0.00104
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(!A2 * A4 * B1 * X)	0.00175	0.00177	0.00175
	(!A2 * A4 * B1 * X)	-0.00194	-0.00196	-0.00194
	(!A2 * !A4 * B1 * X)	0.00104	0.00105	0.00104
	(!A2 * !A4 * B1 * X)	-0.00194	-0.00196	-0.00194
	(!A1 * A2 * A4 * B1 * X)	0.00172	0.00172	0.00172
	(!A1 * A2 * A4 * B1 * X)	-0.00194	-0.00195	-0.00194
	(!A1 * A2 * A4 * !B1 * !X)	0.00175	0.00177	0.00176
	(!A1 * A2 * A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(!A1 * A2 * !A4 * B1 * X)	0.00106	0.00106	0.00105
	(!A1 * A2 * !A4 * B1 * X)	-0.00195	-0.00196	-0.00194
	(!A1 * A2 * !A4 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(!A1 * !A2 * A4 * !B1 * !X)	0.00177	0.00178	0.00177
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00449	0.00376	0.00362
	(A1 * A2 * A4 * B1 * X)	-0.00302	-0.00380	-0.00388
	(A1 * A2 * !A4 * B1 * X)	0.00344	0.00347	0.00345
	(A1 * A2 * !A4 * B1 * X)	-0.00393	-0.00395	-0.00393
	(A1 * A2 * !A4 * !B1 * !X)	0.00171	0.00172	0.00170
	(A1 * A2 * !A4 * !B1 * !X)	-0.00381	-0.00382	-0.00377
	(A1 * !A2 * A4 * !B1 * !X)	0.00350	0.00355	0.00352
	(A1 * !A2 * A4 * !B1 * !X)	-0.00388	-0.00391	-0.00389
	(A1 * !A2 * !A4 * !B1 * !X)	0.00201	0.00203	0.00201
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00389	-0.00392	-0.00390
	(!A2 * A4 * B1 * X)	0.00345	0.00350	0.00346
	(!A2 * A4 * B1 * X)	-0.00393	-0.00396	-0.00393
	(!A2 * !A4 * B1 * X)	0.00203	0.00204	0.00203
	(!A2 * !A4 * B1 * X)	-0.00394	-0.00395	-0.00394
	(!A1 * A2 * A4 * B1 * X)	0.00340	0.00342	0.00341
	(!A1 * A2 * A4 * B1 * X)	-0.00393	-0.00394	-0.00393
	(!A1 * A2 * A4 * !B1 * !X)	0.00345	0.00349	0.00346
	(!A1 * A2 * A4 * !B1 * !X)	-0.00388	-0.00391	-0.00388
	(!A1 * A2 * !A4 * B1 * X)	0.00204	0.00205	0.00204
	(!A1 * A2 * !A4 * B1 * X)	-0.00394	-0.00396	-0.00394
	(!A1 * A2 * !A4 * !B1 * !X)	0.00202	0.00203	0.00203
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00390	-0.00392	-0.00390
	(!A1 * !A2 * A4 * !B1 * !X)	0.00347	0.00351	0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00388	-0.00391	-0.00389
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00203	0.00206	0.00204
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00389	-0.00392	-0.00390

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)**	-0.00153	-0.00153	-0.00153
	(A1 * A2 * A4 * B1 * X)	0.00214	0.00215	0.00215
	(A1 * A2 * !A4 * B1 * X)	-0.00145	-0.00148	-0.00149
	(A1 * A2 * !A4 * B1 * X)	0.00216	0.00217	0.00216
	(A1 * A2 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !A4 * !B1 * !X)	0.00218	0.00221	0.00215
	(A1 * !A2 * A4 * !B1 * !X)	-0.00138	-0.00152	-0.00152
	(A1 * !A2 * A4 * !B1 * !X)	0.00218	0.00214	0.00213
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00089	-0.00090	-0.00091
	(A1 * !A2 * !A4 * !B1 * !X)	0.00223	0.00225	0.00216
	(!A2 * A4 * B1 * X)	-0.00145	-0.00149	-0.00149
	(!A2 * A4 * B1 * X)	0.00215	0.00217	0.00216
	(!A2 * !A4 * B1 * X)	-0.00098	-0.00098	-0.00092
	(!A2 * !A4 * B1 * X)	0.00216	0.00219	0.00217
	(!A1 * A2 * A4 * B1 * X)	-0.00131	-0.00146	-0.00148
	(!A1 * A2 * A4 * B1 * X)	0.00216	0.00217	0.00216
	(!A1 * A2 * A4 * !B1 * !X)	-0.00127	-0.00149	-0.00151
	(!A1 * A2 * A4 * !B1 * !X)	0.00223	0.00214	0.00213
	(!A1 * A2 * !A4 * B1 * X)	-0.00099	-0.00100	-0.00091
	(!A1 * A2 * !A4 * B1 * X)	0.00215	0.00219	0.00217
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00087	-0.00085	-0.00088
	(!A1 * A2 * !A4 * !B1 * !X)	0.00226	0.00231	0.00218
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00145	-0.00152	-0.00153
	(!A1 * !A2 * A4 * !B1 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00095	-0.00096	-0.00093
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00220	0.00222	0.00216

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00160	-0.00160	-0.00160
	(A1 * A2 * A4 * B1 * X)	0.00212	0.00214	0.00213
	(A1 * A2 * !A4 * B1 * X)	-0.00153	-0.00155	-0.00156
	(A1 * A2 * !A4 * B1 * X)	0.00215	0.00216	0.00215
	(A1 * A2 * !A4 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(A1 * A2 * !A4 * !B1 * !X)	0.00222	0.00224	0.00219
	(A1 * !A2 * A4 * !B1 * !X)	-0.00139	-0.00153	-0.00153
	(A1 * !A2 * A4 * !B1 * !X)	0.00222	0.00218	0.00218
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00085	-0.00085	-0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	0.00226	0.00229	0.00221
	(!A2 * A4 * B1 * X)	-0.00152	-0.00156	-0.00156
	(!A2 * A4 * B1 * X)	0.00214	0.00216	0.00215
	(!A2 * !A4 * B1 * X)	-0.00098	-0.00099	-0.00092
	(!A2 * !A4 * B1 * X)	0.00215	0.00217	0.00215
	(!A1 * A2 * A4 * B1 * X)	-0.00138	-0.00153	-0.00154
	(!A1 * A2 * A4 * B1 * X)	0.00214	0.00216	0.00215
	(!A1 * A2 * A4 * !B1 * !X)	-0.00128	-0.00150	-0.00152
	(!A1 * A2 * A4 * !B1 * !X)	0.00227	0.00219	0.00218
	(!A1 * A2 * !A4 * B1 * X)	-0.00106	-0.00105	-0.00096
	(!A1 * A2 * !A4 * B1 * X)	0.00214	0.00217	0.00215
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00087	-0.00084	-0.00087
	(!A1 * A2 * !A4 * !B1 * !X)	0.00230	0.00236	0.00222
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00146	-0.00153	-0.00154
	(!A1 * !A2 * A4 * !B1 * !X)	0.00216	0.00218	0.00217
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00091	-0.00088
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00224	0.00226	0.00221

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00319	-0.00320	-0.00318
	(A1 * A2 * A4 * B1 * X)	0.00429	0.00433	0.00431
	(A1 * A2 * !A4 * B1 * X)	-0.00300	-0.00309	-0.00311
	(A1 * A2 * !A4 * B1 * X)	0.00434	0.00439	0.00435
	(A1 * A2 * !A4 * !B1 * !X)	-0.00105	-0.00107	-0.00108
	(A1 * A2 * !A4 * !B1 * !X)	0.00453	0.00458	0.00445
	(A1 * !A2 * A4 * !B1 * !X)	-0.00272	-0.00303	-0.00303
	(A1 * !A2 * A4 * !B1 * !X)	0.00452	0.00442	0.00440
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00157	-0.00160	-0.00163
	(A1 * !A2 * !A4 * !B1 * !X)	0.00469	0.00470	0.00450
	(!A2 * A4 * B1 * X)	-0.00300	-0.00309	-0.00309
	(!A2 * A4 * B1 * X)	0.00433	0.00436	0.00435
	(!A2 * !A4 * B1 * X)	-0.00194	-0.00195	-0.00180
	(!A2 * !A4 * B1 * X)	0.00435	0.00440	0.00436
	(!A1 * A2 * A4 * B1 * X)	-0.00272	-0.00303	-0.00306
	(!A1 * A2 * A4 * B1 * X)	0.00436	0.00436	0.00435
	(!A1 * A2 * A4 * !B1 * !X)	-0.00251	-0.00297	-0.00300
	(!A1 * A2 * A4 * !B1 * !X)	0.00464	0.00442	0.00440
	(!A1 * A2 * !A4 * B1 * X)	-0.00204	-0.00203	-0.00184
	(!A1 * A2 * !A4 * B1 * X)	0.00435	0.00440	0.00435
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00165	-0.00158	-0.00164
	(!A1 * A2 * !A4 * !B1 * !X)	0.00467	0.00480	0.00452
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00287	-0.00304	-0.00304
	(!A1 * !A2 * A4 * !B1 * !X)	0.00438	0.00441	0.00439
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00172	-0.00174	-0.00169
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00457	0.00460	0.00448

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)**	0.00228	0.00192	0.00185
	(A1 * A2 * A3 * B1 * X)	-0.00149	-0.00189	-0.00193
	(A1 * A2 * !A3 * !B1 * !X)	0.00175	0.00177	0.00176
	(A1 * A2 * !A3 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(A1 * !A2 * A3 * !B1 * !X)	0.00172	0.00172	0.00171
	(A1 * !A2 * A3 * !B1 * !X)	-0.00199	-0.00199	-0.00199
	(A1 * !A2 * !A3 * !B1 * !X)	0.00174	0.00176	0.00175
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(!A3 * B1 * X)	0.00178	0.00179	0.00178
	(!A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A2 * A3 * B1 * X)	0.00175	0.00176	0.00175
	(!A2 * A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A2 * A3 * B1 * X)	0.00172	0.00174	0.00172
	(!A1 * A2 * A3 * B1 * X)	-0.00195	-0.00197	-0.00195
	(!A1 * A2 * A3 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * A2 * A3 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00176	0.00175
	(!A1 * !A3 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(!A1 * !A2 * A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00199	-0.00200	-0.00199

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00227	0.00191	0.00184
	(A1 * A2 * A3 * B1 * X)	-0.00149	-0.00189	-0.00193
	(A1 * A2 * !A3 * !B1 * !X)	0.00180	0.00182	0.00180
	(A1 * A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00193
	(A1 * !A2 * A3 * !B1 * !X)	0.00176	0.00177	0.00176
	(A1 * !A2 * A3 * !B1 * !X)	-0.00193	-0.00193	-0.00193
	(A1 * !A2 * !A3 * !B1 * !X)	0.00178	0.00181	0.00179
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00192	-0.00194	-0.00193
	(!A3 * B1 * X)	0.00177	0.00178	0.00177
	(!A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A2 * A3 * B1 * X)	0.00174	0.00174	0.00173
	(!A2 * A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A2 * A3 * B1 * X)	0.00171	0.00173	0.00171
	(!A1 * A2 * A3 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A2 * A3 * !B1 * !X)	0.00174	0.00176	0.00175
	(!A1 * A2 * A3 * !B1 * !X)	-0.00192	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * !X)	0.00179	0.00181	0.00179
	(!A1 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A2 * A3 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00193	-0.00194	-0.00193

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00435	0.00370	0.00359
	(A1 * A2 * A3 * B1 * X)	-0.00301	-0.00374	-0.00380
	(A1 * A2 * !A3 * !B1 * !X)	0.00348	0.00351	0.00348
	(A1 * A2 * !A3 * !B1 * !X)	-0.00380	-0.00381	-0.00380
	(A1 * !A2 * A3 * !B1 * !X)	0.00341	0.00345	0.00342
	(A1 * !A2 * A3 * !B1 * !X)	-0.00379	-0.00382	-0.00379
	(A1 * !A2 * !A3 * !B1 * !X)	0.00346	0.00350	0.00347
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00380	-0.00382	-0.00380
	(!A3 * B1 * X)	0.00343	0.00346	0.00343
	(!A3 * B1 * X)	-0.00384	-0.00386	-0.00384
	(!A2 * A3 * B1 * X)	0.00336	0.00338	0.00336
	(!A2 * A3 * B1 * X)	-0.00384	-0.00385	-0.00384
	(!A1 * A2 * A3 * B1 * X)	0.00333	0.00337	0.00334
	(!A1 * A2 * A3 * B1 * X)	-0.00383	-0.00386	-0.00384
	(!A1 * A2 * A3 * !B1 * !X)	0.00339	0.00342	0.00340
	(!A1 * A2 * A3 * !B1 * !X)	-0.00378	-0.00381	-0.00379
	(!A1 * !A3 * !B1 * !X)	0.00346	0.00350	0.00347
	(!A1 * !A3 * !B1 * !X)	-0.00380	-0.00382	-0.00380
	(!A1 * !A2 * A3 * !B1 * !X)	0.00341	0.00345	0.00341
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00379	-0.00382	-0.00380

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)**	-0.00163	-0.00164	-0.00163
	(A1 * A2 * A3 * B1 * X)	0.00212	0.00215	0.00214
	(A1 * A2 * !A3 * !B1 * !X)	-0.00155	-0.00161	-0.00163
	(A1 * A2 * !A3 * !B1 * !X)	0.00213	0.00213	0.00212
	(A1 * !A2 * A3 * !B1 * !X)	-0.00147	-0.00160	-0.00161
	(A1 * !A2 * A3 * !B1 * !X)	0.00212	0.00215	0.00212
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00158	-0.00162	-0.00163
	(A1 * !A2 * !A3 * !B1 * !X)	0.00213	0.00213	0.00212
	(!A3 * B1 * X)	-0.00157	-0.00159	-0.00160
	(!A3 * B1 * X)	0.00216	0.00217	0.00216
	(!A2 * A3 * B1 * X)	-0.00145	-0.00157	-0.00158
	(!A2 * A3 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A2 * A3 * B1 * X)	-0.00141	-0.00156	-0.00157
	(!A1 * A2 * A3 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A2 * A3 * !B1 * !X)	-0.00144	-0.00159	-0.00161
	(!A1 * A2 * A3 * !B1 * !X)	0.00214	0.00215	0.00212
	(!A1 * !A3 * !B1 * !X)	-0.00157	-0.00162	-0.00163
	(!A1 * !A3 * !B1 * !X)	0.00213	0.00213	0.00212
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00148	-0.00160	-0.00162
	(!A1 * !A2 * A3 * !B1 * !X)	0.00211	0.00215	0.00212

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00162	-0.00163	-0.00162
	(A1 * A2 * A3 * B1 * X)	0.00213	0.00215	0.00214
	(A1 * A2 * !A3 * !B1 * !X)	-0.00146	-0.00155	-0.00155
	(A1 * A2 * !A3 * !B1 * !X)	0.00217	0.00220	0.00219
	(A1 * !A2 * A3 * !B1 * !X)	-0.00140	-0.00152	-0.00154
	(A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00149	-0.00155	-0.00155
	(A1 * !A2 * !A3 * !B1 * !X)	0.00217	0.00219	0.00218
	(!A3 * B1 * X)	-0.00154	-0.00158	-0.00158
	(!A3 * B1 * X)	0.00215	0.00219	0.00216
	(!A2 * A3 * B1 * X)	-0.00143	-0.00155	-0.00157
	(!A2 * A3 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A2 * A3 * B1 * X)	-0.00140	-0.00155	-0.00156
	(!A1 * A2 * A3 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A2 * A3 * !B1 * !X)	-0.00136	-0.00152	-0.00153
	(!A1 * A2 * A3 * !B1 * !X)	0.00220	0.00221	0.00219
	(!A1 * !A3 * !B1 * !X)	-0.00149	-0.00155	-0.00156
	(!A1 * !A3 * !B1 * !X)	0.00217	0.00219	0.00218
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00141	-0.00152	-0.00154
	(!A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00218

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00315	-0.00317	-0.00314
	(A1 * A2 * A3 * B1 * X)	0.00420	0.00425	0.00422
	(A1 * A2 * !A3 * !B1 * !X)	-0.00278	-0.00297	-0.00301
	(A1 * A2 * !A3 * !B1 * !X)	0.00429	0.00433	0.00431
	(A1 * !A2 * A3 * !B1 * !X)	-0.00266	-0.00289	-0.00297
	(A1 * !A2 * A3 * !B1 * !X)	0.00432	0.00429	0.00431
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00285	-0.00298	-0.00301
	(A1 * !A2 * !A3 * !B1 * !X)	0.00428	0.00432	0.00430
	(!A3 * B1 * X)	-0.00296	-0.00305	-0.00307
	(!A3 * B1 * X)	0.00424	0.00429	0.00425
	(!A2 * A3 * B1 * X)	-0.00274	-0.00295	-0.00302
	(!A2 * A3 * B1 * X)	0.00426	0.00424	0.00425
	(!A1 * A2 * A3 * B1 * X)	-0.00267	-0.00295	-0.00301
	(!A1 * A2 * A3 * B1 * X)	0.00427	0.00431	0.00425
	(!A1 * A2 * A3 * !B1 * !X)	-0.00259	-0.00290	-0.00295
	(!A1 * A2 * A3 * !B1 * !X)	0.00437	0.00436	0.00431
	(!A1 * !A3 * !B1 * !X)	-0.00284	-0.00298	-0.00302
	(!A1 * !A3 * !B1 * !X)	0.00428	0.00432	0.00430
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00267	-0.00290	-0.00297
	(!A1 * !A2 * A3 * !B1 * !X)	0.00431	0.00428	0.00430

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)	0.00197	0.00201	0.00198
	(A1 * A2 * A3 * A4 * X)	-0.00087	-0.00088	-0.00086
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00199	0.00203	0.00200
	(A1 * A2 * A3 * A4 * X)	-0.00089	-0.00090	-0.00087
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00378	0.00383	0.00378
	(A1 * A2 * A3 * A4 * X)	-0.00184	-0.00185	-0.00180

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)	-0.00158	-0.00160	-0.00184
	(A1 * A2 * A3 * A4 * X)	0.00124	0.00124	0.00105
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00160	-0.00162	-0.00186
	(A1 * A2 * A3 * A4 * X)	0.00126	0.00126	0.00107
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00294	-0.00299	-0.00348
	(A1 * A2 * A3 * A4 * X)	0.00258	0.00259	0.00218

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00263	0.00250	1.28483
sky130_fd_sc_hs__and2b_2	0.00237	0.00290	2.14942
sky130_fd_sc_hs__and2b_4	0.00266	0.00522	4.68362

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	23.65570	36.62780
sky130_fd_sc_hs__and2b_2	0.00000	25.36910	32.30240
sky130_fd_sc_hs__and2b_4	0.00000	45.33110	73.85820

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)	0.10910	0.66610	7.68873
	B->X (RR)	0.06653	0.51167	6.26558
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.11990	0.60605	7.59412
	B->X (RR)	0.07093	0.44372	5.92586
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.11993	0.53973	7.77914
	B->X (RR)	0.07209	0.37694	6.29933

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)	0.09396	0.35738	2.99287
	B->X (FF)	0.07041	0.46826	4.79366
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.10482	0.31578	2.51196
	B->X (FF)	0.08041	0.44645	4.42934
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.10393	0.29236	2.83936
	B->X (FF)	0.08190	0.42438	4.86607

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	0.00789	0.01325	0.09597
	A_N	0.01192	0.01727	0.10038
	B	0.00965	0.01277	0.07902
	B	0.00562	0.00874	0.07542
sky130_fd_sc_hs__and2b_2	A_N	0.01152	0.01677	0.09833
	A_N	0.01513	0.02047	0.10257
	B	0.01295	0.01564	0.06957
	B	0.00821	0.01092	0.06583
sky130_fd_sc_hs__and2b_4	A_N	0.02249	0.02878	0.12534
	A_N	0.02638	0.03266	0.13084
	B	0.02547	0.03205	0.17286
	B	0.01717	0.02379	0.16607

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01241	0.01669	0.09891
	A_N	0.00840	0.01267	0.09469
	B	0.00411	0.00898	0.07735
	B	0.00812	0.01299	0.08078
sky130_fd_sc_hs__and2b_2	A_N	0.01551	0.01968	0.09750
	A_N	0.01189	0.01606	0.09298
	B	0.00705	0.01163	0.08251
	B	0.01177	0.01630	0.08604
sky130_fd_sc_hs__and2b_4	A_N	0.02451	0.02979	0.12694
	A_N	0.02063	0.02587	0.12307
	B	0.01438	0.02408	0.17427
	B	0.02265	0.03219	0.17828

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00703	0.01118	0.08819
	(!B * !X)	0.00258	0.00672	0.08374
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00684	0.01106	0.08674
	(!B * !X)	0.00270	0.00689	0.08258
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00861	0.01328	0.09986
	(!B * !X)	0.00387	0.00850	0.09510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00004	0.00496	0.08220
	(!B * !X)	0.00451	0.00942	0.08666
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00039	0.00519	0.08112
	(!B * !X)	0.00454	0.00937	0.08528
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00081	0.00602	0.09244
	(!B * !X)	0.00558	0.01080	0.09721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00173	0.00174	0.00174
	(A_N * !X)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00212	0.00214	0.00213
	(A_N * !X)	-0.00190	-0.00192	-0.00190
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00357	0.00361	0.00358
	(A_N * !X)	-0.00353	-0.00356	-0.00354

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00114	-0.00126	-0.00129
	(A_N * !X)	0.00229	0.00221	0.00216
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00142	-0.00153	-0.00156
	(A_N * !X)	0.00262	0.00252	0.00247
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00261	-0.00283	-0.00288
	(A_N * !X)	0.00449	0.00433	0.00425

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00255	0.00250	1.25293
sky130_fd_sc_hs__and2_2	0.00278	0.00306	2.38783
sky130_fd_sc_hs__and2_4	0.00453	0.00502	4.70063

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	14.52570	36.46050
sky130_fd_sc_hs__and2_2	0.00000	16.24220	22.60330
sky130_fd_sc_hs__and2_4	0.00000	39.63200	73.48180

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)	0.06139	0.52674	6.50018
	B->X (RR)	0.06648	0.51736	6.25274
sky130_fd_sc_hs__and2_2	A->X (RR)	0.06439	0.45451	6.38613
	B->X (RR)	0.06974	0.44143	6.13470
sky130_fd_sc_hs__and2_4	A->X (RR)	0.06379	0.38364	6.43322
	B->X (RR)	0.07115	0.37750	6.28644

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.06390	0.44435	4.62442
	B->X (FF)	0.07238	0.46972	4.75309
sky130_fd_sc_hs__and2_2	A->X (FF)	0.06897	0.42658	4.57954
	B->X (FF)	0.07839	0.45182	4.71690
sky130_fd_sc_hs__and2_4	A->X (FF)	0.07503	0.40413	4.75275
	B->X (FF)	0.08306	0.42297	4.82391

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00899	0.01325	0.09124
	A	0.00465	0.00891	0.08709
	B	0.00979	0.01261	0.07385
	B	0.00465	0.00747	0.06914
sky130_fd_sc_hs__and2_2	A	0.01185	0.01592	0.09637
	A	0.00708	0.01117	0.09222
	B	0.01326	0.01608	0.07884
	B	0.00717	0.01002	0.07375
sky130_fd_sc_hs__and2_4	A	0.02287	0.03146	0.18832
	A	0.01533	0.02398	0.18189
	B	0.02552	0.03244	0.17476
	B	0.01523	0.02223	0.16611

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00325	0.00827	0.07685
	A	0.00761	0.01260	0.08065
	B	0.00406	0.00868	0.07561
	B	0.00917	0.01379	0.07922
sky130_fd_sc_hs__and2_2	A	0.00673	0.01182	0.08306
	A	0.01149	0.01657	0.08746
	B	0.00714	0.01189	0.08217
	B	0.01319	0.01784	0.08660
sky130_fd_sc_hs__and2_4	A	0.01331	0.02301	0.17350
	A	0.02087	0.03044	0.18050
	B	0.01402	0.02371	0.17801
	B	0.02426	0.03392	0.18362

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00088	0.00088	0.00086
	(!B * !X)	-0.00195	-0.00196	-0.00199
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00071	0.00070	0.00069
	(!B * !X)	-0.00225	-0.00225	-0.00228
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00113	0.00113	0.00108
	(!B * !X)	-0.00367	-0.00368	-0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00074	-0.00074	-0.00072
	(!B * !X)	0.00213	0.00216	0.00212
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00043	-0.00044	-0.00043
	(!B * !X)	0.00253	0.00257	0.00253
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00057	-0.00058	-0.00056
	(!B * !X)	0.00425	0.00433	0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00141	0.00142	0.00141
	(!A * !X)	-0.00188	-0.00189	-0.00187
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00168	0.00170	0.00169
	(!A * !X)	-0.00221	-0.00223	-0.00221
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00338	0.00341	0.00339
	(!A * !X)	-0.00337	-0.00339	-0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00114	-0.00125	-0.00128
	(!A * !X)	0.00216	0.00206	0.00201
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00128	-0.00142	-0.00144
	(!A * !X)	0.00261	0.00251	0.00247
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00259	-0.00285	-0.00289
	(!A * !X)	0.00417	0.00398	0.00389

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00232	0.00245	0.00244	1.25075
sky130_fd_sc_hs__and3b_2	0.00240	0.00293	0.00282	2.14475
sky130_fd_sc_hs__and3b_4	0.00269	0.00504	0.00518	4.65572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	22.18990	54.70520
sky130_fd_sc_hs__and3b_2	0.00000	25.63790	33.78810
sky130_fd_sc_hs__and3b_4	0.00000	38.77430	67.61530

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)	0.12372	0.68894	7.74640
	B->X (RR)	0.08698	0.56857	6.63298
	C->X (RR)	0.09160	0.55018	6.37791
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.13700	0.62670	7.57072
	B->X (RR)	0.09398	0.50382	6.40641
	C->X (RR)	0.09891	0.48041	6.03092
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.15046	0.58714	7.84792
	B->X (RR)	0.10822	0.46108	6.84946
	C->X (RR)	0.11267	0.42603	6.55237

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)	0.09815	0.35158	2.82770
	B->X (FF)	0.07972	0.47870	4.62936
	C->X (FF)	0.08371	0.49201	4.73602
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.10399	0.30954	2.39911
	B->X (FF)	0.08270	0.44494	4.20922
	C->X (FF)	0.09251	0.47085	4.38292
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.10208	0.28943	2.76968
	B->X (FF)	0.07883	0.40817	4.51108
	C->X (FF)	0.08353	0.42571	4.72621

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	0.00995	0.01521	0.09771
	A_N	0.01329	0.01855	0.10145
	B	0.01122	0.01422	0.08560
	B	0.00712	0.01013	0.08159
	C	0.01224	0.01452	0.07503
	C	0.00724	0.00952	0.07032
sky130_fd_sc_hs__and3b_2	A_N	0.01335	0.01846	0.09925
	A_N	0.01685	0.02199	0.10339
	B	0.01493	0.01766	0.09154
	B	0.01011	0.01288	0.08729
	C	0.01611	0.01788	0.06967
	C	0.01031	0.01211	0.06486
sky130_fd_sc_hs__and3b_4	A_N	0.02500	0.03042	0.12597
	A_N	0.02847	0.03395	0.13097
	B	0.02816	0.03282	0.17112
	B	0.01961	0.02440	0.16271
	C	0.03045	0.03481	0.17549
	C	0.01971	0.02409	0.16540

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.01164	0.01643	0.09972
	A_N	0.00830	0.01301	0.09581
	B	0.00431	0.00883	0.07720
	B	0.00842	0.01291	0.08116
	C	0.00468	0.00908	0.07797
	C	0.00963	0.01395	0.08276
sky130_fd_sc_hs__and3b_2	A_N	0.01522	0.01969	0.10105
	A_N	0.01172	0.01617	0.09723
	B	0.00724	0.01181	0.08201
	B	0.01206	0.01649	0.08678
	C	0.00782	0.01161	0.07975
	C	0.01353	0.01726	0.08478
sky130_fd_sc_hs__and3b_4	A_N	0.02553	0.03073	0.12854
	A_N	0.02206	0.02720	0.12291
	B	0.01549	0.02361	0.15965
	B	0.02404	0.03210	0.16785
	C	0.01629	0.02457	0.17315
	C	0.02693	0.03513	0.18101

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)	0.00608	0.01064	0.08796
	(B * !C * !X)	0.00207	0.00661	0.08395
	(!B * !X)	0.00606	0.01062	0.08794
	(!B * !X)	0.00208	0.00661	0.08395
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00665	0.01092	0.08685
	(B * !C * !X)	0.00249	0.00674	0.08269
	(!B * !X)	0.00663	0.01089	0.08683
	(!B * !X)	0.00250	0.00674	0.08268
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00920	0.01380	0.10026
	(B * !C * !X)	0.00458	0.00915	0.09562
	(!B * !X)	0.00915	0.01374	0.10020
	(!B * !X)	0.00458	0.00915	0.09562

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)	0.00010	0.00516	0.08270
	(B * !C * !X)	0.00418	0.00925	0.08677
	(!B * !X)	0.00008	0.00516	0.08271
	(!B * !X)	0.00408	0.00917	0.08671
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00030	0.00514	0.08125
	(B * !C * !X)	0.00455	0.00940	0.08548
	(!B * !X)	0.00028	0.00513	0.08126
	(!B * !X)	0.00443	0.00929	0.08541
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00070	0.00580	0.09203
	(B * !C * !X)	0.00550	0.01061	0.09680
	(!B * !X)	0.00072	0.00582	0.09210
	(!B * !X)	0.00531	0.01043	0.09668

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)	0.00173	0.00176	0.00174
	(A_N * C * !X)	-0.00156	-0.00158	-0.00157
	(A_N * !C * !X)	0.00118	0.00119	0.00118
	(A_N * !C * !X)	-0.00158	-0.00159	-0.00158
	(!A_N * !C * !X)	0.00062	0.00063	0.00062
	(!A_N * !C * !X)	-0.00196	-0.00197	-0.00197
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00214	0.00217	0.00215
	(A_N * C * !X)	-0.00184	-0.00185	-0.00184
	(A_N * !C * !X)	0.00150	0.00151	0.00149
	(A_N * !C * !X)	-0.00185	-0.00186	-0.00185
	(!A_N * !C * !X)	0.00088	0.00088	0.00087
	(!A_N * !C * !X)	-0.00226	-0.00227	-0.00227
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00330	0.00334	0.00331
	(A_N * C * !X)	-0.00372	-0.00375	-0.00371
	(A_N * !C * !X)	0.00219	0.00220	0.00219
	(A_N * !C * !X)	-0.00376	-0.00377	-0.00377
	(!A_N * !C * !X)	0.00145	0.00145	0.00147
	(!A_N * !C * !X)	-0.00409	-0.00409	-0.00409

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)	-0.00112	-0.00128	-0.00129
	(A_N * C * !X)	0.00218	0.00205	0.00202
	(A_N * !C * !X)	-0.00075	-0.00077	-0.00080
	(A_N * !C * !X)	0.00212	0.00214	0.00205
	(!A_N * !C * !X)	-0.00046	-0.00046	-0.00047
	(!A_N * !C * !X)	0.00213	0.00214	0.00212
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00139	-0.00157	-0.00159
	(A_N * C * !X)	0.00259	0.00244	0.00241
	(A_N * !C * !X)	-0.00095	-0.00098	-0.00101
	(A_N * !C * !X)	0.00253	0.00255	0.00244
	(!A_N * !C * !X)	-0.00059	-0.00060	-0.00060
	(!A_N * !C * !X)	0.00256	0.00261	0.00255
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00218	-0.00260	-0.00262
	(A_N * C * !X)	0.00487	0.00448	0.00443
	(A_N * !C * !X)	-0.00155	-0.00156	-0.00164
	(A_N * !C * !X)	0.00469	0.00474	0.00453
	(!A_N * !C * !X)	-0.00088	-0.00090	-0.00092
	(!A_N * !C * !X)	0.00471	0.00478	0.00465

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)	0.00155	0.00156	0.00155
	(A_N * B * !X)	-0.00164	-0.00165	-0.00164
	(A_N * !B * !X)	0.00156	0.00157	0.00156
	(A_N * !B * !X)	-0.00164	-0.00165	-0.00165
	(!A_N * !B * !X)	0.00142	0.00143	0.00142
	(!A_N * !B * !X)	-0.00179	-0.00181	-0.00180
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00195	0.00196	0.00195
	(A_N * B * !X)	-0.00184	-0.00185	-0.00184
	(A_N * !B * !X)	0.00194	0.00197	0.00195
	(A_N * !B * !X)	-0.00183	-0.00185	-0.00184
	(!A_N * !B * !X)	0.00180	0.00182	0.00181
	(!A_N * !B * !X)	-0.00199	-0.00201	-0.00200
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00317	0.00318	0.00317
	(A_N * B * !X)	-0.00386	-0.00386	-0.00385
	(A_N * !B * !X)	0.00315	0.00319	0.00316
	(A_N * !B * !X)	-0.00386	-0.00389	-0.00387
	(!A_N * !B * !X)	0.00308	0.00310	0.00309
	(!A_N * !B * !X)	-0.00394	-0.00396	-0.00395

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)	-0.00099	-0.00112	-0.00113
	(A_N * B * !X)	0.00215	0.00212	0.00209
	(A_N * !B * !X)	-0.00111	-0.00113	-0.00114
	(A_N * !B * !X)	0.00209	0.00209	0.00209
	(!A_N * !B * !X)	-0.00119	-0.00128	-0.00129
	(!A_N * !B * !X)	0.00202	0.00196	0.00193
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00125	-0.00138	-0.00140
	(A_N * B * !X)	0.00246	0.00244	0.00241
	(A_N * !B * !X)	-0.00135	-0.00139	-0.00141
	(A_N * !B * !X)	0.00239	0.00241	0.00241
	(!A_N * !B * !X)	-0.00144	-0.00154	-0.00156
	(!A_N * !B * !X)	0.00231	0.00227	0.00225
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00223	-0.00247	-0.00251
	(A_N * B * !X)	0.00468	0.00463	0.00456
	(A_N * !B * !X)	-0.00242	-0.00250	-0.00252
	(A_N * !B * !X)	0.00454	0.00457	0.00455
	(!A_N * !B * !X)	-0.00239	-0.00257	-0.00260
	(!A_N * !B * !X)	0.00460	0.00452	0.00447

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00262	0.00242	0.00239	1.28485
sky130_fd_sc_hs__and3_2	0.00260	0.00239	0.00242	2.45077
sky130_fd_sc_hs__and3_4	0.00474	0.00461	0.00477	4.61896

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	13.06160	54.53910
sky130_fd_sc_hs__and3_2	0.00000	19.18860	54.81980
sky130_fd_sc_hs__and3_4	0.00000	38.37560	109.63800

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)	0.07604	0.55657	6.62659
	B->X (RR)	0.08330	0.55476	6.52771
	C->X (RR)	0.08722	0.53855	6.35275
sky130_fd_sc_hs__and3_2	A->X (RR)	0.08694	0.50724	6.67211
	B->X (RR)	0.09407	0.50116	6.56791
	C->X (RR)	0.09799	0.47881	6.29951
sky130_fd_sc_hs__and3_4	A->X (RR)	0.09302	0.45994	6.84425
	B->X (RR)	0.10352	0.45750	6.75752
	C->X (RR)	0.10819	0.42238	6.43972

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.06991	0.45359	4.59500
	B->X (FF)	0.07891	0.47965	4.70388
	C->X (FF)	0.08041	0.48945	4.79810
sky130_fd_sc_hs__and3_2	A->X (FF)	0.08374	0.45120	4.56295
	B->X (FF)	0.09219	0.47306	4.67004
	C->X (FF)	0.09588	0.48543	4.78530
sky130_fd_sc_hs__and3_4	A->X (FF)	0.07781	0.40067	4.44420
	B->X (FF)	0.08693	0.42393	4.54766
	C->X (FF)	0.09295	0.44401	4.77016

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.01045	0.01412	0.08708
	A	0.00588	0.00957	0.08261
	B	0.01102	0.01398	0.08518
	B	0.00591	0.00888	0.08027
	C	0.01203	0.01461	0.08300
	C	0.00586	0.00843	0.07714
sky130_fd_sc_hs__and3_2	A	0.01380	0.01703	0.08964
	A	0.00925	0.01251	0.08523
	B	0.01434	0.01702	0.08752
	B	0.00927	0.01199	0.08279
	C	0.01540	0.01750	0.07770
	C	0.00924	0.01134	0.07239
sky130_fd_sc_hs__and3_4	A	0.02651	0.03275	0.17401
	A	0.01809	0.02435	0.17673
	B	0.02860	0.03345	0.17204
	B	0.01818	0.02311	0.16161
	C	0.03089	0.03528	0.17186
	C	0.01816	0.02256	0.16025

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00312	0.00778	0.07531
	A	0.00770	0.01223	0.07978
	B	0.00425	0.00870	0.07656
	B	0.00933	0.01377	0.08106
	C	0.00465	0.00929	0.08100
	C	0.01075	0.01531	0.08570
sky130_fd_sc_hs__and3_2	A	0.00647	0.01072	0.07970
	A	0.01103	0.01526	0.08326
	B	0.00770	0.01183	0.07983
	B	0.01273	0.01685	0.08482
	C	0.00793	0.01193	0.08025
	C	0.01401	0.01798	0.08631
sky130_fd_sc_hs__and3_4	A	0.01378	0.02210	0.15907
	A	0.02218	0.03041	0.16743
	B	0.01581	0.02383	0.16173
	B	0.02619	0.03408	0.17090
	C	0.01676	0.02491	0.17131
	C	0.02931	0.03730	0.18181

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00095	0.00095	0.00091
	(B * !C * !X)	-0.00188	-0.00190	-0.00198
	(!B * !X)	0.00095	0.00095	0.00093
	(!B * !X)	-0.00194	-0.00195	-0.00198
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00102	0.00103	0.00098
	(B * !C * !X)	-0.00180	-0.00182	-0.00189
	(!B * !X)	0.00102	0.00103	0.00101
	(!B * !X)	-0.00185	-0.00186	-0.00190
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00128	0.00128	0.00117
	(B * !C * !X)	-0.00372	-0.00373	-0.00393
	(!B * !X)	0.00131	0.00130	0.00123
	(!B * !X)	-0.00385	-0.00385	-0.00395

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00079	-0.00079	-0.00078
	(B * !C * !X)	0.00212	0.00213	0.00211
	(!B * !X)	-0.00080	-0.00079	-0.00079
	(!B * !X)	0.00212	0.00211	0.00211
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00073	-0.00073	-0.00073
	(B * !C * !X)	0.00213	0.00214	0.00214
	(!B * !X)	-0.00076	-0.00077	-0.00075
	(!B * !X)	0.00215	0.00218	0.00215
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00068	-0.00070	-0.00068
	(B * !C * !X)	0.00445	0.00452	0.00445
	(!B * !X)	-0.00072	-0.00074	-0.00071
	(!B * !X)	0.00446	0.00453	0.00446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00060	0.00061	0.00060
	(A * !C * !X)	-0.00173	-0.00173	-0.00172
	(!A * C * !X)	0.00137	0.00138	0.00138
	(!A * C * !X)	-0.00172	-0.00173	-0.00172
	(!A * !C * !X)	0.00077	0.00077	0.00077
	(!A * !C * !X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00064	0.00064	0.00065
	(A * !C * !X)	-0.00163	-0.00164	-0.00163
	(!A * C * !X)	0.00143	0.00144	0.00143
	(!A * C * !X)	-0.00163	-0.00164	-0.00163
	(!A * !C * !X)	0.00080	0.00080	0.00080
	(!A * !C * !X)	-0.00164	-0.00163	-0.00164
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00150	0.00151	0.00152
	(A * !C * !X)	-0.00325	-0.00326	-0.00322
	(!A * C * !X)	0.00310	0.00312	0.00311
	(!A * C * !X)	-0.00324	-0.00324	-0.00323
	(!A * !C * !X)	0.00186	0.00188	0.00187
	(!A * !C * !X)	-0.00326	-0.00329	-0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00044	-0.00045	-0.00046
	(A * !C * !X)	0.00189	0.00190	0.00186
	(!A * C * !X)	-0.00107	-0.00123	-0.00125
	(!A * C * !X)	0.00204	0.00189	0.00186
	(!A * !C * !X)	-0.00066	-0.00067	-0.00069
	(!A * !C * !X)	0.00195	0.00198	0.00188
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00036	-0.00037	-0.00038
	(A * !C * !X)	0.00192	0.00192	0.00189
	(!A * C * !X)	-0.00100	-0.00117	-0.00118
	(!A * C * !X)	0.00207	0.00192	0.00189
	(!A * !C * !X)	-0.00058	-0.00059	-0.00061
	(!A * !C * !X)	0.00197	0.00200	0.00191
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00093	-0.00095	-0.00097
	(A * !C * !X)	0.00387	0.00392	0.00378
	(!A * C * !X)	-0.00215	-0.00259	-0.00261
	(!A * C * !X)	0.00418	0.00379	0.00375
	(!A * !C * !X)	-0.00142	-0.00142	-0.00147
	(!A * !C * !X)	0.00398	0.00403	0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00141	0.00143	0.00142
	(A * !B * !X)	-0.00177	-0.00178	-0.00177
	(!A * B * !X)	0.00137	0.00138	0.00138
	(!A * B * !X)	-0.00177	-0.00178	-0.00177
	(!A * !B * !X)	0.00140	0.00142	0.00140
	(!A * !B * !X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00146	0.00147	0.00146
	(A * !B * !X)	-0.00172	-0.00173	-0.00172
	(!A * B * !X)	0.00143	0.00145	0.00143
	(!A * B * !X)	-0.00172	-0.00173	-0.00172
	(!A * !B * !X)	0.00144	0.00146	0.00144
	(!A * !B * !X)	-0.00172	-0.00173	-0.00172
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00307	0.00310	0.00307
	(A * !B * !X)	-0.00342	-0.00343	-0.00342
	(!A * B * !X)	0.00302	0.00306	0.00303
	(!A * B * !X)	-0.00341	-0.00343	-0.00341
	(!A * !B * !X)	0.00303	0.00308	0.00305
	(!A * !B * !X)	-0.00340	-0.00344	-0.00342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00120	-0.00127	-0.00129
	(A * !B * !X)	0.00196	0.00191	0.00190
	(!A * B * !X)	-0.00113	-0.00126	-0.00128
	(!A * B * !X)	0.00196	0.00193	0.00190
	(!A * !B * !X)	-0.00125	-0.00128	-0.00129
	(!A * !B * !X)	0.00191	0.00191	0.00190
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00112	-0.00120	-0.00121
	(A * !B * !X)	0.00204	0.00199	0.00198
	(!A * B * !X)	-0.00106	-0.00118	-0.00120
	(!A * B * !X)	0.00205	0.00200	0.00198
	(!A * !B * !X)	-0.00117	-0.00121	-0.00121
	(!A * !B * !X)	0.00198	0.00198	0.00197
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00238	-0.00255	-0.00258
	(A * !B * !X)	0.00399	0.00394	0.00392
	(!A * B * !X)	-0.00226	-0.00252	-0.00256
	(!A * B * !X)	0.00404	0.00398	0.00392
	(!A * !B * !X)	-0.00248	-0.00258	-0.00259
	(!A * !B * !X)	0.00390	0.00393	0.00391

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00237	0.00240	0.00253	0.00247	1.12859
sky130_fd_sc_hs__and4bb_2	0.00240	0.00229	0.00278	0.00284	2.35984
sky130_fd_sc_hs__and4bb_4	0.00260	0.00276	0.00516	0.00501	4.56542

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	29.43660	72.94690
sky130_fd_sc_hs__and4bb_2	0.00000	34.19750	50.16240
sky130_fd_sc_hs__and4bb_4	0.00000	43.31490	90.02070

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)	0.14855	0.73501	7.76061
	B_N->X (FR)	0.15549	0.73722	7.65754
	C->X (RR)	0.11816	0.61557	6.69203
	D->X (RR)	0.12201	0.60041	6.54036
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.14670	0.63321	7.63209
	B_N->X (FR)	0.16269	0.65078	7.64854
	C->X (RR)	0.12274	0.52822	6.60614
	D->X (RR)	0.12813	0.50829	6.30728
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.18195	0.63572	7.88383
	B_N->X (FR)	0.20295	0.65965	7.91055
	C->X (RR)	0.15099	0.49972	6.95811
	D->X (RR)	0.15576	0.47415	6.67208

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)	0.10415	0.35502	2.66731
	B_N->X (RF)	0.10859	0.36271	2.65499
	C->X (FF)	0.08874	0.49073	4.47390
	D->X (FF)	0.09497	0.50942	4.62042
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.10539	0.32762	2.86735
	B_N->X (RF)	0.11611	0.34850	2.95025
	C->X (FF)	0.09232	0.48316	4.66469
	D->X (FF)	0.09823	0.49972	4.80316
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.11447	0.30740	2.76098
	B_N->X (RF)	0.11778	0.31595	2.77988
	C->X (FF)	0.08497	0.42320	4.46934
	D->X (FF)	0.08985	0.44125	4.67326

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	0.01108	0.01613	0.09568
	A_N	0.01449	0.01955	0.09951
	B_N	0.01188	0.01708	0.09753
	B_N	0.01572	0.02093	0.10180
	C	0.01313	0.01569	0.08708
	C	0.00907	0.01164	0.08309
	D	0.01407	0.01655	0.09110
	D	0.00921	0.01169	0.08640
sky130_fd_sc_hs__and4bb_2	A_N	0.01402	0.01888	0.10012
	A_N	0.01728	0.02226	0.10427
	B_N	0.01580	0.02015	0.09749
	B_N	0.01919	0.02352	0.10174
	C	0.01693	0.01851	0.08925
	C	0.01222	0.01381	0.08479
	D	0.01821	0.01923	0.07866
	D	0.01239	0.01342	0.07364
sky130_fd_sc_hs__and4bb_4	A_N	0.02947	0.03357	0.12604
	A_N	0.03245	0.03687	0.13048
	B_N	0.03191	0.03567	0.12735
	B_N	0.03541	0.03923	0.13218
	C	0.03429	0.03666	0.17213
	C	0.02549	0.02789	0.16332
	D	0.03626	0.03827	0.17059
	D	0.02556	0.02766	0.16023

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01246	0.01654	0.09423
	A_N	0.00903	0.01304	0.09046
	B_N	0.01285	0.01753	0.09988
	B_N	0.00900	0.01363	0.09580
	C	0.00551	0.00990	0.08281
	C	0.00955	0.01390	0.08633
	D	0.00602	0.01050	0.08637
	D	0.01081	0.01521	0.09089
sky130_fd_sc_hs__and4bb_2	A_N	0.01517	0.01946	0.10084
	A_N	0.01190	0.01616	0.09758
	B_N	0.01605	0.02022	0.09729
	B_N	0.01266	0.01684	0.09364
	C	0.00835	0.01254	0.07974
	C	0.01308	0.01711	0.08320
	D	0.00882	0.01247	0.08042
	D	0.01458	0.01816	0.08454
sky130_fd_sc_hs__and4bb_4	A_N	0.02581	0.03091	0.12629
	A_N	0.02283	0.02785	0.12252
	B_N	0.02785	0.03283	0.12974
	B_N	0.02435	0.02927	0.12499
	C	0.01618	0.02337	0.15733
	C	0.02499	0.03211	0.16608
	D	0.01773	0.02455	0.16677
	D	0.02829	0.03497	0.17596

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)	0.00623	0.01054	0.08643
	(B_N * !X)	0.00241	0.00671	0.08259
	(!B_N * C * !D * !X)	0.00634	0.01065	0.08654
	(!B_N * C * !D * !X)	0.00249	0.00678	0.08268
	(!B_N * !C * !X)	0.00634	0.01066	0.08654
	(!B_N * !C * !X)	0.00250	0.00680	0.08269
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00641	0.01077	0.08805
	(B_N * !X)	0.00253	0.00687	0.08416
	(!B_N * C * !D * !X)	0.00650	0.01087	0.08814
	(!B_N * C * !D * !X)	0.00259	0.00695	0.08423
	(!B_N * !C * !X)	0.00650	0.01087	0.08814
	(!B_N * !C * !X)	0.00261	0.00697	0.08424
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00884	0.01328	0.09849
	(B_N * !X)	0.00480	0.00924	0.09445
	(!B_N * C * !D * !X)	0.00924	0.01367	0.09888
	(!B_N * C * !D * !X)	0.00514	0.00957	0.09480
	(!B_N * !C * !X)	0.00923	0.01366	0.09888
	(!B_N * !C * !X)	0.00517	0.00960	0.09482

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)	0.00066	0.00555	0.08164
	(B_N * !X)	0.00447	0.00940	0.08548
	(!B_N * C * !D * !X)	0.00029	0.00517	0.08124
	(!B_N * C * !D * !X)	0.00421	0.00914	0.08517
	(!B_N * !C * !X)	0.00026	0.00515	0.08123
	(!B_N * !C * !X)	0.00411	0.00904	0.08509
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00059	0.00557	0.08306
	(B_N * !X)	0.00446	0.00946	0.08695
	(!B_N * C * !D * !X)	0.00024	0.00522	0.08267
	(!B_N * C * !D * !X)	0.00424	0.00923	0.08667
	(!B_N * !C * !X)	0.00021	0.00519	0.08266
	(!B_N * !C * !X)	0.00412	0.00912	0.08658
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00168	0.00664	0.09154
	(B_N * !X)	0.00573	0.01071	0.09558
	(!B_N * C * !D * !X)	0.00118	0.00615	0.09100
	(!B_N * C * !D * !X)	0.00548	0.01046	0.09524
	(!B_N * !C * !X)	0.00112	0.00609	0.09097
	(!B_N * !C * !X)	0.00524	0.01022	0.09508

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)	0.00635	0.01055	0.08726
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00209	0.00628	0.08299
	(!C * !X)	0.00638	0.01071	0.08761
	(!C * !X)	0.00203	0.00635	0.08324
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00650	0.01044	0.08709
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00250	0.00643	0.08309
	(!C * !X)	0.00653	0.01083	0.08753
	(!C * !X)	0.00243	0.00671	0.08341
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00902	0.01295	0.09844
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00446	0.00837	0.09388
	(!C * !X)	0.00904	0.01336	0.09922
	(!C * !X)	0.00429	0.00860	0.09446

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)	0.00139	0.00630	0.08347
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00564	0.01057	0.08773
	(!C * !X)	0.00084	0.00579	0.08303
	(!C * !X)	0.00517	0.01015	0.08738
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00196	0.00680	0.08384
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00596	0.01081	0.08785
	(!C * !X)	0.00130	0.00618	0.08329
	(!C * !X)	0.00540	0.01030	0.08740
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00378	0.00872	0.09430
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00834	0.01330	0.09887
	(!C * !X)	0.00259	0.00755	0.09331
	(!C * !X)	0.00733	0.01231	0.09806

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)**	0.00206	0.00207	0.00206
	(A_N * B_N * D * !X)	-0.00137	-0.00138	-0.00137
	(A_N * B_N * !D * !X)	0.00156	0.00157	0.00156
	(A_N * B_N * !D * !X)	-0.00137	-0.00138	-0.00137
	(A_N * !B_N * D * !X)	0.00154	0.00155	0.00155
	(A_N * !B_N * D * !X)	-0.00190	-0.00191	-0.00190
	(A_N * !B_N * !D * !X)	0.00100	0.00100	0.00099
	(A_N * !B_N * !D * !X)	-0.00209	-0.00211	-0.00209
	(!A_N * B_N * D * !X)	0.00191	0.00193	0.00192
	(!A_N * B_N * D * !X)	-0.00152	-0.00153	-0.00152
	(!A_N * B_N * !D * !X)	0.00139	0.00140	0.00139
	(!A_N * B_N * !D * !X)	-0.00153	-0.00154	-0.00153
	(!A_N * !B_N * !D * !X)	0.00067	0.00067	0.00067
	(!A_N * !B_N * !D * !X)	-0.00206	-0.00207	-0.00206
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00223	0.00225	0.00223
	(A_N * B_N * D * !X)	-0.00161	-0.00163	-0.00162
	(A_N * B_N * !D * !X)	0.00163	0.00164	0.00163
	(A_N * B_N * !D * !X)	-0.00161	-0.00163	-0.00162
	(A_N * !B_N * D * !X)	0.00180	0.00182	0.00180
	(A_N * !B_N * D * !X)	-0.00206	-0.00208	-0.00206
	(A_N * !B_N * !D * !X)	0.00114	0.00115	0.00114
	(A_N * !B_N * !D * !X)	-0.00229	-0.00231	-0.00230
	(!A_N * B_N * D * !X)	0.00208	0.00210	0.00209
	(!A_N * B_N * D * !X)	-0.00177	-0.00178	-0.00177
	(!A_N * B_N * !D * !X)	0.00147	0.00148	0.00147
	(!A_N * B_N * !D * !X)	-0.00178	-0.00178	-0.00177
	(!A_N * !B_N * !D * !X)	0.00078	0.00079	0.00079
	(!A_N * !B_N * !D * !X)	-0.00224	-0.00225	-0.00224

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00345	0.00349	0.00346
	(A_N * B_N * D * !X)	-0.00380	-0.00383	-0.00381
	(A_N * B_N * !D * !X)	0.00235	0.00237	0.00235
	(A_N * B_N * !D * !X)	-0.00382	-0.00385	-0.00382
	(A_N * !B_N * D * !X)	0.00324	0.00324	0.00324
	(A_N * !B_N * D * !X)	-0.00406	-0.00406	-0.00406
	(A_N * !B_N * !D * !X)	0.00205	0.00206	0.00205
	(A_N * !B_N * !D * !X)	-0.00449	-0.00452	-0.00450
	(!A_N * B_N * D * !X)	0.00338	0.00341	0.00338
	(!A_N * B_N * D * !X)	-0.00390	-0.00392	-0.00389
	(!A_N * B_N * !D * !X)	0.00223	0.00226	0.00223
	(!A_N * B_N * !D * !X)	-0.00392	-0.00395	-0.00392
	(!A_N * !B_N * !D * !X)	0.00159	0.00159	0.00160
	(!A_N * !B_N * !D * !X)	-0.00417	-0.00417	-0.00420

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)**	-0.00131	-0.00132	-0.00132
	(A_N * B_N * D * !X)	0.00213	0.00213	0.00213
	(A_N * B_N * !D * !X)	-0.00087	-0.00089	-0.00087
	(A_N * B_N * !D * !X)	0.00218	0.00221	0.00216
	(A_N * !B_N * D * !X)	-0.00094	-0.00111	-0.00112
	(A_N * !B_N * D * !X)	0.00249	0.00235	0.00233
	(A_N * !B_N * !D * !X)	-0.00060	-0.00057	-0.00062
	(A_N * !B_N * !D * !X)	0.00261	0.00265	0.00259
	(!A_N * B_N * D * !X)	-0.00136	-0.00147	-0.00147
	(!A_N * B_N * D * !X)	0.00209	0.00199	0.00198
	(!A_N * B_N * !D * !X)	-0.00098	-0.00100	-0.00102
	(!A_N * B_N * !D * !X)	0.00206	0.00208	0.00200
	(!A_N * !B_N * !D * !X)	-0.00049	-0.00050	-0.00050
	(!A_N * !B_N * !D * !X)	0.00225	0.00229	0.00223
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00134	-0.00137	-0.00136
	(A_N * B_N * D * !X)	0.00249	0.00250	0.00250
	(A_N * B_N * !D * !X)	-0.00085	-0.00086	-0.00084
	(A_N * B_N * !D * !X)	0.00257	0.00259	0.00253
	(A_N * !B_N * D * !X)	-0.00105	-0.00124	-0.00125
	(A_N * !B_N * D * !X)	0.00279	0.00264	0.00262
	(A_N * !B_N * !D * !X)	-0.00065	-0.00063	-0.00066
	(A_N * !B_N * !D * !X)	0.00296	0.00303	0.00293
	(!A_N * B_N * D * !X)	-0.00140	-0.00152	-0.00152
	(!A_N * B_N * D * !X)	0.00244	0.00235	0.00234
	(!A_N * B_N * !D * !X)	-0.00096	-0.00097	-0.00099
	(!A_N * B_N * !D * !X)	0.00244	0.00246	0.00237
	(!A_N * !B_N * !D * !X)	-0.00048	-0.00050	-0.00050
	(!A_N * !B_N * !D * !X)	0.00255	0.00259	0.00253

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00256	-0.00261	-0.00260
	(A_N * B_N * D * !X)	0.00468	0.00470	0.00469
	(A_N * B_N * !D * !X)	-0.00163	-0.00164	-0.00160
	(A_N * B_N * !D * !X)	0.00484	0.00488	0.00477
	(A_N * !B_N * D * !X)	-0.00218	-0.00255	-0.00257
	(A_N * !B_N * D * !X)	0.00511	0.00478	0.00474
	(A_N * !B_N * !D * !X)	-0.00150	-0.00142	-0.00148
	(A_N * !B_N * !D * !X)	0.00535	0.00551	0.00532
	(!A_N * B_N * D * !X)	-0.00245	-0.00269	-0.00269
	(!A_N * B_N * D * !X)	0.00480	0.00463	0.00460
	(!A_N * B_N * !D * !X)	-0.00158	-0.00161	-0.00166
	(!A_N * B_N * !D * !X)	0.00485	0.00489	0.00470
	(!A_N * !B_N * !D * !X)	-0.00098	-0.00100	-0.00100
	(!A_N * !B_N * !D * !X)	0.00483	0.00490	0.00479

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)	0.00190	0.00191	0.00191
	(A_N * B_N * C * !X)	-0.00133	-0.00134	-0.00133
	(A_N * !C * !X)	0.00192	0.00193	0.00192
	(A_N * !C * !X)	-0.00133	-0.00134	-0.00133
	(A_N * !B_N * C * !X)	0.00156	0.00156	0.00155
	(A_N * !B_N * C * !X)	-0.00171	-0.00171	-0.00170
	(!A_N * B_N * C * !X)	0.00175	0.00177	0.00175
	(!A_N * B_N * C * !X)	-0.00148	-0.00150	-0.00149
	(!A_N * B_N * !C * !X)	0.00175	0.00177	0.00176
	(!A_N * B_N * !C * !X)	-0.00148	-0.00149	-0.00149
	(!A_N * !B_N * !C * !X)	0.00143	0.00145	0.00144
	(!A_N * !B_N * !C * !X)	-0.00182	-0.00184	-0.00182

sky130_fd_sc_hs__and4bb_2	(A_N * B_N * C * !X)	0.00205	0.00207	0.00206
	(A_N * B_N * C * !X)	-0.00173	-0.00174	-0.00173
	(A_N * !C * !X)	0.00206	0.00207	0.00206
	(A_N * !C * !X)	-0.00173	-0.00174	-0.00173
	(A_N * !B_N * C * !X)	0.00180	0.00182	0.00181
	(A_N * !B_N * C * !X)	-0.00200	-0.00201	-0.00200
	(!A_N * B_N * C * !X)	0.00190	0.00191	0.00190
	(!A_N * B_N * C * !X)	-0.00189	-0.00189	-0.00189
	(!A_N * B_N * !C * !X)	0.00190	0.00192	0.00191
	(!A_N * B_N * !C * !X)	-0.00188	-0.00190	-0.00189
	(!A_N * !B_N * !C * !X)	0.00169	0.00171	0.00169
	(!A_N * !B_N * !C * !X)	-0.00211	-0.00212	-0.00211
sky130_fd_sc_hs__and4bb_4	(A_N * B_N * C * !X)	0.00317	0.00320	0.00317
	(A_N * B_N * C * !X)	-0.00377	-0.00379	-0.00377
	(A_N * !C * !X)	0.00319	0.00321	0.00319
	(A_N * !C * !X)	-0.00377	-0.00379	-0.00377
	(A_N * !B_N * C * !X)	0.00305	0.00308	0.00306
	(A_N * !B_N * C * !X)	-0.00392	-0.00395	-0.00392
	(!A_N * B_N * C * !X)	0.00308	0.00308	0.00308
	(!A_N * B_N * C * !X)	-0.00386	-0.00385	-0.00386
	(!A_N * B_N * !C * !X)	0.00310	0.00312	0.00310
	(!A_N * B_N * !C * !X)	-0.00386	-0.00388	-0.00386
	(!A_N * !B_N * !C * !X)	0.00302	0.00303	0.00302
	(!A_N * !B_N * !C * !X)	-0.00396	-0.00397	-0.00395

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)**	-0.00108	-0.00117	-0.00117
	(A_N * B_N * C * !X)	0.00208	0.00211	0.00209
	(A_N * !C * !X)	-0.00115	-0.00117	-0.00118
	(A_N * !C * !X)	0.00210	0.00209	0.00209
	(A_N * !B_N * C * !X)	-0.00100	-0.00112	-0.00113
	(A_N * !B_N * C * !X)	0.00222	0.00217	0.00214
	(!A_N * B_N * C * !X)	-0.00122	-0.00132	-0.00133
	(!A_N * B_N * C * !X)	0.00195	0.00196	0.00194
	(!A_N * B_N * !C * !X)	-0.00130	-0.00133	-0.00133
	(!A_N * B_N * !C * !X)	0.00194	0.00194	0.00193
	(!A_N * !B_N * !C * !X)	-0.00123	-0.00129	-0.00130
	(!A_N * !B_N * !C * !X)	0.00203	0.00198	0.00196
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00109	-0.00119	-0.00120
	(A_N * B_N * C * !X)	0.00261	0.00264	0.00261
	(A_N * !C * !X)	-0.00115	-0.00119	-0.00120
	(A_N * !C * !X)	0.00260	0.00262	0.00261
	(A_N * !B_N * C * !X)	-0.00111	-0.00126	-0.00127
	(A_N * !B_N * C * !X)	0.00263	0.00259	0.00255
	(!A_N * B_N * C * !X)	-0.00124	-0.00134	-0.00135
	(!A_N * B_N * C * !X)	0.00247	0.00248	0.00246
	(!A_N * B_N * !C * !X)	-0.00131	-0.00135	-0.00136
	(!A_N * B_N * !C * !X)	0.00245	0.00246	0.00246
	(!A_N * !B_N * !C * !X)	-0.00135	-0.00143	-0.00145
	(!A_N * !B_N * !C * !X)	0.00242	0.00238	0.00237

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00214	-0.00231	-0.00233
	(A_N * B_N * C * !X)	0.00464	0.00470	0.00465
	(A_N * !C * !X)	-0.00223	-0.00232	-0.00234
	(A_N * !C * !X)	0.00463	0.00466	0.00465
	(A_N * !B_N * C * !X)	-0.00212	-0.00236	-0.00240
	(A_N * !B_N * C * !X)	0.00476	0.00469	0.00461
	(!A_N * B_N * C * !X)	-0.00222	-0.00240	-0.00242
	(!A_N * B_N * C * !X)	0.00459	0.00462	0.00456
	(!A_N * B_N * !C * !X)	-0.00232	-0.00241	-0.00244
	(!A_N * B_N * !C * !X)	0.00454	0.00456	0.00456
	(!A_N * !B_N * !C * !X)	-0.00232	-0.00248	-0.00252
	(!A_N * !B_N * !C * !X)	0.00457	0.00450	0.00447

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00251	0.00264	0.00254	0.00247	1.22182
sky130_fd_sc_hs__and4b_2	0.00233	0.00283	0.00282	0.00291	2.12397
sky130_fd_sc_hs__and4b_4	0.00256	0.00524	0.00562	0.00522	3.99669

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	20.30950	72.78160
sky130_fd_sc_hs__and4b_2	0.00000	25.06790	44.79930
sky130_fd_sc_hs__and4b_4	0.00000	37.61350	89.63960

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)	0.13681	0.70565	7.69012
	B->X (RR)	0.10684	0.61036	6.83829
	C->X (RR)	0.11296	0.59959	6.72158
	D->X (RR)	0.11848	0.58050	6.42108
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.15501	0.65319	7.58441
	B->X (RR)	0.11250	0.54048	6.54541
	C->X (RR)	0.11995	0.52741	6.41334
	D->X (RR)	0.12468	0.50604	6.05161
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.18839	0.65278	7.83266
	B->X (RR)	0.13000	0.50940	6.83065
	C->X (RR)	0.14502	0.49617	6.57226
	D->X (RR)	0.14615	0.47642	6.47264

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)	0.09792	0.35569	2.85341
	B->X (FF)	0.08079	0.47739	4.44178
	C->X (FF)	0.08767	0.49687	4.57811
	D->X (FF)	0.09376	0.51688	4.73488
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.11199	0.32654	2.48578
	B->X (FF)	0.08935	0.45583	4.17920
	C->X (FF)	0.09756	0.47673	4.31699
	D->X (FF)	0.10198	0.49021	4.44041
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.12534	0.31837	2.37823
	B->X (FF)	0.08765	0.41076	4.02628
	C->X (FF)	0.09561	0.43197	4.18144
	D->X (FF)	0.10929	0.46409	4.40352

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	0.01061	0.01569	0.09711
	A_N	0.01388	0.01899	0.10080
	B	0.01230	0.01455	0.08081
	B	0.00757	0.00984	0.07611
	C	0.01335	0.01544	0.08455
	C	0.00779	0.00988	0.07901
	D	0.01416	0.01554	0.07364
	D	0.00776	0.00914	0.06750
sky130_fd_sc_hs__and4b_2	A_N	0.01401	0.01871	0.09713
	A_N	0.01710	0.02183	0.10086
	B	0.01535	0.01741	0.08545
	B	0.01031	0.01239	0.08077
	C	0.01647	0.01830	0.08907
	C	0.01050	0.01235	0.08368
	D	0.01775	0.01892	0.07005
	D	0.01048	0.01169	0.06378
sky130_fd_sc_hs__and4b_4	A_N	0.02898	0.03354	0.12633
	A_N	0.03250	0.03709	0.13143
	B	0.03118	0.03492	0.16409
	B	0.02192	0.02566	0.16674
	C	0.03410	0.03673	0.15379
	C	0.02243	0.02507	0.14271
	D	0.03560	0.03828	0.17566
	D	0.02253	0.02524	0.16348

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.01159	0.01594	0.09809
	A_N	0.00831	0.01267	0.09459
	B	0.00437	0.00845	0.06973
	B	0.00908	0.01315	0.07399
	C	0.00466	0.00882	0.07250
	C	0.01017	0.01432	0.07798
	D	0.00539	0.00931	0.07342
	D	0.01168	0.01551	0.07912
sky130_fd_sc_hs__and4b_2	A_N	0.01585	0.01990	0.09562
	A_N	0.01276	0.01675	0.09239
	B	0.00783	0.01178	0.07829
	B	0.01285	0.01679	0.08244
	C	0.00862	0.01256	0.08208
	C	0.01452	0.01834	0.08688
	D	0.00879	0.01205	0.07980
	D	0.01589	0.01914	0.08604
sky130_fd_sc_hs__and4b_4	A_N	0.02776	0.03214	0.12204
	A_N	0.02423	0.02852	0.11815
	B	0.01494	0.02238	0.15448
	B	0.02420	0.03162	0.16357
	C	0.01617	0.02284	0.15985
	C	0.02769	0.03429	0.16885
	D	0.01874	0.02515	0.16675
	D	0.03152	0.03781	0.17738

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)	0.00622	0.01060	0.08801
	(B * C * !D * !X)	0.00189	0.00626	0.08368
	(B * !C * !X)	0.00622	0.01061	0.08801
	(B * !C * !X)	0.00189	0.00626	0.08368
	(!B * !X)	0.00620	0.01058	0.08799
	(!B * !X)	0.00190	0.00627	0.08368
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00694	0.01118	0.08686
	(B * C * !D * !X)	0.00283	0.00704	0.08273
	(B * !C * !X)	0.00694	0.01117	0.08686
	(B * !C * !X)	0.00283	0.00704	0.08273
	(!B * !X)	0.00692	0.01115	0.08683
	(!B * !X)	0.00283	0.00705	0.08273
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01071	0.01500	0.09914
	(B * C * !D * !X)	0.00573	0.01000	0.09416
	(B * !C * !X)	0.01070	0.01499	0.09913
	(B * !C * !X)	0.00573	0.01000	0.09416
	(!B * !X)	0.01063	0.01491	0.09904
	(!B * !X)	0.00573	0.01000	0.09415

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)	0.00019	0.00522	0.08278
	(B * C * !D * !X)	0.00464	0.00968	0.08720
	(B * !C * !X)	0.00016	0.00518	0.08276
	(B * !C * !X)	0.00456	0.00960	0.08715
	(!B * !X)	0.00017	0.00519	0.08278
	(!B * !X)	0.00448	0.00952	0.08710
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00036	0.00517	0.08107
	(B * C * !D * !X)	0.00464	0.00945	0.08531
	(B * !C * !X)	0.00035	0.00516	0.08107
	(B * !C * !X)	0.00456	0.00938	0.08526
	(!B * !X)	0.00034	0.00516	0.08109
	(!B * !X)	0.00445	0.00927	0.08519
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00090	0.00575	0.08948
	(B * C * !D * !X)	0.00615	0.01102	0.09466
	(B * !C * !X)	0.00087	0.00573	0.08948
	(B * !C * !X)	0.00601	0.01088	0.09458
	(!B * !X)	0.00087	0.00573	0.08953
	(!B * !X)	0.00576	0.01064	0.09443

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)**	0.00178	0.00180	0.00180
	(A_N * C * D * !X)	-0.00173	-0.00175	-0.00174
	(A_N * C * !D * !X)	0.00124	0.00124	0.00123
	(A_N * C * !D * !X)	-0.00175	-0.00175	-0.00175
	(A_N * !C * !X)	0.00122	0.00123	0.00122
	(A_N * !C * !X)	-0.00175	-0.00176	-0.00175
	(!A_N * C * !D * !X)	0.00065	0.00065	0.00065
	(!A_N * C * !D * !X)	-0.00211	-0.00211	-0.00214
	(!A_N * !C * !X)	0.00065	0.00065	0.00065
	(!A_N * !C * !X)	-0.00214	-0.00214	-0.00215
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00207	0.00209	0.00207
	(A_N * C * D * !X)	-0.00178	-0.00179	-0.00178
	(A_N * C * !D * !X)	0.00140	0.00141	0.00141
	(A_N * C * !D * !X)	-0.00178	-0.00179	-0.00179
	(A_N * !C * !X)	0.00146	0.00146	0.00145
	(A_N * !C * !X)	-0.00180	-0.00181	-0.00180
	(!A_N * C * !D * !X)	0.00074	0.00075	0.00075
	(!A_N * C * !D * !X)	-0.00220	-0.00221	-0.00223
	(!A_N * !C * !X)	0.00079	0.00078	0.00079
	(!A_N * !C * !X)	-0.00223	-0.00223	-0.00224
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00399	0.00403	0.00400
	(A_N * C * D * !X)	-0.00359	-0.00361	-0.00358
	(A_N * C * !D * !X)	0.00284	0.00287	0.00285
	(A_N * C * !D * !X)	-0.00360	-0.00363	-0.00361
	(A_N * !C * !X)	0.00295	0.00298	0.00295
	(A_N * !C * !X)	-0.00361	-0.00364	-0.00362
	(!A_N * C * !D * !X)	0.00168	0.00171	0.00170
	(!A_N * C * !D * !X)	-0.00429	-0.00433	-0.00438
	(!A_N * !C * !X)	0.00176	0.00178	0.00176
	(!A_N * !C * !X)	-0.00435	-0.00439	-0.00440

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)	-0.00114	-0.00133	-0.00135
	(A_N * C * D * !X)	0.00239	0.00222	0.00219
	(A_N * C * !D * !X)	-0.00074	-0.00079	-0.00082
	(A_N * C * !D * !X)	0.00237	0.00235	0.00225
	(A_N * !C * !X)	-0.00081	-0.00082	-0.00085
	(A_N * !C * !X)	0.00228	0.00231	0.00222
	(!A_N * C * !D * !X)	-0.00049	-0.00050	-0.00051
	(!A_N * C * !D * !X)	0.00231	0.00234	0.00229
	(!A_N * !C * !X)	-0.00050	-0.00051	-0.00051
	(!A_N * !C * !X)	0.00231	0.00235	0.00229
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00130	-0.00150	-0.00151
	(A_N * C * D * !X)	0.00257	0.00238	0.00235
	(A_N * C * !D * !X)	-0.00080	-0.00085	-0.00089
	(A_N * C * !D * !X)	0.00256	0.00254	0.00242
	(A_N * !C * !X)	-0.00092	-0.00093	-0.00097
	(A_N * !C * !X)	0.00248	0.00250	0.00239
	(!A_N * C * !D * !X)	-0.00048	-0.00049	-0.00049
	(!A_N * C * !D * !X)	0.00253	0.00256	0.00251
	(!A_N * !C * !X)	-0.00050	-0.00051	-0.00051
	(!A_N * !C * !X)	0.00253	0.00258	0.00251

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00290	-0.00322	-0.00330
	(A_N * C * D * !X)	0.00467	0.00436	0.00430
	(A_N * C * !D * !X)	-0.00205	-0.00214	-0.00223
	(A_N * C * !D * !X)	0.00467	0.00462	0.00441
	(A_N * !C * !X)	-0.00224	-0.00229	-0.00237
	(A_N * !C * !X)	0.00457	0.00460	0.00440
	(!A_N * C * !D * !X)	-0.00114	-0.00116	-0.00117
	(!A_N * C * !D * !X)	0.00497	0.00502	0.00494
	(!A_N * !C * !X)	-0.00117	-0.00120	-0.00121
	(!A_N * !C * !X)	0.00498	0.00503	0.00494

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)**	0.00180	0.00182	0.00181
	(A_N * B * D * !X)	-0.00155	-0.00157	-0.00156
	(A_N * B * !D * !X)	0.00127	0.00128	0.00127
	(A_N * B * !D * !X)	-0.00156	-0.00158	-0.00157
	(A_N * !B * D * !X)	0.00181	0.00182	0.00181
	(A_N * !B * D * !X)	-0.00156	-0.00157	-0.00156
	(A_N * !B * !D * !X)	0.00125	0.00124	0.00124
	(A_N * !B * !D * !X)	-0.00157	-0.00157	-0.00157
	(!A_N * B * !D * !X)	0.00093	0.00093	0.00092
	(!A_N * B * !D * !X)	-0.00172	-0.00173	-0.00171
	(!A_N * !B * D * !X)	0.00165	0.00167	0.00166
	(!A_N * !B * D * !X)	-0.00173	-0.00174	-0.00173
	(!A_N * !B * !D * !X)	0.00107	0.00107	0.00107
	(!A_N * !B * !D * !X)	-0.00174	-0.00175	-0.00174

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00183	0.00185	0.00183
	(A_N * B * D * !X)	-0.00176	-0.00177	-0.00176
	(A_N * B * !D * !X)	0.00117	0.00117	0.00117
	(A_N * B * !D * !X)	-0.00178	-0.00178	-0.00177
	(A_N * !B * D * !X)	0.00184	0.00186	0.00184
	(A_N * !B * D * !X)	-0.00176	-0.00178	-0.00177
	(A_N * !B * !D * !X)	0.00112	0.00113	0.00112
	(A_N * !B * !D * !X)	-0.00177	-0.00179	-0.00178
	(!A_N * B * !D * !X)	0.00078	0.00078	0.00078
	(!A_N * B * !D * !X)	-0.00193	-0.00194	-0.00192
	(!A_N * !B * D * !X)	0.00167	0.00169	0.00167
	(!A_N * !B * D * !X)	-0.00194	-0.00195	-0.00194
	(!A_N * !B * !D * !X)	0.00093	0.00095	0.00094
	(!A_N * !B * !D * !X)	-0.00194	-0.00196	-0.00195
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00376	0.00381	0.00378
	(A_N * B * D * !X)	-0.00381	-0.00384	-0.00382
	(A_N * B * !D * !X)	0.00265	0.00268	0.00266
	(A_N * B * !D * !X)	-0.00383	-0.00386	-0.00384
	(A_N * !B * D * !X)	0.00376	0.00379	0.00377
	(A_N * !B * D * !X)	-0.00383	-0.00385	-0.00383
	(A_N * !B * !D * !X)	0.00264	0.00265	0.00264
	(A_N * !B * !D * !X)	-0.00383	-0.00385	-0.00384
	(!A_N * B * !D * !X)	0.00212	0.00214	0.00215
	(!A_N * B * !D * !X)	-0.00394	-0.00396	-0.00392
	(!A_N * !B * D * !X)	0.00364	0.00364	0.00365
	(!A_N * !B * D * !X)	-0.00397	-0.00397	-0.00397
	(!A_N * !B * !D * !X)	0.00245	0.00247	0.00245
	(!A_N * !B * !D * !X)	-0.00400	-0.00402	-0.00400

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)	-0.00118	-0.00138	-0.00138
	(A_N * B * D * !X)	0.00213	0.00202	0.00201
	(A_N * B * !D * !X)	-0.00088	-0.00086	-0.00089
	(A_N * B * !D * !X)	0.00213	0.00218	0.00206
	(A_N * !B * D * !X)	-0.00135	-0.00139	-0.00139
	(A_N * !B * D * !X)	0.00200	0.00201	0.00200
	(A_N * !B * !D * !X)	-0.00088	-0.00090	-0.00087
	(A_N * !B * !D * !X)	0.00207	0.00209	0.00204
	(!A_N * B * !D * !X)	-0.00074	-0.00075	-0.00075
	(!A_N * B * !D * !X)	0.00191	0.00194	0.00189
	(!A_N * !B * D * !X)	-0.00139	-0.00153	-0.00153
	(!A_N * !B * D * !X)	0.00197	0.00188	0.00187
	(!A_N * !B * !D * !X)	-0.00096	-0.00098	-0.00099
	(!A_N * !B * !D * !X)	0.00197	0.00199	0.00190
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00108	-0.00127	-0.00129
	(A_N * B * D * !X)	0.00243	0.00234	0.00233
	(A_N * B * !D * !X)	-0.00069	-0.00066	-0.00070
	(A_N * B * !D * !X)	0.00246	0.00252	0.00239
	(A_N * !B * D * !X)	-0.00124	-0.00130	-0.00129
	(A_N * !B * D * !X)	0.00232	0.00234	0.00233
	(A_N * !B * !D * !X)	-0.00066	-0.00067	-0.00064
	(A_N * !B * !D * !X)	0.00240	0.00243	0.00237
	(!A_N * B * !D * !X)	-0.00048	-0.00049	-0.00049
	(!A_N * B * !D * !X)	0.00225	0.00229	0.00222
	(!A_N * !B * D * !X)	-0.00129	-0.00143	-0.00143
	(!A_N * !B * D * !X)	0.00228	0.00221	0.00220
	(!A_N * !B * !D * !X)	-0.00074	-0.00075	-0.00075
	(!A_N * !B * !D * !X)	0.00229	0.00232	0.00223

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00272	-0.00309	-0.00311
	(A_N * B * D * !X)	0.00472	0.00458	0.00452
	(A_N * B * !D * !X)	-0.00208	-0.00204	-0.00210
	(A_N * B * !D * !X)	0.00475	0.00485	0.00462
	(A_N * !B * D * !X)	-0.00299	-0.00312	-0.00313
	(A_N * !B * D * !X)	0.00451	0.00456	0.00452
	(A_N * !B * !D * !X)	-0.00211	-0.00212	-0.00207
	(A_N * !B * !D * !X)	0.00466	0.00471	0.00460
	(!A_N * B * !D * !X)	-0.00153	-0.00155	-0.00157
	(!A_N * B * !D * !X)	0.00461	0.00464	0.00454
	(!A_N * !B * D * !X)	-0.00286	-0.00315	-0.00317
	(!A_N * !B * D * !X)	0.00468	0.00454	0.00448
	(!A_N * !B * !D * !X)	-0.00201	-0.00201	-0.00205
	(!A_N * !B * !D * !X)	0.00472	0.00478	0.00459

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)**	0.00153	0.00154	0.00153
	(A_N * B * C * !X)	-0.00170	-0.00171	-0.00170
	(A_N * !C * !X)	0.00157	0.00157	0.00156
	(A_N * !C * !X)	-0.00171	-0.00171	-0.00171
	(A_N * !B * C * !X)	0.00152	0.00153	0.00153
	(A_N * !B * C * !X)	-0.00170	-0.00171	-0.00171
	(!A_N * B * !C * !X)	0.00141	0.00143	0.00142
	(!A_N * B * !C * !X)	-0.00186	-0.00187	-0.00186
	(!A_N * !B * C * !X)	0.00137	0.00138	0.00138
	(!A_N * !B * C * !X)	-0.00186	-0.00187	-0.00186
	(!A_N * !B * !C * !X)	0.00141	0.00142	0.00141
	(!A_N * !B * !C * !X)	-0.00187	-0.00187	-0.00186

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00182	0.00184	0.00182
	(A_N * B * C * !X)	-0.00191	-0.00193	-0.00192
	(A_N * !C * !X)	0.00185	0.00187	0.00186
	(A_N * !C * !X)	-0.00192	-0.00193	-0.00192
	(A_N * !B * C * !X)	0.00184	0.00184	0.00184
	(A_N * !B * C * !X)	-0.00192	-0.00193	-0.00192
	(!A_N * B * !C * !X)	0.00168	0.00171	0.00169
	(!A_N * B * !C * !X)	-0.00209	-0.00211	-0.00210
	(!A_N * !B * C * !X)	0.00165	0.00166	0.00166
	(!A_N * !B * C * !X)	-0.00210	-0.00210	-0.00210
	(!A_N * !B * !C * !X)	0.00167	0.00169	0.00167
	(!A_N * !B * !C * !X)	-0.00209	-0.00211	-0.00210
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00317	0.00318	0.00317
	(A_N * B * C * !X)	-0.00380	-0.00381	-0.00380
	(A_N * !C * !X)	0.00316	0.00320	0.00316
	(A_N * !C * !X)	-0.00380	-0.00384	-0.00381
	(A_N * !B * C * !X)	0.00317	0.00318	0.00316
	(A_N * !B * C * !X)	-0.00381	-0.00382	-0.00381
	(!A_N * B * !C * !X)	0.00303	0.00305	0.00303
	(!A_N * B * !C * !X)	-0.00395	-0.00396	-0.00395
	(!A_N * !B * C * !X)	0.00304	0.00305	0.00303
	(!A_N * !B * C * !X)	-0.00395	-0.00397	-0.00395
	(!A_N * !B * !C * !X)	0.00303	0.00304	0.00303
	(!A_N * !B * !C * !X)	-0.00395	-0.00396	-0.00395

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)**	-0.00097	-0.00110	-0.00112
	(A_N * B * C * !X)	0.00217	0.00218	0.00215
	(A_N * !C * !X)	-0.00109	-0.00113	-0.00114
	(A_N * !C * !X)	0.00216	0.00215	0.00215
	(A_N * !B * C * !X)	-0.00101	-0.00111	-0.00112
	(A_N * !B * C * !X)	0.00214	0.00217	0.00215
	(!A_N * B * !C * !X)	-0.00121	-0.00128	-0.00129
	(!A_N * B * !C * !X)	0.00202	0.00200	0.00199
	(!A_N * !B * C * !X)	-0.00115	-0.00126	-0.00128
	(!A_N * !B * C * !X)	0.00201	0.00202	0.00199
	(!A_N * !B * !C * !X)	-0.00124	-0.00128	-0.00129
	(!A_N * !B * !C * !X)	0.00200	0.00200	0.00199
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00114	-0.00128	-0.00129
	(A_N * B * C * !X)	0.00250	0.00251	0.00249
	(A_N * !C * !X)	-0.00125	-0.00130	-0.00131
	(A_N * !C * !X)	0.00247	0.00249	0.00249
	(A_N * !B * C * !X)	-0.00116	-0.00128	-0.00129
	(A_N * !B * C * !X)	0.00248	0.00252	0.00249
	(!A_N * B * !C * !X)	-0.00135	-0.00144	-0.00144
	(!A_N * B * !C * !X)	0.00235	0.00236	0.00235
	(!A_N * !B * C * !X)	-0.00129	-0.00141	-0.00143
	(!A_N * !B * C * !X)	0.00236	0.00239	0.00235
	(!A_N * !B * !C * !X)	-0.00138	-0.00144	-0.00144
	(!A_N * !B * !C * !X)	0.00234	0.00236	0.00235

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00219	-0.00250	-0.00253
	(A_N * B * C * !X)	0.00458	0.00456	0.00450
	(A_N * !C * !X)	-0.00240	-0.00249	-0.00251
	(A_N * !C * !X)	0.00448	0.00452	0.00450
	(A_N * !B * C * !X)	-0.00227	-0.00250	-0.00254
	(A_N * !B * C * !X)	0.00449	0.00454	0.00450
	(!A_N * B * !C * !X)	-0.00234	-0.00250	-0.00253
	(!A_N * B * !C * !X)	0.00454	0.00450	0.00447
	(!A_N * !B * C * !X)	-0.00227	-0.00254	-0.00258
	(!A_N * !B * C * !X)	0.00452	0.00451	0.00446
	(!A_N * !B * !C * !X)	-0.00245	-0.00254	-0.00256
	(!A_N * !B * !C * !X)	0.00444	0.00448	0.00445

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00266	0.00263	0.00253	0.00256	1.24842
sky130_fd_sc_hs__and4_2	0.00287	0.00295	0.00280	0.00277	2.14870
sky130_fd_sc_hs__and4_4	0.00498	0.00515	0.00563	0.00504	4.61300

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4_1	0.00000	11.17970	72.61550
sky130_fd_sc_hs__and4_2	0.00000	15.94020	44.63540
sky130_fd_sc_hs__and4_4	0.00000	31.91500	89.26830

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)	0.09560	0.61003	6.96683
	B->X (RR)	0.10463	0.61052	6.88464
	C->X (RR)	0.11002	0.59802	6.76534
	D->X (RR)	0.11608	0.57993	6.47710
sky130_fd_sc_hs__and4_2	A->X (RR)	0.10328	0.55395	6.77994
	B->X (RR)	0.11335	0.55143	6.68358
	C->X (RR)	0.11985	0.53710	6.55599
	D->X (RR)	0.12474	0.51499	6.16024
sky130_fd_sc_hs__and4_4	A->X (RR)	0.10996	0.49415	7.01649
	B->X (RR)	0.12289	0.49724	6.99115
	C->X (RR)	0.13584	0.48410	6.77804
	D->X (RR)	0.13646	0.46395	6.69968

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.07242	0.45161	4.36441
	B->X (FF)	0.08055	0.47420	4.45649
	C->X (FF)	0.08696	0.49335	4.59390
	D->X (FF)	0.09332	0.51201	4.73737
sky130_fd_sc_hs__and4_2	A->X (FF)	0.07677	0.42580	4.00586
	B->X (FF)	0.08669	0.45015	4.12899
	C->X (FF)	0.09340	0.46825	4.26853
	D->X (FF)	0.10284	0.49289	4.44133
sky130_fd_sc_hs__and4_4	A->X (FF)	0.07707	0.39823	4.41968
	B->X (FF)	0.08165	0.40827	4.43787
	C->X (FF)	0.08890	0.42872	4.59361
	D->X (FF)	0.09103	0.44160	4.74013

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.01159	0.01469	0.08415
	A	0.00685	0.00996	0.07941
	B	0.01245	0.01494	0.08248
	B	0.00689	0.00937	0.07699
	C	0.01342	0.01575	0.08591
	C	0.00689	0.00922	0.07937
	D	0.01451	0.01618	0.07600
	D	0.00688	0.00854	0.06858
sky130_fd_sc_hs__and4_2	A	0.01482	0.01755	0.08848
	A	0.00956	0.01229	0.08554
	B	0.01601	0.01804	0.08674
	B	0.00970	0.01173	0.08054
	C	0.01705	0.01886	0.09057
	C	0.00971	0.01154	0.08353
	D	0.01831	0.01942	0.06996
	D	0.00973	0.01087	0.06229
sky130_fd_sc_hs__and4_4	A	0.02841	0.03352	0.16767
	A	0.01934	0.02447	0.15888
	B	0.03073	0.03467	0.16672
	B	0.01928	0.02323	0.15549
	C	0.03351	0.03654	0.16270
	C	0.01933	0.02244	0.14851
	D	0.03477	0.03789	0.18302
	D	0.01937	0.02254	0.16789

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00379	0.00804	0.07388
	A	0.00853	0.01272	0.07797
	B	0.00437	0.00859	0.07356
	B	0.00991	0.01406	0.07870
	C	0.00480	0.00909	0.07697
	C	0.01126	0.01552	0.08272
	D	0.00523	0.00923	0.07646
	D	0.01273	0.01664	0.08390
sky130_fd_sc_hs__and4_2	A	0.00678	0.01096	0.07869
	A	0.01204	0.01616	0.08271
	B	0.00749	0.01148	0.07831
	B	0.01377	0.01774	0.08389
	C	0.00832	0.01249	0.08208
	C	0.01555	0.01955	0.08860
	D	0.00876	0.01228	0.07839
	D	0.01715	0.02046	0.08665
sky130_fd_sc_hs__and4_4	A	0.01370	0.02138	0.15620
	A	0.02277	0.03044	0.16526
	B	0.01441	0.02226	0.15760
	B	0.02582	0.03357	0.16896
	C	0.01561	0.02304	0.16342
	C	0.02959	0.03687	0.17607
	D	0.01765	0.02528	0.17600
	D	0.03271	0.04019	0.18830

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)	0.00060	0.00060	0.00054
	(B * C * !D * !X)	-0.00201	-0.00202	-0.00214
	(B * !C * !X)	0.00057	0.00056	0.00053
	(B * !C * !X)	-0.00207	-0.00208	-0.00215
	(!B * !X)	0.00056	0.00056	0.00055
	(!B * !X)	-0.00212	-0.00213	-0.00216
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00078	0.00078	0.00070
	(B * C * !D * !X)	-0.00222	-0.00223	-0.00238
	(B * !C * !X)	0.00074	0.00074	0.00070
	(B * !C * !X)	-0.00229	-0.00230	-0.00239
	(!B * !X)	0.00072	0.00072	0.00070
	(!B * !X)	-0.00236	-0.00236	-0.00240
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00117	0.00117	0.00104
	(B * C * !D * !X)	-0.00406	-0.00410	-0.00438
	(B * !C * !X)	0.00114	0.00114	0.00104
	(B * !C * !X)	-0.00418	-0.00422	-0.00441
	(!B * !X)	0.00108	0.00109	0.00105
	(!B * !X)	-0.00433	-0.00437	-0.00443

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)	-0.00040	-0.00041	-0.00040
	(B * C * !D * !X)	0.00227	0.00231	0.00228
	(B * !C * !X)	-0.00040	-0.00040	-0.00040
	(B * !C * !X)	0.00227	0.00229	0.00228
	(!B * !X)	-0.00041	-0.00042	-0.00041
	(!B * !X)	0.00227	0.00232	0.00228
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00044	-0.00045	-0.00043
	(B * C * !D * !X)	0.00264	0.00267	0.00264
	(B * !C * !X)	-0.00044	-0.00045	-0.00044
	(B * !C * !X)	0.00264	0.00267	0.00264
	(!B * !X)	-0.00045	-0.00046	-0.00045
	(!B * !X)	0.00264	0.00269	0.00265
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00050	-0.00052	-0.00050
	(B * C * !D * !X)	0.00490	0.00499	0.00492
	(B * !C * !X)	-0.00051	-0.00053	-0.00051
	(B * !C * !X)	0.00490	0.00497	0.00492
	(!B * !X)	-0.00055	-0.00056	-0.00054
	(!B * !X)	0.00492	0.00500	0.00493

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)**	0.00063	0.00063	0.00063
	(A * C * !D * !X)	-0.00176	-0.00175	-0.00175
	(A * !C * !X)	0.00063	0.00064	0.00063
	(A * !C * !X)	-0.00175	-0.00176	-0.00175
	(!A * C * D * !X)	0.00143	0.00145	0.00144
	(!A * C * D * !X)	-0.00175	-0.00176	-0.00175
	(!A * C * !D * !X)	0.00079	0.00080	0.00079
	(!A * C * !D * !X)	-0.00175	-0.00176	-0.00175
	(!A * !C * !X)	0.00077	0.00077	0.00077
	(!A * !C * !X)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00079	0.00079	0.00079
	(A * C * !D * !X)	-0.00204	-0.00204	-0.00203
	(A * !C * !X)	0.00082	0.00081	0.00081
	(A * !C * !X)	-0.00204	-0.00204	-0.00203
	(!A * C * D * !X)	0.00171	0.00173	0.00172
	(!A * C * D * !X)	-0.00203	-0.00205	-0.00203
	(!A * C * !D * !X)	0.00100	0.00100	0.00099
	(!A * C * !D * !X)	-0.00204	-0.00205	-0.00203
	(!A * !C * !X)	0.00098	0.00099	0.00098
	(!A * !C * !X)	-0.00203	-0.00205	-0.00204
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00166	0.00168	0.00166
	(A * C * !D * !X)	-0.00383	-0.00386	-0.00383
	(A * !C * !X)	0.00173	0.00175	0.00173
	(A * !C * !X)	-0.00385	-0.00387	-0.00384
	(!A * C * D * !X)	0.00331	0.00334	0.00332
	(!A * C * D * !X)	-0.00382	-0.00383	-0.00381
	(!A * C * !D * !X)	0.00201	0.00201	0.00201
	(!A * C * !D * !X)	-0.00385	-0.00386	-0.00385
	(!A * !C * !X)	0.00205	0.00208	0.00206
	(!A * !C * !X)	-0.00387	-0.00390	-0.00387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * C * !D * !X)	-0.00048	-0.00048	-0.00049
	(A * C * !D * !X)	0.00191	0.00194	0.00189
	(A * !C * !X)	-0.00049	-0.00049	-0.00049
	(A * !C * !X)	0.00192	0.00195	0.00189
	(!A * C * D * !X)	-0.00111	-0.00130	-0.00131
	(!A * C * D * !X)	0.00210	0.00192	0.00189
	(!A * C * !D * !X)	-0.00064	-0.00069	-0.00070
	(!A * C * !D * !X)	0.00207	0.00205	0.00195
	(!A * !C * !X)	-0.00067	-0.00067	-0.00069
	(!A * !C * !X)	0.00198	0.00199	0.00191
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00051	-0.00052	-0.00052
	(A * C * !D * !X)	0.00233	0.00234	0.00229
	(A * !C * !X)	-0.00053	-0.00053	-0.00054
	(A * !C * !X)	0.00233	0.00233	0.00229
	(!A * C * D * !X)	-0.00126	-0.00146	-0.00147
	(!A * C * D * !X)	0.00251	0.00232	0.00229
	(!A * C * !D * !X)	-0.00073	-0.00078	-0.00080
	(!A * C * !D * !X)	0.00250	0.00247	0.00236
	(!A * !C * !X)	-0.00077	-0.00078	-0.00080
	(!A * !C * !X)	0.00241	0.00242	0.00232

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00112	-0.00114	-0.00115
	(A * C * !D * !X)	0.00442	0.00446	0.00437
	(A * !C * !X)	-0.00116	-0.00119	-0.00119
	(A * !C * !X)	0.00443	0.00450	0.00437
	(!A * C * D * !X)	-0.00240	-0.00277	-0.00282
	(!A * C * D * !X)	0.00472	0.00441	0.00433
	(!A * C * !D * !X)	-0.00145	-0.00154	-0.00158
	(!A * C * !D * !X)	0.00473	0.00468	0.00448
	(!A * !C * !X)	-0.00157	-0.00161	-0.00165
	(!A * !C * !X)	0.00462	0.00465	0.00445

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)**	0.00074	0.00074	0.00073
	(A * B * !D * !X)	-0.00166	-0.00167	-0.00165
	(A * !B * D * !X)	0.00149	0.00151	0.00149
	(A * !B * D * !X)	-0.00169	-0.00170	-0.00169
	(A * !B * !D * !X)	0.00087	0.00087	0.00087
	(A * !B * !D * !X)	-0.00170	-0.00171	-0.00170
	(!A * B * D * !X)	0.00144	0.00146	0.00145
	(!A * B * D * !X)	-0.00169	-0.00170	-0.00169
	(!A * B * !D * !X)	0.00085	0.00085	0.00085
	(!A * B * !D * !X)	-0.00169	-0.00170	-0.00169
	(!A * !B * D * !X)	0.00147	0.00149	0.00148
	(!A * !B * D * !X)	-0.00169	-0.00171	-0.00170
	(!A * !B * !D * !X)	0.00088	0.00088	0.00087
	(!A * !B * !D * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00084	0.00085	0.00085
	(A * B * !D * !X)	-0.00186	-0.00188	-0.00186
	(A * !B * D * !X)	0.00171	0.00173	0.00172
	(A * !B * D * !X)	-0.00191	-0.00192	-0.00192
	(A * !B * !D * !X)	0.00104	0.00104	0.00103
	(A * !B * !D * !X)	-0.00192	-0.00193	-0.00192
	(!A * B * D * !X)	0.00166	0.00168	0.00167
	(!A * B * D * !X)	-0.00191	-0.00192	-0.00191
	(!A * B * !D * !X)	0.00099	0.00100	0.00099
	(!A * B * !D * !X)	-0.00191	-0.00192	-0.00191
	(!A * !B * D * !X)	0.00171	0.00173	0.00171
	(!A * !B * D * !X)	-0.00191	-0.00193	-0.00192
	(!A * !B * !D * !X)	0.00104	0.00105	0.00104
	(!A * !B * !D * !X)	-0.00191	-0.00193	-0.00192
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00210	0.00212	0.00213
	(A * B * !D * !X)	-0.00390	-0.00391	-0.00388
	(A * !B * D * !X)	0.00365	0.00366	0.00366
	(A * !B * D * !X)	-0.00397	-0.00398	-0.00397
	(A * !B * !D * !X)	0.00242	0.00243	0.00243
	(A * !B * !D * !X)	-0.00399	-0.00399	-0.00400
	(!A * B * D * !X)	0.00361	0.00365	0.00362
	(!A * B * D * !X)	-0.00395	-0.00398	-0.00396
	(!A * B * !D * !X)	0.00237	0.00239	0.00237
	(!A * B * !D * !X)	-0.00399	-0.00401	-0.00399
	(!A * !B * D * !X)	0.00363	0.00365	0.00364
	(!A * !B * D * !X)	-0.00397	-0.00398	-0.00397
	(!A * !B * !D * !X)	0.00245	0.00246	0.00245
	(!A * !B * !D * !X)	-0.00399	-0.00400	-0.00400

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)	-0.00056	-0.00057	-0.00057
	(A * B * !D * !X)	0.00187	0.00189	0.00184
	(A * !B * D * !X)	-0.00122	-0.00136	-0.00136
	(A * !B * D * !X)	0.00191	0.00184	0.00183
	(A * !B * !D * !X)	-0.00077	-0.00078	-0.00080
	(A * !B * !D * !X)	0.00191	0.00192	0.00185
	(!A * B * D * !X)	-0.00113	-0.00133	-0.00135
	(!A * B * D * !X)	0.00195	0.00184	0.00182
	(!A * B * !D * !X)	-0.00076	-0.00075	-0.00077
	(!A * B * !D * !X)	0.00193	0.00198	0.00187
	(!A * !B * D * !X)	-0.00130	-0.00137	-0.00137
	(!A * !B * D * !X)	0.00181	0.00183	0.00182
	(!A * !B * !D * !X)	-0.00082	-0.00084	-0.00082
	(!A * !B * !D * !X)	0.00188	0.00190	0.00185
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00055	-0.00056	-0.00056
	(A * B * !D * !X)	0.00221	0.00225	0.00218
	(A * !B * D * !X)	-0.00132	-0.00147	-0.00148
	(A * !B * D * !X)	0.00222	0.00217	0.00217
	(A * !B * !D * !X)	-0.00083	-0.00084	-0.00085
	(A * !B * !D * !X)	0.00226	0.00228	0.00219
	(!A * B * D * !X)	-0.00121	-0.00144	-0.00146
	(!A * B * D * !X)	0.00227	0.00218	0.00217
	(!A * B * !D * !X)	-0.00080	-0.00078	-0.00080
	(!A * B * !D * !X)	0.00229	0.00235	0.00221
	(!A * !B * D * !X)	-0.00140	-0.00148	-0.00148
	(!A * !B * D * !X)	0.00215	0.00217	0.00216
	(!A * !B * !D * !X)	-0.00089	-0.00090	-0.00088
	(!A * !B * !D * !X)	0.00223	0.00225	0.00220

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00152	-0.00154	-0.00156
	(A * B * !D * !X)	0.00459	0.00462	0.00452
	(A * !B * D * !X)	-0.00286	-0.00316	-0.00319
	(A * !B * D * !X)	0.00463	0.00451	0.00447
	(A * !B * !D * !X)	-0.00200	-0.00201	-0.00204
	(A * !B * !D * !X)	0.00468	0.00474	0.00456
	(!A * B * D * !X)	-0.00270	-0.00313	-0.00316
	(!A * B * D * !X)	0.00469	0.00455	0.00447
	(!A * B * !D * !X)	-0.00197	-0.00193	-0.00197
	(!A * B * !D * !X)	0.00472	0.00482	0.00459
	(!A * !B * D * !X)	-0.00302	-0.00318	-0.00319
	(!A * !B * D * !X)	0.00446	0.00450	0.00447
	(!A * !B * !D * !X)	-0.00212	-0.00213	-0.00209
	(!A * !B * !D * !X)	0.00462	0.00467	0.00456

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)	0.00145	0.00147	0.00146
	(A * B * !C * !X)	-0.00187	-0.00188	-0.00187
	(A * !B * C * !X)	0.00141	0.00142	0.00142
	(A * !B * C * !X)	-0.00187	-0.00188	-0.00187
	(A * !B * !C * !X)	0.00144	0.00146	0.00144
	(A * !B * !C * !X)	-0.00187	-0.00188	-0.00187
	(!A * B * C * !X)	0.00140	0.00142	0.00141
	(!A * B * C * !X)	-0.00186	-0.00188	-0.00187
	(!A * !C * !X)	0.00144	0.00146	0.00144
	(!A * !C * !X)	-0.00187	-0.00188	-0.00187
	(!A * !B * C * !X)	0.00141	0.00142	0.00141
	(!A * !B * C * !X)	-0.00187	-0.00188	-0.00187

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00174	0.00177	0.00175
	(A * B * !C * !X)	-0.00197	-0.00199	-0.00198
	(A * !B * C * !X)	0.00171	0.00172	0.00171
	(A * !B * C * !X)	-0.00198	-0.00199	-0.00198
	(A * !B * !C * !X)	0.00174	0.00176	0.00174
	(A * !B * !C * !X)	-0.00198	-0.00199	-0.00198
	(!A * B * C * !X)	0.00169	0.00169	0.00169
	(!A * B * C * !X)	-0.00198	-0.00198	-0.00198
	(!A * !C * !X)	0.00173	0.00176	0.00174
	(!A * !C * !X)	-0.00197	-0.00199	-0.00198
	(!A * !B * C * !X)	0.00170	0.00171	0.00170
	(!A * !B * C * !X)	-0.00198	-0.00199	-0.00198
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00293	0.00296	0.00295
	(A * B * !C * !X)	-0.00387	-0.00389	-0.00388
	(A * !B * C * !X)	0.00293	0.00295	0.00293
	(A * !B * C * !X)	-0.00388	-0.00389	-0.00388
	(A * !B * !C * !X)	0.00292	0.00296	0.00293
	(A * !B * !C * !X)	-0.00387	-0.00390	-0.00388
	(!A * B * C * !X)	0.00291	0.00294	0.00291
	(!A * B * C * !X)	-0.00387	-0.00390	-0.00387
	(!A * !C * !X)	0.00291	0.00294	0.00292
	(!A * !C * !X)	-0.00387	-0.00390	-0.00388
	(!A * !B * C * !X)	0.00293	0.00293	0.00292
	(!A * !B * C * !X)	-0.00388	-0.00388	-0.00388

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)**	-0.00125	-0.00131	-0.00133
	(A * B * !C * !X)	0.00201	0.00201	0.00200
	(A * !B * C * !X)	-0.00119	-0.00130	-0.00131
	(A * !B * C * !X)	0.00200	0.00202	0.00200
	(A * !B * !C * !X)	-0.00129	-0.00132	-0.00133
	(A * !B * !C * !X)	0.00200	0.00200	0.00200
	(!A * B * C * !X)	-0.00115	-0.00129	-0.00131
	(!A * B * C * !X)	0.00202	0.00202	0.00200
	(!A * !C * !X)	-0.00128	-0.00132	-0.00133
	(!A * !C * !X)	0.00200	0.00200	0.00200
	(!A * !B * C * !X)	-0.00120	-0.00130	-0.00132
	(!A * !B * C * !X)	0.00199	0.00202	0.00200
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00143	-0.00149	-0.00151
	(A * B * !C * !X)	0.00223	0.00224	0.00223
	(A * !B * C * !X)	-0.00135	-0.00148	-0.00149
	(A * !B * C * !X)	0.00223	0.00225	0.00223
	(A * !B * !C * !X)	-0.00146	-0.00150	-0.00151
	(A * !B * !C * !X)	0.00223	0.00224	0.00223
	(!A * B * C * !X)	-0.00132	-0.00147	-0.00148
	(!A * B * C * !X)	0.00225	0.00225	0.00223
	(!A * !C * !X)	-0.00145	-0.00150	-0.00151
	(!A * !C * !X)	0.00223	0.00224	0.00223
	(!A * !B * C * !X)	-0.00136	-0.00148	-0.00150
	(!A * !B * C * !X)	0.00222	0.00225	0.00223

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00227	-0.00244	-0.00246
	(A * B * !C * !X)	0.00439	0.00441	0.00438
	(A * !B * C * !X)	-0.00218	-0.00243	-0.00247
	(A * !B * C * !X)	0.00439	0.00443	0.00438
	(A * !B * !C * !X)	-0.00237	-0.00246	-0.00248
	(A * !B * !C * !X)	0.00436	0.00440	0.00438
	(!A * B * C * !X)	-0.00209	-0.00241	-0.00246
	(!A * B * C * !X)	0.00445	0.00444	0.00438
	(!A * !C * !X)	-0.00234	-0.00245	-0.00247
	(!A * !C * !X)	0.00436	0.00440	0.00437
	(!A * !B * C * !X)	-0.00221	-0.00244	-0.00248
	(!A * !B * C * !X)	0.00437	0.00442	0.00438

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00256	1.23266
sky130_fd_sc_hs__buf_16	0.01674	19.15534
sky130_fd_sc_hs__buf_2	0.00275	2.26611
sky130_fd_sc_hs__buf_4	0.00379	4.76006
sky130_fd_sc_hs__buf_8	0.00856	8.96453
sky130_fd_sc_hs__bufbuf_16	0.00306	19.09520
sky130_fd_sc_hs__bufbuf_8	0.00239	9.06572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	12.75540	18.37570
sky130_fd_sc_hs__buf_16	0.00000	79.72010	113.13300
sky130_fd_sc_hs__buf_2	0.00000	12.94660	14.30680
sky130_fd_sc_hs__buf_4	0.00000	32.72540	37.30700
sky130_fd_sc_hs__buf_8	0.00000	39.86190	56.56760
sky130_fd_sc_hs__bufbuf_16	0.00000	94.21920	134.31400
sky130_fd_sc_hs__bufbuf_8	0.00000	52.61740	63.70130

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)	0.05247	0.50666	6.22958
sky130_fd_sc_hs__buf_16	A->X (RR)	0.05397	0.26232	6.34073
sky130_fd_sc_hs__buf_2	A->X (RR)	0.05506	0.42574	5.91214
sky130_fd_sc_hs__buf_4	A->X (RR)	0.06648	0.41507	6.77500
sky130_fd_sc_hs__buf_8	A->X (RR)	0.05404	0.30660	6.17064
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.15885	0.37412	6.23437
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.16605	0.39866	6.04945

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.06093	0.42971	4.49645
sky130_fd_sc_hs__buf_16	A->X (FF)	0.07278	0.35609	4.87034
sky130_fd_sc_hs__buf_2	A->X (FF)	0.07144	0.42728	4.43672
sky130_fd_sc_hs__buf_4	A->X (FF)	0.07048	0.38152	4.42809
sky130_fd_sc_hs__buf_8	A->X (FF)	0.07370	0.38519	4.89219
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.18499	0.46985	4.75140
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.16573	0.43462	4.53563

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00794	0.01157	0.07422
	A	0.00382	0.00746	0.07057
sky130_fd_sc_hs__buf_16	A	0.07790	0.10804	0.59511
	A	0.05091	0.08107	0.57290
sky130_fd_sc_hs__buf_2	A	0.01140	0.01487	0.07225
	A	0.00696	0.01049	0.06781
sky130_fd_sc_hs__buf_4	A	0.01928	0.02608	0.14823
	A	0.01319	0.01998	0.14688
sky130_fd_sc_hs__buf_8	A	0.03947	0.05298	0.28879
	A	0.02564	0.03921	0.27767
sky130_fd_sc_hs__bufbuf_16	A	0.09395	0.10361	0.21173
	A	0.08901	0.09868	0.21358
sky130_fd_sc_hs__bufbuf_8	A	0.04762	0.05323	0.13572
	A	0.04375	0.04966	0.13458

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00355	0.00838	0.07716
	A	0.00768	0.01246	0.08086
sky130_fd_sc_hs__buf_16	A	0.05587	0.08543	0.58420
	A	0.08286	0.11245	0.59720
sky130_fd_sc_hs__buf_2	A	0.00653	0.01134	0.07891
	A	0.01096	0.01567	0.08243
sky130_fd_sc_hs__buf_4	A	0.01401	0.02227	0.13778
	A	0.02012	0.02835	0.14388
sky130_fd_sc_hs__buf_8	A	0.02735	0.04226	0.28450
	A	0.04118	0.05604	0.29208
sky130_fd_sc_hs__bufbuf_16	A	0.09342	0.10125	0.21432
	A	0.09838	0.10616	0.21127
sky130_fd_sc_hs__bufbuf_8	A	0.04371	0.04984	0.13494
	A	0.04755	0.05354	0.13466

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00273	1.26919
sky130_fd_sc_hs__clkbuf_16	0.00925	19.28473
sky130_fd_sc_hs__clkbuf_2	0.00274	2.10600
sky130_fd_sc_hs__clkbuf_4	0.00252	4.72193
sky130_fd_sc_hs__clkbuf_8	0.00474	9.04879

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	7.05663	7.05670
sky130_fd_sc_hs__clkbuf_16	0.00000	70.52800	111.78900
sky130_fd_sc_hs__clkbuf_2	0.00000	10.58110	14.01900
sky130_fd_sc_hs__clkbuf_4	0.00000	17.63410	27.94870
sky130_fd_sc_hs__clkbuf_8	0.00000	35.26410	55.89430

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)**	0.05620	0.53604	6.68943
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.07582	0.35559	6.92001
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.06262	0.47338	6.26916
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.08034	0.46139	6.82614
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.07563	0.39555	6.71376

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.05879	0.56008	6.82725
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.08654	0.42746	7.19148
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.06726	0.49228	6.01377
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.08641	0.51266	6.89076
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.08342	0.45527	6.81480

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00744	0.01054	0.06594
	A	0.00303	0.00616	0.06158
sky130_fd_sc_hs__clkbuf_16	A	0.06187	0.07537	0.32835
	A	0.04694	0.06056	0.31324
sky130_fd_sc_hs__clkbuf_2	A	0.01013	0.01274	0.05879
	A	0.00585	0.00848	0.05533
sky130_fd_sc_hs__clkbuf_4	A	0.01624	0.01921	0.07639
	A	0.01218	0.01533	0.07245
sky130_fd_sc_hs__clkbuf_8	A	0.03111	0.03782	0.16046
	A	0.02346	0.03028	0.15284

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00292	0.00705	0.07117
	A	0.00730	0.01144	0.07542
sky130_fd_sc_hs__clkbuf_16	A	0.04443	0.05954	0.31899
	A	0.05939	0.07432	0.33212
sky130_fd_sc_hs__clkbuf_2	A	0.00486	0.00864	0.06619
	A	0.00915	0.01283	0.07028
sky130_fd_sc_hs__clkbuf_4	A	0.01096	0.01496	0.07605
	A	0.01502	0.01890	0.07955
sky130_fd_sc_hs__clkbuf_8	A	0.02165	0.02967	0.16001
	A	0.02930	0.03712	0.16540

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00259	1.28889
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00262	1.27652
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00265	1.28934
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00258	1.27241
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00261	1.26818
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00265	1.28613

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	12.61200	14.02400
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	7.08219	13.98190
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	7.08192	13.98190
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	23.72420	25.13650
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	7.13476	14.03470
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	7.13348	14.03420

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)**	0.08874	0.62032	7.34489
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.09966	0.63725	7.27671
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.11520	0.67008	7.39464
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.16208	0.69045	7.33258
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.22428	0.76160	7.38209
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.36174	0.91969	7.67069

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.09094	0.53005	5.92635
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.12302	0.58219	6.04804
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.18927	0.68632	6.33143
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.16394	0.59927	5.89725
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.25120	0.70984	6.12446
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.44790	0.94671	6.59107

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00617	0.01069	0.08502
	A	0.01037	0.01489	0.08951
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00629	0.01034	0.08124
	A	0.01053	0.01469	0.08581
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00710	0.01058	0.08002
	A	0.01137	0.01487	0.08462
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01355	0.01783	0.09234
	A	0.01773	0.02204	0.09690
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01433	0.01808	0.08887
	A	0.01855	0.02232	0.09341
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01732	0.02049	0.08933
	A	0.02160	0.02477	0.09407

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.01016	0.01418	0.08874
	A	0.00597	0.01000	0.08439
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01086	0.01449	0.08522
	A	0.00663	0.01024	0.08075
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01285	0.01614	0.08543
	A	0.00857	0.01184	0.08116
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01728	0.02111	0.09576
	A	0.01311	0.01694	0.09149
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01867	0.02203	0.09227
	A	0.01445	0.01782	0.08806
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.02312	0.02611	0.09527
	A	0.01884	0.02185	0.09064

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00332	1.51007
sky130_fd_sc_hs__clkinv_16	0.04944	22.12561
sky130_fd_sc_hs__clkinv_2	0.00635	2.97469
sky130_fd_sc_hs__clkinv_4	0.01260	5.71817
sky130_fd_sc_hs__clkinv_8	0.02522	10.80547

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	18.13320	36.17580
sky130_fd_sc_hs__clkinv_16	0.00000	84.28030	167.15300
sky130_fd_sc_hs__clkinv_2	0.00000	10.53740	20.89650
sky130_fd_sc_hs__clkinv_4	0.00000	21.07090	41.78780
sky130_fd_sc_hs__clkinv_8	0.00000	42.14360	83.57500

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)	0.02000	0.59420	8.84394
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01465	0.32487	8.73350
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01866	0.53858	9.26382
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01657	0.45737	9.09732
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01693	0.39142	8.98620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02598	0.68289	10.34200
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01852	0.34996	10.05910
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.02303	0.57674	10.23060
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.02033	0.48839	10.11890
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.02070	0.41197	9.92892

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00033	0.00198	0.02498
	A	0.00502	0.00741	0.03043
sky130_fd_sc_hs__clkinv_16	A	-0.01337	0.03511	0.28311
	A	0.06620	0.11483	0.36671
sky130_fd_sc_hs__clkinv_2	A	-0.00108	0.00295	0.03460
	A	0.00915	0.01333	0.04544
sky130_fd_sc_hs__clkinv_4	A	-0.00249	0.00704	0.07372
	A	0.01781	0.02751	0.09576
sky130_fd_sc_hs__clkinv_8	A	-0.00480	0.01742	0.16989
	A	0.03578	0.05828	0.21150

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00488	0.00609	0.01746
	A	-0.00046	0.00070	0.01199
sky130_fd_sc_hs__clkinv_16	A	0.05868	0.09140	0.26040
	A	-0.02087	0.01170	0.18058
sky130_fd_sc_hs__clkinv_2	A	0.00832	0.01090	0.03216
	A	-0.00190	0.00059	0.02176
sky130_fd_sc_hs__clkinv_4	A	0.01520	0.02151	0.06636
	A	-0.00507	0.00096	0.04606
sky130_fd_sc_hs__clkinv_8	A	0.02997	0.04713	0.14896
	A	-0.01060	0.00648	0.10772

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

Cell Name	Max Cap(pf)	
	HI	LO
sky130_fd_sc_hs__conb_1	-	-

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__conb_1	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00163	1.27239
sky130_fd_sc_hs__dlymetal6s4s_1	0.00163	1.27534
sky130_fd_sc_hs__dlymetal6s6s_1	0.00163	1.26844

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	12.35460	21.16980
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	12.35460	21.16980
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	12.35460	21.16980

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)**	0.06297	0.51056	5.92174
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.12533	0.57063	5.87623
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.18062	0.62306	5.89487

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.08964	0.53016	5.15045
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.17764	0.60586	5.15739
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.25943	0.68896	5.22230

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01920	0.02187	0.08048
	A	0.01657	0.01925	0.07840
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01920	0.02261	0.09536
	A	0.01658	0.01999	0.09290
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01922	0.02114	0.05903
	A	0.01659	0.01852	0.05641

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01676	0.01888	0.06135
	A	0.01938	0.02150	0.06258
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01678	0.01973	0.07368
	A	0.01940	0.02234	0.07487
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01678	0.01897	0.05611
	A	0.01939	0.02160	0.05753

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00177	0.00176	0.00555	0.00306	1.26422	1.18182
sky130_fd_sc_hs__dfbbn_2	0.00178	0.00178	0.00549	0.00306	2.41027	2.35102

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	55.13980	98.96500
sky130_fd_sc_hs__dfbbn_2	0.00000	58.25610	99.13820

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)	0.34809	0.93639	8.06101
	SET_B->Q (FR)	0.17228	0.79544	8.10450
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.38864	0.87796	8.01497
	SET_B->Q (FR)	0.19671	0.73637	8.07407

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)	0.35100	0.75081	4.96344
	RESET_B->Q (FF)	0.22548	0.65555	4.96431
	SET_B->Q (RF)	0.13920	0.42685	3.00595
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.38641	0.73401	4.82570
	RESET_B->Q (FF)	0.25875	0.63928	4.85274
	SET_B->Q (RF)	0.17201	0.42406	2.96997

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)	0.31810	0.93681	8.17049
	RESET_B->Q_N (FR)	0.19381	0.84689	8.18478
	SET_B->Q_N (RR)	0.10725	0.62382	6.57143
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.32480	0.84513	8.01726
	RESET_B->Q_N (FR)	0.19922	0.75369	8.05652
	SET_B->Q_N (RR)	0.11200	0.54146	6.47259

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)	0.28413	0.73154	4.79139
	SET_B->Q_N (FF)	0.11457	0.59549	5.04493
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.30921	0.72459	4.71953
	SET_B->Q_N (FF)	0.12576	0.58077	5.00581

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)	0.00070	0.04863	1.86951
	setup	CLK_N (F)	0.09111	0.02796	-1.85615
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00044	0.04640	1.87806
	setup	CLK_N (F)	0.08766	0.02475	-1.86536

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)	-0.12402	-0.18842	-0.85266
	setup	CLK_N (F)	0.14440	0.20283	0.86219
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12621	-0.18954	-0.85148
	setup	CLK_N (F)	0.14274	0.20200	0.86260

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)	0.00070	0.04863	1.86951
	setup	CLK_N (F)	0.09111	0.02796	-1.85615
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00044	0.04640	1.87806
	setup	CLK_N (F)	0.08766	0.02475	-1.86536

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)	-0.12402	-0.18842	-0.85266
	setup	CLK_N (F)	0.14440	0.20283	0.86219
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12621	-0.18954	-0.85148
	setup	CLK_N (F)	0.14274	0.20200	0.86260

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)	0.08429	0.02341	-1.64525
	removal	CLK_N (F)	0.01842	0.07051	1.73395
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08166	0.02094	-1.65483
	removal	CLK_N (F)	0.01682	0.07073	1.73990

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)	0.08429	0.02341	-1.64525
	removal	CLK_N (F)	0.01842	0.07051	1.73395
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08166	0.02094	-1.65483
	removal	CLK_N (F)	0.01682	0.07073	1.73990

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 ()	0.18988	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17012	0.65918	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.20470	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17506	0.65918	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)	-0.01577	-0.09499	-1.31750
	removal	CLK_N (F)	0.03017	0.10647	1.71519
	hold	RESET_B (R)	-0.05321	-0.08501	-0.46370
	setup	RESET_B (R)	0.10644	0.13025	0.89521
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01917	-0.09629	-1.02713
	removal	CLK_N (F)	0.02946	0.10647	1.71813
	hold	RESET_B (R)	-0.07473	-0.10761	-0.59456
	setup	RESET_B (R)	0.11719	0.15351	1.21070

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)	-0.01577	-0.09499	-1.31750
	removal	CLK_N (F)	0.03017	0.10647	1.71519
	hold	RESET_B (R)	-0.05321	-0.08501	-0.46370
	hold	RESET_B (R)	-0.05444	-0.08623	-0.46393
	setup	RESET_B (R)	0.10644	0.13025	0.89440
	setup	RESET_B (R)	0.08408	0.11500	0.89521
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01917	-0.09629	-1.02713
	removal	CLK_N (F)	0.02946	0.10647	1.71813
	hold	RESET_B (R)	-0.07847	-0.11793	-0.59488
	hold	RESET_B (R)	-0.07473	-0.10761	-0.59456
	setup	RESET_B (R)	0.11719	0.15351	1.20666
	setup	RESET_B (R)	0.08837	0.13746	1.21070

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 ()	0.12813	0.65918	16.50020
	min_pulse_width	SET_B ()	0.11578	0.65918	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.15036	0.65918	16.50020
	min_pulse_width	SET_B ()	0.13060	0.65918	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 ()	0.15530	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.14048	0.65918	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.15036	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.14048	0.65918	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 ()	0.14789	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.17753	0.65918	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.17012	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.18741	0.65918	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	0.01599	0.01848	0.06570
	CLK_N	0.01842	0.02094	0.06762
	SET_B	0.01641	0.02057	0.09992
	SET_B	0.02092	0.02510	0.10395
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02061	0.02229	0.06954
	CLK_N	0.02306	0.02477	0.07148
	SET_B	0.02043	0.02429	0.10354
	SET_B	0.02495	0.02880	0.10795

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01708	0.01989	0.06524
	CLK_N	0.01933	0.02214	0.06712
	RESET_B	0.02004	0.02169	0.04941
	RESET_B	0.02135	0.02300	0.05035
	SET_B	0.02090	0.02311	0.09981
	SET_B	0.01637	0.01857	0.09508
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02082	0.02353	0.06903
	CLK_N	0.02304	0.02574	0.07082
	RESET_B	0.02380	0.02537	0.05375
	RESET_B	0.02510	0.02667	0.05457
	SET_B	0.02460	0.02676	0.10319
	SET_B	0.02008	0.02220	0.09856

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01758	0.02040	0.06608
	CLK_N	0.01983	0.02264	0.06802
	RESET_B	0.02032	0.02192	0.05001
	RESET_B	0.02163	0.02323	0.05102
	SET_B	0.02119	0.02342	0.10014
	SET_B	0.01666	0.01885	0.09552
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02136	0.02409	0.07065
	CLK_N	0.02359	0.02631	0.07193
	RESET_B	0.02412	0.02571	0.05500
	RESET_B	0.02543	0.02699	0.05539
	SET_B	0.02493	0.02711	0.10409
	SET_B	0.02041	0.02253	0.09931

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01565	0.01815	0.06435
	CLK_N	0.01808	0.02059	0.06678
	SET_B	0.01612	0.02028	0.09892
	SET_B	0.02063	0.02479	0.10312
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02026	0.02194	0.06867
	CLK_N	0.02271	0.02441	0.07070
	SET_B	0.02013	0.02402	0.10321
	SET_B	0.02465	0.02852	0.10718

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)	0.01196	0.01326	0.04704
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00963	0.01092	0.04470
	(CLK_N * !SET_B * Q * !Q_N)	0.00788	0.00916	0.03904
	(CLK_N * !SET_B * Q * !Q_N)	0.00498	0.00625	0.03615
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00671	0.00794	0.03779
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00385	0.00506	0.03493
	!CLK_N	0.00465	0.00614	0.03718
	!CLK_N	0.00178	0.00326	0.03431
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01206	0.01337	0.04719
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00971	0.01101	0.04483
	(CLK_N * !SET_B * Q * !Q_N)	0.00790	0.00919	0.03913
	(CLK_N * !SET_B * Q * !Q_N)	0.00500	0.00627	0.03623
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00675	0.00798	0.03790
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00388	0.00510	0.03503
	!CLK_N	0.00470	0.00621	0.03730
	!CLK_N	0.00183	0.00332	0.03443

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)	0.01206	0.01352	0.04624
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01440	0.01585	0.04857
	(CLK_N * !SET_B * Q * !Q_N)	0.00340	0.00473	0.03420
	(CLK_N * !SET_B * Q * !Q_N)	0.00632	0.00764	0.03711
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00435	0.00573	0.03539
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00722	0.00860	0.03826
	!CLK_N	0.00226	0.00394	0.03465
	!CLK_N	0.00513	0.00681	0.03751
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01209	0.01355	0.04632
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01444	0.01590	0.04868
	(CLK_N * !SET_B * Q * !Q_N)	0.00333	0.00466	0.03418
	(CLK_N * !SET_B * Q * !Q_N)	0.00625	0.00758	0.03710
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00439	0.00577	0.03549
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00726	0.00865	0.03836
	!CLK_N	0.00229	0.00395	0.03474
	!CLK_N	0.00516	0.00682	0.03761

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)	0.01342	0.01536	0.06892
	(CLK_N * D * SET_B * !Q * Q_N)	0.01061	0.01254	0.06610
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00842	0.01049	0.06095
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00507	0.00714	0.05760
	(!SET_B * Q * !Q_N)	0.00809	0.01032	0.06119
	(!SET_B * Q * !Q_N)	0.00468	0.00689	0.05776
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01354	0.01548	0.06929
	(CLK_N * D * SET_B * !Q * Q_N)	0.01067	0.01261	0.06642
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00847	0.01056	0.06129
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00508	0.00717	0.05790
	(!SET_B * Q * !Q_N)	0.00811	0.01034	0.06137
	(!SET_B * Q * !Q_N)	0.00465	0.00687	0.05792

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)	0.01198	0.01473	0.06835
	(CLK_N * D * SET_B * !Q * Q_N)	0.01480	0.01755	0.07117
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00436	0.00701	0.05756
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00771	0.01037	0.06091
	(!SET_B * Q * !Q_N)	0.00271	0.00545	0.05627
	(!SET_B * Q * !Q_N)	0.00616	0.00890	0.05971
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01209	0.01484	0.06871
	(CLK_N * D * SET_B * !Q * Q_N)	0.01496	0.01771	0.07158
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00446	0.00713	0.05793
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00785	0.01051	0.06132
	(!SET_B * Q * !Q_N)	0.00272	0.00547	0.05642
	(!SET_B * Q * !Q_N)	0.00620	0.00896	0.05990

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)	0.00401	0.00407	0.00403
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00385	-0.00389	-0.00386
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01273	0.01503	0.08392
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00413	0.00640	0.07531
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00398	0.00403	0.00400
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00383	-0.00386	-0.00384
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01272	0.01505	0.08387
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00420	0.00648	0.07533

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)	-0.00300	-0.00320	-0.00322
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00492	0.00474	0.00469
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00201	0.00571	0.07615
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01062	0.01436	0.08477
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00296	-0.00316	-0.00318
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00490	0.00472	0.00467
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00197	0.00568	0.07605
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01051	0.01426	0.08459

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)**	0.02215	0.02662	0.11834
	(D * RESET_B * SET_B * !Q * Q_N)	0.01801	0.02248	0.11418
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01408	0.01841	0.10899
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00941	0.01372	0.10431
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01684	0.02128	0.11276
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01216	0.01658	0.10808
	(!D * SET_B * !Q * Q_N)	0.01373	0.01801	0.10856
	(!D * SET_B * !Q * Q_N)	0.00906	0.01333	0.10388
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02368	0.02795	0.12017
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01848	0.02272	0.11495
	(!D * !SET_B * Q * !Q_N)	0.01485	0.01918	0.11146
	(!D * !SET_B * Q * !Q_N)	0.01021	0.01453	0.10680

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.02228	0.02675	0.11847
	(D * RESET_B * SET_B * !Q * Q_N)	0.01813	0.02259	0.11429
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01407	0.01840	0.10898
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00940	0.01371	0.10430
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01691	0.02136	0.11284
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01224	0.01666	0.10815
	(!D * SET_B * !Q * Q_N)	0.01381	0.01809	0.10864
	(!D * SET_B * !Q * Q_N)	0.00914	0.01340	0.10395
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02369	0.02796	0.12018
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01850	0.02274	0.11497
	(!D * !SET_B * Q * !Q_N)	0.01480	0.01913	0.11141
	(!D * !SET_B * Q * !Q_N)	0.01015	0.01448	0.10675

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)	0.01063	0.01590	0.10641
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01530	0.02060	0.11108
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01495	0.02014	0.10967
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01962	0.02483	0.11436
	(!D * SET_B * !Q * Q_N)	0.01191	0.01714	0.10755
	(!D * SET_B * !Q * Q_N)	0.01659	0.02184	0.11224
	(!D * !SET_B * Q * !Q_N)	0.01468	0.01999	0.11185
	(!D * !SET_B * Q * !Q_N)	0.01934	0.02467	0.11652
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01064	0.01591	0.10642
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01531	0.02061	0.11111
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01497	0.02016	0.10970
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01965	0.02485	0.11439
	(!D * SET_B * !Q * Q_N)	0.01196	0.01718	0.10760
	(!D * SET_B * !Q * Q_N)	0.01664	0.02189	0.11230
	(!D * !SET_B * Q * !Q_N)	0.01474	0.02004	0.11191
	(!D * !SET_B * Q * !Q_N)	0.01938	0.02472	0.11658

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00156	0.00192	0.00638	0.00303	1.27174	1.15119

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	55.13530	98.95710

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)	0.34080	0.80745	6.28204
	SET_B->Q (FR)	0.15742	0.77709	8.07913

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.26833	0.54635	3.15076
	RESET_B->Q (FF)	0.21928	0.64677	4.99343
	SET_B->Q (RF)	0.14141	0.42118	3.04341

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)	0.23711	0.72525	6.20047
	RESET_B->Q_N (FR)	0.18849	0.83334	8.05676
	SET_B->Q_N (RR)	0.11111	0.61348	6.44364

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)	0.27866	0.59391	2.86583
	SET_B->Q_N (FF)	0.10341	0.56393	4.86998

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)	-0.03839	-0.06944	-0.20315
	setup	CLK (R)	0.06755	0.08479	0.24735

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)	-0.07671	-0.17993	-2.43853
	setup	CLK (R)	0.12549	0.22159	2.60708

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)	-0.03839	-0.06944	-0.20315
	setup	CLK (R)	0.06755	0.08479	0.24735

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)	-0.07671	-0.17993	-2.43853
	setup	CLK (R)	0.12549	0.22159	2.60708

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)	0.07108	0.07955	0.41260
	removal	CLK (R)	-0.03392	-0.04666	-0.07369

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)	0.07108	0.07955	0.41260
	removal	CLK (R)	-0.03392	-0.04666	-0.07369

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 ()	0.16765	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17259	0.65918	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)	0.01175	0.00400	2.76165
	removal	CLK (R)	0.05205	0.07388	0.00922
	hold	RESET_B (R)	-0.05774	-0.08950	-0.50209
	setup	RESET_B (R)	0.09584	0.12722	0.91742

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)	0.01175	0.00400	2.76165
	removal	CLK (R)	0.05205	0.07388	0.00922
	hold	RESET_B (R)	-0.05796	-0.09116	-0.51026
	hold	RESET_B (R)	-0.05774	-0.08950	-0.50209
	setup	RESET_B (R)	0.09567	0.12515	0.91678
	setup	RESET_B (R)	0.09584	0.12722	0.91742

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 ()	0.10343	0.65918	16.50020
	min_pulse_width	SET_B ()	0.11084	0.65918	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 ()	0.09602	0.65918	16.50020
	min_pulse_width	CLK ()	0.11578	0.65918	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 ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.19235	0.65918	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	0.01858	0.02083	0.06802
	CLK	0.01622	0.01846	0.06533
	SET_B	0.01619	0.02061	0.10162
	SET_B	0.02110	0.02552	0.10601

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01832	0.02092	0.06941
	CLK	0.01574	0.01832	0.06675
	RESET_B	0.01851	0.02012	0.04801
	RESET_B	0.01985	0.02147	0.04893
	SET_B	0.01996	0.02206	0.09960
	SET_B	0.01503	0.01710	0.09452

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01881	0.02141	0.07081
	CLK	0.01623	0.01881	0.06805
	RESET_B	0.01878	0.02036	0.04880
	RESET_B	0.02012	0.02170	0.04966
	SET_B	0.02024	0.02237	0.10016
	SET_B	0.01531	0.01738	0.09512

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01823	0.02047	0.06687
	CLK	0.01587	0.01812	0.06445
	SET_B	0.01589	0.02030	0.10023
	SET_B	0.02079	0.02521	0.10508

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00334	0.00530	0.03748
	CLK	0.00082	0.00277	0.03496
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01131	0.01284	0.04739
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00904	0.01056	0.04511
	(!CLK * !SET_B * Q * !Q_N)	0.00677	0.00824	0.03905
	(!CLK * !SET_B * Q * !Q_N)	0.00397	0.00543	0.03625
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00548	0.00694	0.03769
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00269	0.00414	0.03490

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00056	0.00265	0.03469
	CLK	0.00308	0.00518	0.03722
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00937	0.01121	0.04474
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01164	0.01348	0.04701
	(!CLK * !SET_B * Q * !Q_N)	0.00240	0.00411	0.03438
	(!CLK * !SET_B * Q * !Q_N)	0.00522	0.00692	0.03719
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00343	0.00504	0.03567
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00622	0.00784	0.03846

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)	0.00779	0.00993	0.06069
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00463	0.00675	0.05753
	(!SET_B * Q * !Q_N)	0.00803	0.01033	0.06152
	(!SET_B * Q * !Q_N)	0.00479	0.00709	0.05829
	(!CLK * D * SET_B * !Q * Q_N)	0.01349	0.01542	0.06923
	(!CLK * D * SET_B * !Q * Q_N)	0.01085	0.01277	0.06659

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)	0.00426	0.00693	0.05775
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00743	0.01009	0.06091
	(!SET_B * Q * !Q_N)	0.00215	0.00492	0.05601
	(!SET_B * Q * !Q_N)	0.00540	0.00818	0.05925
	(!CLK * D * SET_B * !Q * Q_N)	0.01034	0.01306	0.06689
	(!CLK * D * SET_B * !Q * Q_N)	0.01298	0.01571	0.06953

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)	0.00415	0.00415	0.00414
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00484	-0.00483	-0.00483
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01080	0.01315	0.08205
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00116	0.00349	0.07241

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)	-0.00297	-0.00319	-0.00318
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00595	0.00583	0.00580
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00308	0.00687	0.07700
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01269	0.01656	0.08666

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)	0.01614	0.02059	0.11292
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01121	0.01563	0.10798
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01941	0.02392	0.11803
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01475	0.01924	0.11335
	(!D * SET_B * !Q * Q_N)	0.01676	0.02121	0.11349
	(!D * SET_B * !Q * Q_N)	0.01183	0.01626	0.10856
	(!D * !SET_B * Q * !Q_N)	0.02040	0.02494	0.11703
	(!D * !SET_B * Q * !Q_N)	0.01519	0.01971	0.11181

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)	0.01713	0.02255	0.11663
	(D * RESET_B * SET_B * !Q * Q_N)	0.02231	0.02774	0.12182
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00864	0.01404	0.10663
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01357	0.01899	0.11157
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01095	0.01642	0.11024
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01561	0.02110	0.11490
	(!D * SET_B * !Q * Q_N)	0.00895	0.01431	0.10669
	(!D * SET_B * !Q * Q_N)	0.01388	0.01926	0.11162
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01859	0.02422	0.11826
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02329	0.02894	0.12297
	(!D * !SET_B * Q * !Q_N)	0.01151	0.01717	0.11107
	(!D * !SET_B * Q * !Q_N)	0.01672	0.02240	0.11630

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00184	0.00569	0.00309	1.31041	1.26346
sky130_fd_sc_hs__dfrbp_2	0.00169	0.00548	0.00309	2.54408	2.49120

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	32.24320	57.00420
sky130_fd_sc_hs__dfrbp_2	0.00000	37.22910	57.09230

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)	0.21091	0.67822	6.26299
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.24922	0.63496	6.67018

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.20089	0.47470	2.98228
	RESET_B->Q (FF)	0.27748	0.73773	5.36021
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.22809	0.46190	3.06992
	RESET_B->Q (FF)	0.32637	0.75462	5.51976

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)	0.16898	0.65257	6.13604
	RESET_B->Q_N (FR)	0.24500	0.91040	8.49835
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.16394	0.56027	6.06881
	RESET_B->Q_N (FR)	0.26256	0.85025	8.51190

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)	0.16159	0.48447	2.92846
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.16520	0.47392	3.02145

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)	-0.05849	-0.12600	-0.61717
	setup	CLK (R)	0.11220	0.16293	0.69462
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05465	-0.12632	-0.64292
	setup	CLK (R)	0.12796	0.17527	0.74661

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)	-0.06058	-0.17202	-2.29704
	setup	CLK (R)	0.13122	0.24783	2.55245
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07366	-0.19081	-2.51371
	setup	CLK (R)	0.14825	0.26464	2.58795

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)	-0.05849	-0.12600	-0.61717
	setup	CLK (R)	0.11220	0.16293	0.69462
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05465	-0.12632	-0.64292
	setup	CLK (R)	0.12796	0.17527	0.74661

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)	-0.06058	-0.17202	-2.29704
	setup	CLK (R)	0.13122	0.24783	2.55245
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07366	-0.19081	-2.51371
	setup	CLK (R)	0.14825	0.26464	2.58795

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)	0.12112	0.15844	1.06372
	removal	CLK (R)	-0.09424	-0.14123	-1.01033
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.13961	0.16873	1.08380
	removal	CLK (R)	-0.10289	-0.14905	-1.01689

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)	0.12112	0.15844	1.06372
	removal	CLK (R)	-0.09424	-0.14123	-1.01033
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.13961	0.16873	1.08380
	removal	CLK (R)	-0.10289	-0.14905	-1.01689

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 ()	0.13801	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.11578	0.65918	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.14789	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.12813	0.65918	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 ()	0.11825	0.65918	16.50020
	min_pulse_width	CLK ()	0.07873	0.65918	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.15283	0.65918	16.50020
	min_pulse_width	CLK ()	0.09355	0.65918	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 ()	0.15283	0.65918	16.50020
	min_pulse_width	CLK ()	0.17753	0.65918	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.17012	0.65918	16.50020
	min_pulse_width	CLK ()	0.18000	0.65918	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	0.01723	0.01923	0.06638
	CLK	0.01474	0.01673	0.06361
sky130_fd_sc_hs__dfrbp_2	CLK	0.02049	0.02194	0.06824
	CLK	0.01805	0.01934	0.06577

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01687	0.01918	0.06452
	CLK	0.01434	0.01664	0.06190
	RESET_B	0.01316	0.01552	0.05618
	RESET_B	0.01805	0.02039	0.06037
sky130_fd_sc_hs__dfrbp_2	CLK	0.01960	0.02202	0.06748
	CLK	0.01715	0.01954	0.06480
	RESET_B	0.01714	0.01955	0.05965
	RESET_B	0.02170	0.02408	0.06413

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01703	0.01932	0.06571
	CLK	0.01449	0.01679	0.06289
	RESET_B	0.01331	0.01568	0.05601
	RESET_B	0.01821	0.02054	0.06084
sky130_fd_sc_hs__dfrbp_2	CLK	0.01980	0.02220	0.06911
	CLK	0.01736	0.01974	0.06604
	RESET_B	0.01735	0.01975	0.06093
	RESET_B	0.02191	0.02428	0.06488

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01698	0.01899	0.06536
	CLK	0.01450	0.01649	0.06274
sky130_fd_sc_hs__dfrbp_2	CLK	0.02025	0.02159	0.06768
	CLK	0.01780	0.01908	0.06496

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00447	0.00585	0.03527
	(CLK * RESET_B)	0.00121	0.00259	0.03200
	(CLK * !RESET_B)	0.00067	0.00067	0.00065
	(CLK * !RESET_B)	-0.00121	-0.00120	-0.00122
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01247	0.01411	0.04945
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00906	0.01068	0.04604
	(!CLK * !RESET_B)	0.00067	0.00067	0.00066
	(!CLK * !RESET_B)	-0.00119	-0.00121	-0.00122
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00510	0.00639	0.03555
	(CLK * RESET_B)	0.00224	0.00352	0.03269
	(CLK * !RESET_B)	0.00080	0.00079	0.00078
	(CLK * !RESET_B)	-0.00094	-0.00094	-0.00096
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01508	0.01669	0.05175
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01239	0.01398	0.04905
	(!CLK * !RESET_B)	0.00079	0.00080	0.00078
	(!CLK * !RESET_B)	-0.00093	-0.00094	-0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00090	0.00245	0.03174
	(CLK * RESET_B)	0.00417	0.00572	0.03501
	(CLK * !RESET_B)	-0.00020	-0.00020	-0.00020
	(CLK * !RESET_B)	0.00168	0.00168	0.00168
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00873	0.01067	0.04558
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01215	0.01409	0.04900
	(!CLK * !RESET_B)	-0.00020	-0.00020	-0.00019
	(!CLK * !RESET_B)	0.00169	0.00171	0.00168
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00128	0.00281	0.03177
	(CLK * RESET_B)	0.00415	0.00567	0.03463
	(CLK * !RESET_B)	-0.00020	-0.00019	-0.00019
	(CLK * !RESET_B)	0.00156	0.00154	0.00155
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01018	0.01207	0.04591
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01288	0.01476	0.04860
	(!CLK * !RESET_B)	-0.00019	-0.00020	-0.00019
	(!CLK * !RESET_B)	0.00156	0.00157	0.00155

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)	0.00807	0.00921	0.03810
	(CLK * D * !Q * Q_N)	-0.00148	-0.00038	0.02852
	(CLK * !D * !Q * Q_N)	0.00396	0.00400	0.00397
	(CLK * !D * !Q * Q_N)	-0.00403	-0.00405	-0.00403
	(!CLK * D * !Q * Q_N)	0.01646	0.01797	0.06642
	(!CLK * D * !Q * Q_N)	0.00677	0.00824	0.05672
	(!CLK * !D * !Q * Q_N)	0.00387	0.00392	0.00388
	(!CLK * !D * !Q * Q_N)	-0.00410	-0.00414	-0.00411
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00904	0.01014	0.03898
	(CLK * D * !Q * Q_N)	-0.00009	0.00098	0.02983
	(CLK * !D * !Q * Q_N)	0.00435	0.00440	0.00436
	(CLK * !D * !Q * Q_N)	-0.00347	-0.00350	-0.00347
	(!CLK * D * !Q * Q_N)	0.01941	0.02078	0.06875
	(!CLK * D * !Q * Q_N)	0.01045	0.01180	0.05978
	(!CLK * !D * !Q * Q_N)	0.00430	0.00435	0.00431
	(!CLK * !D * !Q * Q_N)	-0.00352	-0.00355	-0.00352

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)	-0.00180	-0.00042	0.02857
	(CLK * D * !Q * Q_N)	0.00775	0.00918	0.03812
	(CLK * !D * !Q * Q_N)	-0.00332	-0.00351	-0.00351
	(CLK * !D * !Q * Q_N)	0.00465	0.00454	0.00450
	(!CLK * D * !Q * Q_N)	0.00623	0.00813	0.05848
	(!CLK * D * !Q * Q_N)	0.01593	0.01784	0.06819
	(!CLK * !D * !Q * Q_N)	-0.00326	-0.00342	-0.00342
	(!CLK * !D * !Q * Q_N)	0.00471	0.00463	0.00459
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00177	-0.00039	0.02865
	(CLK * D * !Q * Q_N)	0.00736	0.00880	0.03778
	(CLK * !D * !Q * Q_N)	-0.00359	-0.00378	-0.00378
	(CLK * !D * !Q * Q_N)	0.00421	0.00410	0.00407
	(!CLK * D * !Q * Q_N)	0.00756	0.00937	0.05841
	(!CLK * D * !Q * Q_N)	0.01656	0.01835	0.06737
	(!CLK * !D * !Q * Q_N)	-0.00354	-0.00372	-0.00372
	(!CLK * !D * !Q * Q_N)	0.00426	0.00416	0.00413

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)	0.01554	0.01946	0.10727
	(D * RESET_B * Q * !Q_N)	0.01052	0.01443	0.10224
	(D * !RESET_B * !Q * Q_N)	0.01576	0.01966	0.10747
	(D * !RESET_B * !Q * Q_N)	0.01075	0.01464	0.10244
	(!D * !Q * Q_N)	0.01576	0.01966	0.10748
	(!D * !Q * Q_N)	0.01075	0.01464	0.10245
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01420	0.01822	0.10576
	(D * RESET_B * Q * !Q_N)	0.00931	0.01330	0.10086
	(D * !RESET_B * !Q * Q_N)	0.01411	0.01809	0.10562
	(D * !RESET_B * !Q * Q_N)	0.00922	0.01317	0.10071
	(!D * !Q * Q_N)	0.01411	0.01808	0.10563
	(!D * !Q * Q_N)	0.00922	0.01316	0.10072

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)	0.00863	0.01379	0.10171
	(D * RESET_B * Q * !Q_N)	0.01365	0.01883	0.10674
	(D * RESET_B * !Q * Q_N)	0.01577	0.02107	0.11173
	(D * RESET_B * !Q * Q_N)	0.02064	0.02595	0.11661
	(D * !RESET_B * !Q * Q_N)	0.00797	0.01314	0.10112
	(D * !RESET_B * !Q * Q_N)	0.01299	0.01818	0.10614
	(!D * RESET_B * Q * !Q_N)	0.01738	0.02276	0.11217
	(!D * RESET_B * Q * !Q_N)	0.02255	0.02795	0.11734
	(!D * !Q * Q_N)	0.00797	0.01314	0.10114
	(!D * !Q * Q_N)	0.01299	0.01819	0.10616
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00872	0.01380	0.10148
	(D * RESET_B * Q * !Q_N)	0.01361	0.01873	0.10639
	(D * RESET_B * !Q * Q_N)	0.01912	0.02431	0.11411
	(D * RESET_B * !Q * Q_N)	0.02415	0.02938	0.11917
	(D * !RESET_B * !Q * Q_N)	0.00860	0.01371	0.10144
	(D * !RESET_B * !Q * Q_N)	0.01349	0.01863	0.10636
	(!D * RESET_B * Q * !Q_N)	0.01872	0.02397	0.11351
	(!D * RESET_B * Q * !Q_N)	0.02345	0.02872	0.11825
	(!D * !Q * Q_N)	0.00860	0.01370	0.10147
	(!D * !Q * Q_N)	0.01349	0.01863	0.10637

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00181	0.00547	0.00296	1.23725

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	29.68520	49.93560

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)	0.22304	0.82857	8.05798

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)	0.18436	0.58281	4.68276
	RESET_B->Q (FF)	0.25377	0.70530	5.13728

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)	0.00796	0.04102	1.57689
	setup	CLK_N (F)	0.06860	0.03073	-1.51436

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)	-0.05734	-0.11350	-0.56734
	setup	CLK_N (F)	0.16428	0.20721	0.60546

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)	0.00796	0.04102	1.57689
	setup	CLK_N (F)	0.06860	0.03073	-1.51436

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)	-0.05734	-0.11350	-0.56734
	setup	CLK_N (F)	0.16428	0.20721	0.60546

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)	0.08102	0.02036	-1.26428
	removal	CLK_N (F)	-0.04925	0.00217	1.26777

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)	0.08102	0.02036	-1.26428
	removal	CLK_N (F)	-0.04925	0.00217	1.26777

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 ()	0.10590	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.13554	0.65918	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 ()	0.12319	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.17259	0.65918	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 ()	0.12319	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.11331	0.65918	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	0.02632	0.03189	0.12406
	CLK_N	0.03103	0.03662	0.12900

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.02388	0.02919	0.12246
	CLK_N	0.02847	0.03377	0.12690
	RESET_B	0.02331	0.02781	0.10816
	RESET_B	0.03239	0.03689	0.11643

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)	0.01231	0.01397	0.04923
	(CLK_N * RESET_B)	0.00931	0.01095	0.04623
	(CLK_N * !RESET_B)	0.00067	0.00068	0.00066
	(CLK_N * !RESET_B)	-0.00119	-0.00120	-0.00121
	(!CLK_N * RESET_B)	0.00430	0.00569	0.03509
	(!CLK_N * RESET_B)	0.00121	0.00258	0.03200
	(!CLK_N * !RESET_B)	0.00067	0.00067	0.00066
	(!CLK_N * !RESET_B)	-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__dfrtn_1	(CLK_N * RESET_B)	0.00980	0.01168	0.04652
	(CLK_N * RESET_B)	0.01281	0.01468	0.04952
	(CLK_N * !RESET_B)	-0.00020	-0.00021	-0.00020
	(CLK_N * !RESET_B)	0.00166	0.00169	0.00167
	(!CLK_N * RESET_B)	0.00094	0.00249	0.03178
	(!CLK_N * RESET_B)	0.00404	0.00560	0.03488
	(!CLK_N * !RESET_B)	-0.00020	-0.00020	-0.00020
	(!CLK_N * !RESET_B)	0.00165	0.00167	0.00166

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)	0.01634	0.01789	0.06630
	(CLK_N * D * !Q)	0.00732	0.00881	0.05726
	(CLK_N * !D * !Q)	0.00414	0.00419	0.00415
	(CLK_N * !D * !Q)	-0.00356	-0.00359	-0.00357
	(!CLK_N * D * !Q)	0.00774	0.00890	0.03777
	(!CLK_N * D * !Q)	-0.00140	-0.00025	0.02862
	(!CLK_N * !D * !Q)	0.00405	0.00410	0.00406
	(!CLK_N * !D * !Q)	-0.00366	-0.00369	-0.00366

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)	0.00717	0.00926	0.05940
	(CLK_N * D * !Q)	0.01623	0.01833	0.06842
	(CLK_N * !D * !Q)	-0.00353	-0.00370	-0.00370
	(CLK_N * !D * !Q)	0.00416	0.00407	0.00404
	(!CLK_N * D * !Q)	-0.00158	-0.00012	0.02882
	(!CLK_N * D * !Q)	0.00753	0.00906	0.03794
	(!CLK_N * !D * !Q)	-0.00342	-0.00361	-0.00361
	(!CLK_N * !D * !Q)	0.00427	0.00416	0.00413

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)	0.01477	0.01891	0.10850
	(D * RESET_B * Q)	0.01011	0.01423	0.10385
	(D * RESET_B * !Q)	0.02307	0.02733	0.11834
	(D * RESET_B * !Q)	0.01850	0.02274	0.11377
	(D * !RESET_B * !Q)	0.01450	0.01863	0.10829
	(D * !RESET_B * !Q)	0.00983	0.01396	0.10363
	(!D * RESET_B * Q)	0.02312	0.02717	0.11901
	(!D * RESET_B * Q)	0.01837	0.02240	0.11426
	(!D * !Q)	0.01449	0.01864	0.10819
	(!D * !Q)	0.00983	0.01396	0.10354

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)	0.01067	0.01572	0.10504
	(D * RESET_B * Q)	0.01532	0.02039	0.10970
	(D * !RESET_B * !Q)	0.01068	0.01575	0.10515
	(D * !RESET_B * !Q)	0.01533	0.02041	0.10981
	(!D * !Q)	0.01066	0.01573	0.10501
	(!D * !Q)	0.01531	0.02040	0.10967

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00182	0.00567	0.00311	1.30496
sky130_fd_sc_hs__dfrtp_2	0.00181	0.00557	0.00310	2.47218
sky130_fd_sc_hs__dfrtp_4	0.00183	0.00575	0.00309	4.93830

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	29.68460	49.93230
sky130_fd_sc_hs__dfrtp_2	0.00000	34.49760	50.21270
sky130_fd_sc_hs__dfrtp_4	0.00000	50.00590	68.88770

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)	0.18265	0.64829	6.16674
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.18083	0.55087	6.02484
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.23540	0.54419	6.19528

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.19088	0.46443	2.96354
	RESET_B->Q (FF)	0.25993	0.71989	5.33012
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.21082	0.44390	2.82638
	RESET_B->Q (FF)	0.27834	0.69730	5.18927
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.21261	0.41817	3.04118
	RESET_B->Q (FF)	0.28753	0.67778	5.40923

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)	-0.06521	-0.13279	-0.63701
	setup	CLK (R)	0.12716	0.17583	0.72787
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06483	-0.13254	-0.63045
	setup	CLK (R)	0.12420	0.17383	0.72455
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06405	-0.13077	-0.62486
	setup	CLK (R)	0.12457	0.17444	0.74523

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)	-0.05814	-0.16701	-2.26603
	setup	CLK (R)	0.12832	0.24441	2.54830
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05459	-0.16417	-2.26014
	setup	CLK (R)	0.12931	0.24336	2.55056
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06523	-0.17479	-2.20402
	setup	CLK (R)	0.13972	0.25041	2.56856

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)	-0.06521	-0.13279	-0.63701
	setup	CLK (R)	0.12716	0.17583	0.72787
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06483	-0.13254	-0.63045
	setup	CLK (R)	0.12420	0.17383	0.72455
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06405	-0.13077	-0.62486
	setup	CLK (R)	0.12457	0.17444	0.74523

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)	-0.05814	-0.16701	-2.26603
	setup	CLK (R)	0.12832	0.24441	2.54830
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05459	-0.16417	-2.26014
	setup	CLK (R)	0.12931	0.24336	2.55056
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06523	-0.17479	-2.20402
	setup	CLK (R)	0.13972	0.25041	2.56856

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)	0.13807	0.16983	1.08573
	removal	CLK (R)	-0.09632	-0.14341	-1.01803
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.13450	0.16827	1.08766
	removal	CLK (R)	-0.09279	-0.14341	-1.01510
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.13809	0.16880	1.10148
	removal	CLK (R)	-0.09904	-0.14593	-1.01301

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)	0.13807	0.16983	1.08573
	removal	CLK (R)	-0.09632	-0.14341	-1.01803
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.13450	0.16827	1.08766
	removal	CLK (R)	-0.09279	-0.14341	-1.01510
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.13809	0.16880	1.10148
	removal	CLK (R)	-0.09904	-0.14593	-1.01301

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 ()	0.13307	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.10590	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.13554	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.11084	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.14048	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.11331	0.65918	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 ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.07379	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.09355	0.65918	16.50020
	min_pulse_width	CLK ()	0.07626	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.12566	0.65918	16.50020
	min_pulse_width	CLK ()	0.08120	0.65918	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 ()	0.16765	0.65918	16.50020
	min_pulse_width	CLK ()	0.17506	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.16765	0.65918	16.50020
	min_pulse_width	CLK ()	0.17506	0.65918	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.17506	0.65918	16.50020
	min_pulse_width	CLK ()	0.18741	0.65918	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	0.02991	0.03441	0.12804
	CLK	0.02495	0.02948	0.12344
sky130_fd_sc_hs__dfrtp_2	CLK	0.03315	0.03784	0.13159
	CLK	0.02822	0.03292	0.12740
sky130_fd_sc_hs__dfrtp_4	CLK	0.04308	0.04757	0.14141
	CLK	0.03795	0.04259	0.13775

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.03144	0.03599	0.12646
	CLK	0.02622	0.03075	0.12124
	RESET_B	0.02354	0.02823	0.10905
	RESET_B	0.03326	0.03791	0.11769
sky130_fd_sc_hs__dfrtp_2	CLK	0.03438	0.03882	0.13052
	CLK	0.02920	0.03358	0.12413
	RESET_B	0.02664	0.03123	0.11333
	RESET_B	0.03621	0.04075	0.12054
sky130_fd_sc_hs__dfrtp_4	CLK	0.04488	0.04944	0.14078
	CLK	0.03950	0.04404	0.13443
	RESET_B	0.03655	0.04130	0.12511
	RESET_B	0.04640	0.05110	0.13120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00437	0.00576	0.03518
	(CLK * RESET_B)	0.00113	0.00251	0.03194
	(CLK * !RESET_B)	0.00065	0.00065	0.00064
	(CLK * !RESET_B)	-0.00117	-0.00118	-0.00120
	(!CLK * RESET_B)	0.01272	0.01438	0.04989
	(!CLK * RESET_B)	0.00929	0.01095	0.04646
	(!CLK * !RESET_B)	0.00066	0.00066	0.00065
	(!CLK * !RESET_B)	-0.00117	-0.00118	-0.00120
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00427	0.00567	0.03512
	(CLK * RESET_B)	0.00107	0.00246	0.03193
	(CLK * !RESET_B)	0.00071	0.00072	0.00070
	(CLK * !RESET_B)	-0.00112	-0.00112	-0.00114
	(!CLK * RESET_B)	0.01227	0.01396	0.04961
	(!CLK * RESET_B)	0.00891	0.01059	0.04625
	(!CLK * !RESET_B)	0.00072	0.00072	0.00071
	(!CLK * !RESET_B)	-0.00111	-0.00112	-0.00114
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00456	0.00594	0.03535
	(CLK * RESET_B)	0.00133	0.00271	0.03211
	(CLK * !RESET_B)	0.00084	0.00084	0.00083
	(CLK * !RESET_B)	-0.00100	-0.00101	-0.00103
	(!CLK * RESET_B)	0.01396	0.01556	0.05063
	(!CLK * RESET_B)	0.01054	0.01213	0.04721
	(!CLK * !RESET_B)	0.00085	0.00085	0.00084
	(!CLK * !RESET_B)	-0.00100	-0.00101	-0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00082	0.00238	0.03169
	(CLK * RESET_B)	0.00407	0.00563	0.03493
	(CLK * !RESET_B)	-0.00020	-0.00019	-0.00019
	(CLK * !RESET_B)	0.00166	0.00166	0.00165
	(!CLK * RESET_B)	0.00907	0.01103	0.04616
	(!CLK * RESET_B)	0.01251	0.01446	0.04959
	(!CLK * !RESET_B)	-0.00019	-0.00019	-0.00018
	(!CLK * !RESET_B)	0.00166	0.00168	0.00165
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00082	0.00240	0.03173
	(CLK * RESET_B)	0.00403	0.00561	0.03493
	(CLK * !RESET_B)	-0.00014	-0.00013	-0.00013
	(CLK * !RESET_B)	0.00172	0.00172	0.00171
	(!CLK * RESET_B)	0.00912	0.01109	0.04628
	(!CLK * RESET_B)	0.01248	0.01445	0.04963
	(!CLK * !RESET_B)	-0.00013	-0.00013	-0.00012
	(!CLK * !RESET_B)	0.00172	0.00174	0.00172
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00100	0.00255	0.03184
	(CLK * RESET_B)	0.00424	0.00579	0.03507
	(CLK * !RESET_B)	-0.00002	-0.00002	-0.00001
	(CLK * !RESET_B)	0.00184	0.00185	0.00184
	(!CLK * RESET_B)	0.00941	0.01129	0.04617
	(!CLK * RESET_B)	0.01283	0.01470	0.04959
	(!CLK * !RESET_B)	-0.00001	-0.00002	-0.00001
	(!CLK * !RESET_B)	0.00185	0.00187	0.00185

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)	0.00805	0.00919	0.03805
	(CLK * D * !Q)	-0.00149	-0.00040	0.02855
	(CLK * !D * !Q)	0.00395	0.00399	0.00396
	(CLK * !D * !Q)	-0.00401	-0.00403	-0.00401
	(!CLK * D * !Q)	0.01683	0.01838	0.06697
	(!CLK * D * !Q)	0.00712	0.00861	0.05725
	(!CLK * !D * !Q)	0.00382	0.00387	0.00383
	(!CLK * !D * !Q)	-0.00412	-0.00416	-0.00413
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00795	0.00910	0.03801
	(CLK * D * !Q)	-0.00145	-0.00034	0.02863
	(CLK * !D * !Q)	0.00398	0.00403	0.00399
	(CLK * !D * !Q)	-0.00389	-0.00392	-0.00389
	(!CLK * D * !Q)	0.01635	0.01800	0.06667
	(!CLK * D * !Q)	0.00681	0.00840	0.05711
	(!CLK * !D * !Q)	0.00387	0.00391	0.00387
	(!CLK * !D * !Q)	-0.00400	-0.00402	-0.00400
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00843	0.00957	0.03845
	(CLK * D * !Q)	-0.00122	-0.00012	0.02878
	(CLK * !D * !Q)	0.00434	0.00437	0.00434
	(CLK * !D * !Q)	-0.00377	-0.00379	-0.00376
	(!CLK * D * !Q)	0.01798	0.01946	0.06768
	(!CLK * D * !Q)	0.00815	0.00958	0.05783
	(!CLK * !D * !Q)	0.00403	0.00407	0.00404
	(!CLK * !D * !Q)	-0.00407	-0.00410	-0.00407

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)	-0.00182	-0.00043	0.02856
	(CLK * D * !Q)	0.00771	0.00915	0.03809
	(CLK * !D * !Q)	-0.00332	-0.00351	-0.00350
	(CLK * !D * !Q)	0.00463	0.00451	0.00447
	(!CLK * D * !Q)	0.00648	0.00841	0.05893
	(!CLK * D * !Q)	0.01620	0.01817	0.06862
	(!CLK * !D * !Q)	-0.00321	-0.00338	-0.00337
	(!CLK * !D * !Q)	0.00473	0.00464	0.00460
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00172	-0.00031	0.02870
	(CLK * D * !Q)	0.00768	0.00915	0.03810
	(CLK * !D * !Q)	-0.00323	-0.00341	-0.00341
	(CLK * !D * !Q)	0.00463	0.00451	0.00447
	(!CLK * D * !Q)	0.00656	0.00858	0.05917
	(!CLK * D * !Q)	0.01611	0.01815	0.06873
	(!CLK * !D * !Q)	-0.00313	-0.00330	-0.00329
	(!CLK * !D * !Q)	0.00472	0.00463	0.00459
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00182	-0.00043	0.02854
	(CLK * D * !Q)	0.00783	0.00927	0.03819
	(CLK * !D * !Q)	-0.00334	-0.00353	-0.00353
	(CLK * !D * !Q)	0.00475	0.00463	0.00459
	(!CLK * D * !Q)	0.00699	0.00880	0.05906
	(!CLK * D * !Q)	0.01682	0.01868	0.06891
	(!CLK * !D * !Q)	-0.00305	-0.00322	-0.00321
	(!CLK * !D * !Q)	0.00503	0.00495	0.00491

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)	0.01597	0.01984	0.10763
	(D * RESET_B * Q)	0.01090	0.01473	0.10253
	(D * !RESET_B * !Q)	0.01645	0.02030	0.10804
	(D * !RESET_B * !Q)	0.01137	0.01519	0.10295
	(!D * !Q)	0.01645	0.02029	0.10804
	(!D * !Q)	0.01137	0.01518	0.10296
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01588	0.01976	0.10754
	(D * RESET_B * Q)	0.01083	0.01468	0.10247
	(D * !RESET_B * !Q)	0.01641	0.02027	0.10799
	(D * !RESET_B * !Q)	0.01136	0.01519	0.10294
	(!D * !Q)	0.01641	0.02027	0.10800
	(!D * !Q)	0.01136	0.01518	0.10294
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01689	0.02072	0.10823
	(D * RESET_B * Q)	0.01165	0.01545	0.10298
	(D * !RESET_B * !Q)	0.01726	0.02107	0.10852
	(D * !RESET_B * !Q)	0.01202	0.01581	0.10328
	(!D * !Q)	0.01726	0.02106	0.10853
	(!D * !Q)	0.01202	0.01580	0.10329

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)**	0.00862	0.01376	0.10196
	(D * RESET_B * Q)	0.01370	0.01886	0.10705
	(D * RESET_B * !Q)	0.01620	0.02147	0.11210
	(D * RESET_B * !Q)	0.02110	0.02636	0.11701
	(D * !RESET_B * !Q)	0.00793	0.01308	0.10103
	(D * !RESET_B * !Q)	0.01301	0.01819	0.10610
	(!D * RESET_B * Q)	0.01782	0.02317	0.11247
	(!D * RESET_B * Q)	0.02309	0.02846	0.11775
	(!D * !Q)	0.00793	0.01308	0.10104
	(!D * !Q)	0.01301	0.01818	0.10614
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00865	0.01378	0.10163
	(D * RESET_B * Q)	0.01371	0.01886	0.10670
	(D * RESET_B * !Q)	0.01593	0.02120	0.11187
	(D * RESET_B * !Q)	0.02083	0.02610	0.11678
	(D * !RESET_B * !Q)	0.00802	0.01316	0.10104
	(D * !RESET_B * !Q)	0.01308	0.01824	0.10611
	(!D * RESET_B * Q)	0.01787	0.02323	0.11252
	(!D * RESET_B * Q)	0.02308	0.02845	0.11774
	(!D * !Q)	0.00802	0.01317	0.10106
	(!D * !Q)	0.01307	0.01825	0.10613
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00912	0.01422	0.10187
	(D * RESET_B * Q)	0.01436	0.01947	0.10712
	(D * RESET_B * !Q)	0.01792	0.02310	0.11329
	(D * RESET_B * !Q)	0.02298	0.02817	0.11835
	(D * !RESET_B * !Q)	0.00857	0.01368	0.10135
	(D * !RESET_B * !Q)	0.01381	0.01894	0.10660
	(!D * RESET_B * Q)	0.01836	0.02370	0.11290
	(!D * RESET_B * Q)	0.02379	0.02913	0.11833
	(!D * !Q)	0.00857	0.01367	0.10137
	(!D * !Q)	0.01381	0.01893	0.10662

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00180	0.00336	0.00306	1.23811	1.17575
sky130_fd_sc_hs__dfsbp_2	0.00180	0.00332	0.00307	2.51536	2.42058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	31.50080	35.84470
sky130_fd_sc_hs__dfsbp_2	0.00000	34.10160	36.01920

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)	0.24042	0.70297	6.14287
	SET_B->Q (FR)	0.23820	0.92171	8.59577
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.28512	0.64164	6.14670
	SET_B->Q (FR)	0.29026	0.87815	8.66177

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.23198	0.49704	2.82735
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.26227	0.48521	2.91875

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)	0.19962	0.69548	6.17416
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.20121	0.59604	6.10651

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)	0.18528	0.50786	2.81566
	SET_B->Q_N (FF)	0.17798	0.72563	5.26892
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.20218	0.49624	2.91276
	SET_B->Q_N (FF)	0.19995	0.72918	5.43563

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)	-0.05308	-0.11721	-0.46375
	setup	CLK (R)	0.08992	0.14106	0.51906
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05147	-0.11477	-0.45421
	setup	CLK (R)	0.08432	0.13706	0.51468

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)	-0.05055	-0.16085	-2.26998
	setup	CLK (R)	0.14372	0.26460	2.73432
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05355	-0.16711	-2.21161
	setup	CLK (R)	0.14008	0.25904	2.73663

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)	-0.05308	-0.11721	-0.46375
	setup	CLK (R)	0.08992	0.14106	0.51906
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05147	-0.11477	-0.45421
	setup	CLK (R)	0.08432	0.13706	0.51468

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)	-0.05055	-0.16085	-2.26998
	setup	CLK (R)	0.14372	0.26460	2.73432
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05355	-0.16711	-2.21161
	setup	CLK (R)	0.14008	0.25904	2.73663

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)	-0.08953	-0.13172	-0.44042
	removal	CLK (R)	0.11013	0.15210	0.51373
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.09014	-0.13256	-0.46147
	removal	CLK (R)	0.11097	0.15427	0.49499

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)	-0.08953	-0.13172	-0.44042
	removal	CLK (R)	0.11013	0.15210	0.51373
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.09014	-0.13256	-0.46147
	removal	CLK (R)	0.11097	0.15427	0.49499

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 ()	0.18741	0.65918	16.50020
	min_pulse_width	SET_B ()	0.18247	0.65918	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.19976	0.65918	16.50020
	min_pulse_width	SET_B ()	0.22693	0.65918	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 ()	0.14048	0.65918	16.50020
	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.18000	0.65918	16.50020
	min_pulse_width	CLK ()	0.11825	0.65918	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 ()	0.14542	0.65918	16.50020
	min_pulse_width	CLK ()	0.20470	0.65918	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.14048	0.65918	16.50020
	min_pulse_width	CLK ()	0.19729	0.65918	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	0.01798	0.01981	0.06686
	CLK	0.01551	0.01727	0.06412
	SET_B	0.01077	0.01206	0.04103
	SET_B	0.01344	0.01475	0.04368
sky130_fd_sc_hs__dfsbp_2	CLK	0.02234	0.02317	0.07057
	CLK	0.01984	0.02069	0.06764
	SET_B	0.01564	0.01578	0.04524
	SET_B	0.01831	0.01850	0.04787

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01779	0.01994	0.06466
	CLK	0.01544	0.01756	0.06214
sky130_fd_sc_hs__dfsbp_2	CLK	0.02127	0.02342	0.06828
	CLK	0.01887	0.02097	0.06567

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01794	0.02018	0.06529
	CLK	0.01559	0.01771	0.06281
sky130_fd_sc_hs__dfsbp_2	CLK	0.02145	0.02355	0.06941
	CLK	0.01905	0.02115	0.06660

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01776	0.01954	0.06567
	CLK	0.01528	0.01703	0.06312
	SET_B	0.01055	0.01183	0.04100
	SET_B	0.01323	0.01454	0.04327
sky130_fd_sc_hs__dfsbp_2	CLK	0.02211	0.02306	0.06935
	CLK	0.01961	0.02047	0.06668
	SET_B	0.01544	0.01558	0.04655
	SET_B	0.01810	0.01828	0.04766

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00401	0.00575	0.03721
	CLK	0.00110	0.00283	0.03430
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01158	0.01285	0.04421
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00838	0.00965	0.04102
	(!CLK * !SET_B * Q * !Q_N)	0.00915	0.01035	0.03982
	(!CLK * !SET_B * Q * !Q_N)	0.00584	0.00703	0.03651
sky130_fd_sc_hs__dfsbp_2	CLK	0.00400	0.00575	0.03720
	CLK	0.00108	0.00282	0.03429
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01147	0.01275	0.04416
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00817	0.00944	0.04086
	(!CLK * !SET_B * Q * !Q_N)	0.00914	0.01035	0.03985
	(!CLK * !SET_B * Q * !Q_N)	0.00573	0.00693	0.03645

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00061	0.00238	0.03372
	CLK	0.00351	0.00530	0.03663
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00858	0.01028	0.04134
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01178	0.01346	0.04453
	(!CLK * !SET_B * Q * !Q_N)	0.00486	0.00617	0.03520
	(!CLK * !SET_B * Q * !Q_N)	0.00819	0.00950	0.03852
sky130_fd_sc_hs__dfsbp_2	CLK	0.00061	0.00238	0.03372
	CLK	0.00351	0.00530	0.03664
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00826	0.00997	0.04106
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01156	0.01327	0.04435
	(!CLK * !SET_B * Q * !Q_N)	0.00470	0.00601	0.03508
	(!CLK * !SET_B * Q * !Q_N)	0.00812	0.00941	0.03849

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)	0.00309	0.00313	0.00310
	(CLK * Q * !Q_N)	-0.00212	-0.00214	-0.00212
	(!CLK * D * Q * !Q_N)	0.00334	0.00338	0.00336
	(!CLK * D * Q * !Q_N)	-0.00186	-0.00188	-0.00187
	(!CLK * !D * Q * !Q_N)	0.00623	0.00743	0.03623
	(!CLK * !D * Q * !Q_N)	0.00080	0.00199	0.03079
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00313	0.00317	0.00314
	(CLK * Q * !Q_N)	-0.00205	-0.00207	-0.00205
	(!CLK * D * Q * !Q_N)	0.00332	0.00336	0.00333
	(!CLK * D * Q * !Q_N)	-0.00186	-0.00188	-0.00186
	(!CLK * !D * Q * !Q_N)	0.00601	0.00725	0.03608
	(!CLK * !D * Q * !Q_N)	0.00063	0.00185	0.03071

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)	-0.00240	-0.00247	-0.00248
	(CLK * Q * !Q_N)	0.00280	0.00278	0.00275
	(!CLK * D * Q * !Q_N)	-0.00264	-0.00275	-0.00275
	(!CLK * D * Q * !Q_N)	0.00256	0.00251	0.00248
	(!CLK * !D * Q * !Q_N)	0.00005	0.00161	0.03058
	(!CLK * !D * Q * !Q_N)	0.00547	0.00708	0.03602
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00242	-0.00252	-0.00251
	(CLK * Q * !Q_N)	0.00273	0.00272	0.00268
	(!CLK * D * Q * !Q_N)	-0.00260	-0.00272	-0.00272
	(!CLK * D * Q * !Q_N)	0.00256	0.00251	0.00248
	(!CLK * !D * Q * !Q_N)	0.00010	0.00170	0.03068
	(!CLK * !D * Q * !Q_N)	0.00546	0.00712	0.03607

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)	0.01655	0.02040	0.10843
	(D * Q * !Q_N)	0.01173	0.01557	0.10362
	(!D * SET_B * !Q * Q_N)	0.01607	0.01985	0.10794
	(!D * SET_B * !Q * Q_N)	0.01125	0.01501	0.10313
	(!D * !SET_B * Q * !Q_N)	0.03039	0.03455	0.12338
	(!D * !SET_B * Q * !Q_N)	0.02516	0.02932	0.11817
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01637	0.02019	0.10834
	(D * Q * !Q_N)	0.01147	0.01528	0.10345
	(!D * SET_B * !Q * Q_N)	0.01606	0.01989	0.10802
	(!D * SET_B * !Q * Q_N)	0.01116	0.01498	0.10313
	(!D * !SET_B * Q * !Q_N)	0.02991	0.03408	0.12300
	(!D * !SET_B * Q * !Q_N)	0.02453	0.02868	0.11762

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)	0.01646	0.02166	0.11287
	(D * SET_B * !Q * Q_N)	0.02098	0.02621	0.11740
	(D * Q * !Q_N)	0.00947	0.01462	0.10340
	(D * Q * !Q_N)	0.01427	0.01944	0.10822
	(!D * SET_B * Q * !Q_N)	0.01909	0.02446	0.11415
	(!D * SET_B * Q * !Q_N)	0.02418	0.02956	0.11925
	(!D * SET_B * !Q * Q_N)	0.00951	0.01467	0.10336
	(!D * SET_B * !Q * Q_N)	0.01431	0.01950	0.10818
	(!D * !SET_B * Q * !Q_N)	0.01537	0.02073	0.11038
	(!D * !SET_B * Q * !Q_N)	0.02059	0.02596	0.11561
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01626	0.02147	0.11276
	(D * SET_B * !Q * Q_N)	0.02076	0.02599	0.11728
	(D * Q * !Q_N)	0.00934	0.01450	0.10337
	(D * Q * !Q_N)	0.01422	0.01940	0.10825
	(!D * SET_B * Q * !Q_N)	0.01859	0.02397	0.11372
	(!D * SET_B * Q * !Q_N)	0.02385	0.02925	0.11901
	(!D * SET_B * !Q * Q_N)	0.00935	0.01452	0.10329
	(!D * SET_B * !Q * Q_N)	0.01423	0.01942	0.10819
	(!D * !SET_B * Q * !Q_N)	0.01503	0.02039	0.11012
	(!D * !SET_B * Q * !Q_N)	0.02040	0.02578	0.11550

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00179	0.00348	0.00305	1.27049
sky130_fd_sc_hs__dfstp_2	0.00179	0.00328	0.00307	2.51997
sky130_fd_sc_hs__dfstp_4	0.00178	0.00332	0.00308	4.71148

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	26.76110	28.87710
sky130_fd_sc_hs__dfstp_2	0.00000	24.62710	35.43800
sky130_fd_sc_hs__dfstp_4	0.00000	46.38700	49.27570

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)	0.19982	0.65665	6.03216
	SET_B->Q (FR)	0.19597	0.85685	8.39839
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.20852	0.57499	6.09567
	SET_B->Q (FR)	0.20608	0.78112	8.47718
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.24715	0.54790	6.08439
	SET_B->Q (FR)	0.24487	0.76215	8.50414

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.21426	0.48105	2.89693
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.22668	0.45381	2.91501
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.23402	0.42625	2.81498

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)	-0.05437	-0.11547	-0.45568
	setup	CLK (R)	0.08750	0.13906	0.50649
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05376	-0.11700	-0.46448
	setup	CLK (R)	0.08750	0.14122	0.51625
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05321	-0.11426	-0.44925
	setup	CLK (R)	0.08047	0.13478	0.50538

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)	-0.04455	-0.15732	-2.33096
	setup	CLK (R)	0.14012	0.26155	2.71568
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04974	-0.15898	-2.34540
	setup	CLK (R)	0.14091	0.26142	2.72877
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05118	-0.16416	-2.28065
	setup	CLK (R)	0.13996	0.25670	2.71791

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)	-0.05437	-0.11547	-0.45568
	setup	CLK (R)	0.08750	0.13906	0.50649
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05376	-0.11700	-0.46448
	setup	CLK (R)	0.08750	0.14122	0.51625
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05321	-0.11426	-0.44925
	setup	CLK (R)	0.08047	0.13478	0.50538

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)	-0.04455	-0.15732	-2.33096
	setup	CLK (R)	0.14012	0.26155	2.71568
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04974	-0.15898	-2.34540
	setup	CLK (R)	0.14091	0.26142	2.72877
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05118	-0.16416	-2.28065
	setup	CLK (R)	0.13996	0.25670	2.71791

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)	-0.08930	-0.13706	-0.44389
	removal	CLK (R)	0.10843	0.15210	0.57566
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09079	-0.13651	-0.44768
	removal	CLK (R)	0.11013	0.15210	0.54523
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08760	-0.13242	-0.43561
	removal	CLK (R)	0.10796	0.14775	0.50739

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)	-0.08930	-0.13706	-0.44389
	removal	CLK (R)	0.10843	0.15210	0.57566
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09079	-0.13651	-0.44768
	removal	CLK (R)	0.11013	0.15210	0.54523
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08760	-0.13242	-0.43561
	removal	CLK (R)	0.10796	0.14775	0.50739

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 ()	0.16765	0.65918	16.50020
	min_pulse_width	SET_B ()	0.14048	0.65918	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.17506	0.65918	16.50020
	min_pulse_width	SET_B ()	0.15036	0.65918	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.18000	0.65918	16.50020
	min_pulse_width	SET_B ()	0.17012	0.65918	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 ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.08614	0.65918	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.11084	0.65918	16.50020
	min_pulse_width	CLK ()	0.09108	0.65918	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.09602	0.65918	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 ()	0.14295	0.65918	16.50020
	min_pulse_width	CLK ()	0.19729	0.65918	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.14542	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.14048	0.65918	16.50020
	min_pulse_width	CLK ()	0.19482	0.65918	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	0.02982	0.03387	0.12742
	CLK	0.02507	0.02914	0.12303
	SET_B	0.02863	0.03043	0.07729
	SET_B	0.03383	0.03561	0.08301
sky130_fd_sc_hs__dfstp_2	CLK	0.03362	0.03782	0.13145
	CLK	0.02867	0.03289	0.12722
	SET_B	0.01925	0.02273	0.08079
	SET_B	0.03724	0.03950	0.09175
sky130_fd_sc_hs__dfstp_4	CLK	0.04300	0.04703	0.14102
	CLK	0.03799	0.04218	0.13743
	SET_B	0.02863	0.03200	0.09141
	SET_B	0.03395	0.03732	0.09711

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.03175	0.03574	0.12533
	CLK	0.02678	0.03079	0.11976
sky130_fd_sc_hs__dfstp_2	CLK	0.03528	0.03955	0.12851
	CLK	0.03046	0.03458	0.12338
sky130_fd_sc_hs__dfstp_4	CLK	0.04444	0.04890	0.13812
	CLK	0.03960	0.04408	0.13323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00395	0.00570	0.03712
	CLK	0.00106	0.00279	0.03423
	(!CLK * SET_B)	0.01139	0.01267	0.04408
	(!CLK * SET_B)	0.00821	0.00949	0.04090
	(!CLK * !SET_B * Q)	0.00904	0.01024	0.03978
	(!CLK * !SET_B * Q)	0.00571	0.00690	0.03645
sky130_fd_sc_hs__dfstp_2	CLK	0.00392	0.00566	0.03709
	CLK	0.00101	0.00274	0.03418
	(!CLK * SET_B)	0.01133	0.01260	0.04396
	(!CLK * SET_B)	0.00814	0.00942	0.04078
	(!CLK * !SET_B * Q)	0.00897	0.01017	0.03964
	(!CLK * !SET_B * Q)	0.00563	0.00682	0.03630
sky130_fd_sc_hs__dfstp_4	CLK	0.00413	0.00588	0.03729
	CLK	0.00124	0.00297	0.03440
	(!CLK * SET_B)	0.01151	0.01278	0.04419
	(!CLK * SET_B)	0.00830	0.00957	0.04099
	(!CLK * !SET_B * Q)	0.00911	0.01030	0.03984
	(!CLK * !SET_B * Q)	0.00577	0.00697	0.03651

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00063	0.00240	0.03371
	CLK	0.00353	0.00531	0.03661
	(!CLK * SET_B)	0.00820	0.00991	0.04100
	(!CLK * SET_B)	0.01138	0.01309	0.04418
	(!CLK * !SET_B * Q)	0.00465	0.00596	0.03504
	(!CLK * !SET_B * Q)	0.00799	0.00931	0.03837
sky130_fd_sc_hs__dfstp_2	CLK	0.00055	0.00232	0.03363
	CLK	0.00347	0.00524	0.03654
	(!CLK * SET_B)	0.00838	0.01007	0.04111
	(!CLK * SET_B)	0.01157	0.01327	0.04430
	(!CLK * !SET_B * Q)	0.00483	0.00613	0.03515
	(!CLK * !SET_B * Q)	0.00818	0.00949	0.03850
sky130_fd_sc_hs__dfstp_4	CLK	0.00080	0.00257	0.03387
	CLK	0.00370	0.00547	0.03677
	(!CLK * SET_B)	0.00826	0.00997	0.04106
	(!CLK * SET_B)	0.01147	0.01318	0.04427
	(!CLK * !SET_B * Q)	0.00480	0.00611	0.03521
	(!CLK * !SET_B * Q)	0.00814	0.00947	0.03854

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00292	0.00295	0.00292
	(CLK * Q)	-0.00239	-0.00241	-0.00239
	(!CLK * D * Q)	0.00313	0.00316	0.00313
	(!CLK * D * Q)	-0.00218	-0.00220	-0.00218
	(!CLK * !D * Q)	0.00591	0.00712	0.03593
	(!CLK * !D * Q)	0.00037	0.00156	0.03038
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00280	0.00284	0.00281
	(CLK * Q)	-0.00224	-0.00226	-0.00225
	(!CLK * D * Q)	0.00301	0.00305	0.00302
	(!CLK * D * Q)	-0.00204	-0.00206	-0.00204
	(!CLK * !D * Q)	0.00580	0.00701	0.03581
	(!CLK * !D * Q)	0.00051	0.00169	0.03052
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00317	0.00321	0.00318
	(CLK * Q)	-0.00196	-0.00198	-0.00197
	(!CLK * D * Q)	0.00335	0.00339	0.00336
	(!CLK * D * Q)	-0.00178	-0.00180	-0.00178
	(!CLK * !D * Q)	0.00605	0.00728	0.03608
	(!CLK * !D * Q)	0.00070	0.00190	0.03073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00234	-0.00242	-0.00242
	(CLK * Q)	0.00295	0.00292	0.00289
	(!CLK * D * Q)	-0.00254	-0.00264	-0.00264
	(!CLK * D * Q)	0.00276	0.00271	0.00267
	(!CLK * !D * Q)	0.00011	0.00171	0.03067
	(!CLK * !D * Q)	0.00569	0.00729	0.03622
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00235	-0.00243	-0.00243
	(CLK * Q)	0.00269	0.00266	0.00263
	(!CLK * D * Q)	-0.00255	-0.00265	-0.00265
	(!CLK * D * Q)	0.00249	0.00244	0.00242
	(!CLK * !D * Q)	0.00016	0.00172	0.03069
	(!CLK * !D * Q)	0.00543	0.00704	0.03599
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00226	-0.00235	-0.00235
	(CLK * Q)	0.00285	0.00283	0.00280
	(!CLK * D * Q)	-0.00244	-0.00255	-0.00255
	(!CLK * D * Q)	0.00268	0.00263	0.00260
	(!CLK * !D * Q)	0.00030	0.00189	0.03087
	(!CLK * !D * Q)	0.00569	0.00729	0.03623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01631	0.02012	0.10817
	(D * Q)	0.01147	0.01526	0.10333
	(!D * SET_B * !Q)	0.01604	0.01987	0.10789
	(!D * SET_B * !Q)	0.01119	0.01501	0.10305
	(!D * !SET_B * Q)	0.02960	0.03380	0.12264
	(!D * !SET_B * Q)	0.02433	0.02851	0.11737
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01647	0.02033	0.10840
	(D * Q)	0.01159	0.01543	0.10352
	(!D * SET_B * !Q)	0.01617	0.02000	0.10809
	(!D * SET_B * !Q)	0.01128	0.01510	0.10321
	(!D * !SET_B * Q)	0.02987	0.03402	0.12290
	(!D * !SET_B * Q)	0.02456	0.02871	0.11758
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01652	0.02038	0.10847
	(D * Q)	0.01160	0.01545	0.10355
	(!D * SET_B * !Q)	0.01629	0.02012	0.10824
	(!D * SET_B * !Q)	0.01137	0.01518	0.10332
	(!D * !SET_B * Q)	0.02972	0.03391	0.12283
	(!D * !SET_B * Q)	0.02437	0.02855	0.11748

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)**	0.01638	0.02156	0.11277
	(D * SET_B * !Q)	0.02095	0.02616	0.11736
	(D * Q)	0.00945	0.01458	0.10337
	(D * Q)	0.01428	0.01943	0.10822
	(!D * SET_B * Q)	0.01855	0.02390	0.11359
	(!D * SET_B * Q)	0.02365	0.02902	0.11871
	(!D * SET_B * !Q)	0.00940	0.01455	0.10322
	(!D * SET_B * !Q)	0.01423	0.01941	0.10807
	(!D * !SET_B * Q)	0.01499	0.02033	0.10998
	(!D * !SET_B * Q)	0.02026	0.02562	0.11527
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01634	0.02154	0.11282
	(D * SET_B * !Q)	0.02095	0.02617	0.11744
	(D * Q)	0.00924	0.01438	0.10326
	(D * Q)	0.01411	0.01928	0.10815
	(!D * SET_B * Q)	0.01862	0.02399	0.11376
	(!D * SET_B * Q)	0.02377	0.02915	0.11893
	(!D * SET_B * !Q)	0.00946	0.01462	0.10339
	(!D * SET_B * !Q)	0.01434	0.01952	0.10828
	(!D * !SET_B * Q)	0.01508	0.02043	0.11017
	(!D * !SET_B * Q)	0.02039	0.02575	0.11549
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01640	0.02159	0.11293
	(D * SET_B * !Q)	0.02100	0.02622	0.11755
	(D * Q)	0.00952	0.01467	0.10355
	(D * Q)	0.01442	0.01960	0.10848
	(!D * SET_B * Q)	0.01846	0.02384	0.11363
	(!D * SET_B * Q)	0.02367	0.02908	0.11886
	(!D * SET_B * !Q)	0.00946	0.01462	0.10340
	(!D * SET_B * !Q)	0.01436	0.01955	0.10832
	(!D * !SET_B * Q)	0.01501	0.02036	0.11013
	(!D * !SET_B * Q)	0.02036	0.02574	0.11549

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00183	0.00306	1.24777	1.24031
sky130_fd_sc_hs__dfxbp_2	0.00178	0.00307	2.13037	2.45258

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	44.35840	62.39930
sky130_fd_sc_hs__dfxbp_2	0.00000	60.60680	94.85150

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)	0.18908	0.66141	6.19317
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.21983	0.60866	5.95678

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.20624	0.49583	3.01194
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.20175	0.42834	2.45645

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)	0.24372	0.71676	6.22379
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.25772	0.62909	6.10062

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)	0.22271	0.49045	2.89613
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.27319	0.50067	2.96057

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)	-0.02071	-0.05432	-0.19692
	setup	CLK (R)	0.07354	0.09756	0.29365
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02012	-0.04780	-0.16929
	setup	CLK (R)	0.05648	0.08402	0.27596

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)	-0.03764	-0.13400	-2.23900
	setup	CLK (R)	0.10424	0.20518	2.50928
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03846	-0.12904	-2.20333
	setup	CLK (R)	0.09811	0.20071	2.49949

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 ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.07626	0.65918	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.11578	0.65918	16.50020
	min_pulse_width	CLK ()	0.07873	0.65918	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 ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.16518	0.65918	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.12319	0.65918	16.50020
	min_pulse_width	CLK ()	0.16518	0.65918	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	0.01649	0.01868	0.06715
	CLK	0.01420	0.01634	0.06463
sky130_fd_sc_hs__dfxbp_2	CLK	0.02095	0.02329	0.07191
	CLK	0.01863	0.02092	0.06951

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01708	0.01949	0.06613
	CLK	0.01479	0.01718	0.06374
sky130_fd_sc_hs__dfxbp_2	CLK	0.02128	0.02392	0.07058
	CLK	0.01895	0.02157	0.06826

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01739	0.01981	0.06716
	CLK	0.01510	0.01749	0.06467
sky130_fd_sc_hs__dfxbp_2	CLK	0.02164	0.02426	0.07244
	CLK	0.01931	0.02192	0.06964

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01632	0.01845	0.06623
	CLK	0.01402	0.01616	0.06379
sky130_fd_sc_hs__dfxbp_2	CLK	0.02060	0.02297	0.07082
	CLK	0.01827	0.02057	0.06822

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00296	0.00485	0.03621
	CLK	0.00000	0.00188	0.03326
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01020	0.01203	0.04776
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00724	0.00908	0.04480
sky130_fd_sc_hs__dfxbp_2	CLK	0.00307	0.00499	0.03631
	CLK	0.00020	0.00211	0.03344
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01031	0.01214	0.04787
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00743	0.00926	0.04499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00006	0.00207	0.03334
	CLK	0.00301	0.00504	0.03629
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00680	0.00881	0.04347
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00973	0.01177	0.04643
sky130_fd_sc_hs__dfxbp_2	CLK	0.00033	0.00236	0.03358
	CLK	0.00320	0.00525	0.03646
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00668	0.00871	0.04333
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00954	0.01158	0.04621

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)	0.01468	0.01895	0.10938
	(D * Q * !Q_N)	0.01010	0.01434	0.10477
	(!D * !Q * Q_N)	0.01507	0.01932	0.10977
	(!D * !Q * Q_N)	0.01048	0.01472	0.10516
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01506	0.01927	0.10975
	(D * Q * !Q_N)	0.01041	0.01460	0.10510
	(!D * !Q * Q_N)	0.01502	0.01922	0.10971
	(!D * !Q * Q_N)	0.01037	0.01455	0.10506

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)	0.01094	0.01604	0.10599
	(D * Q * !Q_N)	0.01551	0.02062	0.11057
	(D * !Q * Q_N)	0.01779	0.02300	0.11601
	(D * !Q * Q_N)	0.02236	0.02762	0.12061
	(!D * Q * !Q_N)	0.01912	0.02442	0.11591
	(!D * Q * !Q_N)	0.02369	0.02901	0.12051
	(!D * !Q * Q_N)	0.01075	0.01585	0.10589
	(!D * !Q * Q_N)	0.01532	0.02047	0.11049
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01121	0.01630	0.10630
	(D * Q * !Q_N)	0.01584	0.02098	0.11095
	(D * !Q * Q_N)	0.01791	0.02314	0.11618
	(D * !Q * Q_N)	0.02255	0.02780	0.12084
	(!D * Q * !Q_N)	0.01888	0.02417	0.11581
	(!D * Q * !Q_N)	0.02351	0.02884	0.12046
	(!D * !Q * Q_N)	0.01088	0.01599	0.10607
	(!D * !Q * Q_N)	0.01552	0.02067	0.11071

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00178	0.00306	1.24975
sky130_fd_sc_hs__dfxtp_2	0.00183	0.00306	2.53018
sky130_fd_sc_hs__dfxtp_4	0.00182	0.00307	4.68748

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	35.03490	62.14140
sky130_fd_sc_hs__dfxtp_2	0.00000	35.11930	55.33590
sky130_fd_sc_hs__dfxtp_4	0.00000	54.90390	81.10940

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)**	0.17128	0.64368	6.16528
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.18269	0.56050	6.20209
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.21806	0.53147	6.19649

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.19654	0.48156	2.99170
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.20241	0.44654	3.03827
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.20933	0.41830	2.97080

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)	-0.02064	-0.05215	-0.18086
	setup	CLK (R)	0.07512	0.09649	0.27808
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02051	-0.04815	-0.18369
	setup	CLK (R)	0.07310	0.09372	0.28653
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.02030	-0.04705	-0.17296
	setup	CLK (R)	0.06376	0.09061	0.28682

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)	-0.04245	-0.13818	-2.26137
	setup	CLK (R)	0.10731	0.20918	2.53110
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03601	-0.13100	-2.23087
	setup	CLK (R)	0.09821	0.19995	2.50274
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03294	-0.12786	-2.18098
	setup	CLK (R)	0.09790	0.20040	2.49740

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 ()	0.08120	0.65918	16.50020
	min_pulse_width	CLK ()	0.07379	0.65918	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.07626	0.65918	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.11578	0.65918	16.50020
	min_pulse_width	CLK ()	0.08120	0.65918	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 ()	0.14048	0.65918	16.50020
	min_pulse_width	CLK ()	0.16765	0.65918	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.16518	0.65918	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
	min_pulse_width	CLK ()	0.16765	0.65918	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	0.02564	0.02991	0.12606
	CLK	0.02099	0.02528	0.12177
sky130_fd_sc_hs__dfxtp_2	CLK	0.02898	0.03332	0.12942
	CLK	0.02430	0.02889	0.12548
sky130_fd_sc_hs__dfxtp_4	CLK	0.03772	0.04192	0.13794
	CLK	0.03310	0.03732	0.13472

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02671	0.03137	0.12510
	CLK	0.02206	0.02674	0.12015
sky130_fd_sc_hs__dfxtp_2	CLK	0.03016	0.03503	0.12827
	CLK	0.02549	0.03021	0.12340
sky130_fd_sc_hs__dfxtp_4	CLK	0.03932	0.04426	0.13992
	CLK	0.03470	0.03964	0.13281

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00275	0.00462	0.03597
	CLK	-0.00013	0.00173	0.03309
	!CLK	0.01005	0.01188	0.04763
	!CLK	0.00716	0.00898	0.04473
sky130_fd_sc_hs__dfxtp_2	CLK	0.00285	0.00475	0.03616
	CLK	-0.00011	0.00179	0.03320
	!CLK	0.00990	0.01172	0.04750
	!CLK	0.00694	0.00876	0.04454
sky130_fd_sc_hs__dfxtp_4	CLK	0.00293	0.00485	0.03624
	CLK	-0.00001	0.00190	0.03330
	!CLK	0.01012	0.01196	0.04771
	!CLK	0.00717	0.00902	0.04476

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00045	0.00238	0.03362
	CLK	0.00334	0.00527	0.03650
	!CLK	0.00719	0.00912	0.04381
	!CLK	0.01009	0.01201	0.04670
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00005	0.00193	0.03326
	CLK	0.00289	0.00490	0.03623
	!CLK	0.00681	0.00881	0.04351
	!CLK	0.00977	0.01177	0.04647
sky130_fd_sc_hs__dfxtp_4	CLK	0.00023	0.00223	0.03355
	CLK	0.00318	0.00519	0.03650
	!CLK	0.00695	0.00894	0.04360
	!CLK	0.00989	0.01189	0.04654

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01475	0.01892	0.10935
	(D * Q)	0.01011	0.01426	0.10472
	(!D * !Q)	0.01519	0.01941	0.10982
	(!D * !Q)	0.01055	0.01476	0.10516
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01474	0.01897	0.10939
	(D * Q)	0.01007	0.01428	0.10473
	(!D * !Q)	0.01519	0.01941	0.10985
	(!D * !Q)	0.01052	0.01473	0.10517
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01486	0.01907	0.10936
	(D * Q)	0.01025	0.01443	0.10472
	(!D * !Q)	0.01521	0.01942	0.10973
	(!D * !Q)	0.01060	0.01479	0.10509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01136	0.01648	0.10640
	(D * Q)	0.01600	0.02114	0.11106
	(D * !Q)	0.01798	0.02320	0.11615
	(D * !Q)	0.02261	0.02784	0.12080
	(!D * Q)	0.01948	0.02479	0.11634
	(!D * Q)	0.02411	0.02944	0.12098
	(!D * !Q)	0.01080	0.01592	0.10592
	(!D * !Q)	0.01544	0.02059	0.11058
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01108	0.01620	0.10616
	(D * Q)	0.01574	0.02089	0.11084
	(D * !Q)	0.01763	0.02289	0.11583
	(D * !Q)	0.02229	0.02756	0.12051
	(!D * Q)	0.01929	0.02462	0.11624
	(!D * Q)	0.02395	0.02929	0.12091
	(!D * !Q)	0.01075	0.01588	0.10591
	(!D * !Q)	0.01542	0.02058	0.11060
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01173	0.01681	0.10653
	(D * Q)	0.01633	0.02145	0.11117
	(D * !Q)	0.01822	0.02342	0.11615
	(D * !Q)	0.02283	0.02806	0.12077
	(!D * Q)	0.01992	0.02523	0.11659
	(!D * Q)	0.02454	0.02986	0.12122
	(!D * !Q)	0.01128	0.01637	0.10617
	(!D * !Q)	0.01589	0.02101	0.11081

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00270	0.00460	1.30286
sky130_fd_sc_hs__dlclkp_2	0.00269	0.00495	2.48594
sky130_fd_sc_hs__dlclkp_4	0.00268	0.00519	4.88348

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	42.28460	66.84410
sky130_fd_sc_hs__dlclkp_2	0.00000	42.26580	52.98800
sky130_fd_sc_hs__dlclkp_4	0.00000	49.03850	53.94370

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)**	0.06709	0.51871	6.42632
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.06989	0.43527	6.18964
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.09709	0.43604	6.46196

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.07242	0.47149	4.94003
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.07876	0.45620	4.92153
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.10362	0.48467	5.01777

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)	-0.03509	-0.06953	-0.62021
	setup	CLK (R)	0.12173	0.17622	0.70571
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03402	-0.06953	-0.62315
	setup	CLK (R)	0.13012	0.17399	0.72995
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03004	-0.06736	-0.60140
	setup	CLK (R)	0.12419	0.15307	0.77910

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)	-0.03943	-0.09428	-1.77389
	setup	CLK (R)	0.08880	0.16475	1.90231
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03857	-0.09207	-1.75854
	setup	CLK (R)	0.08273	0.14933	1.88157
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03507	-0.09078	-1.75908
	setup	CLK (R)	0.06246	0.11189	1.88021

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 ()	0.04909	0.65918	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.05403	0.65918	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.08367	0.65918	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 ()	0.16765	0.65918	16.50020
	min_pulse_width	CLK ()	0.14048	0.65918	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.17753	0.65918	16.50020
	min_pulse_width	CLK ()	0.14295	0.65918	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.17012	0.65918	16.50020
	min_pulse_width	CLK ()	0.14048	0.65918	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	0.01981	0.02846	0.19723
	CLK	0.01236	0.02101	0.19002
sky130_fd_sc_hs__dlclkp_2	CLK	0.02329	0.03179	0.20190
	CLK	0.01528	0.02382	0.19463
sky130_fd_sc_hs__dlclkp_4	CLK	0.03078	0.03809	0.20262
	CLK	0.02255	0.02992	0.19543

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01174	0.02263	0.19315
	CLK	0.01912	0.02997	0.19813
sky130_fd_sc_hs__dlclkp_2	CLK	0.01532	0.02627	0.19675
	CLK	0.02324	0.03410	0.20379
sky130_fd_sc_hs__dlclkp_4	CLK	0.02394	0.03316	0.20285
	CLK	0.03214	0.04131	0.20624

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00271	0.00240	0.00233
	CLK	-0.00114	-0.00150	-0.00151
	(!CLK * !GCLK)	0.01357	0.01600	0.07679
	(!CLK * !GCLK)	0.00945	0.01185	0.07266
sky130_fd_sc_hs__dlclkp_2	CLK	0.00189	0.00191	0.00189
	CLK	-0.00196	-0.00197	-0.00196
	(!CLK * !GCLK)	0.01376	0.01618	0.07724
	(!CLK * !GCLK)	0.00967	0.01206	0.07315
sky130_fd_sc_hs__dlclkp_4	CLK	0.00197	0.00198	0.00197
	CLK	-0.00183	-0.00185	-0.00184
	(!CLK * !GCLK)	0.01359	0.01598	0.07695
	(!CLK * !GCLK)	0.00970	0.01207	0.07304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00116	-0.00117	-0.00118
	CLK	0.00270	0.00270	0.00268
	(!CLK * !GCLK)	0.00943	0.01200	0.07233
	(!CLK * !GCLK)	0.01357	0.01616	0.07646
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00105	-0.00116	-0.00119
	CLK	0.00281	0.00273	0.00267
	(!CLK * !GCLK)	0.00989	0.01244	0.07274
	(!CLK * !GCLK)	0.01401	0.01657	0.07685
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00088	-0.00100	-0.00102
	CLK	0.00293	0.00285	0.00278
	(!CLK * !GCLK)	0.01066	0.01320	0.07344
	(!CLK * !GCLK)	0.01457	0.01711	0.07735

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01164	0.01672	0.11031
	(!GATE * !GCLK)	0.00450	0.00954	0.10315
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01229	0.01728	0.11089
	(!GATE * !GCLK)	0.00463	0.00959	0.10322
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01234	0.01714	0.10922
	(!GATE * !GCLK)	0.00443	0.00916	0.10129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01585	0.02200	0.12990
	(GATE * !GCLK)	0.02302	0.02915	0.13703
	(!GATE * !GCLK)	0.00569	0.01143	0.10431
	(!GATE * !GCLK)	0.01284	0.01863	0.11147
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01636	0.02255	0.13075
	(GATE * !GCLK)	0.02411	0.03025	0.13846
	(!GATE * !GCLK)	0.00602	0.01176	0.10481
	(!GATE * !GCLK)	0.01368	0.01947	0.11250
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01603	0.02194	0.12879
	(GATE * !GCLK)	0.02414	0.03010	0.13693
	(!GATE * !GCLK)	0.00582	0.01142	0.10275
	(!GATE * !GCLK)	0.01375	0.01936	0.11072

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00239	0.00264	0.00294	1.25104	1.26763
sky130_fd_sc_hs__dlrbn_2	0.00240	0.00264	0.00304	2.13089	2.43013

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	55.68200	73.81800
sky130_fd_sc_hs__dlrbn_2	0.00000	58.03600	73.98550

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)	0.23431	0.68706	6.22802
	GATE_N->Q (-R)	0.27245	0.86770	8.15274
	RESET_B->Q (RR)	0.08582	0.56027	6.32872
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.24177	0.61629	5.98751
	GATE_N->Q (-R)	0.28279	0.80325	7.96656
	RESET_B->Q (RR)	0.09329	0.50282	6.07676

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.18580	0.55886	4.50829
	GATE_N->Q (-F)	0.19749	0.60730	4.84865
	RESET_B->Q (FF)	0.08346	0.50884	4.76585
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.20259	0.53260	4.12624
	GATE_N->Q (-F)	0.21466	0.58107	4.46305
	RESET_B->Q (FF)	0.09617	0.49566	4.45030

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)	0.22681	0.78499	7.75708
	GATE_N->Q_N (-R)	0.23865	0.83307	8.09682
	RESET_B->Q_N (FR)	0.12662	0.72187	7.84023
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.26355	0.73511	7.92149
	GATE_N->Q_N (-R)	0.27581	0.78332	8.25750
	RESET_B->Q_N (FR)	0.16010	0.68765	8.06761

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)	0.26784	0.51634	3.01342
	GATE_N->Q_N (-F)	0.30599	0.69682	4.93913
	RESET_B->Q_N (RF)	0.11924	0.38295	2.85029
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.30566	0.52851	3.27476
	GATE_N->Q_N (-F)	0.34682	0.71535	5.25420
	RESET_B->Q_N (RF)	0.15663	0.41197	3.18336

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 ()**	0.10096	0.65918	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.12566	0.65918	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	0.01453	0.01675	0.05774
	D	0.01253	0.01465	0.05553
	GATE_N	0.01482	0.01777	0.06397
	GATE_N	0.01673	0.01969	0.06553
	RESET_B	0.00978	0.01131	0.04451
	RESET_B	0.00741	0.00892	0.04199
sky130_fd_sc_hs__dlrbn_2	D	0.01786	0.02014	0.06089
	D	0.01589	0.01806	0.05859
	GATE_N	0.01817	0.02116	0.06734
	GATE_N	0.02010	0.02307	0.06838
	RESET_B	0.01334	0.01471	0.04366
	RESET_B	0.01092	0.01228	0.04097

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01116	0.01383	0.05470
	D	0.01317	0.01582	0.05637
	GATE_N	0.01340	0.01667	0.06414
	GATE_N	0.01555	0.01881	0.06628
	RESET_B	0.00627	0.00867	0.04590
	RESET_B	0.00863	0.01102	0.04825
sky130_fd_sc_hs__dlrbn_2	D	0.01471	0.01751	0.05720
	D	0.01669	0.01942	0.05917
	GATE_N	0.01695	0.02022	0.06764
	GATE_N	0.01908	0.02230	0.06921
	RESET_B	0.00952	0.01183	0.04889
	RESET_B	0.01195	0.01417	0.05073

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01147	0.01423	0.05600
	D	0.01347	0.01620	0.05708
	GATE_N	0.01371	0.01701	0.06531
	GATE_N	0.01586	0.01915	0.06695
	RESET_B	0.00665	0.00905	0.04777
	RESET_B	0.00901	0.01140	0.04916
sky130_fd_sc_hs__dlrbn_2	D	0.01506	0.01797	0.05941
	D	0.01703	0.01982	0.06021
	GATE_N	0.01729	0.02062	0.06804
	GATE_N	0.01943	0.02274	0.06973
	RESET_B	0.00995	0.01233	0.04980
	RESET_B	0.01238	0.01460	0.05130

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01418	0.01635	0.05685
	D	0.01218	0.01430	0.05473
	GATE_N	0.01447	0.01736	0.06315
	GATE_N	0.01638	0.01928	0.06482
	RESET_B	0.00943	0.01095	0.04392
	RESET_B	0.00706	0.00856	0.04141
sky130_fd_sc_hs__dlrbn_2	D	0.01749	0.01974	0.05957
	D	0.01551	0.01769	0.05738
	GATE_N	0.01781	0.02074	0.06619
	GATE_N	0.01973	0.02266	0.06750
	RESET_B	0.01297	0.01439	0.04264
	RESET_B	0.01055	0.01193	0.03990

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)	0.00655	0.01057	0.08788
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00277	0.00679	0.08410
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01162	0.01554	0.09604
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00808	0.01199	0.09250
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)	0.00658	0.01055	0.08648
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00284	0.00678	0.08273
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01105	0.01509	0.09409
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00754	0.01156	0.09057

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)	0.00201	0.00690	0.08451
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00579	0.01070	0.08829
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00876	0.01359	0.09441
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01232	0.01715	0.09797
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)	0.00198	0.00679	0.08303
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00574	0.01056	0.08678
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00896	0.01371	0.09317
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01249	0.01724	0.09670

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)	0.01088	0.01563	0.10857
	(D * RESET_B * Q * !Q_N)	0.00680	0.01154	0.10449
	(D * !RESET_B * !Q * Q_N)	0.01694	0.02165	0.11414
	(D * !RESET_B * !Q * Q_N)	0.01265	0.01734	0.10984
	(!D * !Q * Q_N)	0.01134	0.01607	0.10895
	(!D * !Q * Q_N)	0.00726	0.01197	0.10487
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01097	0.01564	0.10701
	(D * RESET_B * Q * !Q_N)	0.00693	0.01158	0.10296
	(D * !RESET_B * !Q * Q_N)	0.01715	0.02175	0.11263
	(D * !RESET_B * !Q * Q_N)	0.01288	0.01750	0.10836
	(!D * !Q * Q_N)	0.01124	0.01589	0.10721
	(!D * !Q * Q_N)	0.00720	0.01182	0.10316

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)	0.00862	0.01430	0.10643
	(D * RESET_B * Q * !Q_N)	0.01270	0.01839	0.11051
	(D * !RESET_B * !Q * Q_N)	0.01206	0.01772	0.10873
	(D * !RESET_B * !Q * Q_N)	0.01637	0.02203	0.11302
	(!D * !Q * Q_N)	0.00770	0.01345	0.10586
	(!D * !Q * Q_N)	0.01179	0.01754	0.10994
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00858	0.01416	0.10465
	(D * RESET_B * Q * !Q_N)	0.01263	0.01822	0.10870
	(D * !RESET_B * !Q * Q_N)	0.01154	0.01709	0.10651
	(D * !RESET_B * !Q * Q_N)	0.01582	0.02138	0.11079
	(!D * !Q * Q_N)	0.00770	0.01335	0.10401
	(!D * !Q * Q_N)	0.01176	0.01741	0.10806

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)	0.00238	0.00240	0.00239
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00172	-0.00174	-0.00172
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00249	0.00252	0.00250
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00175	-0.00176	-0.00175

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)	-0.00096	-0.00106	-0.00110
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00317	0.00307	0.00302
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00105	-0.00118	-0.00120
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00317	0.00310	0.00305

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00223	0.00253	0.00303	1.24906	1.25606
sky130_fd_sc_hs__dlrbp_2	0.00223	0.00253	0.00303	2.47639	2.55742

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	55.68080	73.81860
sky130_fd_sc_hs__dlrbp_2	0.00000	58.03750	73.99100

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)	0.22799	0.67816	6.21459
	GATE->Q (-R)	0.20390	0.65494	5.99605
	RESET_B->Q (RR)	0.08720	0.56502	6.36572
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.23578	0.59410	6.14690
	GATE->Q (-R)	0.20993	0.56774	5.92254
	RESET_B->Q (RR)	0.09227	0.49232	6.38628

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.18422	0.55764	4.53275
	GATE->Q (-F)	0.20010	0.45586	2.68334
	RESET_B->Q (FF)	0.08474	0.51262	4.77749
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.20070	0.54494	4.62771
	GATE->Q (-F)	0.21612	0.44133	2.77032
	RESET_B->Q (FF)	0.09233	0.50196	4.91259

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)	0.22725	0.79210	7.87794
	GATE->Q_N (-R)	0.24324	0.69027	6.02913
	RESET_B->Q_N (FR)	0.13002	0.73385	7.94541
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.25989	0.72141	7.88135
	GATE->Q_N (-R)	0.27547	0.61764	6.02486
	RESET_B->Q_N (FR)	0.15193	0.66856	7.97948

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)	0.26282	0.50495	2.92889
	GATE->Q_N (-F)	0.23878	0.48167	2.71041
	RESET_B->Q_N (RF)	0.12199	0.38497	2.81788
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.29312	0.49642	3.07550
	GATE->Q_N (-F)	0.26738	0.46994	2.85024
	RESET_B->Q_N (RF)	0.14905	0.39023	3.06497

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 ()**	0.09849	0.65918	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.11578	0.65918	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	0.01382	0.01601	0.05641
	D	0.01194	0.01405	0.05429
	GATE	0.01552	0.01795	0.06695
	GATE	0.01341	0.01584	0.06463
	RESET_B	0.00983	0.01133	0.04451
	RESET_B	0.00740	0.00885	0.04193
sky130_fd_sc_hs__dlrbp_2	D	0.01753	0.01986	0.06031
	D	0.01565	0.01785	0.05806
	GATE	0.01918	0.02178	0.07121
	GATE	0.01707	0.01960	0.06870
	RESET_B	0.01343	0.01511	0.05097
	RESET_B	0.01099	0.01261	0.04818

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01155	0.01421	0.05436
	D	0.01344	0.01608	0.05588
	GATE	0.01552	0.01828	0.06420
	GATE	0.01368	0.01637	0.06224
	RESET_B	0.00646	0.00886	0.04624
	RESET_B	0.00889	0.01127	0.04847
sky130_fd_sc_hs__dlrbp_2	D	0.01513	0.01788	0.05830
	D	0.01701	0.01968	0.05958
	GATE	0.01909	0.02178	0.06779
	GATE	0.01723	0.01992	0.06579
	RESET_B	0.00994	0.01235	0.05171
	RESET_B	0.01238	0.01477	0.05337

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01186	0.01461	0.05545
	D	0.01375	0.01645	0.05657
	GATE	0.01583	0.01857	0.06513
	GATE	0.01399	0.01667	0.06306
	RESET_B	0.00684	0.00933	0.04761
	RESET_B	0.00927	0.01166	0.04930
sky130_fd_sc_hs__dlrbp_2	D	0.01544	0.01814	0.05995
	D	0.01732	0.02001	0.06035
	GATE	0.01940	0.02218	0.06906
	GATE	0.01754	0.02025	0.06681
	RESET_B	0.01031	0.01276	0.05292
	RESET_B	0.01275	0.01515	0.05418

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01347	0.01560	0.05548
	D	0.01158	0.01368	0.05344
	GATE	0.01516	0.01759	0.06550
	GATE	0.01305	0.01548	0.06338
	RESET_B	0.00947	0.01095	0.04383
	RESET_B	0.00704	0.00849	0.04128
sky130_fd_sc_hs__dlrbp_2	D	0.01716	0.01938	0.05902
	D	0.01528	0.01745	0.05705
	GATE	0.01879	0.02137	0.06925
	GATE	0.01668	0.01920	0.06710
	RESET_B	0.01303	0.01466	0.04972
	RESET_B	0.01060	0.01219	0.04728

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)	0.01017	0.01411	0.09322
	(GATE * !RESET_B * !Q * Q_N)	0.00692	0.01085	0.08996
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00636	0.01041	0.08634
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00287	0.00690	0.08285
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01026	0.01418	0.09328
	(GATE * !RESET_B * !Q * Q_N)	0.00700	0.01091	0.09002
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00643	0.01045	0.08639
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00291	0.00692	0.08287

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)	0.00910	0.01390	0.09330
	(GATE * !RESET_B * !Q * Q_N)	0.01237	0.01718	0.09657
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00162	0.00651	0.08275
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00513	0.01001	0.08625
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00921	0.01400	0.09340
	(GATE * !RESET_B * !Q * Q_N)	0.01247	0.01728	0.09667
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00180	0.00666	0.08291
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00531	0.01019	0.08643

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)	0.01132	0.01608	0.10759
	(D * RESET_B * Q * !Q_N)	0.00736	0.01211	0.10364
	(D * !RESET_B * !Q * Q_N)	0.01316	0.01794	0.11379
	(D * !RESET_B * !Q * Q_N)	0.00945	0.01422	0.11008
	(!D * !Q * Q_N)	0.01112	0.01587	0.10729
	(!D * !Q * Q_N)	0.00717	0.01190	0.10333
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01140	0.01617	0.10771
	(D * RESET_B * Q * !Q_N)	0.00742	0.01218	0.10373
	(D * !RESET_B * !Q * Q_N)	0.01313	0.01793	0.11378
	(D * !RESET_B * !Q * Q_N)	0.00941	0.01421	0.11007
	(!D * !Q * Q_N)	0.01108	0.01584	0.10731
	(!D * !Q * Q_N)	0.00711	0.01187	0.10333

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)	0.00722	0.01287	0.10349
	(D * RESET_B * Q * !Q_N)	0.01119	0.01683	0.10744
	(D * !RESET_B * !Q * Q_N)	0.01221	0.01807	0.11230
	(D * !RESET_B * !Q * Q_N)	0.01596	0.02180	0.11604
	(!D * !Q * Q_N)	0.00696	0.01262	0.10350
	(!D * !Q * Q_N)	0.01093	0.01658	0.10746
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00725	0.01288	0.10346
	(D * RESET_B * Q * !Q_N)	0.01123	0.01687	0.10743
	(D * !RESET_B * !Q * Q_N)	0.01214	0.01799	0.11221
	(D * !RESET_B * !Q * Q_N)	0.01587	0.02171	0.11594
	(!D * !Q * Q_N)	0.00696	0.01263	0.10353
	(!D * !Q * Q_N)	0.01094	0.01660	0.10750

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)	0.00240	0.00243	0.00242
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00177	-0.00180	-0.00178
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00243	0.00246	0.00244
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00177	-0.00179	-0.00177

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)	-0.00099	-0.00110	-0.00112
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00322	0.00313	0.00308
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00101	-0.00112	-0.00114
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00322	0.00312	0.00307

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00221	0.00256	0.00288	1.28194
sky130_fd_sc_hs__dlrtn_2	0.00224	0.00254	0.00299	2.46474
sky130_fd_sc_hs__dlrtn_4	0.00223	0.00255	0.00484	4.64313

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	43.11080	59.11770
sky130_fd_sc_hs__dlrtn_2	0.00000	45.63580	62.40510
sky130_fd_sc_hs__dlrtn_4	0.00000	73.27640	110.27700

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)	0.21580	0.66393	6.23433
	GATE_N->Q (-R)	0.24583	0.82978	8.09149
	RESET_B->Q (RR)	0.07493	0.53120	6.29569
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.22570	0.58359	6.15996
	GATE_N->Q (-R)	0.25566	0.74966	8.01502
	RESET_B->Q (RR)	0.08039	0.45995	6.23467
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.24686	0.54108	6.20239
	GATE_N->Q (-R)	0.27705	0.70808	8.05443
	RESET_B->Q (RR)	0.08556	0.40353	6.40346

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.17371	0.54327	4.56254
	GATE_N->Q (-F)	0.17996	0.58284	4.86785
	RESET_B->Q (FF)	0.07616	0.48762	4.82084
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.18026	0.50495	4.43094
	GATE_N->Q (-F)	0.18618	0.54410	4.73689
	RESET_B->Q (FF)	0.08144	0.46389	4.75916
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.19339	0.48972	4.49107
	GATE_N->Q (-F)	0.20250	0.53508	4.81574
	RESET_B->Q (FF)	0.08772	0.43852	4.86107

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 ()**	0.09108	0.65918	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.10590	0.65918	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.12319	0.65918	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	0.02081	0.02496	0.10576
	D	0.01710	0.02125	0.10251
	GATE_N	0.02127	0.02704	0.11851
	GATE_N	0.02500	0.03076	0.12243
	RESET_B	0.01294	0.01579	0.08409
	RESET_B	0.00829	0.01116	0.07983
sky130_fd_sc_hs__dlrtn_2	D	0.02376	0.02811	0.10890
	D	0.02007	0.02448	0.10593
	GATE_N	0.02424	0.03026	0.12192
	GATE_N	0.02798	0.03406	0.12615
	RESET_B	0.01573	0.01847	0.08126
	RESET_B	0.01092	0.01367	0.07740
sky130_fd_sc_hs__dlrtn_4	D	0.03559	0.04028	0.12146
	D	0.03168	0.03653	0.11897
	GATE_N	0.03610	0.04251	0.13435
	GATE_N	0.03963	0.04609	0.13871
	RESET_B	0.02837	0.03433	0.17327
	RESET_B	0.02057	0.02653	0.16661

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01613	0.02124	0.10200
	D	0.01984	0.02495	0.10570
	GATE_N	0.01919	0.02547	0.12058
	GATE_N	0.02343	0.02971	0.12483
	RESET_B	0.00551	0.01035	0.08527
	RESET_B	0.01014	0.01492	0.08837
sky130_fd_sc_hs__dlrtn_2	D	0.01976	0.02520	0.10586
	D	0.02345	0.02873	0.10930
	GATE_N	0.02296	0.02958	0.12549
	GATE_N	0.02711	0.03352	0.12856
	RESET_B	0.00897	0.01340	0.08706
	RESET_B	0.01376	0.01814	0.09184
sky130_fd_sc_hs__dlrtn_4	D	0.02892	0.03449	0.11574
	D	0.03282	0.03823	0.11935
	GATE_N	0.03219	0.03873	0.13885
	GATE_N	0.03657	0.04309	0.13929
	RESET_B	0.01682	0.02563	0.17673
	RESET_B	0.02457	0.03325	0.18433

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)	0.00617	0.01021	0.08692
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00272	0.00675	0.08346
	(!GATE_N * !RESET_B * !Q)	0.00984	0.01379	0.09380
	(!GATE_N * !RESET_B * !Q)	0.00661	0.01055	0.09057
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00616	0.01018	0.08690
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00267	0.00669	0.08340
	(!GATE_N * !RESET_B * !Q)	0.00994	0.01388	0.09388
	(!GATE_N * !RESET_B * !Q)	0.00669	0.01062	0.09063
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00665	0.01069	0.08746
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00317	0.00721	0.08398
	(!GATE_N * !RESET_B * !Q)	0.01054	0.01450	0.09434
	(!GATE_N * !RESET_B * !Q)	0.00733	0.01128	0.09111

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)	0.00209	0.00699	0.08402
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00553	0.01046	0.08748
	(!GATE_N * !RESET_B * !Q)	0.00941	0.01424	0.09456
	(!GATE_N * !RESET_B * !Q)	0.01264	0.01750	0.09781
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00200	0.00689	0.08393
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00548	0.01040	0.08743
	(!GATE_N * !RESET_B * !Q)	0.00957	0.01439	0.09472
	(!GATE_N * !RESET_B * !Q)	0.01281	0.01767	0.09799
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00246	0.00737	0.08445
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00592	0.01086	0.08794
	(!GATE_N * !RESET_B * !Q)	0.01106	0.01589	0.09609
	(!GATE_N * !RESET_B * !Q)	0.01428	0.01914	0.09934

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)	0.01071	0.01556	0.10841
	(D * RESET_B * Q)	0.00672	0.01155	0.10440
	(D * !RESET_B * !Q)	0.01659	0.02140	0.11382
	(D * !RESET_B * !Q)	0.01238	0.01718	0.10962
	(!D * !Q)	0.01034	0.01518	0.10798
	(!D * !Q)	0.00635	0.01119	0.10398
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.01060	0.01546	0.10833
	(D * RESET_B * Q)	0.00665	0.01149	0.10437
	(D * !RESET_B * !Q)	0.01674	0.02156	0.11404
	(D * !RESET_B * !Q)	0.01256	0.01737	0.10986
	(!D * !Q)	0.01034	0.01519	0.10801
	(!D * !Q)	0.00639	0.01123	0.10405
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01120	0.01604	0.10890
	(D * RESET_B * Q)	0.00724	0.01206	0.10493
	(D * !RESET_B * !Q)	0.01828	0.02311	0.11566
	(D * !RESET_B * !Q)	0.01408	0.01889	0.11146
	(!D * !Q)	0.01050	0.01532	0.10814
	(!D * !Q)	0.00653	0.01136	0.10417

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)	0.00738	0.01308	0.10518
	(D * RESET_B * Q)	0.01139	0.01708	0.10918
	(D * !RESET_B * !Q)	0.01010	0.01579	0.10681
	(D * !RESET_B * !Q)	0.01434	0.02002	0.11104
	(!D * !Q)	0.00695	0.01270	0.10495
	(!D * !Q)	0.01095	0.01670	0.10895
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00740	0.01311	0.10523
	(D * RESET_B * Q)	0.01136	0.01706	0.10919
	(D * !RESET_B * !Q)	0.01026	0.01596	0.10702
	(D * !RESET_B * !Q)	0.01447	0.02017	0.11121
	(!D * !Q)	0.00712	0.01288	0.10515
	(!D * !Q)	0.01109	0.01685	0.10911
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00795	0.01364	0.10577
	(D * RESET_B * Q)	0.01193	0.01760	0.10974
	(D * !RESET_B * !Q)	0.01089	0.01660	0.10764
	(D * !RESET_B * !Q)	0.01514	0.02084	0.11187
	(!D * !Q)	0.00733	0.01307	0.10535
	(!D * !Q)	0.01131	0.01704	0.10931

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)	0.00224	0.00227	0.00225
	(D * GATE_N * !Q) + (!D * !Q)	-0.00173	-0.00175	-0.00173
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00234	0.00237	0.00235
	(D * GATE_N * !Q) + (!D * !Q)	-0.00184	-0.00186	-0.00184
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00370	0.00373	0.00371
	(D * GATE_N * !Q) + (!D * !Q)	-0.00299	-0.00300	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	-0.00114	-0.00125	-0.00128
	(D * GATE_N * !Q) + (!D * !Q)	0.00286	0.00276	0.00271
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00112	-0.00124	-0.00126
	(D * GATE_N * !Q) + (!D * !Q)	0.00309	0.00298	0.00294
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00202	-0.00231	-0.00237
	(D * GATE_N * !Q) + (!D * !Q)	0.00464	0.00444	0.00435

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00238	0.00258	0.00293	1.28734
sky130_fd_sc_hs__dlrtp_2	0.00235	0.00253	0.00304	2.47729
sky130_fd_sc_hs__dlrtp_4	0.00234	0.00252	0.00463	4.68408

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	43.11040	59.11300
sky130_fd_sc_hs__dlrtp_2	0.00000	45.63490	62.40420
sky130_fd_sc_hs__dlrtp_4	0.00000	73.27450	110.26700

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)	0.21427	0.65827	6.20343
	GATE->Q (-R)	0.18977	0.63423	5.98049
	RESET_B->Q (RR)	0.07529	0.53162	6.31379
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.22512	0.57917	6.12531
	GATE->Q (-R)	0.19983	0.55306	5.90332
	RESET_B->Q (RR)	0.08011	0.46105	6.30225
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.24606	0.53851	6.19406
	GATE->Q (-R)	0.22335	0.51659	5.99089
	RESET_B->Q (RR)	0.08536	0.40386	6.44392

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.18022	0.56135	4.74830
	GATE->Q (-F)	0.19596	0.46084	2.91200
	RESET_B->Q (FF)	0.07662	0.49436	4.89492
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.18818	0.52209	4.59278
	GATE->Q (-F)	0.20182	0.41689	2.73474
	RESET_B->Q (FF)	0.07921	0.46184	4.79984
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.19929	0.49959	4.56049
	GATE->Q (-F)	0.21251	0.39707	2.73318
	RESET_B->Q (FF)	0.08689	0.43835	4.88547

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 ()**	0.08861	0.65918	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.10096	0.65918	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.12072	0.65918	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	0.02090	0.02478	0.10458
	D	0.01680	0.02070	0.10084
	GATE	0.02449	0.02908	0.12618
	GATE	0.02018	0.02477	0.12240
	RESET_B	0.01250	0.01518	0.08196
	RESET_B	0.00779	0.01046	0.07754
sky130_fd_sc_hs__dlrtp_2	D	0.02438	0.02850	0.10829
	D	0.02028	0.02441	0.10494
	GATE	0.02764	0.03254	0.12960
	GATE	0.02335	0.02827	0.12532
	RESET_B	0.01576	0.01854	0.08571
	RESET_B	0.01086	0.01364	0.08160
sky130_fd_sc_hs__dlrtp_4	D	0.03590	0.04046	0.12014
	D	0.03174	0.03638	0.11741
	GATE	0.03912	0.04442	0.14165
	GATE	0.03478	0.04020	0.13941
	RESET_B	0.02813	0.03424	0.17714
	RESET_B	0.02067	0.02678	0.17067

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01572	0.02088	0.10136
	D	0.01981	0.02494	0.10471
	GATE	0.02409	0.02922	0.12103
	GATE	0.02027	0.02542	0.11714
	RESET_B	0.00583	0.01065	0.08116
	RESET_B	0.01054	0.01530	0.08463
sky130_fd_sc_hs__dlrtp_2	D	0.01912	0.02441	0.10385
	D	0.02321	0.02838	0.10794
	GATE	0.02712	0.03245	0.12459
	GATE	0.02341	0.02869	0.12033
	RESET_B	0.00887	0.01352	0.08740
	RESET_B	0.01376	0.01831	0.09108
sky130_fd_sc_hs__dlrtp_4	D	0.02866	0.03410	0.11596
	D	0.03281	0.03806	0.11785
	GATE	0.03640	0.04187	0.13418
	GATE	0.03275	0.03809	0.12957
	RESET_B	0.01717	0.02609	0.18211
	RESET_B	0.02459	0.03344	0.18588

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)	0.01040	0.01442	0.09337
	(GATE * !RESET_B * !Q)	0.00683	0.01083	0.08978
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00665	0.01063	0.08653
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00281	0.00677	0.08268
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01059	0.01458	0.09345
	(GATE * !RESET_B * !Q)	0.00701	0.01100	0.08987
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00662	0.01057	0.08646
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00281	0.00675	0.08263
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01103	0.01498	0.09325
	(GATE * !RESET_B * !Q)	0.00747	0.01141	0.08968
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00710	0.01104	0.08646
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00330	0.00723	0.08265

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)	0.00879	0.01355	0.09295
	(GATE * !RESET_B * !Q)	0.01239	0.01715	0.09654
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00160	0.00644	0.08266
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00546	0.01029	0.08651
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00909	0.01383	0.09318
	(GATE * !RESET_B * !Q)	0.01266	0.01742	0.09676
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00162	0.00643	0.08262
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00542	0.01025	0.08645
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01051	0.01522	0.09407
	(GATE * !RESET_B * !Q)	0.01411	0.01882	0.09767
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00207	0.00686	0.08263
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00589	0.01067	0.08644

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)	0.01181	0.01653	0.10816
	(D * RESET_B * Q)	0.00774	0.01245	0.10408
	(D * !RESET_B * !Q)	0.01357	0.01829	0.11433
	(D * !RESET_B * !Q)	0.00976	0.01449	0.11053
	(!D * !Q)	0.01130	0.01602	0.10754
	(!D * !Q)	0.00723	0.01193	0.10346
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01149	0.01624	0.10773
	(D * RESET_B * Q)	0.00748	0.01221	0.10373
	(D * !RESET_B * !Q)	0.01343	0.01818	0.11408
	(D * !RESET_B * !Q)	0.00966	0.01441	0.11031
	(!D * !Q)	0.01107	0.01582	0.10722
	(!D * !Q)	0.00706	0.01179	0.10322
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01185	0.01655	0.10756
	(D * RESET_B * Q)	0.00784	0.01253	0.10357
	(D * !RESET_B * !Q)	0.01388	0.01853	0.11364
	(D * !RESET_B * !Q)	0.01012	0.01476	0.10988
	(!D * !Q)	0.01110	0.01580	0.10671
	(!D * !Q)	0.00710	0.01178	0.10271

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)	0.00721	0.01283	0.10359
	(D * RESET_B * Q)	0.01128	0.01690	0.10765
	(D * !RESET_B * !Q)	0.01204	0.01786	0.11236
	(D * !RESET_B * !Q)	0.01585	0.02169	0.11618
	(!D * !Q)	0.00693	0.01256	0.10349
	(!D * !Q)	0.01100	0.01664	0.10756
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00717	0.01279	0.10338
	(D * RESET_B * Q)	0.01119	0.01681	0.10739
	(D * !RESET_B * !Q)	0.01232	0.01814	0.11245
	(D * !RESET_B * !Q)	0.01610	0.02193	0.11623
	(!D * !Q)	0.00704	0.01269	0.10354
	(!D * !Q)	0.01106	0.01669	0.10756
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00761	0.01322	0.10345
	(D * RESET_B * Q)	0.01163	0.01723	0.10744
	(D * !RESET_B * !Q)	0.01378	0.01952	0.11321
	(D * !RESET_B * !Q)	0.01758	0.02332	0.11699
	(!D * !Q)	0.00702	0.01264	0.10299
	(!D * !Q)	0.01104	0.01666	0.10699

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)	0.00224	0.00227	0.00225
	(D * !GATE * !Q) + (!D * !Q)	-0.00179	-0.00181	-0.00179
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00231	0.00234	0.00232
	(D * !GATE * !Q) + (!D * !Q)	-0.00188	-0.00191	-0.00189
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00362	0.00365	0.00363
	(D * !GATE * !Q) + (!D * !Q)	-0.00283	-0.00285	-0.00283

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)	-0.00113	-0.00125	-0.00128
	(D * !GATE * !Q) + (!D * !Q)	0.00290	0.00281	0.00277
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00109	-0.00120	-0.00123
	(D * !GATE * !Q) + (!D * !Q)	0.00314	0.00303	0.00299
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00195	-0.00223	-0.00229
	(D * !GATE * !Q) + (!D * !Q)	0.00447	0.00427	0.00419

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00237	0.00258	1.25140	1.26322
sky130_fd_sc_hs__dlxbn_2	0.00225	0.00256	2.14656	2.41791

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	50.81060	73.81810
sky130_fd_sc_hs__dlxbn_2	0.00000	54.62390	73.99100

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)	0.21525	0.67188	6.26185
	GATE_N->Q (-R)	0.24638	0.83996	8.12263
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.22200	0.59367	6.02763
	GATE_N->Q (-R)	0.25294	0.76085	7.88261

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.18372	0.56298	4.62486
	GATE_N->Q (-F)	0.19073	0.60406	4.93637
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.19070	0.51435	4.11460
	GATE_N->Q (-F)	0.19818	0.55556	4.42722

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)	0.22673	0.81468	8.24262
	GATE_N->Q_N (-R)	0.23384	0.85567	8.55271
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.24970	0.71727	7.85073
	GATE_N->Q_N (-R)	0.25737	0.75834	8.16281

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)	0.24928	0.50893	3.18625
	GATE_N->Q_N (-F)	0.28038	0.67696	5.04749
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.28051	0.50429	3.25226
	GATE_N->Q_N (-F)	0.31155	0.67139	5.10697

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01375	0.01629	0.05743
	D	0.01191	0.01439	0.05526
	GATE_N	0.01389	0.01723	0.06363
	GATE_N	0.01591	0.01924	0.06517
sky130_fd_sc_hs__dlxbn_2	D	0.01722	0.01991	0.06128
	D	0.01545	0.01807	0.05920
	GATE_N	0.01738	0.02085	0.06846
	GATE_N	0.01939	0.02285	0.06920

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01168	0.01453	0.05485
	D	0.01352	0.01635	0.05668
	GATE_N	0.01341	0.01679	0.06476
	GATE_N	0.01543	0.01880	0.06640
sky130_fd_sc_hs__dlxbn_2	D	0.01504	0.01796	0.05894
	D	0.01681	0.01971	0.06029
	GATE_N	0.01675	0.02023	0.06785
	GATE_N	0.01876	0.02217	0.06971

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01200	0.01490	0.05582
	D	0.01384	0.01673	0.05733
	GATE_N	0.01372	0.01718	0.06492
	GATE_N	0.01575	0.01919	0.06693
sky130_fd_sc_hs__dlxbn_2	D	0.01538	0.01836	0.06079
	D	0.01715	0.02012	0.06112
	GATE_N	0.01710	0.02066	0.06905
	GATE_N	0.01910	0.02260	0.07046

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01344	0.01597	0.05625
	D	0.01160	0.01408	0.05437
	GATE_N	0.01359	0.01684	0.06299
	GATE_N	0.01561	0.01885	0.06457
sky130_fd_sc_hs__dlxbn_2	D	0.01688	0.01949	0.06046
	D	0.01512	0.01773	0.05820
	GATE_N	0.01705	0.02044	0.06721
	GATE_N	0.01905	0.02244	0.06828

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)	0.00642	0.01044	0.08725
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00273	0.00674	0.08356
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00637	0.01040	0.08720
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00285	0.00687	0.08367

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)	0.00177	0.00666	0.08379
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00547	0.01036	0.08749
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00190	0.00681	0.08396
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00542	0.01035	0.08749

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)	0.01100	0.01580	0.10860
	(D * Q * !Q_N)	0.00696	0.01175	0.10456
	(!D * !Q * Q_N)	0.01077	0.01556	0.10830
	(!D * !Q * Q_N)	0.00674	0.01150	0.10426
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01102	0.01584	0.10864
	(D * Q * !Q_N)	0.00701	0.01180	0.10462
	(!D * !Q * Q_N)	0.01073	0.01554	0.10827
	(!D * !Q * Q_N)	0.00671	0.01150	0.10425

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)	0.00744	0.01309	0.10522
	(D * Q * !Q_N)	0.01148	0.01715	0.10926
	(!D * !Q * Q_N)	0.00733	0.01304	0.10529
	(!D * !Q * Q_N)	0.01136	0.01708	0.10933
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00746	0.01311	0.10523
	(D * Q * !Q_N)	0.01150	0.01715	0.10926
	(!D * !Q * Q_N)	0.00727	0.01299	0.10525
	(!D * !Q * Q_N)	0.01131	0.01701	0.10927

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00235	0.00259	1.24216	1.26441

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	50.80810	73.81630

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)	0.21140	0.66265	6.15815
	GATE->Q (-R)	0.18679	0.63746	5.93264

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.18931	0.57278	4.65205
	GATE->Q (-F)	0.20060	0.46465	2.78844

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)	0.23285	0.82411	8.30030
	GATE->Q_N (-R)	0.24424	0.71578	6.43703

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)	0.24557	0.50203	3.13691
	GATE->Q_N (-F)	0.22096	0.47665	2.91090

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01375	0.01624	0.05679
	D	0.01192	0.01437	0.05466
	GATE	0.01532	0.01822	0.06732
	GATE	0.01329	0.01612	0.06502

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01151	0.01430	0.05421
	D	0.01333	0.01611	0.05595
	GATE	0.01539	0.01825	0.06421
	GATE	0.01337	0.01620	0.06207

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01183	0.01466	0.05475
	D	0.01366	0.01648	0.05653
	GATE	0.01571	0.01858	0.06505
	GATE	0.01369	0.01653	0.06288

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01345	0.01591	0.05579
	D	0.01162	0.01407	0.05388
	GATE	0.01502	0.01782	0.06613
	GATE	0.01300	0.01580	0.06399

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)	0.00655	0.01053	0.08644
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00290	0.00686	0.08278

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)	0.00163	0.00645	0.08266
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00528	0.01013	0.08633

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)	0.01117	0.01593	0.10745
	(D * Q * !Q_N)	0.00712	0.01189	0.10340
	(!D * !Q * Q_N)	0.01107	0.01584	0.10726
	(!D * !Q * Q_N)	0.00702	0.01179	0.10321

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)	0.00702	0.01265	0.10324
	(D * Q * !Q_N)	0.01107	0.01670	0.10729
	(!D * !Q * Q_N)	0.00674	0.01240	0.10326
	(!D * !Q * Q_N)	0.01080	0.01645	0.10731

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00235	0.00261	1.26570
sky130_fd_sc_hs__dlxtn_2	0.00240	0.00261	2.32257
sky130_fd_sc_hs__dlxtn_4	0.00239	0.00260	4.67603

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	40.12870	55.53470
sky130_fd_sc_hs__dlxtn_2	0.00000	41.67650	62.40410
sky130_fd_sc_hs__dlxtn_4	0.00000	63.76430	76.79990

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)	0.20101	0.64719	6.15136
	GATE_N->Q (-R)	0.23219	0.81585	8.01215
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.20415	0.55312	5.88437
	GATE_N->Q (-R)	0.23371	0.71865	7.73856
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.22561	0.51262	6.17596
	GATE_N->Q (-R)	0.25413	0.67712	8.02124

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.17044	0.53714	4.49710
	GATE_N->Q (-F)	0.17912	0.58054	4.80946
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.17673	0.49645	4.27315
	GATE_N->Q (-F)	0.18412	0.53759	4.58396
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.19226	0.49060	4.57243
	GATE_N->Q (-F)	0.20243	0.53771	4.90119

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01983	0.02422	0.10527
	D	0.01603	0.02042	0.10183
	GATE_N	0.02003	0.02613	0.11764
	GATE_N	0.02416	0.03033	0.12202
sky130_fd_sc_hs__dlxtn_2	D	0.02304	0.02762	0.10869
	D	0.01916	0.02375	0.10494
	GATE_N	0.02312	0.02948	0.12109
	GATE_N	0.02722	0.03358	0.12615
sky130_fd_sc_hs__dlxtn_4	D	0.03356	0.03825	0.11954
	D	0.02969	0.03439	0.11706
	GATE_N	0.03363	0.04011	0.13164
	GATE_N	0.03773	0.04427	0.13665

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01588	0.02097	0.10188
	D	0.01969	0.02476	0.10552
	GATE_N	0.01926	0.02556	0.12156
	GATE_N	0.02339	0.02966	0.12488
sky130_fd_sc_hs__dlxtn_2	D	0.01909	0.02445	0.10600
	D	0.02296	0.02811	0.10876
	GATE_N	0.02243	0.02877	0.12395
	GATE_N	0.02653	0.03276	0.12790
sky130_fd_sc_hs__dlxtn_4	D	0.02849	0.03395	0.11698
	D	0.03236	0.03767	0.11889
	GATE_N	0.03187	0.03839	0.13695
	GATE_N	0.03599	0.04248	0.13885

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00640	0.01035	0.08696
	GATE_N	0.00260	0.00653	0.08315
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00639	0.01034	0.08697
	GATE_N	0.00251	0.00645	0.08309
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00666	0.01060	0.08723
	GATE_N	0.00279	0.00672	0.08335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00207	0.00690	0.08389
	GATE_N	0.00589	0.01073	0.08770
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00203	0.00685	0.08387
	GATE_N	0.00589	0.01075	0.08775
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00232	0.00713	0.08415
	GATE_N	0.00618	0.01103	0.08803

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01140	0.01614	0.10887
	(D * Q)	0.00727	0.01199	0.10473
	(!D * !Q)	0.01101	0.01574	0.10841
	(!D * !Q)	0.00688	0.01159	0.10427
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01112	0.01590	0.10866
	(D * Q)	0.00702	0.01178	0.10454
	(!D * !Q)	0.01078	0.01556	0.10824
	(!D * !Q)	0.00668	0.01143	0.10413
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01146	0.01622	0.10896
	(D * Q)	0.00736	0.01209	0.10484
	(!D * !Q)	0.01098	0.01574	0.10842
	(!D * !Q)	0.00688	0.01161	0.10430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00745	0.01308	0.10516
	(D * Q)	0.01160	0.01723	0.10930
	(!D * !Q)	0.00724	0.01293	0.10514
	(!D * !Q)	0.01138	0.01705	0.10927
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00734	0.01299	0.10507
	(D * Q)	0.01146	0.01711	0.10918
	(!D * !Q)	0.00726	0.01297	0.10518
	(!D * !Q)	0.01138	0.01707	0.10929
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00765	0.01328	0.10537
	(D * Q)	0.01178	0.01741	0.10949
	(!D * !Q)	0.00744	0.01313	0.10534
	(!D * !Q)	0.01156	0.01724	0.10945

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00230	0.00266	1.24448

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	38.03120	55.44530

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)	0.23684	0.68667	6.26225
	GATE->Q (-R)	0.19183	0.64226	6.04764

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.18409	0.55902	4.61975
	GATE->Q (-F)	0.19657	0.46083	2.86326

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02149	0.02589	0.10648
	D	0.01757	0.02199	0.10300
	GATE	0.02504	0.02934	0.10859
	GATE	0.02075	0.02506	0.10481

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01803	0.02317	0.10424
	D	0.02194	0.02708	0.10769
	GATE	0.02582	0.03091	0.11902
	GATE	0.02191	0.02692	0.11460

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00607	0.01026	0.08737
	!GATE	0.00234	0.00652	0.08363

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00206	0.00683	0.08402
	!GATE	0.00579	0.01057	0.08776

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01201	0.01686	0.10979
	(D * Q)	0.00790	0.01273	0.10568
	(!D * !Q)	0.01139	0.01620	0.10902
	(!D * !Q)	0.00728	0.01211	0.10491

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00616	0.01192	0.10399
	(D * Q)	0.01028	0.01604	0.10810
	(!D * !Q)	0.00639	0.01215	0.10438
	(!D * !Q)	0.01051	0.01626	0.10849

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00184	1.27112
sky130_fd_sc_hs__dlygate4sd2_1	0.00185	1.27462
sky130_fd_sc_hs__dlygate4sd3_1	0.00187	1.26016

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	4.60783	7.54645
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	4.17076	7.10944
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	4.16975	7.10890

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)**	0.14620	0.58944	5.86680
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.18493	0.63843	6.00092
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.30907	0.78082	6.20237

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.17664	0.60566	5.16881
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.21684	0.66063	5.24889
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.32139	0.80484	5.41887

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01393	0.01526	0.04875
	A	0.01096	0.01231	0.04582
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01460	0.01576	0.04786
	A	0.01161	0.01278	0.04539
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01688	0.01796	0.04868
	A	0.01387	0.01494	0.04583

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01058	0.01231	0.04636
	A	0.01356	0.01526	0.04780
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01131	0.01273	0.04544
	A	0.01431	0.01571	0.04699
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01413	0.01484	0.04521
	A	0.01716	0.01793	0.04763

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00239	0.00448	0.64946
sky130_fd_sc_hs__ebufn_2	0.00262	0.00592	1.07977
sky130_fd_sc_hs__ebufn_4	0.00288	0.00912	2.13245
sky130_fd_sc_hs__ebufn_8	0.00556	0.01522	3.67366

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	22.53590	36.22690
sky130_fd_sc_hs__ebufn_2	0.00000	15.75670	22.14180
sky130_fd_sc_hs__ebufn_4	0.00000	13.53290	28.41710
sky130_fd_sc_hs__ebufn_8	0.00000	22.32070	56.53920

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)	0.07070	0.64535	6.32334
	TE_B->Z (RR)	0.02833	0.38820	5.09382
	TE_B->Z (FR)	0.05283	0.78449	9.20403
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.06702	0.55720	6.25076
	TE_B->Z (RR)	0.03085	0.38909	5.09471
	TE_B->Z (FR)	0.05278	0.68266	9.10403
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.07530	0.49040	6.27994
	TE_B->Z (RR)	0.03973	0.39136	5.09698
	TE_B->Z (FR)	0.04998	0.56398	8.97497
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.07949	0.42602	6.23387
	TE_B->Z (RR)	0.06611	0.39632	5.10197
	TE_B->Z (FR)	0.05611	0.47657	8.65148

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.07217	0.45155	4.04902
	TE_B->Z (RF)	0.02820	0.38823	5.09382
	TE_B->Z (FF)	0.05808	0.41405	3.89844
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.08045	0.44254	4.01150
	TE_B->Z (RF)	0.03072	0.38913	5.09473
	TE_B->Z (FF)	0.06162	0.38610	3.82912
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.10543	0.48180	4.31597
	TE_B->Z (RF)	0.03949	0.39145	5.09701
	TE_B->Z (FF)	0.07187	0.39498	4.06607
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.10398	0.45033	4.37413
	TE_B->Z (RF)	0.06529	0.39654	5.10201
	TE_B->Z (FF)	0.09929	0.43292	4.26837

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00829	0.01265	0.08930
	A	0.00433	0.00869	0.08557
	TE_B	0.00412	0.00920	0.08606
	TE_B	0.01125	0.01631	0.09335
sky130_fd_sc_hs__ebufn_2	A	0.01158	0.01653	0.10227
	A	0.00733	0.01228	0.09832
	TE_B	0.00735	0.01270	0.09796
	TE_B	0.01678	0.02212	0.10762
sky130_fd_sc_hs__ebufn_4	A	0.01849	0.02351	0.10922
	A	0.01380	0.01886	0.10513
	TE_B	0.01441	0.01944	0.10479
	TE_B	0.02902	0.03405	0.11951
sky130_fd_sc_hs__ebufn_8	A	0.03590	0.04693	0.21968
	A	0.02675	0.03785	0.21164
	TE_B	0.02953	0.03395	0.11748
	TE_B	0.05397	0.05837	0.14224

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00392	0.00900	0.08499
	A	0.00788	0.01293	0.08890
	TE_B	0.00404	0.00923	0.08591
	TE_B	0.01109	0.01622	0.09273
sky130_fd_sc_hs__ebufn_2	A	0.00734	0.01296	0.09738
	A	0.01159	0.01712	0.10125
	TE_B	0.00797	0.01354	0.09820
	TE_B	0.01703	0.02259	0.10724
sky130_fd_sc_hs__ebufn_4	A	0.01484	0.02017	0.10475
	A	0.01954	0.02475	0.10837
	TE_B	0.01586	0.02120	0.10641
	TE_B	0.02992	0.03522	0.11976
sky130_fd_sc_hs__ebufn_8	A	0.02912	0.04020	0.20929
	A	0.03825	0.04932	0.21825
	TE_B	0.03229	0.03676	0.12021
	TE_B	0.05569	0.06012	0.14302

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00542	0.00986	0.08555
	(TE_B * Z)	0.00141	0.00583	0.08153
	(TE_B * !Z)	0.00526	0.00967	0.08533
	(TE_B * !Z)	0.00127	0.00568	0.08135
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00737	0.01189	0.09654
	(TE_B * Z)	0.00296	0.00746	0.09211
	(TE_B * !Z)	0.00683	0.01131	0.09586
	(TE_B * !Z)	0.00247	0.00693	0.09148
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01068	0.01462	0.09901
	(TE_B * Z)	0.00577	0.00968	0.09409
	(TE_B * !Z)	0.00977	0.01364	0.09787
	(TE_B * !Z)	0.00494	0.00881	0.09304
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01975	0.02821	0.19883
	(TE_B * Z)	0.01016	0.01859	0.18925
	(TE_B * !Z)	0.01794	0.02663	0.19649
	(TE_B * !Z)	0.00852	0.01720	0.18711

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00080	0.00578	0.08174
	(TE_B * Z)	0.00482	0.00982	0.08578
	(TE_B * !Z)	0.00090	0.00595	0.08198
	(TE_B * !Z)	0.00488	0.00995	0.08598
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00149	0.00660	0.09097
	(TE_B * Z)	0.00593	0.01108	0.09543
	(TE_B * !Z)	0.00185	0.00709	0.09172
	(TE_B * !Z)	0.00621	0.01146	0.09609
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00273	0.00751	0.09157
	(TE_B * Z)	0.00771	0.01253	0.09660
	(TE_B * !Z)	0.00339	0.00832	0.09286
	(TE_B * !Z)	0.00820	0.01314	0.09767
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00453	0.01468	0.18476
	(TE_B * Z)	0.01427	0.02437	0.19456
	(TE_B * !Z)	0.00587	0.01630	0.18721
	(TE_B * !Z)	0.01526	0.02566	0.19659

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00466	0.00881	0.08490
	(A * Z)	-0.00236	0.00177	0.07786
	(!A * !Z)	0.00462	0.00871	0.08483
	(!A * !Z)	-0.00241	0.00165	0.07781
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00514	0.00932	0.09390
	(A * Z)	-0.00393	0.00019	0.08481
	(!A * !Z)	0.00543	0.00945	0.09401
	(!A * !Z)	-0.00367	0.00029	0.08492
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00639	0.00955	0.09395
	(A * Z)	-0.00764	-0.00459	0.07986
	(!A * !Z)	0.00685	0.00976	0.09414
	(!A * !Z)	-0.00726	-0.00437	0.08008
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00876	0.01057	0.09224
	(A * Z)	-0.01456	-0.01300	0.06873
	(!A * !Z)	0.00934	0.01089	0.09297
	(!A * !Z)	-0.01411	-0.01271	0.06947

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00122	0.00648	0.08282
	(A * Z)	0.00824	0.01356	0.08987
	(!A * !Z)	0.00111	0.00634	0.08270
	(!A * !Z)	0.00816	0.01341	0.08976
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00265	0.00835	0.09305
	(A * Z)	0.01174	0.01749	0.10217
	(!A * !Z)	0.00268	0.00825	0.09303
	(!A * !Z)	0.01180	0.01741	0.10217
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00546	0.01070	0.09572
	(A * Z)	0.01954	0.02483	0.10980
	(!A * !Z)	0.00585	0.01112	0.09598
	(!A * !Z)	0.01990	0.02523	0.11008
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01130	0.01610	0.09927
	(A * Z)	0.03476	0.03965	0.12280
	(!A * !Z)	0.01230	0.01694	0.10032
	(!A * !Z)	0.03572	0.04048	0.12390

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00187	0.00372	0.00302	1.27784	1.29450

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	38.53590	57.30010

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)	0.18078	0.65403	6.10915

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.16385	0.48408	3.06114

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)	0.23952	0.70005	6.21703

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)	0.24241	0.52507	3.01393

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)	-0.09648	-0.17583	-0.57291
	setup	CLK (R)	0.12115	0.19405	0.58302

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)	-0.25158	-0.37338	-3.12891
	setup	CLK (R)	0.32671	0.43432	3.25375

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)	-0.09648	-0.17583	-0.57291
	setup	CLK (R)	0.12115	0.19405	0.58302

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)	-0.25158	-0.37338	-3.12891
	setup	CLK (R)	0.32671	0.43432	3.25375

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)	-0.00342	0.00654	0.42366
	setup	CLK (R)	0.36046	0.37281	0.61582

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)	-0.15315	-0.25150	-2.22501
	setup	CLK (R)	0.28787	0.37590	2.97133

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)	-0.00342	0.00654	0.42366
	hold	CLK (R)	-0.14088	-0.16105	-0.29316
	setup	CLK (R)	0.12185	0.17041	0.49892
	setup	CLK (R)	0.36046	0.37281	0.61582

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)	-0.26574	-0.36318	-2.96350
	hold	CLK (R)	-0.15315	-0.25150	-2.22501
	setup	CLK (R)	0.28787	0.37590	2.97133
	setup	CLK (R)	0.16791	0.25878	2.23007

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 ()	0.08614	0.65918	16.50020
	min_pulse_width	CLK ()	0.12813	0.65918	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 ()	0.14048	0.65918	16.50020
	min_pulse_width	CLK ()	0.22199	0.65918	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	0.01816	0.02048	0.06658
	CLK	0.01585	0.01817	0.06395

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01811	0.02019	0.06722
	CLK	0.01563	0.01765	0.06472

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01844	0.02055	0.06854
	CLK	0.01595	0.01799	0.06581

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01795	0.02031	0.06561
	CLK	0.01563	0.01796	0.06314

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00645	0.00728	0.03029
	(CLK * DE)	0.00324	0.00404	0.02707
	(CLK * !DE)	0.00080	0.00080	0.00079
	(CLK * !DE)	-0.00122	-0.00122	-0.00124
	(!CLK * DE * Q * !Q_N)	0.01549	0.01681	0.04588
	(!CLK * DE * Q * !Q_N)	0.01232	0.01362	0.04269
	(!CLK * DE * !Q * Q_N)	0.01475	0.01609	0.04487
	(!CLK * DE * !Q * Q_N)	0.01152	0.01285	0.04164
	(!CLK * !DE)	0.00080	0.00080	0.00078
	(!CLK * !DE)	-0.00123	-0.00123	-0.00125

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00290	0.00389	0.02666
	(CLK * DE)	0.00614	0.00712	0.02988
	(CLK * !DE)	-0.00001	-0.00002	-0.00001
	(CLK * !DE)	0.00201	0.00202	0.00201
	(!CLK * DE * Q * !Q_N)	0.01322	0.01443	0.04269
	(!CLK * DE * Q * !Q_N)	0.01641	0.01761	0.04587
	(!CLK * DE * !Q * Q_N)	0.01401	0.01520	0.04412
	(!CLK * DE * !Q * Q_N)	0.01724	0.01841	0.04734
	(!CLK * !DE)	-0.00001	-0.00001	-0.00001
	(!CLK * !DE)	0.00201	0.00202	0.00201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01100	0.01440	0.08887
	CLK	0.00372	0.00708	0.08158
	(!CLK * D * Q * !Q_N)	0.00613	0.00870	0.06074
	(!CLK * D * Q * !Q_N)	0.00020	0.00273	0.05479
	(!CLK * D * !Q * Q_N)	0.01927	0.02296	0.10204
	(!CLK * D * !Q * Q_N)	0.01198	0.01564	0.09474
	(!CLK * !D * Q * !Q_N)	0.02029	0.02287	0.07600
	(!CLK * !D * Q * !Q_N)	0.01559	0.01814	0.07127
	(!CLK * !D * !Q * Q_N)	0.00632	0.00897	0.06100
	(!CLK * !D * !Q * Q_N)	0.00042	0.00304	0.05509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00377	0.00753	0.08216
	CLK	0.01106	0.01484	0.08944
	(!CLK * D * Q * !Q_N)	0.00007	0.00316	0.05527
	(!CLK * D * Q * !Q_N)	0.00602	0.00910	0.06120
	(!CLK * D * !Q * Q_N)	0.01470	0.01865	0.09752
	(!CLK * D * !Q * Q_N)	0.02198	0.02595	0.10480
	(!CLK * !D * Q * !Q_N)	0.01509	0.01819	0.07111
	(!CLK * !D * Q * !Q_N)	0.01980	0.02293	0.07586
	(!CLK * !D * !Q * Q_N)	0.00024	0.00344	0.05548
	(!CLK * !D * !Q * Q_N)	0.00614	0.00937	0.06138

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)	0.01670	0.02116	0.11074
	(D * Q * !Q_N)	0.01189	0.01633	0.10593
	(D * !DE * !Q * Q_N)	0.01652	0.02094	0.11071
	(D * !DE * !Q * Q_N)	0.01171	0.01612	0.10590
	(!D * !Q * Q_N)	0.01661	0.02098	0.11080
	(!D * !Q * Q_N)	0.01180	0.01615	0.10599
	(!D * !DE * Q * !Q_N)	0.01661	0.02107	0.11065
	(!D * !DE * Q * !Q_N)	0.01180	0.01624	0.10584

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)	0.00867	0.01380	0.10339
	(D * Q * !Q_N)	0.01347	0.01862	0.10819
	(D * DE * !Q * Q_N)	0.01751	0.02266	0.11424
	(D * DE * !Q * Q_N)	0.02231	0.02748	0.11905
	(D * !DE * !Q * Q_N)	0.00935	0.01444	0.10385
	(D * !DE * !Q * Q_N)	0.01415	0.01925	0.10865
	(!D * DE * Q * !Q_N)	0.02051	0.02579	0.11646
	(!D * DE * Q * !Q_N)	0.02531	0.03060	0.12127
	(!D * !Q * Q_N)	0.00944	0.01453	0.10394
	(!D * !Q * Q_N)	0.01424	0.01934	0.10874
	(!D * !DE * Q * !Q_N)	0.00858	0.01371	0.10330
	(!D * !DE * Q * !Q_N)	0.01339	0.01853	0.10811

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00191	0.00358	0.00296	1.26735

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	34.62800	56.73900

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)	0.17136	0.63920	6.04050

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.15198	0.45671	2.91487

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)	-0.09673	-0.17692	-0.57445
	setup	CLK (R)	0.11917	0.19066	0.58460

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)	-0.24911	-0.37266	-3.12018
	setup	CLK (R)	0.32770	0.43532	3.26580

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)	-0.00297	0.00433	0.42007
	setup	CLK (R)	0.35748	0.37281	0.65732

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)	-0.15239	-0.25255	-2.23862
	setup	CLK (R)	0.28213	0.37590	2.96839

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)	-0.00297	0.00433	0.42007
	hold	CLK (R)	-0.13596	-0.15357	-0.28558
	setup	CLK (R)	0.11780	0.16820	0.50209
	setup	CLK (R)	0.35748	0.37281	0.65732

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)	-0.26455	-0.36318	-2.95672
	hold	CLK (R)	-0.15239	-0.25255	-2.23862
	setup	CLK (R)	0.28213	0.37590	2.96839
	setup	CLK (R)	0.16415	0.25981	2.24262

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 ()	0.07873	0.65918	16.50020
	min_pulse_width	CLK ()	0.11578	0.65918	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 ()	0.13801	0.65918	16.50020
	min_pulse_width	CLK ()	0.22693	0.65918	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	0.03042	0.03513	0.12653
	CLK	0.02587	0.03058	0.12232

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.03000	0.03440	0.12928
	CLK	0.02515	0.02946	0.12400

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00629	0.00711	0.03018
	(CLK * DE)	0.00305	0.00385	0.02693
	(CLK * !DE)	0.00078	0.00078	0.00077
	(CLK * !DE)	-0.00127	-0.00127	-0.00129
	(!CLK * DE * Q)	0.01526	0.01659	0.04571
	(!CLK * DE * Q)	0.01205	0.01337	0.04249
	(!CLK * DE * !Q)	0.01449	0.01586	0.04470
	(!CLK * DE * !Q)	0.01124	0.01259	0.04146
	(!CLK * !DE)	0.00078	0.00078	0.00076
	(!CLK * !DE)	-0.00127	-0.00128	-0.00129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00280	0.00381	0.02663
	(CLK * DE)	0.00607	0.00707	0.02988
	(CLK * !DE)	-0.00001	-0.00001	-0.00000
	(CLK * !DE)	0.00205	0.00205	0.00205
	(!CLK * DE * Q)	0.01266	0.01385	0.04220
	(!CLK * DE * Q)	0.01588	0.01706	0.04540
	(!CLK * DE * !Q)	0.01354	0.01474	0.04372
	(!CLK * DE * !Q)	0.01680	0.01799	0.04697
	(!CLK * !DE)	0.00000	-0.00001	-0.00000
	(!CLK * !DE)	0.00205	0.00205	0.00205

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01067	0.01413	0.08865
	CLK	0.00360	0.00703	0.08158
	(!CLK * D * Q)	0.00592	0.00851	0.06059
	(!CLK * D * Q)	0.00018	0.00276	0.05487
	(!CLK * D * !Q)	0.01886	0.02260	0.10177
	(!CLK * D * !Q)	0.01179	0.01551	0.09470
	(!CLK * !D * Q)	0.01958	0.02219	0.07542
	(!CLK * !D * Q)	0.01508	0.01767	0.07091
	(!CLK * !D * !Q)	0.00617	0.00890	0.06094
	(!CLK * !D * !Q)	0.00049	0.00319	0.05524

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00370	0.00747	0.08210
	CLK	0.01078	0.01455	0.08915
	(!CLK * D * Q)	0.00005	0.00314	0.05526
	(!CLK * D * Q)	0.00578	0.00887	0.06098
	(!CLK * D * !Q)	0.01427	0.01821	0.09709
	(!CLK * D * !Q)	0.02133	0.02529	0.10415
	(!CLK * !D * Q)	0.01488	0.01800	0.07095
	(!CLK * !D * Q)	0.01937	0.02252	0.07547
	(!CLK * !D * !Q)	0.00026	0.00346	0.05551
	(!CLK * !D * !Q)	0.00594	0.00917	0.06120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01598	0.02041	0.11017
	(D * Q)	0.01125	0.01568	0.10545
	(D * !DE * !Q)	0.01635	0.02073	0.11073
	(D * !DE * !Q)	0.01163	0.01601	0.10601
	(!D * !Q)	0.01644	0.02082	0.11085
	(!D * !Q)	0.01172	0.01610	0.10613
	(!D * !DE * Q)	0.01589	0.02025	0.11008
	(!D * !DE * Q)	0.01117	0.01554	0.10537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00863	0.01378	0.10347
	(D * Q)	0.01334	0.01851	0.10819
	(D * DE * !Q)	0.01696	0.02217	0.11395
	(D * DE * !Q)	0.02167	0.02689	0.11867
	(D * !DE * !Q)	0.00885	0.01396	0.10347
	(D * !DE * !Q)	0.01356	0.01868	0.10819
	(!D * DE * Q)	0.02002	0.02534	0.11594
	(!D * DE * Q)	0.02473	0.03005	0.12067
	(!D * !Q)	0.00894	0.01405	0.10356
	(!D * !Q)	0.01365	0.01877	0.10829
	(!D * !DE * Q)	0.00854	0.01369	0.10338
	(!D * !DE * Q)	0.01325	0.01842	0.10810

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00293	0.00332	0.64509
sky130_fd_sc_hs__einvn_2	0.00551	0.00503	1.17076
sky130_fd_sc_hs__einvn_4	0.01100	0.00907	2.22571
sky130_fd_sc_hs__einvn_8	0.02202	0.01516	3.86504

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	8.49030	10.95590
sky130_fd_sc_hs__einvn_2	0.00000	9.78154	14.01460
sky130_fd_sc_hs__einvn_4	0.00000	9.90762	28.13380
sky130_fd_sc_hs__einvn_8	0.00000	15.07360	55.97780

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)	0.04360	0.81955	9.87193
	TE_B->Z (RR)	0.02987	0.38783	5.09344
	TE_B->Z (FR)	0.05163	0.78344	9.17659
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.03024	0.69902	9.81540
	TE_B->Z (RR)	0.03909	0.38981	5.09543
	TE_B->Z (FR)	0.04664	0.66261	9.08100
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.02829	0.60535	9.79015
	TE_B->Z (RR)	0.04051	0.39143	5.09706
	TE_B->Z (FR)	0.04474	0.54775	8.85619
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02991	0.53077	9.59769
	TE_B->Z (RR)	0.06471	0.39862	5.10431
	TE_B->Z (FR)	0.05270	0.45927	8.43567

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.02251	0.42444	5.05636
	TE_B->Z (RF)	0.02947	0.38784	5.09344
	TE_B->Z (FF)	0.05736	0.41656	3.79992
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01846	0.36535	5.12687
	TE_B->Z (RF)	0.03857	0.38987	5.09545
	TE_B->Z (FF)	0.06495	0.40758	3.98580
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01781	0.30841	5.13821
	TE_B->Z (RF)	0.04015	0.39153	5.09709
	TE_B->Z (FF)	0.06556	0.37457	4.01601
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01980	0.27516	5.28961
	TE_B->Z (RF)	0.06405	0.39897	5.10438
	TE_B->Z (FF)	0.08990	0.40929	4.23961

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00052	0.00131	0.02449
	A	0.00408	0.00589	0.02910
	TE_B	0.00233	0.00571	0.05905
	TE_B	0.00933	0.01270	0.06620
sky130_fd_sc_hs__einvn_2	A	-0.00215	0.00182	0.04546
	A	0.00674	0.01073	0.05434
	TE_B	0.00359	0.00685	0.06008
	TE_B	0.01506	0.01837	0.07182
sky130_fd_sc_hs__einvn_4	A	-0.00425	0.00475	0.08791
	A	0.01350	0.02246	0.10563
	TE_B	0.00739	0.01274	0.10102
	TE_B	0.02881	0.03414	0.12270
sky130_fd_sc_hs__einvn_8	A	-0.00800	0.01031	0.16747
	A	0.02750	0.04600	0.20308
	TE_B	0.01544	0.02022	0.10694
	TE_B	0.05354	0.05848	0.14522

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00434	0.00549	0.02061
	A	-0.00023	0.00085	0.01577
	TE_B	0.00452	0.00795	0.05798
	TE_B	0.00821	0.01161	0.06167
sky130_fd_sc_hs__einvn_2	A	0.00722	0.00984	0.03956
	A	-0.00165	0.00097	0.02939
	TE_B	0.00774	0.01113	0.06437
	TE_B	0.01273	0.01608	0.06894
sky130_fd_sc_hs__einvn_4	A	0.01462	0.02027	0.07674
	A	-0.00309	0.00247	0.05758
	TE_B	0.01596	0.02153	0.10945
	TE_B	0.02413	0.02969	0.11717
sky130_fd_sc_hs__einvn_8	A	0.02916	0.04133	0.14862
	A	-0.00628	0.00572	0.11106
	TE_B	0.03229	0.03715	0.12305
	TE_B	0.04366	0.04844	0.13422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00099	0.00100	0.00099
	(TE_B * Z)	-0.00156	-0.00158	-0.00152
	(TE_B * !Z)	0.00109	0.00109	0.00109
	(TE_B * !Z)	-0.00120	-0.00120	-0.00120
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00179	0.00180	0.00173
	(TE_B * Z)	-0.00306	-0.00309	-0.00305
	(TE_B * !Z)	0.00215	0.00214	0.00214
	(TE_B * !Z)	-0.00222	-0.00221	-0.00220
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00317	0.00320	0.00307
	(TE_B * Z)	-0.00589	-0.00592	-0.00590
	(TE_B * !Z)	0.00378	0.00381	0.00380
	(TE_B * !Z)	-0.00464	-0.00468	-0.00464
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00602	0.00609	0.00584
	(TE_B * Z)	-0.01150	-0.01164	-0.01156
	(TE_B * !Z)	0.00736	0.00739	0.00735
	(TE_B * !Z)	-0.00932	-0.00935	-0.00927

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00080	-0.00079	-0.00079
	(TE_B * Z)	0.00159	0.00159	0.00158
	(TE_B * !Z)	-0.00099	-0.00100	-0.00100
	(TE_B * !Z)	0.00143	0.00144	0.00141
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00153	-0.00155	-0.00152
	(TE_B * Z)	0.00306	0.00309	0.00305
	(TE_B * !Z)	-0.00195	-0.00200	-0.00208
	(TE_B * !Z)	0.00257	0.00256	0.00244
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00290	-0.00291	-0.00290
	(TE_B * Z)	0.00589	0.00592	0.00590
	(TE_B * !Z)	-0.00378	-0.00381	-0.00380
	(TE_B * !Z)	0.00508	0.00507	0.00485
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00561	-0.00569	-0.00565
	(TE_B * Z)	0.01150	0.01164	0.01156
	(TE_B * !Z)	-0.00736	-0.00739	-0.00735
	(TE_B * !Z)	0.00990	0.00989	0.00953

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00331	0.00609	0.05957
	(A * !Z)	-0.00183	0.00084	0.05433
	(!A * Z)	0.00311	0.00601	0.05949
	(!A * Z)	-0.00193	0.00081	0.05429
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00415	0.00631	0.05885
	(A * !Z)	-0.00368	-0.00173	0.05086
	(!A * Z)	0.00363	0.00610	0.05869
	(!A * Z)	-0.00398	-0.00177	0.05080
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00686	0.01015	0.09731
	(A * !Z)	-0.00706	-0.00419	0.08303
	(!A * Z)	0.00584	0.00971	0.09694
	(!A * Z)	-0.00764	-0.00434	0.08289
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00864	0.01059	0.09548
	(A * !Z)	-0.01418	-0.01319	0.07173
	(!A * Z)	0.00677	0.00974	0.09471
	(!A * Z)	-0.01526	-0.01342	0.07140

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00160	0.00510	0.05875
	(A * !Z)	0.00685	0.01037	0.06400
	(!A * Z)	0.00155	0.00511	0.05875
	(!A * Z)	0.00670	0.01027	0.06392
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00280	0.00621	0.05903
	(A * !Z)	0.01083	0.01428	0.06708
	(!A * Z)	0.00275	0.00612	0.05905
	(!A * Z)	0.01057	0.01400	0.06691
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00570	0.01118	0.09887
	(A * !Z)	0.01999	0.02559	0.11324
	(!A * Z)	0.00552	0.01096	0.09885
	(!A * Z)	0.01946	0.02500	0.11284
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01202	0.01695	0.10310
	(A * !Z)	0.03571	0.04076	0.12687
	(!A * Z)	0.01155	0.01669	0.10293
	(!A * Z)	0.03446	0.03969	0.12597

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00293	0.00287	0.58089
sky130_fd_sc_hs__einvp_2	0.00544	0.00446	1.19275
sky130_fd_sc_hs__einvp_4	0.01100	0.00806	2.21871
sky130_fd_sc_hs__einvp_8	0.02203	0.01268	3.82901

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	2.33623	11.91430
sky130_fd_sc_hs__einvp_2	0.00000	6.22782	24.67600
sky130_fd_sc_hs__einvp_4	0.00000	7.68080	34.81740
sky130_fd_sc_hs__einvp_8	0.00000	12.84620	62.65980

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)	0.04736	0.83862	9.79949
	TE->Z (FR)	0.08249	0.38773	5.09331
	TE->Z (RR)	0.07592	0.64312	5.69390
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02977	0.69352	9.78674
	TE->Z (FR)	0.07960	0.38886	5.09442
	TE->Z (RR)	0.07560	0.53844	6.09146
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.02820	0.60399	9.74299
	TE->Z (FR)	0.09056	0.39088	5.09632
	TE->Z (RR)	0.07438	0.44236	5.97408
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02998	0.53232	9.61518
	TE->Z (FR)	0.15640	0.40068	5.10227
	TE->Z (RR)	0.09406	0.42858	5.97688

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02277	0.40691	4.69238
	TE->Z (FF)	0.08325	0.38768	5.09326
	TE->Z (RF)	0.02285	0.35646	4.02092
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01797	0.35538	5.01459
	TE->Z (FF)	0.08078	0.38876	5.09436
	TE->Z (RF)	0.02098	0.30372	4.23220
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01806	0.31034	5.17283
	TE->Z (FF)	0.09232	0.39066	5.09619
	TE->Z (RF)	0.02216	0.24496	4.09508
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01997	0.28312	5.41667
	TE->Z (FF)	0.15693	0.40397	5.10188
	TE->Z (RF)	0.02725	0.19599	3.85098

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00071	0.00121	0.02643
	A	0.00397	0.00589	0.03109
	TE	0.00763	0.00913	0.03883
	TE	0.00500	0.00671	0.03636
sky130_fd_sc_hs__einvp_2	A	-0.00183	0.00258	0.04674
	A	0.00694	0.01137	0.05549
	TE	0.01229	0.01501	0.06802
	TE	0.00898	0.01170	0.06520
sky130_fd_sc_hs__einvp_4	A	-0.00393	0.00475	0.08841
	A	0.01379	0.02256	0.10609
	TE	0.02306	0.02732	0.11498
	TE	0.01799	0.02223	0.11014
sky130_fd_sc_hs__einvp_8	A	-0.00776	0.00881	0.15924
	A	0.02783	0.04451	0.19492
	TE	0.04046	0.04398	0.12937
	TE	0.03584	0.03943	0.12504

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00454	0.00566	0.02087
	A	-0.00012	0.00092	0.01586
	TE	0.00985	0.01140	0.04304
	TE	0.00367	0.00520	0.03685
sky130_fd_sc_hs__einvp_2	A	0.00744	0.01008	0.04032
	A	-0.00130	0.00134	0.03023
	TE	0.01598	0.01872	0.07184
	TE	0.00593	0.00863	0.06137
sky130_fd_sc_hs__einvp_4	A	0.01451	0.02052	0.07604
	A	-0.00318	0.00279	0.05798
	TE	0.03054	0.03488	0.12200
	TE	0.01166	0.01590	0.10310
sky130_fd_sc_hs__einvp_8	A	0.02919	0.04110	0.14504
	A	-0.00624	0.00548	0.10746
	TE	0.05544	0.05900	0.14368
	TE	0.02304	0.02652	0.11128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00076	0.00077	0.00077
	(!TE * Z)	-0.00153	-0.00154	-0.00152
	(!TE * !Z)	0.00087	0.00088	0.00087
	(!TE * !Z)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00140	0.00142	0.00136
	(!TE * Z)	-0.00313	-0.00316	-0.00314
	(!TE * !Z)	0.00171	0.00171	0.00170
	(!TE * !Z)	-0.00245	-0.00246	-0.00244
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00270	0.00271	0.00260
	(!TE * Z)	-0.00619	-0.00625	-0.00621
	(!TE * !Z)	0.00332	0.00333	0.00330
	(!TE * !Z)	-0.00490	-0.00492	-0.00488
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00527	0.00526	0.00511
	(!TE * Z)	-0.01193	-0.01202	-0.01197
	(!TE * !Z)	0.00643	0.00647	0.00643
	(!TE * !Z)	-0.00942	-0.00950	-0.00942

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00076	-0.00077	-0.00076
	(!TE * Z)	0.00153	0.00154	0.00152
	(!TE * !Z)	-0.00087	-0.00088	-0.00087
	(!TE * !Z)	0.00137	0.00139	0.00135
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00134	-0.00136	-0.00135
	(!TE * Z)	0.00313	0.00316	0.00314
	(!TE * !Z)	-0.00166	-0.00170	-0.00170
	(!TE * !Z)	0.00265	0.00264	0.00250
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00258	-0.00261	-0.00258
	(!TE * Z)	0.00619	0.00625	0.00621
	(!TE * !Z)	-0.00332	-0.00333	-0.00330
	(!TE * !Z)	0.00523	0.00525	0.00497
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00506	-0.00510	-0.00508
	(!TE * Z)	0.01193	0.01202	0.01197
	(!TE * !Z)	-0.00643	-0.00647	-0.00643
	(!TE * !Z)	0.01001	0.01007	0.00956

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00700	0.00861	0.04039
	(A * !Z)	0.00267	0.00425	0.03606
	(!A * Z)	0.00677	0.00837	0.04018
	(!A * Z)	0.00240	0.00401	0.03580
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01111	0.01391	0.06651
	(A * !Z)	0.00440	0.00716	0.05979
	(!A * Z)	0.01074	0.01347	0.06608
	(!A * Z)	0.00390	0.00662	0.05924
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.02092	0.02524	0.11232
	(A * !Z)	0.00893	0.01318	0.10027
	(!A * Z)	0.02020	0.02449	0.11146
	(!A * Z)	0.00796	0.01216	0.09920
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.03631	0.03991	0.12483
	(A * !Z)	0.01785	0.02137	0.10633
	(!A * Z)	0.03507	0.03865	0.12347
	(!A * Z)	0.01613	0.01963	0.10446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00127	0.00019	0.03162
	(A * !Z)	0.00299	0.00454	0.03592
	(!A * Z)	-0.00139	0.00012	0.03151
	(!A * Z)	0.00298	0.00451	0.03585
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00302	-0.00034	0.05204
	(A * !Z)	0.00360	0.00640	0.05861
	(!A * Z)	-0.00342	-0.00059	0.05179
	(!A * Z)	0.00337	0.00623	0.05850
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00555	-0.00155	0.08504
	(A * !Z)	0.00625	0.01053	0.09680
	(!A * Z)	-0.00625	-0.00201	0.08458
	(!A * Z)	0.00593	0.01022	0.09660
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01056	-0.00747	0.07656
	(A * !Z)	0.00743	0.01105	0.09467
	(!A * Z)	-0.01161	-0.00832	0.07559
	(!A * Z)	0.00710	0.01053	0.09421

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00300	0.00720	0.00528	0.61519	1.27617

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	101.89500	113.83900

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)	0.16155	0.67473	4.42686
	B->COUT (RR)	0.14208	0.59926	4.50812
	CIN->COUT (FR)	0.06599	0.71010	8.04401

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.17802	0.66571	4.29656
	B->COUT (FF)	0.16377	0.61589	4.32759
	CIN->COUT (RF)	0.04209	0.42894	4.70878

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)	-	0.22425	0.86029	8.27611
	B->SUM (-R)	-	0.21498	0.84127	8.30294
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.09194	0.59965	6.51690
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.13676	0.71546	7.89463

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)	-	0.26731	0.73821	5.14433
	B->SUM (-F)	-	0.21149	0.65518	5.02052
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.11674	0.61120	5.35692
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.12511	0.41226	2.97338

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01890	0.02097	0.06817
	A	0.01663	0.01867	0.06597
	B	0.02002	0.02345	0.10752
	B	0.01422	0.01760	0.10173
	CIN	0.00913	0.01303	0.07591
	CIN	0.01341	0.01727	0.08031

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01642	0.01877	0.06581
	A	0.01870	0.02106	0.06809
	B	0.01410	0.01913	0.11071
	B	0.01990	0.02494	0.11653
	CIN	0.01289	0.01654	0.08038
	CIN	0.00863	0.01229	0.07615

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03719	0.04114	0.13507
	A	-	0.03264	0.03660	0.13082
	B	-	0.03722	0.04560	0.24491
	B	-	0.02563	0.03399	0.23346
	CIN	(A * B) + (!A * !B)	0.01311	0.02376	0.19735
	CIN	(A * B) + (!A * !B)	0.02164	0.03231	0.20636
	CIN	(A * !B) + (!A * B)	0.01338	0.01702	0.07963
	CIN	(A * !B) + (!A * B)	0.00912	0.01274	0.07540

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03267	0.03788	0.13088
	A	-	0.03722	0.04243	0.13432
	B	-	0.02640	0.03917	0.22863
	B	-	0.03799	0.05077	0.23773
	CIN	(A * B) + (!A * !B)	0.02305	0.03271	0.20620
	CIN	(A * B) + (!A * !B)	0.01452	0.02409	0.19711
	CIN	(A * !B) + (!A * B)	0.00853	0.01243	0.07089
	CIN	(A * !B) + (!A * B)	0.01281	0.01669	0.07466

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00298	0.00919	0.00531	0.62919	1.23825

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	101.89400	117.81300

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)	0.20633	0.78073	6.02015
	B->COUT_N (FR)	0.14568	0.76057	8.34654
	CI->COUT_N (FR)	0.06005	0.69646	8.01042

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)	0.16260	0.48522	2.41441
	B->COUT_N (RF)	0.10646	0.48094	5.05779
	CI->COUT_N (RF)	0.04083	0.42794	4.78977

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)	-	0.20311	0.83201	8.08312
	B->SUM (-R)	-	0.17584	0.78659	8.03851
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08876	0.59160	6.41182
	CI->SUM (FR)	(A * !B) + (!A * B)	0.13555	0.72069	7.92723

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)	-	0.24752	0.70720	5.02502
	B->SUM (-F)	-	0.18363	0.60282	4.80166
	CI->SUM (FF)	(A * B) + (!A * !B)	0.11387	0.58513	5.15167
	CI->SUM (RF)	(A * !B) + (!A * B)	0.13267	0.41545	2.95221

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	0.01646	0.01842	0.06520
	A	0.01879	0.02077	0.06806
	B	0.01135	0.01808	0.13813
	B	0.01868	0.02544	0.14597
	CI	0.00825	0.01217	0.07660
	CI	0.01254	0.01651	0.08101

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01729	0.01894	0.06578
	A	0.01495	0.01651	0.06340
	B	0.01846	0.02463	0.14715
	B	0.01113	0.01725	0.13968
	CI	0.01319	0.01661	0.08187
	CI	0.00891	0.01233	0.07750

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.03268	0.03671	0.13051
	A	-	0.02802	0.03206	0.12616
	B	-	0.03848	0.05834	0.33506
	B	-	0.02388	0.04370	0.32025
	CI	(A * B) + (!A * !B)	0.02346	0.03329	0.21086
	CI	(A * B) + (!A * !B)	0.01487	0.02470	0.20251
	CI	(A * !B) + (!A * B)	0.00825	0.01203	0.07303
	CI	(A * !B) + (!A * B)	0.01253	0.01632	0.07756

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.03058	0.03594	0.12868
	A	-	0.03525	0.04062	0.13234
	B	-	0.02391	0.04360	0.31855
	B	-	0.03858	0.05825	0.33131
	CI	(A * B) + (!A * !B)	0.01485	0.02565	0.20273
	CI	(A * B) + (!A * !B)	0.02341	0.03422	0.21014
	CI	(A * !B) + (!A * B)	0.01310	0.01653	0.08019
	CI	(A * !B) + (!A * B)	0.00882	0.01218	0.07568

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00501	0.00724	0.00264	1.10081	1.22673
sky130_fd_sc_hs__fah_2	0.00504	0.00819	0.00277	2.15465	2.39069
sky130_fd_sc_hs__fah_4	0.00496	0.00745	0.00266	3.98759	4.66716

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	101.89800	121.75900
sky130_fd_sc_hs__fah_2	0.00000	109.14400	129.00800
sky130_fd_sc_hs__fah_4	0.00000	123.65000	143.52800

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)	0.23156	0.73409	6.44223
	B->COUT (RR)	0.18444	0.73313	6.50132
	CI->COUT (RR)	0.12327	0.69632	6.97002
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.23683	0.62686	6.05525
	B->COUT (RR)	0.17506	0.61792	6.67650
	CI->COUT (RR)	0.11314	0.56320	6.35465
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.24479	0.58405	6.36860
	B->COUT (RR)	0.19864	0.57894	6.44074
	CI->COUT (RR)	0.14195	0.56225	6.95685

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.23323	0.64020	4.59010
	B->COUT (FF)	0.21476	0.66896	4.98463
	CI->COUT (FF)	0.14622	0.64665	5.10240
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.24599	0.62830	4.36328
	B->COUT (FF)	0.23072	0.65684	5.00237
	CI->COUT (FF)	0.14798	0.61251	4.81140
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.27157	0.65935	4.53148
	B->COUT (FF)	0.24452	0.67384	5.15760
	CI->COUT (FF)	0.17668	0.63755	5.07952

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)	-	0.22984	0.88484	8.49526
	B->SUM (-R)	-	0.21147	0.84855	8.43713
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12065	0.64825	6.45391
	CI->SUM (FR)	(A * !B) + (!A * B)	0.22278	0.89309	8.55221
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.23306	0.77092	8.02719
	B->SUM (-R)	-	0.21898	0.75432	8.10483
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11443	0.55805	6.45805
	CI->SUM (FR)	(A * !B) + (!A * B)	0.21687	0.76972	8.11073
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.25406	0.73347	8.40989
	B->SUM (-R)	-	0.23406	0.71470	8.45442
	CI->SUM (RR)	(A * B) + (!A * !B)	0.14868	0.55431	6.59149
	CI->SUM (FR)	(A * !B) + (!A * B)	0.27938	0.80738	8.62934

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)	-	0.23247	0.65095	4.77748
	B->SUM (-F)	-	0.22430	0.68675	6.22331
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14464	0.64677	5.07029
	CI->SUM (RF)	(A * !B) + (!A * B)	0.20520	0.58975	3.55540
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.25610	0.64390	4.65244
	B->SUM (-F)	-	0.23592	0.65957	4.84997
	CI->SUM (FF)	(A * B) + (!A * !B)	0.15420	0.62067	5.11933
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18430	0.51008	3.11456
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.27160	0.67092	4.83616
	B->SUM (-F)	-	0.25575	0.69271	6.24596
	CI->SUM (FF)	(A * B) + (!A * !B)	0.18567	0.64941	5.24729
	CI->SUM (RF)	(A * !B) + (!A * B)	0.27139	0.63723	3.81733

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02414	0.02860	0.11922
	A	0.02021	0.02458	0.11513
	B	0.02084	0.02533	0.12494
	B	0.01527	0.01971	0.11937
	CI	0.01571	0.01752	0.05978
	CI	0.01382	0.01559	0.05784
sky130_fd_sc_hs__fah_2	A	0.02808	0.03183	0.12103
	A	0.02393	0.02752	0.11671
	B	0.02585	0.02891	0.12577
	B	0.01949	0.02249	0.11936
	CI	0.01745	0.01848	0.06109
	CI	0.01522	0.01614	0.05871
sky130_fd_sc_hs__fah_4	A	0.03687	0.03753	0.12858
	A	0.03295	0.03361	0.12423
	B	0.03461	0.03475	0.13412
	B	0.02881	0.02885	0.12826
	CI	0.02944	0.02807	0.07105
	CI	0.02747	0.02611	0.06879

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01952	0.02462	0.11475
	A	0.02329	0.02839	0.11820
	B	0.01569	0.02127	0.11588
	B	0.02110	0.02669	0.12129
	CI	0.01278	0.01514	0.05788
	CI	0.01467	0.01703	0.05951
sky130_fd_sc_hs__fah_2	A	0.02306	0.02771	0.11632
	A	0.02720	0.03185	0.12044
	B	0.01789	0.02262	0.11361
	B	0.02426	0.02900	0.11994
	CI	0.01492	0.01636	0.05829
	CI	0.01715	0.01860	0.06023
sky130_fd_sc_hs__fah_4	A	0.03104	0.03302	0.12188
	A	0.03487	0.03686	0.12538
	B	0.02793	0.03009	0.12310
	B	0.03366	0.03581	0.12859
	CI	0.02638	0.02526	0.06827
	CI	0.02834	0.02721	0.06918

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.04212	0.05019	0.22695
	A	-	0.03409	0.04217	0.21926
	B	-	0.03851	0.04940	0.27039
	B	-	0.02722	0.03809	0.25917
	CI	(A * B) + (!A * !B)	0.02162	0.02476	0.09663
	CI	(A * B) + (!A * !B)	0.01737	0.02052	0.09263
	CI	(A * !B) + (!A * B)	0.01340	0.01570	0.05838
	CI	(A * !B) + (!A * B)	0.01528	0.01758	0.06026
sky130_fd_sc_hs__fah_2	A	-	0.04565	0.05312	0.22784
	A	-	0.03735	0.04484	0.22023
	B	-	0.04238	0.05328	0.26174
	B	-	0.02965	0.04056	0.24938
	CI	(A * B) + (!A * !B)	0.02265	0.02684	0.11490
	CI	(A * B) + (!A * !B)	0.01817	0.02236	0.10972
	CI	(A * !B) + (!A * B)	0.01559	0.01698	0.05986
	CI	(A * !B) + (!A * B)	0.01781	0.01921	0.06124
sky130_fd_sc_hs__fah_4	A	-	0.05063	0.05761	0.23489
	A	-	0.04260	0.04963	0.22826
	B	-	0.04882	0.06035	0.28164
	B	-	0.03701	0.04855	0.27038
	CI	(A * B) + (!A * !B)	0.03312	0.03594	0.11351
	CI	(A * B) + (!A * !B)	0.02883	0.03174	0.10975
	CI	(A * !B) + (!A * B)	0.02715	0.02586	0.06773
	CI	(A * !B) + (!A * B)	0.02912	0.02782	0.06968

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03105	0.04064	0.21590
	A	-	0.03939	0.04899	0.22370
	B	-	0.02789	0.04156	0.35752
	B	-	0.03953	0.05318	0.36683
	CI	(A * B) + (!A * !B)	0.01655	0.02068	0.09746
	CI	(A * B) + (!A * !B)	0.02080	0.02494	0.10123
	CI	(A * !B) + (!A * B)	0.01504	0.01680	0.05886
	CI	(A * !B) + (!A * B)	0.01315	0.01492	0.05671
sky130_fd_sc_hs__fah_2	A	-	0.03654	0.04473	0.21752
	A	-	0.04484	0.05304	0.22543
	B	-	0.02904	0.04090	0.22462
	B	-	0.04177	0.05365	0.23718
	CI	(A * B) + (!A * !B)	0.02053	0.02386	0.11203
	CI	(A * B) + (!A * !B)	0.02500	0.02833	0.11465
	CI	(A * !B) + (!A * B)	0.01670	0.01763	0.05942
	CI	(A * !B) + (!A * B)	0.01447	0.01540	0.05718
sky130_fd_sc_hs__fah_4	A	-	0.04522	0.04929	0.22554
	A	-	0.05339	0.05776	0.23168
	B	-	0.04439	0.05530	0.35864
	B	-	0.05636	0.06730	0.37008
	CI	(A * B) + (!A * !B)	0.03365	0.03228	0.11022
	CI	(A * B) + (!A * !B)	0.03794	0.03659	0.11400
	CI	(A * !B) + (!A * B)	0.02865	0.02728	0.06899
	CI	(A * !B) + (!A * B)	0.02668	0.02532	0.06687

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.01052	0.01021	0.00744	1.28354	1.29201
sky130_fd_sc_hs__fa_2	0.01114	0.01061	0.00792	2.14227	2.33826
sky130_fd_sc_hs__fa_4	0.01110	0.01088	0.00778	4.71274	4.71987

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fa_1	0.00000	23.26620	29.95600
sky130_fd_sc_hs__fa_2	0.00000	30.36060	37.04130
sky130_fd_sc_hs__fa_4	0.00000	44.85680	56.57160

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)	0.10479	0.60108	6.38591
	B->COUT (RR)	0.11962	0.63466	6.53388
	CIN->COUT (RR)	0.09434	0.61245	6.55597
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.10881	0.52528	6.08921
	B->COUT (RR)	0.11660	0.55781	6.22980
	CIN->COUT (RR)	0.10103	0.54879	6.23375
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.14836	0.52126	6.41859
	B->COUT (RR)	0.13034	0.53716	6.56758
	CIN->COUT (RR)	0.12746	0.53782	6.58012

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.18003	0.63329	5.33127
	B->COUT (FF)	0.19273	0.66612	5.46805
	CIN->COUT (FF)	0.14123	0.63828	5.42808
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.21088	0.63024	5.04635
	B->COUT (FF)	0.21880	0.66932	5.19881
	CIN->COUT (FF)	0.18942	0.64988	5.15416
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.28767	0.71544	5.61300
	B->COUT (FF)	0.26096	0.71903	5.71773
	CIN->COUT (FF)	0.25915	0.72776	5.73834

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.26210	0.84698	8.23979
	B->SUM (-R)	0.27284	0.87794	8.38748
	CIN->SUM (-R)	0.24369	0.85165	8.25283
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.32933	0.83587	8.32997
	B->SUM (-R)	0.33529	0.86960	8.49368
	CIN->SUM (-R)	0.31390	0.84851	8.39992
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.47837	0.91750	8.68228
	B->SUM (-R)	0.43580	0.91615	8.79325
	CIN->SUM (-R)	0.44827	0.92532	8.77333

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.20333	0.61290	5.35030
	B->SUM (-F)	0.20602	0.65842	5.56527
	CIN->SUM (-F)	0.16554	0.63810	5.59698
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.25389	0.64556	5.23845
	B->SUM (-F)	0.26361	0.69522	5.45499
	CIN->SUM (-F)	0.22456	0.68190	5.49942
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.35461	0.74092	5.65985
	B->SUM (-F)	0.31787	0.74961	5.85738
	CIN->SUM (-F)	0.30044	0.75584	5.94320

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01394	0.01492	0.04550
	A	0.00546	0.00634	0.03674
	B	0.01231	0.01351	0.04670
	B	0.00573	0.00657	0.03806
	CIN	0.01173	0.01307	0.04763
	CIN	0.00676	0.00806	0.04257
sky130_fd_sc_hs__fa_2	A	0.01870	0.01842	0.04841
	A	0.00950	0.00901	0.03898
	B	0.01712	0.01704	0.05005
	B	0.00876	0.00856	0.04157
	CIN	0.01652	0.01650	0.05037
	CIN	0.01076	0.01038	0.04473
sky130_fd_sc_hs__fa_4	A	0.02887	0.02625	0.05697
	A	0.01924	0.01661	0.04659
	B	0.02945	0.02654	0.05795
	B	0.02151	0.01866	0.04955
	CIN	0.02746	0.02468	0.05802
	CIN	0.02174	0.01905	0.05241

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00577	0.00668	0.03699
	A	0.01419	0.01512	0.04492
	B	0.00693	0.00806	0.04180
	B	0.01490	0.01607	0.04919
	CIN	0.00788	0.00938	0.04310
	CIN	0.01291	0.01439	0.04790
sky130_fd_sc_hs__fa_2	A	0.01032	0.00969	0.03932
	A	0.01949	0.01890	0.04799
	B	0.01133	0.01116	0.04535
	B	0.01974	0.01959	0.05287
	CIN	0.01227	0.01246	0.04630
	CIN	0.01792	0.01810	0.05127
sky130_fd_sc_hs__fa_4	A	0.02302	0.01836	0.04720
	A	0.03257	0.02794	0.05583
	B	0.02327	0.01935	0.05228
	B	0.03131	0.02736	0.06008
	CIN	0.02505	0.02100	0.05428
	CIN	0.03037	0.02621	0.05816

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01952	0.01988	0.07253
	A	0.00172	0.00199	0.05492
	B	0.01818	0.01951	0.07051
	B	0.00154	0.00286	0.05403
	CIN	0.01576	0.01697	0.06990
	CIN	0.00475	0.00599	0.05900
sky130_fd_sc_hs__fa_2	A	0.02425	0.02498	0.08050
	A	0.00550	0.00624	0.06154
	B	0.02268	0.02418	0.07765
	B	0.00574	0.00725	0.06023
	CIN	0.02030	0.02177	0.07689
	CIN	0.00873	0.01021	0.06471
sky130_fd_sc_hs__fa_4	A	0.03179	0.03120	0.08405
	A	0.01152	0.01098	0.06435
	B	0.03163	0.03171	0.08250
	B	0.01480	0.01500	0.06573
	CIN	0.02831	0.02874	0.08225
	CIN	0.01662	0.01712	0.07024

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00190	0.00351	0.05251
	A	0.01977	0.02134	0.06890
	B	0.00241	0.00431	0.05132
	B	0.01832	0.02022	0.06598
	CIN	0.00468	0.00670	0.05988
	CIN	0.01637	0.01837	0.07106
sky130_fd_sc_hs__fa_2	A	0.00637	0.00698	0.06370
	A	0.02510	0.02562	0.08076
	B	0.00718	0.00772	0.06086
	B	0.02336	0.02383	0.07698
	CIN	0.01121	0.01090	0.06692
	CIN	0.02326	0.02295	0.07659
sky130_fd_sc_hs__fa_4	A	0.01954	0.01537	0.06619
	A	0.03973	0.03558	0.08482
	B	0.02508	0.01649	0.06169
	B	0.04213	0.03377	0.07627
	CIN	0.02673	0.01877	0.07427
	CIN	0.03876	0.03102	0.08096

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00502	0.00456	1.22345	1.15650
sky130_fd_sc_hs__ha_2	0.00509	0.00527	2.13104	2.22669
sky130_fd_sc_hs__ha_4	0.00967	0.00869	4.03568	4.65231

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	31.65520	43.80580
sky130_fd_sc_hs__ha_2	0.00000	33.40360	36.81650
sky130_fd_sc_hs__ha_4	0.00000	81.13460	102.08900

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)	0.08076	0.55502	6.25192
	B->COUT (RR)	0.07610	0.56859	6.50615
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.08705	0.49732	6.19900
	B->COUT (RR)	0.08352	0.51374	6.34694
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.10442	0.44381	6.24470
	B->COUT (RR)	0.09062	0.45198	6.44901

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.09036	0.51487	4.76226
	B->COUT (FF)	0.08025	0.48925	4.63731
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.10424	0.50741	4.59330
	B->COUT (FF)	0.09654	0.48613	4.47154
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.12168	0.48434	4.59806
	B->COUT (FF)	0.10401	0.45304	4.48244

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	0.08369	0.56602	6.31566
	A->SUM (FR)	B	0.14789	0.75965	7.97138
	B->SUM (RR)	!A	0.07106	0.53956	6.20215
	B->SUM (FR)	A	0.14912	0.74655	7.77874
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.08945	0.47574	5.96351
	A->SUM (FR)	B	0.19135	0.71765	7.86061
	B->SUM (RR)	!A	0.07967	0.45693	5.88320
	B->SUM (FR)	A	0.19153	0.70426	7.69008
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.09975	0.43331	6.39311
	A->SUM (FR)	B	0.21464	0.66650	8.13244
	B->SUM (RR)	!A	0.08566	0.40580	6.27812
	B->SUM (FR)	A	0.20561	0.64732	7.94417

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	0.12172	0.51474	4.76570
	A->SUM (RF)	B	0.12155	0.38076	2.61266
	B->SUM (FF)	!A	0.10706	0.52461	4.89233
	B->SUM (RF)	A	0.11747	0.39409	2.81463
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.15983	0.55090	4.94753
	A->SUM (RF)	B	0.14813	0.38618	2.70500
	B->SUM (FF)	!A	0.14519	0.56707	5.07008
	B->SUM (RF)	A	0.14545	0.40287	2.87421
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.16274	0.51662	5.15670
	A->SUM (RF)	B	0.17920	0.39487	3.01679
	B->SUM (FF)	!A	0.14435	0.53133	5.29204
	B->SUM (RF)	A	0.16614	0.40388	3.21336

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00962	0.01119	0.04477
	A	0.00497	0.00652	0.03991
	B	0.00908	0.01124	0.05426
	B	0.00549	0.00759	0.05058
sky130_fd_sc_hs__ha_2	A	0.01329	0.01483	0.05641
	A	0.00858	0.01007	0.05151
	B	0.01292	0.01476	0.05738
	B	0.00894	0.01070	0.05328
sky130_fd_sc_hs__ha_4	A	0.02581	0.02873	0.09950
	A	0.01719	0.02011	0.09052
	B	0.02437	0.02826	0.11135
	B	0.01797	0.02180	0.10482

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00503	0.00763	0.04436
	A	0.00967	0.01223	0.04896
	B	0.00606	0.00847	0.04741
	B	0.00960	0.01201	0.05065
sky130_fd_sc_hs__ha_2	A	0.00956	0.01165	0.05368
	A	0.01425	0.01626	0.05772
	B	0.01011	0.01177	0.05283
	B	0.01404	0.01563	0.05642
sky130_fd_sc_hs__ha_4	A	0.01789	0.02199	0.10168
	A	0.02648	0.03056	0.10950
	B	0.01972	0.02363	0.10584
	B	0.02594	0.02980	0.11139

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	0.00526	0.00782	0.04549
	A	B	0.00990	0.01245	0.04964
	A	!B	0.01433	0.01680	0.07441
	A	!B	0.00531	0.00778	0.06566
	B	A	0.00625	0.00869	0.04845
	B	A	0.00979	0.01221	0.05127
	B	!A	0.01099	0.01398	0.07877
	B	!A	0.00418	0.00718	0.07226
sky130_fd_sc_hs__ha_2	A	B	0.00980	0.01186	0.05399
	A	B	0.01450	0.01651	0.05821
	A	!B	0.01830	0.02052	0.07715
	A	!B	0.00933	0.01157	0.06921
	B	A	0.01032	0.01192	0.05482
	B	A	0.01425	0.01583	0.05736
	B	!A	0.01551	0.01815	0.08159
	B	!A	0.00808	0.01119	0.07427
sky130_fd_sc_hs__ha_4	A	B	0.01848	0.02284	0.10311
	A	B	0.02708	0.03125	0.11040
	A	!B	0.03746	0.04153	0.15092
	A	!B	0.01895	0.02308	0.13350
	B	A	0.02023	0.02426	0.10890
	B	A	0.02644	0.03036	0.11274
	B	!A	0.03032	0.03546	0.15730
	B	!A	0.01661	0.02176	0.14509

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	0.00934	0.01089	0.04399
	A	B	0.00470	0.00624	0.03931
	A	!B	0.00322	0.00571	0.06347
	A	!B	0.01214	0.01456	0.07208
	B	A	0.00881	0.01092	0.05338
	B	A	0.00521	0.00731	0.04980
	B	!A	0.00441	0.00851	0.07334
	B	!A	0.01144	0.01548	0.08034
sky130_fd_sc_hs__ha_2	A	B	0.01306	0.01457	0.05571
	A	B	0.00835	0.00984	0.05086
	A	!B	0.00814	0.00926	0.06680
	A	!B	0.01701	0.01805	0.07437
	B	A	0.01269	0.01449	0.05652
	B	A	0.00870	0.01046	0.05245
	B	!A	0.00885	0.01162	0.07726
	B	!A	0.01651	0.01919	0.08300
sky130_fd_sc_hs__ha_4	A	B	0.02523	0.02817	0.09785
	A	B	0.01662	0.01956	0.08881
	A	!B	0.01642	0.01803	0.12737
	A	!B	0.03472	0.03631	0.14495
	B	A	0.02380	0.02764	0.10969
	B	A	0.01739	0.02120	0.10307
	B	!A	0.01899	0.02415	0.14805
	B	!A	0.03340	0.03834	0.16046

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00855	19.10755
sky130_fd_sc_hs__bufinv_8	0.00293	7.63689
sky130_fd_sc_hs__inv_1	0.00297	1.21528
sky130_fd_sc_hs__inv_16	0.04512	18.38609
sky130_fd_sc_hs__inv_2	0.00548	2.34682
sky130_fd_sc_hs__inv_4	0.01105	4.40561
sky130_fd_sc_hs__inv_8	0.02188	8.49334

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	90.59350	134.03000
sky130_fd_sc_hs__bufinv_8	0.00000	43.48650	63.53270
sky130_fd_sc_hs__inv_1	0.00000	3.62584	6.96750
sky130_fd_sc_hs__inv_16	0.00000	57.97770	111.43700
sky130_fd_sc_hs__inv_2	0.00000	7.24732	13.92990
sky130_fd_sc_hs__inv_4	0.00000	14.49440	27.85910
sky130_fd_sc_hs__inv_8	0.00000	28.98860	55.71810

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)	0.11636	0.43801	7.85671
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.14834	0.55219	7.82092
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.02551	0.70481	10.01590
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01765	0.40225	10.00020
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.02004	0.60575	9.90148
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01866	0.53002	9.86291
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01836	0.45787	9.72775

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.10563	0.24342	2.80555
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.12701	0.30956	2.44204
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01649	0.42471	6.07016
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01258	0.19772	6.03707
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01373	0.34790	5.93644
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01298	0.29381	5.95333
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01301	0.23975	5.85624

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.07592	0.09619	0.38196
	A	0.08979	0.11073	0.40127
sky130_fd_sc_hs__bufinv_8	A	0.04000	0.04728	0.15333
	A	0.04472	0.05223	0.16099
sky130_fd_sc_hs__inv_1	A	-0.00089	0.00148	0.02419
	A	0.00389	0.00629	0.02897
sky130_fd_sc_hs__inv_16	A	-0.01843	0.04318	0.37977
	A	0.05431	0.11661	0.45240
sky130_fd_sc_hs__inv_2	A	-0.00221	0.00353	0.04865
	A	0.00662	0.01245	0.05749
sky130_fd_sc_hs__inv_4	A	-0.00436	0.00673	0.09323
	A	0.01347	0.02471	0.11146
sky130_fd_sc_hs__inv_8	A	-0.00864	0.01741	0.20805
	A	0.02664	0.05281	0.24343

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.09465	0.11015	0.40029
	A	0.08082	0.09626	0.38030
sky130_fd_sc_hs__bufinv_8	A	0.04585	0.05009	0.14874
	A	0.04114	0.04537	0.14244
sky130_fd_sc_hs__inv_1	A	0.00432	0.00566	0.02012
	A	-0.00046	0.00078	0.01454
sky130_fd_sc_hs__inv_16	A	0.05718	0.09447	0.31352
	A	-0.01546	0.02166	0.23124
sky130_fd_sc_hs__inv_2	A	0.00703	0.01019	0.03744
	A	-0.00179	0.00133	0.02861
sky130_fd_sc_hs__inv_4	A	0.01427	0.02107	0.07654
	A	-0.00353	0.00325	0.05726
sky130_fd_sc_hs__inv_8	A	0.02788	0.04585	0.16417
	A	-0.00738	0.01033	0.12890

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00549	0.00516	0.00536	1.26976
sky130_fd_sc_hs__maj3_2	0.00582	0.00555	0.00568	2.46073
sky130_fd_sc_hs__maj3_4	0.01069	0.01012	0.01052	4.65267

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	10.56220	22.73930
sky130_fd_sc_hs__maj3_2	0.00000	14.12260	23.02030
sky130_fd_sc_hs__maj3_4	0.00000	28.36500	46.03470

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)	0.09861	0.58593	6.26106
	B->X (RR)	0.09132	0.58554	6.32323
	C->X (RR)	0.10076	0.60938	6.44388
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.10540	0.50539	6.11480
	B->X (RR)	0.08832	0.50385	6.15928
	C->X (RR)	0.09901	0.52453	6.27438
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.09855	0.43696	6.24713
	B->X (RR)	0.09294	0.44803	6.31656
	C->X (RR)	0.09782	0.45792	6.35231

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.14195	0.58441	5.20785
	B->X (FF)	0.13075	0.58659	5.24628
	C->X (FF)	0.15009	0.60592	5.34041
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.16712	0.58421	5.15236
	B->X (FF)	0.14848	0.59686	5.21489
	C->X (FF)	0.18209	0.61900	5.30289
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.17331	0.53742	5.14886
	B->X (FF)	0.13250	0.53466	5.24457
	C->X (FF)	0.16604	0.56069	5.28406

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01728	0.01875	0.07346
	A	0.00445	0.00590	0.06103
	B	0.01565	0.01723	0.08030
	B	0.00562	0.00722	0.07054
	C	0.01480	0.01697	0.08048
	C	0.00366	0.00584	0.06968
sky130_fd_sc_hs__maj3_2	A	0.02116	0.02310	0.08043
	A	0.00730	0.00925	0.06761
	B	0.01898	0.02091	0.08047
	B	0.00814	0.01009	0.07059
	C	0.01932	0.02129	0.08542
	C	0.00712	0.00909	0.07394
sky130_fd_sc_hs__maj3_4	A	0.04198	0.04504	0.15494
	A	0.01732	0.02040	0.13163
	B	0.03425	0.03864	0.16835
	B	0.01512	0.01955	0.15059
	C	0.03483	0.03861	0.15469
	C	0.01312	0.01689	0.13488

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00309	0.00499	0.06137
	A	0.01595	0.01765	0.07275
	B	0.00475	0.00746	0.07189
	B	0.01461	0.01716	0.08028
	C	0.00524	0.00779	0.07197
	C	0.01629	0.01887	0.08256
sky130_fd_sc_hs__maj3_2	A	0.00840	0.00899	0.06793
	A	0.02209	0.02265	0.07911
	B	0.00916	0.01048	0.07562
	B	0.01989	0.02121	0.08415
	C	0.01018	0.01147	0.07724
	C	0.02228	0.02358	0.08789
sky130_fd_sc_hs__maj3_4	A	0.01619	0.01756	0.12620
	A	0.04068	0.04183	0.14928
	B	0.01725	0.02020	0.15142
	B	0.03647	0.03938	0.16570
	C	0.01953	0.02235	0.14841
	C	0.04103	0.04387	0.16686

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00479	0.00417	0.00404
	(B * C * X)	-0.00290	-0.00360	-0.00363
	(!B * !C * !X)	0.00354	0.00359	0.00355
	(!B * !C * !X)	-0.00405	-0.00408	-0.00405
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00465	0.00401	0.00392
	(B * C * X)	-0.00345	-0.00413	-0.00417
	(!B * !C * !X)	0.00333	0.00337	0.00334
	(!B * !C * !X)	-0.00465	-0.00468	-0.00465
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00879	0.00746	0.00726
	(B * C * X)	-0.00587	-0.00727	-0.00739
	(!B * !C * !X)	0.00633	0.00641	0.00637
	(!B * !C * !X)	-0.00810	-0.00816	-0.00811

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00361	-0.00364	-0.00364
	(B * C * X)	0.00406	0.00409	0.00405
	(!B * !C * !X)	-0.00311	-0.00337	-0.00341
	(!B * !C * !X)	0.00447	0.00430	0.00421
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00348	-0.00351	-0.00351
	(B * C * X)	0.00459	0.00464	0.00459
	(!B * !C * !X)	-0.00279	-0.00303	-0.00309
	(!B * !C * !X)	0.00520	0.00500	0.00493
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00638	-0.00642	-0.00644
	(B * C * X)	0.00824	0.00831	0.00824
	(!B * !C * !X)	-0.00529	-0.00570	-0.00587
	(!B * !C * !X)	0.00920	0.00877	0.00867

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00319	0.00321	0.00321
	(A * C * X)	-0.00175	-0.00176	-0.00175
	(!A * !C * !X)	0.00086	0.00087	0.00084
	(!A * !C * !X)	-0.00452	-0.00456	-0.00460
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00378	0.00378	0.00378
	(A * C * X)	-0.00171	-0.00169	-0.00168
	(!A * !C * !X)	0.00112	0.00111	0.00107
	(!A * !C * !X)	-0.00457	-0.00457	-0.00463
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00632	0.00632	0.00635
	(A * C * X)	-0.00352	-0.00352	-0.00351
	(!A * !C * !X)	0.00213	0.00215	0.00202
	(!A * !C * !X)	-0.00866	-0.00874	-0.00888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00298	-0.00299	-0.00313
	(A * C * X)	0.00196	0.00196	0.00186
	(!A * !C * !X)	-0.00069	-0.00070	-0.00069
	(!A * !C * !X)	0.00471	0.00475	0.00474
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00352	-0.00356	-0.00369
	(A * C * X)	0.00190	0.00192	0.00179
	(!A * !C * !X)	-0.00080	-0.00080	-0.00080
	(!A * !C * !X)	0.00487	0.00489	0.00489
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00583	-0.00583	-0.00616
	(A * C * X)	0.00401	0.00398	0.00374
	(!A * !C * !X)	-0.00147	-0.00149	-0.00147
	(!A * !C * !X)	0.00937	0.00943	0.00940

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00379	0.00347	0.00341
	(A * B * X)	-0.00236	-0.00273	-0.00272
	(!A * !B * !X)	0.00182	0.00183	0.00181
	(!A * !B * !X)	-0.00449	-0.00451	-0.00453
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00429	0.00397	0.00391
	(A * B * X)	-0.00231	-0.00268	-0.00267
	(!A * !B * !X)	0.00225	0.00226	0.00224
	(!A * !B * !X)	-0.00438	-0.00439	-0.00442
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00759	0.00688	0.00679
	(A * B * X)	-0.00464	-0.00534	-0.00540
	(!A * !B * !X)	0.00418	0.00420	0.00413
	(!A * !B * !X)	-0.00843	-0.00845	-0.00851

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00309	-0.00311	-0.00317
	(A * B * X)	0.00306	0.00307	0.00298
	(!A * !B * !X)	-0.00152	-0.00165	-0.00166
	(!A * !B * !X)	0.00480	0.00472	0.00468
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00359	-0.00360	-0.00366
	(A * B * X)	0.00302	0.00302	0.00294
	(!A * !B * !X)	-0.00181	-0.00196	-0.00198
	(!A * !B * !X)	0.00481	0.00472	0.00469
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00609	-0.00614	-0.00629
	(A * B * X)	0.00605	0.00610	0.00594
	(!A * !B * !X)	-0.00330	-0.00354	-0.00361
	(!A * !B * !X)	0.00927	0.00913	0.00905

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00296	0.00281	0.00521	0.58608
sky130_fd_sc_hs__mux2i_2	0.00557	0.00587	0.00846	0.97109
sky130_fd_sc_hs__mux2i_4	0.01102	0.01100	0.01478	1.68109

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	13.88420	28.96570
sky130_fd_sc_hs__mux2i_2	0.00000	15.20750	32.76520
sky130_fd_sc_hs__mux2i_4	0.00000	37.23740	79.65390

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)	-	0.07739	0.85706	9.78385
	A1->Y (FR)	-	0.06937	0.85339	9.77919
	S->Y (RR)	(A0 * !A1)	0.11432	0.69385	6.09626
	S->Y (FR)	(!A0 * A1)	0.09011	0.83025	9.18054
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.08710	0.77045	9.72260
	A1->Y (FR)	-	0.07941	0.73574	9.32859
	S->Y (RR)	(A0 * !A1)	0.12308	0.58037	5.54021
	S->Y (FR)	(!A0 * A1)	0.09723	0.71859	8.87373
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.08055	0.66012	9.33428
	A1->Y (FR)	-	0.08028	0.67244	9.57104
	S->Y (RR)	(A0 * !A1)	0.14234	0.58069	6.32614
	S->Y (FR)	(!A0 * A1)	0.09238	0.59868	8.36359

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)	-	0.03359	0.43491	4.83357
	A1->Y (RF)	-	0.03525	0.45847	5.11592
	S->Y (FF)	(A0 * !A1)	0.08463	0.44477	3.69185
	S->Y (RF)	(!A0 * A1)	0.04051	0.39881	4.32553
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.04135	0.41423	5.10361
	A1->Y (RF)	-	0.03952	0.40119	4.96321
	S->Y (FF)	(A0 * !A1)	0.10235	0.45375	3.85646
	S->Y (RF)	(!A0 * A1)	0.04255	0.32145	3.88277
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.03803	0.34316	4.79616
	A1->Y (RF)	-	0.04324	0.37655	5.25339
	S->Y (FF)	(A0 * !A1)	0.10319	0.39737	3.38365
	S->Y (RF)	(!A0 * A1)	0.04556	0.26822	3.70242

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	-	0.00147	0.00301	0.02646
	A0	-	0.00789	0.00914	0.03285
	A1	-	0.00153	0.00302	0.02567
	A1	-	0.00741	0.00892	0.03154
	S	(A0 * !A1)	0.01106	0.01516	0.09286
	S	(A0 * !A1)	0.00603	0.01010	0.08804
	S	(!A0 * A1)	0.00227	0.00769	0.10457
	S	(!A0 * A1)	0.01399	0.01944	0.11641
sky130_fd_sc_hs__mux2i_2	A0	-	0.00311	0.00583	0.04680
	A0	-	0.01557	0.01828	0.05891
	A1	-	0.00318	0.00614	0.04873
	A1	-	0.01552	0.01839	0.06116
	S	(A0 * !A1)	0.01833	0.02199	0.09893
	S	(A0 * !A1)	0.01205	0.01567	0.09264
	S	(!A0 * A1)	0.00535	0.01150	0.13506
	S	(!A0 * A1)	0.02541	0.03161	0.15522
sky130_fd_sc_hs__mux2i_4	A0	-	0.00377	0.01008	0.09190
	A0	-	0.02848	0.03481	0.11676
	A1	-	0.00490	0.01039	0.08410
	A1	-	0.02834	0.03388	0.10757
	S	(A0 * !A1)	0.03200	0.03775	0.17176
	S	(A0 * !A1)	0.02241	0.02811	0.16277
	S	(!A0 * A1)	0.00873	0.01949	0.22616
	S	(!A0 * A1)	0.04522	0.05610	0.26387

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00863	0.00960	0.02488
	A0	-	0.00227	0.00319	0.01818
	A1	-	0.00866	0.00960	0.02471
	A1	-	0.00239	0.00328	0.01768
	S	(A0 * !A1)	0.00715	0.01203	0.08949
	S	(A0 * !A1)	0.01216	0.01702	0.09436
	S	(!A0 * A1)	0.01566	0.02044	0.11332
	S	(!A0 * A1)	0.00391	0.00857	0.10138
sky130_fd_sc_hs__mux2i_2	A0	-	0.01753	0.01933	0.04644
	A0	-	0.00528	0.00694	0.03379
	A1	-	0.01707	0.01894	0.04761
	A1	-	0.00415	0.00590	0.03396
	S	(A0 * !A1)	0.01497	0.01949	0.09593
	S	(A0 * !A1)	0.02107	0.02561	0.10185
	S	(!A0 * A1)	0.02759	0.03302	0.15180
	S	(!A0 * A1)	0.00738	0.01279	0.13088
sky130_fd_sc_hs__mux2i_4	A0	-	0.03257	0.03671	0.09044
	A0	-	0.00815	0.01216	0.06601
	A1	-	0.03306	0.03681	0.08693
	A1	-	0.00825	0.01188	0.06141
	S	(A0 * !A1)	0.02855	0.03608	0.17152
	S	(A0 * !A1)	0.03788	0.04536	0.18091
	S	(!A0 * A1)	0.05159	0.06036	0.25913
	S	(!A0 * A1)	0.01484	0.02358	0.22185

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00228	0.00229	0.00228
	(A1 * S * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * S * Y)	0.00101	0.00100	0.00097
	(!A1 * S * Y)	-0.00238	-0.00241	-0.00246
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00396	0.00402	0.00397
	(A1 * S * !Y)	-0.00167	-0.00169	-0.00165
	(!A1 * S * Y)	0.00139	0.00139	0.00130
	(!A1 * S * Y)	-0.00488	-0.00492	-0.00504
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00785	0.00787	0.00787
	(A1 * S * !Y)	-0.00333	-0.00333	-0.00330
	(!A1 * S * Y)	0.00277	0.00278	0.00263
	(!A1 * S * Y)	-0.00969	-0.00980	-0.00999

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00168	-0.00170	-0.00182
	(A1 * S * !Y)	0.00138	0.00138	0.00129
	(!A1 * S * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * S * Y)	0.00274	0.00276	0.00275
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00327	-0.00333	-0.00351
	(A1 * S * !Y)	0.00228	0.00229	0.00217
	(!A1 * S * Y)	-0.00106	-0.00107	-0.00106
	(!A1 * S * Y)	0.00519	0.00522	0.00520
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00624	-0.00636	-0.00670
	(A1 * S * !Y)	0.00483	0.00486	0.00457
	(!A1 * S * Y)	-0.00189	-0.00193	-0.00191
	(!A1 * S * Y)	0.01051	0.01062	0.01057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00193	0.00195	0.00194
	(A0 * !S * !Y)	-0.00096	-0.00098	-0.00097
	(!A0 * !S * Y)	0.00070	0.00070	0.00065
	(!A0 * !S * Y)	-0.00250	-0.00251	-0.00259
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00398	0.00400	0.00400
	(A0 * !S * !Y)	-0.00198	-0.00199	-0.00198
	(!A0 * !S * Y)	0.00140	0.00139	0.00132
	(!A0 * !S * Y)	-0.00509	-0.00510	-0.00522
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00740	0.00744	0.00744
	(A0 * !S * !Y)	-0.00364	-0.00366	-0.00364
	(!A0 * !S * Y)	0.00221	0.00222	0.00207
	(!A0 * !S * Y)	-0.00998	-0.01008	-0.01031

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00159	-0.00167	-0.00180
	(A0 * !S * !Y)	0.00127	0.00125	0.00114
	(!A0 * !S * Y)	-0.00062	-0.00062	-0.00062
	(!A0 * !S * Y)	0.00258	0.00260	0.00259
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00344	-0.00353	-0.00376
	(A0 * !S * !Y)	0.00247	0.00248	0.00231
	(!A0 * !S * Y)	-0.00126	-0.00127	-0.00126
	(!A0 * !S * Y)	0.00520	0.00524	0.00523
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00635	-0.00657	-0.00696
	(A0 * !S * !Y)	0.00459	0.00462	0.00429
	(!A0 * !S * Y)	-0.00198	-0.00199	-0.00198
	(!A0 * !S * Y)	0.01029	0.01034	0.01032

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00848	0.01235	0.08919
	(A0 * A1 * !Y)	0.00033	0.00414	0.08104
	(!A0 * !A1 * Y)	0.00824	0.01228	0.08911
	(!A0 * !A1 * Y)	0.00007	0.00408	0.08092
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01349	0.01678	0.10182
	(A0 * A1 * !Y)	0.00068	0.00391	0.08901
	(!A0 * !A1 * Y)	0.01242	0.01638	0.10151
	(!A0 * !A1 * Y)	-0.00032	0.00360	0.08879
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.02417	0.02830	0.16218
	(A0 * A1 * !Y)	0.00187	0.00600	0.13992
	(!A0 * !A1 * Y)	0.02218	0.02776	0.16155
	(!A0 * !A1 * Y)	-0.00001	0.00556	0.13939

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00006	0.00479	0.08166
	(A0 * A1 * !Y)	0.00809	0.01296	0.08983
	(!A0 * !A1 * Y)	-0.00051	0.00447	0.08156
	(!A0 * !A1 * Y)	0.00764	0.01267	0.08974
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00006	0.00469	0.08951
	(A0 * A1 * !Y)	0.01282	0.01749	0.10231
	(!A0 * !A1 * Y)	-0.00040	0.00409	0.08925
	(!A0 * !A1 * Y)	0.01231	0.01689	0.10201
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00093	0.00817	0.14287
	(A0 * A1 * !Y)	0.02315	0.03047	0.16508
	(!A0 * !A1 * Y)	-0.00008	0.00711	0.14233
	(!A0 * !A1 * Y)	0.02203	0.02926	0.16460

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00285	0.00332	0.00480	1.28372
sky130_fd_sc_hs__mux2_2	0.00264	0.00298	0.00562	2.15093
sky130_fd_sc_hs__mux2_4	0.00508	0.00510	0.00853	4.01235

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	20.04430	35.23660
sky130_fd_sc_hs__mux2_2	0.00000	23.66600	35.51840
sky130_fd_sc_hs__mux2_4	0.00000	34.90090	45.87150

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)	-	0.07412	0.54947	6.19525
	A1->X (RR)	-	0.07442	0.54869	6.13751
	S->X (RR)	(!A0 * A1)	0.07705	0.53603	6.07950
	S->X (FR)	(A0 * !A1)	0.13530	0.70006	7.75824
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.08885	0.51677	6.14089
	A1->X (RR)	-	0.08596	0.50504	6.04616
	S->X (RR)	(!A0 * A1)	0.08796	0.48709	6.01869
	S->X (FR)	(A0 * !A1)	0.14648	0.63630	7.59388
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.11920	0.49707	6.20546
	A1->X (RR)	-	0.12066	0.50305	6.30810
	S->X (RR)	(!A0 * A1)	0.12345	0.46072	6.08293
	S->X (FR)	(A0 * !A1)	0.18943	0.64496	7.77394

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)	-	0.11125	0.57832	5.25484
	A1->X (FF)	-	0.10860	0.57495	5.38588
	S->X (FF)	(!A0 * A1)	0.14378	0.57462	5.36350
	S->X (RF)	(A0 * !A1)	0.16717	0.45212	3.14440
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.13892	0.57676	4.92498
	A1->X (FF)	-	0.14245	0.58745	4.99179
	S->X (FF)	(!A0 * A1)	0.17143	0.55180	4.79674
	S->X (RF)	(A0 * !A1)	0.20546	0.44574	2.62499
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.16883	0.57088	4.78671
	A1->X (FF)	-	0.17043	0.57494	4.75354
	S->X (FF)	(!A0 * A1)	0.19652	0.53506	4.58764
	S->X (RF)	(A0 * !A1)	0.22766	0.44508	2.43015

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	-	0.01203	0.01460	0.07746
	A0	-	0.00588	0.00846	0.07166
	A1	-	0.01302	0.01583	0.07284
	A1	-	0.00636	0.00919	0.06669
	S	(A0 * !A1)	0.01115	0.01548	0.09482
	S	(A0 * !A1)	0.01518	0.01954	0.09929
	S	(!A0 * A1)	0.01972	0.02583	0.15446
	S	(!A0 * A1)	0.00862	0.01473	0.14369
sky130_fd_sc_hs__mux2_2	A0	-	0.01585	0.01853	0.07952
	A0	-	0.00978	0.01249	0.07412
	A1	-	0.01461	0.01763	0.07988
	A1	-	0.00838	0.01143	0.07434
	S	(A0 * !A1)	0.01454	0.01975	0.09669
	S	(A0 * !A1)	0.01945	0.02481	0.10223
	S	(!A0 * A1)	0.02378	0.02893	0.13701
	S	(!A0 * A1)	0.01180	0.01695	0.12567
sky130_fd_sc_hs__mux2_4	A0	-	0.02779	0.03241	0.12947
	A0	-	0.01651	0.02113	0.11988
	A1	-	0.03111	0.03533	0.14584
	A1	-	0.01654	0.02124	0.13449
	S	(A0 * !A1)	0.02805	0.03301	0.12272
	S	(A0 * !A1)	0.03501	0.03998	0.13138
	S	(!A0 * A1)	0.04230	0.04850	0.19962
	S	(!A0 * A1)	0.02306	0.02936	0.18218

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00463	0.00825	0.06532
	A0	-	0.01077	0.01440	0.07140
	A1	-	0.00487	0.00845	0.07272
	A1	-	0.01151	0.01509	0.07931
	S	(A0 * !A1)	0.01632	0.01981	0.09898
	S	(A0 * !A1)	0.01224	0.01563	0.09461
	S	(!A0 * A1)	0.00630	0.01302	0.14165
	S	(!A0 * A1)	0.01737	0.02406	0.15254
sky130_fd_sc_hs__mux2_2	A0	-	0.00913	0.01123	0.07145
	A0	-	0.01520	0.01727	0.07750
	A1	-	0.00951	0.01154	0.07243
	A1	-	0.01587	0.01787	0.07878
	S	(A0 * !A1)	0.02059	0.02285	0.09586
	S	(A0 * !A1)	0.01562	0.01790	0.09026
	S	(!A0 * A1)	0.01025	0.01517	0.13753
	S	(!A0 * A1)	0.02221	0.02698	0.14802
sky130_fd_sc_hs__mux2_4	A0	-	0.02175	0.02390	0.13354
	A0	-	0.03291	0.03455	0.14120
	A1	-	0.02275	0.02453	0.13253
	A1	-	0.03410	0.03582	0.14196
	S	(A0 * !A1)	0.03872	0.03906	0.12403
	S	(A0 * !A1)	0.03164	0.03193	0.11628
	S	(!A0 * A1)	0.02443	0.02783	0.20385
	S	(!A0 * A1)	0.04356	0.04691	0.22009

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00219	0.00222	0.00219
	(A1 * S * X)	-0.00061	-0.00062	-0.00060
	(!A1 * S * !X)	0.00094	0.00094	0.00089
	(!A1 * S * !X)	-0.00206	-0.00207	-0.00214
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00210	0.00212	0.00210
	(A1 * S * X)	-0.00067	-0.00068	-0.00066
	(!A1 * S * !X)	0.00109	0.00109	0.00102
	(!A1 * S * !X)	-0.00187	-0.00190	-0.00198
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00360	0.00361	0.00361
	(A1 * S * X)	-0.00152	-0.00153	-0.00151
	(!A1 * S * !X)	0.00156	0.00155	0.00148
	(!A1 * S * !X)	-0.00419	-0.00422	-0.00431

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00151	-0.00155	-0.00165
	(A1 * S * X)	0.00124	0.00124	0.00116
	(!A1 * S * !X)	-0.00042	-0.00044	-0.00043
	(!A1 * S * !X)	0.00256	0.00258	0.00257
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00138	-0.00142	-0.00155
	(A1 * S * X)	0.00134	0.00134	0.00123
	(!A1 * S * !X)	-0.00043	-0.00044	-0.00044
	(!A1 * S * !X)	0.00252	0.00253	0.00253
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00273	-0.00278	-0.00296
	(A1 * S * X)	0.00235	0.00237	0.00221
	(!A1 * S * !X)	-0.00075	-0.00078	-0.00076
	(!A1 * S * !X)	0.00496	0.00499	0.00497

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00223	0.00223	0.00223
	(A0 * !S * X)	-0.00094	-0.00094	-0.00093
	(!A0 * !S * !X)	0.00070	0.00069	0.00067
	(!A0 * !S * !X)	-0.00261	-0.00262	-0.00266
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00209	0.00210	0.00209
	(A0 * !S * X)	-0.00078	-0.00079	-0.00078
	(!A0 * !S * !X)	0.00069	0.00068	0.00067
	(!A0 * !S * !X)	-0.00231	-0.00231	-0.00236
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00353	0.00357	0.00354
	(A0 * !S * X)	-0.00162	-0.00165	-0.00160
	(!A0 * !S * !X)	0.00124	0.00123	0.00117
	(!A0 * !S * !X)	-0.00443	-0.00443	-0.00454

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00191	-0.00195	-0.00202
	(A0 * !S * X)	0.00124	0.00125	0.00118
	(!A0 * !S * !X)	-0.00053	-0.00054	-0.00053
	(!A0 * !S * !X)	0.00278	0.00279	0.00278
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00173	-0.00176	-0.00187
	(A0 * !S * X)	0.00114	0.00114	0.00104
	(!A0 * !S * !X)	-0.00040	-0.00041	-0.00041
	(!A0 * !S * !X)	0.00260	0.00261	0.00261
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00281	-0.00290	-0.00309
	(A0 * !S * X)	0.00226	0.00226	0.00211
	(!A0 * !S * !X)	-0.00064	-0.00066	-0.00064
	(!A0 * !S * !X)	0.00503	0.00505	0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00872	0.01229	0.08811
	(A0 * A1 * X)	0.00128	0.00482	0.08068
	(!A0 * !A1 * !X)	0.00848	0.01238	0.08824
	(!A0 * !A1 * !X)	0.00107	0.00495	0.08083
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00884	0.01245	0.08811
	(A0 * A1 * X)	0.00052	0.00408	0.07977
	(!A0 * !A1 * !X)	0.00814	0.01208	0.08757
	(!A0 * !A1 * !X)	-0.00016	0.00374	0.07926
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01379	0.01717	0.10124
	(A0 * A1 * X)	0.00101	0.00437	0.08847
	(!A0 * !A1 * !X)	0.01324	0.01711	0.10077
	(!A0 * !A1 * !X)	0.00056	0.00431	0.08802

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00029	0.00503	0.08098
	(A0 * A1 * X)	0.00773	0.01248	0.08842
	(!A0 * !A1 * !X)	-0.00019	0.00454	0.08064
	(!A0 * !A1 * !X)	0.00721	0.01196	0.08808
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00031	0.00442	0.08016
	(A0 * A1 * X)	0.00799	0.01277	0.08849
	(!A0 * !A1 * !X)	-0.00030	0.00446	0.08015
	(!A0 * !A1 * !X)	0.00801	0.01282	0.08848
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00024	0.00478	0.08850
	(A0 * A1 * X)	0.01297	0.01758	0.10129
	(!A0 * !A1 * !X)	-0.00038	0.00431	0.08784
	(!A0 * !A1 * !X)	0.01236	0.01712	0.10060

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00250	0.00261	0.00259	0.00286	0.00869	0.00556	1.21823
sky130_fd_sc_hs__mux4_2	0.00282	0.00267	0.00277	0.00271	0.00981	0.00575	2.43684
sky130_fd_sc_hs__mux4_4	0.00498	0.00479	0.00497	0.00498	0.01379	0.00859	4.63309

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	32.81460	57.94940
sky130_fd_sc_hs__mux4_2	0.00000	36.27910	64.66830
sky130_fd_sc_hs__mux4_4	0.00000	57.32370	99.68140

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)	0.13295	0.64228	6.38438
	A1->X (RR)	0.13424	0.64293	6.36131
	A2->X (RR)	0.13514	0.64851	6.37794
	A3->X (RR)	0.13276	0.64270	6.35086
	S0->X (-R)	0.20049	0.80747	7.89348
	S1->X (-R)	0.11161	0.68882	7.80162
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.14152	0.56281	6.26576
	A1->X (RR)	0.13629	0.56092	6.26542
	A2->X (RR)	0.13207	0.55055	6.22792
	A3->X (RR)	0.12633	0.54581	6.22952
	S0->X (-R)	0.18773	0.70350	7.85706
	S1->X (-R)	0.11944	0.61082	7.71125
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.16093	0.51728	6.45514
	A1->X (RR)	0.16458	0.52111	6.47001
	A2->X (RR)	0.16501	0.52290	6.43375
	A3->X (RR)	0.15768	0.51889	6.43074
	S0->X (-R)	0.26146	0.74579	8.10997
	S1->X (-R)	0.13877	0.59639	7.92838

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.19211	0.65353	5.09073
	A1->X (FF)	0.20232	0.67130	5.14941
	A2->X (FF)	0.20808	0.68258	5.17268
	A3->X (FF)	0.20820	0.68090	5.17672
	S0->X (-F)	0.19153	0.69415	5.26148
	S1->X (-F)	0.09406	0.54067	5.06880
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.23966	0.70270	5.36539
	A1->X (FF)	0.23769	0.69757	5.34877
	A2->X (FF)	0.23697	0.69595	5.35919
	A3->X (FF)	0.22977	0.68421	5.32972
	S0->X (-F)	0.21901	0.71454	5.43825
	S1->X (-F)	0.11444	0.55632	5.27525
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.24280	0.64922	5.34616
	A1->X (FF)	0.23817	0.64299	5.31954
	A2->X (FF)	0.26448	0.67370	5.40084
	A3->X (FF)	0.25249	0.65997	5.36802
	S0->X (-F)	0.23880	0.70664	5.59341
	S1->X (-F)	0.12476	0.53908	5.31659

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01906	0.02108	0.07693
	A0	0.01171	0.01372	0.06987
	A1	0.01761	0.01951	0.07408
	A1	0.01039	0.01230	0.06718
	A2	0.01747	0.01944	0.07382
	A2	0.01038	0.01236	0.06704
	A3	0.01643	0.01838	0.07329
	A3	0.00915	0.01111	0.06632
	S0	0.03046	0.04104	0.25640
	S0	0.01313	0.02372	0.23931
	S1	0.01441	0.02156	0.14464
	S1	0.00546	0.01262	0.13601
sky130_fd_sc_hs__mux4_2	A0	0.02358	0.02538	0.08162
	A0	0.01542	0.01723	0.07437
	A1	0.02224	0.02411	0.08056
	A1	0.01423	0.01633	0.07345
	A2	0.02098	0.02282	0.07800
	A2	0.01333	0.01517	0.07107
	A3	0.02001	0.02200	0.07835
	A3	0.01255	0.01454	0.07185
	S0	0.03638	0.04665	0.26545
	S0	0.01844	0.02874	0.24814
	S1	0.01801	0.02515	0.15091
	S1	0.00874	0.01597	0.14237

sky130_fd_sc_hs__mux4_4	**A0**	0.04433	0.04721	0.15506
	A0	0.02988	0.03290	0.14164
	A1	0.04121	0.04392	0.15307
	A1	0.02719	0.03012	0.14000
	A2	0.04124	0.04381	0.14961
	A2	0.02724	0.03006	0.13672
	A3	0.03902	0.04184	0.14968
	A3	0.02512	0.02810	0.13684
	S0	0.06270	0.07650	0.39432
	S0	0.03508	0.04890	0.36696
	S1	0.03282	0.04053	0.20811
	S1	0.01897	0.02675	0.19504

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00724	0.00862	0.06484
	A0	0.01459	0.01597	0.07171
	A1	0.00943	0.01061	0.06612
	A1	0.01660	0.01780	0.07214
	A2	0.01053	0.01156	0.06661
	A2	0.01760	0.01871	0.07292
	A3	0.01198	0.01303	0.06854
	A3	0.01921	0.02037	0.07499
	S0	0.01110	0.02298	0.23748
	S0	0.02822	0.04014	0.25357
	S1	0.00397	0.01261	0.14291
	S1	0.01290	0.02120	0.15076

sky130_fd_sc_hs__mux4_2	**A0**	0.01569	0.01435	0.07297
	A0	0.02381	0.02253	0.07814
	A1	0.01729	0.01597	0.07281
	A1	0.02527	0.02399	0.07996
	A2	0.01701	0.01563	0.07075
	A2	0.02464	0.02332	0.07799
	A3	0.01807	0.01696	0.07552
	A3	0.02550	0.02438	0.08019
	S0	0.01770	0.02691	0.24511
	S0	0.03566	0.04485	0.26098
	S1	0.01053	0.01688	0.15008
	S1	0.01979	0.02613	0.15664
sky130_fd_sc_hs__mux4_4	**A0**	0.02994	0.02666	0.13673
	A0	0.04437	0.04115	0.14785
	A1	0.03377	0.03044	0.14190
	A1	0.04770	0.04437	0.15234
	A2	0.03481	0.03024	0.13716
	A2	0.04875	0.04447	0.14872
	A3	0.03685	0.03312	0.14261
	A3	0.05070	0.04703	0.15347
	S0	0.03461	0.04497	0.36245
	S0	0.06171	0.07216	0.38645
	S1	0.02230	0.02762	0.20119
	S1	0.03612	0.04138	0.21161

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)**	0.01008	0.01234	0.06932
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00427	0.00649	0.06351
	(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)	0.00240	0.00204	0.00198
	(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	-0.00152	-0.00156
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01112	0.01329	0.07125
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00451	0.00667	0.06466
	(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)	0.00251	0.00219	0.00213
	(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)	-0.00115	-0.00151	-0.00152
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01877	0.02319	0.13464
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00731	0.01170	0.12323
	(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)	0.00442	0.00372	0.00355
	(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)	-0.00265	-0.00341	-0.00348

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)	0.00180	0.00415	0.06138
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00763	0.00999	0.06720
	(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)	-0.00116	-0.00119	-0.00119
	(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)	0.00236	0.00239	0.00236
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00273	0.00507	0.06313
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00932	0.01168	0.06973
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00131	-0.00134	-0.00134
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00235	0.00237	0.00233

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00386	0.00842	0.12024
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01532	0.01991	0.13168
	(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	-0.00249	-0.00248
	(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)	0.00460	0.00464	0.00459

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)**	0.00843	0.01059	0.06635
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00279	0.00493	0.06071
	(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)	0.00215	0.00179	0.00174
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00145	-0.00181	-0.00184

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00965	0.01187	0.07010
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00322	0.00543	0.06367
	(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)	0.00229	0.00192	0.00186
	(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)	-0.00132	-0.00171	-0.00175
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01540	0.01981	0.13253
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00444	0.00881	0.12162
	(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)	0.00417	0.00342	0.00330
	(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)	-0.00267	-0.00346	-0.00354

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)**	0.00378	0.00605	0.06185
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00943	0.01172	0.06748
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00109	-0.00113	-0.00115
	(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	0.00247	0.00245
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00437	0.00665	0.06510
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01081	0.01311	0.07150
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00122	-0.00125	-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)	0.00237	0.00239	0.00238
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00776	0.01225	0.12528
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01871	0.02322	0.13619
	(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)	-0.00227	-0.00233	-0.00236
	(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)	0.00453	0.00455	0.00453

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)	0.00247	0.00211	0.00206
	(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)	-0.00110	-0.00148	-0.00150
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01023	0.01238	0.06782
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00437	0.00648	0.06197
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)	0.00269	0.00235	0.00229
	(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	-0.00150	-0.00152
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01048	0.01259	0.06941
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00416	0.00625	0.06311

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)**	0.00445	0.00375	0.00362
	(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)	-0.00254	-0.00327	-0.00332
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01891	0.02314	0.13259
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00730	0.01148	0.12101

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)**	-0.00125	-0.00126	-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)	0.00232	0.00232	0.00231
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00262	0.00484	0.06051
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00847	0.01071	0.06634

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)**	-0.00147	-0.00149	-0.00150
	(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)	0.00233	0.00235	0.00233
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00277	0.00505	0.06196
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00908	0.01136	0.06828
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)**	-0.00251	-0.00254	-0.00256
	(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)	0.00444	0.00444	0.00442
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00370	0.00818	0.11794
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01531	0.01980	0.12955

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)**	0.00901	0.01113	0.06713
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00300	0.00509	0.06111
	(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)	0.00254	0.00221	0.00215
	(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	-0.00176	-0.00178
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00937	0.01160	0.06943
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00329	0.00549	0.06335
	(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)	0.00238	0.00202	0.00196
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00126	-0.00166	-0.00170
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01674	0.02102	0.13249
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00528	0.00953	0.12103
	(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)	0.00433	0.00356	0.00346
	(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)	-0.00257	-0.00332	-0.00341

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)	0.00400	0.00623	0.06236
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01003	0.01226	0.06836
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00153	-0.00155	-0.00156
	(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)	0.00241	0.00243	0.00239
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00394	0.00625	0.06436
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01005	0.01238	0.07043
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00133	-0.00136	-0.00136
	(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)	0.00232	0.00235	0.00232

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00671	0.01105	0.12286
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01819	0.02256	0.13426
	(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)	-0.00245	-0.00251	-0.00254
	(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)	0.00440	0.00442	0.00438

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)**	0.01074	0.01487	0.10063
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00096	0.00311	0.08890
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01601	0.02001	0.11027
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00607	0.01001	0.10038
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01539	0.02300	0.17397
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00169	0.00926	0.16027
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01136	0.01554	0.10129
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00060	0.00352	0.08927
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01523	0.01955	0.10974
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00521	0.00947	0.09980
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01505	0.01944	0.10987
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00473	0.00908	0.09960
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01500	0.02272	0.17245
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00132	0.00897	0.15873
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01617	0.02390	0.17359
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00226	0.00993	0.15962
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01576	0.01979	0.11022
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00551	0.00950	0.09999
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01656	0.02416	0.17504
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00254	0.01006	0.16096

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01190	0.01616	0.10241
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00033	0.00454	0.09082
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01704	0.02075	0.11164
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00758	0.01127	0.10219
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01653	0.02424	0.17663
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00282	0.01044	0.16289
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01205	0.01634	0.10265
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00035	0.00460	0.09092
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01771	0.02106	0.11142
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00860	0.01190	0.10241
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01725	0.02066	0.11131
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00801	0.01138	0.10208
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01673	0.02444	0.17716
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00261	0.01025	0.16304
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01725	0.02509	0.17773
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00306	0.01083	0.16348
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01629	0.02004	0.11115
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00666	0.01039	0.10156
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01788	0.02569	0.17798
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00403	0.01179	0.16408

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01666	0.02070	0.10683
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00006	0.00405	0.09030
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02613	0.02906	0.12285
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01315	0.01601	0.11002
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02509	0.03485	0.23519
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00461	0.01426	0.21465
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01730	0.02140	0.10766
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00033	0.00442	0.09063
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02649	0.03002	0.12305
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01292	0.01636	0.10973
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02583	0.02945	0.12356
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01183	0.01539	0.10969
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02416	0.03454	0.23994
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00397	0.01431	0.21981
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02564	0.03613	0.24147
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00514	0.01559	0.22093
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02604	0.02904	0.12331
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01253	0.01548	0.10992
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02734	0.03711	0.23736
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00630	0.01597	0.21627

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)**	0.00091	0.00588	0.09155
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01259	0.01759	0.10330
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00797	0.01315	0.10318
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01793	0.02309	0.11293
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00294	0.01199	0.16282
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01663	0.02571	0.17657
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00073	0.00547	0.09117
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01271	0.01750	0.10321
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00773	0.01301	0.10266
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01777	0.02310	0.11243
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00814	0.01332	0.10256
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01850	0.02372	0.11262
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00212	0.01120	0.16079
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01581	0.02495	0.17454
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00116	0.01000	0.15976
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01511	0.02398	0.17375
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00850	0.01350	0.10338
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01881	0.02387	0.11347
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00198	0.01100	0.16186
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01604	0.02511	0.17593

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00095	0.00421	0.09055
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01064	0.01577	0.10214
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00629	0.01143	0.10228
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01580	0.02101	0.11154
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00132	0.01047	0.16270
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01504	0.02427	0.17647
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00061	0.00444	0.09068
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01114	0.01619	0.10243
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00702	0.01218	0.10310
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01610	0.02136	0.11197
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00777	0.01280	0.10348
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01708	0.02218	0.11251
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00077	0.00999	0.16262
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01492	0.02409	0.17677
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00050	0.00959	0.16227
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01479	0.02391	0.17654
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00737	0.01240	0.10300
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01701	0.02212	0.11239
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00023	0.00936	0.16159
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01412	0.02332	0.17550

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00128	0.00381	0.09053
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01527	0.02035	0.10720
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01279	0.01791	0.11223
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02577	0.03095	0.12459
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00172	0.01339	0.21400
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02223	0.03395	0.23454
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00086	0.00408	0.09064
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.01613	0.02110	0.10769
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01156	0.01708	0.11010
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02509	0.03071	0.12316
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01295	0.01829	0.11080
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02706	0.03243	0.12428
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00137	0.01411	0.22069
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02155	0.03430	0.24084
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00047	0.01306	0.21968
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02107	0.03370	0.24017
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01373	0.01856	0.11232
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02734	0.03224	0.12526
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00016	0.01175	0.21220
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02127	0.03298	0.23336

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)	0.00724	0.01229	0.09885
	(A1 * A3 * S0 * X)	-0.00019	0.00481	0.09141
	(A0 * A2 * !S0 * X)	0.00714	0.01219	0.09876
	(A0 * A2 * !S0 * X)	-0.00028	0.00471	0.09132
	(!A1 * !A3 * S0 * !X)	0.00759	0.01269	0.09921
	(!A1 * !A3 * S0 * !X)	-0.00016	0.00490	0.09145
	(!A0 * !A2 * !S0 * !X)	0.00750	0.01260	0.09912
	(!A0 * !A2 * !S0 * !X)	-0.00026	0.00481	0.09136
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00759	0.01259	0.09886
	(A1 * A3 * S0 * X)	-0.00013	0.00484	0.09111
	(A0 * A2 * !S0 * X)	0.00750	0.01249	0.09877
	(A0 * A2 * !S0 * X)	-0.00022	0.00475	0.09101
	(!A1 * !A3 * S0 * !X)	0.00773	0.01283	0.09904
	(!A1 * !A3 * S0 * !X)	-0.00023	0.00481	0.09107
	(!A0 * !A2 * !S0 * !X)	0.00764	0.01274	0.09895
	(!A0 * !A2 * !S0 * !X)	-0.00032	0.00471	0.09098
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01093	0.01545	0.10301
	(A1 * A3 * S0 * X)	-0.00004	0.00448	0.09206
	(A0 * A2 * !S0 * X)	0.01087	0.01540	0.10296
	(A0 * A2 * !S0 * X)	-0.00010	0.00442	0.09200
	(!A1 * !A3 * S0 * !X)	0.01124	0.01585	0.10335
	(!A1 * !A3 * S0 * !X)	-0.00038	0.00420	0.09175
	(!A0 * !A2 * !S0 * !X)	0.01118	0.01580	0.10329
	(!A0 * !A2 * !S0 * !X)	-0.00044	0.00414	0.09170

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)	-0.00075	0.00517	0.09162
	(A1 * A3 * S0 * X)	0.00669	0.01260	0.09907
	(A0 * A2 * !S0 * X)	-0.00085	0.00506	0.09153
	(A0 * A2 * !S0 * X)	0.00660	0.01250	0.09898
	(!A1 * !A3 * S0 * !X)	-0.00086	0.00488	0.09124
	(!A1 * !A3 * S0 * !X)	0.00692	0.01266	0.09900
	(!A0 * !A2 * !S0 * !X)	-0.00095	0.00478	0.09114
	(!A0 * !A2 * !S0 * !X)	0.00682	0.01257	0.09891
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00084	0.00502	0.09120
	(A1 * A3 * S0 * X)	0.00691	0.01278	0.09896
	(A0 * A2 * !S0 * X)	-0.00093	0.00492	0.09111
	(A0 * A2 * !S0 * X)	0.00682	0.01268	0.09887
	(!A1 * !A3 * S0 * !X)	-0.00074	0.00495	0.09105
	(!A1 * !A3 * S0 * !X)	0.00725	0.01299	0.09903
	(!A0 * !A2 * !S0 * !X)	-0.00083	0.00486	0.09096
	(!A0 * !A2 * !S0 * !X)	0.00716	0.01288	0.09893
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00122	0.00429	0.09203
	(A1 * A3 * S0 * X)	0.00975	0.01525	0.10299
	(A0 * A2 * !S0 * X)	-0.00128	0.00423	0.09197
	(A0 * A2 * !S0 * X)	0.00969	0.01520	0.10294
	(!A1 * !A3 * S0 * !X)	-0.00076	0.00468	0.09186
	(!A1 * !A3 * S0 * !X)	0.01084	0.01635	0.10351
	(!A0 * !A2 * !S0 * !X)	-0.00081	0.00462	0.09180
	(!A0 * !A2 * !S0 * !X)	0.01078	0.01628	0.10345

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00241	0.00290	1.16076
sky130_fd_sc_hs__nand2b_2	0.00271	0.00551	2.01263
sky130_fd_sc_hs__nand2b_4	0.00400	0.00837	2.47118

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	12.75580	18.37660
sky130_fd_sc_hs__nand2b_2	0.00000	12.95040	28.23450
sky130_fd_sc_hs__nand2b_4	0.00000	25.76960	37.30980

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)	0.05810	0.52977	6.40521
	B->Y (FR)	0.03457	0.71229	9.88039
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.05763	0.41487	5.44750
	B->Y (FR)	0.03270	0.62139	9.62226
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.07009	0.45662	6.40588
	B->Y (FR)	0.04185	0.63324	10.08490

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)	0.07121	0.53091	5.90174
	B->Y (RF)	0.02817	0.48612	6.78931
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.07628	0.49517	5.87743
	B->Y (RF)	0.02812	0.39848	6.42897
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.05981	0.35306	4.00348
	B->Y (RF)	0.02410	0.26707	4.57393

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	0.00859	0.01311	0.09081
	A_N	0.00463	0.00927	0.08711
	B	0.00025	0.00208	0.02234
	B	0.00477	0.00661	0.02685
sky130_fd_sc_hs__nand2b_2	A_N	0.01120	0.01552	0.08620
	A_N	0.00708	0.01147	0.08204
	B	0.00023	0.00414	0.04443
	B	0.00908	0.01303	0.05328
sky130_fd_sc_hs__nand2b_4	A_N	0.01541	0.02308	0.15186
	A_N	0.00945	0.01716	0.14675
	B	-0.00006	0.00576	0.06624
	B	0.01335	0.01887	0.07988

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00443	0.00968	0.08395
	A_N	0.00840	0.01361	0.08729
	B	0.00598	0.00707	0.01857
	B	0.00145	0.00222	0.01378
sky130_fd_sc_hs__nand2b_2	A_N	0.00785	0.01299	0.09692
	A_N	0.01196	0.01700	0.09954
	B	0.01155	0.01336	0.03667
	B	0.00265	0.00438	0.02752
sky130_fd_sc_hs__nand2b_4	A_N	0.01300	0.02185	0.15713
	A_N	0.01896	0.02774	0.16291
	B	0.01963	0.02239	0.05895
	B	0.00612	0.00884	0.04361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00677	0.01118	0.08874
	(!B * Y)	0.00257	0.00696	0.08453
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00943	0.01381	0.09924
	(!B * Y)	0.00477	0.00914	0.09458
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01171	0.01911	0.15511
	(!B * Y)	0.00488	0.01224	0.14825

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00005	0.00501	0.08282
	(!B * Y)	0.00426	0.00924	0.08703
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00079	0.00573	0.09098
	(!B * Y)	0.00548	0.01045	0.09566
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00144	0.00994	0.14673
	(!B * Y)	0.00834	0.01689	0.15361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00212	0.00214	0.00213
	(A_N * Y)	-0.00200	-0.00200	-0.00200
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00350	0.00353	0.00352
	(A_N * Y)	-0.00432	-0.00433	-0.00432
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00715	0.00721	0.00719
	(A_N * Y)	-0.00431	-0.00433	-0.00431

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00166	-0.00177	-0.00181
	(A_N * Y)	0.00245	0.00238	0.00233
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00298	-0.00327	-0.00332
	(A_N * Y)	0.00481	0.00462	0.00454
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00581	-0.00638	-0.00653
	(A_N * Y)	0.00567	0.00518	0.00500

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00290	0.00282	1.20556
sky130_fd_sc_hs__nand2_2	0.00557	0.00553	2.35065
sky130_fd_sc_hs__nand2_4	0.00840	0.00817	2.40503
sky130_fd_sc_hs__nand2_8	0.01611	0.01616	4.20898

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	3.62629	13.92960
sky130_fd_sc_hs__nand2_2	0.00000	7.25167	27.85840
sky130_fd_sc_hs__nand2_4	0.00000	7.53967	27.86560
sky130_fd_sc_hs__nand2_8	0.00000	15.07340	55.71890

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)	0.02713	0.70195	9.93838
	B->Y (FR)	0.03344	0.70862	9.94719
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02367	0.61164	9.96676
	B->Y (FR)	0.03177	0.61796	9.92845
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03311	0.62835	10.13710
	B->Y (FR)	0.04926	0.64313	10.11000
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02678	0.53222	9.59907
	B->Y (FR)	0.04115	0.53357	9.20692

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.02246	0.54049	7.67923
	B->Y (RF)	0.02606	0.49210	6.98089
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.02126	0.48797	8.20903
	B->Y (RF)	0.02737	0.43806	7.43891
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01917	0.32775	5.58298
	B->Y (RF)	0.02450	0.27262	4.60985
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01687	0.27940	5.61573
	B->Y (RF)	0.02218	0.20756	4.25084

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00059	0.00145	0.02094
	A	0.00414	0.00621	0.02572
	B	-0.00003	0.00196	0.02184
	B	0.00582	0.00783	0.02773
sky130_fd_sc_hs__nand2_2	A	-0.00168	0.00232	0.03814
	A	0.00750	0.01158	0.04727
	B	0.00037	0.00405	0.04084
	B	0.01199	0.01572	0.05239
sky130_fd_sc_hs__nand2_4	A	-0.00323	0.00377	0.06084
	A	0.01066	0.01764	0.07491
	B	0.00049	0.00603	0.06598
	B	0.01907	0.02460	0.08475
sky130_fd_sc_hs__nand2_8	A	-0.00728	0.00729	0.13832
	A	0.01968	0.03442	0.16528
	B	-0.00043	0.01299	0.13693
	B	0.03631	0.04991	0.17462

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00468	0.00569	0.01753
	A	-0.00006	0.00091	0.01255
	B	0.00586	0.00663	0.01844
	B	-0.00003	0.00075	0.01203
sky130_fd_sc_hs__nand2_2	A	0.00923	0.01141	0.03304
	A	0.00005	0.00220	0.02363
	B	0.01182	0.01360	0.03464
	B	0.00013	0.00178	0.02293
sky130_fd_sc_hs__nand2_4	A	0.01634	0.01979	0.05355
	A	0.00253	0.00583	0.03971
	B	0.02141	0.02395	0.06011
	B	0.00265	0.00521	0.03983
sky130_fd_sc_hs__nand2_8	A	0.02625	0.03465	0.10840
	A	-0.00059	0.00769	0.08153
	B	0.03679	0.04368	0.12101
	B	-0.00025	0.00655	0.08166

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00059	0.00059	0.00057
	(!B * Y)	-0.00259	-0.00259	-0.00263
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00111	0.00111	0.00105
	(!B * Y)	-0.00503	-0.00505	-0.00516
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00215	0.00217	0.00205
	(!B * Y)	-0.00593	-0.00600	-0.00620
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00432	0.00429	0.00406
	(!B * Y)	-0.01157	-0.01158	-0.01198

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00056	-0.00057	-0.00055
	(!B * Y)	0.00263	0.00268	0.00264
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00101	-0.00103	-0.00101
	(!B * Y)	0.00516	0.00527	0.00518
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00199	-0.00199	-0.00198
	(!B * Y)	0.00621	0.00625	0.00623
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00394	-0.00396	-0.00394
	(!B * Y)	0.01199	0.01208	0.01202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00168	0.00170	0.00169
	(!A * Y)	-0.00225	-0.00227	-0.00225
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00324	0.00324	0.00325
	(!A * Y)	-0.00442	-0.00442	-0.00441
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00647	0.00653	0.00648
	(!A * Y)	-0.00461	-0.00462	-0.00459
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01287	0.01304	0.01294
	(!A * Y)	-0.00919	-0.00925	-0.00918

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00153	-0.00165	-0.00168
	(!A * Y)	0.00242	0.00232	0.00227
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00287	-0.00320	-0.00325
	(!A * Y)	0.00476	0.00451	0.00445
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00571	-0.00635	-0.00647
	(!A * Y)	0.00531	0.00478	0.00465
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.01153	-0.01285	-0.01293
	(!A * Y)	0.01059	0.00949	0.00929

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00226	0.00291	0.00283	1.20297
sky130_fd_sc_hs__nand3b_2	0.00268	0.00555	0.00552	2.08575
sky130_fd_sc_hs__nand3b_4	0.00381	0.00794	0.00802	2.08014

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	11.86050	21.06200
sky130_fd_sc_hs__nand3b_2	0.00000	11.15970	42.16280
sky130_fd_sc_hs__nand3b_4	0.00000	23.92330	42.07100

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)	0.05957	0.50840	6.15677
	B->Y (FR)	0.03947	0.72068	10.08000
	C->Y (FR)	0.04355	0.71610	9.92992
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.06074	0.40481	5.33606
	B->Y (FR)	0.03411	0.59759	9.23286
	C->Y (FR)	0.03957	0.60961	9.32592
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.07545	0.46379	6.01388
	B->Y (FR)	0.04734	0.61591	9.32302
	C->Y (FR)	0.06344	0.65061	9.63850

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)	0.07961	0.64982	7.76558
	B->Y (RF)	0.04151	0.62181	8.72674
	C->Y (RF)	0.04515	0.57374	8.02223
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.08956	0.61561	8.04297
	B->Y (RF)	0.04200	0.54465	8.84860
	C->Y (RF)	0.04546	0.47763	7.88166
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.07564	0.49539	6.32690
	B->Y (RF)	0.04474	0.47280	7.53200
	C->Y (RF)	0.04867	0.34655	5.64788

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	0.00836	0.01295	0.09123
	A_N	0.00486	0.00947	0.08821
	B	0.00063	0.00235	0.01966
	B	0.00526	0.00675	0.02424
	C	0.00113	0.00283	0.02064
	C	0.00665	0.00811	0.02610
sky130_fd_sc_hs__nand3b_2	A_N	0.01159	0.01637	0.10211
	A_N	0.00768	0.01250	0.09842
	B	0.00099	0.00420	0.03874
	B	0.01026	0.01358	0.04841
	C	0.00203	0.00521	0.04051
	C	0.01362	0.01687	0.05233
sky130_fd_sc_hs__nand3b_4	A_N	0.01606	0.02397	0.15778
	A_N	0.01014	0.01806	0.15212
	B	0.00133	0.00531	0.05313
	B	0.01449	0.01847	0.06656
	C	0.00304	0.00716	0.05727
	C	0.02122	0.02543	0.07532

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00586	0.01111	0.08679
	A_N	0.00935	0.01460	0.08998
	B	0.00734	0.00790	0.01747
	B	0.00269	0.00324	0.01273
	C	0.00844	0.00902	0.01981
	C	0.00287	0.00341	0.01405
sky130_fd_sc_hs__nand3b_2	A_N	0.01080	0.01608	0.09624
	A_N	0.01471	0.01997	0.09981
	B	0.01398	0.01518	0.03406
	B	0.00464	0.00584	0.02452
	C	0.01640	0.01769	0.04067
	C	0.00466	0.00589	0.02825
sky130_fd_sc_hs__nand3b_4	A_N	0.01428	0.02283	0.15206
	A_N	0.02020	0.02874	0.15702
	B	0.02017	0.02158	0.04579
	B	0.00700	0.00843	0.03194
	C	0.02634	0.02821	0.06200
	C	0.00781	0.00960	0.04343

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)	0.00646	0.01099	0.08901
	(B * !C * Y)	0.00251	0.00702	0.08506
	(!B * Y)	0.00643	0.01097	0.08895
	(!B * Y)	0.00252	0.00705	0.08504
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00979	0.01417	0.09980
	(B * !C * Y)	0.00483	0.00918	0.09482
	(!B * Y)	0.00965	0.01404	0.09961
	(!B * Y)	0.00484	0.00921	0.09478
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01182	0.01895	0.15177
	(B * !C * Y)	0.00479	0.01190	0.14474
	(!B * Y)	0.01162	0.01877	0.15185
	(!B * Y)	0.00475	0.01187	0.14497

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)	0.00022	0.00527	0.08354
	(B * !C * Y)	0.00427	0.00930	0.08757
	(!B * Y)	0.00023	0.00528	0.08353
	(!B * Y)	0.00417	0.00922	0.08746
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00071	0.00564	0.09101
	(B * !C * Y)	0.00586	0.01080	0.09612
	(!B * Y)	0.00087	0.00580	0.09112
	(!B * Y)	0.00571	0.01065	0.09596
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00155	0.00980	0.14330
	(B * !C * Y)	0.00900	0.01727	0.15062
	(!B * Y)	0.00175	0.01005	0.14384
	(!B * Y)	0.00867	0.01700	0.15074

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)	0.00199	0.00201	0.00200
	(A_N * C * Y)	-0.00205	-0.00206	-0.00205
	(A_N * !C * Y)	0.00134	0.00134	0.00134
	(A_N * !C * Y)	-0.00205	-0.00206	-0.00206
	(!A_N * !C * Y)	0.00063	0.00063	0.00063
	(!A_N * !C * Y)	-0.00255	-0.00257	-0.00256
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00352	0.00354	0.00352
	(A_N * C * Y)	-0.00446	-0.00447	-0.00444
	(A_N * !C * Y)	0.00228	0.00229	0.00228
	(A_N * !C * Y)	-0.00447	-0.00448	-0.00446
	(!A_N * !C * Y)	0.00136	0.00137	0.00140
	(!A_N * !C * Y)	-0.00484	-0.00485	-0.00485
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00722	0.00731	0.00726
	(A_N * C * Y)	-0.00410	-0.00413	-0.00409
	(A_N * !C * Y)	0.00421	0.00425	0.00421
	(A_N * !C * Y)	-0.00460	-0.00463	-0.00460
	(!A_N * !C * Y)	0.00252	0.00253	0.00261
	(!A_N * !C * Y)	-0.00527	-0.00528	-0.00527

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)	-0.00148	-0.00166	-0.00167
	(A_N * C * Y)	0.00255	0.00241	0.00238
	(A_N * !C * Y)	-0.00107	-0.00107	-0.00111
	(A_N * !C * Y)	0.00248	0.00251	0.00241
	(!A_N * !C * Y)	-0.00059	-0.00060	-0.00061
	(!A_N * !C * Y)	0.00261	0.00266	0.00259
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00286	-0.00330	-0.00331
	(A_N * C * Y)	0.00510	0.00472	0.00467
	(A_N * !C * Y)	-0.00215	-0.00215	-0.00225
	(A_N * !C * Y)	0.00492	0.00499	0.00474
	(!A_N * !C * Y)	-0.00127	-0.00129	-0.00133
	(!A_N * !C * Y)	0.00500	0.00508	0.00493
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00527	-0.00645	-0.00660
	(A_N * C * Y)	0.00605	0.00493	0.00478
	(A_N * !C * Y)	-0.00366	-0.00371	-0.00386
	(A_N * !C * Y)	0.00582	0.00581	0.00540
	(!A_N * !C * Y)	-0.00242	-0.00247	-0.00251
	(!A_N * !C * Y)	0.00546	0.00556	0.00536

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)	0.00176	0.00177	0.00177
	(A_N * B * Y)	-0.00202	-0.00203	-0.00202
	(A_N * !B * Y)	0.00177	0.00179	0.00177
	(A_N * !B * Y)	-0.00203	-0.00204	-0.00203
	(!A_N * !B * Y)	0.00156	0.00158	0.00157
	(!A_N * !B * Y)	-0.00224	-0.00226	-0.00224
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00354	0.00356	0.00355
	(A_N * B * Y)	-0.00429	-0.00429	-0.00428
	(A_N * !B * Y)	0.00357	0.00360	0.00356
	(A_N * !B * Y)	-0.00430	-0.00432	-0.00430
	(!A_N * !B * Y)	0.00313	0.00316	0.00312
	(!A_N * !B * Y)	-0.00476	-0.00478	-0.00475
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00693	0.00703	0.00697
	(A_N * B * Y)	-0.00415	-0.00419	-0.00416
	(A_N * !B * Y)	0.00694	0.00696	0.00695
	(A_N * !B * Y)	-0.00422	-0.00422	-0.00422
	(!A_N * !B * Y)	0.00617	0.00621	0.00619
	(!A_N * !B * Y)	-0.00500	-0.00502	-0.00501

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)	-0.00132	-0.00146	-0.00147
	(A_N * B * Y)	0.00240	0.00240	0.00235
	(A_N * !B * Y)	-0.00142	-0.00147	-0.00147
	(A_N * !B * Y)	0.00233	0.00236	0.00235
	(!A_N * !B * Y)	-0.00145	-0.00155	-0.00156
	(!A_N * !B * Y)	0.00231	0.00228	0.00226
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00312	-0.00338	-0.00340
	(A_N * B * Y)	0.00458	0.00456	0.00450
	(A_N * !B * Y)	-0.00328	-0.00338	-0.00341
	(A_N * !B * Y)	0.00447	0.00452	0.00450
	(!A_N * !B * Y)	-0.00293	-0.00310	-0.00312
	(!A_N * !B * Y)	0.00484	0.00481	0.00478
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00585	-0.00636	-0.00644
	(A_N * B * Y)	0.00499	0.00490	0.00481
	(A_N * !B * Y)	-0.00613	-0.00637	-0.00644
	(A_N * !B * Y)	0.00492	0.00487	0.00483
	(!A_N * !B * Y)	-0.00579	-0.00618	-0.00619
	(!A_N * !B * Y)	0.00529	0.00507	0.00501

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00294	0.00299	0.00290	1.21811
sky130_fd_sc_hs__nand3_2	0.00553	0.00598	0.00549	1.91774
sky130_fd_sc_hs__nand3_4	0.00815	0.00806	0.00810	2.38352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	2.73080	20.89600
sky130_fd_sc_hs__nand3_2	0.00000	5.45969	41.78450
sky130_fd_sc_hs__nand3_4	0.00000	5.69276	41.78950

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)	0.03251	0.70786	9.98562
	B->Y (FR)	0.03971	0.71285	9.96812
	C->Y (FR)	0.04427	0.72067	9.99708
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.03028	0.63459	9.88219
	B->Y (FR)	0.03536	0.58971	8.91394
	C->Y (FR)	0.04131	0.60084	8.96508
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03244	0.62504	10.06610
	B->Y (FR)	0.04936	0.63484	9.98510
	C->Y (FR)	0.05911	0.64275	9.86631

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.03343	0.65819	9.34757
	B->Y (RF)	0.04079	0.62613	8.82987
	C->Y (RF)	0.04383	0.57748	8.12695
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02781	0.53302	8.47712
	B->Y (RF)	0.03772	0.50477	7.98522
	C->Y (RF)	0.04273	0.45782	7.25429
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.02147	0.40084	6.79620
	B->Y (RF)	0.03124	0.36073	6.03634
	C->Y (RF)	0.03496	0.30272	5.09903

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00043	0.00136	0.01897
	A	0.00460	0.00640	0.02395
	B	0.00037	0.00207	0.01927
	B	0.00651	0.00822	0.02535
	C	0.00078	0.00242	0.01998
	C	0.00812	0.00976	0.02724
sky130_fd_sc_hs__nand3_2	A	-0.00155	0.00188	0.03567
	A	0.00799	0.01093	0.04510
	B	0.00063	0.00390	0.04066
	B	0.01285	0.01619	0.05298
	C	0.00221	0.00552	0.04486
	C	0.01655	0.01994	0.05910
sky130_fd_sc_hs__nand3_4	A	-0.00318	0.00311	0.05491
	A	0.01078	0.01707	0.06878
	B	0.00080	0.00549	0.05957
	B	0.01951	0.02372	0.07813
	C	0.00303	0.00779	0.06435
	C	0.02669	0.03151	0.08791

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00655	0.00734	0.01791
	A	0.00153	0.00233	0.01277
	B	0.00774	0.00829	0.01785
	B	0.00157	0.00211	0.01159
	C	0.00893	0.00951	0.02027
	C	0.00151	0.00205	0.01272
sky130_fd_sc_hs__nand3_2	A	0.01132	0.01318	0.03453
	A	0.00180	0.00358	0.02483
	B	0.01389	0.01524	0.03656
	B	0.00157	0.00287	0.02362
	C	0.01620	0.01755	0.04213
	C	0.00164	0.00295	0.02737
sky130_fd_sc_hs__nand3_4	A	0.01619	0.01921	0.04994
	A	0.00225	0.00509	0.03451
	B	0.02115	0.02328	0.05260
	B	0.00236	0.00432	0.03273
	C	0.02618	0.02822	0.06434
	C	0.00207	0.00407	0.03755

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00056	0.00056	0.00052
	(B * !C * Y)	-0.00252	-0.00254	-0.00263
	(!B * Y)	0.00057	0.00057	0.00055
	(!B * Y)	-0.00257	-0.00259	-0.00263
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00112	0.00112	0.00099
	(B * !C * Y)	-0.00472	-0.00474	-0.00496
	(!B * Y)	0.00115	0.00115	0.00108
	(!B * Y)	-0.00485	-0.00488	-0.00497
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00206	0.00207	0.00186
	(B * !C * Y)	-0.00553	-0.00559	-0.00601
	(!B * Y)	0.00211	0.00212	0.00200
	(!B * Y)	-0.00582	-0.00586	-0.00606

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00052	-0.00052	-0.00052
	(B * !C * Y)	0.00263	0.00267	0.00264
	(!B * Y)	-0.00053	-0.00054	-0.00053
	(!B * Y)	0.00263	0.00269	0.00264
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00098	-0.00099	-0.00098
	(B * !C * Y)	0.00500	0.00508	0.00499
	(!B * Y)	-0.00106	-0.00107	-0.00105
	(!B * Y)	0.00500	0.00508	0.00499
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00185	-0.00185	-0.00185
	(B * !C * Y)	0.00605	0.00609	0.00607
	(!B * Y)	-0.00193	-0.00194	-0.00193
	(!B * Y)	0.00607	0.00611	0.00609

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00072	0.00072	0.00072
	(A * !C * Y)	-0.00226	-0.00227	-0.00225
	(!A * C * Y)	0.00163	0.00165	0.00164
	(!A * C * Y)	-0.00225	-0.00227	-0.00225
	(!A * !C * Y)	0.00090	0.00091	0.00090
	(!A * !C * Y)	-0.00225	-0.00227	-0.00226
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00143	0.00144	0.00146
	(A * !C * Y)	-0.00472	-0.00473	-0.00470
	(!A * C * Y)	0.00323	0.00325	0.00323
	(!A * C * Y)	-0.00470	-0.00471	-0.00468
	(!A * !C * Y)	0.00189	0.00191	0.00189
	(!A * !C * Y)	-0.00473	-0.00476	-0.00474
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00259	0.00256	0.00262
	(A * !C * Y)	-0.00465	-0.00462	-0.00461
	(!A * C * Y)	0.00638	0.00647	0.00641
	(!A * C * Y)	-0.00462	-0.00465	-0.00461
	(!A * !C * Y)	0.00334	0.00334	0.00335
	(!A * !C * Y)	-0.00468	-0.00468	-0.00469

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00068	-0.00068	-0.00070
	(A * !C * Y)	0.00231	0.00233	0.00228
	(!A * C * Y)	-0.00144	-0.00162	-0.00164
	(!A * C * Y)	0.00246	0.00230	0.00227
	(!A * !C * Y)	-0.00090	-0.00091	-0.00090
	(!A * !C * Y)	0.00237	0.00240	0.00229
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00135	-0.00137	-0.00139
	(A * !C * Y)	0.00488	0.00494	0.00477
	(!A * C * Y)	-0.00280	-0.00322	-0.00323
	(!A * C * Y)	0.00512	0.00476	0.00472
	(!A * !C * Y)	-0.00189	-0.00191	-0.00189
	(!A * !C * Y)	0.00505	0.00507	0.00483
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00242	-0.00246	-0.00251
	(A * !C * Y)	0.00491	0.00499	0.00473
	(!A * C * Y)	-0.00547	-0.00638	-0.00641
	(!A * C * Y)	0.00557	0.00477	0.00467
	(!A * !C * Y)	-0.00334	-0.00334	-0.00335
	(!A * !C * Y)	0.00516	0.00523	0.00483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00173	0.00175	0.00174
	(A * !B * Y)	-0.00227	-0.00229	-0.00227
	(!A * B * Y)	0.00170	0.00172	0.00170
	(!A * B * Y)	-0.00227	-0.00228	-0.00227
	(!A * !B * Y)	0.00172	0.00174	0.00172
	(!A * !B * Y)	-0.00227	-0.00229	-0.00227
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00320	0.00320	0.00320
	(A * !B * Y)	-0.00447	-0.00447	-0.00447
	(!A * B * Y)	0.00316	0.00316	0.00315
	(!A * B * Y)	-0.00447	-0.00447	-0.00446
	(!A * !B * Y)	0.00317	0.00316	0.00317
	(!A * !B * Y)	-0.00447	-0.00447	-0.00447
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00651	0.00657	0.00651
	(A * !B * Y)	-0.00470	-0.00472	-0.00469
	(!A * B * Y)	0.00633	0.00637	0.00634
	(!A * B * Y)	-0.00468	-0.00470	-0.00467
	(!A * !B * Y)	0.00643	0.00652	0.00646
	(!A * !B * Y)	-0.00468	-0.00472	-0.00470

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00164	-0.00173	-0.00173
	(A * !B * Y)	0.00233	0.00230	0.00228
	(!A * B * Y)	-0.00155	-0.00170	-0.00170
	(!A * B * Y)	0.00233	0.00231	0.00228
	(!A * !B * Y)	-0.00169	-0.00173	-0.00172
	(!A * !B * Y)	0.00229	0.00229	0.00228
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00298	-0.00318	-0.00320
	(A * !B * Y)	0.00453	0.00452	0.00449
	(!A * B * Y)	-0.00281	-0.00314	-0.00315
	(!A * B * Y)	0.00460	0.00455	0.00448
	(!A * !B * Y)	-0.00306	-0.00316	-0.00317
	(!A * !B * Y)	0.00447	0.00451	0.00448
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00604	-0.00648	-0.00651
	(A * !B * Y)	0.00488	0.00475	0.00472
	(!A * B * Y)	-0.00571	-0.00637	-0.00634
	(!A * B * Y)	0.00500	0.00481	0.00472
	(!A * !B * Y)	-0.00625	-0.00647	-0.00646
	(!A * !B * Y)	0.00470	0.00474	0.00471

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00229	0.00223	0.00298	0.00300	0.94403
sky130_fd_sc_hs__nand4bb_2	0.00263	0.00259	0.00562	0.00555	1.53507
sky130_fd_sc_hs__nand4bb_4	0.00368	0.00380	0.01095	0.01099	2.51650

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	20.08960	36.23070
sky130_fd_sc_hs__nand4bb_2	0.00000	15.06400	56.46370
sky130_fd_sc_hs__nand4bb_4	0.00000	43.78760	111.98400

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)	0.06823	0.49170	5.24795
	B_N->Y (RR)	0.07674	0.49922	5.22150
	C->Y (FR)	0.05100	0.67875	8.74027
	D->Y (FR)	0.05657	0.68752	8.76371
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.06478	0.36765	4.02165
	B_N->Y (RR)	0.07341	0.36284	3.75865
	C->Y (FR)	0.04132	0.55259	7.75723
	D->Y (FR)	0.04638	0.56444	7.81867
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.07941	0.35293	3.81613
	B_N->Y (RR)	0.09169	0.37124	3.92433
	C->Y (FR)	0.04009	0.47804	7.29383
	D->Y (FR)	0.04459	0.49085	7.35588

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)	0.09446	0.71643	8.01253
	B_N->Y (FF)	0.10608	0.72990	7.97710
	C->Y (RF)	0.06926	0.66047	8.37456
	D->Y (RF)	0.07474	0.62842	7.82034
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.10295	0.66872	8.10138
	B_N->Y (FF)	0.12489	0.69552	8.09061
	C->Y (RF)	0.06956	0.54991	7.97609
	D->Y (RF)	0.07478	0.52123	7.44075
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.10425	0.56419	7.30224
	B_N->Y (FF)	0.12087	0.58240	7.25291
	C->Y (RF)	0.07233	0.45672	7.50678
	D->Y (RF)	0.07685	0.42047	6.86642

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	0.00859	0.01299	0.09106
	A_N	0.00553	0.00995	0.08823
	B_N	0.00934	0.01376	0.09155
	B_N	0.00638	0.01082	0.08889
	C	0.00138	0.00291	0.02089
	C	0.00641	0.00796	0.02602
	D	0.00202	0.00349	0.02247
	D	0.00806	0.00956	0.02853
sky130_fd_sc_hs__nand4bb_2	A_N	0.01192	0.01674	0.10202
	A_N	0.00862	0.01345	0.09948
	B_N	0.01468	0.01913	0.10414
	B_N	0.01147	0.01597	0.10108
	C	0.00237	0.00520	0.04251
	C	0.01158	0.01446	0.05226
	D	0.00402	0.00671	0.04479
	D	0.01559	0.01826	0.05687
sky130_fd_sc_hs__nand4bb_4	A_N	0.02038	0.02776	0.16225
	A_N	0.01605	0.02345	0.15870
	B_N	0.02468	0.03167	0.16812
	B_N	0.02019	0.02723	0.16341
	C	0.00383	0.01064	0.09820
	C	0.02205	0.02897	0.11664
	D	0.00650	0.01320	0.10282
	D	0.02947	0.03624	0.12545

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00738	0.01241	0.09028
	A_N	0.01045	0.01546	0.09318
	B_N	0.00897	0.01413	0.09182
	B_N	0.01193	0.01708	0.09462
	C	0.01052	0.01088	0.02199
	C	0.00547	0.00584	0.01645
	D	0.01174	0.01209	0.02441
	D	0.00561	0.00597	0.01796
sky130_fd_sc_hs__nand4bb_2	A_N	0.01288	0.01801	0.10274
	A_N	0.01619	0.02130	0.10581
	B_N	0.01570	0.02090	0.10509
	B_N	0.01890	0.02410	0.10806
	C	0.01875	0.01962	0.04289
	C	0.00949	0.01034	0.03328
	D	0.02121	0.02202	0.04791
	D	0.00944	0.01021	0.03568
sky130_fd_sc_hs__nand4bb_4	A_N	0.02583	0.03428	0.17047
	A_N	0.03017	0.03861	0.17411
	B_N	0.03064	0.03908	0.17499
	B_N	0.03512	0.04353	0.17942
	C	0.03687	0.03934	0.09911
	C	0.01854	0.02104	0.08031
	D	0.04181	0.04437	0.11294
	D	0.01851	0.02089	0.08951

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)	0.00624	0.01065	0.08779
	(B_N * Y)	0.00248	0.00685	0.08400
	(!B_N * C * !D * Y)	0.00663	0.01103	0.08817
	(!B_N * C * !D * Y)	0.00284	0.00720	0.08437
	(!B_N * !C * Y)	0.00663	0.01103	0.08817
	(!B_N * !C * Y)	0.00286	0.00722	0.08438
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00917	0.01354	0.09784
	(B_N * Y)	0.00503	0.00937	0.09368
	(!B_N * C * !D * Y)	0.00973	0.01407	0.09838
	(!B_N * C * !D * Y)	0.00554	0.00986	0.09419
	(!B_N * !C * Y)	0.00972	0.01406	0.09837
	(!B_N * !C * Y)	0.00556	0.00988	0.09420
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01541	0.02194	0.15545
	(B_N * Y)	0.00944	0.01594	0.14946
	(!B_N * C * !D * Y)	0.01600	0.02253	0.15608
	(!B_N * C * !D * Y)	0.00990	0.01640	0.14999
	(!B_N * !C * Y)	0.01598	0.02251	0.15607
	(!B_N * !C * Y)	0.00996	0.01646	0.15003

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)	0.00062	0.00558	0.08288
	(B_N * Y)	0.00439	0.00936	0.08666
	(!B_N * C * !D * Y)	-0.00002	0.00494	0.08222
	(!B_N * C * !D * Y)	0.00388	0.00885	0.08611
	(!B_N * !C * Y)	-0.00005	0.00491	0.08220
	(!B_N * !C * Y)	0.00376	0.00873	0.08602
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00143	0.00630	0.09024
	(B_N * Y)	0.00557	0.01045	0.09439
	(!B_N * C * !D * Y)	0.00077	0.00565	0.08955
	(!B_N * C * !D * Y)	0.00518	0.01007	0.09391
	(!B_N * !C * Y)	0.00072	0.00559	0.08953
	(!B_N * !C * Y)	0.00493	0.00981	0.09374
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00303	0.01085	0.14519
	(B_N * Y)	0.00901	0.01686	0.15118
	(!B_N * C * !D * Y)	0.00201	0.00983	0.14412
	(!B_N * C * !D * Y)	0.00859	0.01642	0.15060
	(!B_N * !C * Y)	0.00192	0.00974	0.14409
	(!B_N * !C * Y)	0.00807	0.01591	0.15022

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)	0.00626	0.01029	0.08710
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00258	0.00662	0.08342
	(!C * Y)	0.00629	0.01055	0.08753
	(!C * Y)	0.00251	0.00676	0.08374
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00911	0.01290	0.09633
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00506	0.00883	0.09227
	(!C * Y)	0.00918	0.01340	0.09715
	(!C * Y)	0.00493	0.00914	0.09288
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01554	0.02096	0.15320
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00942	0.01481	0.14706
	(!C * Y)	0.01592	0.02228	0.15490
	(!C * Y)	0.00938	0.01573	0.14832

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)	0.00157	0.00650	0.08365
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00524	0.01019	0.08733
	(!C * Y)	0.00093	0.00589	0.08309
	(!C * Y)	0.00469	0.00968	0.08687
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00338	0.00817	0.09162
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00743	0.01224	0.09568
	(!C * Y)	0.00218	0.00701	0.09061
	(!C * Y)	0.00641	0.01127	0.09485
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00641	0.01414	0.14802
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01255	0.02030	0.15418
	(!C * Y)	0.00395	0.01174	0.14587
	(!C * Y)	0.01051	0.01828	0.15238

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)**	0.00207	0.00209	0.00207
	(A_N * B_N * D * Y)	-0.00200	-0.00201	-0.00200
	(A_N * B_N * !D * Y)	0.00147	0.00149	0.00147
	(A_N * B_N * !D * Y)	-0.00201	-0.00203	-0.00201
	(A_N * !B_N * D * Y)	0.00169	0.00170	0.00169
	(A_N * !B_N * D * Y)	-0.00239	-0.00240	-0.00239
	(A_N * !B_N * !D * Y)	0.00104	0.00105	0.00105
	(A_N * !B_N * !D * Y)	-0.00262	-0.00264	-0.00263
	(!A_N * B_N * D * Y)	0.00192	0.00194	0.00192
	(!A_N * B_N * D * Y)	-0.00215	-0.00217	-0.00215
	(!A_N * B_N * !D * Y)	0.00132	0.00132	0.00131
	(!A_N * B_N * !D * Y)	-0.00217	-0.00218	-0.00217
	(!A_N * !B_N * !D * Y)	0.00068	0.00068	0.00069
	(!A_N * !B_N * !D * Y)	-0.00256	-0.00255	-0.00257
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00352	0.00354	0.00352
	(A_N * B_N * D * Y)	-0.00436	-0.00436	-0.00435
	(A_N * B_N * !D * Y)	0.00225	0.00228	0.00226
	(A_N * B_N * !D * Y)	-0.00435	-0.00438	-0.00435
	(A_N * !B_N * D * Y)	0.00336	0.00339	0.00336
	(A_N * !B_N * D * Y)	-0.00455	-0.00457	-0.00454
	(A_N * !B_N * !D * Y)	0.00205	0.00205	0.00204
	(A_N * !B_N * !D * Y)	-0.00499	-0.00500	-0.00500
	(!A_N * B_N * D * Y)	0.00342	0.00348	0.00344
	(!A_N * B_N * D * Y)	-0.00443	-0.00446	-0.00444
	(!A_N * B_N * !D * Y)	0.00213	0.00216	0.00214
	(!A_N * B_N * !D * Y)	-0.00444	-0.00448	-0.00445
	(!A_N * !B_N * !D * Y)	0.00148	0.00150	0.00151
	(!A_N * !B_N * !D * Y)	-0.00462	-0.00465	-0.00465

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00723	0.00728	0.00727
	(A_N * B_N * D * Y)	-0.00824	-0.00829	-0.00828
	(A_N * B_N * !D * Y)	0.00470	0.00475	0.00470
	(A_N * B_N * !D * Y)	-0.00828	-0.00834	-0.00829
	(A_N * !B_N * D * Y)	0.00675	0.00677	0.00675
	(A_N * !B_N * D * Y)	-0.00891	-0.00891	-0.00888
	(A_N * !B_N * !D * Y)	0.00402	0.00404	0.00402
	(A_N * !B_N * !D * Y)	-0.00978	-0.00981	-0.00978
	(!A_N * B_N * D * Y)	0.00695	0.00701	0.00699
	(!A_N * B_N * D * Y)	-0.00856	-0.00860	-0.00858
	(!A_N * B_N * !D * Y)	0.00433	0.00438	0.00434
	(!A_N * B_N * !D * Y)	-0.00860	-0.00867	-0.00861
	(!A_N * !B_N * !D * Y)	0.00281	0.00285	0.00287
	(!A_N * !B_N * !D * Y)	-0.00919	-0.00926	-0.00923

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)**	-0.00143	-0.00145	-0.00145
	(A_N * B_N * D * Y)	0.00264	0.00264	0.00264
	(A_N * B_N * !D * Y)	-0.00093	-0.00095	-0.00093
	(A_N * B_N * !D * Y)	0.00271	0.00274	0.00268
	(A_N * !B_N * D * Y)	-0.00118	-0.00137	-0.00139
	(A_N * !B_N * D * Y)	0.00288	0.00273	0.00271
	(A_N * !B_N * !D * Y)	-0.00079	-0.00077	-0.00081
	(A_N * !B_N * !D * Y)	0.00304	0.00312	0.00301
	(!A_N * B_N * D * Y)	-0.00149	-0.00160	-0.00160
	(!A_N * B_N * D * Y)	0.00259	0.00250	0.00248
	(!A_N * B_N * !D * Y)	-0.00104	-0.00105	-0.00108
	(!A_N * B_N * !D * Y)	0.00259	0.00262	0.00252
	(!A_N * !B_N * !D * Y)	-0.00062	-0.00064	-0.00064
	(!A_N * !B_N * !D * Y)	0.00263	0.00268	0.00262
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00311	-0.00316	-0.00315
	(A_N * B_N * D * Y)	0.00476	0.00476	0.00475
	(A_N * B_N * !D * Y)	-0.00207	-0.00209	-0.00203
	(A_N * B_N * !D * Y)	0.00488	0.00492	0.00481
	(A_N * !B_N * D * Y)	-0.00279	-0.00317	-0.00319
	(A_N * !B_N * D * Y)	0.00510	0.00478	0.00473
	(A_N * !B_N * !D * Y)	-0.00202	-0.00191	-0.00201
	(A_N * !B_N * !D * Y)	0.00538	0.00547	0.00534
	(!A_N * B_N * D * Y)	-0.00305	-0.00324	-0.00324
	(!A_N * B_N * D * Y)	0.00484	0.00468	0.00466
	(!A_N * B_N * !D * Y)	-0.00201	-0.00203	-0.00208
	(!A_N * B_N * !D * Y)	0.00491	0.00496	0.00476
	(!A_N * !B_N * !D * Y)	-0.00135	-0.00137	-0.00137
	(!A_N * !B_N * !D * Y)	0.00481	0.00489	0.00477

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00596	-0.00606	-0.00605
	(A_N * B_N * D * Y)	0.00960	0.00962	0.00956
	(A_N * B_N * !D * Y)	-0.00378	-0.00382	-0.00374
	(A_N * B_N * !D * Y)	0.00988	0.00998	0.00972
	(A_N * !B_N * D * Y)	-0.00529	-0.00615	-0.00617
	(A_N * !B_N * D * Y)	0.01030	0.00958	0.00948
	(A_N * !B_N * !D * Y)	-0.00374	-0.00354	-0.00371
	(A_N * !B_N * !D * Y)	0.01083	0.01107	0.01072
	(!A_N * B_N * D * Y)	-0.00584	-0.00635	-0.00635
	(!A_N * B_N * D * Y)	0.00976	0.00934	0.00926
	(!A_N * B_N * !D * Y)	-0.00386	-0.00389	-0.00399
	(!A_N * B_N * !D * Y)	0.00975	0.00985	0.00944
	(!A_N * !B_N * !D * Y)	-0.00261	-0.00264	-0.00265
	(!A_N * !B_N * !D * Y)	0.00957	0.00970	0.00944

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)	0.00186	0.00186	0.00186
	(A_N * B_N * C * Y)	-0.00211	-0.00211	-0.00212
	(A_N * !C * Y)	0.00187	0.00189	0.00188
	(A_N * !C * Y)	-0.00211	-0.00213	-0.00212
	(A_N * !B_N * C * Y)	0.00168	0.00170	0.00168
	(A_N * !B_N * C * Y)	-0.00231	-0.00232	-0.00231
	(!A_N * B_N * C * Y)	0.00170	0.00171	0.00170
	(!A_N * B_N * C * Y)	-0.00227	-0.00228	-0.00227
	(!A_N * B_N * !C * Y)	0.00172	0.00174	0.00172
	(!A_N * B_N * !C * Y)	-0.00227	-0.00228	-0.00227
	(!A_N * !B_N * !C * Y)	0.00157	0.00159	0.00157
	(!A_N * !B_N * !C * Y)	-0.00242	-0.00244	-0.00242

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00344	0.00345	0.00344
	(A_N * B_N * C * Y)	-0.00425	-0.00425	-0.00425
	(A_N * !C * Y)	0.00344	0.00348	0.00345
	(A_N * !C * Y)	-0.00424	-0.00427	-0.00425
	(A_N * !B_N * C * Y)	0.00331	0.00335	0.00332
	(A_N * !B_N * C * Y)	-0.00442	-0.00445	-0.00442
	(!A_N * B_N * C * Y)	0.00335	0.00336	0.00335
	(!A_N * B_N * C * Y)	-0.00434	-0.00434	-0.00434
	(!A_N * B_N * !C * Y)	0.00336	0.00340	0.00337
	(!A_N * B_N * !C * Y)	-0.00433	-0.00436	-0.00434
	(!A_N * !B_N * !C * Y)	0.00329	0.00333	0.00330
	(!A_N * !B_N * !C * Y)	-0.00442	-0.00446	-0.00443
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00709	0.00712	0.00709
	(A_N * B_N * C * Y)	-0.00822	-0.00824	-0.00822
	(A_N * !C * Y)	0.00711	0.00721	0.00714
	(A_N * !C * Y)	-0.00819	-0.00827	-0.00822
	(A_N * !B_N * C * Y)	0.00668	0.00676	0.00669
	(A_N * !B_N * C * Y)	-0.00872	-0.00876	-0.00871
	(!A_N * B_N * C * Y)	0.00678	0.00681	0.00678
	(!A_N * B_N * C * Y)	-0.00853	-0.00855	-0.00853
	(!A_N * B_N * !C * Y)	0.00679	0.00690	0.00683
	(!A_N * B_N * !C * Y)	-0.00850	-0.00858	-0.00853
	(!A_N * !B_N * !C * Y)	0.00656	0.00661	0.00656
	(!A_N * !B_N * !C * Y)	-0.00885	-0.00888	-0.00884

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)**	-0.00114	-0.00124	-0.00125
	(A_N * B_N * C * Y)	0.00275	0.00278	0.00275
	(A_N * !C * Y)	-0.00121	-0.00125	-0.00126
	(A_N * !C * Y)	0.00274	0.00276	0.00275
	(A_N * !B_N * C * Y)	-0.00123	-0.00138	-0.00139
	(A_N * !B_N * C * Y)	0.00270	0.00266	0.00262
	(!A_N * B_N * C * Y)	-0.00129	-0.00139	-0.00141
	(!A_N * B_N * C * Y)	0.00261	0.00263	0.00260
	(!A_N * B_N * !C * Y)	-0.00136	-0.00140	-0.00141
	(!A_N * B_N * !C * Y)	0.00258	0.00260	0.00260
	(!A_N * !B_N * !C * Y)	-0.00147	-0.00155	-0.00157
	(!A_N * !B_N * !C * Y)	0.00248	0.00246	0.00244
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00285	-0.00307	-0.00310
	(A_N * B_N * C * Y)	0.00466	0.00470	0.00464
	(A_N * !C * Y)	-0.00299	-0.00309	-0.00311
	(A_N * !C * Y)	0.00463	0.00466	0.00464
	(A_N * !B_N * C * Y)	-0.00282	-0.00312	-0.00317
	(A_N * !B_N * C * Y)	0.00481	0.00471	0.00462
	(!A_N * B_N * C * Y)	-0.00294	-0.00313	-0.00319
	(!A_N * B_N * C * Y)	0.00461	0.00455	0.00456
	(!A_N * B_N * !C * Y)	-0.00308	-0.00318	-0.00321
	(!A_N * B_N * !C * Y)	0.00454	0.00457	0.00455
	(!A_N * !B_N * !C * Y)	-0.00307	-0.00326	-0.00329
	(!A_N * !B_N * !C * Y)	0.00457	0.00450	0.00446

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00545	-0.00586	-0.00593
	(A_N * B_N * C * Y)	0.00953	0.00962	0.00951
	(A_N * !C * Y)	-0.00571	-0.00590	-0.00595
	(A_N * !C * Y)	0.00947	0.00953	0.00950
	(A_N * !B_N * C * Y)	-0.00551	-0.00609	-0.00618
	(A_N * !B_N * C * Y)	0.00971	0.00950	0.00932
	(!A_N * B_N * C * Y)	-0.00573	-0.00617	-0.00623
	(!A_N * B_N * C * Y)	0.00932	0.00932	0.00920
	(!A_N * B_N * !C * Y)	-0.00602	-0.00621	-0.00626
	(!A_N * B_N * !C * Y)	0.00916	0.00922	0.00919
	(!A_N * !B_N * !C * Y)	-0.00612	-0.00650	-0.00656
	(!A_N * !B_N * !C * Y)	0.00911	0.00896	0.00889

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00225	0.00292	0.00293	0.00283	0.96076
sky130_fd_sc_hs__nand4b_2	0.00282	0.00577	0.00561	0.00561	1.55509
sky130_fd_sc_hs__nand4b_4	0.00395	0.00815	0.00831	0.00798	2.32087

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	10.96340	28.02370
sky130_fd_sc_hs__nand4b_2	0.00000	9.36433	56.08730
sky130_fd_sc_hs__nand4b_4	0.00000	22.07470	56.00190

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)	0.06222	0.45387	4.77639
	B->Y (FR)	0.04139	0.67262	8.82292
	C->Y (FR)	0.04770	0.67947	8.82853
	D->Y (FR)	0.04990	0.67607	8.71163
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.06354	0.35022	3.73332
	B->Y (FR)	0.03684	0.54545	7.78904
	C->Y (FR)	0.04309	0.56100	7.90927
	D->Y (FR)	0.04739	0.56676	7.87772
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.07839	0.45679	6.12398
	B->Y (FR)	0.05018	0.62529	9.66850
	C->Y (FR)	0.06272	0.63941	9.68801
	D->Y (FR)	0.07454	0.66038	9.83666

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)	0.08967	0.71392	7.97910
	B->Y (RF)	0.05314	0.68705	8.97427
	C->Y (RF)	0.06082	0.65261	8.39946
	D->Y (RF)	0.06394	0.61806	7.85789
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.09653	0.65377	8.04306
	B->Y (RF)	0.05758	0.60326	8.87242
	C->Y (RF)	0.06546	0.54717	7.99985
	D->Y (RF)	0.07109	0.51875	7.47065
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.07509	0.48945	6.57755
	B->Y (RF)	0.04761	0.46461	7.62891
	C->Y (RF)	0.05630	0.41461	6.78283
	D->Y (RF)	0.06095	0.37893	6.12257

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	0.00835	0.01281	0.09019
	A_N	0.00511	0.00958	0.08726
	B	0.00067	0.00230	0.02035
	B	0.00555	0.00720	0.02526
	C	0.00139	0.00292	0.02126
	C	0.00715	0.00872	0.02706
	D	0.00187	0.00333	0.02220
	D	0.00866	0.01016	0.02907
sky130_fd_sc_hs__nand4b_2	A_N	0.01196	0.01636	0.09186
	A_N	0.00876	0.01322	0.08901
	B	0.00066	0.00371	0.03973
	B	0.01071	0.01383	0.05030
	C	0.00222	0.00505	0.04198
	C	0.01426	0.01708	0.05420
	D	0.00379	0.00651	0.04449
	D	0.01827	0.02098	0.05917
sky130_fd_sc_hs__nand4b_4	A_N	0.01593	0.02360	0.15153
	A_N	0.01125	0.01893	0.14677
	B	0.00085	0.00555	0.05155
	B	0.01503	0.01970	0.06555
	C	0.00346	0.00715	0.05487
	C	0.02230	0.02598	0.07353
	D	0.00620	0.01022	0.05828
	D	0.02942	0.03347	0.08141

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00679	0.01189	0.08537
	A_N	0.01002	0.01512	0.08846
	B	0.00807	0.00854	0.01826
	B	0.00319	0.00364	0.01332
	C	0.00922	0.00963	0.02015
	C	0.00338	0.00377	0.01430
	D	0.01029	0.01069	0.02276
	D	0.00335	0.00374	0.01553
sky130_fd_sc_hs__nand4b_2	A_N	0.01250	0.01754	0.10229
	A_N	0.01571	0.02073	0.10521
	B	0.01622	0.01722	0.03690
	B	0.00613	0.00707	0.02662
	C	0.01852	0.01939	0.04245
	C	0.00630	0.00719	0.02990
	D	0.02104	0.02187	0.04757
	D	0.00623	0.00701	0.03229
sky130_fd_sc_hs__nand4b_4	A_N	0.01805	0.02660	0.16281
	A_N	0.02275	0.03127	0.16626
	B	0.02429	0.02577	0.05099
	B	0.01009	0.01157	0.03597
	C	0.02925	0.03066	0.05910
	C	0.01016	0.01144	0.03934
	D	0.03402	0.03532	0.06809
	D	0.01020	0.01145	0.04319

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)	0.00654	0.01097	0.08834
	(B * C * !D * Y)	0.00260	0.00701	0.08439
	(B * !C * Y)	0.00653	0.01098	0.08831
	(B * !C * Y)	0.00260	0.00703	0.08437
	(!B * Y)	0.00650	0.01095	0.08827
	(!B * Y)	0.00260	0.00703	0.08437
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00974	0.01418	0.10043
	(B * C * !D * Y)	0.00485	0.00928	0.09553
	(B * !C * Y)	0.00973	0.01417	0.10042
	(B * !C * Y)	0.00485	0.00928	0.09554
	(!B * Y)	0.00968	0.01411	0.10037
	(!B * Y)	0.00486	0.00929	0.09554
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01172	0.01907	0.15455
	(B * C * !D * Y)	0.00483	0.01214	0.14766
	(B * !C * Y)	0.01170	0.01905	0.15455
	(B * !C * Y)	0.00483	0.01214	0.14766
	(!B * Y)	0.01160	0.01894	0.15444
	(!B * Y)	0.00485	0.01216	0.14768

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)	0.00047	0.00540	0.08306
	(B * C * !D * Y)	0.00457	0.00951	0.08712
	(B * !C * Y)	0.00046	0.00540	0.08302
	(B * !C * Y)	0.00450	0.00944	0.08703
	(!B * Y)	0.00047	0.00541	0.08305
	(!B * Y)	0.00439	0.00933	0.08697
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00061	0.00555	0.09153
	(B * C * !D * Y)	0.00581	0.01077	0.09667
	(B * !C * Y)	0.00056	0.00550	0.09152
	(B * !C * Y)	0.00561	0.01057	0.09655
	(!B * Y)	0.00053	0.00548	0.09154
	(!B * Y)	0.00536	0.01034	0.09639
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00141	0.00988	0.14596
	(B * C * !D * Y)	0.00895	0.01745	0.15333
	(B * !C * Y)	0.00132	0.00979	0.14592
	(B * !C * Y)	0.00858	0.01708	0.15310
	(!B * Y)	0.00130	0.00979	0.14600
	(!B * Y)	0.00811	0.01663	0.15279

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)**	0.00197	0.00199	0.00198
	(A_N * C * D * Y)	-0.00206	-0.00208	-0.00206
	(A_N * C * !D * Y)	0.00131	0.00131	0.00131
	(A_N * C * !D * Y)	-0.00207	-0.00207	-0.00207
	(A_N * !C * Y)	0.00136	0.00137	0.00136
	(A_N * !C * Y)	-0.00208	-0.00208	-0.00207
	(!A_N * C * !D * Y)	0.00061	0.00062	0.00063
	(!A_N * C * !D * Y)	-0.00249	-0.00251	-0.00254
	(!A_N * !C * Y)	0.00066	0.00066	0.00066
	(!A_N * !C * Y)	-0.00254	-0.00254	-0.00255
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00344	0.00347	0.00345
	(A_N * C * D * Y)	-0.00458	-0.00461	-0.00458
	(A_N * C * !D * Y)	0.00216	0.00219	0.00217
	(A_N * C * !D * Y)	-0.00460	-0.00465	-0.00462
	(A_N * !C * Y)	0.00226	0.00227	0.00227
	(A_N * !C * Y)	-0.00463	-0.00463	-0.00463
	(!A_N * C * !D * Y)	0.00132	0.00133	0.00134
	(!A_N * C * !D * Y)	-0.00489	-0.00492	-0.00498
	(!A_N * !C * Y)	0.00140	0.00141	0.00141
	(!A_N * !C * Y)	-0.00496	-0.00498	-0.00500
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00671	0.00682	0.00676
	(A_N * C * D * Y)	-0.00451	-0.00456	-0.00452
	(A_N * C * !D * Y)	0.00405	0.00408	0.00407
	(A_N * C * !D * Y)	-0.00456	-0.00459	-0.00458
	(A_N * !C * Y)	0.00421	0.00427	0.00422
	(A_N * !C * Y)	-0.00460	-0.00464	-0.00461
	(!A_N * C * !D * Y)	0.00245	0.00247	0.00250
	(!A_N * C * !D * Y)	-0.00511	-0.00513	-0.00528
	(!A_N * !C * Y)	0.00261	0.00262	0.00263
	(!A_N * !C * Y)	-0.00525	-0.00528	-0.00532

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)	-0.00143	-0.00164	-0.00165
	(A_N * C * D * Y)	0.00260	0.00242	0.00239
	(A_N * C * !D * Y)	-0.00095	-0.00099	-0.00103
	(A_N * C * !D * Y)	0.00259	0.00258	0.00246
	(A_N * !C * Y)	-0.00107	-0.00108	-0.00112
	(A_N * !C * Y)	0.00250	0.00253	0.00242
	(!A_N * C * !D * Y)	-0.00060	-0.00060	-0.00061
	(!A_N * C * !D * Y)	0.00259	0.00263	0.00257
	(!A_N * !C * Y)	-0.00061	-0.00063	-0.00063
	(!A_N * !C * Y)	0.00260	0.00264	0.00258
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00272	-0.00321	-0.00325
	(A_N * C * D * Y)	0.00530	0.00490	0.00480
	(A_N * C * !D * Y)	-0.00185	-0.00198	-0.00206
	(A_N * C * !D * Y)	0.00525	0.00517	0.00493
	(A_N * !C * Y)	-0.00210	-0.00213	-0.00222
	(A_N * !C * Y)	0.00508	0.00516	0.00491
	(!A_N * C * !D * Y)	-0.00125	-0.00127	-0.00129
	(!A_N * C * !D * Y)	0.00511	0.00521	0.00507
	(!A_N * !C * Y)	-0.00129	-0.00132	-0.00134
	(!A_N * !C * Y)	0.00512	0.00522	0.00507

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00501	-0.00601	-0.00611
	(A_N * C * D * Y)	0.00624	0.00537	0.00520
	(A_N * C * !D * Y)	-0.00321	-0.00342	-0.00358
	(A_N * C * !D * Y)	0.00613	0.00590	0.00547
	(A_N * !C * Y)	-0.00371	-0.00373	-0.00389
	(A_N * !C * Y)	0.00573	0.00579	0.00539
	(!A_N * C * !D * Y)	-0.00237	-0.00238	-0.00242
	(!A_N * C * !D * Y)	0.00556	0.00559	0.00543
	(!A_N * !C * Y)	-0.00245	-0.00248	-0.00251
	(!A_N * !C * Y)	0.00557	0.00564	0.00544

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)**	0.00175	0.00175	0.00175
	(A_N * B * D * Y)	-0.00206	-0.00206	-0.00206
	(A_N * B * !D * Y)	0.00110	0.00110	0.00109
	(A_N * B * !D * Y)	-0.00207	-0.00207	-0.00206
	(A_N * !B * D * Y)	0.00175	0.00177	0.00176
	(A_N * !B * D * Y)	-0.00206	-0.00208	-0.00207
	(A_N * !B * !D * Y)	0.00104	0.00105	0.00104
	(A_N * !B * !D * Y)	-0.00206	-0.00208	-0.00207
	(!A_N * B * !D * Y)	0.00064	0.00065	0.00066
	(!A_N * B * !D * Y)	-0.00226	-0.00227	-0.00226
	(!A_N * !B * D * Y)	0.00155	0.00157	0.00155
	(!A_N * !B * D * Y)	-0.00227	-0.00229	-0.00228
	(!A_N * !B * !D * Y)	0.00081	0.00082	0.00081
	(!A_N * !B * !D * Y)	-0.00228	-0.00230	-0.00229

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00331	0.00332	0.00331
	(A_N * B * D * Y)	-0.00441	-0.00442	-0.00441
	(A_N * B * !D * Y)	0.00200	0.00202	0.00200
	(A_N * B * !D * Y)	-0.00444	-0.00447	-0.00444
	(A_N * !B * D * Y)	0.00333	0.00337	0.00334
	(A_N * !B * D * Y)	-0.00441	-0.00444	-0.00442
	(A_N * !B * !D * Y)	0.00195	0.00197	0.00195
	(A_N * !B * !D * Y)	-0.00441	-0.00445	-0.00442
	(!A_N * B * !D * Y)	0.00144	0.00146	0.00147
	(!A_N * B * !D * Y)	-0.00447	-0.00450	-0.00444
	(!A_N * !B * D * Y)	0.00325	0.00329	0.00326
	(!A_N * !B * D * Y)	-0.00450	-0.00453	-0.00450
	(!A_N * !B * !D * Y)	0.00184	0.00185	0.00183
	(!A_N * !B * !D * Y)	-0.00454	-0.00455	-0.00453
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00679	0.00683	0.00681
	(A_N * B * D * Y)	-0.00450	-0.00452	-0.00450
	(A_N * B * !D * Y)	0.00398	0.00400	0.00399
	(A_N * B * !D * Y)	-0.00455	-0.00456	-0.00455
	(A_N * !B * D * Y)	0.00680	0.00689	0.00683
	(A_N * !B * D * Y)	-0.00450	-0.00454	-0.00452
	(A_N * !B * !D * Y)	0.00383	0.00387	0.00384
	(A_N * !B * !D * Y)	-0.00451	-0.00455	-0.00452
	(!A_N * B * !D * Y)	0.00280	0.00282	0.00285
	(!A_N * B * !D * Y)	-0.00475	-0.00477	-0.00471
	(!A_N * !B * D * Y)	0.00652	0.00661	0.00655
	(!A_N * !B * D * Y)	-0.00481	-0.00485	-0.00482
	(!A_N * !B * !D * Y)	0.00348	0.00350	0.00347
	(!A_N * !B * !D * Y)	-0.00486	-0.00488	-0.00485

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * B * D * Y)	-0.00123	-0.00143	-0.00145
	(A_N * B * D * Y)	0.00249	0.00240	0.00239
	(A_N * B * !D * Y)	-0.00085	-0.00083	-0.00086
	(A_N * B * !D * Y)	0.00251	0.00257	0.00244
	(A_N * !B * D * Y)	-0.00140	-0.00145	-0.00145
	(A_N * !B * D * Y)	0.00237	0.00239	0.00239
	(A_N * !B * !D * Y)	-0.00082	-0.00083	-0.00079
	(A_N * !B * !D * Y)	0.00245	0.00248	0.00242
	(!A_N * B * !D * Y)	-0.00060	-0.00061	-0.00061
	(!A_N * B * !D * Y)	0.00234	0.00239	0.00232
	(!A_N * !B * D * Y)	-0.00140	-0.00155	-0.00155
	(!A_N * !B * D * Y)	0.00237	0.00230	0.00229
	(!A_N * !B * !D * Y)	-0.00081	-0.00082	-0.00081
	(!A_N * !B * !D * Y)	0.00239	0.00242	0.00233
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00273	-0.00313	-0.00315
	(A_N * B * D * Y)	0.00484	0.00465	0.00463
	(A_N * B * !D * Y)	-0.00197	-0.00189	-0.00197
	(A_N * B * !D * Y)	0.00488	0.00502	0.00475
	(A_N * !B * D * Y)	-0.00305	-0.00317	-0.00317
	(A_N * !B * D * Y)	0.00464	0.00464	0.00462
	(A_N * !B * !D * Y)	-0.00195	-0.00197	-0.00190
	(A_N * !B * !D * Y)	0.00477	0.00482	0.00470
	(!A_N * B * !D * Y)	-0.00133	-0.00135	-0.00136
	(!A_N * B * !D * Y)	0.00465	0.00473	0.00459
	(!A_N * !B * D * Y)	-0.00297	-0.00325	-0.00326
	(!A_N * !B * D * Y)	0.00474	0.00456	0.00453
	(!A_N * !B * !D * Y)	-0.00184	-0.00185	-0.00183
	(!A_N * !B * !D * Y)	0.00480	0.00484	0.00463

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00526	-0.00621	-0.00624
	(A_N * B * D * Y)	0.00569	0.00522	0.00517
	(A_N * B * !D * Y)	-0.00369	-0.00354	-0.00369
	(A_N * B * !D * Y)	0.00571	0.00593	0.00542
	(A_N * !B * D * Y)	-0.00604	-0.00627	-0.00627
	(A_N * !B * D * Y)	0.00519	0.00519	0.00516
	(A_N * !B * !D * Y)	-0.00356	-0.00360	-0.00347
	(A_N * !B * !D * Y)	0.00549	0.00553	0.00532
	(!A_N * B * !D * Y)	-0.00258	-0.00263	-0.00264
	(!A_N * B * !D * Y)	0.00510	0.00518	0.00496
	(!A_N * !B * D * Y)	-0.00591	-0.00656	-0.00655
	(!A_N * !B * D * Y)	0.00538	0.00491	0.00486
	(!A_N * !B * !D * Y)	-0.00348	-0.00350	-0.00347
	(!A_N * !B * !D * Y)	0.00533	0.00537	0.00502

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)	0.00173	0.00175	0.00173
	(A_N * B * C * Y)	-0.00201	-0.00203	-0.00201
	(A_N * !C * Y)	0.00177	0.00179	0.00177
	(A_N * !C * Y)	-0.00202	-0.00203	-0.00202
	(A_N * !B * C * Y)	0.00172	0.00174	0.00172
	(A_N * !B * C * Y)	-0.00202	-0.00203	-0.00202
	(!A_N * B * !C * Y)	0.00156	0.00158	0.00157
	(!A_N * B * !C * Y)	-0.00223	-0.00225	-0.00223
	(!A_N * !B * C * Y)	0.00151	0.00152	0.00151
	(!A_N * !B * C * Y)	-0.00223	-0.00224	-0.00223
	(!A_N * !B * !C * Y)	0.00155	0.00157	0.00156
	(!A_N * !B * !C * Y)	-0.00223	-0.00225	-0.00224

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00330	0.00334	0.00331
	(A_N * B * C * Y)	-0.00438	-0.00441	-0.00438
	(A_N * !C * Y)	0.00335	0.00336	0.00335
	(A_N * !C * Y)	-0.00439	-0.00440	-0.00439
	(A_N * !B * C * Y)	0.00331	0.00335	0.00332
	(A_N * !B * C * Y)	-0.00439	-0.00441	-0.00439
	(!A_N * B * !C * Y)	0.00328	0.00330	0.00328
	(!A_N * B * !C * Y)	-0.00448	-0.00450	-0.00448
	(!A_N * !B * C * Y)	0.00322	0.00323	0.00322
	(!A_N * !B * C * Y)	-0.00448	-0.00449	-0.00448
	(!A_N * !B * !C * Y)	0.00325	0.00327	0.00325
	(!A_N * !B * !C * Y)	-0.00448	-0.00450	-0.00448
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00660	0.00663	0.00662
	(A_N * B * C * Y)	-0.00415	-0.00416	-0.00415
	(A_N * !C * Y)	0.00677	0.00684	0.00676
	(A_N * !C * Y)	-0.00417	-0.00419	-0.00416
	(A_N * !B * C * Y)	0.00659	0.00665	0.00659
	(A_N * !B * C * Y)	-0.00416	-0.00418	-0.00416
	(!A_N * B * !C * Y)	0.00645	0.00651	0.00649
	(!A_N * B * !C * Y)	-0.00446	-0.00448	-0.00447
	(!A_N * !B * C * Y)	0.00629	0.00636	0.00630
	(!A_N * !B * C * Y)	-0.00447	-0.00449	-0.00447
	(!A_N * !B * !C * Y)	0.00645	0.00653	0.00645
	(!A_N * !B * !C * Y)	-0.00448	-0.00450	-0.00447

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)**	-0.00129	-0.00144	-0.00145
	(A_N * B * C * Y)	0.00236	0.00237	0.00234
	(A_N * !C * Y)	-0.00141	-0.00146	-0.00147
	(A_N * !C * Y)	0.00233	0.00235	0.00234
	(A_N * !B * C * Y)	-0.00131	-0.00143	-0.00145
	(A_N * !B * C * Y)	0.00233	0.00237	0.00234
	(!A_N * B * !C * Y)	-0.00147	-0.00155	-0.00156
	(!A_N * B * !C * Y)	0.00225	0.00226	0.00225
	(!A_N * !B * C * Y)	-0.00140	-0.00152	-0.00151
	(!A_N * !B * C * Y)	0.00226	0.00228	0.00225
	(!A_N * !B * !C * Y)	-0.00150	-0.00155	-0.00156
	(!A_N * !B * !C * Y)	0.00224	0.00226	0.00224
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00281	-0.00312	-0.00317
	(A_N * B * C * Y)	0.00467	0.00466	0.00460
	(A_N * !C * Y)	-0.00305	-0.00318	-0.00320
	(A_N * !C * Y)	0.00458	0.00461	0.00459
	(A_N * !B * C * Y)	-0.00287	-0.00312	-0.00317
	(A_N * !B * C * Y)	0.00460	0.00460	0.00459
	(!A_N * B * !C * Y)	-0.00307	-0.00326	-0.00328
	(!A_N * B * !C * Y)	0.00452	0.00452	0.00450
	(!A_N * !B * C * Y)	-0.00293	-0.00320	-0.00322
	(!A_N * !B * C * Y)	0.00456	0.00452	0.00450
	(!A_N * !B * !C * Y)	-0.00314	-0.00327	-0.00325
	(!A_N * !B * !C * Y)	0.00448	0.00452	0.00450

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00542	-0.00605	-0.00614
	(A_N * B * C * Y)	0.00491	0.00485	0.00482
	(A_N * !C * Y)	-0.00591	-0.00618	-0.00621
	(A_N * !C * Y)	0.00480	0.00482	0.00481
	(A_N * !B * C * Y)	-0.00551	-0.00609	-0.00615
	(A_N * !B * C * Y)	0.00479	0.00483	0.00481
	(!A_N * B * !C * Y)	-0.00608	-0.00648	-0.00649
	(!A_N * B * !C * Y)	0.00457	0.00452	0.00450
	(!A_N * !B * C * Y)	-0.00577	-0.00636	-0.00630
	(!A_N * !B * C * Y)	0.00458	0.00453	0.00450
	(!A_N * !B * !C * Y)	-0.00622	-0.00650	-0.00645
	(!A_N * !B * !C * Y)	0.00448	0.00451	0.00449

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00285	0.00301	0.00297	0.00296	0.95817
sky130_fd_sc_hs__nand4_2	0.00557	0.00563	0.00569	0.00552	1.51309
sky130_fd_sc_hs__nand4_4	0.00828	0.00809	0.00811	0.00831	2.24642

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	1.83322	27.85660
sky130_fd_sc_hs__nand4_2	0.00000	3.66460	55.71050
sky130_fd_sc_hs__nand4_4	0.00000	3.84476	55.71910

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)	0.03434	0.65423	8.65188
	B->Y (FR)	0.04374	0.67375	8.81556
	C->Y (FR)	0.04951	0.68121	8.82726
	D->Y (FR)	0.05216	0.67707	8.69988
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02908	0.53679	7.75219
	B->Y (FR)	0.03742	0.54190	7.69346
	C->Y (FR)	0.04298	0.55158	7.72171
	D->Y (FR)	0.04733	0.56311	7.78069
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03666	0.60701	9.49086
	B->Y (FR)	0.05312	0.61990	9.46259
	C->Y (FR)	0.06811	0.64844	9.72968
	D->Y (FR)	0.07873	0.66399	9.75677

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.04159	0.69897	9.25714
	B->Y (RF)	0.05352	0.67937	8.84558
	C->Y (RF)	0.06042	0.64318	8.25849
	D->Y (RF)	0.06419	0.60899	7.70706
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.03831	0.61508	9.14167
	B->Y (RF)	0.05452	0.59811	8.73703
	C->Y (RF)	0.06267	0.54139	7.86881
	D->Y (RF)	0.06772	0.51199	7.32852
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02895	0.48196	7.96491
	B->Y (RF)	0.04443	0.45740	7.42161
	C->Y (RF)	0.05318	0.40692	6.56601
	D->Y (RF)	0.05795	0.37039	5.90674

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00020	0.00148	0.01929
	A	0.00519	0.00686	0.02475
	B	0.00068	0.00228	0.02007
	B	0.00719	0.00881	0.02673
	C	0.00142	0.00293	0.02148
	C	0.00895	0.01050	0.02904
	D	0.00187	0.00331	0.02241
	D	0.01057	0.01204	0.03116
sky130_fd_sc_hs__nand4_2	A	-0.00137	0.00210	0.03771
	A	0.00865	0.01221	0.04824
	B	0.00089	0.00390	0.04052
	B	0.01334	0.01643	0.05332
	C	0.00208	0.00499	0.04295
	C	0.01699	0.01994	0.05830
	D	0.00377	0.00650	0.04536
	D	0.02090	0.02361	0.06297
sky130_fd_sc_hs__nand4_4	A	-0.00273	0.00223	0.05000
	A	0.01189	0.01692	0.06464
	B	0.00115	0.00519	0.05404
	B	0.02047	0.02450	0.07336
	C	0.00373	0.00741	0.05679
	C	0.02763	0.03136	0.08051
	D	0.00650	0.01009	0.06071
	D	0.03539	0.03905	0.08941

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00727	0.00799	0.01883
	A	0.00190	0.00259	0.01330
	B	0.00850	0.00895	0.01870
	B	0.00196	0.00239	0.01207
	C	0.00959	0.01000	0.02082
	C	0.00195	0.00235	0.01312
	D	0.01077	0.01119	0.02351
	D	0.00190	0.00230	0.01431
sky130_fd_sc_hs__nand4_2	A	0.01340	0.01505	0.03683
	A	0.00340	0.00500	0.02651
	B	0.01596	0.01695	0.03681
	B	0.00342	0.00436	0.02409
	C	0.01852	0.01940	0.04266
	C	0.00339	0.00425	0.02697
	D	0.02088	0.02173	0.04765
	D	0.00332	0.00410	0.02968
sky130_fd_sc_hs__nand4_4	A	0.01981	0.02216	0.04970
	A	0.00521	0.00755	0.03413
	B	0.02472	0.02621	0.05119
	B	0.00529	0.00671	0.03133
	C	0.02962	0.03096	0.06017
	C	0.00532	0.00656	0.03444
	D	0.03471	0.03593	0.06811
	D	0.00503	0.00624	0.03810

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)	0.00064	0.00064	0.00057
	(B * C * !D * Y)	-0.00239	-0.00240	-0.00255
	(B * !C * Y)	0.00063	0.00063	0.00058
	(B * !C * Y)	-0.00246	-0.00247	-0.00256
	(!B * Y)	0.00062	0.00062	0.00059
	(!B * Y)	-0.00253	-0.00253	-0.00257
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00117	0.00118	0.00100
	(B * C * !D * Y)	-0.00469	-0.00474	-0.00510
	(B * !C * Y)	0.00109	0.00110	0.00098
	(B * !C * Y)	-0.00487	-0.00492	-0.00513
	(!B * Y)	0.00112	0.00113	0.00106
	(!B * Y)	-0.00502	-0.00506	-0.00516
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00228	0.00228	0.00196
	(B * C * !D * Y)	-0.00530	-0.00534	-0.00602
	(B * !C * Y)	0.00214	0.00213	0.00193
	(B * !C * Y)	-0.00565	-0.00568	-0.00609
	(!B * Y)	0.00218	0.00217	0.00206
	(!B * Y)	-0.00594	-0.00594	-0.00614

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)	-0.00056	-0.00057	-0.00056
	(B * C * !D * Y)	0.00257	0.00262	0.00257
	(B * !C * Y)	-0.00057	-0.00057	-0.00057
	(B * !C * Y)	0.00257	0.00261	0.00258
	(!B * Y)	-0.00058	-0.00059	-0.00058
	(!B * Y)	0.00257	0.00262	0.00258
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00098	-0.00099	-0.00098
	(B * C * !D * Y)	0.00518	0.00526	0.00517
	(B * !C * Y)	-0.00099	-0.00100	-0.00098
	(B * !C * Y)	0.00518	0.00526	0.00517
	(!B * Y)	-0.00103	-0.00104	-0.00102
	(!B * Y)	0.00519	0.00527	0.00518
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00192	-0.00192	-0.00191
	(B * C * !D * Y)	0.00614	0.00616	0.00615
	(B * !C * Y)	-0.00192	-0.00193	-0.00192
	(B * !C * Y)	0.00614	0.00618	0.00615
	(!B * Y)	-0.00200	-0.00201	-0.00200
	(!B * Y)	0.00616	0.00620	0.00616

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)**	0.00064	0.00064	0.00065
	(A * C * !D * Y)	-0.00234	-0.00235	-0.00233
	(A * !C * Y)	0.00068	0.00068	0.00068
	(A * !C * Y)	-0.00234	-0.00235	-0.00233
	(!A * C * D * Y)	0.00155	0.00156	0.00156
	(!A * C * D * Y)	-0.00233	-0.00233	-0.00233
	(!A * C * !D * Y)	0.00085	0.00086	0.00085
	(!A * C * !D * Y)	-0.00234	-0.00235	-0.00234
	(!A * !C * Y)	0.00089	0.00089	0.00088
	(!A * !C * Y)	-0.00235	-0.00236	-0.00235
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00134	0.00134	0.00138
	(A * C * !D * Y)	-0.00449	-0.00449	-0.00446
	(A * !C * Y)	0.00136	0.00136	0.00139
	(A * !C * Y)	-0.00449	-0.00448	-0.00447
	(!A * C * D * Y)	0.00324	0.00327	0.00326
	(!A * C * D * Y)	-0.00447	-0.00450	-0.00447
	(!A * C * !D * Y)	0.00181	0.00183	0.00181
	(!A * C * !D * Y)	-0.00450	-0.00452	-0.00450
	(!A * !C * Y)	0.00178	0.00179	0.00178
	(!A * !C * Y)	-0.00451	-0.00452	-0.00451
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00257	0.00257	0.00262
	(A * C * !D * Y)	-0.00467	-0.00468	-0.00464
	(A * !C * Y)	0.00264	0.00266	0.00267
	(A * !C * Y)	-0.00468	-0.00470	-0.00465
	(!A * C * D * Y)	0.00643	0.00650	0.00646
	(!A * C * D * Y)	-0.00466	-0.00469	-0.00465
	(!A * C * !D * Y)	0.00342	0.00344	0.00344
	(!A * C * !D * Y)	-0.00468	-0.00469	-0.00470
	(!A * !C * Y)	0.00340	0.00342	0.00339
	(!A * !C * Y)	-0.00473	-0.00475	-0.00472

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)	-0.00061	-0.00062	-0.00063
	(A * C * !D * Y)	0.00239	0.00242	0.00236
	(A * !C * Y)	-0.00063	-0.00065	-0.00065
	(A * !C * Y)	0.00239	0.00244	0.00236
	(!A * C * D * Y)	-0.00133	-0.00155	-0.00156
	(!A * C * D * Y)	0.00255	0.00237	0.00234
	(!A * C * !D * Y)	-0.00082	-0.00086	-0.00085
	(!A * C * !D * Y)	0.00255	0.00253	0.00241
	(!A * !C * Y)	-0.00089	-0.00089	-0.00088
	(!A * !C * Y)	0.00247	0.00250	0.00239
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00125	-0.00127	-0.00130
	(A * C * !D * Y)	0.00463	0.00468	0.00454
	(A * !C * Y)	-0.00128	-0.00130	-0.00133
	(A * !C * Y)	0.00464	0.00471	0.00454
	(!A * C * D * Y)	-0.00268	-0.00324	-0.00326
	(!A * C * D * Y)	0.00504	0.00459	0.00451
	(!A * C * !D * Y)	-0.00171	-0.00183	-0.00181
	(!A * C * !D * Y)	0.00497	0.00488	0.00463
	(!A * !C * Y)	-0.00178	-0.00179	-0.00178
	(!A * !C * Y)	0.00476	0.00483	0.00459

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00243	-0.00246	-0.00251
	(A * C * !D * Y)	0.00493	0.00498	0.00476
	(A * !C * Y)	-0.00248	-0.00253	-0.00256
	(A * !C * Y)	0.00494	0.00502	0.00477
	(!A * C * D * Y)	-0.00529	-0.00637	-0.00646
	(!A * C * D * Y)	0.00579	0.00488	0.00471
	(!A * C * !D * Y)	-0.00327	-0.00344	-0.00344
	(!A * C * !D * Y)	0.00564	0.00542	0.00498
	(!A * !C * Y)	-0.00340	-0.00342	-0.00339
	(!A * !C * Y)	0.00520	0.00526	0.00486

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)**	0.00066	0.00066	0.00067
	(A * B * !D * Y)	-0.00227	-0.00226	-0.00225
	(A * !B * D * Y)	0.00155	0.00155	0.00155
	(A * !B * D * Y)	-0.00229	-0.00230	-0.00230
	(A * !B * !D * Y)	0.00082	0.00083	0.00082
	(A * !B * !D * Y)	-0.00231	-0.00231	-0.00231
	(!A * B * D * Y)	0.00152	0.00152	0.00152
	(!A * B * D * Y)	-0.00229	-0.00230	-0.00229
	(!A * B * !D * Y)	0.00083	0.00083	0.00083
	(!A * B * !D * Y)	-0.00231	-0.00232	-0.00231
	(!A * !B * D * Y)	0.00154	0.00156	0.00155
	(!A * !B * D * Y)	-0.00230	-0.00231	-0.00230
	(!A * !B * !D * Y)	0.00083	0.00084	0.00083
	(!A * !B * !D * Y)	-0.00231	-0.00233	-0.00231

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00149	0.00150	0.00147
	(A * B * !D * Y)	-0.00440	-0.00441	-0.00436
	(A * !B * D * Y)	0.00326	0.00330	0.00327
	(A * !B * D * Y)	-0.00447	-0.00451	-0.00448
	(A * !B * !D * Y)	0.00179	0.00180	0.00179
	(A * !B * !D * Y)	-0.00448	-0.00450	-0.00448
	(!A * B * D * Y)	0.00319	0.00321	0.00320
	(!A * B * D * Y)	-0.00448	-0.00449	-0.00447
	(!A * B * !D * Y)	0.00183	0.00184	0.00183
	(!A * B * !D * Y)	-0.00449	-0.00452	-0.00449
	(!A * !B * D * Y)	0.00323	0.00328	0.00324
	(!A * !B * D * Y)	-0.00448	-0.00451	-0.00448
	(!A * !B * !D * Y)	0.00181	0.00182	0.00181
	(!A * !B * !D * Y)	-0.00448	-0.00450	-0.00449
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00274	0.00276	0.00273
	(A * B * !D * Y)	-0.00445	-0.00446	-0.00439
	(A * !B * D * Y)	0.00632	0.00640	0.00635
	(A * !B * D * Y)	-0.00461	-0.00464	-0.00462
	(A * !B * !D * Y)	0.00331	0.00337	0.00334
	(A * !B * !D * Y)	-0.00460	-0.00465	-0.00463
	(!A * B * D * Y)	0.00620	0.00624	0.00623
	(!A * B * D * Y)	-0.00460	-0.00461	-0.00460
	(!A * B * !D * Y)	0.00335	0.00337	0.00336
	(!A * B * !D * Y)	-0.00464	-0.00466	-0.00464
	(!A * !B * D * Y)	0.00626	0.00634	0.00629
	(!A * !B * D * Y)	-0.00461	-0.00465	-0.00462
	(!A * !B * !D * Y)	0.00338	0.00341	0.00338
	(!A * !B * !D * Y)	-0.00463	-0.00465	-0.00463

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)	-0.00061	-0.00062	-0.00062
	(A * B * !D * Y)	0.00235	0.00240	0.00233
	(A * !B * D * Y)	-0.00143	-0.00155	-0.00155
	(A * !B * D * Y)	0.00237	0.00232	0.00231
	(A * !B * !D * Y)	-0.00082	-0.00083	-0.00082
	(A * !B * !D * Y)	0.00240	0.00243	0.00235
	(!A * B * D * Y)	-0.00131	-0.00152	-0.00152
	(!A * B * D * Y)	0.00240	0.00232	0.00231
	(!A * B * !D * Y)	-0.00083	-0.00083	-0.00083
	(!A * B * !D * Y)	0.00244	0.00250	0.00236
	(!A * !B * D * Y)	-0.00149	-0.00155	-0.00155
	(!A * !B * D * Y)	0.00231	0.00231	0.00231
	(!A * !B * !D * Y)	-0.00083	-0.00084	-0.00083
	(!A * !B * !D * Y)	0.00238	0.00241	0.00235
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00131	-0.00132	-0.00134
	(A * B * !D * Y)	0.00464	0.00469	0.00455
	(A * !B * D * Y)	-0.00298	-0.00328	-0.00327
	(A * !B * D * Y)	0.00468	0.00452	0.00450
	(A * !B * !D * Y)	-0.00179	-0.00180	-0.00179
	(A * !B * !D * Y)	0.00480	0.00481	0.00460
	(!A * B * D * Y)	-0.00273	-0.00321	-0.00320
	(!A * B * D * Y)	0.00477	0.00453	0.00450
	(!A * B * !D * Y)	-0.00183	-0.00184	-0.00183
	(!A * B * !D * Y)	0.00477	0.00490	0.00461
	(!A * !B * D * Y)	-0.00314	-0.00328	-0.00324
	(!A * !B * D * Y)	0.00451	0.00452	0.00450
	(!A * !B * !D * Y)	-0.00181	-0.00182	-0.00181
	(!A * !B * !D * Y)	0.00467	0.00470	0.00457

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00244	-0.00247	-0.00250
	(A * B * !D * Y)	0.00489	0.00494	0.00474
	(A * !B * D * Y)	-0.00569	-0.00636	-0.00635
	(A * !B * D * Y)	0.00504	0.00468	0.00465
	(A * !B * !D * Y)	-0.00331	-0.00337	-0.00334
	(A * !B * !D * Y)	0.00516	0.00516	0.00481
	(!A * B * D * Y)	-0.00518	-0.00624	-0.00623
	(!A * B * D * Y)	0.00520	0.00470	0.00465
	(!A * B * !D * Y)	-0.00335	-0.00337	-0.00336
	(!A * B * !D * Y)	0.00519	0.00538	0.00487
	(!A * !B * D * Y)	-0.00606	-0.00634	-0.00629
	(!A * !B * D * Y)	0.00466	0.00467	0.00464
	(!A * !B * !D * Y)	-0.00338	-0.00341	-0.00338
	(!A * !B * !D * Y)	0.00498	0.00500	0.00479

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)	0.00156	0.00159	0.00157
	(A * B * !C * Y)	-0.00238	-0.00240	-0.00239
	(A * !B * C * Y)	0.00152	0.00153	0.00152
	(A * !B * C * Y)	-0.00239	-0.00240	-0.00239
	(A * !B * !C * Y)	0.00156	0.00157	0.00156
	(A * !B * !C * Y)	-0.00238	-0.00240	-0.00239
	(!A * B * C * Y)	0.00150	0.00150	0.00151
	(!A * B * C * Y)	-0.00238	-0.00237	-0.00238
	(!A * !C * Y)	0.00156	0.00157	0.00156
	(!A * !C * Y)	-0.00238	-0.00240	-0.00239
	(!A * !B * C * Y)	0.00151	0.00152	0.00151
	(!A * !B * C * Y)	-0.00239	-0.00240	-0.00239

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00328	0.00330	0.00329
	(A * B * !C * Y)	-0.00442	-0.00444	-0.00443
	(A * !B * C * Y)	0.00321	0.00323	0.00322
	(A * !B * C * Y)	-0.00443	-0.00443	-0.00443
	(A * !B * !C * Y)	0.00328	0.00332	0.00329
	(A * !B * !C * Y)	-0.00442	-0.00445	-0.00443
	(!A * B * C * Y)	0.00319	0.00323	0.00320
	(!A * B * C * Y)	-0.00442	-0.00445	-0.00443
	(!A * !C * Y)	0.00328	0.00332	0.00329
	(!A * !C * Y)	-0.00443	-0.00445	-0.00443
	(!A * !B * C * Y)	0.00321	0.00322	0.00321
	(!A * !B * C * Y)	-0.00443	-0.00444	-0.00443
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00661	0.00669	0.00664
	(A * B * !C * Y)	-0.00470	-0.00473	-0.00471
	(A * !B * C * Y)	0.00644	0.00648	0.00645
	(A * !B * C * Y)	-0.00471	-0.00472	-0.00471
	(A * !B * !C * Y)	0.00658	0.00666	0.00660
	(A * !B * !C * Y)	-0.00470	-0.00474	-0.00471
	(!A * B * C * Y)	0.00633	0.00641	0.00635
	(!A * B * C * Y)	-0.00469	-0.00472	-0.00469
	(!A * !C * Y)	0.00658	0.00665	0.00660
	(!A * !C * Y)	-0.00471	-0.00473	-0.00471
	(!A * !B * C * Y)	0.00645	0.00649	0.00645
	(!A * !B * C * Y)	-0.00471	-0.00473	-0.00471

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)**	-0.00149	-0.00156	-0.00157
	(A * B * !C * Y)	0.00240	0.00241	0.00239
	(A * !B * C * Y)	-0.00141	-0.00153	-0.00152
	(A * !B * C * Y)	0.00239	0.00242	0.00239
	(A * !B * !C * Y)	-0.00152	-0.00157	-0.00156
	(A * !B * !C * Y)	0.00240	0.00240	0.00239
	(!A * B * C * Y)	-0.00138	-0.00150	-0.00151
	(!A * B * C * Y)	0.00241	0.00242	0.00239
	(!A * !C * Y)	-0.00151	-0.00156	-0.00156
	(!A * !C * Y)	0.00240	0.00240	0.00239
	(!A * !B * C * Y)	-0.00142	-0.00152	-0.00151
	(!A * !B * C * Y)	0.00239	0.00242	0.00239
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00307	-0.00327	-0.00329
	(A * B * !C * Y)	0.00443	0.00446	0.00445
	(A * !B * C * Y)	-0.00292	-0.00319	-0.00322
	(A * !B * C * Y)	0.00445	0.00443	0.00445
	(A * !B * !C * Y)	-0.00314	-0.00329	-0.00329
	(A * !B * !C * Y)	0.00443	0.00446	0.00445
	(!A * B * C * Y)	-0.00285	-0.00320	-0.00320
	(!A * B * C * Y)	0.00452	0.00451	0.00445
	(!A * !C * Y)	-0.00314	-0.00329	-0.00329
	(!A * !C * Y)	0.00443	0.00446	0.00444
	(!A * !B * C * Y)	-0.00294	-0.00320	-0.00321
	(!A * !B * C * Y)	0.00444	0.00444	0.00445

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00617	-0.00658	-0.00664
	(A * B * !C * Y)	0.00473	0.00475	0.00473
	(A * !B * C * Y)	-0.00587	-0.00643	-0.00645
	(A * !B * C * Y)	0.00475	0.00473	0.00473
	(A * !B * !C * Y)	-0.00633	-0.00661	-0.00660
	(A * !B * !C * Y)	0.00471	0.00474	0.00472
	(!A * B * C * Y)	-0.00572	-0.00641	-0.00635
	(!A * B * C * Y)	0.00486	0.00481	0.00473
	(!A * !C * Y)	-0.00632	-0.00661	-0.00660
	(!A * !C * Y)	0.00471	0.00474	0.00472
	(!A * !B * C * Y)	-0.00591	-0.00644	-0.00645
	(!A * !B * C * Y)	0.00472	0.00473	0.00472

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00285	0.00230	0.65535
sky130_fd_sc_hs__nor2b_2	0.00562	0.00267	1.17462
sky130_fd_sc_hs__nor2b_4	0.00932	0.00385	2.26812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	12.07030	22.00140
sky130_fd_sc_hs__nor2b_2	0.00000	11.57880	18.84110
sky130_fd_sc_hs__nor2b_4	0.00000	29.70430	51.80690

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)	0.06008	0.80690	9.53044
	B_N->Y (RR)	0.07316	0.64963	6.38168
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.05862	0.69082	9.42231
	B_N->Y (RR)	0.06766	0.53733	6.25539
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.04611	0.55820	9.03390
	B_N->Y (RR)	0.06809	0.47004	6.56327

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02071	0.34247	3.99440
	B_N->Y (FF)	0.06395	0.37405	3.17722
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01848	0.28085	3.78474
	B_N->Y (FF)	0.06961	0.36713	3.03177
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02757	0.38240	6.04527
	B_N->Y (FF)	0.07362	0.39938	4.29541

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00163	0.00255	0.02328
	A	0.00616	0.00710	0.02787
	B_N	0.00834	0.01264	0.08588
	B_N	0.00468	0.00898	0.08240
sky130_fd_sc_hs__nor2b_2	A	0.00263	0.00466	0.04671
	A	0.01174	0.01380	0.05595
	B_N	0.01178	0.01656	0.10461
	B_N	0.00815	0.01293	0.10131
sky130_fd_sc_hs__nor2b_4	A	0.00520	0.00806	0.05497
	A	0.02015	0.02299	0.07002
	B_N	0.01839	0.02557	0.15748
	B_N	0.01299	0.02018	0.15250

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00579	0.00697	0.02561
	A	0.00128	0.00244	0.02090
	B_N	0.00431	0.00942	0.08626
	B_N	0.00797	0.01306	0.08985
sky130_fd_sc_hs__nor2b_2	A	0.01118	0.01386	0.05108
	A	0.00210	0.00471	0.04199
	B_N	0.00778	0.01326	0.09317
	B_N	0.01144	0.01689	0.09677
sky130_fd_sc_hs__nor2b_4	A	0.01795	0.02141	0.06843
	A	0.00305	0.00649	0.05117
	B_N	0.01144	0.02051	0.15545
	B_N	0.01684	0.02584	0.16083

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00217	0.00181	0.00175
	(!B_N * !Y)	-0.00199	-0.00237	-0.00239
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00464	0.00373	0.00357
	(!B_N * !Y)	-0.00336	-0.00432	-0.00441
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00626	0.00467	0.00443
	(!B_N * !Y)	-0.00706	-0.00869	-0.00883

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00162	-0.00162	-0.00162
	(!B_N * !Y)	0.00253	0.00255	0.00253
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00328	-0.00330	-0.00329
	(!B_N * !Y)	0.00468	0.00473	0.00470
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00389	-0.00392	-0.00389
	(!B_N * !Y)	0.00941	0.00949	0.00939

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00494	0.00923	0.08708
	(A * !Y)	0.00097	0.00523	0.08310
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00635	0.01077	0.09766
	(A * !Y)	0.00187	0.00625	0.09317
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00992	0.01690	0.15219
	(A * !Y)	0.00321	0.01016	0.14548

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00155	0.00670	0.08485
	(A * !Y)	0.00553	0.01070	0.08883
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00332	0.00866	0.09571
	(A * !Y)	0.00779	0.01315	0.10018
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00394	0.01268	0.14919
	(A * !Y)	0.01066	0.01941	0.15589

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00286	0.00294	0.64525
sky130_fd_sc_hs__nor2_2	0.00457	0.00436	1.14723
sky130_fd_sc_hs__nor2_4	0.00874	0.00870	2.17140
sky130_fd_sc_hs__nor2_8	0.01708	0.01717	3.95097

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor2_1	0.00000	2.94055	6.96576
sky130_fd_sc_hs__nor2_2	0.00000	5.73817	13.92540
sky130_fd_sc_hs__nor2_4	0.00000	11.47540	27.84970
sky130_fd_sc_hs__nor2_8	0.00000	22.94560	55.69430

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)	0.05826	0.80052	9.43172
	B->Y (FR)	0.04543	0.82422	9.91135
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.04755	0.66958	9.16469
	B->Y (FR)	0.02888	0.68903	9.65248
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.04727	0.56695	9.05390
	B->Y (FR)	0.02844	0.59840	9.66193
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.04726	0.47467	8.81355
	B->Y (FR)	0.03356	0.53139	9.66421

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02116	0.34025	3.94700
	B->Y (RF)	0.01811	0.33187	3.92633
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02879	0.44002	5.91250
	B->Y (RF)	0.02053	0.42404	5.89520
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02821	0.37151	5.76885
	B->Y (RF)	0.01971	0.34997	5.69429
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02640	0.30700	5.47823
	B->Y (RF)	0.02682	0.29501	5.45668

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00055	0.00037	0.02142
	A	0.00562	0.00656	0.02767
	B	-0.00071	0.00136	0.02749
	B	0.00426	0.00634	0.03248
sky130_fd_sc_hs__nor2_2	A	-0.00102	0.00012	0.02546
	A	0.00933	0.01049	0.03604
	B	-0.00086	0.00204	0.03482
	B	0.00640	0.00935	0.04212
sky130_fd_sc_hs__nor2_4	A	0.00001	0.00273	0.05407
	A	0.02011	0.02280	0.07420
	B	-0.00066	0.00635	0.07008
	B	0.01402	0.02114	0.08480
sky130_fd_sc_hs__nor2_8	A	-0.00089	0.00589	0.10814
	A	0.03867	0.04551	0.14835
	B	-0.00239	0.01339	0.14147
	B	0.02678	0.04267	0.17061

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00711	0.00829	0.02697
	A	0.00095	0.00207	0.02076
	B	0.00488	0.00616	0.02371
	B	-0.00008	0.00118	0.01875
sky130_fd_sc_hs__nor2_2	A	0.01234	0.01383	0.03708
	A	0.00203	0.00341	0.02678
	B	0.00588	0.00802	0.03017
	B	-0.00139	0.00066	0.02284
sky130_fd_sc_hs__nor2_4	A	0.02352	0.02690	0.07573
	A	0.00346	0.00677	0.05348
	B	0.01172	0.01615	0.06401
	B	-0.00297	0.00144	0.04593
sky130_fd_sc_hs__nor2_8	A	0.04479	0.05340	0.15256
	A	0.00525	0.01388	0.10839
	B	0.02325	0.03362	0.12864
	B	-0.00591	0.00433	0.09386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00230	0.00193	0.00188
	(B * !Y)	-0.00172	-0.00210	-0.00212
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00346	0.00252	0.00238
	(B * !Y)	-0.00319	-0.00419	-0.00426
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00612	0.00424	0.00394
	(B * !Y)	-0.00648	-0.00840	-0.00857
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01152	0.00829	0.00762
	(B * !Y)	-0.01313	-0.01666	-0.01706

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00174	-0.00175	-0.00174
	(B * !Y)	0.00226	0.00227	0.00226
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00211	-0.00213	-0.00211
	(B * !Y)	0.00453	0.00458	0.00454
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00338	-0.00341	-0.00339
	(B * !Y)	0.00909	0.00922	0.00914
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00650	-0.00652	-0.00653
	(B * !Y)	0.01812	0.01819	0.01819

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00203	0.00207	0.00203
	(A * !Y)	-0.00095	-0.00096	-0.00094
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00226	0.00228	0.00225
	(A * !Y)	-0.00193	-0.00195	-0.00191
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00454	0.00460	0.00453
	(A * !Y)	-0.00382	-0.00385	-0.00378
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00889	0.00905	0.00892
	(A * !Y)	-0.00749	-0.00762	-0.00748

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00193	-0.00195	-0.00201
	(A * !Y)	0.00102	0.00103	0.00098
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00197	-0.00200	-0.00219
	(A * !Y)	0.00216	0.00217	0.00200
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00401	-0.00406	-0.00441
	(A * !Y)	0.00423	0.00425	0.00394
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00795	-0.00798	-0.00871
	(A * !Y)	0.00830	0.00829	0.00780

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00281	0.00293	0.00224	0.43165
sky130_fd_sc_hs__nor3b_2	0.00551	0.00550	0.00266	0.77686
sky130_fd_sc_hs__nor3b_4	0.01106	0.01099	0.00377	1.34397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	11.18890	22.00060
sky130_fd_sc_hs__nor3b_2	0.00000	9.81648	18.83980
sky130_fd_sc_hs__nor3b_4	0.00000	26.46370	51.80830

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)	0.11164	0.90377	8.98708
	B->Y (FR)	0.10031	0.93517	9.59768
	C_N->Y (RR)	0.09507	0.76477	6.38873
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.10668	0.75849	8.81021
	B->Y (FR)	0.09372	0.80106	9.59392
	C_N->Y (RR)	0.08176	0.62841	6.31116
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.11055	0.64711	8.54733
	B->Y (FR)	0.09781	0.69492	9.40121
	C_N->Y (RR)	0.10318	0.59800	6.73638

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02229	0.30019	2.92487
	B->Y (RF)	0.02365	0.30137	2.99544
	C_N->Y (FF)	0.06626	0.34336	2.57434
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01828	0.24046	2.68130
	B->Y (RF)	0.01905	0.22995	2.63578
	C_N->Y (FF)	0.07124	0.34136	2.45850
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01766	0.19968	2.52654
	B->Y (RF)	0.01848	0.18907	2.48270
	C_N->Y (FF)	0.07830	0.32169	2.17300

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00259	0.00302	0.02628
	A	0.00837	0.00882	0.03214
	B	0.00239	0.00308	0.02409
	B	0.00721	0.00789	0.02891
	C_N	0.00887	0.01313	0.08632
	C_N	0.00574	0.00999	0.08330
sky130_fd_sc_hs__nor3b_2	A	0.00360	0.00458	0.05223
	A	0.01576	0.01673	0.06452
	B	0.00358	0.00510	0.04650
	B	0.01310	0.01461	0.05603
	C_N	0.01262	0.01735	0.10550
	C_N	0.00963	0.01436	0.10277
sky130_fd_sc_hs__nor3b_4	A	0.00717	0.00944	0.10230
	A	0.03155	0.03387	0.12672
	B	0.00738	0.01073	0.09188
	B	0.02656	0.02999	0.11124
	C_N	0.02330	0.03044	0.16606
	C_N	0.01970	0.02684	0.16253

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00832	0.00924	0.03068
	A	0.00255	0.00346	0.02491
	B	0.00628	0.00739	0.02705
	B	0.00147	0.00257	0.02221
	C_N	0.00466	0.00972	0.08622
	C_N	0.00780	0.01286	0.08936
sky130_fd_sc_hs__nor3b_2	A	0.01664	0.01876	0.06230
	A	0.00458	0.00661	0.05019
	B	0.01184	0.01434	0.05379
	B	0.00236	0.00483	0.04431
	C_N	0.00860	0.01402	0.09457
	C_N	0.01160	0.01702	0.09759
sky130_fd_sc_hs__nor3b_4	A	0.03282	0.03723	0.12264
	A	0.00857	0.01289	0.09831
	B	0.02343	0.02854	0.10516
	B	0.00425	0.00927	0.08596
	C_N	0.01874	0.02705	0.16393
	C_N	0.02234	0.03067	0.16756

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)	0.00225	0.00193	0.00189
	(B * C_N * !Y)	-0.00158	-0.00193	-0.00194
	(B * !C_N * !Y)	0.00170	0.00164	0.00163
	(B * !C_N * !Y)	-0.00212	-0.00221	-0.00220
	(!B * !C_N * !Y)	0.00207	0.00174	0.00169
	(!B * !C_N * !Y)	-0.00170	-0.00210	-0.00213
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00436	0.00370	0.00361
	(B * C_N * !Y)	-0.00351	-0.00422	-0.00425
	(B * !C_N * !Y)	0.00355	0.00344	0.00342
	(B * !C_N * !Y)	-0.00429	-0.00444	-0.00444
	(!B * !C_N * !Y)	0.00427	0.00367	0.00354
	(!B * !C_N * !Y)	-0.00346	-0.00421	-0.00429
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00930	0.00794	0.00776
	(B * C_N * !Y)	-0.00655	-0.00800	-0.00805
	(B * !C_N * !Y)	0.00708	0.00685	0.00678
	(B * !C_N * !Y)	-0.00865	-0.00904	-0.00900
	(!B * !C_N * !Y)	0.00849	0.00728	0.00703
	(!B * !C_N * !Y)	-0.00712	-0.00860	-0.00873

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)	-0.00148	-0.00148	-0.00148
	(B * C_N * !Y)	0.00234	0.00234	0.00235
	(B * !C_N * !Y)	-0.00162	-0.00162	-0.00161
	(B * !C_N * !Y)	0.00221	0.00222	0.00221
	(!B * !C_N * !Y)	-0.00155	-0.00156	-0.00154
	(!B * !C_N * !Y)	0.00223	0.00226	0.00225
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00322	-0.00323	-0.00323
	(B * C_N * !Y)	0.00461	0.00463	0.00463
	(B * !C_N * !Y)	-0.00338	-0.00339	-0.00339
	(B * !C_N * !Y)	0.00442	0.00444	0.00444
	(!B * !C_N * !Y)	-0.00327	-0.00329	-0.00325
	(!B * !C_N * !Y)	0.00450	0.00455	0.00453
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00675	-0.00679	-0.00675
	(B * C_N * !Y)	0.00903	0.00912	0.00906
	(B * !C_N * !Y)	-0.00672	-0.00677	-0.00674
	(B * !C_N * !Y)	0.00895	0.00904	0.00900
	(!B * !C_N * !Y)	-0.00649	-0.00653	-0.00645
	(!B * !C_N * !Y)	0.00913	0.00923	0.00919

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)	0.00218	0.00222	0.00216
	(A * C_N * !Y)	-0.00083	-0.00085	-0.00086
	(A * !C_N * !Y)	0.00186	0.00190	0.00178
	(A * !C_N * !Y)	-0.00167	-0.00168	-0.00169
	(!A * !C_N * !Y)	0.00232	0.00185	0.00176
	(!A * !C_N * !Y)	-0.00177	-0.00226	-0.00231
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00376	0.00380	0.00369
	(A * C_N * !Y)	-0.00200	-0.00202	-0.00204
	(A * !C_N * !Y)	0.00382	0.00389	0.00364
	(A * !C_N * !Y)	-0.00309	-0.00304	-0.00310
	(!A * !C_N * !Y)	0.00483	0.00368	0.00352
	(!A * !C_N * !Y)	-0.00310	-0.00424	-0.00437
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00777	0.00785	0.00759
	(A * C_N * !Y)	-0.00384	-0.00388	-0.00392
	(A * !C_N * !Y)	0.00766	0.00774	0.00725
	(A * !C_N * !Y)	-0.00603	-0.00602	-0.00616
	(!A * !C_N * !Y)	0.00971	0.00739	0.00708
	(!A * !C_N * !Y)	-0.00622	-0.00849	-0.00873

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)	-0.00176	-0.00178	-0.00178
	(A * C_N * !Y)	0.00124	0.00125	0.00124
	(A * !C_N * !Y)	-0.00167	-0.00169	-0.00168
	(A * !C_N * !Y)	0.00169	0.00171	0.00169
	(!A * !C_N * !Y)	-0.00162	-0.00163	-0.00162
	(!A * !C_N * !Y)	0.00245	0.00246	0.00245
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00329	-0.00332	-0.00333
	(A * C_N * !Y)	0.00238	0.00241	0.00240
	(A * !C_N * !Y)	-0.00340	-0.00342	-0.00340
	(A * !C_N * !Y)	0.00310	0.00313	0.00310
	(!A * !C_N * !Y)	-0.00323	-0.00326	-0.00323
	(!A * !C_N * !Y)	0.00465	0.00469	0.00466
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00666	-0.00670	-0.00667
	(A * C_N * !Y)	0.00480	0.00484	0.00486
	(A * !C_N * !Y)	-0.00680	-0.00684	-0.00681
	(A * !C_N * !Y)	0.00615	0.00619	0.00616
	(!A * !C_N * !Y)	-0.00648	-0.00656	-0.00652
	(!A * !C_N * !Y)	0.00922	0.00936	0.00929

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00484	0.00912	0.08664
	(B * !Y)	0.00102	0.00529	0.08283
	(A * !B * !Y)	0.00495	0.00923	0.08671
	(A * !B * !Y)	0.00107	0.00533	0.08283
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00626	0.01070	0.09765
	(B * !Y)	0.00184	0.00625	0.09322
	(A * !B * !Y)	0.00653	0.01096	0.09784
	(A * !B * !Y)	0.00196	0.00637	0.09329
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01022	0.01629	0.15150
	(B * !Y)	0.00353	0.00956	0.14483
	(A * !B * !Y)	0.01072	0.01678	0.15184
	(A * !B * !Y)	0.00376	0.00978	0.14494

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00161	0.00675	0.08454
	(B * !Y)	0.00543	0.01058	0.08836
	(A * !B * !Y)	0.00162	0.00674	0.08453
	(A * !B * !Y)	0.00546	0.01060	0.08837
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00326	0.00863	0.09570
	(B * !Y)	0.00767	0.01306	0.10011
	(A * !B * !Y)	0.00327	0.00863	0.09571
	(A * !B * !Y)	0.00772	0.01310	0.10017
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00778	0.01609	0.15273
	(B * !Y)	0.01443	0.02274	0.15940
	(A * !B * !Y)	0.00780	0.01609	0.15276
	(A * !B * !Y)	0.01455	0.02285	0.15951

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00291	0.00314	0.00298	0.43232
sky130_fd_sc_hs__nor3_2	0.00452	0.00474	0.00441	0.81053
sky130_fd_sc_hs__nor3_4	0.00986	0.00973	0.00939	1.28669

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	2.05951	6.96395
sky130_fd_sc_hs__nor3_2	0.00000	4.01192	13.92220
sky130_fd_sc_hs__nor3_4	0.00000	8.02028	27.84040

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)	0.11300	0.89915	8.92732
	B->Y (FR)	0.10313	0.93265	9.54349
	C->Y (FR)	0.07241	0.92306	9.81306
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.08987	0.73616	8.69273
	B->Y (FR)	0.07592	0.76228	9.29094
	C->Y (FR)	0.03808	0.74988	9.57601
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.10046	0.63043	8.14616
	B->Y (FR)	0.08199	0.65472	8.81204
	C->Y (FR)	0.04478	0.65749	9.21309

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02305	0.30095	2.92441
	B->Y (RF)	0.02502	0.30082	2.97915
	C->Y (RF)	0.02077	0.29232	2.97061
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03430	0.40582	4.72708
	B->Y (RF)	0.03272	0.39090	4.67518
	C->Y (RF)	0.02263	0.37277	4.65341
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02555	0.32513	4.08439
	B->Y (RF)	0.02865	0.31751	4.12881
	C->Y (RF)	0.02897	0.30332	4.10607

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00010	0.00054	0.02398
	A	0.00816	0.00861	0.03207
	B	0.00016	0.00085	0.02203
	B	0.00700	0.00768	0.02888
	C	0.00005	0.00179	0.02832
	C	0.00562	0.00712	0.03390
sky130_fd_sc_hs__nor3_2	A	-0.00004	0.00047	0.02858
	A	0.01313	0.01366	0.04175
	B	0.00026	0.00116	0.02758
	B	0.01097	0.01183	0.03839
	C	0.00016	0.00301	0.03784
	C	0.00783	0.01055	0.04555
sky130_fd_sc_hs__nor3_4	A	-0.00045	0.00057	0.06207
	A	0.02759	0.02862	0.09034
	B	-0.00044	0.00187	0.05979
	B	0.02175	0.02404	0.08221
	C	-0.00127	0.00498	0.07837
	C	0.01595	0.02218	0.09592

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01032	0.01130	0.03283
	A	0.00232	0.00324	0.02481
	B	0.00814	0.00922	0.02902
	B	0.00132	0.00239	0.02217
	C	0.00554	0.00685	0.02571
	C	-0.00003	0.00126	0.02009
sky130_fd_sc_hs__nor3_2	A	0.01781	0.01901	0.04630
	A	0.00469	0.00589	0.03267
	B	0.01302	0.01443	0.04012
	B	0.00235	0.00377	0.02948
	C	0.00638	0.00847	0.03307
	C	-0.00128	0.00075	0.02532
sky130_fd_sc_hs__nor3_4	A	0.03757	0.03958	0.09403
	A	0.00966	0.01167	0.06608
	B	0.02647	0.02926	0.08455
	B	0.00432	0.00714	0.06102
	C	0.01446	0.01893	0.07259
	C	-0.00276	0.00172	0.05463

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00193	0.00187	0.00185
	(B * C * !Y)	-0.00206	-0.00218	-0.00217
	(B * !C * !Y)	0.00225	0.00194	0.00190
	(B * !C * !Y)	-0.00178	-0.00212	-0.00213
	(!B * C * !Y)	0.00230	0.00197	0.00191
	(!B * C * !Y)	-0.00166	-0.00206	-0.00210
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00229	0.00218	0.00216
	(B * C * !Y)	-0.00406	-0.00428	-0.00428
	(B * !C * !Y)	0.00302	0.00236	0.00226
	(B * !C * !Y)	-0.00341	-0.00413	-0.00419
	(!B * C * !Y)	0.00311	0.00241	0.00228
	(!B * C * !Y)	-0.00318	-0.00404	-0.00413
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00467	0.00420	0.00414
	(B * C * !Y)	-0.00845	-0.00914	-0.00913
	(B * !C * !Y)	0.00639	0.00467	0.00437
	(B * !C * !Y)	-0.00693	-0.00875	-0.00894
	(!B * C * !Y)	0.00651	0.00476	0.00439
	(!B * C * !Y)	-0.00650	-0.00854	-0.00883

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00184	-0.00185	-0.00184
	(B * C * !Y)	0.00216	0.00219	0.00217
	(B * !C * !Y)	-0.00179	-0.00180	-0.00180
	(B * !C * !Y)	0.00222	0.00222	0.00223
	(!B * C * !Y)	-0.00178	-0.00179	-0.00177
	(!B * C * !Y)	0.00219	0.00222	0.00221
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00213	-0.00215	-0.00214
	(B * C * !Y)	0.00425	0.00429	0.00428
	(B * !C * !Y)	-0.00209	-0.00211	-0.00209
	(B * !C * !Y)	0.00433	0.00439	0.00436
	(!B * C * !Y)	-0.00203	-0.00203	-0.00199
	(!B * C * !Y)	0.00432	0.00434	0.00434
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00409	-0.00411	-0.00410
	(B * C * !Y)	0.00907	0.00916	0.00913
	(B * !C * !Y)	-0.00390	-0.00394	-0.00389
	(B * !C * !Y)	0.00931	0.00944	0.00939
	(!B * C * !Y)	-0.00386	-0.00387	-0.00379
	(!B * C * !Y)	0.00921	0.00929	0.00926

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00208	0.00210	0.00200
	(A * C * !Y)	-0.00133	-0.00133	-0.00136
	(A * !C * !Y)	0.00198	0.00201	0.00195
	(A * !C * !Y)	-0.00097	-0.00099	-0.00099
	(!A * C * !Y)	0.00254	0.00207	0.00198
	(!A * C * !Y)	-0.00150	-0.00198	-0.00203
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00236	0.00240	0.00213
	(A * C * !Y)	-0.00292	-0.00290	-0.00298
	(A * !C * !Y)	0.00214	0.00216	0.00200
	(A * !C * !Y)	-0.00213	-0.00217	-0.00222
	(!A * C * !Y)	0.00339	0.00224	0.00203
	(!A * C * !Y)	-0.00303	-0.00424	-0.00440
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00535	0.00541	0.00490
	(A * C * !Y)	-0.00544	-0.00549	-0.00565
	(A * !C * !Y)	0.00479	0.00483	0.00461
	(A * !C * !Y)	-0.00394	-0.00399	-0.00402
	(!A * C * !Y)	0.00710	0.00497	0.00470
	(!A * C * !Y)	-0.00586	-0.00807	-0.00826

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00190	-0.00191	-0.00190
	(A * C * !Y)	0.00136	0.00137	0.00136
	(A * !C * !Y)	-0.00188	-0.00189	-0.00188
	(A * !C * !Y)	0.00106	0.00107	0.00106
	(!A * C * !Y)	-0.00183	-0.00185	-0.00184
	(!A * C * !Y)	0.00216	0.00219	0.00217
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00191	-0.00192	-0.00191
	(A * C * !Y)	0.00298	0.00300	0.00298
	(A * !C * !Y)	-0.00186	-0.00188	-0.00183
	(A * !C * !Y)	0.00234	0.00238	0.00238
	(!A * C * !Y)	-0.00175	-0.00176	-0.00174
	(!A * C * !Y)	0.00468	0.00473	0.00469
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00441	-0.00442	-0.00441
	(A * C * !Y)	0.00565	0.00567	0.00565
	(A * !C * !Y)	-0.00429	-0.00432	-0.00429
	(A * !C * !Y)	0.00432	0.00436	0.00434
	(!A * C * !Y)	-0.00414	-0.00416	-0.00416
	(!A * C * !Y)	0.00876	0.00880	0.00881

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00199	0.00201	0.00200
	(B * !Y)	-0.00095	-0.00096	-0.00095
	(A * !B * !Y)	0.00201	0.00203	0.00200
	(A * !B * !Y)	-0.00094	-0.00095	-0.00093
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00221	0.00223	0.00221
	(B * !Y)	-0.00190	-0.00192	-0.00190
	(A * !B * !Y)	0.00221	0.00225	0.00222
	(A * !B * !Y)	-0.00188	-0.00191	-0.00188
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00498	0.00501	0.00498
	(B * !Y)	-0.00392	-0.00395	-0.00392
	(A * !B * !Y)	0.00496	0.00502	0.00499
	(A * !B * !Y)	-0.00383	-0.00388	-0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00191	-0.00193	-0.00198
	(B * !Y)	0.00101	0.00102	0.00097
	(A * !B * !Y)	-0.00181	-0.00183	-0.00196
	(A * !B * !Y)	0.00107	0.00108	0.00098
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00199	-0.00201	-0.00218
	(B * !Y)	0.00209	0.00209	0.00195
	(A * !B * !Y)	-0.00174	-0.00178	-0.00212
	(A * !B * !Y)	0.00222	0.00224	0.00198
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00457	-0.00464	-0.00492
	(B * !Y)	0.00423	0.00427	0.00401
	(A * !B * !Y)	-0.00403	-0.00410	-0.00480
	(A * !B * !Y)	0.00452	0.00456	0.00405

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00294	0.00302	0.00237	0.00234	0.32936
sky130_fd_sc_hs__nor4bb_2	0.00551	0.00576	0.00275	0.00262	0.55803
sky130_fd_sc_hs__nor4bb_4	0.01088	0.01156	0.00382	0.00372	1.05024

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	19.62060	39.82050
sky130_fd_sc_hs__nor4bb_2	0.00000	14.12330	29.31800
sky130_fd_sc_hs__nor4bb_4	0.00000	41.90390	86.89780

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)	0.18183	1.02899	8.84786
	B->Y (FR)	0.17108	1.04370	9.29986
	C_N->Y (RR)	0.17288	0.93333	6.55995
	D_N->Y (RR)	0.11233	0.86467	6.50490
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.18511	0.88871	8.63978
	B->Y (FR)	0.16997	0.89055	9.06183
	C_N->Y (RR)	0.17018	0.79970	6.47059
	D_N->Y (RR)	0.10063	0.72487	6.43505
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.18688	0.75643	8.56566
	B->Y (FR)	0.17176	0.76638	9.03047
	C_N->Y (RR)	0.17353	0.71151	6.80939
	D_N->Y (RR)	0.11276	0.64865	6.79295

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02328	0.28076	2.36102
	B->Y (RF)	0.02407	0.27217	2.31110
	C_N->Y (FF)	0.08206	0.34659	2.28342
	D_N->Y (FF)	0.06852	0.32454	2.20448
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01932	0.21915	2.02606
	B->Y (RF)	0.02037	0.21588	2.02589
	C_N->Y (FF)	0.08503	0.34504	2.28636
	D_N->Y (FF)	0.07252	0.32900	2.26780
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.02011	0.20098	2.15975
	B->Y (RF)	0.02067	0.18822	2.03454
	C_N->Y (FF)	0.08688	0.31741	1.88253
	D_N->Y (FF)	0.08004	0.31110	1.93082

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00501	0.00507	0.02976
	A	0.01123	0.01132	0.03604
	B	0.00496	0.00518	0.02747
	B	0.01005	0.01029	0.03263
	C_N	0.01228	0.01624	0.09017
	C_N	0.00905	0.01300	0.08698
	D_N	0.01009	0.01449	0.09302
	D_N	0.00719	0.01158	0.09017
sky130_fd_sc_hs__nor4bb_2	A	0.00810	0.00819	0.05641
	A	0.02033	0.02047	0.06867
	B	0.00804	0.00851	0.05257
	B	0.01786	0.01836	0.06252
	C_N	0.01753	0.02188	0.11006
	C_N	0.01460	0.01896	0.10724
	D_N	0.01436	0.01906	0.10813
	D_N	0.01174	0.01644	0.10564
sky130_fd_sc_hs__nor4bb_4	A	0.01736	0.01761	0.11194
	A	0.04114	0.04140	0.13577
	B	0.01707	0.01806	0.10368
	B	0.03663	0.03759	0.12343
	C_N	0.03279	0.03900	0.17450
	C_N	0.02938	0.03558	0.17110
	D_N	0.02648	0.03378	0.17307
	D_N	0.02329	0.03060	0.16988

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.01019	0.01092	0.03374
	A	0.00400	0.00469	0.02755
	B	0.00808	0.00900	0.03043
	B	0.00300	0.00389	0.02532
	C_N	0.00710	0.01186	0.08825
	C_N	0.01032	0.01510	0.09148
	D_N	0.00513	0.01023	0.08535
	D_N	0.00803	0.01313	0.08824
sky130_fd_sc_hs__nor4bb_2	A	0.02017	0.02171	0.06732
	A	0.00801	0.00954	0.05518
	B	0.01465	0.01667	0.05911
	B	0.00483	0.00685	0.04928
	C_N	0.01318	0.01827	0.10576
	C_N	0.01612	0.02120	0.10869
	D_N	0.00903	0.01463	0.10196
	D_N	0.01165	0.01725	0.10458
sky130_fd_sc_hs__nor4bb_4	A	0.03904	0.04257	0.13239
	A	0.01543	0.01890	0.10888
	B	0.02995	0.03391	0.11918
	B	0.01044	0.01433	0.09967
	C_N	0.02445	0.03246	0.16073
	C_N	0.02787	0.03590	0.16414
	D_N	0.01919	0.02782	0.16586
	D_N	0.02239	0.03104	0.16905

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)**	0.00256	0.00229	0.00226
	(B * C_N * D_N * !Y)	-0.00150	-0.00179	-0.00179
	(B * !D_N * !Y)	0.00215	0.00208	0.00206
	(B * !D_N * !Y)	-0.00191	-0.00199	-0.00199
	(B * !C_N * D_N * !Y)	0.00194	0.00194	0.00193
	(B * !C_N * D_N * !Y)	-0.00209	-0.00213	-0.00212
	(!B * C_N * !D_N * !Y)	0.00242	0.00219	0.00214
	(!B * C_N * !D_N * !Y)	-0.00156	-0.00186	-0.00190
	(!B * !C_N * D_N * !Y)	0.00219	0.00199	0.00196
	(!B * !C_N * D_N * !Y)	-0.00176	-0.00206	-0.00207
	(!B * !C_N * !D_N * !Y)	0.00178	0.00178	0.00177
	(!B * !C_N * !D_N * !Y)	-0.00212	-0.00225	-0.00223
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00438	0.00373	0.00366
	(B * C_N * D_N * !Y)	-0.00343	-0.00414	-0.00415
	(B * !D_N * !Y)	0.00366	0.00352	0.00348
	(B * !D_N * !Y)	-0.00411	-0.00433	-0.00433
	(B * !C_N * D_N * !Y)	0.00353	0.00351	0.00348
	(B * !C_N * D_N * !Y)	-0.00422	-0.00434	-0.00433
	(!B * C_N * !D_N * !Y)	0.00429	0.00377	0.00364
	(!B * C_N * !D_N * !Y)	-0.00339	-0.00406	-0.00416
	(!B * !C_N * D_N * !Y)	0.00408	0.00363	0.00356
	(!B * !C_N * D_N * !Y)	-0.00352	-0.00418	-0.00422
	(!B * !C_N * !D_N * !Y)	0.00342	0.00342	0.00339
	(!B * !C_N * !D_N * !Y)	-0.00406	-0.00433	-0.00430

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00885	0.00758	0.00741
	(B * C_N * D_N * !Y)	-0.00632	-0.00771	-0.00775
	(B * !D_N * !Y)	0.00728	0.00701	0.00692
	(B * !D_N * !Y)	-0.00782	-0.00824	-0.00824
	(B * !C_N * D_N * !Y)	0.00698	0.00696	0.00689
	(B * !C_N * D_N * !Y)	-0.00808	-0.00828	-0.00826
	(!B * C_N * !D_N * !Y)	0.00854	0.00747	0.00721
	(!B * C_N * !D_N * !Y)	-0.00637	-0.00774	-0.00792
	(!B * !C_N * D_N * !Y)	0.00813	0.00721	0.00705
	(!B * !C_N * D_N * !Y)	-0.00666	-0.00795	-0.00805
	(!B * !C_N * !D_N * !Y)	0.00665	0.00666	0.00658
	(!B * !C_N * !D_N * !Y)	-0.00786	-0.00833	-0.00830

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)**	-0.00156	-0.00157	-0.00157
	(B * C_N * D_N * !Y)	0.00247	0.00248	0.00248
	(B * !D_N * !Y)	-0.00174	-0.00175	-0.00174
	(B * !D_N * !Y)	0.00230	0.00232	0.00230
	(B * !C_N * D_N * !Y)	-0.00160	-0.00161	-0.00160
	(B * !C_N * D_N * !Y)	0.00244	0.00246	0.00244
	(!B * C_N * !D_N * !Y)	-0.00172	-0.00173	-0.00171
	(!B * C_N * !D_N * !Y)	0.00229	0.00231	0.00231
	(!B * !C_N * D_N * !Y)	-0.00157	-0.00158	-0.00157
	(!B * !C_N * D_N * !Y)	0.00243	0.00245	0.00244
	(!B * !C_N * !D_N * !Y)	-0.00176	-0.00177	-0.00176
	(!B * !C_N * !D_N * !Y)	0.00223	0.00225	0.00223

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00313	-0.00315	-0.00314
	(B * C_N * D_N * !Y)	0.00464	0.00467	0.00466
	(B * !D_N * !Y)	-0.00326	-0.00325	-0.00326
	(B * !D_N * !Y)	0.00450	0.00448	0.00451
	(B * !C_N * D_N * !Y)	-0.00326	-0.00326	-0.00327
	(B * !C_N * D_N * !Y)	0.00450	0.00450	0.00451
	(!B * C_N * !D_N * !Y)	-0.00324	-0.00325	-0.00322
	(!B * C_N * !D_N * !Y)	0.00448	0.00450	0.00451
	(!B * !C_N * D_N * !Y)	-0.00322	-0.00324	-0.00321
	(!B * !C_N * D_N * !Y)	0.00447	0.00452	0.00449
	(!B * !C_N * !D_N * !Y)	-0.00335	-0.00337	-0.00336
	(!B * !C_N * !D_N * !Y)	0.00429	0.00433	0.00430
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00587	-0.00590	-0.00587
	(B * C_N * D_N * !Y)	0.00925	0.00932	0.00928
	(B * !D_N * !Y)	-0.00624	-0.00627	-0.00625
	(B * !D_N * !Y)	0.00882	0.00888	0.00885
	(B * !C_N * D_N * !Y)	-0.00620	-0.00624	-0.00623
	(B * !C_N * D_N * !Y)	0.00881	0.00890	0.00887
	(!B * C_N * !D_N * !Y)	-0.00620	-0.00621	-0.00613
	(!B * C_N * !D_N * !Y)	0.00883	0.00886	0.00886
	(!B * !C_N * D_N * !Y)	-0.00612	-0.00615	-0.00609
	(!B * !C_N * D_N * !Y)	0.00879	0.00887	0.00882
	(!B * !C_N * !D_N * !Y)	-0.00654	-0.00656	-0.00654
	(!B * !C_N * !D_N * !Y)	0.00829	0.00833	0.00830

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)**	0.00241	0.00245	0.00239
	(A * C_N * D_N * !Y)	-0.00068	-0.00070	-0.00069
	(A * C_N * !D_N * !Y)	0.00264	0.00274	0.00264
	(A * C_N * !D_N * !Y)	-0.00125	-0.00115	-0.00124
	(A * !C_N * D_N * !Y)	0.00216	0.00219	0.00206
	(A * !C_N * D_N * !Y)	-0.00149	-0.00148	-0.00155
	(A * !C_N * !D_N * !Y)	0.00197	0.00199	0.00191
	(A * !C_N * !D_N * !Y)	-0.00165	-0.00166	-0.00165
	(!A * C_N * !D_N * !Y)	0.00281	0.00235	0.00226
	(!A * C_N * !D_N * !Y)	-0.00134	-0.00183	-0.00188
	(!A * !C_N * D_N * !Y)	0.00253	0.00211	0.00204
	(!A * !C_N * D_N * !Y)	-0.00163	-0.00206	-0.00209
	(!A * !C_N * !D_N * !Y)	0.00197	0.00186	0.00184
	(!A * !C_N * !D_N * !Y)	-0.00218	-0.00230	-0.00229
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00397	0.00404	0.00392
	(A * C_N * D_N * !Y)	-0.00200	-0.00204	-0.00204
	(A * C_N * !D_N * !Y)	0.00454	0.00483	0.00461
	(A * C_N * !D_N * !Y)	-0.00301	-0.00280	-0.00296
	(A * !C_N * D_N * !Y)	0.00408	0.00408	0.00381
	(A * !C_N * D_N * !Y)	-0.00305	-0.00308	-0.00324
	(A * !C_N * !D_N * !Y)	0.00387	0.00387	0.00369
	(A * !C_N * !D_N * !Y)	-0.00328	-0.00328	-0.00326
	(!A * C_N * !D_N * !Y)	0.00485	0.00405	0.00386
	(!A * C_N * !D_N * !Y)	-0.00325	-0.00415	-0.00427
	(!A * !C_N * D_N * !Y)	0.00468	0.00382	0.00372
	(!A * !C_N * D_N * !Y)	-0.00350	-0.00434	-0.00441
	(!A * !C_N * !D_N * !Y)	0.00374	0.00355	0.00353
	(!A * !C_N * !D_N * !Y)	-0.00442	-0.00460	-0.00459

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00808	0.00810	0.00789
	(A * C_N * D_N * !Y)	-0.00361	-0.00364	-0.00378
	(A * C_N * !D_N * !Y)	0.00922	0.00968	0.00917
	(A * C_N * !D_N * !Y)	-0.00570	-0.00529	-0.00564
	(A * !C_N * D_N * !Y)	0.00795	0.00799	0.00744
	(A * !C_N * D_N * !Y)	-0.00598	-0.00593	-0.00635
	(A * !C_N * !D_N * !Y)	0.00739	0.00741	0.00707
	(A * !C_N * !D_N * !Y)	-0.00652	-0.00657	-0.00651
	(!A * C_N * !D_N * !Y)	0.01002	0.00793	0.00759
	(!A * C_N * !D_N * !Y)	-0.00594	-0.00807	-0.00836
	(!A * !C_N * D_N * !Y)	0.00956	0.00753	0.00730
	(!A * !C_N * D_N * !Y)	-0.00641	-0.00849	-0.00864
	(!A * !C_N * !D_N * !Y)	0.00740	0.00683	0.00678
	(!A * !C_N * !D_N * !Y)	-0.00849	-0.00915	-0.00914

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)**	-0.00164	-0.00165	-0.00165
	(A * C_N * D_N * !Y)	0.00143	0.00144	0.00144
	(A * C_N * !D_N * !Y)	-0.00213	-0.00215	-0.00214
	(A * C_N * !D_N * !Y)	0.00153	0.00155	0.00153
	(A * !C_N * D_N * !Y)	-0.00168	-0.00169	-0.00168
	(A * !C_N * D_N * !Y)	0.00178	0.00179	0.00178
	(A * !C_N * !D_N * !Y)	-0.00183	-0.00185	-0.00184
	(A * !C_N * !D_N * !Y)	0.00165	0.00166	0.00165
	(!A * C_N * !D_N * !Y)	-0.00184	-0.00186	-0.00183
	(!A * C_N * !D_N * !Y)	0.00229	0.00231	0.00230
	(!A * !C_N * D_N * !Y)	-0.00162	-0.00163	-0.00162
	(!A * !C_N * D_N * !Y)	0.00252	0.00252	0.00252
	(!A * !C_N * !D_N * !Y)	-0.00183	-0.00184	-0.00182
	(!A * !C_N * !D_N * !Y)	0.00231	0.00232	0.00230
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00324	-0.00324	-0.00328
	(A * C_N * D_N * !Y)	0.00270	0.00270	0.00269
	(A * C_N * !D_N * !Y)	-0.00403	-0.00407	-0.00404
	(A * C_N * !D_N * !Y)	0.00311	0.00314	0.00311
	(A * !C_N * D_N * !Y)	-0.00343	-0.00342	-0.00342
	(A * !C_N * D_N * !Y)	0.00332	0.00331	0.00330
	(A * !C_N * !D_N * !Y)	-0.00351	-0.00351	-0.00350
	(A * !C_N * !D_N * !Y)	0.00328	0.00328	0.00326
	(!A * C_N * !D_N * !Y)	-0.00348	-0.00350	-0.00345
	(!A * C_N * !D_N * !Y)	0.00464	0.00468	0.00468
	(!A * !C_N * D_N * !Y)	-0.00334	-0.00334	-0.00333
	(!A * !C_N * D_N * !Y)	0.00480	0.00481	0.00480
	(!A * !C_N * !D_N * !Y)	-0.00350	-0.00351	-0.00349
	(!A * !C_N * !D_N * !Y)	0.00462	0.00464	0.00461

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00615	-0.00617	-0.00613
	(A * C_N * D_N * !Y)	0.00549	0.00551	0.00554
	(A * C_N * !D_N * !Y)	-0.00778	-0.00783	-0.00780
	(A * C_N * !D_N * !Y)	0.00617	0.00622	0.00618
	(A * !C_N * D_N * !Y)	-0.00646	-0.00649	-0.00646
	(A * !C_N * D_N * !Y)	0.00668	0.00672	0.00667
	(A * !C_N * !D_N * !Y)	-0.00674	-0.00678	-0.00674
	(A * !C_N * !D_N * !Y)	0.00652	0.00657	0.00651
	(!A * C_N * !D_N * !Y)	-0.00657	-0.00661	-0.00652
	(!A * C_N * !D_N * !Y)	0.00929	0.00937	0.00941
	(!A * !C_N * D_N * !Y)	-0.00618	-0.00622	-0.00618
	(!A * !C_N * D_N * !Y)	0.00968	0.00976	0.00974
	(!A * !C_N * !D_N * !Y)	-0.00670	-0.00677	-0.00672
	(!A * !C_N * !D_N * !Y)	0.00910	0.00922	0.00915

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00568	0.00967	0.08661
	(B * !Y)	0.00155	0.00554	0.08247
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00578	0.00977	0.08664
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00157	0.00555	0.08243
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00636	0.01069	0.09774
	(B * !Y)	0.00189	0.00618	0.09326
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00662	0.01094	0.09787
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00196	0.00626	0.09324
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.01041	0.01652	0.15094
	(B * !Y)	0.00401	0.01010	0.14458
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01076	0.01685	0.15113
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00406	0.01013	0.14450

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00229	0.00721	0.08444
	(B * !Y)	0.00642	0.01134	0.08857
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00232	0.00723	0.08444
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00647	0.01139	0.08859
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00404	0.00934	0.09646
	(B * !Y)	0.00849	0.01382	0.10092
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00411	0.00941	0.09652
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00861	0.01393	0.10102
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00749	0.01585	0.15139
	(B * !Y)	0.01382	0.02219	0.15772
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00756	0.01591	0.15148
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01397	0.02233	0.15787

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)	0.00509	0.00949	0.08700
	(B * C_N * !Y)	0.00131	0.00569	0.08323
	(A * !B * C_N * !Y)	0.00522	0.00962	0.08710
	(A * !B * C_N * !Y)	0.00139	0.00577	0.08328
	(!C_N * !Y)	0.00524	0.00964	0.08718
	(!C_N * !Y)	0.00147	0.00585	0.08341
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00619	0.01062	0.09754
	(B * C_N * !Y)	0.00205	0.00645	0.09340
	(A * !B * C_N * !Y)	0.00656	0.01099	0.09781
	(A * !B * C_N * !Y)	0.00227	0.00667	0.09355
	(!C_N * !Y)	0.00642	0.01085	0.09782
	(!C_N * !Y)	0.00232	0.00672	0.09370
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00982	0.01631	0.15074
	(B * C_N * !Y)	0.00374	0.01020	0.14468
	(A * !B * C_N * !Y)	0.01044	0.01693	0.15118
	(A * !B * C_N * !Y)	0.00412	0.01059	0.14495
	(!C_N * !Y)	0.01002	0.01652	0.15114
	(!C_N * !Y)	0.00403	0.01049	0.14515

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)	0.00202	0.00715	0.08517
	(B * C_N * !Y)	0.00581	0.01094	0.08895
	(A * !B * C_N * !Y)	0.00203	0.00716	0.08518
	(A * !B * C_N * !Y)	0.00583	0.01096	0.08897
	(!C_N * !Y)	0.00150	0.00662	0.08464
	(!C_N * !Y)	0.00526	0.01041	0.08842
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00364	0.00901	0.09614
	(B * C_N * !Y)	0.00775	0.01314	0.10026
	(A * !B * C_N * !Y)	0.00365	0.00901	0.09616
	(A * !B * C_N * !Y)	0.00779	0.01318	0.10030
	(!C_N * !Y)	0.00309	0.00846	0.09560
	(!C_N * !Y)	0.00719	0.01259	0.09971
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00857	0.01701	0.15333
	(B * C_N * !Y)	0.01461	0.02306	0.15935
	(A * !B * C_N * !Y)	0.00859	0.01703	0.15337
	(A * !B * C_N * !Y)	0.01467	0.02312	0.15942
	(!C_N * !Y)	0.00740	0.01585	0.15222
	(!C_N * !Y)	0.01341	0.02188	0.15823

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00285	0.00295	0.00294	0.00227	0.32580
sky130_fd_sc_hs__nor4b_2	0.00561	0.00568	0.00571	0.00266	0.54787
sky130_fd_sc_hs__nor4b_4	0.01102	0.01107	0.01124	0.00401	1.01564

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	10.49130	22.00040
sky130_fd_sc_hs__nor4b_2	0.00000	8.42346	18.83820
sky130_fd_sc_hs__nor4b_4	0.00000	23.67500	51.80530

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)	0.17498	1.01499	8.74540
	B->Y (FR)	0.16359	1.02969	9.19104
	C->Y (FR)	0.13489	1.03903	9.67354
	D_N->Y (RR)	0.11565	0.86489	6.45862
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.18592	0.88243	8.52447
	B->Y (FR)	0.17063	0.88507	8.94350
	C->Y (FR)	0.13994	0.90863	9.62558
	D_N->Y (RR)	0.10180	0.71624	6.26118
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.18533	0.75185	8.41913
	B->Y (FR)	0.17050	0.75975	8.89945
	C->Y (FR)	0.13721	0.78170	9.58492
	D_N->Y (RR)	0.11476	0.65028	6.75466

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02387	0.28547	2.40632
	B->Y (RF)	0.02520	0.27986	2.38455
	C->Y (RF)	0.02489	0.27175	2.36089
	D_N->Y (FF)	0.06926	0.32958	2.27554
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01926	0.21768	1.98442
	B->Y (RF)	0.02024	0.21386	1.98478
	C->Y (RF)	0.02250	0.21070	2.00535
	D_N->Y (FF)	0.07480	0.33021	2.18005
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01937	0.18695	1.98305
	B->Y (RF)	0.01964	0.18005	1.93455
	C->Y (RF)	0.02003	0.16388	1.81877
	D_N->Y (FF)	0.07824	0.30481	1.85570

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00279	0.00285	0.02697
	A	0.01018	0.01027	0.03445
	B	0.00278	0.00300	0.02470
	B	0.00899	0.00923	0.03097
	C	0.00255	0.00313	0.02363
	C	0.00776	0.00834	0.02885
	D_N	0.00927	0.01349	0.08759
	D_N	0.00638	0.01059	0.08477
sky130_fd_sc_hs__nor4b_2	A	0.00454	0.00463	0.05408
	A	0.02036	0.02050	0.07000
	B	0.00459	0.00505	0.05024
	B	0.01776	0.01826	0.06353
	C	0.00446	0.00557	0.04549
	C	0.01517	0.01628	0.05622
	D_N	0.01362	0.01826	0.10669
	D_N	0.01164	0.01626	0.10485
sky130_fd_sc_hs__nor4b_4	A	0.00934	0.00966	0.10582
	A	0.04058	0.04091	0.13710
	B	0.00938	0.01053	0.09829
	B	0.03539	0.03654	0.12450
	C	0.00901	0.01173	0.09017
	C	0.03025	0.03295	0.11142
	D_N	0.02451	0.03144	0.16934
	D_N	0.02280	0.02975	0.16766

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01130	0.01202	0.03447
	A	0.00396	0.00464	0.02714
	B	0.00911	0.01004	0.03101
	B	0.00292	0.00381	0.02483
	C	0.00679	0.00795	0.02778
	C	0.00159	0.00274	0.02258
	D_N	0.00526	0.01032	0.08677
	D_N	0.00815	0.01321	0.08965
sky130_fd_sc_hs__nor4b_2	A	0.02345	0.02479	0.07078
	A	0.00778	0.00906	0.05519
	B	0.01795	0.01990	0.06248
	B	0.00480	0.00672	0.04940
	C	0.01310	0.01542	0.05416
	C	0.00240	0.00467	0.04346
	D_N	0.00981	0.01528	0.09638
	D_N	0.01180	0.01728	0.09837
sky130_fd_sc_hs__nor4b_4	A	0.04571	0.04907	0.13800
	A	0.01475	0.01800	0.10719
	B	0.03525	0.03929	0.12188
	B	0.00931	0.01326	0.09600
	C	0.02532	0.03019	0.10629
	C	0.00414	0.00898	0.08514
	D_N	0.02001	0.02854	0.15756
	D_N	0.02172	0.03027	0.15926

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)**	0.00189	0.00188	0.00186
	(B * C * D_N * !Y)	-0.00193	-0.00199	-0.00198
	(B * !D_N * !Y)	0.00165	0.00165	0.00164
	(B * !D_N * !Y)	-0.00217	-0.00221	-0.00220
	(B * !C * D_N * !Y)	0.00220	0.00194	0.00191
	(B * !C * D_N * !Y)	-0.00164	-0.00194	-0.00194
	(!B * C * D_N * !Y)	0.00214	0.00193	0.00190
	(!B * C * D_N * !Y)	-0.00159	-0.00191	-0.00193
	(!B * C * !D_N * !Y)	0.00165	0.00165	0.00164
	(!B * C * !D_N * !Y)	-0.00201	-0.00214	-0.00214
	(!B * !C * !D_N * !Y)	0.00194	0.00175	0.00170
	(!B * !C * !D_N * !Y)	-0.00177	-0.00208	-0.00212
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00358	0.00357	0.00354
	(B * C * D_N * !Y)	-0.00420	-0.00438	-0.00438
	(B * !D_N * !Y)	0.00344	0.00347	0.00344
	(B * !D_N * !Y)	-0.00433	-0.00448	-0.00446
	(B * !C * D_N * !Y)	0.00430	0.00369	0.00363
	(B * !C * D_N * !Y)	-0.00355	-0.00428	-0.00429
	(!B * C * D_N * !Y)	0.00414	0.00368	0.00361
	(!B * C * D_N * !Y)	-0.00351	-0.00421	-0.00426
	(!B * C * !D_N * !Y)	0.00346	0.00347	0.00344
	(!B * C * !D_N * !Y)	-0.00403	-0.00436	-0.00432
	(!B * !C * !D_N * !Y)	0.00410	0.00368	0.00357
	(!B * !C * !D_N * !Y)	-0.00351	-0.00419	-0.00430

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00714	0.00710	0.00704
	(B * C * D_N * !Y)	-0.00820	-0.00852	-0.00851
	(B * !D_N * !Y)	0.00675	0.00678	0.00672
	(B * !D_N * !Y)	-0.00859	-0.00884	-0.00878
	(B * !C * D_N * !Y)	0.00859	0.00736	0.00724
	(B * !C * D_N * !Y)	-0.00691	-0.00830	-0.00833
	(!B * C * D_N * !Y)	0.00823	0.00734	0.00720
	(!B * C * D_N * !Y)	-0.00682	-0.00819	-0.00828
	(!B * C * !D_N * !Y)	0.00679	0.00679	0.00673
	(!B * C * !D_N * !Y)	-0.00800	-0.00859	-0.00851
	(!B * !C * !D_N * !Y)	0.00802	0.00720	0.00698
	(!B * !C * !D_N * !Y)	-0.00699	-0.00829	-0.00848

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)**	-0.00154	-0.00155	-0.00154
	(B * C * D_N * !Y)	0.00229	0.00231	0.00230
	(B * !D_N * !Y)	-0.00164	-0.00164	-0.00163
	(B * !D_N * !Y)	0.00221	0.00222	0.00220
	(B * !C * D_N * !Y)	-0.00152	-0.00153	-0.00153
	(B * !C * D_N * !Y)	0.00231	0.00232	0.00232
	(!B * C * D_N * !Y)	-0.00151	-0.00152	-0.00151
	(!B * C * D_N * !Y)	0.00228	0.00230	0.00228
	(!B * C * !D_N * !Y)	-0.00163	-0.00163	-0.00163
	(!B * C * !D_N * !Y)	0.00214	0.00214	0.00214
	(!B * !C * !D_N * !Y)	-0.00157	-0.00157	-0.00156
	(!B * !C * !D_N * !Y)	0.00220	0.00221	0.00221

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00333	-0.00335	-0.00333
	(B * C * D_N * !Y)	0.00454	0.00459	0.00455
	(B * !D_N * !Y)	-0.00342	-0.00344	-0.00342
	(B * !D_N * !Y)	0.00445	0.00450	0.00446
	(B * !C * D_N * !Y)	-0.00329	-0.00331	-0.00330
	(B * !C * D_N * !Y)	0.00459	0.00463	0.00461
	(!B * C * D_N * !Y)	-0.00328	-0.00330	-0.00327
	(!B * C * D_N * !Y)	0.00449	0.00454	0.00451
	(!B * C * !D_N * !Y)	-0.00342	-0.00344	-0.00342
	(!B * C * !D_N * !Y)	0.00431	0.00436	0.00432
	(!B * !C * !D_N * !Y)	-0.00330	-0.00331	-0.00328
	(!B * !C * !D_N * !Y)	0.00443	0.00446	0.00447
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00635	-0.00640	-0.00638
	(B * C * D_N * !Y)	0.00904	0.00914	0.00910
	(B * !D_N * !Y)	-0.00667	-0.00673	-0.00670
	(B * !D_N * !Y)	0.00873	0.00886	0.00878
	(B * !C * D_N * !Y)	-0.00631	-0.00635	-0.00632
	(B * !C * D_N * !Y)	0.00921	0.00929	0.00923
	(!B * C * D_N * !Y)	-0.00627	-0.00631	-0.00625
	(!B * C * D_N * !Y)	0.00900	0.00910	0.00904
	(!B * C * !D_N * !Y)	-0.00669	-0.00673	-0.00669
	(!B * C * !D_N * !Y)	0.00850	0.00859	0.00851
	(!B * !C * !D_N * !Y)	-0.00646	-0.00648	-0.00640
	(!B * !C * !D_N * !Y)	0.00878	0.00882	0.00882

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)**	0.00206	0.00209	0.00197
	(A * C * D_N * !Y)	-0.00122	-0.00123	-0.00128
	(A * C * !D_N * !Y)	0.00180	0.00182	0.00174
	(A * C * !D_N * !Y)	-0.00148	-0.00149	-0.00148
	(A * !C * D_N * !Y)	0.00198	0.00198	0.00195
	(A * !C * D_N * !Y)	-0.00084	-0.00084	-0.00086
	(A * !C * !D_N * !Y)	0.00189	0.00197	0.00183
	(A * !C * !D_N * !Y)	-0.00143	-0.00137	-0.00144
	(!A * C * D_N * !Y)	0.00243	0.00202	0.00195
	(!A * C * D_N * !Y)	-0.00145	-0.00189	-0.00192
	(!A * C * !D_N * !Y)	0.00182	0.00171	0.00169
	(!A * C * !D_N * !Y)	-0.00204	-0.00218	-0.00218
	(!A * !C * !D_N * !Y)	0.00227	0.00183	0.00175
	(!A * !C * !D_N * !Y)	-0.00156	-0.00205	-0.00210
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00406	0.00406	0.00379
	(A * C * D_N * !Y)	-0.00284	-0.00287	-0.00299
	(A * C * !D_N * !Y)	0.00385	0.00385	0.00367
	(A * C * !D_N * !Y)	-0.00305	-0.00307	-0.00306
	(A * !C * D_N * !Y)	0.00376	0.00382	0.00370
	(A * !C * D_N * !Y)	-0.00205	-0.00210	-0.00210
	(A * !C * !D_N * !Y)	0.00388	0.00413	0.00382
	(A * !C * !D_N * !Y)	-0.00297	-0.00285	-0.00297
	(!A * C * D_N * !Y)	0.00466	0.00379	0.00369
	(!A * C * D_N * !Y)	-0.00336	-0.00421	-0.00428
	(!A * C * !D_N * !Y)	0.00373	0.00352	0.00351
	(!A * C * !D_N * !Y)	-0.00424	-0.00445	-0.00446
	(!A * !C * !D_N * !Y)	0.00453	0.00381	0.00363
	(!A * !C * !D_N * !Y)	-0.00328	-0.00420	-0.00432

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00796	0.00800	0.00748
	(A * C * D_N * !Y)	-0.00549	-0.00552	-0.00576
	(A * C * !D_N * !Y)	0.00747	0.00748	0.00713
	(A * C * !D_N * !Y)	-0.00596	-0.00605	-0.00598
	(A * !C * D_N * !Y)	0.00752	0.00752	0.00734
	(A * !C * D_N * !Y)	-0.00395	-0.00395	-0.00400
	(A * !C * !D_N * !Y)	0.00762	0.00810	0.00747
	(A * !C * !D_N * !Y)	-0.00580	-0.00555	-0.00579
	(!A * C * D_N * !Y)	0.00938	0.00754	0.00735
	(!A * C * D_N * !Y)	-0.00642	-0.00822	-0.00836
	(!A * C * !D_N * !Y)	0.00738	0.00688	0.00685
	(!A * C * !D_N * !Y)	-0.00831	-0.00884	-0.00884
	(!A * !C * !D_N * !Y)	0.00901	0.00735	0.00710
	(!A * !C * !D_N * !Y)	-0.00640	-0.00827	-0.00856

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)**	-0.00159	-0.00160	-0.00159
	(A * C * D_N * !Y)	0.00153	0.00154	0.00153
	(A * C * !D_N * !Y)	-0.00167	-0.00168	-0.00168
	(A * C * !D_N * !Y)	0.00148	0.00149	0.00148
	(A * !C * D_N * !Y)	-0.00152	-0.00152	-0.00152
	(A * !C * D_N * !Y)	0.00128	0.00128	0.00128
	(A * !C * !D_N * !Y)	-0.00167	-0.00168	-0.00167
	(A * !C * !D_N * !Y)	0.00143	0.00146	0.00144
	(!A * C * D_N * !Y)	-0.00153	-0.00154	-0.00153
	(!A * C * D_N * !Y)	0.00232	0.00234	0.00233
	(!A * C * !D_N * !Y)	-0.00167	-0.00168	-0.00167
	(!A * C * !D_N * !Y)	0.00218	0.00219	0.00218
	(!A * !C * !D_N * !Y)	-0.00161	-0.00162	-0.00160
	(!A * !C * !D_N * !Y)	0.00220	0.00222	0.00222
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00340	-0.00341	-0.00340
	(A * C * D_N * !Y)	0.00310	0.00311	0.00309
	(A * C * !D_N * !Y)	-0.00348	-0.00350	-0.00349
	(A * C * !D_N * !Y)	0.00305	0.00307	0.00306
	(A * !C * D_N * !Y)	-0.00322	-0.00322	-0.00323
	(A * !C * D_N * !Y)	0.00257	0.00256	0.00256
	(A * !C * !D_N * !Y)	-0.00352	-0.00354	-0.00352
	(A * !C * !D_N * !Y)	0.00297	0.00300	0.00297
	(!A * C * D_N * !Y)	-0.00332	-0.00333	-0.00331
	(!A * C * D_N * !Y)	0.00465	0.00467	0.00466
	(!A * C * !D_N * !Y)	-0.00348	-0.00350	-0.00348
	(!A * C * !D_N * !Y)	0.00446	0.00450	0.00446
	(!A * !C * !D_N * !Y)	-0.00336	-0.00338	-0.00333
	(!A * !C * !D_N * !Y)	0.00449	0.00453	0.00453

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00649	-0.00653	-0.00651
	(A * C * D_N * !Y)	0.00616	0.00621	0.00618
	(A * C * !D_N * !Y)	-0.00680	-0.00687	-0.00682
	(A * C * !D_N * !Y)	0.00596	0.00605	0.00598
	(A * !C * D_N * !Y)	-0.00617	-0.00618	-0.00619
	(A * !C * D_N * !Y)	0.00512	0.00512	0.00512
	(A * !C * !D_N * !Y)	-0.00686	-0.00691	-0.00686
	(A * !C * !D_N * !Y)	0.00580	0.00586	0.00579
	(!A * C * D_N * !Y)	-0.00632	-0.00634	-0.00632
	(!A * C * D_N * !Y)	0.00936	0.00938	0.00938
	(!A * C * !D_N * !Y)	-0.00677	-0.00684	-0.00680
	(!A * C * !D_N * !Y)	0.00879	0.00892	0.00884
	(!A * !C * !D_N * !Y)	-0.00658	-0.00659	-0.00650
	(!A * !C * !D_N * !Y)	0.00893	0.00898	0.00898

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)	0.00216	0.00218	0.00215
	(B * D_N * !Y)	-0.00086	-0.00087	-0.00088
	(B * !D_N * !Y)	0.00191	0.00193	0.00182
	(B * !D_N * !Y)	-0.00166	-0.00167	-0.00171
	(A * !B * D_N * !Y)	0.00221	0.00220	0.00217
	(A * !B * D_N * !Y)	-0.00084	-0.00083	-0.00084
	(A * !B * !D_N * !Y)	0.00209	0.00196	0.00185
	(A * !B * !D_N * !Y)	-0.00146	-0.00160	-0.00165
	(!A * !B * !D_N * !Y)	0.00234	0.00183	0.00176
	(!A * !B * !D_N * !Y)	-0.00177	-0.00226	-0.00232

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00391	0.00394	0.00388
	(B * D_N * !Y)	-0.00200	-0.00201	-0.00202
	(B * !D_N * !Y)	0.00405	0.00413	0.00386
	(B * !D_N * !Y)	-0.00305	-0.00305	-0.00312
	(A * !B * D_N * !Y)	0.00397	0.00405	0.00393
	(A * !B * D_N * !Y)	-0.00190	-0.00194	-0.00195
	(A * !B * !D_N * !Y)	0.00446	0.00405	0.00385
	(A * !B * !D_N * !Y)	-0.00258	-0.00289	-0.00304
	(!A * !B * !D_N * !Y)	0.00505	0.00384	0.00368
	(!A * !B * !D_N * !Y)	-0.00303	-0.00424	-0.00435
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00786	0.00794	0.00775
	(B * D_N * !Y)	-0.00386	-0.00390	-0.00389
	(B * !D_N * !Y)	0.00812	0.00828	0.00777
	(B * !D_N * !Y)	-0.00577	-0.00582	-0.00596
	(A * !B * D_N * !Y)	0.00798	0.00794	0.00785
	(A * !B * D_N * !Y)	-0.00368	-0.00366	-0.00376
	(A * !B * !D_N * !Y)	0.00905	0.00821	0.00781
	(A * !B * !D_N * !Y)	-0.00490	-0.00549	-0.00577
	(!A * !B * !D_N * !Y)	0.01009	0.00780	0.00745
	(!A * !B * !D_N * !Y)	-0.00587	-0.00822	-0.00845

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)**	-0.00177	-0.00179	-0.00180
	(B * D_N * !Y)	0.00122	0.00124	0.00123
	(B * !D_N * !Y)	-0.00168	-0.00168	-0.00168
	(B * !D_N * !Y)	0.00171	0.00172	0.00171
	(A * !B * D_N * !Y)	-0.00169	-0.00172	-0.00179
	(A * !B * D_N * !Y)	0.00125	0.00126	0.00122
	(A * !B * !D_N * !Y)	-0.00167	-0.00168	-0.00167
	(A * !B * !D_N * !Y)	0.00168	0.00170	0.00168
	(!A * !B * !D_N * !Y)	-0.00162	-0.00162	-0.00162
	(!A * !B * !D_N * !Y)	0.00246	0.00246	0.00246
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00356	-0.00360	-0.00360
	(B * D_N * !Y)	0.00230	0.00233	0.00232
	(B * !D_N * !Y)	-0.00358	-0.00361	-0.00359
	(B * !D_N * !Y)	0.00311	0.00314	0.00312
	(A * !B * D_N * !Y)	-0.00335	-0.00339	-0.00357
	(A * !B * D_N * !Y)	0.00239	0.00240	0.00229
	(A * !B * !D_N * !Y)	-0.00355	-0.00358	-0.00355
	(A * !B * !D_N * !Y)	0.00307	0.00312	0.00309
	(!A * !B * !D_N * !Y)	-0.00341	-0.00341	-0.00340
	(!A * !B * !D_N * !Y)	0.00463	0.00463	0.00463
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00689	-0.00695	-0.00695
	(B * D_N * !Y)	0.00470	0.00475	0.00472
	(B * !D_N * !Y)	-0.00723	-0.00727	-0.00723
	(B * !D_N * !Y)	0.00595	0.00599	0.00596
	(A * !B * D_N * !Y)	-0.00647	-0.00647	-0.00691
	(A * !B * D_N * !Y)	0.00484	0.00480	0.00465
	(A * !B * !D_N * !Y)	-0.00717	-0.00719	-0.00716
	(A * !B * !D_N * !Y)	0.00585	0.00587	0.00588
	(!A * !B * !D_N * !Y)	-0.00687	-0.00692	-0.00689
	(!A * !B * !D_N * !Y)	0.00896	0.00902	0.00901

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00500	0.00920	0.08636
	(C * !Y)	0.00105	0.00524	0.08240
	(B * !C * !Y)	0.00511	0.00931	0.08643
	(B * !C * !Y)	0.00109	0.00528	0.08241
	(A * !B * !C * !Y)	0.00524	0.00944	0.08647
	(A * !B * !C * !Y)	0.00116	0.00535	0.08241
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00632	0.01074	0.09766
	(C * !Y)	0.00182	0.00620	0.09314
	(B * !C * !Y)	0.00656	0.01098	0.09783
	(B * !C * !Y)	0.00192	0.00631	0.09320
	(A * !B * !C * !Y)	0.00692	0.01133	0.09809
	(A * !B * !C * !Y)	0.00214	0.00652	0.09336
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00982	0.01604	0.15136
	(C * !Y)	0.00313	0.00931	0.14470
	(B * !C * !Y)	0.01031	0.01651	0.15168
	(B * !C * !Y)	0.00336	0.00954	0.14481
	(A * !B * !C * !Y)	0.01098	0.01718	0.15216
	(A * !B * !C * !Y)	0.00377	0.00994	0.14510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00159	0.00667	0.08413
	(C * !Y)	0.00552	0.01064	0.08809
	(B * !C * !Y)	0.00158	0.00667	0.08411
	(B * !C * !Y)	0.00555	0.01065	0.08808
	(A * !B * !C * !Y)	0.00159	0.00667	0.08406
	(A * !B * !C * !Y)	0.00556	0.01066	0.08804
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00326	0.00862	0.09566
	(C * !Y)	0.00775	0.01313	0.10015
	(B * !C * !Y)	0.00326	0.00861	0.09565
	(B * !C * !Y)	0.00777	0.01314	0.10017
	(A * !B * !C * !Y)	0.00326	0.00861	0.09566
	(A * !B * !C * !Y)	0.00780	0.01317	0.10020
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00684	0.01526	0.15184
	(C * !Y)	0.01347	0.02192	0.15849
	(B * !C * !Y)	0.00683	0.01525	0.15183
	(B * !C * !Y)	0.01350	0.02195	0.15851
	(A * !B * !C * !Y)	0.00684	0.01525	0.15185
	(A * !B * !C * !Y)	0.01357	0.02202	0.15859

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00279	0.00295	0.00294	0.00298	0.32843
sky130_fd_sc_hs__nor4_2	0.00434	0.00495	0.00491	0.00461	0.58089
sky130_fd_sc_hs__nor4_4	0.00859	0.00896	0.00875	0.00889	1.02504

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	1.36242	6.96224
sky130_fd_sc_hs__nor4_2	0.00000	2.65128	13.91790
sky130_fd_sc_hs__nor4_4	0.00000	5.30257	27.82930

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)	0.17030	1.00849	8.72477
	B->Y (FR)	0.16015	1.02387	9.18086
	C->Y (FR)	0.13173	1.03355	9.66271
	D->Y (FR)	0.08545	1.01234	9.82297
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.14667	0.83545	8.33143
	B->Y (FR)	0.13158	0.84041	8.77207
	C->Y (FR)	0.09522	0.83881	9.27300
	D->Y (FR)	0.04641	0.80702	9.38525
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.16154	0.71860	8.02264
	B->Y (FR)	0.14753	0.72652	8.54495
	C->Y (FR)	0.11400	0.73925	9.20146
	D->Y (FR)	0.05566	0.71423	9.42652

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02297	0.27799	2.34091
	B->Y (RF)	0.02532	0.28066	2.40282
	C->Y (RF)	0.02538	0.27357	2.38981
	D->Y (RF)	0.02119	0.26114	2.34503
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.03251	0.37326	3.77427
	B->Y (RF)	0.03664	0.37492	3.86209
	C->Y (RF)	0.03464	0.35900	3.82730
	D->Y (RF)	0.02605	0.33211	3.68026
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.03311	0.31398	3.45660
	B->Y (RF)	0.03547	0.30645	3.45768
	C->Y (RF)	0.03548	0.29733	3.49588
	D->Y (RF)	0.02513	0.27514	3.45056

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00038	0.00047	0.02460
	A	0.00966	0.00978	0.03388
	B	0.00051	0.00074	0.02252
	B	0.00854	0.00877	0.03060
	C	0.00051	0.00107	0.02160
	C	0.00726	0.00783	0.02836
	D	0.00037	0.00200	0.02807
	D	0.00601	0.00766	0.03371
sky130_fd_sc_hs__nor4_2	A	0.00044	0.00053	0.03010
	A	0.01634	0.01647	0.04598
	B	0.00007	0.00037	0.02799
	B	0.01417	0.01444	0.04216
	C	0.00036	0.00116	0.02790
	C	0.01149	0.01228	0.03912
	D	-0.00001	0.00264	0.03813
	D	0.00851	0.01117	0.04671
sky130_fd_sc_hs__nor4_4	A	0.00391	0.00410	0.06583
	A	0.03628	0.03652	0.09843
	B	0.00405	0.00462	0.06128
	B	0.03135	0.03199	0.08865
	C	0.00415	0.00577	0.05901
	C	0.02613	0.02762	0.08115
	D	0.00373	0.00905	0.07784
	D	0.02054	0.02588	0.09475

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01284	0.01362	0.03664
	A	0.00362	0.00436	0.02746
	B	0.01059	0.01150	0.03259
	B	0.00260	0.00350	0.02462
	C	0.00801	0.00917	0.02904
	C	0.00127	0.00242	0.02230
	D	0.00547	0.00683	0.02641
	D	-0.00017	0.00116	0.02075
sky130_fd_sc_hs__nor4_2	A	0.02308	0.02388	0.05301
	A	0.00732	0.00810	0.03724
	B	0.01883	0.01979	0.04734
	B	0.00481	0.00579	0.03325
	C	0.01273	0.01425	0.04052
	C	0.00163	0.00314	0.02930
	D	0.00717	0.00942	0.03548
	D	-0.00135	0.00086	0.02673
sky130_fd_sc_hs__nor4_4	A	0.04635	0.04817	0.10853
	A	0.01424	0.01607	0.07647
	B	0.03606	0.03834	0.09528
	B	0.00881	0.01109	0.06784
	C	0.02574	0.02891	0.08125
	C	0.00382	0.00694	0.05939
	D	0.01418	0.01849	0.06897
	D	-0.00257	0.00166	0.05198

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00176	0.00177	0.00175
	(B * D * !Y)	-0.00214	-0.00219	-0.00219
	(B * C * !D * !Y)	0.00176	0.00177	0.00176
	(B * C * !D * !Y)	-0.00213	-0.00219	-0.00219
	(B * !C * !D * !Y)	0.00208	0.00183	0.00181
	(B * !C * !D * !Y)	-0.00185	-0.00214	-0.00214
	(!B * C * D * !Y)	0.00176	0.00177	0.00176
	(!B * C * D * !Y)	-0.00199	-0.00212	-0.00212
	(!B * C * !D * !Y)	0.00201	0.00182	0.00179
	(!B * C * !D * !Y)	-0.00180	-0.00211	-0.00213
	(!B * !C * D * !Y)	0.00205	0.00186	0.00182
	(!B * !C * D * !Y)	-0.00175	-0.00206	-0.00210
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00177	0.00177	0.00175
	(B * D * !Y)	-0.00414	-0.00428	-0.00426
	(B * C * !D * !Y)	0.00178	0.00177	0.00175
	(B * C * !D * !Y)	-0.00411	-0.00428	-0.00426
	(B * !C * !D * !Y)	0.00251	0.00190	0.00186
	(B * !C * !D * !Y)	-0.00345	-0.00416	-0.00418
	(!B * C * D * !Y)	0.00179	0.00178	0.00176
	(!B * C * D * !Y)	-0.00380	-0.00415	-0.00411
	(!B * C * !D * !Y)	0.00238	0.00189	0.00183
	(!B * C * !D * !Y)	-0.00336	-0.00411	-0.00416
	(!B * !C * D * !Y)	0.00245	0.00198	0.00188
	(!B * !C * D * !Y)	-0.00325	-0.00401	-0.00410

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00367	0.00368	0.00365
	(B * D * !Y)	-0.00851	-0.00874	-0.00872
	(B * C * !D * !Y)	0.00371	0.00369	0.00365
	(B * C * !D * !Y)	-0.00844	-0.00875	-0.00872
	(B * !C * !D * !Y)	0.00516	0.00395	0.00386
	(B * !C * !D * !Y)	-0.00715	-0.00854	-0.00858
	(!B * C * D * !Y)	0.00372	0.00369	0.00365
	(!B * C * D * !Y)	-0.00788	-0.00851	-0.00843
	(!B * C * !D * !Y)	0.00480	0.00392	0.00382
	(!B * C * !D * !Y)	-0.00707	-0.00843	-0.00853
	(!B * !C * D * !Y)	0.00495	0.00410	0.00391
	(!B * !C * D * !Y)	-0.00686	-0.00822	-0.00840

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00175	-0.00176	-0.00175
	(B * D * !Y)	0.00218	0.00220	0.00219
	(B * C * !D * !Y)	-0.00175	-0.00176	-0.00175
	(B * C * !D * !Y)	0.00218	0.00220	0.00219
	(B * !C * !D * !Y)	-0.00174	-0.00174	-0.00174
	(B * !C * !D * !Y)	0.00221	0.00221	0.00221
	(!B * C * D * !Y)	-0.00174	-0.00175	-0.00175
	(!B * C * D * !Y)	0.00211	0.00212	0.00212
	(!B * C * !D * !Y)	-0.00172	-0.00173	-0.00172
	(!B * C * !D * !Y)	0.00216	0.00219	0.00218
	(!B * !C * D * !Y)	-0.00168	-0.00169	-0.00168
	(!B * !C * D * !Y)	0.00217	0.00219	0.00219

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00174	-0.00175	-0.00174
	(B * D * !Y)	0.00424	0.00429	0.00426
	(B * C * !D * !Y)	-0.00174	-0.00175	-0.00174
	(B * C * !D * !Y)	0.00424	0.00428	0.00426
	(B * !C * !D * !Y)	-0.00173	-0.00174	-0.00173
	(B * !C * !D * !Y)	0.00429	0.00435	0.00431
	(!B * C * D * !Y)	-0.00174	-0.00176	-0.00175
	(!B * C * D * !Y)	0.00409	0.00415	0.00411
	(!B * C * !D * !Y)	-0.00168	-0.00170	-0.00168
	(!B * C * !D * !Y)	0.00419	0.00425	0.00423
	(!B * !C * D * !Y)	-0.00162	-0.00162	-0.00159
	(!B * !C * D * !Y)	0.00421	0.00424	0.00425
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00363	-0.00364	-0.00363
	(B * D * !Y)	0.00870	0.00874	0.00872
	(B * C * !D * !Y)	-0.00363	-0.00364	-0.00363
	(B * C * !D * !Y)	0.00871	0.00875	0.00872
	(B * !C * !D * !Y)	-0.00358	-0.00361	-0.00359
	(B * !C * !D * !Y)	0.00881	0.00891	0.00885
	(!B * C * D * !Y)	-0.00363	-0.00365	-0.00363
	(!B * C * D * !Y)	0.00841	0.00851	0.00843
	(!B * C * !D * !Y)	-0.00353	-0.00355	-0.00351
	(!B * C * !D * !Y)	0.00861	0.00871	0.00865
	(!B * !C * D * !Y)	-0.00338	-0.00340	-0.00333
	(!B * !C * D * !Y)	0.00863	0.00871	0.00870

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)**	0.00181	0.00183	0.00175
	(A * C * D * !Y)	-0.00148	-0.00149	-0.00148
	(A * C * !D * !Y)	0.00184	0.00186	0.00174
	(A * C * !D * !Y)	-0.00145	-0.00147	-0.00146
	(A * !C * D * !Y)	0.00190	0.00199	0.00183
	(A * !C * D * !Y)	-0.00141	-0.00134	-0.00142
	(A * !C * !D * !Y)	0.00176	0.00177	0.00173
	(A * !C * !D * !Y)	-0.00106	-0.00107	-0.00109
	(!A * C * D * !Y)	0.00184	0.00171	0.00169
	(!A * C * D * !Y)	-0.00203	-0.00219	-0.00219
	(!A * C * !D * !Y)	0.00223	0.00181	0.00174
	(!A * C * !D * !Y)	-0.00167	-0.00212	-0.00215
	(!A * !C * D * !Y)	0.00229	0.00184	0.00176
	(!A * !C * D * !Y)	-0.00154	-0.00206	-0.00211
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00253	0.00254	0.00235
	(A * C * D * !Y)	-0.00305	-0.00307	-0.00304
	(A * C * !D * !Y)	0.00262	0.00265	0.00235
	(A * C * !D * !Y)	-0.00297	-0.00295	-0.00298
	(A * !C * D * !Y)	0.00264	0.00283	0.00249
	(A * !C * D * !Y)	-0.00286	-0.00271	-0.00288
	(A * !C * !D * !Y)	0.00242	0.00240	0.00228
	(A * !C * !D * !Y)	-0.00216	-0.00214	-0.00220
	(!A * C * D * !Y)	0.00253	0.00221	0.00219
	(!A * C * D * !Y)	-0.00407	-0.00447	-0.00446
	(!A * C * !D * !Y)	0.00341	0.00240	0.00229
	(!A * C * !D * !Y)	-0.00329	-0.00430	-0.00440
	(!A * !C * D * !Y)	0.00345	0.00250	0.00231
	(!A * !C * D * !Y)	-0.00304	-0.00417	-0.00433

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00440	0.00441	0.00407
	(A * C * D * !Y)	-0.00598	-0.00609	-0.00602
	(A * C * !D * !Y)	0.00461	0.00460	0.00408
	(A * C * !D * !Y)	-0.00583	-0.00585	-0.00591
	(A * !C * D * !Y)	0.00458	0.00502	0.00439
	(A * !C * D * !Y)	-0.00573	-0.00543	-0.00573
	(A * !C * !D * !Y)	0.00413	0.00410	0.00395
	(A * !C * !D * !Y)	-0.00434	-0.00430	-0.00439
	(!A * C * D * !Y)	0.00433	0.00380	0.00378
	(!A * C * D * !Y)	-0.00828	-0.00893	-0.00895
	(!A * C * !D * !Y)	0.00602	0.00417	0.00399
	(!A * C * !D * !Y)	-0.00679	-0.00862	-0.00878
	(!A * !C * D * !Y)	0.00609	0.00429	0.00403
	(!A * !C * D * !Y)	-0.00642	-0.00834	-0.00866

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)**	-0.00168	-0.00169	-0.00168
	(A * C * D * !Y)	0.00148	0.00149	0.00148
	(A * C * !D * !Y)	-0.00168	-0.00169	-0.00168
	(A * C * !D * !Y)	0.00145	0.00147	0.00146
	(A * !C * D * !Y)	-0.00167	-0.00169	-0.00168
	(A * !C * D * !Y)	0.00141	0.00143	0.00142
	(A * !C * !D * !Y)	-0.00160	-0.00161	-0.00160
	(A * !C * !D * !Y)	0.00119	0.00120	0.00120
	(!A * C * D * !Y)	-0.00168	-0.00169	-0.00168
	(!A * C * D * !Y)	0.00218	0.00220	0.00219
	(!A * C * !D * !Y)	-0.00162	-0.00163	-0.00163
	(!A * C * !D * !Y)	0.00224	0.00226	0.00225
	(!A * !C * D * !Y)	-0.00162	-0.00163	-0.00161
	(!A * !C * D * !Y)	0.00220	0.00222	0.00222
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00221	-0.00222	-0.00221
	(A * C * D * !Y)	0.00305	0.00307	0.00304
	(A * C * !D * !Y)	-0.00220	-0.00222	-0.00220
	(A * C * !D * !Y)	0.00298	0.00301	0.00298
	(A * !C * D * !Y)	-0.00218	-0.00221	-0.00219
	(A * !C * D * !Y)	0.00286	0.00294	0.00288
	(A * !C * !D * !Y)	-0.00203	-0.00204	-0.00199
	(A * !C * !D * !Y)	0.00244	0.00246	0.00245
	(!A * C * D * !Y)	-0.00217	-0.00218	-0.00217
	(!A * C * D * !Y)	0.00446	0.00448	0.00446
	(!A * C * !D * !Y)	-0.00205	-0.00205	-0.00203
	(!A * C * !D * !Y)	0.00461	0.00461	0.00461
	(!A * !C * D * !Y)	-0.00205	-0.00205	-0.00201
	(!A * !C * D * !Y)	0.00448	0.00452	0.00452

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00373	-0.00378	-0.00375
	(A * C * D * !Y)	0.00598	0.00609	0.00602
	(A * C * !D * !Y)	-0.00376	-0.00378	-0.00375
	(A * C * !D * !Y)	0.00594	0.00598	0.00591
	(A * !C * D * !Y)	-0.00378	-0.00380	-0.00378
	(A * !C * D * !Y)	0.00573	0.00578	0.00573
	(A * !C * !D * !Y)	-0.00340	-0.00340	-0.00338
	(A * !C * !D * !Y)	0.00487	0.00485	0.00487
	(!A * C * D * !Y)	-0.00374	-0.00375	-0.00374
	(!A * C * D * !Y)	0.00893	0.00897	0.00895
	(!A * C * !D * !Y)	-0.00357	-0.00359	-0.00356
	(!A * C * !D * !Y)	0.00915	0.00919	0.00917
	(!A * !C * D * !Y)	-0.00349	-0.00352	-0.00344
	(!A * !C * D * !Y)	0.00894	0.00904	0.00904

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00194	0.00196	0.00185
	(B * D * !Y)	-0.00135	-0.00137	-0.00141
	(B * !D * !Y)	0.00175	0.00177	0.00173
	(B * !D * !Y)	-0.00102	-0.00104	-0.00104
	(A * !B * D * !Y)	0.00213	0.00199	0.00188
	(A * !B * D * !Y)	-0.00117	-0.00131	-0.00135
	(A * !B * !D * !Y)	0.00178	0.00179	0.00175
	(A * !B * !D * !Y)	-0.00099	-0.00099	-0.00101
	(!A * !B * D * !Y)	0.00238	0.00186	0.00179
	(!A * !B * D * !Y)	-0.00150	-0.00201	-0.00206

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00275	0.00270	0.00249
	(B * D * !Y)	-0.00270	-0.00274	-0.00285
	(B * !D * !Y)	0.00225	0.00226	0.00219
	(B * !D * !Y)	-0.00208	-0.00210	-0.00212
	(A * !B * D * !Y)	0.00304	0.00263	0.00249
	(A * !B * D * !Y)	-0.00240	-0.00264	-0.00275
	(A * !B * !D * !Y)	0.00232	0.00234	0.00223
	(A * !B * !D * !Y)	-0.00204	-0.00206	-0.00207
	(!A * !B * D * !Y)	0.00348	0.00243	0.00229
	(!A * !B * D * !Y)	-0.00310	-0.00412	-0.00422
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00459	0.00463	0.00417
	(B * D * !Y)	-0.00557	-0.00556	-0.00573
	(B * !D * !Y)	0.00382	0.00386	0.00370
	(B * !D * !Y)	-0.00421	-0.00428	-0.00433
	(A * !B * D * !Y)	0.00553	0.00466	0.00427
	(A * !B * D * !Y)	-0.00471	-0.00532	-0.00555
	(A * !B * !D * !Y)	0.00396	0.00401	0.00378
	(A * !B * !D * !Y)	-0.00410	-0.00417	-0.00421
	(!A * !B * D * !Y)	0.00664	0.00422	0.00389
	(!A * !B * D * !Y)	-0.00589	-0.00830	-0.00853

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00171	-0.00171	-0.00170
	(B * D * !Y)	0.00142	0.00141	0.00141
	(B * !D * !Y)	-0.00169	-0.00170	-0.00169
	(B * !D * !Y)	0.00109	0.00109	0.00109
	(A * !B * D * !Y)	-0.00170	-0.00171	-0.00169
	(A * !B * D * !Y)	0.00138	0.00140	0.00139
	(A * !B * !D * !Y)	-0.00162	-0.00164	-0.00169
	(A * !B * !D * !Y)	0.00110	0.00111	0.00107
	(!A * !B * D * !Y)	-0.00165	-0.00165	-0.00165
	(!A * !B * D * !Y)	0.00220	0.00220	0.00220
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00217	-0.00219	-0.00217
	(B * D * !Y)	0.00284	0.00287	0.00285
	(B * !D * !Y)	-0.00211	-0.00213	-0.00212
	(B * !D * !Y)	0.00219	0.00222	0.00221
	(A * !B * D * !Y)	-0.00215	-0.00215	-0.00214
	(A * !B * D * !Y)	0.00282	0.00282	0.00282
	(A * !B * !D * !Y)	-0.00193	-0.00196	-0.00211
	(A * !B * !D * !Y)	0.00229	0.00231	0.00219
	(!A * !B * D * !Y)	-0.00202	-0.00203	-0.00202
	(!A * !B * D * !Y)	0.00449	0.00450	0.00449
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00366	-0.00366	-0.00365
	(B * D * !Y)	0.00576	0.00574	0.00573
	(B * !D * !Y)	-0.00356	-0.00357	-0.00351
	(B * !D * !Y)	0.00451	0.00452	0.00453
	(A * !B * D * !Y)	-0.00361	-0.00363	-0.00358
	(A * !B * D * !Y)	0.00568	0.00573	0.00570
	(A * !B * !D * !Y)	-0.00327	-0.00333	-0.00350
	(A * !B * !D * !Y)	0.00453	0.00459	0.00446
	(!A * !B * D * !Y)	-0.00333	-0.00336	-0.00334
	(!A * !B * D * !Y)	0.00907	0.00913	0.00909

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00197	0.00199	0.00197
	(C * !Y)	-0.00096	-0.00097	-0.00096
	(B * !C * !Y)	0.00197	0.00199	0.00197
	(B * !C * !Y)	-0.00096	-0.00097	-0.00096
	(A * !B * !C * !Y)	0.00197	0.00199	0.00198
	(A * !B * !C * !Y)	-0.00095	-0.00096	-0.00095
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00238	0.00240	0.00239
	(C * !Y)	-0.00190	-0.00191	-0.00191
	(B * !C * !Y)	0.00238	0.00240	0.00239
	(B * !C * !Y)	-0.00188	-0.00190	-0.00189
	(A * !B * !C * !Y)	0.00239	0.00240	0.00240
	(A * !B * !C * !Y)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00451	0.00455	0.00451
	(C * !Y)	-0.00381	-0.00383	-0.00380
	(B * !C * !Y)	0.00450	0.00454	0.00451
	(B * !C * !Y)	-0.00380	-0.00382	-0.00378
	(A * !B * !C * !Y)	0.00451	0.00459	0.00452
	(A * !B * !C * !Y)	-0.00375	-0.00381	-0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00189	-0.00190	-0.00196
	(C * !Y)	0.00104	0.00104	0.00098
	(B * !C * !Y)	-0.00179	-0.00180	-0.00194
	(B * !C * !Y)	0.00109	0.00109	0.00099
	(A * !B * !C * !Y)	-0.00165	-0.00167	-0.00190
	(A * !B * !C * !Y)	0.00117	0.00117	0.00101
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00224	-0.00225	-0.00237
	(C * !Y)	0.00205	0.00204	0.00195
	(B * !C * !Y)	-0.00198	-0.00199	-0.00232
	(B * !C * !Y)	0.00218	0.00218	0.00195
	(A * !B * !C * !Y)	-0.00168	-0.00169	-0.00224
	(A * !B * !C * !Y)	0.00237	0.00236	0.00201
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00413	-0.00418	-0.00446
	(C * !Y)	0.00411	0.00413	0.00389
	(B * !C * !Y)	-0.00369	-0.00375	-0.00437
	(B * !C * !Y)	0.00434	0.00436	0.00390
	(A * !B * !C * !Y)	-0.00303	-0.00309	-0.00418
	(A * !B * !C * !Y)	0.00475	0.00477	0.00403

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00283	0.00294	0.00285	0.00302	0.00294	0.64101
sky130_fd_sc_hs__o2111ai_2	0.00549	0.00551	0.00570	0.00557	0.00553	1.13069
sky130_fd_sc_hs__o2111ai_4	0.01094	0.01102	0.00826	0.00834	0.00823	1.87505

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	2.42581	27.85510
sky130_fd_sc_hs__o2111ai_2	0.00000	4.84700	55.70620
sky130_fd_sc_hs__o2111ai_4	0.00000	5.77462	69.63730

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)	0.11698	0.86045	9.39576
	A2->Y (FR)	0.10516	0.87985	9.86825
	B1->Y (FR)	0.04736	0.59588	7.01666
	C1->Y (FR)	0.04200	0.58918	7.01452
	D1->Y (FR)	0.03505	0.58127	6.99500
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.11982	0.74445	9.18173
	A2->Y (FR)	0.10205	0.76345	9.68646
	B1->Y (FR)	0.04405	0.51378	6.67509
	C1->Y (FR)	0.03811	0.50320	6.64955
	D1->Y (FR)	0.02922	0.49075	6.61695
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.12763	0.65539	8.80972
	A2->Y (FR)	0.10656	0.67855	9.40013
	B1->Y (FR)	0.08197	0.65742	9.23544
	C1->Y (FR)	0.06203	0.61299	8.79559
	D1->Y (FR)	0.04622	0.61889	9.17112

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.08255	0.54741	5.70742
	A2->Y (RF)	0.06775	0.51903	5.55811
	B1->Y (RF)	0.07677	0.58493	6.36745
	C1->Y (RF)	0.06935	0.61812	6.92971
	D1->Y (RF)	0.05855	0.63522	7.32650
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.09129	0.48192	5.77368
	A2->Y (RF)	0.07082	0.45141	5.63254
	B1->Y (RF)	0.08447	0.51545	6.41558
	C1->Y (RF)	0.07526	0.56918	7.27903
	D1->Y (RF)	0.05781	0.58459	7.67159
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.08609	0.37513	5.04403
	A2->Y (RF)	0.07077	0.36329	5.19588
	B1->Y (RF)	0.05973	0.40093	5.95483
	C1->Y (RF)	0.05049	0.44718	6.75855
	D1->Y (RF)	0.03280	0.46595	7.25083

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00266	0.00313	0.01889
	A1	0.01276	0.01325	0.02900
	A2	0.00269	0.00389	0.02376
	A2	0.01152	0.01271	0.03252
	B1	0.00141	0.00323	0.02847
	B1	0.00872	0.01059	0.03622
	C1	0.00066	0.00250	0.02702
	C1	0.00701	0.00888	0.03379
	D1	0.00007	0.00201	0.02591
	D1	0.00529	0.00721	0.03156
sky130_fd_sc_hs__o2111ai_2	A1	0.00444	0.00526	0.03461
	A1	0.02474	0.02533	0.05501
	A2	0.00448	0.00698	0.04316
	A2	0.02206	0.02452	0.06054
	B1	0.00196	0.00539	0.05382
	B1	0.01690	0.02031	0.06863
	C1	0.00071	0.00412	0.05029
	C1	0.01321	0.01661	0.06279
	D1	-0.00163	0.00222	0.04733
	D1	0.00851	0.01237	0.05749

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00778	0.00966	0.07086
	A1	0.04767	0.04948	0.11088
	A2	0.00761	0.01239	0.08261
	A2	0.04246	0.04732	0.11749
	B1	0.00337	0.00738	0.06382
	B1	0.03356	0.03735	0.09112
	C1	0.00096	0.00610	0.06162
	C1	0.02649	0.03063	0.08483
	D1	-0.00291	0.00273	0.05561
	D1	0.01269	0.01832	0.07155

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01317	0.01346	0.02754
	A1	0.00290	0.00318	0.01692
	A2	0.01088	0.01126	0.02481
	A2	0.00188	0.00224	0.01523
	B1	0.00904	0.00960	0.02499
	B1	0.00161	0.00215	0.01708
	C1	0.00801	0.00860	0.02233
	C1	0.00162	0.00220	0.01578
	D1	0.00678	0.00764	0.02255
	D1	0.00158	0.00243	0.01707

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02733	0.02774	0.05465
	A1	0.00666	0.00706	0.03390
	A2	0.02144	0.02220	0.04814
	A2	0.00352	0.00426	0.02967
	B1	0.01803	0.01928	0.05070
	B1	0.00286	0.00399	0.03444
	C1	0.01556	0.01672	0.04424
	C1	0.00295	0.00411	0.02981
	D1	0.01297	0.01499	0.04311
	D1	0.00284	0.00478	0.03224
sky130_fd_sc_hs__o2111ai_4	**A1**	0.05183	0.05275	0.10993
	A1	0.01126	0.01213	0.06834
	A2	0.04001	0.04183	0.09409
	A2	0.00442	0.00620	0.05836
	B1	0.04431	0.04550	0.07832
	B1	0.00624	0.00770	0.04140
	C1	0.03961	0.04105	0.06995
	C1	0.00630	0.00789	0.03785
	D1	0.03451	0.03665	0.06746
	D1	0.00625	0.00875	0.03970

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)**	0.00244	0.00206	0.00201
	(A2 * B1 * C1 * D1 * !Y)	-0.00153	-0.00192	-0.00194
	(A2 * B1 * C1 * !D1 * Y)	0.00176	0.00177	0.00175
	(A2 * B1 * C1 * !D1 * Y)	-0.00219	-0.00220	-0.00219
	(A2 * B1 * !C1 * Y)	0.00176	0.00177	0.00175
	(A2 * B1 * !C1 * Y)	-0.00219	-0.00220	-0.00219
	(A2 * !B1 * Y)	0.00176	0.00177	0.00175
	(A2 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * C1 * !D1 * Y)	0.00163	0.00164	0.00162
	(!A2 * B1 * C1 * !D1 * Y)	-0.00220	-0.00221	-0.00220
	(!A2 * B1 * !C1 * D1 * Y)	0.00164	0.00165	0.00164
	(!A2 * B1 * !C1 * D1 * Y)	-0.00221	-0.00221	-0.00221
	(!A2 * B1 * !C1 * !D1 * Y)	0.00164	0.00165	0.00164
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00221	-0.00222	-0.00221
	(!A2 * !B1 * C1 * D1 * Y)	0.00167	0.00169	0.00167
	(!A2 * !B1 * C1 * D1 * Y)	-0.00220	-0.00222	-0.00221
	(!A2 * !B1 * !D1 * Y)	0.00168	0.00171	0.00169
	(!A2 * !B1 * !D1 * Y)	-0.00220	-0.00222	-0.00221
	(!A2 * !B1 * !C1 * D1 * Y)	0.00168	0.00169	0.00168
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00220	-0.00221	-0.00221

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00498	0.00406	0.00391
	(A2 * B1 * C1 * D1 * !Y)	-0.00288	-0.00385	-0.00393
	(A2 * B1 * C1 * !D1 * Y)	0.00340	0.00343	0.00340
	(A2 * B1 * C1 * !D1 * Y)	-0.00438	-0.00443	-0.00441
	(A2 * B1 * !C1 * Y)	0.00340	0.00343	0.00340
	(A2 * B1 * !C1 * Y)	-0.00438	-0.00443	-0.00441
	(A2 * !B1 * Y)	0.00340	0.00343	0.00340
	(A2 * !B1 * Y)	-0.00439	-0.00443	-0.00441
	(!A2 * B1 * C1 * !D1 * Y)	0.00315	0.00317	0.00316
	(!A2 * B1 * C1 * !D1 * Y)	-0.00445	-0.00447	-0.00445
	(!A2 * B1 * !C1 * D1 * Y)	0.00319	0.00318	0.00318
	(!A2 * B1 * !C1 * D1 * Y)	-0.00447	-0.00446	-0.00446
	(!A2 * B1 * !C1 * !D1 * Y)	0.00318	0.00318	0.00318
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00447	-0.00447	-0.00446
	(!A2 * !B1 * C1 * D1 * Y)	0.00322	0.00325	0.00324
	(!A2 * !B1 * C1 * D1 * Y)	-0.00445	-0.00447	-0.00446
	(!A2 * !B1 * !D1 * Y)	0.00321	0.00324	0.00322
	(!A2 * !B1 * !D1 * Y)	-0.00445	-0.00447	-0.00446
	(!A2 * !B1 * !C1 * D1 * Y)	0.00321	0.00324	0.00322
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00445	-0.00447	-0.00446

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00974	0.00785	0.00754
	(A2 * B1 * C1 * D1 * !Y)	-0.00580	-0.00781	-0.00796
	(A2 * B1 * C1 * !D1 * Y)	0.00666	0.00673	0.00666
	(A2 * B1 * C1 * !D1 * Y)	-0.00876	-0.00887	-0.00882
	(A2 * B1 * !C1 * Y)	0.00666	0.00673	0.00666
	(A2 * B1 * !C1 * Y)	-0.00876	-0.00887	-0.00882
	(A2 * !B1 * Y)	0.00666	0.00673	0.00666
	(A2 * !B1 * Y)	-0.00876	-0.00887	-0.00882
	(!A2 * B1 * C1 * !D1 * Y)	0.00615	0.00617	0.00615
	(!A2 * B1 * C1 * !D1 * Y)	-0.00890	-0.00890	-0.00888
	(!A2 * B1 * !C1 * D1 * Y)	0.00625	0.00631	0.00624
	(!A2 * B1 * !C1 * D1 * Y)	-0.00891	-0.00893	-0.00889
	(!A2 * B1 * !C1 * !D1 * Y)	0.00624	0.00626	0.00623
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00891	-0.00892	-0.00889
	(!A2 * !B1 * C1 * D1 * Y)	0.00633	0.00641	0.00635
	(!A2 * !B1 * C1 * D1 * Y)	-0.00888	-0.00894	-0.00889
	(!A2 * !B1 * !D1 * Y)	0.00629	0.00636	0.00631
	(!A2 * !B1 * !D1 * Y)	-0.00888	-0.00893	-0.00889
	(!A2 * !B1 * !C1 * D1 * Y)	0.00629	0.00636	0.00631
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00888	-0.00893	-0.00889

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)**	-0.00151	-0.00152	-0.00151
	(A2 * B1 * C1 * D1 * !Y)	0.00245	0.00247	0.00244
	(A2 * B1 * C1 * !D1 * Y)	-0.00174	-0.00175	-0.00175
	(A2 * B1 * C1 * !D1 * Y)	0.00219	0.00221	0.00219
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00175	-0.00175
	(A2 * B1 * !C1 * Y)	0.00219	0.00221	0.00219
	(A2 * !B1 * Y)	-0.00174	-0.00175	-0.00175
	(A2 * !B1 * Y)	0.00219	0.00221	0.00219
	(!A2 * B1 * C1 * !D1 * Y)	-0.00147	-0.00164	-0.00162
	(!A2 * B1 * C1 * !D1 * Y)	0.00223	0.00224	0.00222
	(!A2 * B1 * !C1 * D1 * Y)	-0.00151	-0.00165	-0.00164
	(!A2 * B1 * !C1 * D1 * Y)	0.00221	0.00224	0.00222
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00152	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !D1 * Y)	0.00221	0.00224	0.00222
	(!A2 * !B1 * C1 * D1 * Y)	-0.00158	-0.00168	-0.00167
	(!A2 * !B1 * C1 * D1 * Y)	0.00221	0.00223	0.00222
	(!A2 * !B1 * !D1 * Y)	-0.00160	-0.00168	-0.00169
	(!A2 * !B1 * !D1 * Y)	0.00221	0.00223	0.00221
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00161	-0.00169	-0.00168
	(!A2 * !B1 * !C1 * D1 * Y)	0.00221	0.00223	0.00221

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00289	-0.00292	-0.00290
	(A2 * B1 * C1 * D1 * !Y)	0.00491	0.00496	0.00494
	(A2 * B1 * C1 * !D1 * Y)	-0.00337	-0.00339	-0.00338
	(A2 * B1 * C1 * !D1 * Y)	0.00438	0.00443	0.00441
	(A2 * B1 * !C1 * Y)	-0.00337	-0.00339	-0.00338
	(A2 * B1 * !C1 * Y)	0.00438	0.00443	0.00441
	(A2 * !B1 * Y)	-0.00338	-0.00340	-0.00338
	(A2 * !B1 * Y)	0.00439	0.00443	0.00441
	(!A2 * B1 * C1 * !D1 * Y)	-0.00285	-0.00317	-0.00316
	(!A2 * B1 * C1 * !D1 * Y)	0.00453	0.00448	0.00448
	(!A2 * B1 * !C1 * D1 * Y)	-0.00291	-0.00318	-0.00318
	(!A2 * B1 * !C1 * D1 * Y)	0.00449	0.00449	0.00448
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00292	-0.00318	-0.00318
	(!A2 * B1 * !C1 * !D1 * Y)	0.00448	0.00448	0.00447
	(!A2 * !B1 * C1 * D1 * Y)	-0.00303	-0.00325	-0.00324
	(!A2 * !B1 * C1 * D1 * Y)	0.00445	0.00449	0.00448
	(!A2 * !B1 * !D1 * Y)	-0.00307	-0.00324	-0.00322
	(!A2 * !B1 * !D1 * Y)	0.00445	0.00449	0.00447
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00307	-0.00324	-0.00322
	(!A2 * !B1 * !C1 * D1 * Y)	0.00445	0.00449	0.00447

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00626	-0.00628	-0.00626
	(A2 * B1 * C1 * D1 * !Y)	0.00919	0.00924	0.00925
	(A2 * B1 * C1 * !D1 * Y)	-0.00662	-0.00666	-0.00663
	(A2 * B1 * C1 * !D1 * Y)	0.00880	0.00890	0.00882
	(A2 * B1 * !C1 * Y)	-0.00662	-0.00667	-0.00663
	(A2 * B1 * !C1 * Y)	0.00879	0.00890	0.00882
	(A2 * !B1 * Y)	-0.00661	-0.00667	-0.00663
	(A2 * !B1 * Y)	0.00878	0.00890	0.00882
	(!A2 * B1 * C1 * !D1 * Y)	-0.00552	-0.00617	-0.00615
	(!A2 * B1 * C1 * !D1 * Y)	0.00904	0.00905	0.00893
	(!A2 * B1 * !C1 * D1 * Y)	-0.00567	-0.00623	-0.00624
	(!A2 * B1 * !C1 * D1 * Y)	0.00895	0.00893	0.00893
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00568	-0.00623	-0.00623
	(!A2 * B1 * !C1 * !D1 * Y)	0.00891	0.00892	0.00892
	(!A2 * !B1 * C1 * D1 * Y)	-0.00594	-0.00635	-0.00635
	(!A2 * !B1 * C1 * D1 * Y)	0.00895	0.00895	0.00893
	(!A2 * !B1 * !D1 * Y)	-0.00603	-0.00636	-0.00631
	(!A2 * !B1 * !D1 * Y)	0.00894	0.00894	0.00892
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00605	-0.00636	-0.00631
	(!A2 * !B1 * !C1 * D1 * Y)	0.00894	0.00894	0.00892

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)**	0.00208	0.00212	0.00209
	(A1 * B1 * C1 * D1 * !Y)	-0.00076	-0.00078	-0.00076
	(A1 * B1 * C1 * !D1 * Y)	0.00171	0.00172	0.00171
	(A1 * B1 * C1 * !D1 * Y)	-0.00215	-0.00217	-0.00216
	(A1 * B1 * !C1 * D1 * Y)	0.00171	0.00172	0.00171
	(A1 * B1 * !C1 * D1 * Y)	-0.00215	-0.00217	-0.00216
	(A1 * B1 * !C1 * !D1 * Y)	0.00171	0.00173	0.00171
	(A1 * B1 * !C1 * !D1 * Y)	-0.00216	-0.00218	-0.00216
	(A1 * !B1 * C1 * D1 * Y)	0.00171	0.00173	0.00171
	(A1 * !B1 * C1 * D1 * Y)	-0.00215	-0.00217	-0.00216
	(A1 * !B1 * !D1 * Y)	0.00171	0.00173	0.00171
	(A1 * !B1 * !D1 * Y)	-0.00215	-0.00218	-0.00216
	(A1 * !B1 * !C1 * D1 * Y)	0.00171	0.00173	0.00171
	(A1 * !B1 * !C1 * D1 * Y)	-0.00215	-0.00218	-0.00216
	(!A1 * B1 * C1 * !D1 * Y)	0.00158	0.00160	0.00158
	(!A1 * B1 * C1 * !D1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * B1 * !C1 * D1 * Y)	0.00160	0.00162	0.00160
	(!A1 * B1 * !C1 * D1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * B1 * !C1 * !D1 * Y)	0.00159	0.00160	0.00159
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !B1 * C1 * D1 * Y)	0.00162	0.00164	0.00163
	(!A1 * !B1 * C1 * D1 * Y)	-0.00217	-0.00219	-0.00218
	(!A1 * !B1 * !D1 * Y)	0.00162	0.00164	0.00163
	(!A1 * !B1 * !D1 * Y)	-0.00217	-0.00219	-0.00218
	(!A1 * !B1 * !C1 * D1 * Y)	0.00162	0.00164	0.00163
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00217	-0.00219	-0.00218

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00407	0.00413	0.00408
	(A1 * B1 * C1 * D1 * !Y)	-0.00156	-0.00159	-0.00155
	(A1 * B1 * C1 * !D1 * Y)	0.00334	0.00334	0.00333
	(A1 * B1 * C1 * !D1 * Y)	-0.00434	-0.00437	-0.00436
	(A1 * B1 * !C1 * D1 * Y)	0.00334	0.00334	0.00333
	(A1 * B1 * !C1 * D1 * Y)	-0.00434	-0.00437	-0.00436
	(A1 * B1 * !C1 * !D1 * Y)	0.00334	0.00333	0.00332
	(A1 * B1 * !C1 * !D1 * Y)	-0.00434	-0.00437	-0.00435
	(A1 * !B1 * C1 * D1 * Y)	0.00335	0.00334	0.00333
	(A1 * !B1 * C1 * D1 * Y)	-0.00434	-0.00437	-0.00436
	(A1 * !B1 * !D1 * Y)	0.00334	0.00333	0.00332
	(A1 * !B1 * !D1 * Y)	-0.00434	-0.00436	-0.00435
	(A1 * !B1 * !C1 * D1 * Y)	0.00330	0.00333	0.00332
	(A1 * !B1 * !C1 * D1 * Y)	-0.00432	-0.00436	-0.00435
	(!A1 * B1 * C1 * !D1 * Y)	0.00310	0.00314	0.00311
	(!A1 * B1 * C1 * !D1 * Y)	-0.00439	-0.00443	-0.00440
	(!A1 * B1 * !C1 * D1 * Y)	0.00313	0.00317	0.00314
	(!A1 * B1 * !C1 * D1 * Y)	-0.00440	-0.00442	-0.00441
	(!A1 * B1 * !C1 * !D1 * Y)	0.00312	0.00314	0.00313
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00440	-0.00442	-0.00441
	(!A1 * !B1 * C1 * D1 * Y)	0.00319	0.00323	0.00319
	(!A1 * !B1 * C1 * D1 * Y)	-0.00442	-0.00443	-0.00441
	(!A1 * !B1 * !D1 * Y)	0.00315	0.00320	0.00317
	(!A1 * !B1 * !D1 * Y)	-0.00439	-0.00443	-0.00441
	(!A1 * !B1 * !C1 * D1 * Y)	0.00315	0.00320	0.00317
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00439	-0.00443	-0.00441

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00805	0.00813	0.00801
	(A1 * B1 * C1 * D1 * !Y)	-0.00351	-0.00354	-0.00346
	(A1 * B1 * C1 * !D1 * Y)	0.00682	0.00680	0.00677
	(A1 * B1 * C1 * !D1 * Y)	-0.00874	-0.00881	-0.00879
	(A1 * B1 * !C1 * D1 * Y)	0.00682	0.00680	0.00677
	(A1 * B1 * !C1 * D1 * Y)	-0.00875	-0.00881	-0.00879
	(A1 * B1 * !C1 * !D1 * Y)	0.00681	0.00679	0.00676
	(A1 * B1 * !C1 * !D1 * Y)	-0.00875	-0.00882	-0.00880
	(A1 * !B1 * C1 * D1 * Y)	0.00682	0.00680	0.00677
	(A1 * !B1 * C1 * D1 * Y)	-0.00876	-0.00882	-0.00879
	(A1 * !B1 * !D1 * Y)	0.00672	0.00679	0.00676
	(A1 * !B1 * !D1 * Y)	-0.00872	-0.00884	-0.00880
	(A1 * !B1 * !C1 * D1 * Y)	0.00672	0.00679	0.00676
	(A1 * !B1 * !C1 * D1 * Y)	-0.00871	-0.00884	-0.00880
	(!A1 * B1 * C1 * !D1 * Y)	0.00620	0.00624	0.00622
	(!A1 * B1 * C1 * !D1 * Y)	-0.00887	-0.00890	-0.00888
	(!A1 * B1 * !C1 * D1 * Y)	0.00635	0.00640	0.00636
	(!A1 * B1 * !C1 * D1 * Y)	-0.00888	-0.00892	-0.00889
	(!A1 * B1 * !C1 * !D1 * Y)	0.00630	0.00630	0.00628
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00890	-0.00891	-0.00889
	(!A1 * !B1 * C1 * D1 * Y)	0.00641	0.00645	0.00643
	(!A1 * !B1 * C1 * D1 * Y)	-0.00888	-0.00890	-0.00889
	(!A1 * !B1 * !D1 * Y)	0.00636	0.00646	0.00639
	(!A1 * !B1 * !D1 * Y)	-0.00888	-0.00895	-0.00889
	(!A1 * !B1 * !C1 * D1 * Y)	0.00636	0.00645	0.00639
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00888	-0.00894	-0.00889

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)**	-0.00163	-0.00164	-0.00170
	(A1 * B1 * C1 * D1 * !Y)	0.00121	0.00121	0.00116
	(A1 * B1 * C1 * !D1 * Y)	-0.00171	-0.00171	-0.00171
	(A1 * B1 * C1 * !D1 * Y)	0.00216	0.00217	0.00216
	(A1 * B1 * !C1 * D1 * Y)	-0.00171	-0.00171	-0.00171
	(A1 * B1 * !C1 * D1 * Y)	0.00216	0.00217	0.00216
	(A1 * B1 * !C1 * !D1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * !C1 * !D1 * Y)	0.00216	0.00218	0.00216
	(A1 * !B1 * C1 * D1 * Y)	-0.00171	-0.00171	-0.00171
	(A1 * !B1 * C1 * D1 * Y)	0.00216	0.00217	0.00216
	(A1 * !B1 * !D1 * Y)	-0.00170	-0.00172	-0.00171
	(A1 * !B1 * !D1 * Y)	0.00215	0.00218	0.00216
	(A1 * !B1 * !C1 * D1 * Y)	-0.00170	-0.00172	-0.00171
	(A1 * !B1 * !C1 * D1 * Y)	0.00215	0.00218	0.00216
	(!A1 * B1 * C1 * !D1 * Y)	-0.00142	-0.00160	-0.00158
	(!A1 * B1 * C1 * !D1 * Y)	0.00221	0.00222	0.00219
	(!A1 * B1 * !C1 * D1 * Y)	-0.00147	-0.00162	-0.00160
	(!A1 * B1 * !C1 * D1 * Y)	0.00218	0.00221	0.00219
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00148	-0.00160	-0.00159
	(!A1 * B1 * !C1 * !D1 * Y)	0.00218	0.00221	0.00219
	(!A1 * !B1 * C1 * D1 * Y)	-0.00154	-0.00164	-0.00163
	(!A1 * !B1 * C1 * D1 * Y)	0.00219	0.00220	0.00219
	(!A1 * !B1 * !D1 * Y)	-0.00156	-0.00164	-0.00163
	(!A1 * !B1 * !D1 * Y)	0.00218	0.00220	0.00219
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00157	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * D1 * Y)	0.00218	0.00220	0.00219

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00306	-0.00311	-0.00329
	(A1 * B1 * C1 * D1 * !Y)	0.00251	0.00254	0.00236
	(A1 * B1 * C1 * !D1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * B1 * C1 * !D1 * Y)	0.00434	0.00439	0.00436
	(A1 * B1 * !C1 * D1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * B1 * !C1 * D1 * Y)	0.00434	0.00439	0.00436
	(A1 * B1 * !C1 * !D1 * Y)	-0.00331	-0.00333	-0.00332
	(A1 * B1 * !C1 * !D1 * Y)	0.00434	0.00439	0.00435
	(A1 * !B1 * C1 * D1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * !B1 * C1 * D1 * Y)	0.00434	0.00439	0.00436
	(A1 * !B1 * !D1 * Y)	-0.00331	-0.00332	-0.00332
	(A1 * !B1 * !D1 * Y)	0.00434	0.00436	0.00435
	(A1 * !B1 * !C1 * D1 * Y)	-0.00330	-0.00332	-0.00332
	(A1 * !B1 * !C1 * D1 * Y)	0.00434	0.00436	0.00435
	(!A1 * B1 * C1 * !D1 * Y)	-0.00276	-0.00311	-0.00311
	(!A1 * B1 * C1 * !D1 * Y)	0.00445	0.00448	0.00442
	(!A1 * B1 * !C1 * D1 * Y)	-0.00283	-0.00313	-0.00314
	(!A1 * B1 * !C1 * D1 * Y)	0.00441	0.00442	0.00442
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00284	-0.00312	-0.00313
	(!A1 * B1 * !C1 * !D1 * Y)	0.00441	0.00442	0.00442
	(!A1 * !B1 * C1 * D1 * Y)	-0.00298	-0.00317	-0.00319
	(!A1 * !B1 * C1 * D1 * Y)	0.00443	0.00443	0.00442
	(!A1 * !B1 * !D1 * Y)	-0.00301	-0.00318	-0.00317
	(!A1 * !B1 * !D1 * Y)	0.00442	0.00443	0.00442
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00302	-0.00318	-0.00317
	(!A1 * !B1 * !C1 * D1 * Y)	0.00442	0.00443	0.00442

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00673	-0.00678	-0.00716
	(A1 * B1 * C1 * D1 * !Y)	0.00473	0.00473	0.00437
	(A1 * B1 * C1 * !D1 * Y)	-0.00671	-0.00675	-0.00673
	(A1 * B1 * C1 * !D1 * Y)	0.00874	0.00881	0.00879
	(A1 * B1 * !C1 * D1 * Y)	-0.00671	-0.00675	-0.00673
	(A1 * B1 * !C1 * D1 * Y)	0.00875	0.00881	0.00879
	(A1 * B1 * !C1 * !D1 * Y)	-0.00672	-0.00676	-0.00674
	(A1 * B1 * !C1 * !D1 * Y)	0.00875	0.00882	0.00880
	(A1 * !B1 * C1 * D1 * Y)	-0.00672	-0.00676	-0.00673
	(A1 * !B1 * C1 * D1 * Y)	0.00876	0.00882	0.00879
	(A1 * !B1 * !D1 * Y)	-0.00672	-0.00677	-0.00674
	(A1 * !B1 * !D1 * Y)	0.00877	0.00884	0.00880
	(A1 * !B1 * !C1 * D1 * Y)	-0.00672	-0.00677	-0.00674
	(A1 * !B1 * !C1 * D1 * Y)	0.00877	0.00884	0.00880
	(!A1 * B1 * C1 * !D1 * Y)	-0.00564	-0.00624	-0.00622
	(!A1 * B1 * C1 * !D1 * Y)	0.00900	0.00903	0.00893
	(!A1 * B1 * !C1 * D1 * Y)	-0.00576	-0.00635	-0.00636
	(!A1 * B1 * !C1 * D1 * Y)	0.00891	0.00902	0.00892
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00579	-0.00630	-0.00628
	(!A1 * B1 * !C1 * !D1 * Y)	0.00890	0.00901	0.00892
	(!A1 * !B1 * C1 * D1 * Y)	-0.00605	-0.00645	-0.00643
	(!A1 * !B1 * C1 * D1 * Y)	0.00893	0.00894	0.00892
	(!A1 * !B1 * !D1 * Y)	-0.00614	-0.00646	-0.00639
	(!A1 * !B1 * !D1 * Y)	0.00893	0.00898	0.00892
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00615	-0.00645	-0.00639
	(!A1 * !B1 * !C1 * D1 * Y)	0.00893	0.00898	0.00892

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)**	0.00157	0.00159	0.00157
	(A2 * C1 * !D1 * Y)	-0.00220	-0.00221	-0.00220
	(A2 * !C1 * D1 * Y)	0.00159	0.00161	0.00160
	(A2 * !C1 * D1 * Y)	-0.00220	-0.00222	-0.00220
	(A2 * !C1 * !D1 * Y)	0.00158	0.00161	0.00159
	(A2 * !C1 * !D1 * Y)	-0.00220	-0.00222	-0.00221
	(A1 * !A2 * C1 * !D1 * Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * C1 * !D1 * Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A2 * !C1 * D1 * Y)	0.00159	0.00161	0.00160
	(A1 * !A2 * !C1 * D1 * Y)	-0.00220	-0.00222	-0.00220
	(A1 * !A2 * !C1 * !D1 * Y)	0.00159	0.00161	0.00159
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00220	-0.00222	-0.00220
	(!A1 * !A2 * C1 * D1 * Y)	0.00073	0.00072	0.00073
	(!A1 * !A2 * C1 * D1 * Y)	-0.00216	-0.00216	-0.00215
	(!A1 * !A2 * C1 * !D1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !A2 * !C1 * D1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00220	-0.00222	-0.00220
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00220	-0.00222	-0.00220

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00331	0.00333	0.00331
	(A2 * C1 * !D1 * Y)	-0.00456	-0.00456	-0.00455
	(A2 * !C1 * D1 * Y)	0.00336	0.00339	0.00336
	(A2 * !C1 * D1 * Y)	-0.00456	-0.00458	-0.00456
	(A2 * !C1 * !D1 * Y)	0.00333	0.00337	0.00334
	(A2 * !C1 * !D1 * Y)	-0.00455	-0.00458	-0.00456
	(A1 * !A2 * C1 * !D1 * Y)	0.00331	0.00334	0.00331
	(A1 * !A2 * C1 * !D1 * Y)	-0.00455	-0.00458	-0.00455
	(A1 * !A2 * !C1 * D1 * Y)	0.00336	0.00339	0.00336
	(A1 * !A2 * !C1 * D1 * Y)	-0.00456	-0.00458	-0.00456
	(A1 * !A2 * !C1 * !D1 * Y)	0.00334	0.00336	0.00334
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00457	-0.00457	-0.00456
	(!A1 * !A2 * C1 * D1 * Y)	0.00153	0.00155	0.00156
	(!A1 * !A2 * C1 * D1 * Y)	-0.00445	-0.00447	-0.00442
	(!A1 * !A2 * C1 * !D1 * Y)	0.00191	0.00192	0.00191
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00456	-0.00458	-0.00456
	(!A1 * !A2 * !C1 * D1 * Y)	0.00195	0.00195	0.00195
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00456	-0.00457	-0.00456
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00197	0.00197	0.00197
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00456	-0.00457	-0.00456

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00633	0.00638	0.00636
	(A2 * C1 * !D1 * Y)	-0.00472	-0.00474	-0.00472
	(A2 * !C1 * D1 * Y)	0.00647	0.00652	0.00650
	(A2 * !C1 * D1 * Y)	-0.00473	-0.00475	-0.00474
	(A2 * !C1 * !D1 * Y)	0.00643	0.00649	0.00646
	(A2 * !C1 * !D1 * Y)	-0.00473	-0.00476	-0.00474
	(A1 * !A2 * C1 * !D1 * Y)	0.00632	0.00638	0.00635
	(A1 * !A2 * C1 * !D1 * Y)	-0.00472	-0.00475	-0.00472
	(A1 * !A2 * !C1 * D1 * Y)	0.00647	0.00651	0.00650
	(A1 * !A2 * !C1 * D1 * Y)	-0.00473	-0.00475	-0.00474
	(A1 * !A2 * !C1 * !D1 * Y)	0.00643	0.00648	0.00646
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00473	-0.00475	-0.00474
	(!A1 * !A2 * C1 * D1 * Y)	0.00282	0.00281	0.00285
	(!A1 * !A2 * C1 * D1 * Y)	-0.00455	-0.00454	-0.00450
	(!A1 * !A2 * C1 * !D1 * Y)	0.00349	0.00352	0.00350
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00475	-0.00478	-0.00476
	(!A1 * !A2 * !C1 * D1 * Y)	0.00358	0.00359	0.00359
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00474	-0.00474	-0.00475
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00362	0.00365	0.00363
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00474	-0.00477	-0.00475

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)**	-0.00136	-0.00155	-0.00157
	(A2 * C1 * !D1 * Y)	0.00230	0.00222	0.00221
	(A2 * !C1 * D1 * Y)	-0.00147	-0.00159	-0.00160
	(A2 * !C1 * D1 * Y)	0.00228	0.00222	0.00221
	(A2 * !C1 * !D1 * Y)	-0.00154	-0.00159	-0.00159
	(A2 * !C1 * !D1 * Y)	0.00221	0.00222	0.00221
	(A1 * !A2 * C1 * !D1 * Y)	-0.00132	-0.00157	-0.00156
	(A1 * !A2 * C1 * !D1 * Y)	0.00232	0.00223	0.00221
	(A1 * !A2 * !C1 * D1 * Y)	-0.00145	-0.00160	-0.00160
	(A1 * !A2 * !C1 * D1 * Y)	0.00230	0.00222	0.00221
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00153	-0.00160	-0.00159
	(A1 * !A2 * !C1 * !D1 * Y)	0.00221	0.00222	0.00221
	(!A1 * !A2 * C1 * D1 * Y)	-0.00065	-0.00066	-0.00067
	(!A1 * !A2 * C1 * D1 * Y)	0.00227	0.00230	0.00223
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * C1 * !D1 * Y)	0.00234	0.00238	0.00226
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * !C1 * D1 * Y)	0.00235	0.00234	0.00224
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00227	0.00228	0.00223

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00294	-0.00331	-0.00331
	(A2 * C1 * !D1 * Y)	0.00473	0.00460	0.00457
	(A2 * !C1 * D1 * Y)	-0.00313	-0.00337	-0.00336
	(A2 * !C1 * D1 * Y)	0.00463	0.00459	0.00458
	(A2 * !C1 * !D1 * Y)	-0.00324	-0.00337	-0.00334
	(A2 * !C1 * !D1 * Y)	0.00455	0.00458	0.00457
	(A1 * !A2 * C1 * !D1 * Y)	-0.00285	-0.00333	-0.00331
	(A1 * !A2 * C1 * !D1 * Y)	0.00479	0.00461	0.00457
	(A1 * !A2 * !C1 * D1 * Y)	-0.00308	-0.00338	-0.00336
	(A1 * !A2 * !C1 * D1 * Y)	0.00470	0.00460	0.00458
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00323	-0.00336	-0.00334
	(A1 * !A2 * !C1 * !D1 * Y)	0.00458	0.00460	0.00457
	(!A1 * !A2 * C1 * D1 * Y)	-0.00139	-0.00142	-0.00143
	(!A1 * !A2 * C1 * D1 * Y)	0.00469	0.00478	0.00463
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * C1 * !D1 * Y)	0.00479	0.00492	0.00467
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00195	-0.00195	-0.00195
	(!A1 * !A2 * !C1 * D1 * Y)	0.00485	0.00487	0.00467
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00464	0.00470	0.00460

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00552	-0.00638	-0.00636
	(A2 * C1 * !D1 * Y)	0.00517	0.00481	0.00476
	(A2 * !C1 * D1 * Y)	-0.00593	-0.00651	-0.00650
	(A2 * !C1 * D1 * Y)	0.00499	0.00479	0.00477
	(A2 * !C1 * !D1 * Y)	-0.00621	-0.00649	-0.00646
	(A2 * !C1 * !D1 * Y)	0.00474	0.00477	0.00476
	(A1 * !A2 * C1 * !D1 * Y)	-0.00540	-0.00638	-0.00635
	(A1 * !A2 * C1 * !D1 * Y)	0.00526	0.00482	0.00476
	(A1 * !A2 * !C1 * D1 * Y)	-0.00585	-0.00651	-0.00650
	(A1 * !A2 * !C1 * D1 * Y)	0.00505	0.00480	0.00477
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00619	-0.00648	-0.00646
	(A1 * !A2 * !C1 * !D1 * Y)	0.00475	0.00479	0.00476
	(!A1 * !A2 * C1 * D1 * Y)	-0.00254	-0.00260	-0.00262
	(!A1 * !A2 * C1 * D1 * Y)	0.00501	0.00510	0.00487
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00349	-0.00352	-0.00350
	(!A1 * !A2 * C1 * !D1 * Y)	0.00524	0.00545	0.00498
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00358	-0.00359	-0.00359
	(!A1 * !A2 * !C1 * D1 * Y)	0.00532	0.00529	0.00493
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00362	-0.00365	-0.00363
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00496	0.00499	0.00484

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)**	0.00164	0.00166	0.00165
	(A2 * B1 * !D1 * Y)	-0.00227	-0.00228	-0.00227
	(A2 * !B1 * D1 * Y)	0.00073	0.00073	0.00072
	(A2 * !B1 * D1 * Y)	-0.00227	-0.00227	-0.00226
	(A2 * !B1 * !D1 * Y)	0.00089	0.00090	0.00089
	(A2 * !B1 * !D1 * Y)	-0.00227	-0.00229	-0.00227
	(A1 * !A2 * B1 * !D1 * Y)	0.00164	0.00166	0.00165
	(A1 * !A2 * B1 * !D1 * Y)	-0.00227	-0.00228	-0.00227
	(!A2 * !B1 * D1 * Y)	0.00073	0.00073	0.00072
	(!A2 * !B1 * D1 * Y)	-0.00227	-0.00228	-0.00226
	(!A2 * !B1 * !D1 * Y)	0.00089	0.00090	0.00089
	(!A2 * !B1 * !D1 * Y)	-0.00227	-0.00229	-0.00227
	(!A1 * !A2 * B1 * D1 * Y)	0.00071	0.00071	0.00069
	(!A1 * !A2 * B1 * D1 * Y)	-0.00228	-0.00228	-0.00226
	(!A1 * !A2 * B1 * !D1 * Y)	0.00092	0.00093	0.00093
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00227	-0.00228	-0.00227

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00320	0.00323	0.00322
	(A2 * B1 * !D1 * Y)	-0.00444	-0.00446	-0.00443
	(A2 * !B1 * D1 * Y)	0.00146	0.00145	0.00146
	(A2 * !B1 * D1 * Y)	-0.00445	-0.00445	-0.00443
	(A2 * !B1 * !D1 * Y)	0.00189	0.00190	0.00188
	(A2 * !B1 * !D1 * Y)	-0.00447	-0.00448	-0.00446
	(A1 * !A2 * B1 * !D1 * Y)	0.00322	0.00324	0.00322
	(A1 * !A2 * B1 * !D1 * Y)	-0.00445	-0.00447	-0.00443
	(!A2 * !B1 * D1 * Y)	0.00144	0.00146	0.00146
	(!A2 * !B1 * D1 * Y)	-0.00443	-0.00446	-0.00443
	(!A2 * !B1 * !D1 * Y)	0.00187	0.00190	0.00188
	(!A2 * !B1 * !D1 * Y)	-0.00444	-0.00448	-0.00446
	(!A1 * !A2 * B1 * D1 * Y)	0.00135	0.00137	0.00139
	(!A1 * !A2 * B1 * D1 * Y)	-0.00443	-0.00445	-0.00442
	(!A1 * !A2 * B1 * !D1 * Y)	0.00186	0.00187	0.00185
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00445	-0.00447	-0.00445

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00639	0.00650	0.00644
	(A2 * B1 * !D1 * Y)	-0.00464	-0.00469	-0.00465
	(A2 * !B1 * D1 * Y)	0.00271	0.00271	0.00272
	(A2 * !B1 * D1 * Y)	-0.00469	-0.00468	-0.00466
	(A2 * !B1 * !D1 * Y)	0.00346	0.00348	0.00344
	(A2 * !B1 * !D1 * Y)	-0.00473	-0.00475	-0.00473
	(A1 * !A2 * B1 * !D1 * Y)	0.00638	0.00648	0.00644
	(A1 * !A2 * B1 * !D1 * Y)	-0.00464	-0.00468	-0.00465
	(!A2 * !B1 * D1 * Y)	0.00272	0.00270	0.00272
	(!A2 * !B1 * D1 * Y)	-0.00469	-0.00468	-0.00466
	(!A2 * !B1 * !D1 * Y)	0.00346	0.00348	0.00344
	(!A2 * !B1 * !D1 * Y)	-0.00473	-0.00475	-0.00473
	(!A1 * !A2 * B1 * D1 * Y)	0.00260	0.00260	0.00261
	(!A1 * !A2 * B1 * D1 * Y)	-0.00468	-0.00468	-0.00465
	(!A1 * !A2 * B1 * !D1 * Y)	0.00348	0.00351	0.00349
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00469	-0.00471	-0.00469

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)**	-0.00143	-0.00163	-0.00164
	(A2 * B1 * !D1 * Y)	0.00250	0.00231	0.00228
	(A2 * !B1 * D1 * Y)	-0.00069	-0.00070	-0.00070
	(A2 * !B1 * D1 * Y)	0.00234	0.00237	0.00229
	(A2 * !B1 * !D1 * Y)	-0.00089	-0.00090	-0.00089
	(A2 * !B1 * !D1 * Y)	0.00240	0.00242	0.00231
	(A1 * !A2 * B1 * !D1 * Y)	-0.00141	-0.00163	-0.00164
	(A1 * !A2 * B1 * !D1 * Y)	0.00250	0.00232	0.00228
	(!A2 * !B1 * D1 * Y)	-0.00069	-0.00070	-0.00070
	(!A2 * !B1 * D1 * Y)	0.00233	0.00237	0.00229
	(!A2 * !B1 * !D1 * Y)	-0.00089	-0.00090	-0.00089
	(!A2 * !B1 * !D1 * Y)	0.00240	0.00242	0.00231
	(!A1 * !A2 * B1 * D1 * Y)	-0.00065	-0.00066	-0.00066
	(!A1 * !A2 * B1 * D1 * Y)	0.00231	0.00235	0.00229
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00089	-0.00093	-0.00093
	(!A1 * !A2 * B1 * !D1 * Y)	0.00250	0.00245	0.00234

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00266	-0.00320	-0.00322
	(A2 * B1 * !D1 * Y)	0.00498	0.00455	0.00447
	(A2 * !B1 * D1 * Y)	-0.00135	-0.00137	-0.00139
	(A2 * !B1 * D1 * Y)	0.00459	0.00467	0.00450
	(A2 * !B1 * !D1 * Y)	-0.00189	-0.00190	-0.00188
	(A2 * !B1 * !D1 * Y)	0.00475	0.00479	0.00455
	(A1 * !A2 * B1 * !D1 * Y)	-0.00263	-0.00318	-0.00322
	(A1 * !A2 * B1 * !D1 * Y)	0.00501	0.00456	0.00447
	(!A2 * !B1 * D1 * Y)	-0.00135	-0.00137	-0.00139
	(!A2 * !B1 * D1 * Y)	0.00459	0.00467	0.00450
	(!A2 * !B1 * !D1 * Y)	-0.00187	-0.00190	-0.00188
	(!A2 * !B1 * !D1 * Y)	0.00475	0.00479	0.00455
	(!A1 * !A2 * B1 * D1 * Y)	-0.00130	-0.00132	-0.00134
	(!A1 * !A2 * B1 * D1 * Y)	0.00459	0.00467	0.00450
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00172	-0.00187	-0.00185
	(!A1 * !A2 * B1 * !D1 * Y)	0.00495	0.00481	0.00457

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00525	-0.00634	-0.00644
	(A2 * B1 * !D1 * Y)	0.00582	0.00488	0.00470
	(A2 * !B1 * D1 * Y)	-0.00251	-0.00257	-0.00261
	(A2 * !B1 * D1 * Y)	0.00494	0.00504	0.00477
	(A2 * !B1 * !D1 * Y)	-0.00346	-0.00348	-0.00344
	(A2 * !B1 * !D1 * Y)	0.00525	0.00529	0.00487
	(A1 * !A2 * B1 * !D1 * Y)	-0.00521	-0.00630	-0.00644
	(A1 * !A2 * B1 * !D1 * Y)	0.00586	0.00486	0.00470
	(!A2 * !B1 * D1 * Y)	-0.00250	-0.00257	-0.00261
	(!A2 * !B1 * D1 * Y)	0.00493	0.00504	0.00477
	(!A2 * !B1 * !D1 * Y)	-0.00346	-0.00348	-0.00344
	(!A2 * !B1 * !D1 * Y)	0.00525	0.00529	0.00487
	(!A1 * !A2 * B1 * D1 * Y)	-0.00244	-0.00247	-0.00252
	(!A1 * !A2 * B1 * D1 * Y)	0.00496	0.00500	0.00477
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00326	-0.00351	-0.00349
	(!A1 * !A2 * B1 * !D1 * Y)	0.00574	0.00538	0.00495

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00054	0.00053	0.00052
	(A2 * !C1 * Y)	-0.00259	-0.00260	-0.00263
	(A2 * !B1 * C1 * Y)	0.00056	0.00055	0.00051
	(A2 * !B1 * C1 * Y)	-0.00253	-0.00254	-0.00262
	(!A2 * !C1 * Y)	0.00054	0.00053	0.00052
	(!A2 * !C1 * Y)	-0.00259	-0.00260	-0.00263
	(!A2 * !B1 * C1 * Y)	0.00055	0.00055	0.00051
	(!A2 * !B1 * C1 * Y)	-0.00251	-0.00254	-0.00262
	(!A1 * !A2 * B1 * C1 * Y)	0.00061	0.00062	0.00053
	(!A1 * !A2 * B1 * C1 * Y)	-0.00238	-0.00241	-0.00260

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00124	0.00124	0.00117
	(A2 * !C1 * Y)	-0.00495	-0.00498	-0.00508
	(A2 * !B1 * C1 * Y)	0.00125	0.00126	0.00113
	(A2 * !B1 * C1 * Y)	-0.00480	-0.00484	-0.00506
	(!A2 * !C1 * Y)	0.00124	0.00124	0.00117
	(!A2 * !C1 * Y)	-0.00495	-0.00498	-0.00508
	(!A2 * !B1 * C1 * Y)	0.00125	0.00126	0.00113
	(!A2 * !B1 * C1 * Y)	-0.00480	-0.00484	-0.00506
	(!A1 * !A2 * B1 * C1 * Y)	0.00134	0.00134	0.00114
	(!A1 * !A2 * B1 * C1 * Y)	-0.00456	-0.00460	-0.00501
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00218	0.00219	0.00208
	(A2 * !C1 * Y)	-0.00581	-0.00586	-0.00605
	(A2 * !B1 * C1 * Y)	0.00221	0.00223	0.00202
	(A2 * !B1 * C1 * Y)	-0.00551	-0.00558	-0.00600
	(!A2 * !C1 * Y)	0.00219	0.00219	0.00208
	(!A2 * !C1 * Y)	-0.00581	-0.00585	-0.00605
	(!A2 * !B1 * C1 * Y)	0.00221	0.00222	0.00202
	(!A2 * !B1 * C1 * Y)	-0.00552	-0.00557	-0.00600
	(!A1 * !A2 * B1 * C1 * Y)	0.00239	0.00241	0.00204
	(!A1 * !A2 * B1 * C1 * Y)	-0.00505	-0.00511	-0.00590

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00050	-0.00051	-0.00050
	(A2 * !C1 * Y)	0.00263	0.00268	0.00264
	(A2 * !B1 * C1 * Y)	-0.00050	-0.00050	-0.00049
	(A2 * !B1 * C1 * Y)	0.00263	0.00267	0.00264
	(!A2 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !C1 * Y)	0.00263	0.00268	0.00264
	(!A2 * !B1 * C1 * Y)	-0.00050	-0.00050	-0.00049
	(!A2 * !B1 * C1 * Y)	0.00263	0.00267	0.00264
	(!A1 * !A2 * B1 * C1 * Y)	-0.00050	-0.00050	-0.00049
	(!A1 * !A2 * B1 * C1 * Y)	0.00263	0.00263	0.00264
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00113	-0.00116	-0.00114
	(A2 * !C1 * Y)	0.00508	0.00519	0.00510
	(A2 * !B1 * C1 * Y)	-0.00110	-0.00113	-0.00110
	(A2 * !B1 * C1 * Y)	0.00507	0.00518	0.00509
	(!A2 * !C1 * Y)	-0.00114	-0.00114	-0.00114
	(!A2 * !C1 * Y)	0.00508	0.00509	0.00510
	(!A2 * !B1 * C1 * Y)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * C1 * Y)	0.00507	0.00507	0.00509
	(!A1 * !A2 * B1 * C1 * Y)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * B1 * C1 * Y)	0.00507	0.00511	0.00510
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00203	-0.00203	-0.00202
	(A2 * !C1 * Y)	0.00606	0.00610	0.00608
	(A2 * !B1 * C1 * Y)	-0.00197	-0.00197	-0.00196
	(A2 * !B1 * C1 * Y)	0.00604	0.00608	0.00606
	(!A2 * !C1 * Y)	-0.00203	-0.00206	-0.00202
	(!A2 * !C1 * Y)	0.00607	0.00617	0.00608
	(!A2 * !B1 * C1 * Y)	-0.00197	-0.00200	-0.00196
	(!A2 * !B1 * C1 * Y)	0.00605	0.00615	0.00606
	(!A1 * !A2 * B1 * C1 * Y)	-0.00195	-0.00195	-0.00194
	(!A1 * !A2 * B1 * C1 * Y)	0.00605	0.00606	0.00606

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00271	0.00276	0.00255	0.00276	0.00277	1.22672
sky130_fd_sc_hs__o2111a_2	0.00274	0.00273	0.00269	0.00279	0.00288	2.51941
sky130_fd_sc_hs__o2111a_4	0.00523	0.00561	0.00476	0.00490	0.00494	4.63988

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	12.08230	65.54500
sky130_fd_sc_hs__o2111a_2	0.00000	16.43210	44.63200
sky130_fd_sc_hs__o2111a_4	0.00000	36.83480	131.63200

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)	0.12859	0.59618	6.28203
	A2->X (RR)	0.11195	0.57354	6.20519
	B1->X (RR)	0.12207	0.61659	6.62954
	C1->X (RR)	0.11546	0.62792	6.74575
	D1->X (RR)	0.10530	0.62490	6.71333
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.14228	0.53124	6.34532
	A2->X (RR)	0.12530	0.50924	6.27242
	B1->X (RR)	0.13665	0.55476	6.77278
	C1->X (RR)	0.12958	0.57007	6.90293
	D1->X (RR)	0.11847	0.57232	6.92767
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.16517	0.48178	6.27139
	A2->X (RR)	0.14853	0.46810	6.18874
	B1->X (RR)	0.15918	0.51355	6.75451
	C1->X (RR)	0.15160	0.54455	6.97733
	D1->X (RR)	0.13474	0.54138	7.04044

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.16134	0.58601	5.00217
	A2->X (FF)	0.14947	0.60519	5.14052
	B1->X (FF)	0.09316	0.50993	4.79674
	C1->X (FF)	0.08459	0.48695	4.65734
	D1->X (FF)	0.07064	0.45313	4.51943
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.18696	0.59778	5.26063
	A2->X (FF)	0.17508	0.62058	5.40937
	B1->X (FF)	0.09185	0.48235	4.88921
	C1->X (FF)	0.08515	0.46454	4.75440
	D1->X (FF)	0.07365	0.43541	4.61729
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.22115	0.58939	5.24754
	A2->X (FF)	0.21022	0.63633	5.52524
	B1->X (FF)	0.11890	0.49744	5.02025
	C1->X (FF)	0.11067	0.47457	4.81082
	D1->X (FF)	0.09646	0.44506	4.69753

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01716	0.01858	0.07459
	A1	0.00733	0.00876	0.06518
	A2	0.01510	0.01689	0.07965
	A2	0.00647	0.00826	0.07135
	B1	0.01317	0.01599	0.09047
	B1	0.00630	0.00913	0.08389
	C1	0.01212	0.01507	0.08702
	C1	0.00629	0.00925	0.08137
	D1	0.01102	0.01416	0.07576
	D1	0.00623	0.00939	0.07119
sky130_fd_sc_hs__o2111a_2	A1	0.02067	0.02169	0.07718
	A1	0.01083	0.01187	0.06799
	A2	0.01841	0.01983	0.08188
	A2	0.00985	0.01128	0.07420
	B1	0.01646	0.01884	0.09398
	B1	0.00935	0.01177	0.08720
	C1	0.01534	0.01786	0.08983
	C1	0.00934	0.01191	0.08392
	D1	0.01426	0.01722	0.08421
	D1	0.00926	0.01227	0.07921

sky130_fd_sc_hs__o2111a_4	**A1**	0.04423	0.04475	0.14057
	A1	0.02421	0.02481	0.12226
	A2	0.04020	0.04133	0.13958
	A2	0.02221	0.02350	0.12348
	B1	0.03537	0.03890	0.17784
	B1	0.02130	0.02494	0.16456
	C1	0.03313	0.03665	0.16621
	C1	0.02130	0.02488	0.15436
	D1	0.03061	0.03581	0.16804
	D1	0.02120	0.02647	0.17002

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00647	0.00826	0.06529
	A1	0.01608	0.01787	0.07447
	A2	0.00654	0.00974	0.07446
	A2	0.01498	0.01816	0.08197
	B1	0.00496	0.00958	0.08528
	B1	0.01171	0.01625	0.09193
	C1	0.00438	0.00885	0.08239
	C1	0.01018	0.01462	0.08775
	D1	0.00361	0.00796	0.08027
	D1	0.00838	0.01272	0.08469

sky130_fd_sc_hs__o2111a_2	**A1**	0.01131	0.01195	0.07021
	A1	0.02093	0.02138	0.07703
	A2	0.01145	0.01322	0.07785
	A2	0.01980	0.02155	0.08460
	B1	0.00839	0.01262	0.09052
	B1	0.01671	0.02045	0.09397
	C1	0.00794	0.01208	0.08371
	C1	0.01496	0.01886	0.08944
	D1	0.00675	0.01108	0.08440
	D1	0.01292	0.01689	0.08726
sky130_fd_sc_hs__o2111a_4	**A1**	0.02400	0.02258	0.12856
	A1	0.04357	0.04202	0.14369
	A2	0.02407	0.02460	0.13671
	A2	0.04164	0.04212	0.15079
	B1	0.01865	0.02475	0.16105
	B1	0.03466	0.04051	0.17242
	C1	0.01709	0.02325	0.15024
	C1	0.03101	0.03707	0.16085
	D1	0.01450	0.02118	0.14939
	D1	0.02606	0.03273	0.15686

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)**	0.00272	0.00238	0.00235
	(A2 * B1 * C1 * D1 * X)	-0.00106	-0.00142	-0.00142
	(A2 * B1 * C1 * !D1 * !X)	0.00182	0.00184	0.00182
	(A2 * B1 * C1 * !D1 * !X)	-0.00194	-0.00195	-0.00194
	(A2 * B1 * !C1 * !X)	0.00182	0.00184	0.00182
	(A2 * B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194
	(A2 * !B1 * !X)	0.00183	0.00184	0.00182
	(A2 * !B1 * !X)	-0.00194	-0.00195	-0.00194
	(!A2 * B1 * C1 * !D1 * !X)	0.00170	0.00172	0.00170
	(!A2 * B1 * C1 * !D1 * !X)	-0.00195	-0.00196	-0.00195
	(!A2 * B1 * !C1 * D1 * !X)	0.00172	0.00172	0.00172
	(!A2 * B1 * !C1 * D1 * !X)	-0.00195	-0.00195	-0.00195
	(!A2 * B1 * !C1 * !D1 * !X)	0.00171	0.00171	0.00171
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00195	-0.00196	-0.00195
	(!A2 * !B1 * C1 * D1 * !X)	0.00174	0.00177	0.00175
	(!A2 * !B1 * C1 * D1 * !X)	-0.00195	-0.00196	-0.00195
	(!A2 * !B1 * !D1 * !X)	0.00174	0.00176	0.00175
	(!A2 * !B1 * !D1 * !X)	-0.00195	-0.00196	-0.00195
	(!A2 * !B1 * !C1 * D1 * !X)	0.00174	0.00176	0.00174
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00195	-0.00196	-0.00195

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00261	0.00226	0.00223
	(A2 * B1 * C1 * D1 * X)	-0.00123	-0.00159	-0.00159
	(A2 * B1 * C1 * !D1 * !X)	0.00195	0.00196	0.00195
	(A2 * B1 * C1 * !D1 * !X)	-0.00186	-0.00187	-0.00186
	(A2 * B1 * !C1 * !X)	0.00195	0.00196	0.00195
	(A2 * B1 * !C1 * !X)	-0.00186	-0.00187	-0.00186
	(A2 * !B1 * !X)	0.00195	0.00196	0.00195
	(A2 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(!A2 * B1 * C1 * !D1 * !X)	0.00183	0.00184	0.00183
	(!A2 * B1 * C1 * !D1 * !X)	-0.00187	-0.00188	-0.00187
	(!A2 * B1 * !C1 * D1 * !X)	0.00184	0.00185	0.00184
	(!A2 * B1 * !C1 * D1 * !X)	-0.00187	-0.00187	-0.00187
	(!A2 * B1 * !C1 * !D1 * !X)	0.00184	0.00184	0.00184
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * C1 * D1 * !X)	0.00187	0.00189	0.00187
	(!A2 * !B1 * C1 * D1 * !X)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * !D1 * !X)	0.00186	0.00187	0.00187
	(!A2 * !B1 * !D1 * !X)	-0.00186	-0.00187	-0.00187
	(!A2 * !B1 * !C1 * D1 * !X)	0.00186	0.00187	0.00187
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00551	0.00478	0.00468
	(A2 * B1 * C1 * D1 * X)	-0.00198	-0.00275	-0.00276
	(A2 * B1 * C1 * !D1 * !X)	0.00352	0.00354	0.00352
	(A2 * B1 * C1 * !D1 * !X)	-0.00391	-0.00394	-0.00392
	(A2 * B1 * !C1 * !X)	0.00352	0.00354	0.00352
	(A2 * B1 * !C1 * !X)	-0.00391	-0.00394	-0.00392
	(A2 * !B1 * !X)	0.00352	0.00354	0.00352
	(A2 * !B1 * !X)	-0.00391	-0.00394	-0.00392
	(!A2 * B1 * C1 * !D1 * !X)	0.00330	0.00331	0.00330
	(!A2 * B1 * C1 * !D1 * !X)	-0.00395	-0.00395	-0.00394
	(!A2 * B1 * !C1 * D1 * !X)	0.00332	0.00332	0.00331
	(!A2 * B1 * !C1 * D1 * !X)	-0.00396	-0.00396	-0.00395
	(!A2 * B1 * !C1 * !D1 * !X)	0.00331	0.00332	0.00330
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00396	-0.00396	-0.00395
	(!A2 * !B1 * C1 * D1 * !X)	0.00335	0.00340	0.00337
	(!A2 * !B1 * C1 * D1 * !X)	-0.00394	-0.00397	-0.00395
	(!A2 * !B1 * !D1 * !X)	0.00334	0.00337	0.00336
	(!A2 * !B1 * !D1 * !X)	-0.00394	-0.00396	-0.00395
	(!A2 * !B1 * !C1 * D1 * !X)	0.00334	0.00337	0.00336
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00394	-0.00396	-0.00395

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)**	-0.00119	-0.00119	-0.00120
	(A2 * B1 * C1 * D1 * X)	0.00259	0.00258	0.00257
	(A2 * B1 * C1 * !D1 * !X)	-0.00170	-0.00170	-0.00169
	(A2 * B1 * C1 * !D1 * !X)	0.00207	0.00208	0.00206
	(A2 * B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(A2 * B1 * !C1 * !X)	0.00207	0.00208	0.00206
	(A2 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(A2 * !B1 * !X)	0.00207	0.00208	0.00206
	(!A2 * B1 * C1 * !D1 * !X)	-0.00141	-0.00160	-0.00162
	(!A2 * B1 * C1 * !D1 * !X)	0.00210	0.00211	0.00208
	(!A2 * B1 * !C1 * D1 * !X)	-0.00146	-0.00161	-0.00163
	(!A2 * B1 * !C1 * D1 * !X)	0.00208	0.00210	0.00208
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00147	-0.00161	-0.00163
	(!A2 * B1 * !C1 * !D1 * !X)	0.00208	0.00210	0.00208
	(!A2 * !B1 * C1 * D1 * !X)	-0.00153	-0.00163	-0.00164
	(!A2 * !B1 * C1 * D1 * !X)	0.00209	0.00210	0.00208
	(!A2 * !B1 * !D1 * !X)	-0.00156	-0.00163	-0.00165
	(!A2 * !B1 * !D1 * !X)	0.00209	0.00209	0.00208
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00156	-0.00163	-0.00165
	(!A2 * !B1 * !C1 * D1 * !X)	0.00209	0.00209	0.00208

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00143	-0.00145	-0.00145
	(A2 * B1 * C1 * D1 * X)	0.00238	0.00241	0.00238
	(A2 * B1 * C1 * !D1 * !X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * C1 * !D1 * !X)	0.00210	0.00212	0.00210
	(A2 * B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * !C1 * !X)	0.00210	0.00212	0.00210
	(A2 * !B1 * !X)	-0.00169	-0.00171	-0.00170
	(A2 * !B1 * !X)	0.00209	0.00212	0.00210
	(!A2 * B1 * C1 * !D1 * !X)	-0.00143	-0.00161	-0.00163
	(!A2 * B1 * C1 * !D1 * !X)	0.00214	0.00215	0.00212
	(!A2 * B1 * !C1 * D1 * !X)	-0.00147	-0.00162	-0.00163
	(!A2 * B1 * !C1 * D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00148	-0.00162	-0.00164
	(!A2 * B1 * !C1 * !D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * C1 * D1 * !X)	-0.00154	-0.00164	-0.00165
	(!A2 * !B1 * C1 * D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * !D1 * !X)	-0.00156	-0.00164	-0.00165
	(!A2 * !B1 * !D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00156	-0.00164	-0.00165
	(!A2 * !B1 * !C1 * D1 * !X)	0.00212	0.00214	0.00212

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00235	-0.00238	-0.00238
	(A2 * B1 * C1 * D1 * X)	0.00510	0.00514	0.00508
	(A2 * B1 * C1 * !D1 * !X)	-0.00300	-0.00303	-0.00301
	(A2 * B1 * C1 * !D1 * !X)	0.00438	0.00443	0.00440
	(A2 * B1 * !C1 * !X)	-0.00300	-0.00303	-0.00301
	(A2 * B1 * !C1 * !X)	0.00438	0.00442	0.00440
	(A2 * !B1 * !X)	-0.00300	-0.00303	-0.00301
	(A2 * !B1 * !X)	0.00438	0.00442	0.00440
	(!A2 * B1 * C1 * !D1 * !X)	-0.00254	-0.00283	-0.00288
	(!A2 * B1 * C1 * !D1 * !X)	0.00446	0.00451	0.00445
	(!A2 * B1 * !C1 * D1 * !X)	-0.00260	-0.00285	-0.00289
	(!A2 * B1 * !C1 * D1 * !X)	0.00446	0.00450	0.00445
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00261	-0.00285	-0.00289
	(!A2 * B1 * !C1 * !D1 * !X)	0.00446	0.00450	0.00445
	(!A2 * !B1 * C1 * D1 * !X)	-0.00270	-0.00290	-0.00292
	(!A2 * !B1 * C1 * D1 * !X)	0.00444	0.00448	0.00445
	(!A2 * !B1 * !D1 * !X)	-0.00273	-0.00290	-0.00292
	(!A2 * !B1 * !D1 * !X)	0.00443	0.00448	0.00445
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00274	-0.00290	-0.00292
	(!A2 * !B1 * !C1 * D1 * !X)	0.00443	0.00448	0.00445

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)**	0.00231	0.00234	0.00231
	(A1 * B1 * C1 * D1 * X)	-0.00042	-0.00044	-0.00042
	(A1 * B1 * C1 * !D1 * !X)	0.00173	0.00175	0.00174
	(A1 * B1 * C1 * !D1 * !X)	-0.00190	-0.00191	-0.00191
	(A1 * B1 * !C1 * D1 * !X)	0.00173	0.00175	0.00174
	(A1 * B1 * !C1 * D1 * !X)	-0.00190	-0.00191	-0.00191
	(A1 * B1 * !C1 * !D1 * !X)	0.00173	0.00176	0.00174
	(A1 * B1 * !C1 * !D1 * !X)	-0.00190	-0.00192	-0.00191
	(A1 * !B1 * C1 * D1 * !X)	0.00173	0.00175	0.00174
	(A1 * !B1 * C1 * D1 * !X)	-0.00190	-0.00191	-0.00191
	(A1 * !B1 * !D1 * !X)	0.00173	0.00175	0.00174
	(A1 * !B1 * !D1 * !X)	-0.00190	-0.00192	-0.00191
	(A1 * !B1 * !C1 * D1 * !X)	0.00173	0.00176	0.00174
	(A1 * !B1 * !C1 * D1 * !X)	-0.00190	-0.00192	-0.00191
	(!A1 * B1 * C1 * !D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * B1 * C1 * !D1 * !X)	-0.00191	-0.00193	-0.00192
	(!A1 * B1 * !C1 * D1 * !X)	0.00163	0.00164	0.00163
	(!A1 * B1 * !C1 * D1 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * B1 * !C1 * !D1 * !X)	0.00163	0.00164	0.00163
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * !B1 * C1 * D1 * !X)	0.00168	0.00168	0.00167
	(!A1 * !B1 * C1 * D1 * !X)	-0.00193	-0.00192	-0.00192
	(!A1 * !B1 * !D1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !D1 * !X)	-0.00193	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * D1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00193	-0.00193	-0.00192

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00212	0.00216	0.00213
	(A1 * B1 * C1 * D1 * X)	-0.00057	-0.00059	-0.00057
	(A1 * B1 * C1 * !D1 * !X)	0.00181	0.00181	0.00181
	(A1 * B1 * C1 * !D1 * !X)	-0.00180	-0.00181	-0.00181
	(A1 * B1 * !C1 * D1 * !X)	0.00181	0.00181	0.00181
	(A1 * B1 * !C1 * D1 * !X)	-0.00180	-0.00181	-0.00181
	(A1 * B1 * !C1 * !D1 * !X)	0.00180	0.00182	0.00181
	(A1 * B1 * !C1 * !D1 * !X)	-0.00180	-0.00182	-0.00181
	(A1 * !B1 * C1 * D1 * !X)	0.00181	0.00180	0.00181
	(A1 * !B1 * C1 * D1 * !X)	-0.00180	-0.00180	-0.00181
	(A1 * !B1 * !D1 * !X)	0.00180	0.00182	0.00181
	(A1 * !B1 * !D1 * !X)	-0.00180	-0.00182	-0.00181
	(A1 * !B1 * !C1 * D1 * !X)	0.00180	0.00182	0.00181
	(A1 * !B1 * !C1 * D1 * !X)	-0.00180	-0.00182	-0.00181
	(!A1 * B1 * C1 * !D1 * !X)	0.00168	0.00170	0.00169
	(!A1 * B1 * C1 * !D1 * !X)	-0.00181	-0.00182	-0.00182
	(!A1 * B1 * !C1 * D1 * !X)	0.00170	0.00171	0.00170
	(!A1 * B1 * !C1 * D1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * B1 * !C1 * !D1 * !X)	0.00169	0.00170	0.00169
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * !B1 * C1 * D1 * !X)	0.00173	0.00176	0.00174
	(!A1 * !B1 * C1 * D1 * !X)	-0.00181	-0.00183	-0.00182
	(!A1 * !B1 * !D1 * !X)	0.00173	0.00175	0.00174
	(!A1 * !B1 * !D1 * !X)	-0.00181	-0.00182	-0.00182
	(!A1 * !B1 * !C1 * D1 * !X)	0.00174	0.00174	0.00173
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00183	-0.00183	-0.00182

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00497	0.00504	0.00499
	(A1 * B1 * C1 * D1 * X)	-0.00082	-0.00085	-0.00081
	(A1 * B1 * C1 * !D1 * !X)	0.00366	0.00370	0.00368
	(A1 * B1 * C1 * !D1 * !X)	-0.00392	-0.00396	-0.00396
	(A1 * B1 * !C1 * D1 * !X)	0.00366	0.00370	0.00368
	(A1 * B1 * !C1 * D1 * !X)	-0.00392	-0.00396	-0.00396
	(A1 * B1 * !C1 * !D1 * !X)	0.00366	0.00368	0.00367
	(A1 * B1 * !C1 * !D1 * !X)	-0.00392	-0.00395	-0.00396
	(A1 * !B1 * C1 * D1 * !X)	0.00366	0.00369	0.00368
	(A1 * !B1 * C1 * D1 * !X)	-0.00392	-0.00395	-0.00396
	(A1 * !B1 * !D1 * !X)	0.00366	0.00365	0.00367
	(A1 * !B1 * !D1 * !X)	-0.00392	-0.00393	-0.00396
	(A1 * !B1 * !C1 * D1 * !X)	0.00366	0.00366	0.00367
	(A1 * !B1 * !C1 * D1 * !X)	-0.00392	-0.00394	-0.00396
	(!A1 * B1 * C1 * !D1 * !X)	0.00341	0.00343	0.00342
	(!A1 * B1 * C1 * !D1 * !X)	-0.00396	-0.00398	-0.00397
	(!A1 * B1 * !C1 * D1 * !X)	0.00347	0.00350	0.00346
	(!A1 * B1 * !C1 * D1 * !X)	-0.00398	-0.00400	-0.00398
	(!A1 * B1 * !C1 * !D1 * !X)	0.00345	0.00348	0.00344
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00399	-0.00400	-0.00398
	(!A1 * !B1 * C1 * D1 * !X)	0.00351	0.00355	0.00352
	(!A1 * !B1 * C1 * D1 * !X)	-0.00397	-0.00400	-0.00398
	(!A1 * !B1 * !D1 * !X)	0.00350	0.00354	0.00351
	(!A1 * !B1 * !D1 * !X)	-0.00397	-0.00400	-0.00398
	(!A1 * !B1 * !C1 * D1 * !X)	0.00350	0.00354	0.00351
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00397	-0.00400	-0.00398

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)**	-0.00126	-0.00127	-0.00133
	(A1 * B1 * C1 * D1 * X)	0.00147	0.00147	0.00141
	(A1 * B1 * C1 * !D1 * !X)	-0.00160	-0.00161	-0.00161
	(A1 * B1 * C1 * !D1 * !X)	0.00202	0.00203	0.00203
	(A1 * B1 * !C1 * D1 * !X)	-0.00160	-0.00162	-0.00161
	(A1 * B1 * !C1 * D1 * !X)	0.00202	0.00204	0.00203
	(A1 * B1 * !C1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * !C1 * !D1 * !X)	0.00202	0.00203	0.00203
	(A1 * !B1 * C1 * D1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * C1 * D1 * !X)	0.00202	0.00203	0.00203
	(A1 * !B1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * !D1 * !X)	0.00202	0.00204	0.00203
	(A1 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * !C1 * D1 * !X)	0.00202	0.00204	0.00203
	(!A1 * B1 * C1 * !D1 * !X)	-0.00133	-0.00151	-0.00153
	(!A1 * B1 * C1 * !D1 * !X)	0.00207	0.00207	0.00205
	(!A1 * B1 * !C1 * D1 * !X)	-0.00138	-0.00152	-0.00154
	(!A1 * B1 * !C1 * D1 * !X)	0.00205	0.00207	0.00205
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00139	-0.00153	-0.00155
	(!A1 * B1 * !C1 * !D1 * !X)	0.00204	0.00207	0.00205
	(!A1 * !B1 * C1 * D1 * !X)	-0.00145	-0.00155	-0.00156
	(!A1 * !B1 * C1 * D1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !B1 * !D1 * !X)	-0.00148	-0.00155	-0.00156
	(!A1 * !B1 * !D1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00148	-0.00155	-0.00156
	(!A1 * !B1 * !C1 * D1 * !X)	0.00205	0.00206	0.00205

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00144	-0.00145	-0.00151
	(A1 * B1 * C1 * D1 * X)	0.00126	0.00126	0.00120
	(A1 * B1 * C1 * !D1 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * B1 * C1 * !D1 * !X)	0.00204	0.00205	0.00205
	(A1 * B1 * !C1 * D1 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * B1 * !C1 * D1 * !X)	0.00204	0.00205	0.00205
	(A1 * B1 * !C1 * !D1 * !X)	-0.00155	-0.00157	-0.00156
	(A1 * B1 * !C1 * !D1 * !X)	0.00204	0.00206	0.00205
	(A1 * !B1 * C1 * D1 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * !B1 * C1 * D1 * !X)	0.00204	0.00206	0.00205
	(A1 * !B1 * !D1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * !B1 * !D1 * !X)	0.00204	0.00206	0.00205
	(A1 * !B1 * !C1 * D1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * !B1 * !C1 * D1 * !X)	0.00204	0.00206	0.00205
	(!A1 * B1 * C1 * !D1 * !X)	-0.00129	-0.00147	-0.00149
	(!A1 * B1 * C1 * !D1 * !X)	0.00209	0.00209	0.00207
	(!A1 * B1 * !C1 * D1 * !X)	-0.00133	-0.00148	-0.00149
	(!A1 * B1 * !C1 * D1 * !X)	0.00206	0.00209	0.00207
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00134	-0.00148	-0.00150
	(!A1 * B1 * !C1 * !D1 * !X)	0.00206	0.00209	0.00207
	(!A1 * !B1 * C1 * D1 * !X)	-0.00140	-0.00150	-0.00151
	(!A1 * !B1 * C1 * D1 * !X)	0.00207	0.00208	0.00207
	(!A1 * !B1 * !D1 * !X)	-0.00142	-0.00150	-0.00151
	(!A1 * !B1 * !D1 * !X)	0.00207	0.00208	0.00207
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00142	-0.00150	-0.00151
	(!A1 * !B1 * !C1 * D1 * !X)	0.00207	0.00208	0.00207

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00284	-0.00286	-0.00300
	(A1 * B1 * C1 * D1 * X)	0.00295	0.00296	0.00282
	(A1 * B1 * C1 * !D1 * !X)	-0.00317	-0.00319	-0.00317
	(A1 * B1 * C1 * !D1 * !X)	0.00442	0.00444	0.00442
	(A1 * B1 * !C1 * D1 * !X)	-0.00317	-0.00320	-0.00317
	(A1 * B1 * !C1 * D1 * !X)	0.00442	0.00445	0.00442
	(A1 * B1 * !C1 * !D1 * !X)	-0.00318	-0.00318	-0.00318
	(A1 * B1 * !C1 * !D1 * !X)	0.00442	0.00442	0.00442
	(A1 * !B1 * C1 * D1 * !X)	-0.00316	-0.00320	-0.00317
	(A1 * !B1 * C1 * D1 * !X)	0.00441	0.00445	0.00442
	(A1 * !B1 * !D1 * !X)	-0.00317	-0.00318	-0.00318
	(A1 * !B1 * !D1 * !X)	0.00440	0.00442	0.00442
	(A1 * !B1 * !C1 * D1 * !X)	-0.00317	-0.00318	-0.00318
	(A1 * !B1 * !C1 * D1 * !X)	0.00440	0.00442	0.00442
	(!A1 * B1 * C1 * !D1 * !X)	-0.00259	-0.00296	-0.00301
	(!A1 * B1 * C1 * !D1 * !X)	0.00454	0.00452	0.00448
	(!A1 * B1 * !C1 * D1 * !X)	-0.00266	-0.00298	-0.00303
	(!A1 * B1 * !C1 * D1 * !X)	0.00448	0.00452	0.00448
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00267	-0.00298	-0.00303
	(!A1 * B1 * !C1 * !D1 * !X)	0.00447	0.00452	0.00447
	(!A1 * !B1 * C1 * D1 * !X)	-0.00282	-0.00304	-0.00306
	(!A1 * !B1 * C1 * D1 * !X)	0.00449	0.00450	0.00448
	(!A1 * !B1 * !D1 * !X)	-0.00285	-0.00304	-0.00306
	(!A1 * !B1 * !D1 * !X)	0.00445	0.00450	0.00447
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00285	-0.00304	-0.00306
	(!A1 * !B1 * !C1 * D1 * !X)	0.00445	0.00450	0.00447

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)**	0.00159	0.00160	0.00159
	(A2 * C1 * !D1 * !X)	-0.00167	-0.00167	-0.00167
	(A2 * !C1 * D1 * !X)	0.00162	0.00165	0.00163
	(A2 * !C1 * D1 * !X)	-0.00167	-0.00168	-0.00167
	(A2 * !C1 * !D1 * !X)	0.00160	0.00163	0.00161
	(A2 * !C1 * !D1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * C1 * !D1 * !X)	0.00159	0.00160	0.00159
	(A1 * !A2 * C1 * !D1 * !X)	-0.00167	-0.00167	-0.00167
	(A1 * !A2 * !C1 * D1 * !X)	0.00162	0.00164	0.00163
	(A1 * !A2 * !C1 * D1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !C1 * !D1 * !X)	0.00161	0.00163	0.00161
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * C1 * D1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A2 * C1 * D1 * !X)	-0.00162	-0.00164	-0.00162
	(!A1 * !A2 * C1 * !D1 * !X)	0.00091	0.00093	0.00092
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00166	-0.00168	-0.00167
	(!A1 * !A2 * !C1 * D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00168	0.00169	0.00168
	(A2 * C1 * !D1 * !X)	-0.00186	-0.00187	-0.00186
	(A2 * !C1 * D1 * !X)	0.00172	0.00174	0.00172
	(A2 * !C1 * D1 * !X)	-0.00186	-0.00187	-0.00186
	(A2 * !C1 * !D1 * !X)	0.00170	0.00172	0.00171
	(A2 * !C1 * !D1 * !X)	-0.00186	-0.00187	-0.00187
	(A1 * !A2 * C1 * !D1 * !X)	0.00168	0.00169	0.00169
	(A1 * !A2 * C1 * !D1 * !X)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * !C1 * D1 * !X)	0.00171	0.00174	0.00172
	(A1 * !A2 * !C1 * D1 * !X)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * !C1 * !D1 * !X)	0.00171	0.00173	0.00171
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00186	-0.00188	-0.00187
	(!A1 * !A2 * C1 * D1 * !X)	0.00087	0.00088	0.00086
	(!A1 * !A2 * C1 * D1 * !X)	-0.00182	-0.00183	-0.00181
	(!A1 * !A2 * C1 * !D1 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * !C1 * D1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00186	-0.00188	-0.00187
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00186	-0.00187	-0.00187

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00334	0.00337	0.00335
	(A2 * C1 * !D1 * !X)	-0.00317	-0.00318	-0.00317
	(A2 * !C1 * D1 * !X)	0.00339	0.00342	0.00339
	(A2 * !C1 * D1 * !X)	-0.00318	-0.00319	-0.00318
	(A2 * !C1 * !D1 * !X)	0.00337	0.00341	0.00337
	(A2 * !C1 * !D1 * !X)	-0.00318	-0.00320	-0.00318
	(A1 * !A2 * C1 * !D1 * !X)	0.00334	0.00336	0.00335
	(A1 * !A2 * C1 * !D1 * !X)	-0.00317	-0.00318	-0.00317
	(A1 * !A2 * !C1 * D1 * !X)	0.00338	0.00341	0.00339
	(A1 * !A2 * !C1 * D1 * !X)	-0.00318	-0.00319	-0.00318
	(A1 * !A2 * !C1 * !D1 * !X)	0.00335	0.00338	0.00337
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00317	-0.00318	-0.00318
	(!A1 * !A2 * C1 * D1 * !X)	0.00162	0.00164	0.00163
	(!A1 * !A2 * C1 * D1 * !X)	-0.00307	-0.00310	-0.00305
	(!A1 * !A2 * C1 * !D1 * !X)	0.00200	0.00201	0.00200
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00319	-0.00320	-0.00319
	(!A1 * !A2 * !C1 * D1 * !X)	0.00199	0.00200	0.00199
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00319	-0.00320	-0.00319
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00201	0.00202	0.00201
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00319	-0.00321	-0.00319

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)**	-0.00127	-0.00146	-0.00149
	(A2 * C1 * !D1 * !X)	0.00189	0.00181	0.00180
	(A2 * !C1 * D1 * !X)	-0.00137	-0.00149	-0.00151
	(A2 * !C1 * D1 * !X)	0.00187	0.00181	0.00180
	(A2 * !C1 * !D1 * !X)	-0.00144	-0.00150	-0.00151
	(A2 * !C1 * !D1 * !X)	0.00179	0.00180	0.00180
	(A1 * !A2 * C1 * !D1 * !X)	-0.00123	-0.00148	-0.00149
	(A1 * !A2 * C1 * !D1 * !X)	0.00192	0.00181	0.00180
	(A1 * !A2 * !C1 * D1 * !X)	-0.00134	-0.00150	-0.00151
	(A1 * !A2 * !C1 * D1 * !X)	0.00188	0.00181	0.00180
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00143	-0.00151	-0.00151
	(A1 * !A2 * !C1 * !D1 * !X)	0.00179	0.00180	0.00180
	(!A1 * !A2 * C1 * D1 * !X)	-0.00056	-0.00057	-0.00058
	(!A1 * !A2 * C1 * D1 * !X)	0.00186	0.00188	0.00182
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00084	-0.00083	-0.00084
	(!A1 * !A2 * C1 * !D1 * !X)	0.00193	0.00196	0.00185
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00086	-0.00089	-0.00089
	(!A1 * !A2 * !C1 * D1 * !X)	0.00195	0.00192	0.00183
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00094	-0.00096	-0.00092
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00187	0.00187	0.00182

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00126	-0.00144	-0.00147
	(A2 * C1 * !D1 * !X)	0.00219	0.00212	0.00211
	(A2 * !C1 * D1 * !X)	-0.00137	-0.00147	-0.00148
	(A2 * !C1 * D1 * !X)	0.00217	0.00212	0.00212
	(A2 * !C1 * !D1 * !X)	-0.00143	-0.00148	-0.00148
	(A2 * !C1 * !D1 * !X)	0.00212	0.00212	0.00211
	(A1 * !A2 * C1 * !D1 * !X)	-0.00121	-0.00145	-0.00147
	(A1 * !A2 * C1 * !D1 * !X)	0.00222	0.00213	0.00211
	(A1 * !A2 * !C1 * D1 * !X)	-0.00134	-0.00148	-0.00148
	(A1 * !A2 * !C1 * D1 * !X)	0.00219	0.00212	0.00212
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00142	-0.00148	-0.00148
	(A1 * !A2 * !C1 * !D1 * !X)	0.00212	0.00212	0.00211
	(!A1 * !A2 * C1 * D1 * !X)	-0.00054	-0.00055	-0.00056
	(!A1 * !A2 * C1 * D1 * !X)	0.00217	0.00219	0.00213
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00086	-0.00084	-0.00085
	(!A1 * !A2 * C1 * !D1 * !X)	0.00224	0.00227	0.00216
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00084	-0.00088	-0.00088
	(!A1 * !A2 * !C1 * D1 * !X)	0.00225	0.00224	0.00215
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00094	-0.00096	-0.00091
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00216	0.00217	0.00213

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00249	-0.00286	-0.00289
	(A2 * C1 * !D1 * !X)	0.00383	0.00370	0.00368
	(A2 * !C1 * D1 * !X)	-0.00268	-0.00292	-0.00292
	(A2 * !C1 * D1 * !X)	0.00374	0.00369	0.00368
	(A2 * !C1 * !D1 * !X)	-0.00278	-0.00292	-0.00292
	(A2 * !C1 * !D1 * !X)	0.00366	0.00368	0.00367
	(A1 * !A2 * C1 * !D1 * !X)	-0.00240	-0.00288	-0.00289
	(A1 * !A2 * C1 * !D1 * !X)	0.00388	0.00370	0.00368
	(A1 * !A2 * !C1 * D1 * !X)	-0.00264	-0.00292	-0.00292
	(A1 * !A2 * !C1 * D1 * !X)	0.00380	0.00369	0.00368
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00278	-0.00293	-0.00292
	(A1 * !A2 * !C1 * !D1 * !X)	0.00368	0.00369	0.00367
	(!A1 * !A2 * C1 * D1 * !X)	-0.00099	-0.00100	-0.00100
	(!A1 * !A2 * C1 * D1 * !X)	0.00383	0.00386	0.00374
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00165	-0.00159	-0.00161
	(!A1 * !A2 * C1 * !D1 * !X)	0.00390	0.00401	0.00378
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00153	-0.00160	-0.00160
	(!A1 * !A2 * !C1 * D1 * !X)	0.00396	0.00396	0.00378
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00174	-0.00178	-0.00168
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00375	0.00378	0.00371

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)**	0.00163	0.00165	0.00163
	(A2 * B1 * !D1 * !X)	-0.00176	-0.00178	-0.00176
	(A2 * !B1 * D1 * !X)	0.00070	0.00070	0.00070
	(A2 * !B1 * D1 * !X)	-0.00177	-0.00177	-0.00176
	(A2 * !B1 * !D1 * !X)	0.00085	0.00086	0.00085
	(A2 * !B1 * !D1 * !X)	-0.00177	-0.00178	-0.00177
	(A1 * !A2 * B1 * !D1 * !X)	0.00162	0.00164	0.00163
	(A1 * !A2 * B1 * !D1 * !X)	-0.00176	-0.00177	-0.00176
	(!A2 * !B1 * D1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !B1 * D1 * !X)	-0.00177	-0.00177	-0.00176
	(!A2 * !B1 * !D1 * !X)	0.00085	0.00086	0.00085
	(!A2 * !B1 * !D1 * !X)	-0.00177	-0.00178	-0.00177
	(!A1 * !A2 * B1 * D1 * !X)	0.00072	0.00072	0.00071
	(!A1 * !A2 * B1 * D1 * !X)	-0.00177	-0.00177	-0.00176
	(!A1 * !A2 * B1 * !D1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00177	-0.00178	-0.00176

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00170	0.00171	0.00170
	(A2 * B1 * !D1 * !X)	-0.00193	-0.00193	-0.00192
	(A2 * !B1 * D1 * !X)	0.00080	0.00080	0.00080
	(A2 * !B1 * D1 * !X)	-0.00192	-0.00193	-0.00192
	(A2 * !B1 * !D1 * !X)	0.00099	0.00100	0.00099
	(A2 * !B1 * !D1 * !X)	-0.00193	-0.00194	-0.00193
	(A1 * !A2 * B1 * !D1 * !X)	0.00170	0.00170	0.00170
	(A1 * !A2 * B1 * !D1 * !X)	-0.00193	-0.00193	-0.00192
	(!A2 * !B1 * D1 * !X)	0.00080	0.00080	0.00080
	(!A2 * !B1 * D1 * !X)	-0.00192	-0.00193	-0.00192
	(!A2 * !B1 * !D1 * !X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * !D1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A2 * B1 * D1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * B1 * D1 * !X)	-0.00193	-0.00193	-0.00192
	(!A1 * !A2 * B1 * !D1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00347	0.00350	0.00348
	(A2 * B1 * !D1 * !X)	-0.00325	-0.00327	-0.00324
	(A2 * !B1 * D1 * !X)	0.00163	0.00165	0.00166
	(A2 * !B1 * D1 * !X)	-0.00324	-0.00326	-0.00323
	(A2 * !B1 * !D1 * !X)	0.00207	0.00208	0.00207
	(A2 * !B1 * !D1 * !X)	-0.00327	-0.00329	-0.00327
	(A1 * !A2 * B1 * !D1 * !X)	0.00345	0.00349	0.00347
	(A1 * !A2 * B1 * !D1 * !X)	-0.00324	-0.00326	-0.00324
	(!A2 * !B1 * D1 * !X)	0.00165	0.00165	0.00166
	(!A2 * !B1 * D1 * !X)	-0.00326	-0.00326	-0.00323
	(!A2 * !B1 * !D1 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !D1 * !X)	-0.00327	-0.00329	-0.00327
	(!A1 * !A2 * B1 * D1 * !X)	0.00158	0.00158	0.00162
	(!A1 * !A2 * B1 * D1 * !X)	-0.00326	-0.00326	-0.00323
	(!A1 * !A2 * B1 * !D1 * !X)	0.00209	0.00209	0.00208
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00327	-0.00327	-0.00327

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)**	-0.00130	-0.00150	-0.00151
	(A2 * B1 * !D1 * !X)	0.00210	0.00193	0.00190
	(A2 * !B1 * D1 * !X)	-0.00054	-0.00056	-0.00056
	(A2 * !B1 * D1 * !X)	0.00194	0.00197	0.00190
	(A2 * !B1 * !D1 * !X)	-0.00076	-0.00077	-0.00078
	(A2 * !B1 * !D1 * !X)	0.00200	0.00202	0.00192
	(A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00150	-0.00151
	(A1 * !A2 * B1 * !D1 * !X)	0.00212	0.00193	0.00190
	(!A2 * !B1 * D1 * !X)	-0.00054	-0.00056	-0.00056
	(!A2 * !B1 * D1 * !X)	0.00193	0.00197	0.00190
	(!A2 * !B1 * !D1 * !X)	-0.00076	-0.00077	-0.00078
	(!A2 * !B1 * !D1 * !X)	0.00200	0.00202	0.00192
	(!A1 * !A2 * B1 * D1 * !X)	-0.00055	-0.00054	-0.00055
	(!A1 * !A2 * B1 * D1 * !X)	0.00195	0.00196	0.00190
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00078	-0.00084	-0.00085
	(!A1 * !A2 * B1 * !D1 * !X)	0.00212	0.00206	0.00196

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00124	-0.00145	-0.00145
	(A2 * B1 * !D1 * !X)	0.00239	0.00220	0.00218
	(A2 * !B1 * D1 * !X)	-0.00051	-0.00053	-0.00053
	(A2 * !B1 * D1 * !X)	0.00222	0.00226	0.00219
	(A2 * !B1 * !D1 * !X)	-0.00078	-0.00079	-0.00081
	(A2 * !B1 * !D1 * !X)	0.00229	0.00231	0.00221
	(A1 * !A2 * B1 * !D1 * !X)	-0.00122	-0.00144	-0.00145
	(A1 * !A2 * B1 * !D1 * !X)	0.00240	0.00221	0.00218
	(!A2 * !B1 * D1 * !X)	-0.00051	-0.00053	-0.00053
	(!A2 * !B1 * D1 * !X)	0.00222	0.00226	0.00219
	(!A2 * !B1 * !D1 * !X)	-0.00078	-0.00079	-0.00081
	(!A2 * !B1 * !D1 * !X)	0.00229	0.00231	0.00221
	(!A1 * !A2 * B1 * D1 * !X)	-0.00050	-0.00051	-0.00052
	(!A1 * !A2 * B1 * D1 * !X)	0.00222	0.00224	0.00219
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00076	-0.00082	-0.00083
	(!A1 * !A2 * B1 * !D1 * !X)	0.00239	0.00234	0.00223

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00244	-0.00298	-0.00300
	(A2 * B1 * !D1 * !X)	0.00425	0.00381	0.00376
	(A2 * !B1 * D1 * !X)	-0.00106	-0.00109	-0.00111
	(A2 * !B1 * D1 * !X)	0.00389	0.00394	0.00379
	(A2 * !B1 * !D1 * !X)	-0.00166	-0.00165	-0.00170
	(A2 * !B1 * !D1 * !X)	0.00402	0.00406	0.00384
	(A1 * !A2 * B1 * !D1 * !X)	-0.00240	-0.00297	-0.00300
	(A1 * !A2 * B1 * !D1 * !X)	0.00429	0.00383	0.00376
	(!A2 * !B1 * D1 * !X)	-0.00106	-0.00109	-0.00111
	(!A2 * !B1 * D1 * !X)	0.00389	0.00394	0.00379
	(!A2 * !B1 * !D1 * !X)	-0.00166	-0.00164	-0.00170
	(!A2 * !B1 * !D1 * !X)	0.00402	0.00406	0.00384
	(!A1 * !A2 * B1 * D1 * !X)	-0.00102	-0.00104	-0.00107
	(!A1 * !A2 * B1 * D1 * !X)	0.00389	0.00392	0.00380
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00148	-0.00164	-0.00166
	(!A1 * !A2 * B1 * !D1 * !X)	0.00423	0.00411	0.00387

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00061	0.00061	0.00059
	(A2 * !C1 * !X)	-0.00211	-0.00212	-0.00215
	(A2 * !B1 * C1 * !X)	0.00062	0.00062	0.00058
	(A2 * !B1 * C1 * !X)	-0.00205	-0.00206	-0.00214
	(!A2 * !C1 * !X)	0.00061	0.00061	0.00059
	(!A2 * !C1 * !X)	-0.00211	-0.00211	-0.00215
	(!A2 * !B1 * C1 * !X)	0.00062	0.00062	0.00058
	(!A2 * !B1 * C1 * !X)	-0.00205	-0.00206	-0.00214
	(!A1 * !A2 * B1 * C1 * !X)	0.00069	0.00069	0.00061
	(!A1 * !A2 * B1 * C1 * !X)	-0.00193	-0.00194	-0.00212

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00071	0.00070	0.00068
	(A2 * !C1 * !X)	-0.00231	-0.00231	-0.00236
	(A2 * !B1 * C1 * !X)	0.00070	0.00070	0.00065
	(A2 * !B1 * C1 * !X)	-0.00225	-0.00226	-0.00235
	(!A2 * !C1 * !X)	0.00071	0.00070	0.00068
	(!A2 * !C1 * !X)	-0.00231	-0.00231	-0.00236
	(!A2 * !B1 * C1 * !X)	0.00070	0.00070	0.00065
	(!A2 * !B1 * C1 * !X)	-0.00225	-0.00226	-0.00235
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00077	0.00067
	(!A1 * !A2 * B1 * C1 * !X)	-0.00212	-0.00213	-0.00233
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00147	0.00147	0.00139
	(A2 * !C1 * !X)	-0.00378	-0.00381	-0.00392
	(A2 * !B1 * C1 * !X)	0.00144	0.00144	0.00132
	(A2 * !B1 * C1 * !X)	-0.00364	-0.00367	-0.00389
	(!A2 * !C1 * !X)	0.00147	0.00147	0.00139
	(!A2 * !C1 * !X)	-0.00378	-0.00381	-0.00392
	(!A2 * !B1 * C1 * !X)	0.00143	0.00144	0.00132
	(!A2 * !B1 * C1 * !X)	-0.00364	-0.00367	-0.00389
	(!A1 * !A2 * B1 * C1 * !X)	0.00153	0.00154	0.00133
	(!A1 * !A2 * B1 * C1 * !X)	-0.00341	-0.00344	-0.00385

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00046	-0.00047	-0.00046
	(A2 * !C1 * !X)	0.00227	0.00231	0.00228
	(A2 * !B1 * C1 * !X)	-0.00045	-0.00045	-0.00045
	(A2 * !B1 * C1 * !X)	0.00227	0.00227	0.00227
	(!A2 * !C1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !C1 * !X)	0.00227	0.00231	0.00228
	(!A2 * !B1 * C1 * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * C1 * !X)	0.00227	0.00228	0.00227
	(!A1 * !A2 * B1 * C1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B1 * C1 * !X)	0.00227	0.00226	0.00227
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00042	-0.00043	-0.00042
	(A2 * !C1 * !X)	0.00260	0.00265	0.00261
	(A2 * !B1 * C1 * !X)	-0.00041	-0.00041	-0.00041
	(A2 * !B1 * C1 * !X)	0.00260	0.00264	0.00261
	(!A2 * !C1 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !C1 * !X)	0.00260	0.00265	0.00261
	(!A2 * !B1 * C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * C1 * !X)	0.00260	0.00263	0.00261
	(!A1 * !A2 * B1 * C1 * !X)	-0.00041	-0.00042	-0.00040
	(!A1 * !A2 * B1 * C1 * !X)	0.00260	0.00263	0.00261
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00087	-0.00087	-0.00087
	(A2 * !C1 * !X)	0.00440	0.00441	0.00442
	(A2 * !B1 * C1 * !X)	-0.00082	-0.00083	-0.00083
	(A2 * !B1 * C1 * !X)	0.00439	0.00441	0.00441
	(!A2 * !C1 * !X)	-0.00087	-0.00090	-0.00087
	(!A2 * !C1 * !X)	0.00440	0.00449	0.00442
	(!A2 * !B1 * C1 * !X)	-0.00082	-0.00085	-0.00083
	(!A2 * !B1 * C1 * !X)	0.00439	0.00448	0.00441
	(!A1 * !A2 * B1 * C1 * !X)	-0.00081	-0.00084	-0.00082
	(!A1 * !A2 * B1 * C1 * !X)	0.00439	0.00448	0.00441

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00283	0.00294	0.00298	0.00291	0.63672
sky130_fd_sc_hs__o211ai_2	0.00553	0.00564	0.00563	0.00549	1.14056
sky130_fd_sc_hs__o211ai_4	0.01091	0.01113	0.00796	0.00817	2.05400

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	3.46348	20.89500
sky130_fd_sc_hs__o211ai_2	0.00000	6.92052	41.78170
sky130_fd_sc_hs__o211ai_4	0.00000	8.61520	55.70570

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)	0.10571	0.84486	9.36527
	A2->Y (FR)	0.09369	0.86584	9.84153
	B1->Y (FR)	0.04305	0.59830	7.11146
	C1->Y (FR)	0.03522	0.58962	7.09539
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.10029	0.72721	9.24115
	A2->Y (FR)	0.08270	0.74539	9.74909
	B1->Y (FR)	0.03552	0.50317	6.70724
	C1->Y (FR)	0.02596	0.48776	6.63192
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.09572	0.61555	8.88948
	A2->Y (FR)	0.07906	0.64900	9.54229
	B1->Y (FR)	0.05166	0.62231	9.33475
	C1->Y (FR)	0.03347	0.59642	9.17540

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.06219	0.47141	5.05528
	A2->Y (RF)	0.05079	0.44899	4.93267
	B1->Y (RF)	0.05679	0.52502	5.87944
	C1->Y (RF)	0.04790	0.55471	6.37154
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.05930	0.38468	4.80572
	A2->Y (RF)	0.04677	0.36933	4.78928
	B1->Y (RF)	0.05424	0.45858	5.89998
	C1->Y (RF)	0.04196	0.48568	6.40984
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.05987	0.33256	4.88037
	A2->Y (RF)	0.04372	0.30548	4.69671
	B1->Y (RF)	0.04981	0.38970	5.83916
	C1->Y (RF)	0.03863	0.43525	6.65060

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00203	0.00259	0.01981
	A1	0.01081	0.01138	0.02865
	A2	0.00204	0.00346	0.02521
	A2	0.00958	0.01100	0.03270
	B1	0.00076	0.00282	0.03032
	B1	0.00690	0.00899	0.03667
	C1	0.00001	0.00211	0.02886
	C1	0.00497	0.00710	0.03407
sky130_fd_sc_hs__o211ai_2	A1	0.00255	0.00372	0.03665
	A1	0.02031	0.02150	0.05458
	A2	0.00255	0.00556	0.04619
	A2	0.01760	0.02045	0.06114
	B1	0.00073	0.00528	0.05837
	B1	0.01289	0.01745	0.07048
	C1	-0.00167	0.00280	0.05482
	C1	0.00800	0.01250	0.06624
sky130_fd_sc_hs__o211ai_4	A1	0.00491	0.00742	0.07032
	A1	0.03961	0.04219	0.10529
	A2	0.00483	0.01092	0.08743
	A2	0.03433	0.04040	0.11682
	B1	0.00063	0.00570	0.06571
	B1	0.01968	0.02474	0.08497
	C1	-0.00336	0.00306	0.06112
	C1	0.01105	0.01754	0.07604

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01166	0.01208	0.02668
	A1	0.00277	0.00319	0.01760
	A2	0.00937	0.00993	0.02410
	A2	0.00174	0.00224	0.01583
	B1	0.00769	0.00844	0.02415
	B1	0.00151	0.00222	0.01774
	C1	0.00646	0.00751	0.02383
	C1	0.00151	0.00253	0.01881
sky130_fd_sc_hs__o211ai_2	A1	0.02303	0.02390	0.05397
	A1	0.00504	0.00589	0.03555
	A2	0.01711	0.01841	0.04656
	A2	0.00182	0.00309	0.03069
	B1	0.01353	0.01517	0.04671
	B1	0.00124	0.00285	0.03368
	C1	0.01084	0.01324	0.04608
	C1	0.00117	0.00352	0.03594
sky130_fd_sc_hs__o211ai_4	A1	0.04199	0.04396	0.10120
	A1	0.00684	0.00871	0.06606
	A2	0.03051	0.03335	0.08768
	A2	0.00062	0.00347	0.05720
	B1	0.02201	0.02432	0.05768
	B1	0.00284	0.00505	0.03854
	C1	0.01711	0.02033	0.05527
	C1	0.00271	0.00572	0.03907

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)**	0.00237	0.00200	0.00195
	(A2 * B1 * C1 * !Y)	-0.00158	-0.00197	-0.00199
	(A2 * B1 * !C1 * Y)	0.00176	0.00177	0.00176
	(A2 * B1 * !C1 * Y)	-0.00216	-0.00219	-0.00218
	(A2 * !B1 * Y)	0.00176	0.00177	0.00176
	(A2 * !B1 * Y)	-0.00217	-0.00219	-0.00218
	(!A2 * B1 * !C1 * Y)	0.00166	0.00166	0.00166
	(!A2 * B1 * !C1 * Y)	-0.00219	-0.00219	-0.00219
	(!A2 * !B1 * C1 * Y)	0.00169	0.00171	0.00170
	(!A2 * !B1 * C1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * !B1 * !C1 * Y)	0.00168	0.00170	0.00169
	(!A2 * !B1 * !C1 * Y)	-0.00219	-0.00220	-0.00219
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00494	0.00399	0.00383
	(A2 * B1 * C1 * !Y)	-0.00298	-0.00399	-0.00408
	(A2 * B1 * !C1 * Y)	0.00344	0.00347	0.00344
	(A2 * B1 * !C1 * Y)	-0.00441	-0.00447	-0.00444
	(A2 * !B1 * Y)	0.00344	0.00347	0.00344
	(A2 * !B1 * Y)	-0.00441	-0.00447	-0.00444
	(!A2 * B1 * !C1 * Y)	0.00325	0.00326	0.00325
	(!A2 * B1 * !C1 * Y)	-0.00449	-0.00450	-0.00449
	(!A2 * !B1 * C1 * Y)	0.00329	0.00333	0.00330
	(!A2 * !B1 * C1 * Y)	-0.00449	-0.00452	-0.00450
	(!A2 * !B1 * !C1 * Y)	0.00328	0.00332	0.00329
	(!A2 * !B1 * !C1 * Y)	-0.00449	-0.00452	-0.00450

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00941	0.00759	0.00728
	(A2 * B1 * C1 * !Y)	-0.00628	-0.00817	-0.00833
	(A2 * B1 * !C1 * Y)	0.00677	0.00681	0.00675
	(A2 * B1 * !C1 * Y)	-0.00876	-0.00886	-0.00881
	(A2 * !B1 * Y)	0.00677	0.00681	0.00675
	(A2 * !B1 * Y)	-0.00877	-0.00886	-0.00881
	(!A2 * B1 * !C1 * Y)	0.00636	0.00637	0.00634
	(!A2 * B1 * !C1 * Y)	-0.00893	-0.00893	-0.00890
	(!A2 * !B1 * C1 * Y)	0.00642	0.00646	0.00644
	(!A2 * !B1 * C1 * Y)	-0.00890	-0.00893	-0.00891
	(!A2 * !B1 * !C1 * Y)	0.00635	0.00643	0.00638
	(!A2 * !B1 * !C1 * Y)	-0.00888	-0.00896	-0.00892

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)**	-0.00157	-0.00158	-0.00158
	(A2 * B1 * C1 * !Y)	0.00236	0.00238	0.00237
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00176	-0.00175
	(A2 * B1 * !C1 * Y)	0.00216	0.00219	0.00218
	(A2 * !B1 * Y)	-0.00175	-0.00176	-0.00175
	(A2 * !B1 * Y)	0.00217	0.00219	0.00218
	(!A2 * B1 * !C1 * Y)	-0.00150	-0.00166	-0.00166
	(!A2 * B1 * !C1 * Y)	0.00225	0.00223	0.00220
	(!A2 * !B1 * C1 * Y)	-0.00159	-0.00168	-0.00170
	(!A2 * !B1 * C1 * Y)	0.00222	0.00220	0.00220
	(!A2 * !B1 * !C1 * Y)	-0.00162	-0.00168	-0.00169
	(!A2 * !B1 * !C1 * Y)	0.00221	0.00220	0.00220

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00306	-0.00309	-0.00307
	(A2 * B1 * C1 * !Y)	0.00483	0.00489	0.00485
	(A2 * B1 * !C1 * Y)	-0.00343	-0.00344	-0.00343
	(A2 * B1 * !C1 * Y)	0.00444	0.00447	0.00444
	(A2 * !B1 * Y)	-0.00343	-0.00344	-0.00343
	(A2 * !B1 * Y)	0.00444	0.00447	0.00444
	(!A2 * B1 * !C1 * Y)	-0.00298	-0.00326	-0.00325
	(!A2 * B1 * !C1 * Y)	0.00458	0.00458	0.00451
	(!A2 * !B1 * C1 * Y)	-0.00314	-0.00330	-0.00330
	(!A2 * !B1 * C1 * Y)	0.00454	0.00455	0.00451
	(!A2 * !B1 * !C1 * Y)	-0.00317	-0.00330	-0.00329
	(!A2 * !B1 * !C1 * Y)	0.00452	0.00454	0.00451
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00623	-0.00627	-0.00624
	(A2 * B1 * C1 * !Y)	0.00937	0.00943	0.00938
	(A2 * B1 * !C1 * Y)	-0.00670	-0.00675	-0.00672
	(A2 * B1 * !C1 * Y)	0.00876	0.00886	0.00881
	(A2 * !B1 * Y)	-0.00670	-0.00675	-0.00672
	(A2 * !B1 * Y)	0.00877	0.00886	0.00881
	(!A2 * B1 * !C1 * Y)	-0.00569	-0.00633	-0.00634
	(!A2 * B1 * !C1 * Y)	0.00918	0.00900	0.00895
	(!A2 * !B1 * C1 * Y)	-0.00598	-0.00646	-0.00644
	(!A2 * !B1 * C1 * Y)	0.00894	0.00898	0.00895
	(!A2 * !B1 * !C1 * Y)	-0.00610	-0.00643	-0.00638
	(!A2 * !B1 * !C1 * Y)	0.00888	0.00897	0.00894

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)**	0.00200	0.00204	0.00201
	(A1 * B1 * C1 * !Y)	-0.00086	-0.00088	-0.00086
	(A1 * B1 * !C1 * Y)	0.00172	0.00173	0.00172
	(A1 * B1 * !C1 * Y)	-0.00218	-0.00219	-0.00219
	(A1 * !B1 * C1 * Y)	0.00171	0.00172	0.00172
	(A1 * !B1 * C1 * Y)	-0.00218	-0.00219	-0.00219
	(A1 * !B1 * !C1 * Y)	0.00171	0.00174	0.00172
	(A1 * !B1 * !C1 * Y)	-0.00218	-0.00220	-0.00219
	(!A1 * B1 * !C1 * Y)	0.00161	0.00163	0.00162
	(!A1 * B1 * !C1 * Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !B1 * C1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !B1 * C1 * Y)	-0.00220	-0.00221	-0.00221
	(!A1 * !B1 * !C1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !B1 * !C1 * Y)	-0.00220	-0.00222	-0.00221
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00413	0.00420	0.00414
	(A1 * B1 * C1 * !Y)	-0.00165	-0.00169	-0.00165
	(A1 * B1 * !C1 * Y)	0.00348	0.00347	0.00346
	(A1 * B1 * !C1 * Y)	-0.00438	-0.00441	-0.00439
	(A1 * !B1 * C1 * Y)	0.00348	0.00347	0.00346
	(A1 * !B1 * C1 * Y)	-0.00438	-0.00441	-0.00439
	(A1 * !B1 * !C1 * Y)	0.00348	0.00349	0.00345
	(A1 * !B1 * !C1 * Y)	-0.00438	-0.00443	-0.00439
	(!A1 * B1 * !C1 * Y)	0.00322	0.00327	0.00323
	(!A1 * B1 * !C1 * Y)	-0.00444	-0.00447	-0.00444
	(!A1 * !B1 * C1 * Y)	0.00328	0.00328	0.00329
	(!A1 * !B1 * C1 * Y)	-0.00444	-0.00444	-0.00445
	(!A1 * !B1 * !C1 * Y)	0.00329	0.00331	0.00327
	(!A1 * !B1 * !C1 * Y)	-0.00446	-0.00447	-0.00445

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00789	0.00799	0.00787
	(A1 * B1 * C1 * !Y)	-0.00364	-0.00367	-0.00359
	(A1 * B1 * !C1 * Y)	0.00679	0.00678	0.00675
	(A1 * B1 * !C1 * Y)	-0.00879	-0.00885	-0.00883
	(A1 * !B1 * C1 * Y)	0.00679	0.00678	0.00675
	(A1 * !B1 * C1 * Y)	-0.00879	-0.00885	-0.00883
	(A1 * !B1 * !C1 * Y)	0.00678	0.00676	0.00674
	(A1 * !B1 * !C1 * Y)	-0.00881	-0.00883	-0.00883
	(!A1 * B1 * !C1 * Y)	0.00632	0.00640	0.00634
	(!A1 * B1 * !C1 * Y)	-0.00892	-0.00898	-0.00893
	(!A1 * !B1 * C1 * Y)	0.00645	0.00647	0.00644
	(!A1 * !B1 * C1 * Y)	-0.00897	-0.00896	-0.00894
	(!A1 * !B1 * !C1 * Y)	0.00634	0.00641	0.00638
	(!A1 * !B1 * !C1 * Y)	-0.00891	-0.00897	-0.00894

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)**	-0.00168	-0.00169	-0.00174
	(A1 * B1 * C1 * !Y)	0.00119	0.00119	0.00113
	(A1 * B1 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * !C1 * Y)	0.00218	0.00220	0.00219
	(A1 * !B1 * C1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * C1 * Y)	0.00218	0.00219	0.00219
	(A1 * !B1 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * !C1 * Y)	0.00218	0.00220	0.00219
	(!A1 * B1 * !C1 * Y)	-0.00146	-0.00162	-0.00162
	(!A1 * B1 * !C1 * Y)	0.00226	0.00224	0.00222
	(!A1 * !B1 * C1 * Y)	-0.00155	-0.00165	-0.00165
	(!A1 * !B1 * C1 * Y)	0.00223	0.00223	0.00222
	(!A1 * !B1 * !C1 * Y)	-0.00158	-0.00165	-0.00165
	(!A1 * !B1 * !C1 * Y)	0.00222	0.00223	0.00221
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00338	-0.00341	-0.00360
	(A1 * B1 * C1 * !Y)	0.00239	0.00239	0.00222
	(A1 * B1 * !C1 * Y)	-0.00343	-0.00346	-0.00344
	(A1 * B1 * !C1 * Y)	0.00438	0.00443	0.00439
	(A1 * !B1 * C1 * Y)	-0.00344	-0.00346	-0.00344
	(A1 * !B1 * C1 * Y)	0.00438	0.00443	0.00439
	(A1 * !B1 * !C1 * Y)	-0.00344	-0.00346	-0.00344
	(A1 * !B1 * !C1 * Y)	0.00438	0.00443	0.00439
	(!A1 * B1 * !C1 * Y)	-0.00294	-0.00326	-0.00323
	(!A1 * B1 * !C1 * Y)	0.00455	0.00452	0.00446
	(!A1 * !B1 * C1 * Y)	-0.00312	-0.00328	-0.00329
	(!A1 * !B1 * C1 * Y)	0.00449	0.00450	0.00446
	(!A1 * !B1 * !C1 * Y)	-0.00317	-0.00330	-0.00327
	(!A1 * !B1 * !C1 * Y)	0.00447	0.00449	0.00446

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00688	-0.00693	-0.00726
	(A1 * B1 * C1 * !Y)	0.00455	0.00456	0.00424
	(A1 * B1 * !C1 * Y)	-0.00670	-0.00674	-0.00672
	(A1 * B1 * !C1 * Y)	0.00879	0.00885	0.00883
	(A1 * !B1 * C1 * Y)	-0.00670	-0.00674	-0.00672
	(A1 * !B1 * C1 * Y)	0.00879	0.00885	0.00883
	(A1 * !B1 * !C1 * Y)	-0.00672	-0.00673	-0.00673
	(A1 * !B1 * !C1 * Y)	0.00881	0.00883	0.00883
	(!A1 * B1 * !C1 * Y)	-0.00565	-0.00633	-0.00634
	(!A1 * B1 * !C1 * Y)	0.00921	0.00910	0.00898
	(!A1 * !B1 * C1 * Y)	-0.00602	-0.00644	-0.00644
	(!A1 * !B1 * C1 * Y)	0.00905	0.00904	0.00898
	(!A1 * !B1 * !C1 * Y)	-0.00614	-0.00641	-0.00638
	(!A1 * !B1 * !C1 * Y)	0.00898	0.00903	0.00897

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00161	0.00164	0.00162
	(A2 * !C1 * Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * !C1 * Y)	0.00161	0.00162	0.00162
	(A1 * !A2 * !C1 * Y)	-0.00229	-0.00230	-0.00230
	(!A1 * !A2 * C1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !A2 * C1 * Y)	-0.00231	-0.00231	-0.00229
	(!A1 * !A2 * !C1 * Y)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !C1 * Y)	-0.00230	-0.00232	-0.00230
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00323	0.00327	0.00325
	(A2 * !C1 * Y)	-0.00450	-0.00453	-0.00451
	(A1 * !A2 * !C1 * Y)	0.00324	0.00326	0.00324
	(A1 * !A2 * !C1 * Y)	-0.00453	-0.00454	-0.00451
	(!A1 * !A2 * C1 * Y)	0.00136	0.00137	0.00140
	(!A1 * !A2 * C1 * Y)	-0.00451	-0.00452	-0.00450
	(!A1 * !A2 * !C1 * Y)	0.00185	0.00187	0.00185
	(!A1 * !A2 * !C1 * Y)	-0.00454	-0.00457	-0.00454
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00641	0.00647	0.00644
	(A2 * !C1 * Y)	-0.00451	-0.00454	-0.00451
	(A1 * !A2 * !C1 * Y)	0.00639	0.00643	0.00641
	(A1 * !A2 * !C1 * Y)	-0.00452	-0.00453	-0.00450
	(!A1 * !A2 * C1 * Y)	0.00267	0.00268	0.00270
	(!A1 * !A2 * C1 * Y)	-0.00453	-0.00454	-0.00449
	(!A1 * !A2 * !C1 * Y)	0.00356	0.00360	0.00356
	(!A1 * !A2 * !C1 * Y)	-0.00455	-0.00458	-0.00456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00142	-0.00159	-0.00162
	(A2 * !C1 * Y)	0.00247	0.00235	0.00231
	(A1 * !A2 * !C1 * Y)	-0.00140	-0.00160	-0.00162
	(A1 * !A2 * !C1 * Y)	0.00252	0.00234	0.00231
	(!A1 * !A2 * C1 * Y)	-0.00068	-0.00069	-0.00070
	(!A1 * !A2 * C1 * Y)	0.00236	0.00240	0.00232
	(!A1 * !A2 * !C1 * Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !A2 * !C1 * Y)	0.00249	0.00248	0.00236
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00279	-0.00322	-0.00325
	(A2 * !C1 * Y)	0.00497	0.00459	0.00454
	(A1 * !A2 * !C1 * Y)	-0.00272	-0.00323	-0.00324
	(A1 * !A2 * !C1 * Y)	0.00502	0.00460	0.00454
	(!A1 * !A2 * C1 * Y)	-0.00128	-0.00129	-0.00133
	(!A1 * !A2 * C1 * Y)	0.00471	0.00477	0.00459
	(!A1 * !A2 * !C1 * Y)	-0.00185	-0.00187	-0.00185
	(!A1 * !A2 * !C1 * Y)	0.00487	0.00489	0.00464
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00558	-0.00639	-0.00642
	(A2 * !C1 * Y)	0.00535	0.00464	0.00456
	(A1 * !A2 * !C1 * Y)	-0.00539	-0.00638	-0.00641
	(A1 * !A2 * !C1 * Y)	0.00549	0.00466	0.00456
	(!A1 * !A2 * C1 * Y)	-0.00248	-0.00252	-0.00257
	(!A1 * !A2 * C1 * Y)	0.00481	0.00489	0.00463
	(!A1 * !A2 * !C1 * Y)	-0.00356	-0.00360	-0.00356
	(!A1 * !A2 * !C1 * Y)	0.00518	0.00517	0.00475

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00057	0.00057	0.00054
	(A2 * !B1 * Y)	-0.00256	-0.00256	-0.00261
	(!A2 * !B1 * Y)	0.00057	0.00057	0.00054
	(!A2 * !B1 * Y)	-0.00256	-0.00257	-0.00261
	(!A1 * !A2 * B1 * Y)	0.00061	0.00061	0.00054
	(!A1 * !A2 * B1 * Y)	-0.00245	-0.00246	-0.00259
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00121	0.00121	0.00113
	(A2 * !B1 * Y)	-0.00496	-0.00498	-0.00510
	(!A2 * !B1 * Y)	0.00121	0.00121	0.00113
	(!A2 * !B1 * Y)	-0.00496	-0.00498	-0.00510
	(!A1 * !A2 * B1 * Y)	0.00121	0.00122	0.00107
	(!A1 * !A2 * B1 * Y)	-0.00475	-0.00479	-0.00506
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00228	0.00229	0.00216
	(A2 * !B1 * Y)	-0.00568	-0.00573	-0.00594
	(!A2 * !B1 * Y)	0.00228	0.00229	0.00216
	(!A2 * !B1 * Y)	-0.00570	-0.00573	-0.00594
	(!A1 * !A2 * B1 * Y)	0.00232	0.00232	0.00205
	(!A1 * !A2 * B1 * Y)	-0.00527	-0.00531	-0.00586

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00053	-0.00054	-0.00053
	(A2 * !B1 * Y)	0.00261	0.00266	0.00261
	(!A2 * !B1 * Y)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * Y)	0.00261	0.00266	0.00261
	(!A1 * !A2 * B1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B1 * Y)	0.00260	0.00261	0.00261
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00109	-0.00111	-0.00109
	(A2 * !B1 * Y)	0.00509	0.00521	0.00512
	(!A2 * !B1 * Y)	-0.00109	-0.00111	-0.00109
	(!A2 * !B1 * Y)	0.00510	0.00521	0.00512
	(!A1 * !A2 * B1 * Y)	-0.00104	-0.00105	-0.00105
	(!A1 * !A2 * B1 * Y)	0.00509	0.00513	0.00511
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00209	-0.00210	-0.00209
	(A2 * !B1 * Y)	0.00594	0.00598	0.00596
	(!A2 * !B1 * Y)	-0.00209	-0.00209	-0.00209
	(!A2 * !B1 * Y)	0.00595	0.00595	0.00596
	(!A1 * !A2 * B1 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * B1 * Y)	0.00593	0.00596	0.00595

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00272	0.00291	0.00268	0.00264	1.31681
sky130_fd_sc_hs__o211a_2	0.00288	0.00287	0.00286	0.00279	2.51966
sky130_fd_sc_hs__o211a_4	0.00523	0.00499	0.00512	0.00454	4.60453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	11.11630	33.33770
sky130_fd_sc_hs__o211a_2	0.00000	16.78620	33.61790
sky130_fd_sc_hs__o211a_4	0.00000	38.94640	95.49390

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)	0.11541	0.58337	6.35312
	A2->X (RR)	0.10035	0.56087	6.27092
	B1->X (RR)	0.10838	0.60903	6.82856
	C1->X (RR)	0.10016	0.61358	6.92503
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.11712	0.50135	6.20670
	A2->X (RR)	0.09993	0.47810	6.11248
	B1->X (RR)	0.11110	0.53485	6.70251
	C1->X (RR)	0.10271	0.54123	6.79902
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.11863	0.44314	6.32570
	A2->X (RR)	0.10636	0.42107	6.26867
	B1->X (RR)	0.11080	0.46632	6.63474
	C1->X (RR)	0.08925	0.44729	6.70579

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.14788	0.57084	5.13643
	A2->X (FF)	0.13633	0.58874	5.26706
	B1->X (FF)	0.07160	0.46787	4.77730
	C1->X (FF)	0.06459	0.44744	4.68311
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.17113	0.57252	5.21890
	A2->X (FF)	0.15804	0.59424	5.36483
	B1->X (FF)	0.08407	0.46647	4.87366
	C1->X (FF)	0.07627	0.44486	4.76657
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.16166	0.51556	5.02821
	A2->X (FF)	0.14566	0.52944	5.15029
	B1->X (FF)	0.08992	0.44843	4.75675
	C1->X (FF)	0.08911	0.44831	4.78459

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01511	0.01670	0.06883
	A1	0.00669	0.00829	0.06073
	A2	0.01349	0.01543	0.07410
	A2	0.00588	0.00783	0.06693
	B1	0.01133	0.01458	0.09090
	B1	0.00541	0.00867	0.08510
	C1	0.01028	0.01420	0.09223
	C1	0.00538	0.00931	0.08733
sky130_fd_sc_hs__o211a_2	A1	0.01878	0.02029	0.07073
	A1	0.00992	0.01148	0.06287
	A2	0.01651	0.01843	0.07508
	A2	0.00886	0.01078	0.06849
	B1	0.01468	0.01782	0.09484
	B1	0.00840	0.01154	0.08911
	C1	0.01353	0.01731	0.09574
	C1	0.00837	0.01217	0.09092
sky130_fd_sc_hs__o211a_4	A1	0.03593	0.03911	0.14988
	A1	0.01983	0.02311	0.13530
	A2	0.03116	0.03517	0.15890
	A2	0.01775	0.02186	0.14722
	B1	0.02791	0.03391	0.16932
	B1	0.01704	0.02304	0.15943
	C1	0.02521	0.03243	0.17764
	C1	0.01714	0.02448	0.17030

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00606	0.00783	0.06477
	A1	0.01436	0.01612	0.07153
	A2	0.00564	0.00879	0.07305
	A2	0.01314	0.01628	0.07887
	B1	0.00453	0.00924	0.08666
	B1	0.01042	0.01505	0.09202
	C1	0.00398	0.00879	0.08696
	C1	0.00888	0.01362	0.09129
sky130_fd_sc_hs__o211a_2	A1	0.01014	0.01081	0.06892
	A1	0.01888	0.01952	0.07489
	A2	0.01016	0.01224	0.07632
	A2	0.01772	0.01977	0.08251
	B1	0.00769	0.01239	0.09148
	B1	0.01524	0.01938	0.09344
	C1	0.00703	0.01169	0.09025
	C1	0.01342	0.01763	0.09194
sky130_fd_sc_hs__o211a_4	A1	0.01966	0.02138	0.13631
	A1	0.03554	0.03723	0.14780
	A2	0.01998	0.02442	0.15485
	A2	0.03316	0.03760	0.16258
	B1	0.01474	0.02296	0.16983
	B1	0.02775	0.03585	0.17863
	C1	0.01474	0.02250	0.16542
	C1	0.02497	0.03258	0.17304

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)**	0.00236	0.00203	0.00200
	(A2 * B1 * C1 * X)	-0.00134	-0.00169	-0.00169
	(A2 * B1 * !C1 * !X)	0.00157	0.00158	0.00157
	(A2 * B1 * !C1 * !X)	-0.00211	-0.00212	-0.00212
	(A2 * !B1 * !X)	0.00157	0.00158	0.00157
	(A2 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(!A2 * B1 * !C1 * !X)	0.00148	0.00149	0.00148
	(!A2 * B1 * !C1 * !X)	-0.00213	-0.00214	-0.00213
	(!A2 * !B1 * C1 * !X)	0.00150	0.00151	0.00150
	(!A2 * !B1 * C1 * !X)	-0.00214	-0.00215	-0.00213
	(!A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00149
	(!A2 * !B1 * !C1 * !X)	-0.00214	-0.00215	-0.00214
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00258	0.00223	0.00220
	(A2 * B1 * C1 * X)	-0.00127	-0.00163	-0.00164
	(A2 * B1 * !C1 * !X)	0.00176	0.00178	0.00176
	(A2 * B1 * !C1 * !X)	-0.00206	-0.00208	-0.00207
	(A2 * !B1 * !X)	0.00176	0.00178	0.00176
	(A2 * !B1 * !X)	-0.00206	-0.00208	-0.00207
	(!A2 * B1 * !C1 * !X)	0.00167	0.00167	0.00167
	(!A2 * B1 * !C1 * !X)	-0.00208	-0.00208	-0.00208
	(!A2 * !B1 * C1 * !X)	0.00169	0.00172	0.00170
	(!A2 * !B1 * C1 * !X)	-0.00208	-0.00210	-0.00209
	(!A2 * !B1 * !C1 * !X)	0.00169	0.00170	0.00170
	(!A2 * !B1 * !C1 * !X)	-0.00208	-0.00209	-0.00209

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00498	0.00433	0.00421
	(A2 * B1 * C1 * X)	-0.00236	-0.00309	-0.00313
	(A2 * B1 * !C1 * !X)	0.00355	0.00360	0.00356
	(A2 * B1 * !C1 * !X)	-0.00373	-0.00378	-0.00377
	(A2 * !B1 * !X)	0.00355	0.00360	0.00356
	(A2 * !B1 * !X)	-0.00373	-0.00378	-0.00377
	(!A2 * B1 * !C1 * !X)	0.00338	0.00342	0.00339
	(!A2 * B1 * !C1 * !X)	-0.00378	-0.00381	-0.00378
	(!A2 * !B1 * C1 * !X)	0.00342	0.00346	0.00344
	(!A2 * !B1 * C1 * !X)	-0.00378	-0.00381	-0.00379
	(!A2 * !B1 * !C1 * !X)	0.00341	0.00345	0.00342
	(!A2 * !B1 * !C1 * !X)	-0.00379	-0.00381	-0.00379

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)**	-0.00140	-0.00141	-0.00141
	(A2 * B1 * C1 * X)	0.00229	0.00231	0.00228
	(A2 * B1 * !C1 * !X)	-0.00144	-0.00144	-0.00144
	(A2 * B1 * !C1 * !X)	0.00224	0.00226	0.00224
	(A2 * !B1 * !X)	-0.00144	-0.00144	-0.00144
	(A2 * !B1 * !X)	0.00224	0.00225	0.00224
	(!A2 * B1 * !C1 * !X)	-0.00121	-0.00136	-0.00138
	(!A2 * B1 * !C1 * !X)	0.00232	0.00229	0.00226
	(!A2 * !B1 * C1 * !X)	-0.00127	-0.00138	-0.00139
	(!A2 * !B1 * C1 * !X)	0.00229	0.00229	0.00226
	(!A2 * !B1 * !C1 * !X)	-0.00131	-0.00138	-0.00140
	(!A2 * !B1 * !C1 * !X)	0.00227	0.00229	0.00226

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00160	-0.00161	-0.00161
	(A2 * B1 * C1 * X)	0.00225	0.00226	0.00223
	(A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * !C1 * !X)	0.00230	0.00232	0.00231
	(A2 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A2 * !B1 * !X)	0.00230	0.00232	0.00231
	(!A2 * B1 * !C1 * !X)	-0.00128	-0.00143	-0.00145
	(!A2 * B1 * !C1 * !X)	0.00238	0.00236	0.00233
	(!A2 * !B1 * C1 * !X)	-0.00136	-0.00146	-0.00147
	(!A2 * !B1 * C1 * !X)	0.00236	0.00235	0.00234
	(!A2 * !B1 * !C1 * !X)	-0.00139	-0.00146	-0.00147
	(!A2 * !B1 * !C1 * !X)	0.00235	0.00235	0.00233
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00250	-0.00253	-0.00253
	(A2 * B1 * C1 * X)	0.00482	0.00486	0.00482
	(A2 * B1 * !C1 * !X)	-0.00305	-0.00307	-0.00306
	(A2 * B1 * !C1 * !X)	0.00423	0.00426	0.00424
	(A2 * !B1 * !X)	-0.00305	-0.00307	-0.00306
	(A2 * !B1 * !X)	0.00423	0.00426	0.00424
	(!A2 * B1 * !C1 * !X)	-0.00262	-0.00293	-0.00294
	(!A2 * B1 * !C1 * !X)	0.00439	0.00434	0.00430
	(!A2 * !B1 * C1 * !X)	-0.00275	-0.00296	-0.00297
	(!A2 * !B1 * C1 * !X)	0.00432	0.00433	0.00430
	(!A2 * !B1 * !C1 * !X)	-0.00281	-0.00297	-0.00298
	(!A2 * !B1 * !C1 * !X)	0.00428	0.00433	0.00429

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)**	0.00236	0.00236	0.00235
	(A1 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * B1 * !C1 * !X)	0.00201	0.00201	0.00200
	(A1 * B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194
	(A1 * !B1 * C1 * !X)	0.00202	0.00201	0.00200
	(A1 * !B1 * C1 * !X)	-0.00194	-0.00194	-0.00194
	(A1 * !B1 * !C1 * !X)	0.00202	0.00202	0.00200
	(A1 * !B1 * !C1 * !X)	-0.00194	-0.00195	-0.00195
	(!A1 * B1 * !C1 * !X)	0.00192	0.00193	0.00191
	(!A1 * B1 * !C1 * !X)	-0.00196	-0.00196	-0.00195
	(!A1 * !B1 * C1 * !X)	0.00192	0.00193	0.00193
	(!A1 * !B1 * C1 * !X)	-0.00196	-0.00196	-0.00196
	(!A1 * !B1 * !C1 * !X)	0.00192	0.00194	0.00192
	(!A1 * !B1 * !C1 * !X)	-0.00196	-0.00197	-0.00196
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00211	0.00214	0.00212
	(A1 * B1 * C1 * X)	-0.00068	-0.00069	-0.00067
	(A1 * B1 * !C1 * !X)	0.00174	0.00174	0.00174
	(A1 * B1 * !C1 * !X)	-0.00195	-0.00196	-0.00197
	(A1 * !B1 * C1 * !X)	0.00174	0.00174	0.00174
	(A1 * !B1 * C1 * !X)	-0.00195	-0.00196	-0.00197
	(A1 * !B1 * !C1 * !X)	0.00173	0.00175	0.00174
	(A1 * !B1 * !C1 * !X)	-0.00195	-0.00197	-0.00197
	(!A1 * B1 * !C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * B1 * !C1 * !X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * C1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !B1 * C1 * !X)	-0.00199	-0.00199	-0.00198
	(!A1 * !B1 * !C1 * !X)	0.00168	0.00169	0.00168
	(!A1 * !B1 * !C1 * !X)	-0.00199	-0.00199	-0.00198

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00388	0.00394	0.00390
	(A1 * B1 * C1 * X)	-0.00114	-0.00117	-0.00113
	(A1 * B1 * !C1 * !X)	0.00309	0.00311	0.00309
	(A1 * B1 * !C1 * !X)	-0.00376	-0.00379	-0.00379
	(A1 * !B1 * C1 * !X)	0.00309	0.00311	0.00309
	(A1 * !B1 * C1 * !X)	-0.00376	-0.00379	-0.00379
	(A1 * !B1 * !C1 * !X)	0.00308	0.00307	0.00309
	(A1 * !B1 * !C1 * !X)	-0.00376	-0.00376	-0.00379
	(!A1 * B1 * !C1 * !X)	0.00290	0.00293	0.00291
	(!A1 * B1 * !C1 * !X)	-0.00380	-0.00383	-0.00380
	(!A1 * !B1 * C1 * !X)	0.00298	0.00299	0.00296
	(!A1 * !B1 * C1 * !X)	-0.00382	-0.00383	-0.00381
	(!A1 * !B1 * !C1 * !X)	0.00297	0.00296	0.00295
	(!A1 * !B1 * !C1 * !X)	-0.00383	-0.00382	-0.00381

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)**	-0.00185	-0.00186	-0.00193
	(A1 * B1 * C1 * X)	0.00116	0.00116	0.00111
	(A1 * B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * !C1 * !X)	0.00205	0.00207	0.00206
	(A1 * !B1 * C1 * !X)	-0.00187	-0.00189	-0.00187
	(A1 * !B1 * C1 * !X)	0.00206	0.00208	0.00206
	(A1 * !B1 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(A1 * !B1 * !C1 * !X)	0.00205	0.00208	0.00206
	(!A1 * B1 * !C1 * !X)	-0.00163	-0.00179	-0.00181
	(!A1 * B1 * !C1 * !X)	0.00215	0.00210	0.00209
	(!A1 * !B1 * C1 * !X)	-0.00169	-0.00182	-0.00183
	(!A1 * !B1 * C1 * !X)	0.00211	0.00210	0.00209
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00182	-0.00183
	(!A1 * !B1 * !C1 * !X)	0.00208	0.00210	0.00209
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00161	-0.00162	-0.00169
	(A1 * B1 * C1 * X)	0.00118	0.00118	0.00111
	(A1 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * B1 * !C1 * !X)	0.00220	0.00221	0.00220
	(A1 * !B1 * C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * !B1 * C1 * !X)	0.00220	0.00221	0.00220
	(A1 * !B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * !B1 * !C1 * !X)	0.00220	0.00221	0.00220
	(!A1 * B1 * !C1 * !X)	-0.00125	-0.00141	-0.00143
	(!A1 * B1 * !C1 * !X)	0.00227	0.00225	0.00223
	(!A1 * !B1 * C1 * !X)	-0.00134	-0.00143	-0.00145
	(!A1 * !B1 * C1 * !X)	0.00225	0.00224	0.00223
	(!A1 * !B1 * !C1 * !X)	-0.00136	-0.00144	-0.00145
	(!A1 * !B1 * !C1 * !X)	0.00224	0.00224	0.00223

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00238	-0.00240	-0.00254
	(A1 * B1 * C1 * X)	0.00265	0.00265	0.00252
	(A1 * B1 * !C1 * !X)	-0.00259	-0.00260	-0.00259
	(A1 * B1 * !C1 * !X)	0.00426	0.00427	0.00426
	(A1 * !B1 * C1 * !X)	-0.00259	-0.00260	-0.00259
	(A1 * !B1 * C1 * !X)	0.00426	0.00426	0.00426
	(A1 * !B1 * !C1 * !X)	-0.00259	-0.00261	-0.00259
	(A1 * !B1 * !C1 * !X)	0.00425	0.00427	0.00425
	(!A1 * B1 * !C1 * !X)	-0.00214	-0.00244	-0.00247
	(!A1 * B1 * !C1 * !X)	0.00441	0.00437	0.00432
	(!A1 * !B1 * C1 * !X)	-0.00228	-0.00248	-0.00250
	(!A1 * !B1 * C1 * !X)	0.00436	0.00434	0.00431
	(!A1 * !B1 * !C1 * !X)	-0.00235	-0.00249	-0.00251
	(!A1 * !B1 * !C1 * !X)	0.00431	0.00433	0.00431

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00139	0.00141	0.00140
	(A2 * !C1 * !X)	-0.00217	-0.00218	-0.00217
	(A1 * !A2 * !C1 * !X)	0.00139	0.00141	0.00140
	(A1 * !A2 * !C1 * !X)	-0.00217	-0.00218	-0.00217
	(!A1 * !A2 * C1 * !X)	0.00065	0.00065	0.00064
	(!A1 * !A2 * C1 * !X)	-0.00220	-0.00220	-0.00219
	(!A1 * !A2 * !C1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !C1 * !X)	-0.00221	-0.00221	-0.00220
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00167	0.00169	0.00167
	(A2 * !C1 * !X)	-0.00199	-0.00201	-0.00199
	(A1 * !A2 * !C1 * !X)	0.00166	0.00168	0.00167
	(A1 * !A2 * !C1 * !X)	-0.00199	-0.00201	-0.00199
	(!A1 * !A2 * C1 * !X)	0.00079	0.00080	0.00078
	(!A1 * !A2 * C1 * !X)	-0.00203	-0.00204	-0.00201
	(!A1 * !A2 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !A2 * !C1 * !X)	-0.00203	-0.00204	-0.00203
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00356	0.00358	0.00357
	(A2 * !C1 * !X)	-0.00336	-0.00337	-0.00336
	(A1 * !A2 * !C1 * !X)	0.00356	0.00358	0.00357
	(A1 * !A2 * !C1 * !X)	-0.00336	-0.00337	-0.00336
	(!A1 * !A2 * C1 * !X)	0.00201	0.00203	0.00199
	(!A1 * !A2 * C1 * !X)	-0.00337	-0.00340	-0.00337
	(!A1 * !A2 * !C1 * !X)	0.00239	0.00240	0.00239
	(!A1 * !A2 * !C1 * !X)	-0.00339	-0.00341	-0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00111	-0.00124	-0.00127
	(A2 * !C1 * !X)	0.00247	0.00235	0.00231
	(A1 * !A2 * !C1 * !X)	-0.00108	-0.00125	-0.00127
	(A1 * !A2 * !C1 * !X)	0.00249	0.00234	0.00231
	(!A1 * !A2 * C1 * !X)	-0.00047	-0.00049	-0.00049
	(!A1 * !A2 * C1 * !X)	0.00236	0.00240	0.00233
	(!A1 * !A2 * !C1 * !X)	-0.00072	-0.00076	-0.00077
	(!A1 * !A2 * !C1 * !X)	0.00251	0.00249	0.00239
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00124	-0.00140	-0.00142
	(A2 * !C1 * !X)	0.00242	0.00229	0.00225
	(A1 * !A2 * !C1 * !X)	-0.00122	-0.00141	-0.00142
	(A1 * !A2 * !C1 * !X)	0.00246	0.00228	0.00225
	(!A1 * !A2 * C1 * !X)	-0.00049	-0.00048	-0.00050
	(!A1 * !A2 * C1 * !X)	0.00231	0.00230	0.00228
	(!A1 * !A2 * !C1 * !X)	-0.00076	-0.00080	-0.00081
	(!A1 * !A2 * !C1 * !X)	0.00247	0.00244	0.00233
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00275	-0.00304	-0.00307
	(A2 * !C1 * !X)	0.00417	0.00396	0.00388
	(A1 * !A2 * !C1 * !X)	-0.00272	-0.00304	-0.00307
	(A1 * !A2 * !C1 * !X)	0.00420	0.00396	0.00387
	(!A1 * !A2 * C1 * !X)	-0.00141	-0.00143	-0.00144
	(!A1 * !A2 * C1 * !X)	0.00397	0.00401	0.00391
	(!A1 * !A2 * !C1 * !X)	-0.00187	-0.00194	-0.00197
	(!A1 * !A2 * !C1 * !X)	0.00420	0.00419	0.00400

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00053	0.00053	0.00051
	(A2 * !B1 * !X)	-0.00236	-0.00236	-0.00240
	(!A2 * !B1 * !X)	0.00053	0.00053	0.00051
	(!A2 * !B1 * !X)	-0.00236	-0.00237	-0.00240
	(!A1 * !A2 * B1 * !X)	0.00059	0.00059	0.00052
	(!A1 * !A2 * B1 * !X)	-0.00225	-0.00226	-0.00239
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00070	0.00070	0.00068
	(A2 * !B1 * !X)	-0.00222	-0.00222	-0.00226
	(!A2 * !B1 * !X)	0.00070	0.00070	0.00068
	(!A2 * !B1 * !X)	-0.00222	-0.00222	-0.00226
	(!A1 * !A2 * B1 * !X)	0.00076	0.00076	0.00069
	(!A1 * !A2 * B1 * !X)	-0.00212	-0.00213	-0.00226
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00110	0.00110	0.00106
	(A2 * !B1 * !X)	-0.00369	-0.00372	-0.00379
	(!A2 * !B1 * !X)	0.00111	0.00110	0.00106
	(!A2 * !B1 * !X)	-0.00372	-0.00372	-0.00379
	(!A1 * !A2 * B1 * !X)	0.00120	0.00120	0.00107
	(!A1 * !A2 * B1 * !X)	-0.00349	-0.00351	-0.00375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !B1 * !X)	0.00252	0.00257	0.00253
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00252	0.00257	0.00253
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00037	-0.00036
	(!A1 * !A2 * B1 * !X)	0.00252	0.00256	0.00253
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00042	-0.00044	-0.00042
	(A2 * !B1 * !X)	0.00250	0.00255	0.00251
	(!A2 * !B1 * !X)	-0.00042	-0.00044	-0.00042
	(!A2 * !B1 * !X)	0.00250	0.00255	0.00251
	(!A1 * !A2 * B1 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * !X)	0.00250	0.00253	0.00251
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00055	-0.00057	-0.00055
	(A2 * !B1 * !X)	0.00429	0.00435	0.00429
	(!A2 * !B1 * !X)	-0.00055	-0.00057	-0.00055
	(!A2 * !B1 * !X)	0.00429	0.00435	0.00429
	(!A1 * !A2 * B1 * !X)	-0.00052	-0.00053	-0.00051
	(!A1 * !A2 * B1 * !X)	0.00428	0.00432	0.00428

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00296	0.00303	0.00295	0.64347
sky130_fd_sc_hs__o21ai_2	0.00600	0.00555	0.00548	1.16275
sky130_fd_sc_hs__o21ai_4	0.01071	0.01098	0.00808	1.99410

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	4.18696	13.92860
sky130_fd_sc_hs__o21ai_2	0.00000	8.37061	27.85450
sky130_fd_sc_hs__o21ai_4	0.00000	11.51720	41.77630

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)	0.08487	0.82589	9.41840
	A2->Y (FR)	0.07228	0.84769	9.90034
	B1->Y (FR)	0.02988	0.57886	7.03831
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.07551	0.68835	9.09062
	A2->Y (FR)	0.05867	0.70761	9.55082
	B1->Y (FR)	0.02288	0.49660	6.83495
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.07566	0.58969	8.78424
	A2->Y (FR)	0.05924	0.63362	9.55685
	B1->Y (FR)	0.03154	0.62600	9.68580

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.04089	0.40842	4.57429
	A2->Y (RF)	0.03307	0.39234	4.49619
	B1->Y (RF)	0.03446	0.46752	5.41725
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.03381	0.32754	4.27171
	A2->Y (RF)	0.02822	0.31858	4.30161
	B1->Y (RF)	0.02060	0.37462	5.21091
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.03348	0.27142	4.04175
	A2->Y (RF)	0.02675	0.25771	4.02621
	B1->Y (RF)	0.01687	0.29806	4.87131

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00083	0.00148	0.01962
	A1	0.00865	0.00931	0.02750
	A2	0.00088	0.00253	0.02592
	A2	0.00735	0.00902	0.03241
	B1	-0.00039	0.00208	0.03224
	B1	0.00470	0.00718	0.03773
sky130_fd_sc_hs__o21ai_2	A1	0.00103	0.00260	0.04020
	A1	0.01603	0.01767	0.05521
	A2	0.00099	0.00482	0.04990
	A2	0.01305	0.01691	0.06198
	B1	-0.00205	0.00325	0.06273
	B1	0.00714	0.01248	0.07232
sky130_fd_sc_hs__o21ai_4	A1	0.00154	0.00515	0.08095
	A1	0.03073	0.03443	0.11034
	A2	0.00116	0.00882	0.09522
	A2	0.02525	0.03249	0.11934
	B1	-0.00385	0.00290	0.07218
	B1	0.00990	0.01663	0.08589

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00949	0.01013	0.02529
	A1	0.00162	0.00222	0.01744
	A2	0.00709	0.00784	0.02255
	A2	0.00057	0.00128	0.01567
	B1	0.00531	0.00665	0.02601
	B1	0.00021	0.00147	0.02052
sky130_fd_sc_hs__o21ai_2	A1	0.01783	0.01916	0.05024
	A1	0.00273	0.00400	0.03458
	A2	0.01221	0.01406	0.04314
	A2	0.00003	0.00181	0.03059
	B1	0.00872	0.01176	0.05065
	B1	-0.00047	0.00254	0.04064
sky130_fd_sc_hs__o21ai_4	A1	0.03377	0.03703	0.10116
	A1	0.00440	0.00763	0.07060
	A2	0.02284	0.02707	0.08616
	A2	-0.00150	0.00268	0.06031
	B1	0.01430	0.01836	0.06002
	B1	0.00061	0.00456	0.04529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00249	0.00212	0.00207
	(A2 * B1 * !Y)	-0.00162	-0.00200	-0.00202
	(A2 * !B1 * Y)	0.00180	0.00181	0.00179
	(A2 * !B1 * Y)	-0.00229	-0.00231	-0.00230
	(!A2 * !B1 * Y)	0.00171	0.00173	0.00172
	(!A2 * !B1 * Y)	-0.00231	-0.00232	-0.00231
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00486	0.00402	0.00389
	(A2 * B1 * !Y)	-0.00319	-0.00406	-0.00411
	(A2 * !B1 * Y)	0.00344	0.00345	0.00342
	(A2 * !B1 * Y)	-0.00454	-0.00458	-0.00456
	(!A2 * !B1 * Y)	0.00328	0.00332	0.00329
	(!A2 * !B1 * Y)	-0.00458	-0.00461	-0.00458
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00907	0.00733	0.00705
	(A2 * B1 * !Y)	-0.00639	-0.00821	-0.00835
	(A2 * !B1 * Y)	0.00665	0.00669	0.00663
	(A2 * !B1 * Y)	-0.00867	-0.00877	-0.00872
	(!A2 * !B1 * Y)	0.00634	0.00639	0.00637
	(!A2 * !B1 * Y)	-0.00879	-0.00882	-0.00880

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00182	-0.00182	-0.00182
	(A2 * B1 * !Y)	0.00229	0.00230	0.00228
	(A2 * !B1 * Y)	-0.00178	-0.00179	-0.00179
	(A2 * !B1 * Y)	0.00229	0.00231	0.00230
	(!A2 * !B1 * Y)	-0.00157	-0.00171	-0.00172
	(!A2 * !B1 * Y)	0.00245	0.00236	0.00232
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00336	-0.00338	-0.00337
	(A2 * B1 * !Y)	0.00463	0.00466	0.00463
	(A2 * !B1 * Y)	-0.00340	-0.00342	-0.00341
	(A2 * !B1 * Y)	0.00454	0.00458	0.00456
	(!A2 * !B1 * Y)	-0.00295	-0.00327	-0.00329
	(!A2 * !B1 * Y)	0.00483	0.00468	0.00461
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00623	-0.00628	-0.00625
	(A2 * B1 * !Y)	0.00913	0.00923	0.00916
	(A2 * !B1 * Y)	-0.00658	-0.00664	-0.00660
	(A2 * !B1 * Y)	0.00867	0.00880	0.00872
	(!A2 * !B1 * Y)	-0.00569	-0.00635	-0.00637
	(!A2 * !B1 * Y)	0.00929	0.00893	0.00886

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00205	0.00209	0.00205
	(A1 * B1 * !Y)	-0.00088	-0.00090	-0.00088
	(A1 * !B1 * Y)	0.00165	0.00163	0.00163
	(A1 * !B1 * Y)	-0.00233	-0.00233	-0.00234
	(!A1 * !B1 * Y)	0.00157	0.00157	0.00156
	(!A1 * !B1 * Y)	-0.00236	-0.00236	-0.00235
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00374	0.00380	0.00375
	(A1 * B1 * !Y)	-0.00178	-0.00180	-0.00177
	(A1 * !B1 * Y)	0.00335	0.00334	0.00333
	(A1 * !B1 * Y)	-0.00425	-0.00427	-0.00425
	(!A1 * !B1 * Y)	0.00321	0.00323	0.00320
	(!A1 * !B1 * Y)	-0.00430	-0.00431	-0.00429
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00778	0.00788	0.00776
	(A1 * B1 * !Y)	-0.00374	-0.00377	-0.00370
	(A1 * !B1 * Y)	0.00678	0.00677	0.00673
	(A1 * !B1 * Y)	-0.00881	-0.00889	-0.00884
	(!A1 * !B1 * Y)	0.00647	0.00652	0.00645
	(!A1 * !B1 * Y)	-0.00898	-0.00899	-0.00894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00183	-0.00185	-0.00191
	(A1 * B1 * !Y)	0.00108	0.00109	0.00103
	(A1 * !B1 * Y)	-0.00162	-0.00163	-0.00162
	(A1 * !B1 * Y)	0.00233	0.00234	0.00234
	(!A1 * !B1 * Y)	-0.00144	-0.00156	-0.00156
	(!A1 * !B1 * Y)	0.00246	0.00239	0.00236
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00326	-0.00330	-0.00345
	(A1 * B1 * !Y)	0.00220	0.00222	0.00209
	(A1 * !B1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * !B1 * Y)	0.00425	0.00429	0.00425
	(!A1 * !B1 * Y)	-0.00289	-0.00317	-0.00320
	(!A1 * !B1 * Y)	0.00454	0.00438	0.00432
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00699	-0.00707	-0.00740
	(A1 * B1 * !Y)	0.00438	0.00441	0.00411
	(A1 * !B1 * Y)	-0.00668	-0.00674	-0.00670
	(A1 * !B1 * Y)	0.00881	0.00889	0.00884
	(!A1 * !B1 * Y)	-0.00581	-0.00644	-0.00645
	(!A1 * !B1 * Y)	0.00951	0.00906	0.00899

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00062	0.00062	0.00057
	(!A1 * !A2 * Y)	-0.00261	-0.00262	-0.00270
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00126	0.00125	0.00116
	(!A1 * !A2 * Y)	-0.00484	-0.00485	-0.00501
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00219	0.00219	0.00203
	(!A1 * !A2 * Y)	-0.00554	-0.00557	-0.00587

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * Y)	0.00271	0.00272	0.00271
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00112	-0.00112	-0.00112
	(!A1 * !A2 * Y)	0.00502	0.00505	0.00504
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00196	-0.00196	-0.00195
	(!A1 * !A2 * Y)	0.00591	0.00593	0.00591

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00254	0.00256	0.00251	1.26482
sky130_fd_sc_hs__o21a_2	0.00276	0.00272	0.00281	2.46480
sky130_fd_sc_hs__o21a_4	0.00528	0.00489	0.00468	4.72971

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	13.63330	29.38810
sky130_fd_sc_hs__o21a_2	0.00000	15.38750	22.59950
sky130_fd_sc_hs__o21a_4	0.00000	36.17620	59.33100

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)	0.07926	0.53830	6.16419
	A2->X (RR)	0.06832	0.51374	6.05961
	B1->X (RR)	0.07302	0.55198	6.41599
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.08218	0.46403	6.12342
	A2->X (RR)	0.07251	0.44484	6.02665
	B1->X (RR)	0.07610	0.48252	6.41860
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.08733	0.40688	6.24869
	A2->X (RR)	0.07745	0.38489	6.18065
	B1->X (RR)	0.07712	0.41788	6.45190

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.11972	0.51821	4.94015
	A2->X (FF)	0.10600	0.52851	5.06216
	B1->X (FF)	0.06091	0.43779	4.76270
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.14965	0.53621	5.07112
	A2->X (FF)	0.13724	0.55497	5.20150
	B1->X (FF)	0.06880	0.42591	4.73899
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.14619	0.49354	5.08090
	A2->X (FF)	0.12855	0.50417	5.19428
	B1->X (FF)	0.07798	0.43071	4.88124

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01205	0.01448	0.07216
	A1	0.00540	0.00798	0.06601
	A2	0.00986	0.01283	0.07764
	A2	0.00441	0.00739	0.07255
	B1	0.00832	0.01258	0.08574
	B1	0.00427	0.00856	0.08218
sky130_fd_sc_hs__o21a_2	A1	0.01565	0.01813	0.07637
	A1	0.00842	0.01091	0.07019
	A2	0.01349	0.01640	0.08171
	A2	0.00757	0.01050	0.07686
	B1	0.01167	0.01580	0.08922
	B1	0.00710	0.01130	0.08564
sky130_fd_sc_hs__o21a_4	A1	0.03088	0.03558	0.14886
	A1	0.01725	0.02197	0.13702
	A2	0.02603	0.03157	0.15863
	A2	0.01516	0.02074	0.14915
	B1	0.02235	0.03025	0.16914
	B1	0.01451	0.02251	0.16294

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00486	0.00734	0.06481
	A1	0.01148	0.01392	0.07138
	A2	0.00489	0.00891	0.07590
	A2	0.01030	0.01428	0.07907
	B1	0.00354	0.00887	0.08943
	B1	0.00757	0.01280	0.09345
sky130_fd_sc_hs__o21a_2	A1	0.00936	0.01102	0.07373
	A1	0.01651	0.01804	0.07592
	A2	0.00947	0.01252	0.07906
	A2	0.01532	0.01836	0.08387
	B1	0.00678	0.01195	0.09380
	B1	0.01258	0.01738	0.09543
sky130_fd_sc_hs__o21a_4	A1	0.01770	0.02071	0.13800
	A1	0.03123	0.03398	0.14638
	A2	0.01811	0.02402	0.15121
	A2	0.02889	0.03458	0.16163
	B1	0.01393	0.02268	0.17561
	B1	0.02393	0.03258	0.18121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00221	0.00185	0.00182
	(A2 * B1 * X)	-0.00137	-0.00174	-0.00175
	(A2 * !B1 * !X)	0.00161	0.00162	0.00161
	(A2 * !B1 * !X)	-0.00194	-0.00195	-0.00195
	(!A2 * !B1 * !X)	0.00155	0.00157	0.00155
	(!A2 * !B1 * !X)	-0.00195	-0.00197	-0.00195
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00243	0.00209	0.00206
	(A2 * B1 * X)	-0.00142	-0.00178	-0.00178
	(A2 * !B1 * !X)	0.00198	0.00198	0.00197
	(A2 * !B1 * !X)	-0.00185	-0.00187	-0.00186
	(!A2 * !B1 * !X)	0.00188	0.00191	0.00190
	(!A2 * !B1 * !X)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00474	0.00408	0.00396
	(A2 * B1 * X)	-0.00258	-0.00332	-0.00335
	(A2 * !B1 * !X)	0.00358	0.00362	0.00359
	(A2 * !B1 * !X)	-0.00369	-0.00373	-0.00372
	(!A2 * !B1 * !X)	0.00345	0.00350	0.00347
	(!A2 * !B1 * !X)	-0.00373	-0.00376	-0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00129	-0.00130	-0.00130
	(A2 * B1 * X)	0.00229	0.00229	0.00227
	(A2 * !B1 * !X)	-0.00148	-0.00149	-0.00148
	(A2 * !B1 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !X)	-0.00128	-0.00140	-0.00144
	(!A2 * !B1 * !X)	0.00222	0.00211	0.00209
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00165	-0.00166	-0.00166
	(A2 * B1 * X)	0.00219	0.00221	0.00218
	(A2 * !B1 * !X)	-0.00172	-0.00173	-0.00172
	(A2 * !B1 * !X)	0.00210	0.00212	0.00210
	(!A2 * !B1 * !X)	-0.00150	-0.00165	-0.00167
	(!A2 * !B1 * !X)	0.00224	0.00216	0.00212
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00289	-0.00290	-0.00292
	(A2 * B1 * X)	0.00441	0.00443	0.00441
	(A2 * !B1 * !X)	-0.00308	-0.00309	-0.00309
	(A2 * !B1 * !X)	0.00418	0.00421	0.00420
	(!A2 * !B1 * !X)	-0.00269	-0.00295	-0.00300
	(!A2 * !B1 * !X)	0.00447	0.00430	0.00425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00175	0.00178	0.00175
	(A1 * B1 * X)	-0.00077	-0.00078	-0.00076
	(A1 * !B1 * !X)	0.00153	0.00154	0.00154
	(A1 * !B1 * !X)	-0.00188	-0.00189	-0.00190
	(!A1 * !B1 * !X)	0.00148	0.00148	0.00148
	(!A1 * !B1 * !X)	-0.00191	-0.00191	-0.00190
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00192	0.00196	0.00193
	(A1 * B1 * X)	-0.00076	-0.00078	-0.00076
	(A1 * !B1 * !X)	0.00179	0.00179	0.00179
	(A1 * !B1 * !X)	-0.00181	-0.00181	-0.00182
	(!A1 * !B1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !B1 * !X)	-0.00183	-0.00183	-0.00182
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00350	0.00355	0.00351
	(A1 * B1 * X)	-0.00143	-0.00146	-0.00142
	(A1 * !B1 * !X)	0.00306	0.00309	0.00307
	(A1 * !B1 * !X)	-0.00367	-0.00370	-0.00370
	(!A1 * !B1 * !X)	0.00295	0.00297	0.00295
	(!A1 * !B1 * !X)	-0.00373	-0.00374	-0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00132	-0.00133	-0.00140
	(A1 * B1 * X)	0.00120	0.00120	0.00113
	(A1 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * !B1 * !X)	0.00200	0.00202	0.00201
	(!A1 * !B1 * !X)	-0.00121	-0.00132	-0.00136
	(!A1 * !B1 * !X)	0.00216	0.00205	0.00204
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00162	-0.00163	-0.00169
	(A1 * B1 * X)	0.00107	0.00107	0.00101
	(A1 * !B1 * !X)	-0.00153	-0.00155	-0.00154
	(A1 * !B1 * !X)	0.00205	0.00206	0.00206
	(!A1 * !B1 * !X)	-0.00134	-0.00148	-0.00149
	(!A1 * !B1 * !X)	0.00218	0.00210	0.00208
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00262	-0.00264	-0.00278
	(A1 * B1 * X)	0.00231	0.00231	0.00217
	(A1 * !B1 * !X)	-0.00256	-0.00258	-0.00256
	(A1 * !B1 * !X)	0.00417	0.00419	0.00418
	(!A1 * !B1 * !X)	-0.00217	-0.00244	-0.00247
	(!A1 * !B1 * !X)	0.00446	0.00429	0.00423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00063	0.00063	0.00059
	(!A1 * !A2 * !X)	-0.00200	-0.00201	-0.00208
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00075	0.00075	0.00070
	(!A1 * !A2 * !X)	-0.00222	-0.00223	-0.00231
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00122	0.00121	0.00112
	(!A1 * !A2 * !X)	-0.00376	-0.00377	-0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !X)	0.00220	0.00221	0.00221
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00043	-0.00045	-0.00043
	(!A1 * !A2 * !X)	0.00256	0.00261	0.00257
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00060	-0.00062	-0.00060
	(!A1 * !A2 * !X)	0.00442	0.00449	0.00443

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00282	0.00311	0.00242	0.63444
sky130_fd_sc_hs__o21bai_2	0.00596	0.00549	0.00268	1.16949
sky130_fd_sc_hs__o21bai_4	0.01082	0.01092	0.00366	2.14428

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	13.31560	18.37620
sky130_fd_sc_hs__o21bai_2	0.00000	14.06980	28.23120
sky130_fd_sc_hs__o21bai_4	0.00000	29.75120	42.06730

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)	0.07952	0.81879	9.33859
	A2->Y (FR)	0.06796	0.84157	9.82910
	B1_N->Y (RR)	0.05745	0.36924	3.04418
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.07316	0.68583	9.08038
	A2->Y (FR)	0.05719	0.70705	9.54346
	B1_N->Y (RR)	0.05798	0.31978	2.89224
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.07525	0.60089	9.09537
	A2->Y (FR)	0.05808	0.63605	9.76031
	B1_N->Y (RR)	0.07771	0.48609	6.52431

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.04062	0.40653	4.55483
	A2->Y (RF)	0.03309	0.39239	4.49129
	B1_N->Y (FF)	0.07903	0.46062	4.09450
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.03693	0.32939	4.29679
	A2->Y (RF)	0.03070	0.32139	4.32747
	B1_N->Y (FF)	0.07669	0.43863	4.19671
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.04368	0.28922	4.38566
	A2->Y (RF)	0.03127	0.26987	4.27014
	B1_N->Y (FF)	0.07963	0.38075	4.06524

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00077	0.00148	0.01992
	A1	0.00689	0.00761	0.02612
	A2	0.00073	0.00241	0.02614
	A2	0.00579	0.00750	0.03121
	B1_N	0.00798	0.01216	0.08318
	B1_N	0.00565	0.00984	0.08102
sky130_fd_sc_hs__o21bai_2	A1	0.00098	0.00262	0.04030
	A1	0.01325	0.01496	0.05287
	A2	0.00097	0.00450	0.04999
	A2	0.01016	0.01369	0.05919
	B1_N	0.01095	0.01544	0.09119
	B1_N	0.00958	0.01415	0.08992
sky130_fd_sc_hs__o21bai_4	A1	0.00177	0.00517	0.07430
	A1	0.02576	0.02927	0.09876
	A2	0.00149	0.00894	0.09425
	A2	0.02024	0.02719	0.11286
	B1_N	0.01506	0.02321	0.16121
	B1_N	0.01546	0.02374	0.16206

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00888	0.00948	0.02472
	A1	0.00275	0.00335	0.01853
	A2	0.00657	0.00738	0.02196
	A2	0.00147	0.00220	0.01653
	B1_N	0.00686	0.01187	0.08914
	B1_N	0.00927	0.01427	0.09133
sky130_fd_sc_hs__o21bai_2	A1	0.01773	0.01909	0.04955
	A1	0.00542	0.00668	0.03724
	A2	0.01219	0.01403	0.04274
	A2	0.00296	0.00474	0.03345
	B1_N	0.01359	0.01890	0.10324
	B1_N	0.01506	0.02030	0.10455
sky130_fd_sc_hs__o21bai_4	A1	0.03538	0.03841	0.09827
	A1	0.01128	0.01425	0.07417
	A2	0.02413	0.02821	0.08411
	A2	0.00531	0.00929	0.06532
	B1_N	0.02708	0.03573	0.17363
	B1_N	0.02698	0.03562	0.17305

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)	0.00191	0.00192	0.00191
	(A2 * B1_N * Y)	-0.00201	-0.00203	-0.00202
	(A2 * !B1_N * !Y)	0.00231	0.00194	0.00188
	(A2 * !B1_N * !Y)	-0.00163	-0.00203	-0.00205
	(!A2 * B1_N * Y)	0.00186	0.00188	0.00187
	(!A2 * B1_N * Y)	-0.00203	-0.00205	-0.00203
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00369	0.00371	0.00368
	(A2 * B1_N * Y)	-0.00442	-0.00445	-0.00444
	(A2 * !B1_N * !Y)	0.00485	0.00402	0.00390
	(A2 * !B1_N * !Y)	-0.00332	-0.00417	-0.00422
	(!A2 * B1_N * Y)	0.00358	0.00363	0.00360
	(!A2 * B1_N * Y)	-0.00445	-0.00448	-0.00445
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00706	0.00711	0.00704
	(A2 * B1_N * Y)	-0.00848	-0.00855	-0.00852
	(A2 * !B1_N * !Y)	0.00924	0.00746	0.00714
	(A2 * !B1_N * !Y)	-0.00643	-0.00827	-0.00843
	(!A2 * B1_N * Y)	0.00682	0.00686	0.00685
	(!A2 * B1_N * Y)	-0.00856	-0.00858	-0.00856

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)	-0.00159	-0.00159	-0.00159
	(A2 * B1_N * Y)	0.00233	0.00235	0.00234
	(A2 * !B1_N * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * !B1_N * !Y)	0.00232	0.00232	0.00231
	(!A2 * B1_N * Y)	-0.00141	-0.00153	-0.00155
	(!A2 * B1_N * Y)	0.00248	0.00240	0.00236
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00346	-0.00349	-0.00347
	(A2 * B1_N * Y)	0.00460	0.00464	0.00462
	(A2 * !B1_N * !Y)	-0.00337	-0.00339	-0.00338
	(A2 * !B1_N * !Y)	0.00475	0.00480	0.00476
	(!A2 * B1_N * Y)	-0.00310	-0.00338	-0.00341
	(!A2 * B1_N * Y)	0.00488	0.00474	0.00467
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00636	-0.00640	-0.00638
	(A2 * B1_N * Y)	0.00909	0.00918	0.00912
	(A2 * !B1_N * !Y)	-0.00633	-0.00635	-0.00633
	(A2 * !B1_N * !Y)	0.00924	0.00928	0.00925
	(!A2 * B1_N * Y)	-0.00559	-0.00621	-0.00624
	(!A2 * B1_N * Y)	0.00972	0.00932	0.00925

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)	0.00196	0.00195	0.00195
	(A1 * B1_N * Y)	-0.00221	-0.00220	-0.00220
	(A1 * !B1_N * !Y)	0.00208	0.00212	0.00209
	(A1 * !B1_N * !Y)	-0.00101	-0.00103	-0.00101
	(!A1 * B1_N * Y)	0.00191	0.00192	0.00190
	(!A1 * B1_N * Y)	-0.00222	-0.00223	-0.00221
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00340	0.00340	0.00338
	(A1 * B1_N * Y)	-0.00416	-0.00418	-0.00418
	(A1 * !B1_N * !Y)	0.00372	0.00376	0.00371
	(A1 * !B1_N * !Y)	-0.00178	-0.00180	-0.00176
	(!A1 * B1_N * Y)	0.00330	0.00332	0.00330
	(!A1 * B1_N * Y)	-0.00421	-0.00422	-0.00419
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00696	0.00703	0.00698
	(A1 * B1_N * Y)	-0.00845	-0.00856	-0.00856
	(A1 * !B1_N * !Y)	0.00766	0.00776	0.00764
	(A1 * !B1_N * !Y)	-0.00377	-0.00380	-0.00372
	(!A1 * B1_N * Y)	0.00676	0.00686	0.00680
	(!A1 * B1_N * Y)	-0.00858	-0.00864	-0.00858

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)	-0.00163	-0.00163	-0.00163
	(A1 * B1_N * Y)	0.00251	0.00252	0.00251
	(A1 * !B1_N * !Y)	-0.00186	-0.00188	-0.00194
	(A1 * !B1_N * !Y)	0.00122	0.00123	0.00117
	(!A1 * B1_N * Y)	-0.00145	-0.00157	-0.00159
	(!A1 * B1_N * Y)	0.00266	0.00258	0.00254
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00315	-0.00316	-0.00317
	(A1 * B1_N * Y)	0.00432	0.00434	0.00435
	(A1 * !B1_N * !Y)	-0.00323	-0.00327	-0.00340
	(A1 * !B1_N * !Y)	0.00220	0.00222	0.00209
	(!A1 * B1_N * Y)	-0.00284	-0.00308	-0.00311
	(!A1 * B1_N * Y)	0.00462	0.00447	0.00442
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00633	-0.00635	-0.00632
	(A1 * B1_N * Y)	0.00913	0.00916	0.00913
	(A1 * !B1_N * !Y)	-0.00688	-0.00695	-0.00727
	(A1 * !B1_N * !Y)	0.00442	0.00444	0.00414
	(!A1 * B1_N * Y)	-0.00556	-0.00612	-0.00619
	(!A1 * B1_N * Y)	0.00972	0.00935	0.00927

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)	0.00655	0.01097	0.08890
	(!A1 * !A2 * Y)	0.00246	0.00687	0.08480
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00951	0.01394	0.10005
	(!A1 * !A2 * Y)	0.00485	0.00926	0.09537
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01159	0.01909	0.15530
	(!A1 * !A2 * Y)	0.00517	0.01265	0.14888

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)	0.00018	0.00520	0.08337
	(!A1 * !A2 * Y)	0.00429	0.00930	0.08748
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00078	0.00576	0.09168
	(!A1 * !A2 * Y)	0.00550	0.01051	0.09638
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00154	0.01013	0.14708
	(!A1 * !A2 * Y)	0.00808	0.01669	0.15359

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00258	0.00272	0.00222	1.14940
sky130_fd_sc_hs__o21ba_2	0.00268	0.00279	0.00235	2.20478
sky130_fd_sc_hs__o21ba_4	0.00536	0.00509	0.00288	4.08224

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	20.10990	25.43320
sky130_fd_sc_hs__o21ba_2	0.00000	24.51410	32.30280
sky130_fd_sc_hs__o21ba_4	0.00000	39.80110	59.61580

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)	0.08776	0.56705	6.25572
	A2->X (RR)	0.07694	0.54460	6.15647
	B1_N->X (FR)	0.13093	0.71510	7.82028
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.08705	0.46954	5.95757
	A2->X (RR)	0.07580	0.44867	5.85080
	B1_N->X (FR)	0.13325	0.61746	7.55691
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.09350	0.41515	6.05501
	A2->X (RR)	0.08416	0.39369	5.98663
	B1_N->X (FR)	0.14114	0.57839	7.73589

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.12384	0.51755	4.67060
	A2->X (FF)	0.11221	0.52990	4.79350
	B1_N->X (RF)	0.09329	0.34195	2.55627
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.14694	0.52750	4.83533
	A2->X (FF)	0.13473	0.54634	4.97038
	B1_N->X (RF)	0.10201	0.32400	2.65932
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.14486	0.48160	4.62828
	A2->X (FF)	0.12745	0.49292	4.74638
	B1_N->X (RF)	0.10726	0.29467	2.36365

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01250	0.01490	0.07260
	A1	0.00692	0.00933	0.06743
	A2	0.01058	0.01340	0.07820
	A2	0.00598	0.00882	0.07393
	B1_N	0.01118	0.01645	0.09948
	B1_N	0.01212	0.01756	0.10286
sky130_fd_sc_hs__o21ba_2	A1	0.01562	0.01806	0.07645
	A1	0.00987	0.01233	0.07176
	A2	0.01352	0.01643	0.08180
	A2	0.00879	0.01171	0.07720
	B1_N	0.01403	0.01934	0.09796
	B1_N	0.01654	0.02189	0.10116
sky130_fd_sc_hs__o21ba_4	A1	0.03086	0.03543	0.14879
	A1	0.01946	0.02418	0.13931
	A2	0.02606	0.03139	0.15826
	A2	0.01744	0.02276	0.15154
	B1_N	0.02729	0.03317	0.12927
	B1_N	0.02925	0.03515	0.13284

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00494	0.00745	0.06521
	A1	0.01048	0.01294	0.07025
	A2	0.00493	0.00890	0.07437
	A2	0.00948	0.01341	0.07815
	B1_N	0.01172	0.01609	0.09467
	B1_N	0.00954	0.01384	0.09149
sky130_fd_sc_hs__o21ba_2	A1	0.00884	0.01036	0.06953
	A1	0.01453	0.01605	0.07395
	A2	0.00886	0.01211	0.07740
	A2	0.01355	0.01662	0.08204
	B1_N	0.01533	0.01914	0.09685
	B1_N	0.01282	0.01664	0.09398
sky130_fd_sc_hs__o21ba_4	A1	0.01729	0.01993	0.13209
	A1	0.02861	0.03124	0.14325
	A2	0.01759	0.02329	0.15026
	A2	0.02620	0.03166	0.15839
	B1_N	0.02619	0.03052	0.12147
	B1_N	0.02421	0.02848	0.11911

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)	0.00176	0.00177	0.00176
	(A2 * B1_N * !X)	-0.00180	-0.00181	-0.00181
	(A2 * !B1_N * X)	0.00212	0.00178	0.00175
	(A2 * !B1_N * X)	-0.00146	-0.00182	-0.00182
	(!A2 * B1_N * !X)	0.00172	0.00172	0.00172
	(!A2 * B1_N * !X)	-0.00182	-0.00182	-0.00181
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00203	0.00204	0.00203
	(A2 * B1_N * !X)	-0.00170	-0.00171	-0.00170
	(A2 * !B1_N * X)	0.00235	0.00200	0.00196
	(A2 * !B1_N * X)	-0.00140	-0.00177	-0.00177
	(!A2 * B1_N * !X)	0.00198	0.00200	0.00198
	(!A2 * B1_N * !X)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00371	0.00375	0.00372
	(A2 * B1_N * !X)	-0.00369	-0.00374	-0.00373
	(A2 * !B1_N * X)	0.00476	0.00408	0.00397
	(A2 * !B1_N * X)	-0.00271	-0.00345	-0.00349
	(!A2 * B1_N * !X)	0.00362	0.00366	0.00364
	(!A2 * B1_N * !X)	-0.00375	-0.00377	-0.00375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A2 * B1_N * !X)	-0.00131	-0.00132	-0.00131
	(A2 * B1_N * !X)	0.00224	0.00226	0.00224
	(A2 * !B1_N * X)	-0.00134	-0.00135	-0.00135
	(A2 * !B1_N * X)	0.00224	0.00226	0.00223
	(!A2 * B1_N * !X)	-0.00113	-0.00126	-0.00128
	(!A2 * B1_N * !X)	0.00239	0.00230	0.00226
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00146	-0.00147	-0.00146
	(A2 * B1_N * !X)	0.00225	0.00227	0.00226
	(A2 * !B1_N * X)	-0.00155	-0.00156	-0.00156
	(A2 * !B1_N * X)	0.00219	0.00220	0.00218
	(!A2 * B1_N * !X)	-0.00128	-0.00141	-0.00143
	(!A2 * B1_N * !X)	0.00241	0.00231	0.00228
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00308	-0.00310	-0.00309
	(A2 * B1_N * !X)	0.00431	0.00434	0.00432
	(A2 * !B1_N * X)	-0.00289	-0.00290	-0.00291
	(A2 * !B1_N * X)	0.00455	0.00458	0.00455
	(!A2 * B1_N * !X)	-0.00275	-0.00301	-0.00303
	(!A2 * B1_N * !X)	0.00459	0.00445	0.00438

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)	0.00183	0.00184	0.00184
	(A1 * B1_N * !X)	-0.00180	-0.00182	-0.00182
	(A1 * !B1_N * X)	0.00180	0.00183	0.00180
	(A1 * !B1_N * X)	-0.00093	-0.00095	-0.00093
	(!A1 * B1_N * !X)	0.00180	0.00180	0.00180
	(!A1 * B1_N * !X)	-0.00183	-0.00183	-0.00182
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00206	0.00209	0.00207
	(A1 * B1_N * !X)	-0.00171	-0.00173	-0.00173
	(A1 * !B1_N * X)	0.00201	0.00205	0.00202
	(A1 * !B1_N * X)	-0.00086	-0.00088	-0.00086
	(!A1 * B1_N * !X)	0.00201	0.00202	0.00202
	(!A1 * B1_N * !X)	-0.00173	-0.00173	-0.00173
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00320	0.00323	0.00321
	(A1 * B1_N * !X)	-0.00372	-0.00375	-0.00375
	(A1 * !B1_N * X)	0.00358	0.00364	0.00359
	(A1 * !B1_N * X)	-0.00153	-0.00156	-0.00152
	(!A1 * B1_N * !X)	0.00312	0.00316	0.00313
	(!A1 * B1_N * !X)	-0.00377	-0.00380	-0.00377

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	-0.00138	-0.00140	-0.00139
	(A1 * B1_N * !X)	0.00224	0.00227	0.00225
	(A1 * !B1_N * X)	-0.00150	-0.00151	-0.00157
	(A1 * !B1_N * X)	0.00124	0.00124	0.00118
	(!A1 * B1_N * !X)	-0.00122	-0.00134	-0.00136
	(!A1 * B1_N * !X)	0.00240	0.00231	0.00228
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00149	-0.00151	-0.00150
	(A1 * B1_N * !X)	0.00227	0.00228	0.00228
	(A1 * !B1_N * X)	-0.00170	-0.00171	-0.00178
	(A1 * !B1_N * X)	0.00117	0.00118	0.00111
	(!A1 * B1_N * !X)	-0.00133	-0.00146	-0.00147
	(!A1 * B1_N * !X)	0.00242	0.00233	0.00230
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00257	-0.00259	-0.00259
	(A1 * B1_N * !X)	0.00432	0.00434	0.00435
	(A1 * !B1_N * X)	-0.00270	-0.00272	-0.00286
	(A1 * !B1_N * X)	0.00241	0.00241	0.00227
	(!A1 * B1_N * !X)	-0.00222	-0.00248	-0.00252
	(!A1 * B1_N * !X)	0.00467	0.00448	0.00441

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)	0.00614	0.01055	0.08656
	(!A1 * !A2 * !X)	0.00233	0.00673	0.08275
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00673	0.01100	0.08677
	(!A1 * !A2 * !X)	0.00273	0.00698	0.08276
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00941	0.01414	0.09926
	(!A1 * !A2 * !X)	0.00444	0.00919	0.09429

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)	0.00035	0.00528	0.08149
	(!A1 * !A2 * !X)	0.00419	0.00913	0.08532
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00034	0.00518	0.08118
	(!A1 * !A2 * !X)	0.00436	0.00923	0.08520
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00071	0.00588	0.09093
	(!A1 * !A2 * !X)	0.00572	0.01091	0.09593

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00292	0.00307	0.00303	0.00294	0.00298	0.63367
sky130_fd_sc_hs__o221ai_2	0.00597	0.00547	0.00624	0.00546	0.00551	1.14872
sky130_fd_sc_hs__o221ai_4	0.01140	0.01084	0.01151	0.01081	0.01098	2.15573

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	4.24688	20.89300
sky130_fd_sc_hs__o221ai_2	0.00000	8.48825	41.77770
sky130_fd_sc_hs__o221ai_4	0.00000	16.97360	83.55050

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)	0.12146	0.86340	9.36794
	A2->Y (FR)	0.10904	0.88348	9.85017
	B1->Y (FR)	0.09046	0.82088	9.25339
	B2->Y (FR)	0.07700	0.84140	9.73781
	C1->Y (FR)	0.03253	0.57411	6.91762
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.11100	0.72586	9.06905
	A2->Y (FR)	0.09525	0.74541	9.53374
	B1->Y (FR)	0.08305	0.69012	8.99257
	B2->Y (FR)	0.06661	0.70959	9.44840
	C1->Y (FR)	0.02558	0.48789	6.64802
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.10179	0.61837	8.81666
	A2->Y (FR)	0.08666	0.64757	9.40742
	B1->Y (FR)	0.08236	0.60640	9.09112
	B2->Y (FR)	0.06493	0.63308	9.64824
	C1->Y (FR)	0.02561	0.43614	6.75378

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.08113	0.49909	5.09894
	A2->Y (RF)	0.06991	0.48356	5.05149
	B1->Y (RF)	0.07308	0.55000	5.95506
	B2->Y (RF)	0.06044	0.52666	5.82685
	C1->Y (RF)	0.06150	0.59198	6.66171
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.06255	0.39559	4.89294
	A2->Y (RF)	0.05222	0.38600	4.94286
	B1->Y (RF)	0.05428	0.44605	5.74943
	B2->Y (RF)	0.04411	0.44859	5.97926
	C1->Y (RF)	0.02869	0.48159	6.64282
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.06900	0.35182	5.14376
	A2->Y (RF)	0.05466	0.33558	5.16225
	B1->Y (RF)	0.06120	0.41425	6.18045
	B2->Y (RF)	0.04662	0.39874	6.24351
	C1->Y (RF)	0.03104	0.44556	7.14445

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00284	0.00333	0.02082
	A1	0.01371	0.01420	0.03051
	A2	0.00293	0.00426	0.02623
	A2	0.01216	0.01348	0.03541
	B1	0.00099	0.00155	0.01884
	B1	0.00903	0.00961	0.02698
	B2	0.00100	0.00249	0.02437
	B2	0.00759	0.00909	0.03095
	C1	-0.00055	0.00168	0.02939
	C1	0.00490	0.00714	0.03484
sky130_fd_sc_hs__o221ai_2	A1	0.00461	0.00575	0.04064
	A1	0.02565	0.02684	0.06051
	A2	0.00463	0.00742	0.05023
	A2	0.02271	0.02538	0.06639
	B1	0.00123	0.00249	0.03701
	B1	0.01692	0.01825	0.05276
	B2	0.00136	0.00429	0.04525
	B2	0.01399	0.01691	0.05791
	C1	-0.00189	0.00282	0.05730
	C1	0.00803	0.01277	0.06889

sky130_fd_sc_hs__o221ai_4	**A1**	0.00772	0.01002	0.07114
	A1	0.04940	0.05178	0.11073
	A2	0.00792	0.01369	0.08620
	A2	0.04382	0.04970	0.11973
	B1	0.00184	0.00489	0.07415
	B1	0.03261	0.03575	0.10535
	B2	0.00180	0.00795	0.08733
	B2	0.02698	0.03297	0.11235
	C1	-0.00348	0.00761	0.13209
	C1	0.01615	0.02724	0.15260

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01505	0.01538	0.02972
	A1	0.00380	0.00410	0.01848
	A2	0.01259	0.01295	0.02663
	A2	0.00122	0.00163	0.01549
	B1	0.01042	0.01088	0.02482
	B1	0.00233	0.00280	0.01640
	B2	0.00800	0.00864	0.02225
	B2	0.00135	0.00194	0.01523
	C1	0.00646	0.00761	0.02525
	C1	0.00102	0.00211	0.01905

sky130_fd_sc_hs__o221ai_2	**A1**	0.02863	0.02926	0.05850
	A1	0.00684	0.00749	0.03629
	A2	0.02328	0.02425	0.05165
	A2	0.00139	0.00244	0.03010
	B1	0.02526	0.02611	0.05180
	B1	0.00397	0.00494	0.03212
	B2	0.01415	0.01551	0.04012
	B2	0.00144	0.00274	0.02742
	C1	0.01071	0.01340	0.04823
	C1	0.00079	0.00343	0.03739
sky130_fd_sc_hs__o221ai_4	**A1**	0.05680	0.05855	0.11898
	A1	0.01371	0.01541	0.07496
	A2	0.04638	0.04844	0.10437
	A2	0.00289	0.00526	0.06148
	B1	0.03878	0.04149	0.10273
	B1	0.00783	0.01050	0.07111
	B2	0.02841	0.03174	0.08975
	B2	0.00307	0.00636	0.06238
	C1	0.02111	0.02774	0.11134
	C1	0.00147	0.00804	0.09166

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

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

	(A2 * B2 * C1 * !Y)	0.00243	0.00205	0.00199
	(A2 * B2 * C1 * !Y)	-0.00166	-0.00206	-0.00209
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00186	0.00187	0.00186
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00220	-0.00222	-0.00221
	(A2 * B1 * !B2 * C1 * !Y)	0.00246	0.00208	0.00202
	(A2 * B1 * !B2 * C1 * !Y)	-0.00163	-0.00203	-0.00206
	(A2 * !B1 * !B2 * Y)	0.00186	0.00188	0.00186
sky130_fd_sc_hs__o221ai_1	**(A2 * !B1 * !B2 * Y)**	-0.00220	-0.00222	-0.00222
	(!A2 * B2 * !C1 * Y)	0.00172	0.00173	0.00172
	(!A2 * B2 * !C1 * Y)	-0.00223	-0.00224	-0.00223
	(!A2 * B1 * !B2 * !C1 * Y)	0.00174	0.00176	0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00223	-0.00224	-0.00223
	(!A2 * !B1 * !B2 * C1 * Y)	0.00176	0.00178	0.00176
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00223	-0.00224	-0.00223
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00176	0.00176	0.00175
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00223	-0.00224	-0.00223

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00480	0.00395	0.00383
	(A2 * B2 * C1 * !Y)	-0.00324	-0.00411	-0.00416
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00345	0.00347	0.00344
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00452	-0.00456	-0.00454
	(A2 * B1 * !B2 * C1 * !Y)	0.00486	0.00402	0.00389
	(A2 * B1 * !B2 * C1 * !Y)	-0.00318	-0.00404	-0.00410
	(A2 * !B1 * !B2 * Y)	0.00346	0.00347	0.00344
	(A2 * !B1 * !B2 * Y)	-0.00452	-0.00456	-0.00454
	(!A2 * B2 * !C1 * Y)	0.00320	0.00324	0.00321
	(!A2 * B2 * !C1 * Y)	-0.00457	-0.00460	-0.00457
	(!A2 * B1 * !B2 * !C1 * Y)	0.00323	0.00327	0.00323
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00457	-0.00460	-0.00457
	(!A2 * !B1 * !B2 * C1 * Y)	0.00330	0.00332	0.00329
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00459	-0.00460	-0.00457
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00329	0.00331	0.00328
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00459	-0.00460	-0.00458

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00950	0.00782	0.00755
	(A2 * B2 * C1 * !Y)	-0.00635	-0.00808	-0.00820
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00698	0.00701	0.00696
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00872	-0.00881	-0.00876
	(A2 * B1 * !B2 * C1 * !Y)	0.00963	0.00795	0.00767
	(A2 * B1 * !B2 * C1 * !Y)	-0.00623	-0.00796	-0.00808
	(A2 * !B1 * !B2 * Y)	0.00699	0.00702	0.00696
	(A2 * !B1 * !B2 * Y)	-0.00872	-0.00881	-0.00876
	(!A2 * B2 * !C1 * Y)	0.00647	0.00652	0.00645
	(!A2 * B2 * !C1 * Y)	-0.00886	-0.00889	-0.00883
	(!A2 * B1 * !B2 * !C1 * Y)	0.00653	0.00658	0.00651
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00886	-0.00889	-0.00883
	(!A2 * !B1 * !B2 * C1 * Y)	0.00661	0.00669	0.00663
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00884	-0.00889	-0.00884
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00657	0.00666	0.00660
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00883	-0.00889	-0.00885

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)**	-0.00173	-0.00173	-0.00173
	(A2 * B2 * C1 * !Y)	0.00236	0.00236	0.00235
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00221	0.00222	0.00221
	(A2 * B1 * !B2 * C1 * !Y)	-0.00170	-0.00170	-0.00170
	(A2 * B1 * !B2 * C1 * !Y)	0.00239	0.00239	0.00238
	(A2 * !B1 * !B2 * Y)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * !B2 * Y)	0.00221	0.00222	0.00222
	(!A2 * B2 * !C1 * Y)	-0.00156	-0.00173	-0.00172
	(!A2 * B2 * !C1 * Y)	0.00225	0.00227	0.00224
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00159	-0.00176	-0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	0.00226	0.00227	0.00224
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00164	-0.00177	-0.00176
	(!A2 * !B1 * !B2 * C1 * Y)	0.00225	0.00227	0.00224
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00167	-0.00176	-0.00175
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00223	0.00226	0.00224

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00330	-0.00331	-0.00331
	(A2 * B2 * C1 * !Y)	0.00469	0.00472	0.00470
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00341	-0.00344	-0.00342
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00452	0.00456	0.00454
	(A2 * B1 * !B2 * C1 * !Y)	-0.00323	-0.00325	-0.00324
	(A2 * B1 * !B2 * C1 * !Y)	0.00475	0.00478	0.00476
	(A2 * !B1 * !B2 * Y)	-0.00341	-0.00343	-0.00342
	(A2 * !B1 * !B2 * Y)	0.00452	0.00457	0.00454
	(!A2 * B2 * !C1 * Y)	-0.00285	-0.00321	-0.00321
	(!A2 * B2 * !C1 * Y)	0.00463	0.00466	0.00459
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00291	-0.00324	-0.00323
	(!A2 * B1 * !B2 * !C1 * Y)	0.00464	0.00465	0.00459
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00304	-0.00327	-0.00329
	(!A2 * !B1 * !B2 * C1 * Y)	0.00463	0.00462	0.00460
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00309	-0.00329	-0.00328
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00460	0.00463	0.00459

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00645	-0.00652	-0.00649
	(A2 * B2 * C1 * !Y)	0.00923	0.00934	0.00928
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00691	-0.00697	-0.00693
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00872	0.00885	0.00876
	(A2 * B1 * !B2 * C1 * !Y)	-0.00633	-0.00639	-0.00637
	(A2 * B1 * !B2 * C1 * !Y)	0.00935	0.00947	0.00940
	(A2 * !B1 * !B2 * Y)	-0.00690	-0.00694	-0.00692
	(A2 * !B1 * !B2 * Y)	0.00872	0.00881	0.00876
	(!A2 * B2 * !C1 * Y)	-0.00577	-0.00648	-0.00645
	(!A2 * B2 * !C1 * Y)	0.00901	0.00901	0.00888
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00583	-0.00652	-0.00651
	(!A2 * B1 * !B2 * !C1 * Y)	0.00896	0.00901	0.00888
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00604	-0.00661	-0.00663
	(!A2 * !B1 * !B2 * C1 * Y)	0.00892	0.00894	0.00889
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00620	-0.00662	-0.00660
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00883	0.00892	0.00888

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)**	0.00201	0.00205	0.00202
	(A1 * B2 * C1 * !Y)	-0.00099	-0.00101	-0.00099
	(A1 * B2 * !C1 * Y)	0.00171	0.00170	0.00169
	(A1 * B2 * !C1 * Y)	-0.00234	-0.00235	-0.00235
	(A1 * B1 * !B2 * C1 * !Y)	0.00204	0.00208	0.00205
	(A1 * B1 * !B2 * C1 * !Y)	-0.00096	-0.00097	-0.00095
	(A1 * B1 * !B2 * !C1 * Y)	0.00169	0.00170	0.00169
	(A1 * B1 * !B2 * !C1 * Y)	-0.00234	-0.00235	-0.00235
	(A1 * !B1 * !B2 * C1 * Y)	0.00168	0.00170	0.00170
	(A1 * !B1 * !B2 * C1 * Y)	-0.00233	-0.00235	-0.00235
	(A1 * !B1 * !B2 * !C1 * Y)	0.00169	0.00171	0.00169
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00234	-0.00236	-0.00235
	(!A1 * B2 * !C1 * Y)	0.00158	0.00160	0.00159
	(!A1 * B2 * !C1 * Y)	-0.00236	-0.00237	-0.00237
	(!A1 * B1 * !B2 * !C1 * Y)	0.00159	0.00161	0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00236	-0.00238	-0.00237
	(!A1 * !B1 * !B2 * C1 * Y)	0.00161	0.00163	0.00161
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00237	-0.00238	-0.00237
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00161	0.00163	0.00161
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00237	-0.00238	-0.00237

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00369	0.00375	0.00370
	(A1 * B2 * C1 * !Y)	-0.00176	-0.00179	-0.00175
	(A1 * B2 * !C1 * Y)	0.00325	0.00328	0.00327
	(A1 * B2 * !C1 * Y)	-0.00422	-0.00427	-0.00425
	(A1 * B1 * !B2 * C1 * !Y)	0.00375	0.00381	0.00376
	(A1 * B1 * !B2 * C1 * !Y)	-0.00169	-0.00172	-0.00169
	(A1 * B1 * !B2 * !C1 * Y)	0.00326	0.00328	0.00327
	(A1 * B1 * !B2 * !C1 * Y)	-0.00422	-0.00427	-0.00425
	(A1 * !B1 * !B2 * C1 * Y)	0.00325	0.00330	0.00327
	(A1 * !B1 * !B2 * C1 * Y)	-0.00422	-0.00427	-0.00425
	(A1 * !B1 * !B2 * !C1 * Y)	0.00326	0.00327	0.00326
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00423	-0.00426	-0.00424
	(!A1 * B2 * !C1 * Y)	0.00304	0.00308	0.00305
	(!A1 * B2 * !C1 * Y)	-0.00429	-0.00431	-0.00429
	(!A1 * B1 * !B2 * !C1 * Y)	0.00307	0.00309	0.00308
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00428	-0.00430	-0.00429
	(!A1 * !B1 * !B2 * C1 * Y)	0.00312	0.00314	0.00312
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00430	-0.00431	-0.00429
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00313	0.00313	0.00312
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00430	-0.00430	-0.00429

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00749	0.00758	0.00747
	(A1 * B2 * C1 * !Y)	-0.00354	-0.00357	-0.00349
	(A1 * B2 * !C1 * Y)	0.00636	0.00641	0.00638
	(A1 * B2 * !C1 * Y)	-0.00867	-0.00875	-0.00871
	(A1 * B1 * !B2 * C1 * !Y)	0.00761	0.00770	0.00759
	(A1 * B1 * !B2 * C1 * !Y)	-0.00341	-0.00344	-0.00337
	(A1 * B1 * !B2 * !C1 * Y)	0.00636	0.00641	0.00638
	(A1 * B1 * !B2 * !C1 * Y)	-0.00866	-0.00875	-0.00871
	(A1 * !B1 * !B2 * C1 * Y)	0.00636	0.00644	0.00639
	(A1 * !B1 * !B2 * C1 * Y)	-0.00866	-0.00875	-0.00871
	(A1 * !B1 * !B2 * !C1 * Y)	0.00635	0.00639	0.00637
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00866	-0.00873	-0.00871
	(!A1 * B2 * !C1 * Y)	0.00595	0.00594	0.00597
	(!A1 * B2 * !C1 * Y)	-0.00878	-0.00877	-0.00879
	(!A1 * B1 * !B2 * !C1 * Y)	0.00601	0.00606	0.00603
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00878	-0.00882	-0.00879
	(!A1 * !B1 * !B2 * C1 * Y)	0.00613	0.00616	0.00611
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00883	-0.00884	-0.00880
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00612	0.00615	0.00610
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00883	-0.00884	-0.00881

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)**	-0.00179	-0.00180	-0.00187
	(A1 * B2 * C1 * !Y)	0.00122	0.00121	0.00115
	(A1 * B2 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * B2 * !C1 * Y)	0.00234	0.00236	0.00235
	(A1 * B1 * !B2 * C1 * !Y)	-0.00176	-0.00177	-0.00184
	(A1 * B1 * !B2 * C1 * !Y)	0.00125	0.00125	0.00118
	(A1 * B1 * !B2 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * B1 * !B2 * !C1 * Y)	0.00234	0.00236	0.00235
	(A1 * !B1 * !B2 * C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !B1 * !B2 * C1 * Y)	0.00235	0.00236	0.00235
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00169	-0.00169	-0.00169
	(A1 * !B1 * !B2 * !C1 * Y)	0.00235	0.00236	0.00235
	(!A1 * B2 * !C1 * Y)	-0.00141	-0.00160	-0.00159
	(!A1 * B2 * !C1 * Y)	0.00239	0.00240	0.00238
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00144	-0.00160	-0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	0.00239	0.00240	0.00238
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00149	-0.00161	-0.00161
	(!A1 * !B1 * !B2 * C1 * Y)	0.00238	0.00240	0.00238
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00151	-0.00162	-0.00161
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00237	0.00240	0.00238

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00323	-0.00325	-0.00339
	(A1 * B2 * C1 * !Y)	0.00221	0.00221	0.00208
	(A1 * B2 * !C1 * Y)	-0.00325	-0.00327	-0.00325
	(A1 * B2 * !C1 * Y)	0.00425	0.00428	0.00425
	(A1 * B1 * !B2 * C1 * !Y)	-0.00316	-0.00319	-0.00332
	(A1 * B1 * !B2 * C1 * !Y)	0.00227	0.00228	0.00214
	(A1 * B1 * !B2 * !C1 * Y)	-0.00324	-0.00327	-0.00325
	(A1 * B1 * !B2 * !C1 * Y)	0.00422	0.00428	0.00425
	(A1 * !B1 * !B2 * C1 * Y)	-0.00324	-0.00327	-0.00325
	(A1 * !B1 * !B2 * C1 * Y)	0.00424	0.00428	0.00425
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00326	-0.00327	-0.00325
	(A1 * !B1 * !B2 * !C1 * Y)	0.00425	0.00427	0.00424
	(!A1 * B2 * !C1 * Y)	-0.00272	-0.00306	-0.00305
	(!A1 * B2 * !C1 * Y)	0.00434	0.00437	0.00431
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00277	-0.00307	-0.00308
	(!A1 * B1 * !B2 * !C1 * Y)	0.00434	0.00436	0.00431
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00289	-0.00310	-0.00312
	(!A1 * !B1 * !B2 * C1 * Y)	0.00433	0.00432	0.00432
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00293	-0.00310	-0.00312
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00431	0.00431	0.00431

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00651	-0.00656	-0.00685
	(A1 * B2 * C1 * !Y)	0.00442	0.00443	0.00416
	(A1 * B2 * !C1 * Y)	-0.00634	-0.00638	-0.00635
	(A1 * B2 * !C1 * Y)	0.00870	0.00878	0.00871
	(A1 * B1 * !B2 * C1 * !Y)	-0.00635	-0.00644	-0.00672
	(A1 * B1 * !B2 * C1 * !Y)	0.00450	0.00455	0.00428
	(A1 * B1 * !B2 * !C1 * Y)	-0.00632	-0.00638	-0.00635
	(A1 * B1 * !B2 * !C1 * Y)	0.00866	0.00877	0.00871
	(A1 * !B1 * !B2 * C1 * Y)	-0.00634	-0.00638	-0.00634
	(A1 * !B1 * !B2 * C1 * Y)	0.00870	0.00877	0.00871
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00633	-0.00637	-0.00635
	(A1 * !B1 * !B2 * !C1 * Y)	0.00866	0.00873	0.00871
	(!A1 * B2 * !C1 * Y)	-0.00533	-0.00594	-0.00597
	(!A1 * B2 * !C1 * Y)	0.00889	0.00895	0.00884
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00544	-0.00601	-0.00603
	(!A1 * B1 * !B2 * !C1 * Y)	0.00894	0.00894	0.00884
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00563	-0.00607	-0.00611
	(!A1 * !B1 * !B2 * C1 * Y)	0.00889	0.00888	0.00885
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00573	-0.00607	-0.00610
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00884	0.00884	0.00883

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)**	0.00249	0.00213	0.00208
	(A2 * B2 * C1 * !Y)	-0.00163	-0.00202	-0.00203
	(A2 * !B2 * !C1 * Y)	0.00171	0.00173	0.00171
	(A2 * !B2 * !C1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00177	0.00178	0.00177
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00233	-0.00235	-0.00234
	(A1 * !A2 * B2 * C1 * !Y)	0.00252	0.00216	0.00211
	(A1 * !A2 * B2 * C1 * !Y)	-0.00160	-0.00198	-0.00200
	(A1 * !A2 * !B2 * !C1 * Y)	0.00171	0.00173	0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00235	-0.00236	-0.00235
	(!A1 * !A2 * B2 * C1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B2 * C1 * Y)	-0.00234	-0.00236	-0.00235
	(!A1 * !A2 * B2 * !C1 * Y)	0.00103	0.00103	0.00103
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00234	-0.00236	-0.00235
	(!A1 * !A2 * !B2 * C1 * Y)	0.00080	0.00081	0.00082
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00234	-0.00235	-0.00233
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00236	-0.00238	-0.00236

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00500	0.00418	0.00407
	(A2 * B2 * C1 * !Y)	-0.00315	-0.00399	-0.00404
	(A2 * !B2 * !C1 * Y)	0.00330	0.00335	0.00332
	(A2 * !B2 * !C1 * Y)	-0.00465	-0.00469	-0.00466
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00347	0.00348	0.00346
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00461	-0.00466	-0.00463
	(A1 * !A2 * B2 * C1 * !Y)	0.00507	0.00424	0.00413
	(A1 * !A2 * B2 * C1 * !Y)	-0.00308	-0.00393	-0.00398
	(A1 * !A2 * !B2 * !C1 * Y)	0.00330	0.00331	0.00332
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00465	-0.00466	-0.00465
	(!A1 * !A2 * B2 * C1 * Y)	0.00142	0.00142	0.00141
	(!A1 * !A2 * B2 * C1 * Y)	-0.00464	-0.00466	-0.00465
	(!A1 * !A2 * B2 * !C1 * Y)	0.00190	0.00190	0.00188
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00464	-0.00466	-0.00465
	(!A1 * !A2 * !B2 * C1 * Y)	0.00148	0.00149	0.00149
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00466	-0.00467	-0.00463
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00201	0.00202	0.00201
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00467	-0.00468	-0.00467

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00958	0.00796	0.00768
	(A2 * B2 * C1 * !Y)	-0.00621	-0.00791	-0.00804
	(A2 * !B2 * !C1 * Y)	0.00639	0.00646	0.00641
	(A2 * !B2 * !C1 * Y)	-0.00903	-0.00907	-0.00902
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00672	0.00677	0.00671
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00894	-0.00901	-0.00897
	(A1 * !A2 * B2 * C1 * !Y)	0.00970	0.00809	0.00780
	(A1 * !A2 * B2 * C1 * !Y)	-0.00609	-0.00777	-0.00791
	(A1 * !A2 * !B2 * !C1 * Y)	0.00639	0.00646	0.00641
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00903	-0.00907	-0.00902
	(!A1 * !A2 * B2 * C1 * Y)	0.00264	0.00264	0.00262
	(!A1 * !A2 * B2 * C1 * Y)	-0.00898	-0.00904	-0.00901
	(!A1 * !A2 * B2 * !C1 * Y)	0.00353	0.00355	0.00351
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00898	-0.00904	-0.00901
	(!A1 * !A2 * !B2 * C1 * Y)	0.00277	0.00279	0.00278
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00904	-0.00906	-0.00897
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00377	0.00378	0.00375
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00908	-0.00911	-0.00906

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)**	-0.00182	-0.00182	-0.00182
	(A2 * B2 * C1 * !Y)	0.00231	0.00232	0.00230
	(A2 * !B2 * !C1 * Y)	-0.00153	-0.00170	-0.00171
	(A2 * !B2 * !C1 * Y)	0.00249	0.00239	0.00236
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00233	0.00235	0.00234
	(A1 * !A2 * B2 * C1 * !Y)	-0.00178	-0.00179	-0.00179
	(A1 * !A2 * B2 * C1 * !Y)	0.00234	0.00236	0.00233
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00150	-0.00171	-0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	0.00252	0.00238	0.00236
	(!A1 * !A2 * B2 * C1 * Y)	-0.00070	-0.00071	-0.00074
	(!A1 * !A2 * B2 * C1 * Y)	0.00249	0.00249	0.00239
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(!A1 * !A2 * B2 * !C1 * Y)	0.00250	0.00252	0.00239
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00074	-0.00075	-0.00077
	(!A1 * !A2 * !B2 * C1 * Y)	0.00245	0.00248	0.00239
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00106	-0.00110	-0.00109
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00253	0.00255	0.00242

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00354	-0.00356	-0.00355
	(A2 * B2 * C1 * !Y)	0.00456	0.00461	0.00457
	(A2 * !B2 * !C1 * Y)	-0.00290	-0.00330	-0.00332
	(A2 * !B2 * !C1 * Y)	0.00503	0.00473	0.00469
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00343	-0.00346	-0.00344
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00461	0.00467	0.00463
	(A1 * !A2 * B2 * C1 * !Y)	-0.00347	-0.00350	-0.00348
	(A1 * !A2 * B2 * C1 * !Y)	0.00462	0.00467	0.00463
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00285	-0.00331	-0.00332
	(A1 * !A2 * !B2 * !C1 * Y)	0.00505	0.00472	0.00469
	(!A1 * !A2 * B2 * C1 * Y)	-0.00124	-0.00126	-0.00135
	(!A1 * !A2 * B2 * C1 * Y)	0.00490	0.00493	0.00472
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * B2 * !C1 * Y)	0.00497	0.00497	0.00474
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00133	-0.00136	-0.00140
	(!A1 * !A2 * !B2 * C1 * Y)	0.00486	0.00494	0.00474
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00197	-0.00202	-0.00201
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00508	0.00512	0.00481

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00661	-0.00662	-0.00663
	(A2 * B2 * C1 * !Y)	0.00909	0.00910	0.00910
	(A2 * !B2 * !C1 * Y)	-0.00552	-0.00644	-0.00641
	(A2 * !B2 * !C1 * Y)	0.00978	0.00919	0.00908
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00667	-0.00670	-0.00668
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00894	0.00901	0.00897
	(A1 * !A2 * B2 * C1 * !Y)	-0.00649	-0.00651	-0.00650
	(A1 * !A2 * B2 * C1 * !Y)	0.00922	0.00927	0.00923
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00543	-0.00642	-0.00641
	(A1 * !A2 * !B2 * !C1 * Y)	0.00986	0.00921	0.00908
	(!A1 * !A2 * B2 * C1 * Y)	-0.00233	-0.00236	-0.00251
	(!A1 * !A2 * B2 * C1 * Y)	0.00950	0.00957	0.00915
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00353	-0.00355	-0.00351
	(!A1 * !A2 * B2 * !C1 * Y)	0.00968	0.00974	0.00919
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00249	-0.00251	-0.00261
	(!A1 * !A2 * !B2 * C1 * Y)	0.00936	0.00939	0.00918
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00369	-0.00378	-0.00375
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00984	0.00978	0.00932

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)**	0.00197	0.00201	0.00198
	(A2 * B1 * C1 * !Y)	-0.00088	-0.00090	-0.00088
	(A2 * B1 * !C1 * Y)	0.00168	0.00169	0.00169
	(A2 * B1 * !C1 * Y)	-0.00219	-0.00221	-0.00221
	(A2 * !B1 * !C1 * Y)	0.00164	0.00166	0.00164
	(A2 * !B1 * !C1 * Y)	-0.00223	-0.00223	-0.00222
	(A1 * !A2 * B1 * C1 * !Y)	0.00200	0.00204	0.00201
	(A1 * !A2 * B1 * C1 * !Y)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * B1 * !C1 * Y)	0.00168	0.00169	0.00169
	(A1 * !A2 * B1 * !C1 * Y)	-0.00220	-0.00221	-0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	0.00164	0.00164	0.00164
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00223	-0.00222
	(!A1 * !A2 * B1 * C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * B1 * C1 * Y)	-0.00220	-0.00222	-0.00222
	(!A1 * !A2 * B1 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00221	-0.00223	-0.00222
	(!A1 * !A2 * !B1 * C1 * Y)	0.00074	0.00074	0.00075
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00222	-0.00222	-0.00220
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00102	0.00103	0.00102
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00224	-0.00223

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00367	0.00373	0.00368
	(A2 * B1 * C1 * !Y)	-0.00175	-0.00178	-0.00174
	(A2 * B1 * !C1 * Y)	0.00322	0.00325	0.00324
	(A2 * B1 * !C1 * Y)	-0.00422	-0.00426	-0.00425
	(A2 * !B1 * !C1 * Y)	0.00310	0.00311	0.00311
	(A2 * !B1 * !C1 * Y)	-0.00429	-0.00429	-0.00428
	(A1 * !A2 * B1 * C1 * !Y)	0.00373	0.00379	0.00374
	(A1 * !A2 * B1 * C1 * !Y)	-0.00169	-0.00172	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00323	0.00325	0.00324
	(A1 * !A2 * B1 * !C1 * Y)	-0.00423	-0.00427	-0.00425
	(A1 * !A2 * !B1 * !C1 * Y)	0.00311	0.00311	0.00311
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00429	-0.00429	-0.00428
	(!A1 * !A2 * B1 * C1 * Y)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B1 * C1 * Y)	-0.00422	-0.00428	-0.00427
	(!A1 * !A2 * B1 * !C1 * Y)	0.00174	0.00174	0.00174
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00423	-0.00427	-0.00427
	(!A1 * !A2 * !B1 * C1 * Y)	0.00133	0.00135	0.00135
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00426	-0.00430	-0.00424
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00188	0.00186
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00428	-0.00431	-0.00429

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00747	0.00760	0.00749
	(A2 * B1 * C1 * !Y)	-0.00349	-0.00356	-0.00348
	(A2 * B1 * !C1 * Y)	0.00658	0.00658	0.00656
	(A2 * B1 * !C1 * Y)	-0.00853	-0.00858	-0.00855
	(A2 * !B1 * !C1 * Y)	0.00631	0.00635	0.00631
	(A2 * !B1 * !C1 * Y)	-0.00865	-0.00866	-0.00862
	(A1 * !A2 * B1 * C1 * !Y)	0.00759	0.00760	0.00762
	(A1 * !A2 * B1 * C1 * !Y)	-0.00336	-0.00336	-0.00335
	(A1 * !A2 * B1 * !C1 * Y)	0.00653	0.00658	0.00656
	(A1 * !A2 * B1 * !C1 * Y)	-0.00851	-0.00858	-0.00855
	(A1 * !A2 * !B1 * !C1 * Y)	0.00631	0.00633	0.00631
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00865	-0.00865	-0.00862
	(!A1 * !A2 * B1 * C1 * Y)	0.00251	0.00254	0.00253
	(!A1 * !A2 * B1 * C1 * Y)	-0.00850	-0.00861	-0.00860
	(!A1 * !A2 * B1 * !C1 * Y)	0.00341	0.00343	0.00342
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00852	-0.00859	-0.00860
	(!A1 * !A2 * !B1 * C1 * Y)	0.00267	0.00270	0.00268
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00861	-0.00866	-0.00856
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00367	0.00369	0.00365
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00867	-0.00870	-0.00865

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)**	-0.00176	-0.00177	-0.00183
	(A2 * B1 * C1 * !Y)	0.00110	0.00110	0.00105
	(A2 * B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * B1 * !C1 * Y)	0.00220	0.00222	0.00221
	(A2 * !B1 * !C1 * Y)	-0.00147	-0.00162	-0.00164
	(A2 * !B1 * !C1 * Y)	0.00234	0.00225	0.00223
	(A1 * !A2 * B1 * C1 * !Y)	-0.00173	-0.00173	-0.00179
	(A1 * !A2 * B1 * C1 * !Y)	0.00114	0.00113	0.00108
	(A1 * !A2 * B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00220	0.00221	0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00144	-0.00164	-0.00164
	(A1 * !A2 * !B1 * !C1 * Y)	0.00237	0.00225	0.00223
	(!A1 * !A2 * B1 * C1 * Y)	-0.00063	-0.00064	-0.00068
	(!A1 * !A2 * B1 * C1 * Y)	0.00233	0.00233	0.00225
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * !A2 * B1 * !C1 * Y)	0.00235	0.00237	0.00226
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00067	-0.00069	-0.00070
	(!A1 * !A2 * !B1 * C1 * Y)	0.00231	0.00235	0.00226
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00101	-0.00103	-0.00102
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00242	0.00229

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00321	-0.00322	-0.00337
	(A2 * B1 * C1 * !Y)	0.00220	0.00220	0.00207
	(A2 * B1 * !C1 * Y)	-0.00322	-0.00323	-0.00322
	(A2 * B1 * !C1 * Y)	0.00425	0.00426	0.00425
	(A2 * !B1 * !C1 * Y)	-0.00269	-0.00311	-0.00311
	(A2 * !B1 * !C1 * Y)	0.00463	0.00434	0.00431
	(A1 * !A2 * B1 * C1 * !Y)	-0.00314	-0.00316	-0.00331
	(A1 * !A2 * B1 * C1 * !Y)	0.00227	0.00226	0.00214
	(A1 * !A2 * B1 * !C1 * Y)	-0.00322	-0.00323	-0.00322
	(A1 * !A2 * B1 * !C1 * Y)	0.00425	0.00427	0.00425
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00265	-0.00311	-0.00311
	(A1 * !A2 * !B1 * !C1 * Y)	0.00465	0.00434	0.00431
	(!A1 * !A2 * B1 * C1 * Y)	-0.00112	-0.00114	-0.00121
	(!A1 * !A2 * B1 * C1 * Y)	0.00449	0.00451	0.00433
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00174	-0.00174	-0.00174
	(!A1 * !A2 * B1 * !C1 * Y)	0.00458	0.00460	0.00434
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00119	-0.00122	-0.00125
	(!A1 * !A2 * !B1 * C1 * Y)	0.00446	0.00454	0.00436
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00188	-0.00186
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00466	0.00470	0.00442

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00655	-0.00657	-0.00687
	(A2 * B1 * C1 * !Y)	0.00440	0.00438	0.00414
	(A2 * B1 * !C1 * Y)	-0.00652	-0.00655	-0.00653
	(A2 * B1 * !C1 * Y)	0.00853	0.00859	0.00855
	(A2 * !B1 * !C1 * Y)	-0.00542	-0.00630	-0.00631
	(A2 * !B1 * !C1 * Y)	0.00939	0.00875	0.00868
	(A1 * !A2 * B1 * C1 * !Y)	-0.00643	-0.00645	-0.00675
	(A1 * !A2 * B1 * C1 * !Y)	0.00452	0.00451	0.00427
	(A1 * !A2 * B1 * !C1 * Y)	-0.00651	-0.00655	-0.00653
	(A1 * !A2 * B1 * !C1 * Y)	0.00852	0.00859	0.00855
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00531	-0.00629	-0.00631
	(A1 * !A2 * !B1 * !C1 * Y)	0.00944	0.00877	0.00867
	(!A1 * !A2 * B1 * C1 * Y)	-0.00227	-0.00228	-0.00242
	(!A1 * !A2 * B1 * C1 * Y)	0.00910	0.00911	0.00872
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00341	-0.00343	-0.00342
	(!A1 * !A2 * B1 * !C1 * Y)	0.00928	0.00927	0.00876
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00240	-0.00246	-0.00251
	(!A1 * !A2 * !B1 * C1 * Y)	0.00896	0.00912	0.00877
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00361	-0.00369	-0.00365
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00941	0.00943	0.00891

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)	0.00069	0.00070	0.00065
	(A2 * !B1 * !B2 * Y)	-0.00262	-0.00264	-0.00272
	(!A2 * !B1 * !B2 * Y)	0.00069	0.00070	0.00065
	(!A2 * !B1 * !B2 * Y)	-0.00262	-0.00264	-0.00272
	(!A1 * !A2 * B2 * Y)	0.00074	0.00074	0.00062
	(!A1 * !A2 * B2 * Y)	-0.00243	-0.00246	-0.00269
	(!A1 * !A2 * B1 * !B2 * Y)	0.00074	0.00074	0.00063
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00246	-0.00248	-0.00269
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00126	0.00127	0.00117
	(A2 * !B1 * !B2 * Y)	-0.00491	-0.00493	-0.00509
	(!A2 * !B1 * !B2 * Y)	0.00126	0.00127	0.00117
	(!A2 * !B1 * !B2 * Y)	-0.00490	-0.00493	-0.00509
	(!A1 * !A2 * B2 * Y)	0.00135	0.00135	0.00114
	(!A1 * !A2 * B2 * Y)	-0.00458	-0.00461	-0.00504
	(!A1 * !A2 * B1 * !B2 * Y)	0.00136	0.00136	0.00116
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00463	-0.00467	-0.00504
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00218	0.00218	0.00202
	(A2 * !B1 * !B2 * Y)	-0.01001	-0.01003	-0.01030
	(!A2 * !B1 * !B2 * Y)	0.00219	0.00218	0.00202
	(!A2 * !B1 * !B2 * Y)	-0.01001	-0.01004	-0.01030
	(!A1 * !A2 * B2 * Y)	0.00235	0.00234	0.00197
	(!A1 * !A2 * B2 * Y)	-0.00938	-0.00943	-0.01020
	(!A1 * !A2 * B1 * !B2 * Y)	0.00236	0.00235	0.00201
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00949	-0.00953	-0.01021

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)	-0.00062	-0.00063	-0.00062
	(A2 * !B1 * !B2 * Y)	0.00273	0.00274	0.00273
	(!A2 * !B1 * !B2 * Y)	-0.00063	-0.00062	-0.00062
	(!A2 * !B1 * !B2 * Y)	0.00273	0.00272	0.00273
	(!A1 * !A2 * B2 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B2 * Y)	0.00273	0.00275	0.00273
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B1 * !B2 * Y)	0.00273	0.00272	0.00273
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(A2 * !B1 * !B2 * Y)	0.00510	0.00513	0.00512
	(!A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(!A2 * !B1 * !B2 * Y)	0.00510	0.00511	0.00512
	(!A1 * !A2 * B2 * Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !A2 * B2 * Y)	0.00509	0.00512	0.00511
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !A2 * B1 * !B2 * Y)	0.00510	0.00511	0.00512
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00194	-0.00195	-0.00194
	(A2 * !B1 * !B2 * Y)	0.01032	0.01040	0.01036
	(!A2 * !B1 * !B2 * Y)	-0.00195	-0.00198	-0.00194
	(!A2 * !B1 * !B2 * Y)	0.01033	0.01053	0.01036
	(!A1 * !A2 * B2 * Y)	-0.00188	-0.00189	-0.00186
	(!A1 * !A2 * B2 * Y)	0.01031	0.01040	0.01035
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00189	-0.00193	-0.00188
	(!A1 * !A2 * B1 * !B2 * Y)	0.01032	0.01052	0.01035

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00268	0.00265	0.00260	0.00276	0.00272	1.25080
sky130_fd_sc_hs__o221a_2	0.00284	0.00279	0.00279	0.00289	0.00284	2.45377
sky130_fd_sc_hs__o221a_4	0.00533	0.00484	0.00564	0.00485	0.00492	4.66056

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	11.66890	33.33280
sky130_fd_sc_hs__o221a_2	0.00000	16.70020	33.61420
sky130_fd_sc_hs__o221a_4	0.00000	33.49840	67.22040

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)	0.13546	0.62248	6.38333
	A2->X (RR)	0.12469	0.60844	6.34480
	B1->X (RR)	0.12684	0.64822	6.70138
	B2->X (RR)	0.11667	0.62526	6.62554
	C1->X (RR)	0.11454	0.65232	7.02322
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.13295	0.52720	6.17119
	A2->X (RR)	0.12319	0.51466	6.13006
	B1->X (RR)	0.12463	0.55588	6.49983
	B2->X (RR)	0.11784	0.53841	6.43043
	C1->X (RR)	0.10461	0.55020	6.82776
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.14409	0.47719	6.37237
	A2->X (RR)	0.13263	0.46511	6.36281
	B1->X (RR)	0.13690	0.50615	6.64042
	B2->X (RR)	0.12467	0.48254	6.57809
	C1->X (RR)	0.11038	0.49883	7.01212

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.16315	0.60844	5.01308
	A2->X (FF)	0.14953	0.62787	5.21252
	B1->X (FF)	0.13631	0.54507	4.82723
	B2->X (FF)	0.12382	0.55831	4.95310
	C1->X (FF)	0.06717	0.46302	4.49567
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.19002	0.61275	5.16622
	A2->X (FF)	0.17519	0.63540	5.36299
	B1->X (FF)	0.15843	0.54917	4.97048
	B2->X (FF)	0.14602	0.56793	5.10627
	C1->X (FF)	0.07635	0.45557	4.61214
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.17119	0.54673	5.09106
	A2->X (FF)	0.15449	0.56321	5.24634
	B1->X (FF)	0.15211	0.49808	4.91871
	B2->X (FF)	0.13760	0.53182	5.05209
	C1->X (FF)	0.07213	0.40750	4.56417

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01791	0.01863	0.06117
	A1	0.00644	0.00739	0.05123
	A2	0.01594	0.01718	0.06634
	A2	0.00566	0.00715	0.05776
	B1	0.01375	0.01558	0.06997
	B1	0.00657	0.00842	0.06297
	B2	0.01189	0.01408	0.07530
	B2	0.00562	0.00781	0.06928
	C1	0.01016	0.01415	0.09346
	C1	0.00513	0.00913	0.08846
sky130_fd_sc_hs__o221a_2	A1	0.02006	0.02102	0.06522
	A1	0.00979	0.01078	0.05600
	A2	0.01980	0.02104	0.07081
	A2	0.00882	0.01043	0.06220
	B1	0.02004	0.02125	0.07337
	B1	0.00962	0.01153	0.06758
	B2	0.01822	0.01962	0.07833
	B2	0.00879	0.01100	0.07357
	C1	0.01356	0.01745	0.09761
	C1	0.00821	0.01212	0.09274

sky130_fd_sc_hs__o221a_4	**A1**	0.04174	0.04344	0.14165
	A1	0.01870	0.02135	0.12322
	A2	0.03227	0.03553	0.14704
	A2	0.01661	0.01995	0.13306
	B1	0.03893	0.04129	0.14460
	B1	0.02214	0.02453	0.12820
	B2	0.03380	0.03664	0.15230
	B2	0.01659	0.02105	0.14355
	C1	0.02440	0.03210	0.18675
	C1	0.01527	0.02306	0.17794

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00673	0.00791	0.05693
	A1	0.01652	0.01770	0.06625
	A2	0.00672	0.00932	0.06931
	A2	0.01532	0.01793	0.07728
	B1	0.00555	0.00755	0.05989
	B1	0.01395	0.01570	0.06447
	B2	0.00535	0.00871	0.06927
	B2	0.01286	0.01586	0.07246
	C1	0.00384	0.00881	0.08476
	C1	0.00885	0.01369	0.08919

sky130_fd_sc_hs__o221a_2	**A1**	0.01146	0.01120	0.06275
	A1	0.02193	0.02166	0.07108
	A2	0.01144	0.01251	0.07387
	A2	0.02071	0.02182	0.08198
	B1	0.01000	0.01065	0.06134
	B1	0.01869	0.01923	0.06916
	B2	0.00983	0.01185	0.07142
	B2	0.01752	0.01953	0.07743
	C1	0.00689	0.01147	0.08672
	C1	0.01451	0.01877	0.08805
sky130_fd_sc_hs__o221a_4	**A1**	0.02148	0.02186	0.12806
	A1	0.04073	0.04090	0.14446
	A2	0.02188	0.02502	0.15049
	A2	0.03831	0.04141	0.16182
	B1	0.01900	0.02032	0.12376
	B1	0.03568	0.03678	0.13706
	B2	0.01953	0.02365	0.14260
	B2	0.03314	0.03722	0.15231
	C1	0.01430	0.02281	0.16210
	C1	0.02778	0.03613	0.17355

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)**	0.00223	0.00188	0.00185
	(A2 * B2 * C1 * X)	-0.00138	-0.00175	-0.00175
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00149	0.00150	0.00149
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00209	-0.00211	-0.00210
	(A2 * B1 * !B2 * C1 * X)	0.00228	0.00193	0.00190
	(A2 * B1 * !B2 * C1 * X)	-0.00133	-0.00170	-0.00170
	(A2 * !B1 * !B2 * !X)	0.00149	0.00150	0.00149
	(A2 * !B1 * !B2 * !X)	-0.00209	-0.00210	-0.00210
	(!A2 * B2 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A2 * B2 * !C1 * !X)	-0.00210	-0.00212	-0.00211
	(!A2 * B1 * !B2 * !C1 * !X)	0.00141	0.00143	0.00141
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00210	-0.00212	-0.00211
	(!A2 * !B1 * !B2 * C1 * !X)	0.00142	0.00143	0.00142
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00211	-0.00212	-0.00211

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00250	0.00214	0.00210
	(A2 * B2 * C1 * X)	-0.00134	-0.00173	-0.00173
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00178	0.00179	0.00178
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00204	-0.00206	-0.00205
	(A2 * B1 * !B2 * C1 * X)	0.00254	0.00218	0.00215
	(A2 * B1 * !B2 * C1 * X)	-0.00130	-0.00168	-0.00168
	(A2 * !B1 * !B2 * !X)	0.00178	0.00179	0.00178
	(A2 * !B1 * !B2 * !X)	-0.00204	-0.00205	-0.00205
	(!A2 * B2 * !C1 * !X)	0.00166	0.00168	0.00166
	(!A2 * B2 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * !B2 * !C1 * !X)	0.00167	0.00169	0.00167
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A2 * !B1 * !B2 * C1 * !X)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00169	0.00171	0.00169
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00206

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00465	0.00399	0.00388
	(A2 * B2 * C1 * X)	-0.00268	-0.00341	-0.00344
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00342	0.00346	0.00343
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00385	-0.00390	-0.00389
	(A2 * B1 * !B2 * C1 * X)	0.00474	0.00408	0.00398
	(A2 * B1 * !B2 * C1 * X)	-0.00258	-0.00332	-0.00335
	(A2 * !B1 * !B2 * !X)	0.00343	0.00347	0.00343
	(A2 * !B1 * !B2 * !X)	-0.00385	-0.00389	-0.00388
	(!A2 * B2 * !C1 * !X)	0.00324	0.00326	0.00325
	(!A2 * B2 * !C1 * !X)	-0.00390	-0.00391	-0.00390
	(!A2 * B1 * !B2 * !C1 * !X)	0.00326	0.00329	0.00327
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00390	-0.00392	-0.00390
	(!A2 * !B1 * !B2 * C1 * !X)	0.00328	0.00331	0.00330
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00390	-0.00392	-0.00391
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00328	0.00330	0.00329
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00390	-0.00392	-0.00391

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)**	-0.00144	-0.00145	-0.00145
	(A2 * B2 * C1 * X)	0.00216	0.00218	0.00215
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00221	0.00224	0.00222
	(A2 * B1 * !B2 * C1 * X)	-0.00139	-0.00140	-0.00140
	(A2 * B1 * !B2 * C1 * X)	0.00221	0.00223	0.00220
	(A2 * !B1 * !B2 * !X)	-0.00135	-0.00137	-0.00136
	(A2 * !B1 * !B2 * !X)	0.00221	0.00224	0.00222
	(!A2 * B2 * !C1 * !X)	-0.00114	-0.00129	-0.00130
	(!A2 * B2 * !C1 * !X)	0.00226	0.00227	0.00224
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00116	-0.00130	-0.00131
	(!A2 * B1 * !B2 * !C1 * !X)	0.00227	0.00227	0.00224
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00120	-0.00130	-0.00131
	(!A2 * !B1 * !B2 * C1 * !X)	0.00226	0.00226	0.00224
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00122	-0.00130	-0.00132
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00225	0.00225	0.00224

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00168	-0.00169	-0.00170
	(A2 * B2 * C1 * X)	0.00215	0.00216	0.00214
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00228	0.00230	0.00229
	(A2 * B1 * !B2 * C1 * X)	-0.00163	-0.00164	-0.00165
	(A2 * B1 * !B2 * C1 * X)	0.00220	0.00221	0.00219
	(A2 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * !B1 * !B2 * !X)	0.00229	0.00230	0.00229
	(!A2 * B2 * !C1 * !X)	-0.00126	-0.00144	-0.00146
	(!A2 * B2 * !C1 * !X)	0.00233	0.00234	0.00231
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00129	-0.00145	-0.00146
	(!A2 * B1 * !B2 * !C1 * !X)	0.00233	0.00234	0.00231
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00135	-0.00146	-0.00147
	(!A2 * !B1 * !B2 * C1 * !X)	0.00232	0.00234	0.00231
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00137	-0.00146	-0.00148
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00232	0.00233	0.00231

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00304	-0.00306	-0.00307
	(A2 * B2 * C1 * X)	0.00427	0.00430	0.00427
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00292	-0.00294	-0.00293
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00435	0.00439	0.00437
	(A2 * B1 * !B2 * C1 * X)	-0.00294	-0.00297	-0.00297
	(A2 * B1 * !B2 * C1 * X)	0.00436	0.00441	0.00436
	(A2 * !B1 * !B2 * !X)	-0.00292	-0.00293	-0.00292
	(A2 * !B1 * !B2 * !X)	0.00436	0.00439	0.00437
	(!A2 * B2 * !C1 * !X)	-0.00248	-0.00279	-0.00281
	(!A2 * B2 * !C1 * !X)	0.00445	0.00446	0.00441
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00252	-0.00281	-0.00282
	(!A2 * B1 * !B2 * !C1 * !X)	0.00446	0.00446	0.00441
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00261	-0.00282	-0.00283
	(!A2 * !B1 * !B2 * C1 * !X)	0.00444	0.00446	0.00442
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00265	-0.00283	-0.00284
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00440	0.00444	0.00441

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)**	0.00178	0.00181	0.00179
	(A1 * B2 * C1 * X)	-0.00078	-0.00080	-0.00078
	(A1 * B2 * !C1 * !X)	0.00152	0.00153	0.00153
	(A1 * B2 * !C1 * !X)	-0.00194	-0.00195	-0.00195
	(A1 * B1 * !B2 * C1 * X)	0.00183	0.00186	0.00183
	(A1 * B1 * !B2 * C1 * X)	-0.00073	-0.00075	-0.00073
	(A1 * B1 * !B2 * !C1 * !X)	0.00153	0.00153	0.00153
	(A1 * B1 * !B2 * !C1 * !X)	-0.00194	-0.00195	-0.00195
	(A1 * !B1 * !B2 * C1 * !X)	0.00153	0.00154	0.00153
	(A1 * !B1 * !B2 * C1 * !X)	-0.00194	-0.00195	-0.00195
	(A1 * !B1 * !B2 * !C1 * !X)	0.00152	0.00154	0.00153
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00194	-0.00196	-0.00196
	(!A1 * B2 * !C1 * !X)	0.00141	0.00143	0.00142
	(!A1 * B2 * !C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * B1 * !B2 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !B1 * !B2 * C1 * !X)	0.00146	0.00146	0.00145
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00145	0.00146	0.00144
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00197	-0.00198	-0.00197

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00200	0.00204	0.00201
	(A1 * B2 * C1 * X)	-0.00077	-0.00078	-0.00076
	(A1 * B2 * !C1 * !X)	0.00180	0.00182	0.00180
	(A1 * B2 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(A1 * B1 * !B2 * C1 * X)	0.00205	0.00208	0.00206
	(A1 * B1 * !B2 * C1 * X)	-0.00072	-0.00074	-0.00072
	(A1 * B1 * !B2 * !C1 * !X)	0.00180	0.00182	0.00181
	(A1 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(A1 * !B1 * !B2 * C1 * !X)	0.00180	0.00180	0.00181
	(A1 * !B1 * !B2 * C1 * !X)	-0.00187	-0.00187	-0.00188
	(A1 * !B1 * !B2 * !C1 * !X)	0.00180	0.00182	0.00180
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(!A1 * B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * B2 * !C1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * B1 * !B2 * !C1 * !X)	0.00169	0.00171	0.00170
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !B1 * !B2 * C1 * !X)	0.00173	0.00173	0.00172
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00190	-0.00190	-0.00189
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00190	-0.00190	-0.00189

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00332	0.00336	0.00332
	(A1 * B2 * C1 * X)	-0.00154	-0.00157	-0.00153
	(A1 * B2 * !C1 * !X)	0.00298	0.00300	0.00299
	(A1 * B2 * !C1 * !X)	-0.00366	-0.00369	-0.00370
	(A1 * B1 * !B2 * C1 * X)	0.00341	0.00346	0.00342
	(A1 * B1 * !B2 * C1 * X)	-0.00144	-0.00147	-0.00143
	(A1 * B1 * !B2 * !C1 * !X)	0.00298	0.00301	0.00299
	(A1 * B1 * !B2 * !C1 * !X)	-0.00366	-0.00369	-0.00370
	(A1 * !B1 * !B2 * C1 * !X)	0.00299	0.00301	0.00300
	(A1 * !B1 * !B2 * C1 * !X)	-0.00366	-0.00369	-0.00369
	(A1 * !B1 * !B2 * !C1 * !X)	0.00298	0.00300	0.00299
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00367	-0.00370	-0.00370
	(!A1 * B2 * !C1 * !X)	0.00281	0.00284	0.00282
	(!A1 * B2 * !C1 * !X)	-0.00371	-0.00373	-0.00371
	(!A1 * B1 * !B2 * !C1 * !X)	0.00283	0.00286	0.00284
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00371	-0.00373	-0.00371
	(!A1 * !B1 * !B2 * C1 * !X)	0.00288	0.00290	0.00287
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00373	-0.00374	-0.00372
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00286	0.00288	0.00285
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00373	-0.00374	-0.00372

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)**	-0.00147	-0.00149	-0.00155
	(A1 * B2 * C1 * X)	0.00109	0.00109	0.00103
	(A1 * B2 * !C1 * !X)	-0.00139	-0.00140	-0.00140
	(A1 * B2 * !C1 * !X)	0.00206	0.00208	0.00207
	(A1 * B1 * !B2 * C1 * X)	-0.00143	-0.00144	-0.00150
	(A1 * B1 * !B2 * C1 * X)	0.00113	0.00114	0.00108
	(A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00140	-0.00140
	(A1 * B1 * !B2 * !C1 * !X)	0.00207	0.00208	0.00207
	(A1 * !B1 * !B2 * C1 * !X)	-0.00139	-0.00140	-0.00140
	(A1 * !B1 * !B2 * C1 * !X)	0.00207	0.00208	0.00207
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * !B1 * !B2 * !C1 * !X)	0.00206	0.00208	0.00207
	(!A1 * B2 * !C1 * !X)	-0.00115	-0.00132	-0.00133
	(!A1 * B2 * !C1 * !X)	0.00212	0.00212	0.00210
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00117	-0.00132	-0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	0.00212	0.00212	0.00210
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00122	-0.00133	-0.00134
	(!A1 * !B1 * !B2 * C1 * !X)	0.00212	0.00211	0.00210
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00125	-0.00133	-0.00135
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00209	0.00211	0.00209

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00168	-0.00169	-0.00176
	(A1 * B2 * C1 * X)	0.00109	0.00109	0.00102
	(A1 * B2 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B2 * !C1 * !X)	0.00212	0.00212	0.00212
	(A1 * B1 * !B2 * C1 * X)	-0.00164	-0.00165	-0.00171
	(A1 * B1 * !B2 * C1 * X)	0.00113	0.00114	0.00107
	(A1 * B1 * !B2 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !B2 * !C1 * !X)	0.00212	0.00212	0.00212
	(A1 * !B1 * !B2 * C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !B2 * C1 * !X)	0.00212	0.00212	0.00212
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * !B1 * !B2 * !C1 * !X)	0.00210	0.00212	0.00212
	(!A1 * B2 * !C1 * !X)	-0.00127	-0.00146	-0.00148
	(!A1 * B2 * !C1 * !X)	0.00216	0.00216	0.00214
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00147	-0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	0.00217	0.00217	0.00214
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00136	-0.00148	-0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	0.00216	0.00216	0.00214
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00138	-0.00148	-0.00150
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00214	0.00215	0.00214

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00266	-0.00268	-0.00283
	(A1 * B2 * C1 * X)	0.00218	0.00218	0.00205
	(A1 * B2 * !C1 * !X)	-0.00248	-0.00250	-0.00249
	(A1 * B2 * !C1 * !X)	0.00416	0.00418	0.00417
	(A1 * B1 * !B2 * C1 * X)	-0.00257	-0.00259	-0.00274
	(A1 * B1 * !B2 * C1 * X)	0.00227	0.00228	0.00214
	(A1 * B1 * !B2 * !C1 * !X)	-0.00248	-0.00250	-0.00249
	(A1 * B1 * !B2 * !C1 * !X)	0.00416	0.00418	0.00417
	(A1 * !B1 * !B2 * C1 * !X)	-0.00248	-0.00251	-0.00248
	(A1 * !B1 * !B2 * C1 * !X)	0.00417	0.00419	0.00417
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00248	-0.00251	-0.00249
	(A1 * !B1 * !B2 * !C1 * !X)	0.00414	0.00418	0.00417
	(!A1 * B2 * !C1 * !X)	-0.00199	-0.00233	-0.00237
	(!A1 * B2 * !C1 * !X)	0.00427	0.00427	0.00422
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00204	-0.00234	-0.00238
	(!A1 * B1 * !B2 * !C1 * !X)	0.00429	0.00427	0.00422
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00215	-0.00237	-0.00239
	(!A1 * !B1 * !B2 * C1 * !X)	0.00428	0.00425	0.00423
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00220	-0.00238	-0.00240
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00422	0.00424	0.00422

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)**	0.00213	0.00178	0.00175
	(A2 * B2 * C1 * X)	-0.00140	-0.00177	-0.00178
	(A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A2 * !B2 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00152	0.00153	0.00152
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00199	-0.00200	-0.00200
	(A1 * !A2 * B2 * C1 * X)	0.00218	0.00183	0.00179
	(A1 * !A2 * B2 * C1 * X)	-0.00135	-0.00172	-0.00173
	(A1 * !A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * B2 * C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * B2 * C1 * !X)	-0.00199	-0.00200	-0.00200
	(!A1 * !A2 * B2 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00199	-0.00201	-0.00200
	(!A1 * !A2 * !B2 * C1 * !X)	0.00068	0.00068	0.00070
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00200	-0.00200	-0.00199
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00200	-0.00202	-0.00201

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00237	0.00203	0.00200
	(A2 * B2 * C1 * X)	-0.00139	-0.00174	-0.00174
	(A2 * !B2 * !C1 * !X)	0.00173	0.00173	0.00173
	(A2 * !B2 * !C1 * !X)	-0.00196	-0.00196	-0.00196
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00179	0.00180	0.00179
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00194	-0.00196	-0.00195
	(A1 * !A2 * B2 * C1 * X)	0.00242	0.00208	0.00205
	(A1 * !A2 * B2 * C1 * X)	-0.00134	-0.00170	-0.00169
	(A1 * !A2 * !B2 * !C1 * !X)	0.00173	0.00175	0.00174
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * B2 * C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * B2 * C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * B2 * !C1 * !X)	0.00103	0.00103	0.00102
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00196	-0.00197	-0.00197
	(!A1 * !A2 * !B2 * C1 * !X)	0.00082	0.00082	0.00084
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00196	-0.00196	-0.00195
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00198	-0.00199	-0.00198

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00499	0.00435	0.00423
	(A2 * B2 * C1 * X)	-0.00271	-0.00342	-0.00346
	(A2 * !B2 * !C1 * !X)	0.00369	0.00373	0.00370
	(A2 * !B2 * !C1 * !X)	-0.00389	-0.00391	-0.00388
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00380	0.00385	0.00381
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00384	-0.00388	-0.00387
	(A1 * !A2 * B2 * C1 * X)	0.00508	0.00445	0.00432
	(A1 * !A2 * B2 * C1 * X)	-0.00262	-0.00333	-0.00337
	(A1 * !A2 * !B2 * !C1 * !X)	0.00369	0.00372	0.00370
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00389	-0.00391	-0.00388
	(!A1 * !A2 * B2 * C1 * !X)	0.00198	0.00200	0.00199
	(!A1 * !A2 * B2 * C1 * !X)	-0.00386	-0.00391	-0.00390
	(!A1 * !A2 * B2 * !C1 * !X)	0.00237	0.00239	0.00237
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00387	-0.00392	-0.00391
	(!A1 * !A2 * !B2 * C1 * !X)	0.00201	0.00203	0.00206
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00390	-0.00392	-0.00387
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00247	0.00250	0.00248
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00392	-0.00395	-0.00393

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)**	-0.00133	-0.00134	-0.00135
	(A2 * B2 * C1 * X)	0.00219	0.00220	0.00218
	(A2 * !B2 * !C1 * !X)	-0.00118	-0.00134	-0.00136
	(A2 * !B2 * !C1 * !X)	0.00227	0.00216	0.00214
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00211	0.00213	0.00212
	(A1 * !A2 * B2 * C1 * X)	-0.00129	-0.00129	-0.00130
	(A1 * !A2 * B2 * C1 * X)	0.00225	0.00225	0.00223
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00116	-0.00135	-0.00136
	(A1 * !A2 * !B2 * !C1 * !X)	0.00229	0.00216	0.00214
	(!A1 * !A2 * B2 * C1 * !X)	-0.00047	-0.00048	-0.00052
	(!A1 * !A2 * B2 * C1 * !X)	0.00225	0.00226	0.00217
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00074	-0.00075	-0.00078
	(!A1 * !A2 * B2 * !C1 * !X)	0.00229	0.00228	0.00217
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00051	-0.00052	-0.00054
	(!A1 * !A2 * !B2 * C1 * !X)	0.00221	0.00224	0.00216
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00078	-0.00080	-0.00082
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00229	0.00231	0.00219

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00159	-0.00160	-0.00160
	(A2 * B2 * C1 * X)	0.00217	0.00218	0.00215
	(A2 * !B2 * !C1 * !X)	-0.00131	-0.00148	-0.00150
	(A2 * !B2 * !C1 * !X)	0.00236	0.00224	0.00221
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00154	-0.00155	-0.00154
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00220	0.00221	0.00219
	(A1 * !A2 * B2 * C1 * X)	-0.00154	-0.00155	-0.00155
	(A1 * !A2 * B2 * C1 * X)	0.00222	0.00223	0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00128	-0.00149	-0.00150
	(A1 * !A2 * !B2 * !C1 * !X)	0.00237	0.00223	0.00221
	(!A1 * !A2 * B2 * C1 * !X)	-0.00048	-0.00049	-0.00053
	(!A1 * !A2 * B2 * C1 * !X)	0.00233	0.00234	0.00224
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00079	-0.00080	-0.00083
	(!A1 * !A2 * B2 * !C1 * !X)	0.00238	0.00238	0.00225
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00052	-0.00053	-0.00055
	(!A1 * !A2 * !B2 * C1 * !X)	0.00230	0.00233	0.00225
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00083	-0.00085	-0.00088
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00239	0.00241	0.00228

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00338	-0.00341	-0.00341
	(A2 * B2 * C1 * X)	0.00429	0.00433	0.00429
	(A2 * !B2 * !C1 * !X)	-0.00286	-0.00321	-0.00323
	(A2 * !B2 * !C1 * !X)	0.00468	0.00447	0.00440
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00330	-0.00332	-0.00331
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00433	0.00437	0.00435
	(A1 * !A2 * B2 * C1 * X)	-0.00329	-0.00331	-0.00332
	(A1 * !A2 * B2 * C1 * X)	0.00439	0.00442	0.00439
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00281	-0.00321	-0.00323
	(A1 * !A2 * !B2 * !C1 * !X)	0.00472	0.00447	0.00440
	(!A1 * !A2 * B2 * C1 * !X)	-0.00132	-0.00135	-0.00143
	(!A1 * !A2 * B2 * C1 * !X)	0.00468	0.00472	0.00448
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00185	-0.00187	-0.00196
	(!A1 * !A2 * B2 * !C1 * !X)	0.00473	0.00475	0.00449
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00143	-0.00145	-0.00149
	(!A1 * !A2 * !B2 * C1 * !X)	0.00457	0.00460	0.00447
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00197	-0.00200	-0.00205
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00475	0.00478	0.00454

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)**	0.00197	0.00201	0.00198
	(A2 * B1 * C1 * X)	-0.00080	-0.00082	-0.00079
	(A2 * B1 * !C1 * !X)	0.00168	0.00169	0.00169
	(A2 * B1 * !C1 * !X)	-0.00199	-0.00200	-0.00201
	(A2 * !B1 * !C1 * !X)	0.00164	0.00166	0.00165
	(A2 * !B1 * !C1 * !X)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * B1 * C1 * X)	0.00202	0.00205	0.00203
	(A1 * !A2 * B1 * C1 * X)	-0.00075	-0.00077	-0.00075
	(A1 * !A2 * B1 * !C1 * !X)	0.00168	0.00170	0.00169
	(A1 * !A2 * B1 * !C1 * !X)	-0.00199	-0.00201	-0.00201
	(A1 * !A2 * !B1 * !C1 * !X)	0.00165	0.00165	0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00202	-0.00202	-0.00201
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * B1 * C1 * !X)	-0.00200	-0.00201	-0.00201
	(!A1 * !A2 * B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00199	-0.00202	-0.00201
	(!A1 * !A2 * !B1 * C1 * !X)	0.00079	0.00079	0.00081
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00202	-0.00202	-0.00199
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00103	0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00201	-0.00202	-0.00202

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00213	0.00216	0.00214
	(A2 * B1 * C1 * X)	-0.00077	-0.00079	-0.00077
	(A2 * B1 * !C1 * !X)	0.00190	0.00191	0.00191
	(A2 * B1 * !C1 * !X)	-0.00190	-0.00191	-0.00191
	(A2 * !B1 * !C1 * !X)	0.00185	0.00185	0.00185
	(A2 * !B1 * !C1 * !X)	-0.00193	-0.00192	-0.00192
	(A1 * !A2 * B1 * C1 * X)	0.00218	0.00221	0.00218
	(A1 * !A2 * B1 * C1 * X)	-0.00072	-0.00074	-0.00072
	(A1 * !A2 * B1 * !C1 * !X)	0.00190	0.00193	0.00191
	(A1 * !A2 * B1 * !C1 * !X)	-0.00190	-0.00192	-0.00191
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00186	0.00185
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00193	-0.00192	-0.00192
	(!A1 * !A2 * B1 * C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * B1 * C1 * !X)	-0.00191	-0.00192	-0.00192
	(!A1 * !A2 * B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00192	-0.00194	-0.00193
	(!A1 * !A2 * !B1 * C1 * !X)	0.00088	0.00089	0.00090
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00191	-0.00193	-0.00191
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00342	0.00347	0.00343
	(A2 * B1 * C1 * X)	-0.00154	-0.00158	-0.00153
	(A2 * B1 * !C1 * !X)	0.00304	0.00306	0.00305
	(A2 * B1 * !C1 * !X)	-0.00372	-0.00375	-0.00376
	(A2 * !B1 * !C1 * !X)	0.00298	0.00298	0.00297
	(A2 * !B1 * !C1 * !X)	-0.00379	-0.00378	-0.00377
	(A1 * !A2 * B1 * C1 * X)	0.00351	0.00356	0.00353
	(A1 * !A2 * B1 * C1 * X)	-0.00145	-0.00148	-0.00144
	(A1 * !A2 * B1 * !C1 * !X)	0.00305	0.00307	0.00305
	(A1 * !A2 * B1 * !C1 * !X)	-0.00372	-0.00375	-0.00376
	(A1 * !A2 * !B1 * !C1 * !X)	0.00298	0.00298	0.00297
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00379	-0.00379	-0.00377
	(!A1 * !A2 * B1 * C1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A2 * B1 * C1 * !X)	-0.00374	-0.00377	-0.00378
	(!A1 * !A2 * B1 * !C1 * !X)	0.00170	0.00170	0.00170
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00376	-0.00378	-0.00379
	(!A1 * !A2 * !B1 * C1 * !X)	0.00134	0.00135	0.00138
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00378	-0.00380	-0.00375
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00180	0.00181	0.00180
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00381	-0.00382	-0.00381

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)**	-0.00167	-0.00168	-0.00174
	(A2 * B1 * C1 * X)	0.00112	0.00112	0.00105
	(A2 * B1 * !C1 * !X)	-0.00155	-0.00157	-0.00155
	(A2 * B1 * !C1 * !X)	0.00212	0.00214	0.00212
	(A2 * !B1 * !C1 * !X)	-0.00134	-0.00151	-0.00152
	(A2 * !B1 * !C1 * !X)	0.00228	0.00217	0.00215
	(A1 * !A2 * B1 * C1 * X)	-0.00162	-0.00162	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00116	0.00116	0.00109
	(A1 * !A2 * B1 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * B1 * !C1 * !X)	0.00212	0.00213	0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00131	-0.00151	-0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	0.00231	0.00216	0.00214
	(!A1 * !A2 * B1 * C1 * !X)	-0.00056	-0.00056	-0.00061
	(!A1 * !A2 * B1 * C1 * !X)	0.00229	0.00229	0.00218
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00084	-0.00085	-0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	0.00231	0.00231	0.00218
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00061	-0.00063	-0.00064
	(!A1 * !A2 * !B1 * C1 * !X)	0.00222	0.00225	0.00217
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00091	-0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00233	0.00220

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00183	-0.00183	-0.00189
	(A2 * B1 * C1 * X)	0.00109	0.00108	0.00102
	(A2 * B1 * !C1 * !X)	-0.00165	-0.00167	-0.00166
	(A2 * B1 * !C1 * !X)	0.00214	0.00216	0.00215
	(A2 * !B1 * !C1 * !X)	-0.00142	-0.00160	-0.00162
	(A2 * !B1 * !C1 * !X)	0.00231	0.00220	0.00217
	(A1 * !A2 * B1 * C1 * X)	-0.00178	-0.00177	-0.00184
	(A1 * !A2 * B1 * C1 * X)	0.00113	0.00112	0.00107
	(A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * !A2 * B1 * !C1 * !X)	0.00214	0.00216	0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00161	-0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	0.00233	0.00219	0.00217
	(!A1 * !A2 * B1 * C1 * !X)	-0.00053	-0.00054	-0.00058
	(!A1 * !A2 * B1 * C1 * !X)	0.00233	0.00233	0.00221
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00090
	(!A1 * !A2 * B1 * !C1 * !X)	0.00235	0.00235	0.00222
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00059	-0.00060	-0.00062
	(!A1 * !A2 * !B1 * C1 * !X)	0.00226	0.00229	0.00221
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00092	-0.00093	-0.00095
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00236	0.00237	0.00224

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00276	-0.00277	-0.00294
	(A2 * B1 * C1 * X)	0.00217	0.00217	0.00205
	(A2 * B1 * !C1 * !X)	-0.00255	-0.00257	-0.00255
	(A2 * B1 * !C1 * !X)	0.00422	0.00426	0.00423
	(A2 * !B1 * !C1 * !X)	-0.00213	-0.00246	-0.00248
	(A2 * !B1 * !C1 * !X)	0.00454	0.00432	0.00429
	(A1 * !A2 * B1 * C1 * X)	-0.00267	-0.00268	-0.00284
	(A1 * !A2 * B1 * C1 * X)	0.00226	0.00227	0.00215
	(A1 * !A2 * B1 * !C1 * !X)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * B1 * !C1 * !X)	0.00422	0.00424	0.00423
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00208	-0.00247	-0.00248
	(A1 * !A2 * !B1 * !C1 * !X)	0.00458	0.00431	0.00428
	(!A1 * !A2 * B1 * C1 * !X)	-0.00068	-0.00070	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00454	0.00453	0.00434
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00120	-0.00122	-0.00129
	(!A1 * !A2 * B1 * !C1 * !X)	0.00458	0.00460	0.00435
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00077	-0.00079	-0.00082
	(!A1 * !A2 * !B1 * C1 * !X)	0.00444	0.00449	0.00435
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00133	-0.00137
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00459	0.00467	0.00442

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)	0.00068	0.00068	0.00063
	(A2 * !B1 * !B2 * !X)	-0.00232	-0.00232	-0.00240
	(!A2 * !B1 * !B2 * !X)	0.00068	0.00068	0.00063
	(!A2 * !B1 * !B2 * !X)	-0.00232	-0.00232	-0.00240
	(!A1 * !A2 * B2 * !X)	0.00068	0.00068	0.00059
	(!A1 * !A2 * B2 * !X)	-0.00218	-0.00219	-0.00238
	(!A1 * !A2 * B1 * !B2 * !X)	0.00069	0.00068	0.00060
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00220	-0.00221	-0.00238
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00083	0.00083	0.00078
	(A2 * !B1 * !B2 * !X)	-0.00227	-0.00227	-0.00235
	(!A2 * !B1 * !B2 * !X)	0.00083	0.00083	0.00078
	(!A2 * !B1 * !B2 * !X)	-0.00227	-0.00227	-0.00235
	(!A1 * !A2 * B2 * !X)	0.00086	0.00085	0.00076
	(!A1 * !A2 * B2 * !X)	-0.00211	-0.00211	-0.00232
	(!A1 * !A2 * B1 * !B2 * !X)	0.00086	0.00086	0.00077
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00214	-0.00214	-0.00233
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00130	0.00129	0.00119
	(A2 * !B1 * !B2 * !X)	-0.00427	-0.00428	-0.00442
	(!A2 * !B1 * !B2 * !X)	0.00130	0.00129	0.00119
	(!A2 * !B1 * !B2 * !X)	-0.00427	-0.00427	-0.00442
	(!A1 * !A2 * B2 * !X)	0.00130	0.00130	0.00113
	(!A1 * !A2 * B2 * !X)	-0.00401	-0.00401	-0.00438
	(!A1 * !A2 * B1 * !B2 * !X)	0.00130	0.00131	0.00114
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00402	-0.00407	-0.00438

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)	-0.00049	-0.00050	-0.00049
	(A2 * !B1 * !B2 * !X)	0.00252	0.00257	0.00253
	(!A2 * !B1 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * !B2 * !X)	0.00252	0.00257	0.00253
	(!A1 * !A2 * B2 * !X)	-0.00045	-0.00047	-0.00046
	(!A1 * !A2 * B2 * !X)	0.00252	0.00257	0.00253
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * B1 * !B2 * !X)	0.00252	0.00257	0.00253
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00052	-0.00053	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00260	0.00265	0.00261
	(!A2 * !B1 * !B2 * !X)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * !B2 * !X)	0.00260	0.00264	0.00261
	(!A1 * !A2 * B2 * !X)	-0.00049	-0.00051	-0.00050
	(!A1 * !A2 * B2 * !X)	0.00259	0.00264	0.00260
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B1 * !B2 * !X)	0.00259	0.00264	0.00260
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00067	-0.00069	-0.00067
	(A2 * !B1 * !B2 * !X)	0.00493	0.00501	0.00494
	(!A2 * !B1 * !B2 * !X)	-0.00067	-0.00069	-0.00067
	(!A2 * !B1 * !B2 * !X)	0.00493	0.00501	0.00493
	(!A1 * !A2 * B2 * !X)	-0.00063	-0.00064	-0.00062
	(!A1 * !A2 * B2 * !X)	0.00495	0.00500	0.00493
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * B1 * !B2 * !X)	0.00493	0.00500	0.00493

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00292	0.00287	0.00295	0.00302	0.64067
sky130_fd_sc_hs__o22ai_2	0.00553	0.00566	0.00564	0.00556	1.12763
sky130_fd_sc_hs__o22ai_4	0.01136	0.01081	0.01170	0.01099	1.91532

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	4.39862	13.92650
sky130_fd_sc_hs__o22ai_2	0.00000	8.79807	27.85020
sky130_fd_sc_hs__o22ai_4	0.00000	17.58660	55.69660

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)	0.10219	0.84262	9.41634
	A2->Y (FR)	0.08818	0.85889	9.90462
	B1->Y (FR)	0.06529	0.80507	9.38396
	B2->Y (FR)	0.05223	0.82741	9.86533
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.10283	0.72498	9.21173
	A2->Y (FR)	0.08488	0.74601	9.71420
	B1->Y (FR)	0.06238	0.68225	9.12984
	B2->Y (FR)	0.04301	0.70432	9.64527
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.10077	0.60532	8.53991
	A2->Y (FR)	0.08439	0.64343	9.21396
	B1->Y (FR)	0.06020	0.56754	8.53284
	B2->Y (FR)	0.04292	0.60011	9.12068

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.05283	0.42881	4.64432
	A2->Y (RF)	0.04446	0.41714	4.61091
	B1->Y (RF)	0.04307	0.48134	5.45009
	B2->Y (RF)	0.03536	0.46673	5.37988
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.05406	0.36634	4.45967
	A2->Y (RF)	0.04315	0.35112	4.40889
	B1->Y (RF)	0.04355	0.42032	5.34078
	B2->Y (RF)	0.03230	0.39855	5.22649
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.03879	0.27447	3.93800
	A2->Y (RF)	0.03212	0.25865	3.89709
	B1->Y (RF)	0.02964	0.32678	4.86486
	B2->Y (RF)	0.03019	0.34395	5.08155

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00200	0.00263	0.02163
	A1	0.01128	0.01190	0.02988
	A2	0.00208	0.00370	0.02796
	A2	0.00959	0.01092	0.03547
	B1	-0.00019	0.00055	0.01933
	B1	0.00628	0.00705	0.02588
	B2	-0.00019	0.00162	0.02559
	B2	0.00492	0.00673	0.03071
sky130_fd_sc_hs__o22ai_2	A1	0.00363	0.00489	0.04280
	A1	0.02211	0.02331	0.05856
	A2	0.00352	0.00705	0.05406
	A2	0.01941	0.02242	0.06582
	B1	-0.00070	0.00089	0.03816
	B1	0.01214	0.01376	0.05124
	B2	-0.00090	0.00299	0.05022
	B2	0.00909	0.01298	0.06019
sky130_fd_sc_hs__o22ai_4	A1	0.00549	0.00935	0.09537
	A1	0.04201	0.04579	0.12798
	A2	0.00540	0.01354	0.11495
	A2	0.03625	0.04409	0.13993
	B1	-0.00171	0.00277	0.08581
	B1	0.02382	0.02832	0.11138
	B2	-0.00170	0.00743	0.10465
	B2	0.01823	0.02738	0.12507

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01238	0.01288	0.02792
	A1	0.00147	0.00201	0.01730
	A2	0.00981	0.01042	0.02451
	A2	0.00031	0.00099	0.01542
	B1	0.00780	0.00870	0.02548
	B1	0.00133	0.00222	0.01853
	B2	0.00542	0.00658	0.02276
	B2	0.00034	0.00142	0.01707
sky130_fd_sc_hs__o22ai_2	A1	0.02571	0.02677	0.05647
	A1	0.00662	0.00763	0.03744
	A2	0.02011	0.02147	0.04944
	A2	-0.00016	0.00143	0.03008
	B1	0.01589	0.01783	0.05122
	B1	0.00308	0.00498	0.03754
	B2	0.00974	0.01227	0.04387
	B2	-0.00022	0.00230	0.03335
sky130_fd_sc_hs__o22ai_4	A1	0.04815	0.05077	0.11699
	A1	0.00478	0.00765	0.07532
	A2	0.03770	0.04095	0.10164
	A2	-0.00019	0.00361	0.06645
	B1	0.03037	0.03524	0.10296
	B1	0.00488	0.00972	0.07750
	B2	0.01978	0.02549	0.09023
	B2	-0.00006	0.00555	0.06902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00235	0.00197	0.00191
	(A2 * B2 * !Y)	-0.00173	-0.00213	-0.00216
	(A2 * B1 * !B2 * !Y)	0.00238	0.00200	0.00195
	(A2 * B1 * !B2 * !Y)	-0.00170	-0.00210	-0.00213
	(A2 * !B1 * !B2 * Y)	0.00185	0.00186	0.00185
	(A2 * !B1 * !B2 * Y)	-0.00221	-0.00223	-0.00222
	(!A2 * !B1 * !B2 * Y)	0.00176	0.00177	0.00176
	(!A2 * !B1 * !B2 * Y)	-0.00223	-0.00224	-0.00223
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00465	0.00372	0.00357
	(A2 * B2 * !Y)	-0.00323	-0.00421	-0.00428
	(A2 * B1 * !B2 * !Y)	0.00472	0.00378	0.00363
	(A2 * B1 * !B2 * !Y)	-0.00317	-0.00415	-0.00422
	(A2 * !B1 * !B2 * Y)	0.00343	0.00345	0.00343
	(A2 * !B1 * !B2 * Y)	-0.00439	-0.00443	-0.00442
	(!A2 * !B1 * !B2 * Y)	0.00329	0.00331	0.00329
	(!A2 * !B1 * !B2 * Y)	-0.00446	-0.00447	-0.00444
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00913	0.00750	0.00719
	(A2 * B2 * !Y)	-0.00660	-0.00831	-0.00846
	(A2 * B1 * !B2 * !Y)	0.00926	0.00763	0.00731
	(A2 * B1 * !B2 * !Y)	-0.00648	-0.00818	-0.00833
	(A2 * !B1 * !B2 * Y)	0.00673	0.00677	0.00671
	(A2 * !B1 * !B2 * Y)	-0.00888	-0.00895	-0.00892
	(!A2 * !B1 * !B2 * Y)	0.00637	0.00646	0.00641
	(!A2 * !B1 * !B2 * Y)	-0.00895	-0.00902	-0.00896

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00177	-0.00177	-0.00177
	(A2 * B2 * !Y)	0.00230	0.00231	0.00230
	(A2 * B1 * !B2 * !Y)	-0.00174	-0.00174	-0.00174
	(A2 * B1 * !B2 * !Y)	0.00233	0.00234	0.00233
	(A2 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
	(A2 * !B1 * !B2 * Y)	0.00222	0.00225	0.00223
	(!A2 * !B1 * !B2 * Y)	-0.00156	-0.00175	-0.00176
	(!A2 * !B1 * !B2 * Y)	0.00239	0.00229	0.00225
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00328	-0.00330	-0.00328
	(A2 * B2 * !Y)	0.00456	0.00460	0.00458
	(A2 * B1 * !B2 * !Y)	-0.00321	-0.00323	-0.00322
	(A2 * B1 * !B2 * !Y)	0.00462	0.00467	0.00464
	(A2 * !B1 * !B2 * Y)	-0.00340	-0.00340	-0.00340
	(A2 * !B1 * !B2 * Y)	0.00442	0.00443	0.00442
	(!A2 * !B1 * !B2 * Y)	-0.00287	-0.00324	-0.00329
	(!A2 * !B1 * !B2 * Y)	0.00476	0.00454	0.00449
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00658	-0.00662	-0.00662
	(A2 * B2 * !Y)	0.00901	0.00908	0.00905
	(A2 * B1 * !B2 * !Y)	-0.00646	-0.00650	-0.00649
	(A2 * B1 * !B2 * !Y)	0.00913	0.00920	0.00917
	(A2 * !B1 * !B2 * Y)	-0.00664	-0.00669	-0.00666
	(A2 * !B1 * !B2 * Y)	0.00888	0.00899	0.00892
	(!A2 * !B1 * !B2 * Y)	-0.00561	-0.00637	-0.00641
	(!A2 * !B1 * !B2 * Y)	0.00958	0.00916	0.00905

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00182	0.00185	0.00182
	(A1 * B2 * !Y)	-0.00097	-0.00098	-0.00096
	(A1 * B1 * !B2 * !Y)	0.00185	0.00188	0.00186
	(A1 * B1 * !B2 * !Y)	-0.00093	-0.00095	-0.00093
	(A1 * !B1 * !B2 * Y)	0.00169	0.00169	0.00168
	(A1 * !B1 * !B2 * Y)	-0.00214	-0.00214	-0.00214
	(!A1 * !B1 * !B2 * Y)	0.00160	0.00162	0.00161
	(!A1 * !B1 * !B2 * Y)	-0.00215	-0.00216	-0.00215
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00389	0.00396	0.00390
	(A1 * B2 * !Y)	-0.00191	-0.00194	-0.00190
	(A1 * B1 * !B2 * !Y)	0.00396	0.00403	0.00396
	(A1 * B1 * !B2 * !Y)	-0.00184	-0.00187	-0.00184
	(A1 * !B1 * !B2 * Y)	0.00344	0.00344	0.00342
	(A1 * !B1 * !B2 * Y)	-0.00444	-0.00447	-0.00445
	(!A1 * !B1 * !B2 * Y)	0.00326	0.00329	0.00328
	(!A1 * !B1 * !B2 * Y)	-0.00449	-0.00451	-0.00449
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00723	0.00731	0.00720
	(A1 * B2 * !Y)	-0.00376	-0.00378	-0.00371
	(A1 * B1 * !B2 * !Y)	0.00736	0.00744	0.00733
	(A1 * B1 * !B2 * !Y)	-0.00363	-0.00366	-0.00358
	(A1 * !B1 * !B2 * Y)	0.00658	0.00666	0.00661
	(A1 * !B1 * !B2 * Y)	-0.00841	-0.00850	-0.00846
	(!A1 * !B1 * !B2 * Y)	0.00630	0.00633	0.00629
	(!A1 * !B1 * !B2 * Y)	-0.00856	-0.00857	-0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00171	-0.00173	-0.00179
	(A1 * B2 * !Y)	0.00107	0.00107	0.00101
	(A1 * B1 * !B2 * !Y)	-0.00168	-0.00170	-0.00176
	(A1 * B1 * !B2 * !Y)	0.00110	0.00110	0.00104
	(A1 * !B1 * !B2 * Y)	-0.00167	-0.00168	-0.00167
	(A1 * !B1 * !B2 * Y)	0.00214	0.00215	0.00214
	(!A1 * !B1 * !B2 * Y)	-0.00142	-0.00159	-0.00161
	(!A1 * !B1 * !B2 * Y)	0.00228	0.00221	0.00217
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00362	-0.00365	-0.00383
	(A1 * B2 * !Y)	0.00217	0.00217	0.00200
	(A1 * B1 * !B2 * !Y)	-0.00357	-0.00360	-0.00378
	(A1 * B1 * !B2 * !Y)	0.00222	0.00222	0.00206
	(A1 * !B1 * !B2 * Y)	-0.00338	-0.00341	-0.00339
	(A1 * !B1 * !B2 * Y)	0.00444	0.00447	0.00445
	(!A1 * !B1 * !B2 * Y)	-0.00286	-0.00323	-0.00328
	(!A1 * !B1 * !B2 * Y)	0.00480	0.00458	0.00453
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00674	-0.00679	-0.00707
	(A1 * B2 * !Y)	0.00412	0.00414	0.00388
	(A1 * B1 * !B2 * !Y)	-0.00662	-0.00667	-0.00694
	(A1 * B1 * !B2 * !Y)	0.00425	0.00427	0.00401
	(A1 * !B1 * !B2 * Y)	-0.00655	-0.00659	-0.00655
	(A1 * !B1 * !B2 * Y)	0.00845	0.00851	0.00846
	(!A1 * !B1 * !B2 * Y)	-0.00555	-0.00620	-0.00629
	(!A1 * !B1 * !B2 * Y)	0.00913	0.00870	0.00861

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00240	0.00203	0.00198
	(A2 * B2 * !Y)	-0.00171	-0.00210	-0.00212
	(A1 * !A2 * B2 * !Y)	0.00243	0.00206	0.00201
	(A1 * !A2 * B2 * !Y)	-0.00168	-0.00207	-0.00208
	(!A1 * !A2 * B2 * Y)	0.00065	0.00065	0.00064
	(!A1 * !A2 * B2 * Y)	-0.00261	-0.00262	-0.00261
	(!A1 * !A2 * !B2 * Y)	0.00075	0.00075	0.00068
	(!A1 * !A2 * !B2 * Y)	-0.00249	-0.00250	-0.00262
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00464	0.00371	0.00355
	(A2 * B2 * !Y)	-0.00326	-0.00426	-0.00434
	(A1 * !A2 * B2 * !Y)	0.00470	0.00377	0.00362
	(A1 * !A2 * B2 * !Y)	-0.00320	-0.00419	-0.00428
	(!A1 * !A2 * B2 * Y)	0.00107	0.00108	0.00107
	(!A1 * !A2 * B2 * Y)	-0.00514	-0.00520	-0.00519
	(!A1 * !A2 * !B2 * Y)	0.00127	0.00127	0.00114
	(!A1 * !A2 * !B2 * Y)	-0.00495	-0.00499	-0.00521
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00948	0.00781	0.00755
	(A2 * B2 * !Y)	-0.00641	-0.00815	-0.00826
	(A1 * !A2 * B2 * !Y)	0.00960	0.00793	0.00767
	(A1 * !A2 * B2 * !Y)	-0.00628	-0.00802	-0.00814
	(!A1 * !A2 * B2 * Y)	0.00204	0.00204	0.00202
	(!A1 * !A2 * B2 * Y)	-0.01047	-0.01054	-0.01051
	(!A1 * !A2 * !B2 * Y)	0.00236	0.00235	0.00213
	(!A1 * !A2 * !B2 * Y)	-0.01014	-0.01018	-0.01055

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00184	-0.00184	-0.00184
	(A2 * B2 * !Y)	0.00227	0.00227	0.00226
	(A1 * !A2 * B2 * !Y)	-0.00181	-0.00181	-0.00181
	(A1 * !A2 * B2 * !Y)	0.00230	0.00231	0.00229
	(!A1 * !A2 * B2 * Y)	-0.00060	-0.00062	-0.00063
	(!A1 * !A2 * B2 * Y)	0.00267	0.00272	0.00263
	(!A1 * !A2 * !B2 * Y)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * !B2 * Y)	0.00264	0.00268	0.00264
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00326	-0.00326	-0.00326
	(A2 * B2 * !Y)	0.00463	0.00464	0.00464
	(A1 * !A2 * B2 * !Y)	-0.00320	-0.00321	-0.00320
	(A1 * !A2 * B2 * !Y)	0.00469	0.00472	0.00470
	(!A1 * !A2 * B2 * Y)	-0.00100	-0.00102	-0.00104
	(!A1 * !A2 * B2 * Y)	0.00526	0.00532	0.00521
	(!A1 * !A2 * !B2 * Y)	-0.00109	-0.00108	-0.00108
	(!A1 * !A2 * !B2 * Y)	0.00526	0.00523	0.00525
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00698	-0.00701	-0.00698
	(A2 * B2 * !Y)	0.00886	0.00892	0.00884
	(A1 * !A2 * B2 * !Y)	-0.00686	-0.00684	-0.00686
	(A1 * !A2 * B2 * !Y)	0.00899	0.00896	0.00897
	(!A1 * !A2 * B2 * Y)	-0.00187	-0.00190	-0.00196
	(!A1 * !A2 * B2 * Y)	0.01065	0.01077	0.01056
	(!A1 * !A2 * !B2 * Y)	-0.00204	-0.00205	-0.00204
	(!A1 * !A2 * !B2 * Y)	0.01059	0.01063	0.01062

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00195	0.00199	0.00196
	(A2 * B1 * !Y)	-0.00093	-0.00095	-0.00093
	(A1 * !A2 * B1 * !Y)	0.00198	0.00198	0.00199
	(A1 * !A2 * B1 * !Y)	-0.00090	-0.00089	-0.00090
	(!A1 * !A2 * B1 * Y)	0.00053	0.00053	0.00053
	(!A1 * !A2 * B1 * Y)	-0.00260	-0.00260	-0.00260
	(!A1 * !A2 * !B1 * Y)	0.00063	0.00063	0.00056
	(!A1 * !A2 * !B1 * Y)	-0.00248	-0.00249	-0.00260
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00372	0.00379	0.00374
	(A2 * B1 * !Y)	-0.00192	-0.00195	-0.00191
	(A1 * !A2 * B1 * !Y)	0.00379	0.00380	0.00380
	(A1 * !A2 * B1 * !Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !A2 * B1 * Y)	0.00103	0.00102	0.00102
	(!A1 * !A2 * B1 * Y)	-0.00509	-0.00511	-0.00511
	(!A1 * !A2 * !B1 * Y)	0.00122	0.00122	0.00108
	(!A1 * !A2 * !B1 * Y)	-0.00489	-0.00492	-0.00513
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00727	0.00741	0.00729
	(A2 * B1 * !Y)	-0.00376	-0.00381	-0.00373
	(A1 * !A2 * B1 * !Y)	0.00740	0.00742	0.00742
	(A1 * !A2 * B1 * !Y)	-0.00363	-0.00363	-0.00361
	(!A1 * !A2 * B1 * Y)	0.00193	0.00192	0.00190
	(!A1 * !A2 * B1 * Y)	-0.01002	-0.01005	-0.01004
	(!A1 * !A2 * !B1 * Y)	0.00222	0.00224	0.00201
	(!A1 * !A2 * !B1 * Y)	-0.00963	-0.00971	-0.01007

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00185	-0.00188	-0.00193
	(A2 * B1 * !Y)	0.00101	0.00103	0.00097
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00184	-0.00190
	(A1 * !A2 * B1 * !Y)	0.00106	0.00105	0.00100
	(!A1 * !A2 * B1 * Y)	-0.00050	-0.00051	-0.00052
	(!A1 * !A2 * B1 * Y)	0.00263	0.00266	0.00260
	(!A1 * !A2 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !B1 * Y)	0.00261	0.00263	0.00262
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00344	-0.00347	-0.00367
	(A2 * B1 * !Y)	0.00216	0.00216	0.00201
	(A1 * !A2 * B1 * !Y)	-0.00339	-0.00343	-0.00362
	(A1 * !A2 * B1 * !Y)	0.00220	0.00222	0.00206
	(!A1 * !A2 * B1 * Y)	-0.00096	-0.00097	-0.00099
	(!A1 * !A2 * B1 * Y)	0.00517	0.00519	0.00511
	(!A1 * !A2 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(!A1 * !A2 * !B1 * Y)	0.00514	0.00518	0.00517
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00681	-0.00686	-0.00716
	(A2 * B1 * !Y)	0.00414	0.00416	0.00391
	(A1 * !A2 * B1 * !Y)	-0.00671	-0.00675	-0.00703
	(A1 * !A2 * B1 * !Y)	0.00429	0.00429	0.00404
	(!A1 * !A2 * B1 * Y)	-0.00179	-0.00179	-0.00185
	(!A1 * !A2 * B1 * Y)	0.01021	0.01023	0.01006
	(!A1 * !A2 * !B1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !A2 * !B1 * Y)	0.01010	0.01015	0.01014

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00252	0.00261	0.00269	0.00287	1.30942
sky130_fd_sc_hs__o22a_2	0.00270	0.00274	0.00285	0.00282	2.51954
sky130_fd_sc_hs__o22a_4	0.00525	0.00488	0.00537	0.00509	4.61757

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	9.95140	22.31390
sky130_fd_sc_hs__o22a_2	0.00000	13.09570	22.59480
sky130_fd_sc_hs__o22a_4	0.00000	26.30980	45.18750

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)	0.09430	0.56546	6.24461
	A2->X (RR)	0.08519	0.54533	6.16342
	B1->X (RR)	0.08574	0.57548	6.37879
	B2->X (RR)	0.07628	0.55046	6.26900
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.09591	0.49073	6.23771
	A2->X (RR)	0.08680	0.47391	6.16120
	B1->X (RR)	0.08740	0.50625	6.36681
	B2->X (RR)	0.07716	0.48012	6.23380
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.10231	0.43707	6.24340
	A2->X (RR)	0.09482	0.41801	6.18809
	B1->X (RR)	0.09269	0.44896	6.35700
	B2->X (RR)	0.08649	0.43814	6.33489

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.13281	0.56430	5.14880
	A2->X (FF)	0.12031	0.58068	5.28562
	B1->X (FF)	0.10110	0.48936	4.97528
	B2->X (FF)	0.08851	0.49872	5.12614
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.16039	0.57434	5.26774
	A2->X (FF)	0.14725	0.59615	5.41334
	B1->X (FF)	0.12766	0.50345	5.09302
	B2->X (FF)	0.11759	0.54362	5.24437
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.15522	0.52532	5.10288
	A2->X (FF)	0.13795	0.53973	5.23771
	B1->X (FF)	0.13123	0.48439	4.95959
	B2->X (FF)	0.11531	0.49616	5.05474

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01287	0.01514	0.07316
	A1	0.00487	0.00715	0.06568
	A2	0.01084	0.01354	0.07846
	A2	0.00397	0.00668	0.07198
	B1	0.01054	0.01363	0.07135
	B1	0.00468	0.00779	0.06602
	B2	0.00903	0.01266	0.07769
	B2	0.00399	0.00763	0.07320
sky130_fd_sc_hs__o22a_2	A1	0.01655	0.01899	0.07759
	A1	0.00805	0.01051	0.06983
	A2	0.01623	0.01860	0.08265
	A2	0.00709	0.00993	0.07603
	B1	0.01402	0.01704	0.07246
	B1	0.00801	0.01105	0.06745
	B2	0.01190	0.01541	0.07733
	B2	0.00709	0.01069	0.07363
sky130_fd_sc_hs__o22a_4	A1	0.03247	0.03726	0.15223
	A1	0.01654	0.02135	0.13824
	A2	0.02758	0.03311	0.16135
	A2	0.01435	0.01995	0.14953
	B1	0.03376	0.03920	0.14882
	B1	0.01650	0.02281	0.13881
	B2	0.02335	0.03014	0.15357
	B2	0.01434	0.02117	0.14654

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00547	0.00763	0.06540
	A1	0.01386	0.01599	0.07297
	A2	0.00545	0.00905	0.07406
	A2	0.01271	0.01630	0.08049
	B1	0.00386	0.00649	0.06707
	B1	0.01092	0.01326	0.07085
	B2	0.00328	0.00746	0.07526
	B2	0.00956	0.01336	0.07785
sky130_fd_sc_hs__o22a_2	A1	0.01028	0.01115	0.07130
	A1	0.01906	0.01988	0.07739
	A2	0.01029	0.01292	0.07911
	A2	0.01787	0.02032	0.08518
	B1	0.00805	0.00933	0.06775
	B1	0.01512	0.01633	0.07280
	B2	0.00800	0.01099	0.07734
	B2	0.01385	0.01671	0.08037
sky130_fd_sc_hs__o22a_4	A1	0.01964	0.02126	0.13734
	A1	0.03643	0.03802	0.15064
	A2	0.02006	0.02486	0.15676
	A2	0.03415	0.03872	0.16558
	B1	0.01631	0.01877	0.13454
	B1	0.03019	0.03252	0.14530
	B2	0.01679	0.02214	0.15045
	B2	0.02803	0.03307	0.15752

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00200	0.00164	0.00161
	(A2 * B2 * X)	-0.00154	-0.00192	-0.00192
	(A2 * B1 * !B2 * X)	0.00205	0.00169	0.00166
	(A2 * B1 * !B2 * X)	-0.00150	-0.00187	-0.00187
	(A2 * !B1 * !B2 * !X)	0.00156	0.00157	0.00156
	(A2 * !B1 * !B2 * !X)	-0.00196	-0.00197	-0.00197
	(!A2 * !B1 * !B2 * !X)	0.00148	0.00149	0.00149
	(!A2 * !B1 * !B2 * !X)	-0.00198	-0.00198	-0.00197
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00226	0.00191	0.00187
	(A2 * B2 * X)	-0.00152	-0.00189	-0.00190
	(A2 * B1 * !B2 * X)	0.00231	0.00196	0.00192
	(A2 * B1 * !B2 * X)	-0.00147	-0.00184	-0.00185
	(A2 * !B1 * !B2 * !X)	0.00188	0.00189	0.00188
	(A2 * !B1 * !B2 * !X)	-0.00187	-0.00189	-0.00188
	(!A2 * !B1 * !B2 * !X)	0.00181	0.00182	0.00182
	(!A2 * !B1 * !B2 * !X)	-0.00189	-0.00189	-0.00189
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00436	0.00369	0.00358
	(A2 * B2 * X)	-0.00290	-0.00364	-0.00368
	(A2 * B1 * !B2 * X)	0.00445	0.00378	0.00367
	(A2 * B1 * !B2 * X)	-0.00280	-0.00355	-0.00358
	(A2 * !B1 * !B2 * !X)	0.00350	0.00354	0.00351
	(A2 * !B1 * !B2 * !X)	-0.00370	-0.00374	-0.00373
	(!A2 * !B1 * !B2 * !X)	0.00337	0.00339	0.00339
	(!A2 * !B1 * !B2 * !X)	-0.00375	-0.00377	-0.00375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00139	-0.00140	-0.00140
	(A2 * B2 * X)	0.00215	0.00216	0.00214
	(A2 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00136
	(A2 * B1 * !B2 * X)	0.00220	0.00220	0.00218
	(A2 * !B1 * !B2 * !X)	-0.00142	-0.00143	-0.00142
	(A2 * !B1 * !B2 * !X)	0.00209	0.00211	0.00210
	(!A2 * !B1 * !B2 * !X)	-0.00117	-0.00134	-0.00137
	(!A2 * !B1 * !B2 * !X)	0.00227	0.00216	0.00212
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00165	-0.00166	-0.00166
	(A2 * B2 * X)	0.00213	0.00214	0.00212
	(A2 * B1 * !B2 * X)	-0.00160	-0.00161	-0.00161
	(A2 * B1 * !B2 * X)	0.00218	0.00218	0.00216
	(A2 * !B1 * !B2 * !X)	-0.00163	-0.00163	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00214	0.00214	0.00213
	(!A2 * !B1 * !B2 * !X)	-0.00138	-0.00155	-0.00158
	(!A2 * !B1 * !B2 * !X)	0.00228	0.00218	0.00215
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00312	-0.00314	-0.00315
	(A2 * B2 * X)	0.00412	0.00415	0.00412
	(A2 * B1 * !B2 * X)	-0.00302	-0.00304	-0.00305
	(A2 * B1 * !B2 * X)	0.00421	0.00424	0.00421
	(A2 * !B1 * !B2 * !X)	-0.00299	-0.00300	-0.00300
	(A2 * !B1 * !B2 * !X)	0.00421	0.00424	0.00422
	(!A2 * !B1 * !B2 * !X)	-0.00254	-0.00287	-0.00290
	(!A2 * !B1 * !B2 * !X)	0.00454	0.00435	0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00166	0.00169	0.00167
	(A1 * B2 * X)	-0.00089	-0.00091	-0.00089
	(A1 * B1 * !B2 * X)	0.00171	0.00174	0.00172
	(A1 * B1 * !B2 * X)	-0.00085	-0.00086	-0.00084
	(A1 * !B1 * !B2 * !X)	0.00151	0.00152	0.00151
	(A1 * !B1 * !B2 * !X)	-0.00195	-0.00196	-0.00197
	(!A1 * !B1 * !B2 * !X)	0.00144	0.00144	0.00144
	(!A1 * !B1 * !B2 * !X)	-0.00197	-0.00197	-0.00197
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00182	0.00185	0.00182
	(A1 * B2 * X)	-0.00090	-0.00092	-0.00090
	(A1 * B1 * !B2 * X)	0.00186	0.00190	0.00187
	(A1 * B1 * !B2 * X)	-0.00086	-0.00087	-0.00085
	(A1 * !B1 * !B2 * !X)	0.00181	0.00182	0.00181
	(A1 * !B1 * !B2 * !X)	-0.00181	-0.00182	-0.00183
	(!A1 * !B1 * !B2 * !X)	0.00174	0.00175	0.00175
	(!A1 * !B1 * !B2 * !X)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00315	0.00321	0.00316
	(A1 * B2 * X)	-0.00178	-0.00181	-0.00177
	(A1 * B1 * !B2 * X)	0.00325	0.00330	0.00326
	(A1 * B1 * !B2 * X)	-0.00168	-0.00171	-0.00168
	(A1 * !B1 * !B2 * !X)	0.00304	0.00306	0.00305
	(A1 * !B1 * !B2 * !X)	-0.00370	-0.00373	-0.00373
	(!A1 * !B1 * !B2 * !X)	0.00292	0.00291	0.00291
	(!A1 * !B1 * !B2 * !X)	-0.00377	-0.00376	-0.00375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00154	-0.00156	-0.00162
	(A1 * B2 * X)	0.00101	0.00102	0.00095
	(A1 * B1 * !B2 * X)	-0.00150	-0.00151	-0.00157
	(A1 * B1 * !B2 * X)	0.00106	0.00106	0.00100
	(A1 * !B1 * !B2 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * !B1 * !B2 * !X)	0.00209	0.00209	0.00209
	(!A1 * !B1 * !B2 * !X)	-0.00113	-0.00130	-0.00132
	(!A1 * !B1 * !B2 * !X)	0.00226	0.00216	0.00211
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00169	-0.00170	-0.00177
	(A1 * B2 * X)	0.00103	0.00103	0.00097
	(A1 * B1 * !B2 * X)	-0.00165	-0.00165	-0.00172
	(A1 * B1 * !B2 * X)	0.00108	0.00108	0.00101
	(A1 * !B1 * !B2 * !X)	-0.00154	-0.00156	-0.00156
	(A1 * !B1 * !B2 * !X)	0.00206	0.00207	0.00207
	(!A1 * !B1 * !B2 * !X)	-0.00131	-0.00148	-0.00151
	(!A1 * !B1 * !B2 * !X)	0.00222	0.00213	0.00209
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00288	-0.00291	-0.00306
	(A1 * B2 * X)	0.00204	0.00204	0.00191
	(A1 * B1 * !B2 * X)	-0.00279	-0.00281	-0.00296
	(A1 * B1 * !B2 * X)	0.00214	0.00214	0.00200
	(A1 * !B1 * !B2 * !X)	-0.00253	-0.00255	-0.00253
	(A1 * !B1 * !B2 * !X)	0.00422	0.00423	0.00422
	(!A1 * !B1 * !B2 * !X)	-0.00207	-0.00236	-0.00243
	(!A1 * !B1 * !B2 * !X)	0.00455	0.00433	0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00206	0.00173	0.00170
	(A2 * B2 * X)	-0.00161	-0.00196	-0.00196
	(A1 * !A2 * B2 * X)	0.00211	0.00178	0.00175
	(A1 * !A2 * B2 * X)	-0.00156	-0.00191	-0.00191
	(!A1 * !A2 * B2 * !X)	0.00050	0.00051	0.00050
	(!A1 * !A2 * B2 * !X)	-0.00245	-0.00247	-0.00245
	(!A1 * !A2 * !B2 * !X)	0.00057	0.00057	0.00053
	(!A1 * !A2 * !B2 * !X)	-0.00234	-0.00237	-0.00246
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00233	0.00199	0.00196
	(A2 * B2 * X)	-0.00147	-0.00184	-0.00184
	(A1 * !A2 * B2 * X)	0.00238	0.00204	0.00201
	(A1 * !A2 * B2 * X)	-0.00143	-0.00179	-0.00179
	(!A1 * !A2 * B2 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * B2 * !X)	-0.00233	-0.00234	-0.00233
	(!A1 * !A2 * !B2 * !X)	0.00075	0.00075	0.00068
	(!A1 * !A2 * !B2 * !X)	-0.00221	-0.00223	-0.00234
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00454	0.00385	0.00374
	(A2 * B2 * X)	-0.00287	-0.00363	-0.00366
	(A1 * !A2 * B2 * X)	0.00463	0.00395	0.00384
	(A1 * !A2 * B2 * X)	-0.00278	-0.00353	-0.00356
	(!A1 * !A2 * B2 * !X)	0.00163	0.00164	0.00163
	(!A1 * !A2 * B2 * !X)	-0.00430	-0.00435	-0.00434
	(!A1 * !A2 * !B2 * !X)	0.00176	0.00178	0.00167
	(!A1 * !A2 * !B2 * !X)	-0.00416	-0.00420	-0.00436

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00148	-0.00149	-0.00150
	(A2 * B2 * X)	0.00217	0.00220	0.00217
	(A1 * !A2 * B2 * X)	-0.00143	-0.00145	-0.00145
	(A1 * !A2 * B2 * X)	0.00222	0.00225	0.00222
	(!A1 * !A2 * B2 * !X)	-0.00035	-0.00036	-0.00037
	(!A1 * !A2 * B2 * !X)	0.00262	0.00264	0.00259
	(!A1 * !A2 * !B2 * !X)	-0.00039	-0.00039	-0.00038
	(!A1 * !A2 * !B2 * !X)	0.00260	0.00264	0.00260
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00174	-0.00174	-0.00175
	(A2 * B2 * X)	0.00207	0.00208	0.00206
	(A1 * !A2 * B2 * X)	-0.00169	-0.00170	-0.00170
	(A1 * !A2 * B2 * X)	0.00212	0.00213	0.00210
	(!A1 * !A2 * B2 * !X)	-0.00038	-0.00039	-0.00040
	(!A1 * !A2 * B2 * !X)	0.00262	0.00264	0.00259
	(!A1 * !A2 * !B2 * !X)	-0.00041	-0.00043	-0.00042
	(!A1 * !A2 * !B2 * !X)	0.00258	0.00264	0.00260
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00328	-0.00330	-0.00331
	(A2 * B2 * X)	0.00410	0.00414	0.00410
	(A1 * !A2 * B2 * X)	-0.00319	-0.00321	-0.00322
	(A1 * !A2 * B2 * X)	0.00420	0.00423	0.00420
	(!A1 * !A2 * B2 * !X)	-0.00107	-0.00108	-0.00111
	(!A1 * !A2 * B2 * !X)	0.00492	0.00496	0.00486
	(!A1 * !A2 * !B2 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * !B2 * !X)	0.00485	0.00489	0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00215	0.00215	0.00214
	(A2 * B1 * X)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * B1 * X)	0.00219	0.00219	0.00219
	(A1 * !A2 * B1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * B1 * !X)	-0.00220	-0.00221	-0.00221
	(!A1 * !A2 * !B1 * !X)	0.00105	0.00105	0.00099
	(!A1 * !A2 * !B1 * !X)	-0.00211	-0.00213	-0.00221
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00186	0.00190	0.00187
	(A2 * B1 * X)	-0.00088	-0.00089	-0.00087
	(A1 * !A2 * B1 * X)	0.00191	0.00194	0.00192
	(A1 * !A2 * B1 * X)	-0.00083	-0.00085	-0.00082
	(!A1 * !A2 * B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * !X)	-0.00220	-0.00221	-0.00221
	(!A1 * !A2 * !B1 * !X)	0.00074	0.00074	0.00067
	(!A1 * !A2 * !B1 * !X)	-0.00210	-0.00211	-0.00222
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00332	0.00338	0.00334
	(A2 * B1 * X)	-0.00176	-0.00180	-0.00175
	(A1 * !A2 * B1 * X)	0.00342	0.00347	0.00343
	(A1 * !A2 * B1 * X)	-0.00167	-0.00170	-0.00166
	(!A1 * !A2 * B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A2 * B1 * !X)	-0.00439	-0.00442	-0.00443
	(!A1 * !A2 * !B1 * !X)	0.00120	0.00120	0.00111
	(!A1 * !A2 * !B1 * !X)	-0.00425	-0.00428	-0.00444

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00202	-0.00203	-0.00210
	(A2 * B1 * X)	0.00097	0.00098	0.00092
	(A1 * !A2 * B1 * X)	-0.00197	-0.00199	-0.00205
	(A1 * !A2 * B1 * X)	0.00102	0.00103	0.00097
	(!A1 * !A2 * B1 * !X)	-0.00079	-0.00080	-0.00082
	(!A1 * !A2 * B1 * !X)	0.00240	0.00241	0.00235
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * !B1 * !X)	0.00234	0.00235	0.00235
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00175	-0.00176	-0.00182
	(A2 * B1 * X)	0.00100	0.00100	0.00094
	(A1 * !A2 * B1 * X)	-0.00170	-0.00170	-0.00177
	(A1 * !A2 * B1 * X)	0.00105	0.00104	0.00098
	(!A1 * !A2 * B1 * !X)	-0.00036	-0.00037	-0.00038
	(!A1 * !A2 * B1 * !X)	0.00250	0.00250	0.00247
	(!A1 * !A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A2 * !B1 * !X)	0.00248	0.00251	0.00248
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00307	-0.00309	-0.00323
	(A2 * B1 * X)	0.00204	0.00203	0.00189
	(A1 * !A2 * B1 * X)	-0.00298	-0.00297	-0.00314
	(A1 * !A2 * B1 * X)	0.00213	0.00210	0.00198
	(!A1 * !A2 * B1 * !X)	-0.00049	-0.00051	-0.00054
	(!A1 * !A2 * B1 * !X)	0.00502	0.00504	0.00494
	(!A1 * !A2 * !B1 * !X)	-0.00058	-0.00061	-0.00058
	(!A1 * !A2 * !B1 * !X)	0.00495	0.00502	0.00496

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00234	0.00253	0.00286	0.00301	0.64161
sky130_fd_sc_hs__o2bb2ai_2	0.00528	0.00467	0.00581	0.00540	1.23675
sky130_fd_sc_hs__o2bb2ai_4	0.01103	0.01109	0.01089	0.01113	2.14560

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	15.39110	36.46100
sky130_fd_sc_hs__o2bb2ai_2	0.00000	30.77620	72.90970
sky130_fd_sc_hs__o2bb2ai_4	0.00000	39.14760	56.84580

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)	0.06797	0.37752	3.06472
	A2_N->Y (RR)	0.06488	0.38292	3.12812
	B1->Y (FR)	0.07899	0.82036	9.39107
	B2->Y (FR)	0.06674	0.84237	9.87485
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.06156	0.30451	2.97073
	A2_N->Y (RR)	0.05673	0.30683	3.06029
	B1->Y (FR)	0.07039	0.68495	9.24242
	B2->Y (FR)	0.05513	0.70595	9.70367
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.06659	0.26032	2.84589
	A2_N->Y (RR)	0.06148	0.27531	3.03075
	B1->Y (FR)	0.07665	0.60172	9.10629
	B2->Y (FR)	0.05985	0.63612	9.76522

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)	0.09234	0.50193	4.35599
	A2_N->Y (FF)	0.08263	0.47554	4.23209
	B1->Y (RF)	0.04135	0.41277	4.63516
	B2->Y (RF)	0.03285	0.39660	4.55887
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.07575	0.43088	4.30890
	A2_N->Y (FF)	0.07141	0.41800	4.29359
	B1->Y (RF)	0.03610	0.33555	4.46970
	B2->Y (RF)	0.02947	0.32686	4.49380
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.08623	0.40836	4.38646
	A2_N->Y (FF)	0.07514	0.37508	4.16991
	B1->Y (RF)	0.04122	0.28948	4.39939
	B2->Y (RF)	0.02994	0.26945	4.27137

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	0.00947	0.01356	0.09298
	A1_N	0.00598	0.01007	0.08970
	A2_N	0.00855	0.01266	0.08450
	A2_N	0.00597	0.01009	0.08207
	B1	0.00072	0.00141	0.01962
	B1	0.00677	0.00748	0.02573
	B2	0.00069	0.00237	0.02573
	B2	0.00560	0.00730	0.03063
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01772	0.02515	0.17187
	A1_N	0.00996	0.01741	0.16461
	A2_N	0.01530	0.02424	0.17712
	A2_N	0.01036	0.01930	0.17254
	B1	0.00107	0.00273	0.03976
	B1	0.01317	0.01488	0.05211
	B2	0.00105	0.00502	0.04949
	B2	0.01009	0.01409	0.05811
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03728	0.05209	0.36366
	A1_N	0.02004	0.03494	0.34680
	A2_N	0.03213	0.04860	0.34180
	A2_N	0.01996	0.03648	0.33006
	B1	0.00156	0.00490	0.07377
	B1	0.02574	0.02918	0.09787
	B2	0.00125	0.00893	0.09351
	B2	0.02030	0.02750	0.11242

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00736	0.01257	0.09253
	A1_N	0.01093	0.01610	0.09575
	A2_N	0.00687	0.01189	0.09135
	A2_N	0.00952	0.01451	0.09385
	B1	0.00892	0.00955	0.02462
	B1	0.00284	0.00343	0.01855
	B2	0.00656	0.00731	0.02200
	B2	0.00162	0.00235	0.01662
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01364	0.02364	0.17935
	A1_N	0.02143	0.03137	0.18682
	A2_N	0.01283	0.02275	0.17578
	A2_N	0.01789	0.02767	0.18031
	B1	0.01745	0.01887	0.04911
	B1	0.00531	0.00666	0.03690
	B2	0.01197	0.01384	0.04242
	B2	0.00286	0.00466	0.03306
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02965	0.04885	0.36230
	A1_N	0.04701	0.06616	0.37890
	A2_N	0.02647	0.04563	0.34810
	A2_N	0.03899	0.05809	0.36060
	B1	0.03622	0.03931	0.10061
	B1	0.01193	0.01489	0.07484
	B2	0.02503	0.02908	0.08518
	B2	0.00590	0.00985	0.06600

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)	0.00805	0.01199	0.09098
	(A2_N * !B1 * !B2 * Y)	0.00295	0.00687	0.08587
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00154	0.00154	0.00155
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00166	-0.00165	-0.00166
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01571	0.02341	0.17940
	(A2_N * !B1 * !B2 * Y)	0.00482	0.01250	0.16848
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00301	0.00305	0.00303
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00396	-0.00398	-0.00396
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.03369	0.04812	0.35823
	(A2_N * !B1 * !B2 * Y)	0.00982	0.02418	0.33432
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00678	0.00685	0.00679
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00864	-0.00867	-0.00862

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)	0.00057	0.00557	0.08507
	(A2_N * !B1 * !B2 * Y)	0.00573	0.01073	0.09017
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00128	-0.00139	-0.00141
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00195	0.00184	0.00180
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00092	0.01080	0.16753
	(A2_N * !B1 * !B2 * Y)	0.01193	0.02183	0.17844
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00246	-0.00271	-0.00276
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00452	0.00432	0.00425
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00241	0.02121	0.33249
	(A2_N * !B1 * !B2 * Y)	0.02649	0.04535	0.35634
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00550	-0.00615	-0.00627
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00984	0.00934	0.00919

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)	0.00716	0.01157	0.09202
	(A1_N * !B1 * !B2 * Y)	0.00295	0.00732	0.08781
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00056	0.00056	0.00055
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00204	-0.00204	-0.00207
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01343	0.02200	0.17353
	(A1_N * !B1 * !B2 * Y)	0.00522	0.01377	0.16531
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00107	0.00107	0.00103
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00381	-0.00383	-0.00391
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02878	0.04508	0.34705
	(A1_N * !B1 * !B2 * Y)	0.00969	0.02595	0.32802
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00241	0.00242	0.00229
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00987	-0.00991	-0.01011

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)	0.00015	0.00520	0.08592
	(A1_N * !B1 * !B2 * Y)	0.00442	0.00947	0.09017
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00041	-0.00042	-0.00041
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00219	0.00224	0.00220
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00001	0.00960	0.16160
	(A1_N * !B1 * !B2 * Y)	0.00824	0.01790	0.16986
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00075	-0.00077	-0.00075
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00417	0.00424	0.00418
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00066	0.01828	0.32145
	(A1_N * !B1 * !B2 * Y)	0.01848	0.03753	0.34054
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00171	-0.00172	-0.00172
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01061	0.01067	0.01065

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)	0.00207	0.00208	0.00207
	(A1_N * A2_N * B2 * Y)	-0.00189	-0.00191	-0.00190
	(A1_N * A2_N * !B2 * Y)	0.00202	0.00205	0.00203
	(A1_N * A2_N * !B2 * Y)	-0.00190	-0.00192	-0.00190
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00232	0.00195	0.00190
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00166	-0.00206	-0.00208
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00412	0.00414	0.00412
	(A1_N * A2_N * B2 * Y)	-0.00387	-0.00391	-0.00389
	(A1_N * A2_N * !B2 * Y)	0.00404	0.00406	0.00405
	(A1_N * A2_N * !B2 * Y)	-0.00391	-0.00392	-0.00391
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00472	0.00392	0.00381
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00332	-0.00416	-0.00421
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00726	0.00731	0.00725
	(A1_N * A2_N * B2 * Y)	-0.00831	-0.00838	-0.00836
	(A1_N * A2_N * !B2 * Y)	0.00703	0.00709	0.00706
	(A1_N * A2_N * !B2 * Y)	-0.00839	-0.00843	-0.00840
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00939	0.00761	0.00730
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00630	-0.00816	-0.00831

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)	-0.00144	-0.00144	-0.00143
	(A1_N * A2_N * B2 * Y)	0.00253	0.00254	0.00253
	(A1_N * A2_N * !B2 * Y)	-0.00125	-0.00137	-0.00140
	(A1_N * A2_N * !B2 * Y)	0.00267	0.00257	0.00255
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00163	-0.00164	-0.00164
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00235	0.00237	0.00234
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00283	-0.00285	-0.00284
	(A1_N * A2_N * B2 * Y)	0.00512	0.00516	0.00514
	(A1_N * A2_N * !B2 * Y)	-0.00248	-0.00276	-0.00278
	(A1_N * A2_N * !B2 * Y)	0.00539	0.00527	0.00520
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00327	-0.00329	-0.00328
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00474	0.00479	0.00475
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00622	-0.00627	-0.00624
	(A1_N * A2_N * B2 * Y)	0.00926	0.00935	0.00929
	(A1_N * A2_N * !B2 * Y)	-0.00542	-0.00604	-0.00610
	(A1_N * A2_N * !B2 * Y)	0.00989	0.00952	0.00943
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00622	-0.00627	-0.00624
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00936	0.00946	0.00939

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)	0.00215	0.00216	0.00214
	(A1_N * A2_N * B1 * Y)	-0.00192	-0.00192	-0.00192
	(A1_N * A2_N * !B1 * Y)	0.00210	0.00211	0.00209
	(A1_N * A2_N * !B1 * Y)	-0.00193	-0.00194	-0.00192
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00201	0.00205	0.00202
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00100	-0.00102	-0.00100
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00391	0.00391	0.00389
	(A1_N * A2_N * B1 * Y)	-0.00361	-0.00362	-0.00362
	(A1_N * A2_N * !B1 * Y)	0.00380	0.00384	0.00382
	(A1_N * A2_N * !B1 * Y)	-0.00362	-0.00365	-0.00364
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00367	0.00373	0.00368
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00175	-0.00178	-0.00174
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00729	0.00727	0.00725
	(A1_N * A2_N * B1 * Y)	-0.00839	-0.00841	-0.00843
	(A1_N * A2_N * !B1 * Y)	0.00701	0.00711	0.00705
	(A1_N * A2_N * !B1 * Y)	-0.00844	-0.00852	-0.00846
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00793	0.00803	0.00791
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00365	-0.00368	-0.00360

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)	-0.00149	-0.00151	-0.00150
	(A1_N * A2_N * B1 * Y)	0.00252	0.00255	0.00254
	(A1_N * A2_N * !B1 * Y)	-0.00131	-0.00144	-0.00146
	(A1_N * A2_N * !B1 * Y)	0.00269	0.00259	0.00257
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00179	-0.00181	-0.00186
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00121	0.00122	0.00116
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00262	-0.00263	-0.00262
	(A1_N * A2_N * B1 * Y)	0.00485	0.00488	0.00486
	(A1_N * A2_N * !B1 * Y)	-0.00230	-0.00253	-0.00256
	(A1_N * A2_N * !B1 * Y)	0.00513	0.00498	0.00493
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00319	-0.00323	-0.00337
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00219	0.00221	0.00208
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00624	-0.00624	-0.00624
	(A1_N * A2_N * B1 * Y)	0.00934	0.00935	0.00936
	(A1_N * A2_N * !B1 * Y)	-0.00547	-0.00604	-0.00610
	(A1_N * A2_N * !B1 * Y)	0.01003	0.00963	0.00949
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00689	-0.00697	-0.00729
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00453	0.00457	0.00427

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00234	0.00247	0.00253	0.00272	1.26675
sky130_fd_sc_hs__o2bb2a_2	0.00235	0.00256	0.00270	0.00278	2.34136
sky130_fd_sc_hs__o2bb2a_4	0.00234	0.00250	0.00506	0.00497	4.67337

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	26.04220	43.52080
sky130_fd_sc_hs__o2bb2a_2	0.00000	25.22580	50.38770
sky130_fd_sc_hs__o2bb2a_4	0.00000	49.26150	64.78420

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)	0.13091	0.70825	7.84736
	A2_N->X (FR)	0.12161	0.68084	7.63889
	B1->X (RR)	0.08447	0.54674	6.21897
	B2->X (RR)	0.07402	0.52435	6.12128
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.14261	0.64353	7.90342
	A2_N->X (FR)	0.13119	0.61519	7.69541
	B1->X (RR)	0.08786	0.47200	6.11452
	B2->X (RR)	0.07704	0.45260	6.01435
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.16605	0.61017	7.94535
	A2_N->X (FR)	0.15544	0.58501	7.74789
	B1->X (RR)	0.10013	0.42061	6.24630
	B2->X (RR)	0.08532	0.39434	6.13707

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)	0.10628	0.35988	2.78982
	A2_N->X (RF)	0.10336	0.36787	2.94725
	B1->X (FF)	0.12379	0.52930	4.98926
	B2->X (FF)	0.11241	0.54158	5.11334
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.11879	0.33215	2.58279
	A2_N->X (RF)	0.11617	0.33800	2.70607
	B1->X (FF)	0.15221	0.53903	4.95904
	B2->X (FF)	0.14012	0.55961	5.09029
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.13429	0.34652	2.87695
	A2_N->X (RF)	0.13147	0.35523	2.99424
	B1->X (FF)	0.15615	0.50636	5.07374
	B2->X (FF)	0.13736	0.52113	5.20633

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	0.01101	0.01650	0.10073
	A1_N	0.01318	0.01880	0.10478
	A2_N	0.01049	0.01593	0.10090
	A2_N	0.01298	0.01843	0.10381
	B1	0.01227	0.01466	0.07222
	B1	0.00667	0.00906	0.06699
	B2	0.01039	0.01322	0.07793
	B2	0.00573	0.00857	0.07363
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01476	0.02024	0.10448
	A1_N	0.01690	0.02260	0.10953
	A2_N	0.01397	0.01944	0.10213
	A2_N	0.01662	0.02212	0.10563
	B1	0.01610	0.01848	0.07707
	B1	0.01014	0.01252	0.07181
	B2	0.01408	0.01689	0.08240
	B2	0.00912	0.01194	0.07814
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02960	0.03518	0.12402
	A1_N	0.02754	0.03401	0.12819
	A2_N	0.02889	0.03426	0.11993
	A2_N	0.02986	0.03532	0.12260
	B1	0.03256	0.03648	0.14619
	B1	0.02122	0.02517	0.13669
	B2	0.02685	0.03198	0.15381
	B2	0.01802	0.02321	0.14639

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01325	0.01735	0.10078
	A1_N	0.00985	0.01387	0.09614
	A2_N	0.01221	0.01704	0.10393
	A2_N	0.00984	0.01448	0.10035
	B1	0.00518	0.00764	0.06574
	B1	0.01075	0.01316	0.07054
	B2	0.00514	0.00904	0.07423
	B2	0.00977	0.01366	0.07837
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01726	0.02089	0.09953
	A1_N	0.01369	0.01727	0.09528
	A2_N	0.01605	0.02017	0.10311
	A2_N	0.01370	0.01748	0.09911
	B1	0.00950	0.01119	0.06901
	B1	0.01542	0.01695	0.07490
	B2	0.00949	0.01249	0.07964
	B2	0.01441	0.01740	0.08315
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02740	0.03057	0.11335
	A1_N	0.02542	0.02855	0.11037
	A2_N	0.02640	0.02994	0.11805
	A2_N	0.02543	0.02892	0.11609
	B1	0.01871	0.02070	0.13297
	B1	0.02998	0.03161	0.14022
	B2	0.01877	0.02388	0.15005
	B2	0.02753	0.03232	0.15418

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)	0.00733	0.01141	0.09085
	(A2_N * !B1 * !B2 * !X)	0.00227	0.00634	0.08579
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00171	0.00173	0.00172
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00150	-0.00152	-0.00151
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00780	0.01169	0.08914
	(A2_N * !B1 * !B2 * !X)	0.00262	0.00648	0.08394
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00173	0.00173	0.00174
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00154	-0.00154	-0.00154
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00937	0.01290	0.08942
	(A2_N * !B1 * !B2 * !X)	0.00417	0.00769	0.08422
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00195	0.00196	0.00196
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00128	-0.00129	-0.00128

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	0.00578	0.08566
	(A2_N * !B1 * !B2 * !X)	0.00574	0.01088	0.09072
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00123	-0.00136	-0.00138
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00198	0.00190	0.00186
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00071	0.00565	0.08355
	(A2_N * !B1 * !B2 * !X)	0.00594	0.01090	0.08874
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00137	-0.00150	-0.00152
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00190	0.00181	0.00176
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00144	0.00608	0.08325
	(A2_N * !B1 * !B2 * !X)	0.00671	0.01136	0.08846
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00114	-0.00126	-0.00128
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00210	0.00200	0.00196

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)	0.00649	0.01104	0.09167
	(A1_N * !B1 * !B2 * !X)	0.00241	0.00695	0.08758
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00063	0.00063	0.00061
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00191	-0.00191	-0.00194
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00706	0.01144	0.09002
	(A1_N * !B1 * !B2 * !X)	0.00277	0.00712	0.08572
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00066	0.00065	0.00064
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00200	-0.00200	-0.00203
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00858	0.01247	0.09030
	(A1_N * !B1 * !B2 * !X)	0.00435	0.00822	0.08605
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00083	0.00083	0.00081
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00172	-0.00173	-0.00176

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00014	0.00536	0.08625
	(A1_N * !B1 * !B2 * !X)	0.00426	0.00947	0.09036
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00027	-0.00028	-0.00027
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00227	0.00231	0.00228
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00016	0.00513	0.08405
	(A1_N * !B1 * !B2 * !X)	0.00450	0.00948	0.08837
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00042	-0.00041	-0.00042
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00224	0.00224	0.00225
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00099	0.00556	0.08367
	(A1_N * !B1 * !B2 * !X)	0.00526	0.00985	0.08794
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00013	-0.00014	-0.00013
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00242	0.00246	0.00243

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)	0.00191	0.00192	0.00191
	(A1_N * A2_N * B2 * !X)	-0.00160	-0.00161	-0.00160
	(A1_N * A2_N * !B2 * !X)	0.00187	0.00188	0.00187
	(A1_N * A2_N * !B2 * !X)	-0.00160	-0.00161	-0.00161
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00218	0.00183	0.00180
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00135	-0.00171	-0.00171
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00217	0.00218	0.00217
	(A1_N * A2_N * B2 * !X)	-0.00159	-0.00160	-0.00159
	(A1_N * A2_N * !B2 * !X)	0.00212	0.00215	0.00213
	(A1_N * A2_N * !B2 * !X)	-0.00159	-0.00161	-0.00160
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00232	0.00197	0.00194
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00146	-0.00182	-0.00182
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00364	0.00367	0.00365
	(A1_N * A2_N * B2 * !X)	-0.00346	-0.00351	-0.00350
	(A1_N * A2_N * !B2 * !X)	0.00355	0.00359	0.00357
	(A1_N * A2_N * !B2 * !X)	-0.00351	-0.00354	-0.00352
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00466	0.00377	0.00364
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00251	-0.00347	-0.00352

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)	-0.00115	-0.00115	-0.00115
	(A1_N * A2_N * B2 * !X)	0.00235	0.00237	0.00236
	(A1_N * A2_N * !B2 * !X)	-0.00098	-0.00110	-0.00112
	(A1_N * A2_N * !B2 * !X)	0.00250	0.00241	0.00237
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00127	-0.00128	-0.00128
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00225	0.00227	0.00224
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00128	-0.00130	-0.00129
	(A1_N * A2_N * B2 * !X)	0.00246	0.00248	0.00246
	(A1_N * A2_N * !B2 * !X)	-0.00111	-0.00124	-0.00126
	(A1_N * A2_N * !B2 * !X)	0.00260	0.00252	0.00248
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00153	-0.00154	-0.00154
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00225	0.00226	0.00223
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00252	-0.00253	-0.00252
	(A1_N * A2_N * B2 * !X)	0.00460	0.00463	0.00461
	(A1_N * A2_N * !B2 * !X)	-0.00213	-0.00242	-0.00245
	(A1_N * A2_N * !B2 * !X)	0.00496	0.00474	0.00467
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00255	-0.00258	-0.00257
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00459	0.00465	0.00460

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)	0.00201	0.00202	0.00201
	(A1_N * A2_N * B1 * !X)	-0.00163	-0.00164	-0.00164
	(A1_N * A2_N * !B1 * !X)	0.00197	0.00198	0.00197
	(A1_N * A2_N * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00191	0.00194	0.00191
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00082	-0.00084	-0.00082
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00229	0.00229	0.00229
	(A1_N * A2_N * B1 * !X)	-0.00153	-0.00153	-0.00154
	(A1_N * A2_N * !B1 * !X)	0.00224	0.00227	0.00225
	(A1_N * A2_N * !B1 * !X)	-0.00154	-0.00156	-0.00154
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00196	0.00199	0.00196
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00096	-0.00097	-0.00095
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00354	0.00357	0.00355
	(A1_N * A2_N * B1 * !X)	-0.00343	-0.00348	-0.00348
	(A1_N * A2_N * !B1 * !X)	0.00347	0.00350	0.00348
	(A1_N * A2_N * !B1 * !X)	-0.00349	-0.00352	-0.00350
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00360	0.00366	0.00362
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00158	-0.00161	-0.00157

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)	-0.00124	-0.00126	-0.00125
	(A1_N * A2_N * B1 * !X)	0.00238	0.00240	0.00239
	(A1_N * A2_N * !B1 * !X)	-0.00107	-0.00120	-0.00122
	(A1_N * A2_N * !B1 * !X)	0.00255	0.00245	0.00241
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00148	-0.00149	-0.00155
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00125	0.00125	0.00120
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00141	-0.00142	-0.00141
	(A1_N * A2_N * B1 * !X)	0.00240	0.00241	0.00241
	(A1_N * A2_N * !B1 * !X)	-0.00124	-0.00136	-0.00138
	(A1_N * A2_N * !B1 * !X)	0.00254	0.00247	0.00243
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00165	-0.00166	-0.00172
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00127	0.00127	0.00121
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00242	-0.00244	-0.00242
	(A1_N * A2_N * B1 * !X)	0.00457	0.00459	0.00457
	(A1_N * A2_N * !B1 * !X)	-0.00207	-0.00233	-0.00236
	(A1_N * A2_N * !B1 * !X)	0.00490	0.00470	0.00464
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00267	-0.00269	-0.00288
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00252	0.00252	0.00234

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00278	0.00293	0.00284	0.00294	0.00300	0.43472
sky130_fd_sc_hs__o311ai_2	0.00545	0.00557	0.00563	0.00563	0.00571	0.73712
sky130_fd_sc_hs__o311ai_4	0.01074	0.01077	0.01122	0.00846	0.00801	1.40223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	3.69060	20.89290
sky130_fd_sc_hs__o311ai_2	0.00000	7.38146	41.78110
sky130_fd_sc_hs__o311ai_4	0.00000	8.66213	55.69630

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)	0.16844	0.95707	8.94121
	A2->Y (FR)	0.15846	0.98850	9.56265
	A3->Y (FR)	0.12847	0.98067	9.82676
	B1->Y (FR)	0.03930	0.52541	5.73212
	C1->Y (FR)	0.03261	0.51667	5.70921
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.18652	0.84050	8.65841
	A2->Y (FR)	0.16984	0.86180	9.26194
	A3->Y (FR)	0.13800	0.86884	9.72082
	B1->Y (FR)	0.03918	0.46171	5.49711
	C1->Y (FR)	0.03124	0.45059	5.48877
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.16622	0.69942	8.45230
	A2->Y (FR)	0.15401	0.74040	9.26632
	A3->Y (FR)	0.11683	0.73730	9.62971
	B1->Y (FR)	0.05668	0.56046	7.51432
	C1->Y (FR)	0.03967	0.54859	7.59167

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.06445	0.40565	3.66009
	A2->Y (RF)	0.06295	0.40442	3.72136
	A3->Y (RF)	0.04946	0.38322	3.64835
	B1->Y (RF)	0.05460	0.45349	4.50312
	C1->Y (RF)	0.04705	0.48228	4.91879
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.07383	0.36363	3.57246
	A2->Y (RF)	0.06717	0.34615	3.51992
	A3->Y (RF)	0.05374	0.32613	3.45117
	B1->Y (RF)	0.06547	0.41292	4.38582
	C1->Y (RF)	0.05571	0.46600	5.13592
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.07548	0.30915	3.57304
	A2->Y (RF)	0.06696	0.29142	3.50564
	A3->Y (RF)	0.04884	0.26727	3.42058
	B1->Y (RF)	0.06679	0.39715	4.89178
	C1->Y (RF)	0.05313	0.42514	5.43282

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00162	0.00188	0.02133
	A1	0.01196	0.01222	0.03166
	A2	0.00173	0.00212	0.01983
	A2	0.01081	0.01121	0.02889
	A3	0.00169	0.00292	0.02569
	A3	0.00946	0.01071	0.03342
	B1	0.00020	0.00258	0.03749
	B1	0.00641	0.00883	0.04441
	C1	-0.00052	0.00190	0.03554
	C1	0.00472	0.00713	0.04152
sky130_fd_sc_hs__o311ai_2	A1	0.00382	0.00412	0.04128
	A1	0.02481	0.02514	0.06217
	A2	0.00386	0.00467	0.03870
	A2	0.02222	0.02307	0.05712
	A3	0.00380	0.00610	0.04764
	A3	0.01961	0.02189	0.06252
	B1	0.00055	0.00521	0.07228
	B1	0.01290	0.01763	0.08578
	C1	-0.00102	0.00405	0.06649
	C1	0.00911	0.01416	0.07760

sky130_fd_sc_hs__o311ai_4	**A1**	0.00554	0.00656	0.07368
	A1	0.04671	0.04777	0.11474
	A2	0.00578	0.00741	0.06706
	A2	0.04167	0.04335	0.10301
	A3	0.00578	0.01043	0.08474
	A3	0.03677	0.04138	0.11557
	B1	0.00073	0.00582	0.07700
	B1	0.02089	0.02596	0.09702
	C1	-0.00274	0.00300	0.07155
	C1	0.01240	0.01819	0.08660

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01425	0.01459	0.03159
	A1	0.00382	0.00415	0.02117
	A2	0.01199	0.01237	0.02834
	A2	0.00281	0.00319	0.01897
	A3	0.00934	0.00995	0.02502
	A3	0.00147	0.00207	0.01703
	B1	0.00747	0.00840	0.02917
	B1	0.00120	0.00210	0.02277
	C1	0.00640	0.00766	0.02905
	C1	0.00117	0.00236	0.02381

sky130_fd_sc_hs__o311ai_2	**A1**	0.02942	0.02994	0.06333
	A1	0.00824	0.00866	0.04187
	A2	0.02369	0.02458	0.05658
	A2	0.00508	0.00591	0.03728
	A3	0.01861	0.01976	0.04886
	A3	0.00259	0.00375	0.03277
	B1	0.01443	0.01648	0.05932
	B1	0.00201	0.00400	0.04655
	C1	0.01205	0.01457	0.05542
	C1	0.00196	0.00444	0.04502
sky130_fd_sc_hs__o311ai_4	**A1**	0.05376	0.05542	0.12453
	A1	0.01227	0.01385	0.08246
	A2	0.04405	0.04583	0.10844
	A2	0.00778	0.00956	0.07196
	A3	0.03238	0.03548	0.09427
	A3	0.00096	0.00399	0.06254
	B1	0.03510	0.03699	0.07720
	B1	0.00292	0.00525	0.04686
	C1	0.02996	0.03275	0.07307
	C1	0.00293	0.00616	0.04781

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)**	0.00174	0.00175	0.00173
	(A2 * B1 * !C1 * Y)	-0.00217	-0.00222	-0.00221
	(A2 * A3 * B1 * C1 * !Y)	0.00193	0.00187	0.00186
	(A2 * A3 * B1 * C1 * !Y)	-0.00198	-0.00209	-0.00209
	(A2 * !B1 * Y)	0.00174	0.00175	0.00173
	(A2 * !B1 * Y)	-0.00217	-0.00222	-0.00221
	(A2 * !A3 * B1 * C1 * !Y)	0.00225	0.00194	0.00190
	(A2 * !A3 * B1 * C1 * !Y)	-0.00170	-0.00203	-0.00205
	(!A2 * A3 * B1 * C1 * !Y)	0.00229	0.00197	0.00192
	(!A2 * A3 * B1 * C1 * !Y)	-0.00158	-0.00198	-0.00201
	(!A2 * A3 * B1 * !C1 * Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * B1 * !C1 * Y)	-0.00203	-0.00215	-0.00215
	(!A2 * A3 * !B1 * Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * !B1 * Y)	-0.00203	-0.00214	-0.00215
	(!A2 * !A3 * B1 * !C1 * Y)	0.00164	0.00166	0.00164
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00222	-0.00223	-0.00222
	(!A2 * !A3 * !B1 * C1 * Y)	0.00166	0.00167	0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00223	-0.00224	-0.00222
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00166	0.00167	0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00223	-0.00223	-0.00223

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00339	0.00341	0.00338
	(A2 * B1 * !C1 * Y)	-0.00430	-0.00441	-0.00439
	(A2 * A3 * B1 * C1 * !Y)	0.00382	0.00367	0.00363
	(A2 * A3 * B1 * C1 * !Y)	-0.00388	-0.00416	-0.00416
	(A2 * !B1 * Y)	0.00339	0.00341	0.00338
	(A2 * !B1 * Y)	-0.00430	-0.00441	-0.00439
	(A2 * !A3 * B1 * C1 * !Y)	0.00458	0.00382	0.00373
	(A2 * !A3 * B1 * C1 * !Y)	-0.00320	-0.00403	-0.00408
	(!A2 * A3 * B1 * C1 * !Y)	0.00463	0.00389	0.00376
	(!A2 * A3 * B1 * C1 * !Y)	-0.00301	-0.00392	-0.00401
	(!A2 * A3 * B1 * !C1 * Y)	0.00339	0.00342	0.00338
	(!A2 * A3 * B1 * !C1 * Y)	-0.00403	-0.00428	-0.00426
	(!A2 * A3 * !B1 * Y)	0.00339	0.00341	0.00338
	(!A2 * A3 * !B1 * Y)	-0.00403	-0.00427	-0.00426
	(!A2 * !A3 * B1 * !C1 * Y)	0.00317	0.00318	0.00317
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00445	-0.00445	-0.00444
	(!A2 * !A3 * !B1 * C1 * Y)	0.00321	0.00324	0.00321
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00446	-0.00447	-0.00445
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00320	0.00323	0.00320
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00446	-0.00447	-0.00445

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00680	0.00683	0.00677
	(A2 * B1 * !C1 * Y)	-0.00864	-0.00880	-0.00877
	(A2 * A3 * B1 * C1 * !Y)	0.00733	0.00708	0.00702
	(A2 * A3 * B1 * C1 * !Y)	-0.00812	-0.00856	-0.00855
	(A2 * !B1 * Y)	0.00680	0.00682	0.00677
	(A2 * !B1 * Y)	-0.00864	-0.00880	-0.00877
	(A2 * !A3 * B1 * C1 * !Y)	0.00877	0.00740	0.00722
	(A2 * !A3 * B1 * C1 * !Y)	-0.00684	-0.00830	-0.00837
	(!A2 * A3 * B1 * C1 * !Y)	0.00876	0.00752	0.00727
	(!A2 * A3 * B1 * C1 * !Y)	-0.00645	-0.00809	-0.00824
	(!A2 * A3 * B1 * !C1 * Y)	0.00674	0.00682	0.00677
	(!A2 * A3 * B1 * !C1 * Y)	-0.00804	-0.00855	-0.00851
	(!A2 * A3 * !B1 * Y)	0.00675	0.00682	0.00677
	(!A2 * A3 * !B1 * Y)	-0.00805	-0.00855	-0.00851
	(!A2 * !A3 * B1 * !C1 * Y)	0.00636	0.00635	0.00633
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00892	-0.00890	-0.00888
	(!A2 * !A3 * !B1 * C1 * Y)	0.00639	0.00647	0.00641
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00889	-0.00894	-0.00889
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00636	0.00637	0.00639
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00888	-0.00888	-0.00890

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)**	-0.00172	-0.00173	-0.00173
	(A2 * B1 * !C1 * Y)	0.00220	0.00223	0.00221
	(A2 * A3 * B1 * C1 * !Y)	-0.00159	-0.00161	-0.00160
	(A2 * A3 * B1 * C1 * !Y)	0.00232	0.00235	0.00233
	(A2 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(A2 * !B1 * Y)	0.00220	0.00223	0.00221
	(A2 * !A3 * B1 * C1 * !Y)	-0.00156	-0.00157	-0.00156
	(A2 * !A3 * B1 * C1 * !Y)	0.00239	0.00240	0.00238
	(!A2 * A3 * B1 * C1 * !Y)	-0.00154	-0.00155	-0.00153
	(!A2 * A3 * B1 * C1 * !Y)	0.00235	0.00238	0.00237
	(!A2 * A3 * B1 * !C1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * B1 * !C1 * Y)	0.00214	0.00215	0.00215
	(!A2 * A3 * !B1 * Y)	-0.00172	-0.00172	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00214	0.00214	0.00215
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00149	-0.00165	-0.00164
	(!A2 * !A3 * B1 * !C1 * Y)	0.00226	0.00226	0.00223
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00156	-0.00166	-0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	0.00224	0.00225	0.00223
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00158	-0.00166	-0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00223	0.00225	0.00223

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00336	-0.00338	-0.00337
	(A2 * B1 * !C1 * Y)	0.00437	0.00441	0.00439
	(A2 * A3 * B1 * C1 * !Y)	-0.00312	-0.00314	-0.00313
	(A2 * A3 * B1 * C1 * !Y)	0.00461	0.00465	0.00463
	(A2 * !B1 * Y)	-0.00335	-0.00338	-0.00337
	(A2 * !B1 * Y)	0.00436	0.00441	0.00439
	(A2 * !A3 * B1 * C1 * !Y)	-0.00303	-0.00305	-0.00303
	(A2 * !A3 * B1 * C1 * !Y)	0.00473	0.00479	0.00475
	(!A2 * A3 * B1 * C1 * !Y)	-0.00300	-0.00302	-0.00298
	(!A2 * A3 * B1 * C1 * !Y)	0.00467	0.00472	0.00470
	(!A2 * A3 * B1 * !C1 * Y)	-0.00336	-0.00338	-0.00337
	(!A2 * A3 * B1 * !C1 * Y)	0.00425	0.00428	0.00426
	(!A2 * A3 * !B1 * Y)	-0.00336	-0.00338	-0.00337
	(!A2 * A3 * !B1 * Y)	0.00425	0.00427	0.00426
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00283	-0.00318	-0.00317
	(!A2 * !A3 * B1 * !C1 * Y)	0.00454	0.00448	0.00447
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00299	-0.00323	-0.00321
	(!A2 * !A3 * !B1 * C1 * Y)	0.00449	0.00449	0.00447
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00302	-0.00323	-0.00320
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00448	0.00449	0.00446

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00673	-0.00676	-0.00674
	(A2 * B1 * !C1 * Y)	0.00874	0.00880	0.00877
	(A2 * A3 * B1 * C1 * !Y)	-0.00648	-0.00652	-0.00649
	(A2 * A3 * B1 * C1 * !Y)	0.00899	0.00907	0.00902
	(A2 * !B1 * Y)	-0.00673	-0.00676	-0.00674
	(A2 * !B1 * Y)	0.00874	0.00880	0.00877
	(A2 * !A3 * B1 * C1 * !Y)	-0.00631	-0.00635	-0.00632
	(A2 * !A3 * B1 * C1 * !Y)	0.00921	0.00930	0.00925
	(!A2 * A3 * B1 * C1 * !Y)	-0.00623	-0.00629	-0.00621
	(!A2 * A3 * B1 * C1 * !Y)	0.00908	0.00920	0.00916
	(!A2 * A3 * B1 * !C1 * Y)	-0.00674	-0.00676	-0.00674
	(!A2 * A3 * B1 * !C1 * Y)	0.00851	0.00855	0.00851
	(!A2 * A3 * !B1 * Y)	-0.00674	-0.00676	-0.00674
	(!A2 * A3 * !B1 * Y)	0.00851	0.00855	0.00851
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00580	-0.00635	-0.00633
	(!A2 * !A3 * B1 * !C1 * Y)	0.00903	0.00906	0.00893
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00602	-0.00642	-0.00641
	(!A2 * !A3 * !B1 * C1 * Y)	0.00893	0.00896	0.00893
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00608	-0.00637	-0.00639
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00890	0.00897	0.00892

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)**	0.00202	0.00204	0.00193
	(A1 * A3 * B1 * C1 * !Y)	-0.00128	-0.00128	-0.00133
	(A1 * A3 * B1 * !C1 * Y)	0.00165	0.00167	0.00165
	(A1 * A3 * B1 * !C1 * Y)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * Y)	0.00165	0.00167	0.00165
	(A1 * A3 * !B1 * Y)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * B1 * C1 * !Y)	0.00192	0.00195	0.00189
	(A1 * !A3 * B1 * C1 * !Y)	-0.00091	-0.00093	-0.00094
	(A1 * !A3 * B1 * !C1 * Y)	0.00166	0.00166	0.00165
	(A1 * !A3 * B1 * !C1 * Y)	-0.00222	-0.00224	-0.00224
	(A1 * !A3 * !B1 * C1 * Y)	0.00166	0.00166	0.00165
	(A1 * !A3 * !B1 * C1 * Y)	-0.00224	-0.00224	-0.00224
	(A1 * !A3 * !B1 * !C1 * Y)	0.00166	0.00166	0.00165
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00223	-0.00224	-0.00224
	(!A1 * A3 * B1 * C1 * !Y)	0.00251	0.00201	0.00192
	(!A1 * A3 * B1 * C1 * !Y)	-0.00142	-0.00193	-0.00198
	(!A1 * A3 * B1 * !C1 * Y)	0.00166	0.00167	0.00165
	(!A1 * A3 * B1 * !C1 * Y)	-0.00222	-0.00224	-0.00224
	(!A1 * A3 * !B1 * Y)	0.00166	0.00167	0.00165
	(!A1 * A3 * !B1 * Y)	-0.00223	-0.00224	-0.00224
	(!A1 * !A3 * B1 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00225	-0.00226	-0.00225
	(!A1 * !A3 * !B1 * C1 * Y)	0.00158	0.00159	0.00158
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00158	0.00158	0.00158
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00226	-0.00226	-0.00226

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00420	0.00420	0.00397
	(A1 * A3 * B1 * C1 * !Y)	-0.00263	-0.00264	-0.00276
	(A1 * A3 * B1 * !C1 * Y)	0.00343	0.00345	0.00341
	(A1 * A3 * B1 * !C1 * Y)	-0.00313	-0.00318	-0.00314
	(A1 * A3 * !B1 * Y)	0.00343	0.00345	0.00341
	(A1 * A3 * !B1 * Y)	-0.00313	-0.00318	-0.00314
	(A1 * !A3 * B1 * C1 * !Y)	0.00384	0.00390	0.00377
	(A1 * !A3 * B1 * C1 * !Y)	-0.00189	-0.00193	-0.00195
	(A1 * !A3 * B1 * !C1 * Y)	0.00343	0.00343	0.00341
	(A1 * !A3 * B1 * !C1 * Y)	-0.00443	-0.00446	-0.00445
	(A1 * !A3 * !B1 * C1 * Y)	0.00343	0.00343	0.00341
	(A1 * !A3 * !B1 * C1 * Y)	-0.00444	-0.00446	-0.00445
	(A1 * !A3 * !B1 * !C1 * Y)	0.00343	0.00342	0.00341
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00444	-0.00446	-0.00445
	(!A1 * A3 * B1 * C1 * !Y)	0.00498	0.00395	0.00379
	(!A1 * A3 * B1 * C1 * !Y)	-0.00299	-0.00400	-0.00411
	(!A1 * A3 * B1 * !C1 * Y)	0.00343	0.00343	0.00341
	(!A1 * A3 * B1 * !C1 * Y)	-0.00447	-0.00449	-0.00448
	(!A1 * A3 * !B1 * Y)	0.00343	0.00343	0.00341
	(!A1 * A3 * !B1 * Y)	-0.00445	-0.00449	-0.00448
	(!A1 * !A3 * B1 * !C1 * Y)	0.00319	0.00321	0.00320
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00451	-0.00453	-0.00451
	(!A1 * !A3 * !B1 * C1 * Y)	0.00325	0.00326	0.00324
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00453	-0.00453	-0.00452
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00325	0.00325	0.00324
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00454	-0.00453	-0.00452

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00789	0.00799	0.00750
	(A1 * A3 * B1 * C1 * !Y)	-0.00543	-0.00537	-0.00561
	(A1 * A3 * B1 * !C1 * Y)	0.00674	0.00678	0.00671
	(A1 * A3 * B1 * !C1 * Y)	-0.00610	-0.00617	-0.00611
	(A1 * A3 * !B1 * Y)	0.00674	0.00677	0.00670
	(A1 * A3 * !B1 * Y)	-0.00611	-0.00617	-0.00611
	(A1 * !A3 * B1 * C1 * !Y)	0.00741	0.00748	0.00722
	(A1 * !A3 * B1 * C1 * !Y)	-0.00388	-0.00392	-0.00396
	(A1 * !A3 * B1 * !C1 * Y)	0.00674	0.00675	0.00669
	(A1 * !A3 * B1 * !C1 * Y)	-0.00876	-0.00881	-0.00876
	(A1 * !A3 * !B1 * C1 * Y)	0.00674	0.00675	0.00669
	(A1 * !A3 * !B1 * C1 * Y)	-0.00876	-0.00883	-0.00876
	(A1 * !A3 * !B1 * !C1 * Y)	0.00673	0.00673	0.00668
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00876	-0.00883	-0.00876
	(!A1 * A3 * B1 * C1 * !Y)	0.00993	0.00760	0.00729
	(!A1 * A3 * B1 * C1 * !Y)	-0.00573	-0.00802	-0.00825
	(!A1 * A3 * B1 * !C1 * Y)	0.00673	0.00671	0.00669
	(!A1 * A3 * B1 * !C1 * Y)	-0.00879	-0.00882	-0.00881
	(!A1 * A3 * !B1 * Y)	0.00664	0.00671	0.00669
	(!A1 * A3 * !B1 * Y)	-0.00872	-0.00881	-0.00881
	(!A1 * !A3 * B1 * !C1 * Y)	0.00626	0.00634	0.00628
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00889	-0.00895	-0.00890
	(!A1 * !A3 * !B1 * C1 * Y)	0.00638	0.00640	0.00637
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00894	-0.00894	-0.00891
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00638	0.00640	0.00636
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00894	-0.00894	-0.00891

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)**	-0.00159	-0.00160	-0.00159
	(A1 * A3 * B1 * C1 * !Y)	0.00155	0.00156	0.00155
	(A1 * A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * A3 * B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(A1 * A3 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * A3 * !B1 * Y)	0.00155	0.00156	0.00155
	(A1 * !A3 * B1 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * !A3 * B1 * C1 * !Y)	0.00125	0.00125	0.00125
	(A1 * !A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * B1 * !C1 * Y)	0.00222	0.00224	0.00224
	(A1 * !A3 * !B1 * C1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * !B1 * C1 * Y)	0.00224	0.00224	0.00224
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00165	-0.00165	-0.00165
	(A1 * !A3 * !B1 * !C1 * Y)	0.00223	0.00224	0.00224
	(!A1 * A3 * B1 * C1 * !Y)	-0.00153	-0.00154	-0.00154
	(!A1 * A3 * B1 * C1 * !Y)	0.00236	0.00237	0.00236
	(!A1 * A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * A3 * B1 * !C1 * Y)	0.00222	0.00224	0.00224
	(!A1 * A3 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * A3 * !B1 * Y)	0.00223	0.00224	0.00224
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00139	-0.00156	-0.00156
	(!A1 * !A3 * B1 * !C1 * Y)	0.00230	0.00229	0.00227
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00147	-0.00158	-0.00158
	(!A1 * !A3 * !B1 * C1 * Y)	0.00227	0.00228	0.00227
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00149	-0.00158	-0.00158
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00226	0.00228	0.00226

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00323	-0.00323	-0.00322
	(A1 * A3 * B1 * C1 * !Y)	0.00323	0.00322	0.00322
	(A1 * A3 * B1 * !C1 * Y)	-0.00338	-0.00342	-0.00339
	(A1 * A3 * B1 * !C1 * Y)	0.00313	0.00318	0.00314
	(A1 * A3 * !B1 * Y)	-0.00339	-0.00342	-0.00339
	(A1 * A3 * !B1 * Y)	0.00313	0.00318	0.00314
	(A1 * !A3 * B1 * C1 * !Y)	-0.00312	-0.00313	-0.00313
	(A1 * !A3 * B1 * C1 * !Y)	0.00261	0.00261	0.00259
	(A1 * !A3 * B1 * !C1 * Y)	-0.00339	-0.00341	-0.00339
	(A1 * !A3 * B1 * !C1 * Y)	0.00443	0.00446	0.00445
	(A1 * !A3 * !B1 * C1 * Y)	-0.00339	-0.00341	-0.00339
	(A1 * !A3 * !B1 * C1 * Y)	0.00444	0.00446	0.00445
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00340	-0.00341	-0.00340
	(A1 * !A3 * !B1 * !C1 * Y)	0.00444	0.00446	0.00445
	(!A1 * A3 * B1 * C1 * !Y)	-0.00303	-0.00306	-0.00304
	(!A1 * A3 * B1 * C1 * !Y)	0.00487	0.00492	0.00487
	(!A1 * A3 * B1 * !C1 * Y)	-0.00339	-0.00341	-0.00339
	(!A1 * A3 * B1 * !C1 * Y)	0.00447	0.00450	0.00448
	(!A1 * A3 * !B1 * Y)	-0.00338	-0.00340	-0.00339
	(!A1 * A3 * !B1 * Y)	0.00445	0.00449	0.00448
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00283	-0.00320	-0.00320
	(!A1 * !A3 * B1 * !C1 * Y)	0.00462	0.00460	0.00454
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00301	-0.00323	-0.00324
	(!A1 * !A3 * !B1 * C1 * Y)	0.00456	0.00455	0.00454
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00305	-0.00323	-0.00324
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00455	0.00455	0.00453

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00656	-0.00661	-0.00657
	(A1 * A3 * B1 * C1 * !Y)	0.00599	0.00605	0.00599
	(A1 * A3 * B1 * !C1 * Y)	-0.00665	-0.00671	-0.00667
	(A1 * A3 * B1 * !C1 * Y)	0.00610	0.00617	0.00611
	(A1 * A3 * !B1 * Y)	-0.00666	-0.00671	-0.00667
	(A1 * A3 * !B1 * Y)	0.00611	0.00617	0.00611
	(A1 * !A3 * B1 * C1 * !Y)	-0.00642	-0.00645	-0.00640
	(A1 * !A3 * B1 * C1 * !Y)	0.00475	0.00477	0.00477
	(A1 * !A3 * B1 * !C1 * Y)	-0.00665	-0.00669	-0.00666
	(A1 * !A3 * B1 * !C1 * Y)	0.00876	0.00881	0.00876
	(A1 * !A3 * !B1 * C1 * Y)	-0.00666	-0.00670	-0.00666
	(A1 * !A3 * !B1 * C1 * Y)	0.00876	0.00883	0.00876
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00666	-0.00671	-0.00667
	(A1 * !A3 * !B1 * !C1 * Y)	0.00876	0.00883	0.00876
	(!A1 * A3 * B1 * C1 * !Y)	-0.00625	-0.00625	-0.00625
	(!A1 * A3 * B1 * C1 * !Y)	0.00927	0.00926	0.00929
	(!A1 * A3 * B1 * !C1 * Y)	-0.00665	-0.00666	-0.00665
	(!A1 * A3 * B1 * !C1 * Y)	0.00879	0.00882	0.00881
	(!A1 * A3 * !B1 * Y)	-0.00664	-0.00666	-0.00665
	(!A1 * A3 * !B1 * Y)	0.00879	0.00881	0.00881
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00567	-0.00628	-0.00628
	(!A1 * !A3 * B1 * !C1 * Y)	0.00911	0.00906	0.00894
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00594	-0.00636	-0.00637
	(!A1 * !A3 * !B1 * C1 * Y)	0.00899	0.00898	0.00894
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00601	-0.00636	-0.00636
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00896	0.00896	0.00894

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)**	0.00197	0.00198	0.00197
	(A2 * B1 * C1 * !Y)	-0.00083	-0.00083	-0.00082
	(A2 * B1 * !C1 * Y)	0.00168	0.00168	0.00168
	(A2 * B1 * !C1 * Y)	-0.00209	-0.00213	-0.00214
	(A2 * !B1 * C1 * Y)	0.00168	0.00170	0.00168
	(A2 * !B1 * C1 * Y)	-0.00209	-0.00215	-0.00214
	(A2 * !B1 * !C1 * Y)	0.00168	0.00170	0.00168
	(A2 * !B1 * !C1 * Y)	-0.00209	-0.00215	-0.00214
	(A1 * !A2 * B1 * C1 * !Y)	0.00197	0.00200	0.00197
	(A1 * !A2 * B1 * C1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B1 * !C1 * Y)	0.00167	0.00170	0.00168
	(A1 * !A2 * B1 * !C1 * Y)	-0.00194	-0.00207	-0.00205
	(A1 * !A2 * !B1 * C1 * Y)	0.00168	0.00170	0.00168
	(A1 * !A2 * !B1 * C1 * Y)	-0.00195	-0.00205	-0.00206
	(A1 * !A2 * !B1 * !C1 * Y)	0.00168	0.00170	0.00168
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00195	-0.00206	-0.00207
	(!A1 * !A2 * B1 * !C1 * Y)	0.00157	0.00159	0.00157
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00215	-0.00217	-0.00215
	(!A1 * !A2 * !B1 * C1 * Y)	0.00160	0.00161	0.00160
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00217	-0.00217	-0.00216
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00160	0.00161	0.00159
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00216	-0.00217	-0.00216

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00404	0.00410	0.00404
	(A2 * B1 * C1 * !Y)	-0.00170	-0.00173	-0.00170
	(A2 * B1 * !C1 * Y)	0.00336	0.00338	0.00336
	(A2 * B1 * !C1 * Y)	-0.00432	-0.00445	-0.00444
	(A2 * !B1 * C1 * Y)	0.00336	0.00338	0.00336
	(A2 * !B1 * C1 * Y)	-0.00433	-0.00445	-0.00444
	(A2 * !B1 * !C1 * Y)	0.00335	0.00337	0.00336
	(A2 * !B1 * !C1 * Y)	-0.00434	-0.00444	-0.00443
	(A1 * !A2 * B1 * C1 * !Y)	0.00404	0.00410	0.00404
	(A1 * !A2 * B1 * C1 * !Y)	-0.00168	-0.00171	-0.00167
	(A1 * !A2 * B1 * !C1 * Y)	0.00336	0.00337	0.00336
	(A1 * !A2 * B1 * !C1 * Y)	-0.00404	-0.00428	-0.00426
	(A1 * !A2 * !B1 * C1 * Y)	0.00337	0.00336	0.00336
	(A1 * !A2 * !B1 * C1 * Y)	-0.00406	-0.00428	-0.00426
	(A1 * !A2 * !B1 * !C1 * Y)	0.00337	0.00340	0.00336
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00407	-0.00430	-0.00428
	(!A1 * !A2 * B1 * !C1 * Y)	0.00316	0.00318	0.00315
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00449	-0.00450	-0.00447
	(!A1 * !A2 * !B1 * C1 * Y)	0.00320	0.00321	0.00319
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00449	-0.00450	-0.00448
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00316	0.00320	0.00318
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00447	-0.00450	-0.00448

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00798	0.00808	0.00795
	(A2 * B1 * C1 * !Y)	-0.00366	-0.00369	-0.00362
	(A2 * B1 * !C1 * Y)	0.00652	0.00650	0.00647
	(A2 * B1 * !C1 * Y)	-0.00906	-0.00924	-0.00922
	(A2 * !B1 * C1 * Y)	0.00652	0.00650	0.00647
	(A2 * !B1 * C1 * Y)	-0.00906	-0.00924	-0.00922
	(A2 * !B1 * !C1 * Y)	0.00650	0.00650	0.00646
	(A2 * !B1 * !C1 * Y)	-0.00907	-0.00923	-0.00922
	(A1 * !A2 * B1 * C1 * !Y)	0.00799	0.00794	0.00797
	(A1 * !A2 * B1 * C1 * !Y)	-0.00360	-0.00355	-0.00356
	(A1 * !A2 * B1 * !C1 * Y)	0.00645	0.00649	0.00647
	(A1 * !A2 * B1 * !C1 * Y)	-0.00838	-0.00877	-0.00875
	(A1 * !A2 * !B1 * C1 * Y)	0.00646	0.00649	0.00647
	(A1 * !A2 * !B1 * C1 * Y)	-0.00839	-0.00878	-0.00875
	(A1 * !A2 * !B1 * !C1 * Y)	0.00647	0.00646	0.00646
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00844	-0.00887	-0.00883
	(!A1 * !A2 * B1 * !C1 * Y)	0.00605	0.00614	0.00608
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00931	-0.00937	-0.00933
	(!A1 * !A2 * !B1 * C1 * Y)	0.00618	0.00620	0.00616
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00937	-0.00937	-0.00934
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00617	0.00621	0.00615
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00936	-0.00939	-0.00934

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)**	-0.00164	-0.00165	-0.00171
	(A2 * B1 * C1 * !Y)	0.00114	0.00114	0.00109
	(A2 * B1 * !C1 * Y)	-0.00168	-0.00168	-0.00168
	(A2 * B1 * !C1 * Y)	0.00213	0.00215	0.00214
	(A2 * !B1 * C1 * Y)	-0.00167	-0.00168	-0.00168
	(A2 * !B1 * C1 * Y)	0.00212	0.00215	0.00214
	(A2 * !B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * !B1 * !C1 * Y)	0.00213	0.00216	0.00214
	(A1 * !A2 * B1 * C1 * !Y)	-0.00154	-0.00155	-0.00169
	(A1 * !A2 * B1 * C1 * !Y)	0.00120	0.00120	0.00109
	(A1 * !A2 * B1 * !C1 * Y)	-0.00167	-0.00169	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00205	0.00207	0.00205
	(A1 * !A2 * !B1 * C1 * Y)	-0.00167	-0.00167	-0.00168
	(A1 * !A2 * !B1 * C1 * Y)	0.00205	0.00205	0.00206
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * !B1 * !C1 * Y)	0.00206	0.00206	0.00207
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00142	-0.00159	-0.00157
	(!A1 * !A2 * B1 * !C1 * Y)	0.00220	0.00219	0.00217
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00150	-0.00161	-0.00160
	(!A1 * !A2 * !B1 * C1 * Y)	0.00217	0.00218	0.00217
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00152	-0.00161	-0.00159
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00216	0.00218	0.00217

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00338	-0.00341	-0.00353
	(A2 * B1 * C1 * !Y)	0.00234	0.00235	0.00223
	(A2 * B1 * !C1 * Y)	-0.00336	-0.00336	-0.00335
	(A2 * B1 * !C1 * Y)	0.00444	0.00446	0.00444
	(A2 * !B1 * C1 * Y)	-0.00333	-0.00336	-0.00335
	(A2 * !B1 * C1 * Y)	0.00441	0.00446	0.00444
	(A2 * !B1 * !C1 * Y)	-0.00334	-0.00337	-0.00335
	(A2 * !B1 * !C1 * Y)	0.00441	0.00446	0.00443
	(A1 * !A2 * B1 * C1 * !Y)	-0.00307	-0.00311	-0.00345
	(A1 * !A2 * B1 * C1 * !Y)	0.00251	0.00253	0.00227
	(A1 * !A2 * B1 * !C1 * Y)	-0.00334	-0.00336	-0.00335
	(A1 * !A2 * B1 * !C1 * Y)	0.00424	0.00428	0.00426
	(A1 * !A2 * !B1 * C1 * Y)	-0.00335	-0.00336	-0.00335
	(A1 * !A2 * !B1 * C1 * Y)	0.00425	0.00428	0.00426
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00335	-0.00336	-0.00335
	(A1 * !A2 * !B1 * !C1 * Y)	0.00427	0.00430	0.00428
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00280	-0.00315	-0.00315
	(!A1 * !A2 * B1 * !C1 * Y)	0.00457	0.00450	0.00450
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00297	-0.00320	-0.00319
	(!A1 * !A2 * !B1 * C1 * Y)	0.00451	0.00451	0.00450
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00301	-0.00320	-0.00318
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00450	0.00451	0.00449

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00706	-0.00712	-0.00741
	(A2 * B1 * C1 * !Y)	0.00448	0.00449	0.00420
	(A2 * B1 * !C1 * Y)	-0.00642	-0.00645	-0.00643
	(A2 * B1 * !C1 * Y)	0.00918	0.00924	0.00922
	(A2 * !B1 * C1 * Y)	-0.00640	-0.00646	-0.00644
	(A2 * !B1 * C1 * Y)	0.00916	0.00924	0.00922
	(A2 * !B1 * !C1 * Y)	-0.00644	-0.00646	-0.00644
	(A2 * !B1 * !C1 * Y)	0.00920	0.00923	0.00922
	(A1 * !A2 * B1 * C1 * !Y)	-0.00658	-0.00657	-0.00729
	(A1 * !A2 * B1 * C1 * !Y)	0.00474	0.00470	0.00424
	(A1 * !A2 * B1 * !C1 * Y)	-0.00640	-0.00646	-0.00644
	(A1 * !A2 * B1 * !C1 * Y)	0.00869	0.00877	0.00875
	(A1 * !A2 * !B1 * C1 * Y)	-0.00643	-0.00646	-0.00644
	(A1 * !A2 * !B1 * C1 * Y)	0.00873	0.00878	0.00875
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00644	-0.00646	-0.00644
	(A1 * !A2 * !B1 * !C1 * Y)	0.00881	0.00887	0.00883
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00550	-0.00606	-0.00608
	(!A1 * !A2 * B1 * !C1 * Y)	0.00949	0.00937	0.00937
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00575	-0.00620	-0.00616
	(!A1 * !A2 * !B1 * C1 * Y)	0.00938	0.00941	0.00937
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00581	-0.00619	-0.00615
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00936	0.00942	0.00936

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00160	0.00162	0.00161
	(A3 * !C1 * Y)	-0.00228	-0.00230	-0.00229
	(A2 * !A3 * !C1 * Y)	0.00160	0.00162	0.00161
	(A2 * !A3 * !C1 * Y)	-0.00228	-0.00230	-0.00229
	(A1 * !A2 * !A3 * !C1 * Y)	0.00159	0.00161	0.00160
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00228	-0.00230	-0.00229
	(!A1 * !A2 * !A3 * C1 * Y)	0.00070	0.00069	0.00069
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00231	-0.00230	-0.00229
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00230	-0.00231	-0.00230
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00331	0.00334	0.00332
	(A3 * !C1 * Y)	-0.00451	-0.00452	-0.00450
	(A2 * !A3 * !C1 * Y)	0.00331	0.00334	0.00332
	(A2 * !A3 * !C1 * Y)	-0.00451	-0.00452	-0.00450
	(A1 * !A2 * !A3 * !C1 * Y)	0.00331	0.00334	0.00332
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00451	-0.00452	-0.00450
	(!A1 * !A2 * !A3 * C1 * Y)	0.00143	0.00144	0.00145
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00451	-0.00453	-0.00450
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00194	0.00195	0.00193
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00454	-0.00457	-0.00454
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00620	0.00627	0.00623
	(A3 * !C1 * Y)	-0.00508	-0.00511	-0.00507
	(A2 * !A3 * !C1 * Y)	0.00619	0.00628	0.00623
	(A2 * !A3 * !C1 * Y)	-0.00507	-0.00511	-0.00507
	(A1 * !A2 * !A3 * !C1 * Y)	0.00617	0.00626	0.00622
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00506	-0.00511	-0.00507
	(!A1 * !A2 * !A3 * C1 * Y)	0.00259	0.00260	0.00261
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00515	-0.00516	-0.00513
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00350	0.00356	0.00353
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00520	-0.00525	-0.00522

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00142	-0.00157	-0.00160
	(A3 * !C1 * Y)	0.00245	0.00235	0.00230
	(A2 * !A3 * !C1 * Y)	-0.00141	-0.00158	-0.00160
	(A2 * !A3 * !C1 * Y)	0.00247	0.00234	0.00230
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00140	-0.00158	-0.00160
	(A1 * !A2 * !A3 * !C1 * Y)	0.00250	0.00233	0.00230
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00064	-0.00064	-0.00065
	(!A1 * !A2 * !A3 * C1 * Y)	0.00236	0.00237	0.00232
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00091	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00249	0.00247	0.00236
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00294	-0.00330	-0.00332
	(A3 * !C1 * Y)	0.00484	0.00458	0.00453
	(A2 * !A3 * !C1 * Y)	-0.00291	-0.00331	-0.00332
	(A2 * !A3 * !C1 * Y)	0.00488	0.00457	0.00453
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00287	-0.00330	-0.00332
	(A1 * !A2 * !A3 * !C1 * Y)	0.00496	0.00459	0.00453
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00133	-0.00136	-0.00138
	(!A1 * !A2 * !A3 * C1 * Y)	0.00464	0.00474	0.00458
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00191	-0.00195	-0.00193
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00491	0.00489	0.00466

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00533	-0.00621	-0.00623
	(A3 * !C1 * Y)	0.00593	0.00521	0.00513
	(A2 * !A3 * !C1 * Y)	-0.00527	-0.00620	-0.00623
	(A2 * !A3 * !C1 * Y)	0.00605	0.00523	0.00513
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00513	-0.00616	-0.00622
	(A1 * !A2 * !A3 * !C1 * Y)	0.00615	0.00526	0.00513
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00240	-0.00244	-0.00247
	(!A1 * !A2 * !A3 * C1 * Y)	0.00544	0.00551	0.00525
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00347	-0.00356	-0.00353
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00601	0.00584	0.00543

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00060	0.00061	0.00059
	(A3 * !B1 * Y)	-0.00262	-0.00264	-0.00268
	(A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00059
	(A2 * !A3 * !B1 * Y)	-0.00263	-0.00265	-0.00268
	(!A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00059
	(!A2 * !A3 * !B1 * Y)	-0.00263	-0.00264	-0.00268
	(!A1 * !A2 * !A3 * B1 * Y)	0.00066	0.00067	0.00059
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00250	-0.00252	-0.00266
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00119	0.00120	0.00114
	(A3 * !B1 * Y)	-0.00516	-0.00519	-0.00528
	(A2 * !A3 * !B1 * Y)	0.00119	0.00120	0.00114
	(A2 * !A3 * !B1 * Y)	-0.00516	-0.00519	-0.00528
	(!A2 * !A3 * !B1 * Y)	0.00119	0.00120	0.00114
	(!A2 * !A3 * !B1 * Y)	-0.00516	-0.00519	-0.00528
	(!A1 * !A2 * !A3 * B1 * Y)	0.00127	0.00128	0.00111
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00487	-0.00492	-0.00523
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00220	0.00221	0.00211
	(A3 * !B1 * Y)	-0.00565	-0.00570	-0.00589
	(A2 * !A3 * !B1 * Y)	0.00221	0.00221	0.00211
	(A2 * !A3 * !B1 * Y)	-0.00567	-0.00569	-0.00589
	(!A2 * !A3 * !B1 * Y)	0.00221	0.00220	0.00211
	(!A2 * !A3 * !B1 * Y)	-0.00567	-0.00567	-0.00589
	(!A1 * !A2 * !A3 * B1 * Y)	0.00236	0.00237	0.00207
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00512	-0.00517	-0.00579

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(A3 * !B1 * Y)	0.00268	0.00274	0.00269
	(A2 * !A3 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(A2 * !A3 * !B1 * Y)	0.00268	0.00273	0.00269
	(!A2 * !A3 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(!A2 * !A3 * !B1 * Y)	0.00268	0.00273	0.00269
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00057	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * B1 * Y)	0.00268	0.00268	0.00269
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00111	-0.00113	-0.00111
	(A3 * !B1 * Y)	0.00529	0.00539	0.00530
	(A2 * !A3 * !B1 * Y)	-0.00111	-0.00113	-0.00111
	(A2 * !A3 * !B1 * Y)	0.00529	0.00539	0.00530
	(!A2 * !A3 * !B1 * Y)	-0.00111	-0.00113	-0.00111
	(!A2 * !A3 * !B1 * Y)	0.00529	0.00538	0.00530
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00107	-0.00106	-0.00107
	(!A1 * !A2 * !A3 * B1 * Y)	0.00528	0.00528	0.00529
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00203	-0.00206	-0.00204
	(A3 * !B1 * Y)	0.00588	0.00594	0.00591
	(A2 * !A3 * !B1 * Y)	-0.00204	-0.00203	-0.00204
	(A2 * !A3 * !B1 * Y)	0.00589	0.00588	0.00591
	(!A2 * !A3 * !B1 * Y)	-0.00204	-0.00208	-0.00204
	(!A2 * !A3 * !B1 * Y)	0.00589	0.00600	0.00591
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00197	-0.00201	-0.00197
	(!A1 * !A2 * !A3 * B1 * Y)	0.00587	0.00598	0.00589

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00265	0.00313	0.00271	0.00266	0.00272	1.28482
sky130_fd_sc_hs__o311a_2	0.00295	0.00296	0.00294	0.00289	0.00287	2.51740
sky130_fd_sc_hs__o311a_4	0.00490	0.00535	0.00493	0.00594	0.00516	4.78487

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	11.26460	33.33230
sky130_fd_sc_hs__o311a_2	0.00000	16.47080	29.56540
sky130_fd_sc_hs__o311a_4	0.00000	33.53060	67.21850

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)	0.12696	0.60920	6.27887
	A2->X (RR)	0.12220	0.60137	6.16898
	A3->X (RR)	0.10651	0.57466	6.11174
	B1->X (RR)	0.11694	0.63766	6.86902
	C1->X (RR)	0.11033	0.64413	6.96538
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.12983	0.52436	6.25192
	A2->X (RR)	0.12165	0.50961	6.11690
	A3->X (RR)	0.10275	0.48437	6.03720
	B1->X (RR)	0.12321	0.56286	6.81033
	C1->X (RR)	0.11510	0.57188	6.90865
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.14105	0.47282	6.22718
	A2->X (RR)	0.12974	0.45375	6.08114
	A3->X (RR)	0.11295	0.43355	6.04654
	B1->X (RR)	0.13473	0.51495	6.86568
	C1->X (RR)	0.12273	0.51867	6.99011

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.24326	0.66455	5.19949
	A2->X (FF)	0.23322	0.69187	5.44418
	A3->X (FF)	0.19127	0.68409	5.50290
	B1->X (FF)	0.07502	0.49535	4.74153
	C1->X (FF)	0.06869	0.47720	4.64369
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.24864	0.64412	5.30217
	A2->X (FF)	0.23371	0.67174	5.61834
	A3->X (FF)	0.20748	0.67764	5.70277
	B1->X (FF)	0.08589	0.47330	4.92494
	C1->X (FF)	0.08074	0.47156	4.82537
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.29684	0.66335	5.48325
	A2->X (FF)	0.28151	0.68375	5.66809
	A3->X (FF)	0.23744	0.67683	5.72530
	B1->X (FF)	0.08102	0.43647	4.78655
	C1->X (FF)	0.07260	0.41739	4.70052

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01856	0.01915	0.06165
	A1	0.00871	0.00930	0.05222
	A2	0.01649	0.01736	0.05646
	A2	0.00757	0.00846	0.04803
	A3	0.01337	0.01478	0.05982
	A3	0.00586	0.00728	0.05282
	B1	0.01458	0.01720	0.09169
	B1	0.00550	0.00877	0.08533
	C1	0.01366	0.01685	0.09312
	C1	0.00544	0.00928	0.08763
sky130_fd_sc_hs__o311a_2	A1	0.02206	0.02242	0.06591
	A1	0.01135	0.01173	0.05610
	A2	0.01944	0.02060	0.06169
	A2	0.01004	0.01122	0.05332
	A3	0.01690	0.01851	0.06455
	A3	0.00877	0.01040	0.05752
	B1	0.01484	0.01792	0.09514
	B1	0.00844	0.01153	0.08922
	C1	0.01374	0.01748	0.09593
	C1	0.00841	0.01224	0.09087

sky130_fd_sc_hs__o311a_4	**A1**	0.04308	0.04417	0.13862
	A1	0.02444	0.02571	0.12192
	A2	0.03838	0.04015	0.12672
	A2	0.02156	0.02341	0.11201
	A3	0.03183	0.03481	0.13245
	A3	0.01754	0.02055	0.11956
	B1	0.02851	0.03416	0.17376
	B1	0.01650	0.02215	0.16259
	C1	0.02573	0.03317	0.18678
	C1	0.01653	0.02406	0.17788

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00688	0.00681	0.05301
	A1	0.01664	0.01658	0.06244
	A2	0.00694	0.00727	0.05220
	A2	0.01575	0.01606	0.05965
	A3	0.00695	0.00878	0.05965
	A3	0.01436	0.01621	0.06676
	B1	0.00417	0.00894	0.08231
	B1	0.01137	0.01604	0.08945
	C1	0.00365	0.00830	0.08180
	C1	0.01002	0.01466	0.08812

sky130_fd_sc_hs__o311a_2	**A1**	0.01168	0.01004	0.05679
	A1	0.02228	0.02063	0.06628
	A2	0.01160	0.01048	0.05711
	A2	0.02088	0.01994	0.06586
	A3	0.01160	0.01195	0.06533
	A3	0.01961	0.01994	0.07218
	B1	0.00803	0.01245	0.08581
	B1	0.01690	0.02096	0.08688
	C1	0.00729	0.01179	0.08442
	C1	0.01511	0.01918	0.08383
sky130_fd_sc_hs__o311a_4	**A1**	0.02700	0.02155	0.11752
	A1	0.04540	0.04005	0.13346
	A2	0.02676	0.02227	0.10826
	A2	0.04337	0.03884	0.12412
	A3	0.02698	0.02504	0.12557
	A3	0.04105	0.03907	0.13700
	B1	0.01557	0.02391	0.17290
	B1	0.02989	0.03817	0.18383
	C1	0.01418	0.02291	0.17448
	C1	0.02572	0.03444	0.18327

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)**	0.00159	0.00159	0.00158
	(A2 * B1 * !C1 * !X)	-0.00206	-0.00210	-0.00210
	(A2 * A3 * B1 * C1 * X)	0.00200	0.00197	0.00196
	(A2 * A3 * B1 * C1 * X)	-0.00165	-0.00173	-0.00172
	(A2 * !B1 * !X)	0.00159	0.00159	0.00158
	(A2 * !B1 * !X)	-0.00207	-0.00210	-0.00210
	(A2 * !A3 * B1 * C1 * X)	0.00235	0.00205	0.00202
	(A2 * !A3 * B1 * C1 * X)	-0.00133	-0.00165	-0.00167
	(!A2 * A3 * B1 * C1 * X)	0.00241	0.00211	0.00205
	(!A2 * A3 * B1 * C1 * X)	-0.00123	-0.00159	-0.00162
	(!A2 * A3 * B1 * !C1 * !X)	0.00159	0.00159	0.00158
	(!A2 * A3 * B1 * !C1 * !X)	-0.00195	-0.00207	-0.00208
	(!A2 * A3 * !B1 * !X)	0.00159	0.00159	0.00158
	(!A2 * A3 * !B1 * !X)	-0.00195	-0.00207	-0.00208
	(!A2 * !A3 * B1 * !C1 * !X)	0.00151	0.00153	0.00151
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00211	-0.00212	-0.00210
	(!A2 * !A3 * !B1 * C1 * !X)	0.00154	0.00154	0.00153
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00211	-0.00211	-0.00211
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00153	0.00154	0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00211	-0.00211	-0.00211

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00175	0.00175	0.00174
	(A2 * B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(A2 * A3 * B1 * C1 * X)	0.00211	0.00204	0.00203
	(A2 * A3 * B1 * C1 * X)	-0.00186	-0.00198	-0.00198
	(A2 * !B1 * !X)	0.00174	0.00175	0.00174
	(A2 * !B1 * !X)	-0.00222	-0.00227	-0.00226
	(A2 * !A3 * B1 * C1 * X)	0.00243	0.00211	0.00207
	(A2 * !A3 * B1 * C1 * X)	-0.00158	-0.00192	-0.00194
	(!A2 * A3 * B1 * C1 * X)	0.00247	0.00214	0.00209
	(!A2 * A3 * B1 * C1 * X)	-0.00146	-0.00187	-0.00190
	(!A2 * A3 * B1 * !C1 * !X)	0.00174	0.00175	0.00174
	(!A2 * A3 * B1 * !C1 * !X)	-0.00208	-0.00222	-0.00224
	(!A2 * A3 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A2 * A3 * !B1 * !X)	-0.00208	-0.00222	-0.00224
	(!A2 * !A3 * B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00228	-0.00229	-0.00228
	(!A2 * !A3 * !B1 * C1 * !X)	0.00167	0.00168	0.00167
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00229	-0.00229	-0.00228
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00167	0.00169	0.00167
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00229	-0.00230	-0.00228

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00303	0.00305	0.00302
	(A2 * B1 * !C1 * !X)	-0.00369	-0.00377	-0.00376
	(A2 * A3 * B1 * C1 * X)	0.00334	0.00321	0.00318
	(A2 * A3 * B1 * C1 * X)	-0.00338	-0.00361	-0.00360
	(A2 * !B1 * !X)	0.00303	0.00305	0.00302
	(A2 * !B1 * !X)	-0.00369	-0.00377	-0.00376
	(A2 * !A3 * B1 * C1 * X)	0.00416	0.00342	0.00332
	(A2 * !A3 * B1 * C1 * X)	-0.00265	-0.00343	-0.00347
	(!A2 * A3 * B1 * C1 * X)	0.00431	0.00352	0.00337
	(!A2 * A3 * B1 * C1 * X)	-0.00240	-0.00332	-0.00339
	(!A2 * A3 * B1 * !C1 * !X)	0.00302	0.00305	0.00302
	(!A2 * A3 * B1 * !C1 * !X)	-0.00344	-0.00369	-0.00373
	(!A2 * A3 * !B1 * !X)	0.00302	0.00305	0.00302
	(!A2 * A3 * !B1 * !X)	-0.00344	-0.00369	-0.00373
	(!A2 * !A3 * B1 * !C1 * !X)	0.00287	0.00291	0.00287
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00379	-0.00381	-0.00379
	(!A2 * !A3 * !B1 * C1 * !X)	0.00291	0.00293	0.00291
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00380	-0.00381	-0.00379
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00291	0.00292	0.00290
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00381	-0.00382	-0.00380

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)**	-0.00145	-0.00146	-0.00145
	(A2 * B1 * !C1 * !X)	0.00221	0.00223	0.00222
	(A2 * A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00156
	(A2 * A3 * B1 * C1 * X)	0.00210	0.00213	0.00212
	(A2 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A2 * !B1 * !X)	0.00221	0.00223	0.00222
	(A2 * !A3 * B1 * C1 * X)	-0.00152	-0.00152	-0.00152
	(A2 * !A3 * B1 * C1 * X)	0.00217	0.00217	0.00217
	(!A2 * A3 * B1 * C1 * X)	-0.00146	-0.00147	-0.00146
	(!A2 * A3 * B1 * C1 * X)	0.00219	0.00220	0.00220
	(!A2 * A3 * B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(!A2 * A3 * B1 * !C1 * !X)	0.00216	0.00219	0.00217
	(!A2 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(!A2 * A3 * !B1 * !X)	0.00216	0.00219	0.00217
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00128	-0.00140	-0.00141
	(!A2 * !A3 * B1 * !C1 * !X)	0.00226	0.00227	0.00224
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00133	-0.00142	-0.00142
	(!A2 * !A3 * !B1 * C1 * !X)	0.00224	0.00226	0.00224
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00135	-0.00142	-0.00143
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00223	0.00226	0.00224

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00149	-0.00150	-0.00149
	(A2 * B1 * !C1 * !X)	0.00249	0.00252	0.00250
	(A2 * A3 * B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A2 * A3 * B1 * C1 * X)	0.00237	0.00239	0.00238
	(A2 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * !X)	0.00249	0.00252	0.00250
	(A2 * !A3 * B1 * C1 * X)	-0.00157	-0.00158	-0.00157
	(A2 * !A3 * B1 * C1 * X)	0.00243	0.00245	0.00243
	(!A2 * A3 * B1 * C1 * X)	-0.00156	-0.00157	-0.00155
	(!A2 * A3 * B1 * C1 * X)	0.00240	0.00242	0.00241
	(!A2 * A3 * B1 * !C1 * !X)	-0.00149	-0.00149	-0.00149
	(!A2 * A3 * B1 * !C1 * !X)	0.00243	0.00244	0.00244
	(!A2 * A3 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(!A2 * A3 * !B1 * !X)	0.00244	0.00244	0.00244
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00126	-0.00142	-0.00143
	(!A2 * !A3 * B1 * !C1 * !X)	0.00257	0.00256	0.00253
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00133	-0.00143	-0.00145
	(!A2 * !A3 * !B1 * C1 * !X)	0.00255	0.00255	0.00253
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00135	-0.00143	-0.00145
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00255	0.00255	0.00253

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00252	-0.00253	-0.00252
	(A2 * B1 * !C1 * !X)	0.00424	0.00428	0.00424
	(A2 * A3 * B1 * C1 * X)	-0.00236	-0.00238	-0.00237
	(A2 * A3 * B1 * C1 * X)	0.00438	0.00443	0.00440
	(A2 * !B1 * !X)	-0.00252	-0.00253	-0.00252
	(A2 * !B1 * !X)	0.00424	0.00427	0.00424
	(A2 * !A3 * B1 * C1 * X)	-0.00229	-0.00231	-0.00229
	(A2 * !A3 * B1 * C1 * X)	0.00449	0.00453	0.00451
	(!A2 * A3 * B1 * C1 * X)	-0.00217	-0.00219	-0.00216
	(!A2 * A3 * B1 * C1 * X)	0.00453	0.00457	0.00456
	(!A2 * A3 * B1 * !C1 * !X)	-0.00251	-0.00255	-0.00252
	(!A2 * A3 * B1 * !C1 * !X)	0.00410	0.00419	0.00412
	(!A2 * A3 * !B1 * !X)	-0.00252	-0.00253	-0.00252
	(!A2 * A3 * !B1 * !X)	0.00411	0.00415	0.00412
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00214	-0.00239	-0.00242
	(!A2 * !A3 * B1 * !C1 * !X)	0.00436	0.00435	0.00430
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00224	-0.00242	-0.00244
	(!A2 * !A3 * !B1 * C1 * !X)	0.00431	0.00434	0.00430
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00227	-0.00242	-0.00245
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00429	0.00434	0.00429

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)**	0.00222	0.00225	0.00213
	(A1 * A3 * B1 * C1 * X)	-0.00116	-0.00113	-0.00120
	(A1 * A3 * B1 * !C1 * !X)	0.00159	0.00160	0.00158
	(A1 * A3 * B1 * !C1 * !X)	-0.00181	-0.00183	-0.00179
	(A1 * A3 * !B1 * !X)	0.00159	0.00160	0.00158
	(A1 * A3 * !B1 * !X)	-0.00181	-0.00183	-0.00179
	(A1 * !A3 * B1 * C1 * X)	0.00211	0.00214	0.00207
	(A1 * !A3 * B1 * C1 * X)	-0.00076	-0.00078	-0.00080
	(A1 * !A3 * B1 * !C1 * !X)	0.00160	0.00159	0.00158
	(A1 * !A3 * B1 * !C1 * !X)	-0.00223	-0.00223	-0.00223
	(A1 * !A3 * !B1 * C1 * !X)	0.00160	0.00159	0.00158
	(A1 * !A3 * !B1 * C1 * !X)	-0.00223	-0.00223	-0.00223
	(A1 * !A3 * !B1 * !C1 * !X)	0.00160	0.00159	0.00158
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00223	-0.00223	-0.00223
	(!A1 * A3 * B1 * C1 * X)	0.00272	0.00220	0.00211
	(!A1 * A3 * B1 * C1 * X)	-0.00112	-0.00165	-0.00170
	(!A1 * A3 * B1 * !C1 * !X)	0.00160	0.00160	0.00158
	(!A1 * A3 * B1 * !C1 * !X)	-0.00222	-0.00223	-0.00222
	(!A1 * A3 * !B1 * !X)	0.00160	0.00160	0.00158
	(!A1 * A3 * !B1 * !X)	-0.00222	-0.00223	-0.00222
	(!A1 * !A3 * B1 * !C1 * !X)	0.00150	0.00153	0.00151
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00223	-0.00225	-0.00223
	(!A1 * !A3 * !B1 * C1 * !X)	0.00153	0.00155	0.00153
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00223	-0.00225	-0.00224
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00223	-0.00225	-0.00224

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00207	0.00208	0.00198
	(A1 * A3 * B1 * C1 * X)	-0.00124	-0.00126	-0.00131
	(A1 * A3 * B1 * !C1 * !X)	0.00174	0.00176	0.00175
	(A1 * A3 * B1 * !C1 * !X)	-0.00161	-0.00162	-0.00157
	(A1 * A3 * !B1 * !X)	0.00174	0.00176	0.00175
	(A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00157
	(A1 * !A3 * B1 * C1 * X)	0.00196	0.00198	0.00192
	(A1 * !A3 * B1 * C1 * X)	-0.00089	-0.00092	-0.00092
	(A1 * !A3 * B1 * !C1 * !X)	0.00176	0.00176	0.00175
	(A1 * !A3 * B1 * !C1 * !X)	-0.00216	-0.00217	-0.00217
	(A1 * !A3 * !B1 * C1 * !X)	0.00176	0.00176	0.00175
	(A1 * !A3 * !B1 * C1 * !X)	-0.00216	-0.00217	-0.00217
	(A1 * !A3 * !B1 * !C1 * !X)	0.00176	0.00175	0.00175
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00216	-0.00217	-0.00217
	(!A1 * A3 * B1 * C1 * X)	0.00251	0.00204	0.00196
	(!A1 * A3 * B1 * C1 * X)	-0.00144	-0.00192	-0.00196
	(!A1 * A3 * B1 * !C1 * !X)	0.00176	0.00175	0.00175
	(!A1 * A3 * B1 * !C1 * !X)	-0.00217	-0.00216	-0.00216
	(!A1 * A3 * !B1 * !X)	0.00176	0.00175	0.00175
	(!A1 * A3 * !B1 * !X)	-0.00217	-0.00216	-0.00216
	(!A1 * !A3 * B1 * !C1 * !X)	0.00165	0.00165	0.00166
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00218	-0.00217	-0.00218
	(!A1 * !A3 * !B1 * C1 * !X)	0.00167	0.00169	0.00167
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00218	-0.00220	-0.00219
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00168	0.00169	0.00168
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00219	-0.00220	-0.00218

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00394	0.00406	0.00380
	(A1 * A3 * B1 * C1 * X)	-0.00230	-0.00230	-0.00241
	(A1 * A3 * B1 * !C1 * !X)	0.00345	0.00346	0.00342
	(A1 * A3 * B1 * !C1 * !X)	-0.00298	-0.00298	-0.00287
	(A1 * A3 * !B1 * !X)	0.00345	0.00346	0.00342
	(A1 * A3 * !B1 * !X)	-0.00298	-0.00298	-0.00287
	(A1 * !A3 * B1 * C1 * X)	0.00378	0.00383	0.00369
	(A1 * !A3 * B1 * C1 * X)	-0.00154	-0.00157	-0.00160
	(A1 * !A3 * B1 * !C1 * !X)	0.00341	0.00344	0.00342
	(A1 * !A3 * B1 * !C1 * !X)	-0.00371	-0.00375	-0.00375
	(A1 * !A3 * !B1 * C1 * !X)	0.00341	0.00344	0.00342
	(A1 * !A3 * !B1 * C1 * !X)	-0.00371	-0.00375	-0.00375
	(A1 * !A3 * !B1 * !C1 * !X)	0.00341	0.00343	0.00342
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00372	-0.00375	-0.00375
	(!A1 * A3 * B1 * C1 * X)	0.00498	0.00393	0.00378
	(!A1 * A3 * B1 * C1 * X)	-0.00225	-0.00328	-0.00339
	(!A1 * A3 * B1 * !C1 * !X)	0.00345	0.00343	0.00342
	(!A1 * A3 * B1 * !C1 * !X)	-0.00373	-0.00374	-0.00375
	(!A1 * A3 * !B1 * !X)	0.00345	0.00343	0.00342
	(!A1 * A3 * !B1 * !X)	-0.00373	-0.00374	-0.00375
	(!A1 * !A3 * B1 * !C1 * !X)	0.00324	0.00328	0.00325
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00376	-0.00379	-0.00376
	(!A1 * !A3 * !B1 * C1 * !X)	0.00330	0.00330	0.00329
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00378	-0.00378	-0.00377
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00329	0.00329	0.00328
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00378	-0.00378	-0.00377

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)**	-0.00162	-0.00163	-0.00162
	(A1 * A3 * B1 * C1 * X)	0.00158	0.00160	0.00158
	(A1 * A3 * B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * A3 * B1 * !C1 * !X)	0.00181	0.00183	0.00181
	(A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * A3 * !B1 * !X)	0.00181	0.00183	0.00181
	(A1 * !A3 * B1 * C1 * X)	-0.00159	-0.00160	-0.00158
	(A1 * !A3 * B1 * C1 * X)	0.00128	0.00128	0.00128
	(A1 * !A3 * B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * B1 * !C1 * !X)	0.00234	0.00235	0.00234
	(A1 * !A3 * !B1 * C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * !B1 * C1 * !X)	0.00234	0.00235	0.00234
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00146	-0.00146	-0.00145
	(A1 * !A3 * !B1 * !C1 * !X)	0.00234	0.00235	0.00234
	(!A1 * A3 * B1 * C1 * X)	-0.00151	-0.00152	-0.00152
	(!A1 * A3 * B1 * C1 * X)	0.00230	0.00232	0.00229
	(!A1 * A3 * B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * A3 * B1 * !C1 * !X)	0.00233	0.00236	0.00234
	(!A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * A3 * !B1 * !X)	0.00233	0.00235	0.00234
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00126	-0.00139	-0.00141
	(!A1 * !A3 * B1 * !C1 * !X)	0.00241	0.00239	0.00237
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00141	-0.00142
	(!A1 * !A3 * !B1 * C1 * !X)	0.00236	0.00239	0.00237
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00235	0.00239	0.00236

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00149	-0.00149	-0.00148
	(A1 * A3 * B1 * C1 * X)	0.00168	0.00168	0.00168
	(A1 * A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(A1 * A3 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(A1 * A3 * !B1 * !X)	-0.00149	-0.00150	-0.00150
	(A1 * A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(A1 * !A3 * B1 * C1 * X)	-0.00147	-0.00147	-0.00147
	(A1 * !A3 * B1 * C1 * X)	0.00139	0.00139	0.00138
	(A1 * !A3 * B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A3 * B1 * !C1 * !X)	0.00240	0.00241	0.00240
	(A1 * !A3 * !B1 * C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A3 * !B1 * C1 * !X)	0.00240	0.00241	0.00240
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A3 * !B1 * !C1 * !X)	0.00240	0.00241	0.00240
	(!A1 * A3 * B1 * C1 * X)	-0.00142	-0.00143	-0.00143
	(!A1 * A3 * B1 * C1 * X)	0.00248	0.00249	0.00249
	(!A1 * A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(!A1 * A3 * B1 * !C1 * !X)	0.00239	0.00241	0.00240
	(!A1 * A3 * !B1 * !X)	-0.00150	-0.00150	-0.00150
	(!A1 * A3 * !B1 * !X)	0.00240	0.00241	0.00240
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00125	-0.00142	-0.00143
	(!A1 * !A3 * B1 * !C1 * !X)	0.00247	0.00246	0.00243
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00132	-0.00143	-0.00145
	(!A1 * !A3 * !B1 * C1 * !X)	0.00244	0.00245	0.00243
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00134	-0.00144	-0.00145
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00244	0.00245	0.00243

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00277	-0.00279	-0.00277
	(A1 * A3 * B1 * C1 * X)	0.00320	0.00322	0.00319
	(A1 * A3 * B1 * !C1 * !X)	-0.00291	-0.00293	-0.00292
	(A1 * A3 * B1 * !C1 * !X)	0.00317	0.00319	0.00317
	(A1 * A3 * !B1 * !X)	-0.00292	-0.00293	-0.00292
	(A1 * A3 * !B1 * !X)	0.00317	0.00319	0.00316
	(A1 * !A3 * B1 * C1 * X)	-0.00272	-0.00272	-0.00270
	(A1 * !A3 * B1 * C1 * X)	0.00258	0.00259	0.00259
	(A1 * !A3 * B1 * !C1 * !X)	-0.00291	-0.00294	-0.00292
	(A1 * !A3 * B1 * !C1 * !X)	0.00421	0.00425	0.00422
	(A1 * !A3 * !B1 * C1 * !X)	-0.00292	-0.00294	-0.00292
	(A1 * !A3 * !B1 * C1 * !X)	0.00422	0.00424	0.00422
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00292	-0.00294	-0.00292
	(A1 * !A3 * !B1 * !C1 * !X)	0.00421	0.00424	0.00422
	(!A1 * A3 * B1 * C1 * X)	-0.00257	-0.00260	-0.00259
	(!A1 * A3 * B1 * C1 * X)	0.00458	0.00462	0.00459
	(!A1 * A3 * B1 * !C1 * !X)	-0.00291	-0.00294	-0.00292
	(!A1 * A3 * B1 * !C1 * !X)	0.00420	0.00425	0.00422
	(!A1 * A3 * !B1 * !X)	-0.00292	-0.00294	-0.00292
	(!A1 * A3 * !B1 * !X)	0.00421	0.00425	0.00422
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00244	-0.00276	-0.00279
	(!A1 * !A3 * B1 * !C1 * !X)	0.00436	0.00432	0.00427
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00258	-0.00279	-0.00282
	(!A1 * !A3 * !B1 * C1 * !X)	0.00429	0.00430	0.00427
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00263	-0.00280	-0.00282
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00426	0.00429	0.00427

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)**	0.00187	0.00189	0.00188
	(A2 * B1 * C1 * X)	-0.00076	-0.00077	-0.00076
	(A2 * B1 * !C1 * !X)	0.00157	0.00157	0.00157
	(A2 * B1 * !C1 * !X)	-0.00193	-0.00197	-0.00198
	(A2 * !B1 * C1 * !X)	0.00157	0.00156	0.00157
	(A2 * !B1 * C1 * !X)	-0.00193	-0.00197	-0.00198
	(A2 * !B1 * !C1 * !X)	0.00156	0.00158	0.00157
	(A2 * !B1 * !C1 * !X)	-0.00193	-0.00199	-0.00198
	(A1 * !A2 * B1 * C1 * X)	0.00188	0.00191	0.00188
	(A1 * !A2 * B1 * C1 * X)	-0.00074	-0.00076	-0.00074
	(A1 * !A2 * B1 * !C1 * !X)	0.00157	0.00159	0.00157
	(A1 * !A2 * B1 * !C1 * !X)	-0.00181	-0.00194	-0.00196
	(A1 * !A2 * !B1 * C1 * !X)	0.00157	0.00159	0.00157
	(A1 * !A2 * !B1 * C1 * !X)	-0.00182	-0.00194	-0.00196
	(A1 * !A2 * !B1 * !C1 * !X)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00195	-0.00197
	(!A1 * !A2 * B1 * !C1 * !X)	0.00151	0.00152	0.00150
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A2 * !B1 * C1 * !X)	0.00154	0.00154	0.00153
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00200	-0.00200	-0.00199
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00153	0.00153	0.00152
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00200	-0.00200	-0.00199

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00205	0.00207	0.00206
	(A2 * B1 * C1 * X)	-0.00075	-0.00076	-0.00075
	(A2 * B1 * !C1 * !X)	0.00175	0.00176	0.00175
	(A2 * B1 * !C1 * !X)	-0.00206	-0.00210	-0.00211
	(A2 * !B1 * C1 * !X)	0.00175	0.00175	0.00175
	(A2 * !B1 * C1 * !X)	-0.00206	-0.00210	-0.00211
	(A2 * !B1 * !C1 * !X)	0.00174	0.00176	0.00175
	(A2 * !B1 * !C1 * !X)	-0.00206	-0.00211	-0.00211
	(A1 * !A2 * B1 * C1 * X)	0.00206	0.00209	0.00206
	(A1 * !A2 * B1 * C1 * X)	-0.00075	-0.00076	-0.00074
	(A1 * !A2 * B1 * !C1 * !X)	0.00174	0.00176	0.00175
	(A1 * !A2 * B1 * !C1 * !X)	-0.00191	-0.00206	-0.00209
	(A1 * !A2 * !B1 * C1 * !X)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B1 * C1 * !X)	-0.00192	-0.00206	-0.00209
	(A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00176	0.00175
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00192	-0.00207	-0.00209
	(!A1 * !A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00165
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00212	-0.00213	-0.00212
	(!A1 * !A2 * !B1 * C1 * !X)	0.00169	0.00170	0.00168
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00213	-0.00214	-0.00213
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00168	0.00168	0.00167
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00214	-0.00214	-0.00213

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00360	0.00363	0.00361
	(A2 * B1 * C1 * X)	-0.00149	-0.00150	-0.00148
	(A2 * B1 * !C1 * !X)	0.00306	0.00308	0.00307
	(A2 * B1 * !C1 * !X)	-0.00373	-0.00384	-0.00385
	(A2 * !B1 * C1 * !X)	0.00306	0.00308	0.00307
	(A2 * !B1 * C1 * !X)	-0.00374	-0.00384	-0.00385
	(A2 * !B1 * !C1 * !X)	0.00305	0.00310	0.00306
	(A2 * !B1 * !C1 * !X)	-0.00374	-0.00386	-0.00386
	(A1 * !A2 * B1 * C1 * X)	0.00361	0.00364	0.00362
	(A1 * !A2 * B1 * C1 * X)	-0.00146	-0.00147	-0.00145
	(A1 * !A2 * B1 * !C1 * !X)	0.00306	0.00310	0.00307
	(A1 * !A2 * B1 * !C1 * !X)	-0.00350	-0.00376	-0.00381
	(A1 * !A2 * !B1 * C1 * !X)	0.00306	0.00310	0.00307
	(A1 * !A2 * !B1 * C1 * !X)	-0.00350	-0.00376	-0.00381
	(A1 * !A2 * !B1 * !C1 * !X)	0.00305	0.00309	0.00306
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00351	-0.00377	-0.00382
	(!A1 * !A2 * B1 * !C1 * !X)	0.00291	0.00294	0.00292
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00386	-0.00389	-0.00387
	(!A1 * !A2 * !B1 * C1 * !X)	0.00296	0.00297	0.00295
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00388	-0.00389	-0.00388
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00295	0.00296	0.00294
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00389	-0.00389	-0.00388

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)**	-0.00137	-0.00138	-0.00147
	(A2 * B1 * C1 * X)	0.00125	0.00125	0.00118
	(A2 * B1 * !C1 * !X)	-0.00143	-0.00145	-0.00144
	(A2 * B1 * !C1 * !X)	0.00209	0.00211	0.00210
	(A2 * !B1 * C1 * !X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * C1 * !X)	0.00209	0.00211	0.00210
	(A2 * !B1 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * !C1 * !X)	0.00209	0.00211	0.00209
	(A1 * !A2 * B1 * C1 * X)	-0.00126	-0.00127	-0.00144
	(A1 * !A2 * B1 * C1 * X)	0.00133	0.00133	0.00119
	(A1 * !A2 * B1 * !C1 * !X)	-0.00143	-0.00144	-0.00144
	(A1 * !A2 * B1 * !C1 * !X)	0.00202	0.00203	0.00203
	(A1 * !A2 * !B1 * C1 * !X)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * !B1 * C1 * !X)	0.00202	0.00204	0.00203
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00144	-0.00146	-0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	0.00203	0.00207	0.00203
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00138	-0.00139
	(!A1 * !A2 * B1 * !C1 * !X)	0.00215	0.00215	0.00212
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00131	-0.00140	-0.00141
	(!A1 * !A2 * !B1 * C1 * !X)	0.00212	0.00214	0.00212
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00141	-0.00141
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00212	0.00214	0.00212

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00159	-0.00160	-0.00165
	(A2 * B1 * C1 * X)	0.00122	0.00122	0.00117
	(A2 * B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A2 * B1 * !C1 * !X)	0.00234	0.00235	0.00234
	(A2 * !B1 * C1 * !X)	-0.00150	-0.00151	-0.00150
	(A2 * !B1 * C1 * !X)	0.00234	0.00235	0.00234
	(A2 * !B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A2 * !B1 * !C1 * !X)	0.00233	0.00236	0.00234
	(A1 * !A2 * B1 * C1 * X)	-0.00148	-0.00149	-0.00163
	(A1 * !A2 * B1 * C1 * X)	0.00128	0.00128	0.00118
	(A1 * !A2 * B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * B1 * !C1 * !X)	0.00225	0.00226	0.00226
	(A1 * !A2 * !B1 * C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !B1 * C1 * !X)	0.00226	0.00227	0.00226
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	0.00226	0.00228	0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00142	-0.00144
	(!A1 * !A2 * B1 * !C1 * !X)	0.00241	0.00240	0.00237
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00133	-0.00144	-0.00145
	(!A1 * !A2 * !B1 * C1 * !X)	0.00239	0.00239	0.00238
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00134	-0.00144	-0.00145
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00238	0.00239	0.00237

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00258	-0.00261	-0.00278
	(A2 * B1 * C1 * X)	0.00249	0.00249	0.00233
	(A2 * B1 * !C1 * !X)	-0.00256	-0.00257	-0.00256
	(A2 * B1 * !C1 * !X)	0.00431	0.00433	0.00432
	(A2 * !B1 * C1 * !X)	-0.00256	-0.00257	-0.00256
	(A2 * !B1 * C1 * !X)	0.00431	0.00433	0.00432
	(A2 * !B1 * !C1 * !X)	-0.00257	-0.00258	-0.00257
	(A2 * !B1 * !C1 * !X)	0.00431	0.00433	0.00431
	(A1 * !A2 * B1 * C1 * X)	-0.00233	-0.00237	-0.00272
	(A1 * !A2 * B1 * C1 * X)	0.00262	0.00265	0.00236
	(A1 * !A2 * B1 * !C1 * !X)	-0.00256	-0.00258	-0.00256
	(A1 * !A2 * B1 * !C1 * !X)	0.00415	0.00418	0.00416
	(A1 * !A2 * !B1 * C1 * !X)	-0.00256	-0.00258	-0.00256
	(A1 * !A2 * !B1 * C1 * !X)	0.00416	0.00418	0.00416
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * !B1 * !C1 * !X)	0.00417	0.00419	0.00418
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00213	-0.00243	-0.00246
	(!A1 * !A2 * B1 * !C1 * !X)	0.00445	0.00443	0.00438
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00226	-0.00245	-0.00248
	(!A1 * !A2 * !B1 * C1 * !X)	0.00439	0.00438	0.00438
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00229	-0.00245	-0.00249
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00437	0.00437	0.00437

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00146	0.00148	0.00146
	(A3 * !C1 * !X)	-0.00202	-0.00204	-0.00202
	(A2 * !A3 * !C1 * !X)	0.00146	0.00148	0.00146
	(A2 * !A3 * !C1 * !X)	-0.00202	-0.00204	-0.00202
	(A1 * !A2 * !A3 * !C1 * !X)	0.00145	0.00147	0.00146
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(!A1 * !A2 * !A3 * C1 * !X)	0.00077	0.00077	0.00073
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00203	-0.00203	-0.00202
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00203	-0.00204	-0.00203
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00167	0.00169	0.00168
	(A3 * !C1 * !X)	-0.00203	-0.00204	-0.00203
	(A2 * !A3 * !C1 * !X)	0.00167	0.00170	0.00168
	(A2 * !A3 * !C1 * !X)	-0.00203	-0.00205	-0.00203
	(A1 * !A2 * !A3 * !C1 * !X)	0.00166	0.00169	0.00168
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00202	-0.00204	-0.00203
	(!A1 * !A2 * !A3 * C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00207	-0.00206	-0.00206
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00208	-0.00208	-0.00208
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00328	0.00330	0.00328
	(A3 * !C1 * !X)	-0.00437	-0.00438	-0.00436
	(A2 * !A3 * !C1 * !X)	0.00327	0.00329	0.00328
	(A2 * !A3 * !C1 * !X)	-0.00436	-0.00437	-0.00436
	(A1 * !A2 * !A3 * !C1 * !X)	0.00327	0.00330	0.00328
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00435	-0.00438	-0.00435
	(!A1 * !A2 * !A3 * C1 * !X)	0.00172	0.00173	0.00172
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00437	-0.00439	-0.00437
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00217	0.00220	0.00218
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00438	-0.00442	-0.00439

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00117	-0.00130	-0.00133
	(A3 * !C1 * !X)	0.00230	0.00221	0.00216
	(A2 * !A3 * !C1 * !X)	-0.00117	-0.00130	-0.00133
	(A2 * !A3 * !C1 * !X)	0.00231	0.00220	0.00216
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00116	-0.00131	-0.00133
	(A1 * !A2 * !A3 * !C1 * !X)	0.00234	0.00220	0.00216
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00055	-0.00056	-0.00056
	(!A1 * !A2 * !A3 * C1 * !X)	0.00220	0.00224	0.00217
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00083	-0.00088	-0.00089
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00236	0.00231	0.00222
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00126	-0.00141	-0.00143
	(A3 * !C1 * !X)	0.00245	0.00233	0.00229
	(A2 * !A3 * !C1 * !X)	-0.00124	-0.00142	-0.00143
	(A2 * !A3 * !C1 * !X)	0.00246	0.00232	0.00229
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00123	-0.00142	-0.00143
	(A1 * !A2 * !A3 * !C1 * !X)	0.00249	0.00231	0.00229
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * C1 * !X)	0.00236	0.00240	0.00232
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00076	-0.00079	-0.00079
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00252	0.00248	0.00238

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00241	-0.00276	-0.00279
	(A3 * !C1 * !X)	0.00521	0.00494	0.00488
	(A2 * !A3 * !C1 * !X)	-0.00237	-0.00277	-0.00279
	(A2 * !A3 * !C1 * !X)	0.00523	0.00493	0.00488
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00235	-0.00277	-0.00279
	(A1 * !A2 * !A3 * !C1 * !X)	0.00531	0.00494	0.00488
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00111	-0.00115	-0.00116
	(!A1 * !A2 * !A3 * C1 * !X)	0.00498	0.00508	0.00492
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00161	-0.00171	-0.00173
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00526	0.00523	0.00501

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00060	0.00060	0.00058
	(A3 * !B1 * !X)	-0.00234	-0.00234	-0.00237
	(A2 * !A3 * !B1 * !X)	0.00060	0.00060	0.00058
	(A2 * !A3 * !B1 * !X)	-0.00234	-0.00234	-0.00237
	(!A2 * !A3 * !B1 * !X)	0.00060	0.00060	0.00058
	(!A2 * !A3 * !B1 * !X)	-0.00234	-0.00234	-0.00237
	(!A1 * !A2 * !A3 * B1 * !X)	0.00072	0.00072	0.00063
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00217	-0.00219	-0.00235
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00073	0.00072	0.00070
	(A3 * !B1 * !X)	-0.00230	-0.00230	-0.00234
	(A2 * !A3 * !B1 * !X)	0.00073	0.00072	0.00070
	(A2 * !A3 * !B1 * !X)	-0.00230	-0.00230	-0.00234
	(!A2 * !A3 * !B1 * !X)	0.00073	0.00072	0.00070
	(!A2 * !A3 * !B1 * !X)	-0.00230	-0.00230	-0.00234
	(!A1 * !A2 * !A3 * B1 * !X)	0.00078	0.00078	0.00071
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00219	-0.00220	-0.00233
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00135	0.00135	0.00130
	(A3 * !B1 * !X)	-0.00429	-0.00431	-0.00440
	(A2 * !A3 * !B1 * !X)	0.00135	0.00135	0.00130
	(A2 * !A3 * !B1 * !X)	-0.00429	-0.00432	-0.00440
	(!A2 * !A3 * !B1 * !X)	0.00135	0.00135	0.00130
	(!A2 * !A3 * !B1 * !X)	-0.00429	-0.00431	-0.00440
	(!A1 * !A2 * !A3 * B1 * !X)	0.00145	0.00145	0.00128
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00402	-0.00405	-0.00436

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A3 * !B1 * !X)	0.00249	0.00254	0.00250
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00249	0.00254	0.00250
	(!A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !A3 * !B1 * !X)	0.00249	0.00254	0.00250
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	0.00249	0.00252	0.00250
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A3 * !B1 * !X)	0.00259	0.00263	0.00259
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00259	0.00263	0.00259
	(!A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !A3 * !B1 * !X)	0.00259	0.00263	0.00259
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !A2 * !A3 * B1 * !X)	0.00259	0.00261	0.00259
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00078	-0.00080	-0.00078
	(A3 * !B1 * !X)	0.00489	0.00498	0.00491
	(A2 * !A3 * !B1 * !X)	-0.00078	-0.00080	-0.00078
	(A2 * !A3 * !B1 * !X)	0.00490	0.00498	0.00491
	(!A2 * !A3 * !B1 * !X)	-0.00078	-0.00080	-0.00078
	(!A2 * !A3 * !B1 * !X)	0.00490	0.00498	0.00491
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00074	-0.00075	-0.00072
	(!A1 * !A2 * !A3 * B1 * !X)	0.00492	0.00497	0.00490

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00275	0.00321	0.00313	0.00285	0.43547
sky130_fd_sc_hs__o31ai_2	0.00563	0.00551	0.00577	0.00568	0.74697
sky130_fd_sc_hs__o31ai_4	0.01084	0.01083	0.01123	0.00827	1.37069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	4.19788	13.92760
sky130_fd_sc_hs__o31ai_2	0.00000	8.39505	27.85420
sky130_fd_sc_hs__o31ai_4	0.00000	10.69250	41.77190

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)	0.14212	0.92981	8.94718
	A2->Y (FR)	0.13508	0.96440	9.57177
	A3->Y (FR)	0.10530	0.95839	9.84616
	B1->Y (FR)	0.02973	0.51433	5.72586
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.15328	0.80946	8.73566
	A2->Y (FR)	0.13607	0.83109	9.34037
	A3->Y (FR)	0.10465	0.84092	9.81421
	B1->Y (FR)	0.02654	0.45275	5.60104
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.14370	0.68102	8.52099
	A2->Y (FR)	0.12819	0.71099	9.21562
	A3->Y (FR)	0.09351	0.72533	9.74251
	B1->Y (FR)	0.03351	0.54349	7.59364

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.04327	0.35709	3.38566
	A2->Y (RF)	0.04362	0.35012	3.36151
	A3->Y (RF)	0.03437	0.33418	3.30690
	B1->Y (RF)	0.03689	0.41485	4.12882
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.04440	0.31173	3.27273
	A2->Y (RF)	0.04262	0.29878	3.23168
	A3->Y (RF)	0.03431	0.28412	3.18957
	B1->Y (RF)	0.03461	0.36629	4.07033
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.04593	0.26337	3.17476
	A2->Y (RF)	0.04223	0.24707	3.09606
	A3->Y (RF)	0.03050	0.22293	2.95092
	B1->Y (RF)	0.03504	0.34609	4.39741

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	0.00126	0.02215
	A1	0.01012	0.01046	0.03136
	A2	0.00097	0.00143	0.02045
	A2	0.00926	0.00972	0.02874
	A3	0.00091	0.00236	0.02709
	A3	0.00789	0.00931	0.03403
	B1	-0.00043	0.00238	0.04012
	B1	0.00469	0.00750	0.04525
sky130_fd_sc_hs__o31ai_2	A1	0.00189	0.00234	0.04254
	A1	0.02049	0.02098	0.06120
	A2	0.00197	0.00303	0.04014
	A2	0.01771	0.01882	0.05597
	A3	0.00183	0.00461	0.04993
	A3	0.01516	0.01797	0.06321
	B1	-0.00186	0.00408	0.07645
	B1	0.00781	0.01376	0.08664
sky130_fd_sc_hs__o31ai_4	A1	0.00284	0.00407	0.08073
	A1	0.03902	0.04032	0.11700
	A2	0.00295	0.00537	0.07439
	A2	0.03378	0.03627	0.10544
	A3	0.00263	0.00874	0.09369
	A3	0.02854	0.03460	0.11903
	B1	-0.00352	0.00364	0.08631
	B1	0.01099	0.01822	0.10077

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01232	0.01282	0.03079
	A1	0.00308	0.00359	0.02146
	A2	0.01027	0.01084	0.02762
	A2	0.00193	0.00250	0.01929
	A3	0.00763	0.00846	0.02458
	A3	0.00062	0.00142	0.01741
	B1	0.00546	0.00700	0.03214
	B1	0.00033	0.00183	0.02696
sky130_fd_sc_hs__o31ai_2	A1	0.02546	0.02633	0.06160
	A1	0.00678	0.00761	0.04274
	A2	0.01965	0.02091	0.05430
	A2	0.00375	0.00503	0.03811
	A3	0.01458	0.01627	0.04724
	A3	0.00110	0.00279	0.03368
	B1	0.01022	0.01372	0.06446
	B1	0.00055	0.00401	0.05459
sky130_fd_sc_hs__o31ai_4	A1	0.04738	0.04950	0.12037
	A1	0.01108	0.01317	0.08389
	A2	0.03641	0.03930	0.10548
	A2	0.00532	0.00816	0.07382
	A3	0.02580	0.02991	0.09192
	A3	-0.00031	0.00375	0.06568
	B1	0.01612	0.02026	0.07386
	B1	0.00164	0.00572	0.05920

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)**	0.00187	0.00181	0.00180
	(A2 * A3 * B1 * !Y)	-0.00199	-0.00210	-0.00209
	(A2 * !B1 * Y)	0.00174	0.00175	0.00173
	(A2 * !B1 * Y)	-0.00212	-0.00216	-0.00216
	(A2 * !A3 * B1 * !Y)	0.00219	0.00188	0.00184
	(A2 * !A3 * B1 * !Y)	-0.00170	-0.00204	-0.00205
	(!A2 * A3 * B1 * !Y)	0.00224	0.00191	0.00186
	(!A2 * A3 * B1 * !Y)	-0.00158	-0.00198	-0.00202
	(!A2 * A3 * !B1 * Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * !B1 * Y)	-0.00198	-0.00209	-0.00209
	(!A2 * !A3 * !B1 * Y)	0.00164	0.00167	0.00165
	(!A2 * !A3 * !B1 * Y)	-0.00216	-0.00218	-0.00217
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00383	0.00365	0.00362
	(A2 * A3 * B1 * !Y)	-0.00403	-0.00434	-0.00434
	(A2 * !B1 * Y)	0.00350	0.00352	0.00349
	(A2 * !B1 * Y)	-0.00436	-0.00443	-0.00444
	(A2 * !A3 * B1 * !Y)	0.00460	0.00382	0.00372
	(A2 * !A3 * B1 * !Y)	-0.00335	-0.00420	-0.00425
	(!A2 * A3 * B1 * !Y)	0.00466	0.00389	0.00375
	(!A2 * A3 * B1 * !Y)	-0.00315	-0.00409	-0.00418
	(!A2 * A3 * !B1 * Y)	0.00350	0.00353	0.00349
	(!A2 * A3 * !B1 * Y)	-0.00408	-0.00432	-0.00430
	(!A2 * !A3 * !B1 * Y)	0.00333	0.00336	0.00332
	(!A2 * !A3 * !B1 * Y)	-0.00452	-0.00453	-0.00450

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00726	0.00695	0.00688
	(A2 * A3 * B1 * !Y)	-0.00817	-0.00872	-0.00871
	(A2 * !B1 * Y)	0.00677	0.00681	0.00674
	(A2 * !B1 * Y)	-0.00865	-0.00886	-0.00881
	(A2 * !A3 * B1 * !Y)	0.00876	0.00728	0.00707
	(A2 * !A3 * B1 * !Y)	-0.00684	-0.00844	-0.00854
	(!A2 * A3 * B1 * !Y)	0.00882	0.00742	0.00713
	(!A2 * A3 * B1 * !Y)	-0.00648	-0.00822	-0.00840
	(!A2 * A3 * !B1 * Y)	0.00671	0.00681	0.00674
	(!A2 * A3 * !B1 * Y)	-0.00804	-0.00857	-0.00852
	(!A2 * !A3 * !B1 * Y)	0.00636	0.00645	0.00640
	(!A2 * !A3 * !B1 * Y)	-0.00890	-0.00896	-0.00891

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)**	-0.00166	-0.00167	-0.00166
	(A2 * A3 * B1 * !Y)	0.00221	0.00223	0.00222
	(A2 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(A2 * !B1 * Y)	0.00215	0.00217	0.00216
	(A2 * !A3 * B1 * !Y)	-0.00162	-0.00162	-0.00162
	(A2 * !A3 * B1 * !Y)	0.00226	0.00226	0.00227
	(!A2 * A3 * B1 * !Y)	-0.00160	-0.00161	-0.00159
	(!A2 * A3 * B1 * !Y)	0.00224	0.00226	0.00225
	(!A2 * A3 * !B1 * Y)	-0.00172	-0.00172	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00208	0.00209	0.00209
	(!A2 * !A3 * !B1 * Y)	-0.00153	-0.00166	-0.00165
	(!A2 * !A3 * !B1 * Y)	0.00225	0.00221	0.00218

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00336	-0.00336	-0.00336
	(A2 * A3 * B1 * !Y)	0.00457	0.00458	0.00457
	(A2 * !B1 * Y)	-0.00348	-0.00347	-0.00348
	(A2 * !B1 * Y)	0.00445	0.00443	0.00444
	(A2 * !A3 * B1 * !Y)	-0.00325	-0.00327	-0.00325
	(A2 * !A3 * B1 * !Y)	0.00467	0.00473	0.00470
	(!A2 * A3 * B1 * !Y)	-0.00323	-0.00325	-0.00321
	(!A2 * A3 * B1 * !Y)	0.00460	0.00465	0.00464
	(!A2 * A3 * !B1 * Y)	-0.00347	-0.00348	-0.00348
	(!A2 * A3 * !B1 * Y)	0.00430	0.00432	0.00430
	(!A2 * !A3 * !B1 * Y)	-0.00299	-0.00331	-0.00332
	(!A2 * !A3 * !B1 * Y)	0.00474	0.00456	0.00453
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00658	-0.00662	-0.00659
	(A2 * A3 * B1 * !Y)	0.00890	0.00898	0.00893
	(A2 * !B1 * Y)	-0.00670	-0.00674	-0.00671
	(A2 * !B1 * Y)	0.00878	0.00887	0.00881
	(A2 * !A3 * B1 * !Y)	-0.00638	-0.00642	-0.00639
	(A2 * !A3 * B1 * !Y)	0.00911	0.00919	0.00918
	(!A2 * A3 * B1 * !Y)	-0.00632	-0.00638	-0.00630
	(!A2 * A3 * B1 * !Y)	0.00896	0.00909	0.00906
	(!A2 * A3 * !B1 * Y)	-0.00669	-0.00674	-0.00671
	(!A2 * A3 * !B1 * Y)	0.00848	0.00857	0.00852
	(!A2 * !A3 * !B1 * Y)	-0.00577	-0.00641	-0.00640
	(!A2 * !A3 * !B1 * Y)	0.00933	0.00906	0.00896

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)**	0.00220	0.00223	0.00212
	(A1 * A3 * B1 * !Y)	-0.00140	-0.00140	-0.00145
	(A1 * A3 * !B1 * Y)	0.00172	0.00174	0.00172
	(A1 * A3 * !B1 * Y)	-0.00179	-0.00179	-0.00179
	(A1 * !A3 * B1 * !Y)	0.00210	0.00214	0.00207
	(A1 * !A3 * B1 * !Y)	-0.00103	-0.00105	-0.00106
	(A1 * !A3 * !B1 * Y)	0.00173	0.00173	0.00172
	(A1 * !A3 * !B1 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * A3 * B1 * !Y)	0.00268	0.00219	0.00209
	(!A1 * A3 * B1 * !Y)	-0.00155	-0.00205	-0.00210
	(!A1 * A3 * !B1 * Y)	0.00173	0.00174	0.00172
	(!A1 * A3 * !B1 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * !A3 * !B1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A3 * !B1 * Y)	-0.00250	-0.00250	-0.00249
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00408	0.00408	0.00384
	(A1 * A3 * B1 * !Y)	-0.00269	-0.00272	-0.00282
	(A1 * A3 * !B1 * Y)	0.00340	0.00343	0.00339
	(A1 * A3 * !B1 * Y)	-0.00310	-0.00313	-0.00310
	(A1 * !A3 * B1 * !Y)	0.00373	0.00378	0.00366
	(A1 * !A3 * B1 * !Y)	-0.00197	-0.00200	-0.00201
	(A1 * !A3 * !B1 * Y)	0.00341	0.00341	0.00339
	(A1 * !A3 * !B1 * Y)	-0.00442	-0.00443	-0.00441
	(!A1 * A3 * B1 * !Y)	0.00485	0.00383	0.00369
	(!A1 * A3 * B1 * !Y)	-0.00306	-0.00406	-0.00416
	(!A1 * A3 * !B1 * Y)	0.00341	0.00340	0.00339
	(!A1 * A3 * !B1 * Y)	-0.00442	-0.00446	-0.00444
	(!A1 * !A3 * !B1 * Y)	0.00323	0.00326	0.00323
	(!A1 * !A3 * !B1 * Y)	-0.00449	-0.00450	-0.00448

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00788	0.00797	0.00747
	(A1 * A3 * B1 * !Y)	-0.00544	-0.00554	-0.00575
	(A1 * A3 * !B1 * Y)	0.00667	0.00680	0.00671
	(A1 * A3 * !B1 * Y)	-0.00619	-0.00625	-0.00619
	(A1 * !A3 * B1 * !Y)	0.00732	0.00740	0.00713
	(A1 * !A3 * B1 * !Y)	-0.00407	-0.00411	-0.00414
	(A1 * !A3 * !B1 * Y)	0.00669	0.00677	0.00671
	(A1 * !A3 * !B1 * Y)	-0.00880	-0.00887	-0.00883
	(!A1 * A3 * B1 * !Y)	0.00957	0.00748	0.00721
	(!A1 * A3 * B1 * !Y)	-0.00605	-0.00825	-0.00842
	(!A1 * A3 * !B1 * Y)	0.00668	0.00674	0.00670
	(!A1 * A3 * !B1 * Y)	-0.00884	-0.00892	-0.00888
	(!A1 * !A3 * !B1 * Y)	0.00631	0.00642	0.00636
	(!A1 * !A3 * !B1 * Y)	-0.00894	-0.00902	-0.00896

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)**	-0.00189	-0.00191	-0.00190
	(A1 * A3 * B1 * !Y)	0.00154	0.00156	0.00154
	(A1 * A3 * !B1 * Y)	-0.00171	-0.00171	-0.00171
	(A1 * A3 * !B1 * Y)	0.00179	0.00179	0.00179
	(A1 * !A3 * B1 * !Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A3 * B1 * !Y)	0.00125	0.00125	0.00125
	(A1 * !A3 * !B1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A3 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * A3 * B1 * !Y)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * B1 * !Y)	0.00236	0.00237	0.00236
	(!A1 * A3 * !B1 * Y)	-0.00170	-0.00171	-0.00171
	(!A1 * A3 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * !A3 * !B1 * Y)	-0.00149	-0.00163	-0.00164
	(!A1 * !A3 * !B1 * Y)	0.00259	0.00253	0.00250
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00334	-0.00335	-0.00334
	(A1 * A3 * B1 * !Y)	0.00304	0.00305	0.00304
	(A1 * A3 * !B1 * Y)	-0.00337	-0.00339	-0.00337
	(A1 * A3 * !B1 * Y)	0.00310	0.00313	0.00310
	(A1 * !A3 * B1 * !Y)	-0.00323	-0.00327	-0.00326
	(A1 * !A3 * B1 * !Y)	0.00240	0.00244	0.00241
	(A1 * !A3 * !B1 * Y)	-0.00338	-0.00339	-0.00337
	(A1 * !A3 * !B1 * Y)	0.00442	0.00443	0.00441
	(!A1 * A3 * B1 * !Y)	-0.00318	-0.00317	-0.00317
	(!A1 * A3 * B1 * !Y)	0.00469	0.00468	0.00468
	(!A1 * A3 * !B1 * Y)	-0.00336	-0.00339	-0.00337
	(!A1 * A3 * !B1 * Y)	0.00442	0.00448	0.00444
	(!A1 * !A3 * !B1 * Y)	-0.00290	-0.00322	-0.00323
	(!A1 * !A3 * !B1 * Y)	0.00470	0.00454	0.00450

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00673	-0.00676	-0.00673
	(A1 * A3 * B1 * !Y)	0.00594	0.00596	0.00593
	(A1 * A3 * !B1 * Y)	-0.00667	-0.00671	-0.00667
	(A1 * A3 * !B1 * Y)	0.00619	0.00625	0.00619
	(A1 * !A3 * B1 * !Y)	-0.00656	-0.00657	-0.00659
	(A1 * !A3 * B1 * !Y)	0.00469	0.00468	0.00468
	(A1 * !A3 * !B1 * Y)	-0.00668	-0.00671	-0.00667
	(A1 * !A3 * !B1 * Y)	0.00884	0.00887	0.00883
	(!A1 * A3 * B1 * !Y)	-0.00640	-0.00645	-0.00642
	(!A1 * A3 * B1 * !Y)	0.00921	0.00930	0.00922
	(!A1 * A3 * !B1 * Y)	-0.00665	-0.00669	-0.00667
	(!A1 * A3 * !B1 * Y)	0.00884	0.00892	0.00888
	(!A1 * !A3 * !B1 * Y)	-0.00571	-0.00639	-0.00636
	(!A1 * !A3 * !B1 * Y)	0.00936	0.00906	0.00901

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00215	0.00218	0.00216
	(A2 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(A2 * !B1 * Y)	0.00167	0.00165	0.00165
	(A2 * !B1 * Y)	-0.00241	-0.00244	-0.00244
	(A1 * !A2 * B1 * !Y)	0.00216	0.00220	0.00216
	(A1 * !A2 * B1 * !Y)	-0.00089	-0.00091	-0.00089
	(A1 * !A2 * !B1 * Y)	0.00164	0.00167	0.00165
	(A1 * !A2 * !B1 * Y)	-0.00224	-0.00237	-0.00236
	(!A1 * !A2 * !B1 * Y)	0.00158	0.00159	0.00158
	(!A1 * !A2 * !B1 * Y)	-0.00247	-0.00248	-0.00246

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00405	0.00411	0.00405
	(A2 * B1 * !Y)	-0.00180	-0.00183	-0.00179
	(A2 * !B1 * Y)	0.00329	0.00333	0.00331
	(A2 * !B1 * Y)	-0.00449	-0.00462	-0.00461
	(A1 * !A2 * B1 * !Y)	0.00405	0.00412	0.00406
	(A1 * !A2 * B1 * !Y)	-0.00178	-0.00180	-0.00177
	(A1 * !A2 * !B1 * Y)	0.00330	0.00331	0.00331
	(A1 * !A2 * !B1 * Y)	-0.00420	-0.00444	-0.00443
	(!A1 * !A2 * !B1 * Y)	0.00315	0.00317	0.00314
	(!A1 * !A2 * !B1 * Y)	-0.00466	-0.00467	-0.00465
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00779	0.00795	0.00782
	(A2 * B1 * !Y)	-0.00367	-0.00375	-0.00368
	(A2 * !B1 * Y)	0.00652	0.00655	0.00650
	(A2 * !B1 * Y)	-0.00895	-0.00918	-0.00914
	(A1 * !A2 * B1 * !Y)	0.00780	0.00786	0.00783
	(A1 * !A2 * B1 * !Y)	-0.00363	-0.00365	-0.00363
	(A1 * !A2 * !B1 * Y)	0.00653	0.00654	0.00650
	(A1 * !A2 * !B1 * Y)	-0.00836	-0.00875	-0.00870
	(!A1 * !A2 * !B1 * Y)	0.00617	0.00626	0.00620
	(!A1 * !A2 * !B1 * Y)	-0.00921	-0.00928	-0.00923

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00194	-0.00197	-0.00202
	(A2 * B1 * !Y)	0.00109	0.00110	0.00105
	(A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A2 * !B1 * Y)	0.00244	0.00246	0.00244
	(A1 * !A2 * B1 * !Y)	-0.00184	-0.00187	-0.00200
	(A1 * !A2 * B1 * !Y)	0.00115	0.00116	0.00105
	(A1 * !A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * Y)	0.00235	0.00237	0.00236
	(!A1 * !A2 * !B1 * Y)	-0.00145	-0.00157	-0.00158
	(!A1 * !A2 * !B1 * Y)	0.00254	0.00250	0.00247
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00363	-0.00363	-0.00378
	(A2 * B1 * !Y)	0.00218	0.00218	0.00208
	(A2 * !B1 * Y)	-0.00329	-0.00331	-0.00329
	(A2 * !B1 * Y)	0.00459	0.00463	0.00461
	(A1 * !A2 * B1 * !Y)	-0.00334	-0.00335	-0.00371
	(A1 * !A2 * B1 * !Y)	0.00236	0.00236	0.00211
	(A1 * !A2 * !B1 * Y)	-0.00329	-0.00330	-0.00329
	(A1 * !A2 * !B1 * Y)	0.00442	0.00444	0.00443
	(!A1 * !A2 * !B1 * Y)	-0.00285	-0.00315	-0.00314
	(!A1 * !A2 * !B1 * Y)	0.00485	0.00470	0.00467
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00722	-0.00724	-0.00752
	(A2 * B1 * !Y)	0.00423	0.00422	0.00401
	(A2 * !B1 * Y)	-0.00646	-0.00651	-0.00647
	(A2 * !B1 * Y)	0.00911	0.00921	0.00914
	(A1 * !A2 * B1 * !Y)	-0.00668	-0.00671	-0.00739
	(A1 * !A2 * B1 * !Y)	0.00458	0.00457	0.00408
	(A1 * !A2 * !B1 * Y)	-0.00648	-0.00650	-0.00647
	(A1 * !A2 * !B1 * Y)	0.00872	0.00875	0.00870
	(!A1 * !A2 * !B1 * Y)	-0.00561	-0.00624	-0.00620
	(!A1 * !A2 * !B1 * Y)	0.00955	0.00932	0.00927

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)	0.00063	0.00063	0.00059
	(!A1 * !A2 * !A3 * Y)	-0.00248	-0.00249	-0.00258
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00126	0.00126	0.00114
	(!A1 * !A2 * !A3 * Y)	-0.00494	-0.00495	-0.00516
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00224	0.00224	0.00203
	(!A1 * !A2 * !A3 * Y)	-0.00561	-0.00564	-0.00604

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)	-0.00057	-0.00056	-0.00056
	(!A1 * !A2 * !A3 * Y)	0.00260	0.00259	0.00260
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * !A3 * Y)	0.00518	0.00521	0.00520
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00194	-0.00194	-0.00194
	(!A1 * !A2 * !A3 * Y)	0.00607	0.00611	0.00610

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00269	0.00264	0.00263	0.00242	1.23909
sky130_fd_sc_hs__o31a_2	0.00285	0.00277	0.00279	0.00290	2.15251
sky130_fd_sc_hs__o31a_4	0.00491	0.00522	0.00516	0.00512	4.64850

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31a_1	0.00000	13.66630	29.38250
sky130_fd_sc_hs__o31a_2	0.00000	14.55970	22.59440
sky130_fd_sc_hs__o31a_4	0.00000	29.22430	45.18440

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)	0.08840	0.56441	6.11207
	A2->X (RR)	0.08549	0.55291	5.98460
	A3->X (RR)	0.07358	0.52864	5.90948
	B1->X (RR)	0.07984	0.58419	6.58309
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.09201	0.49024	5.81995
	A2->X (RR)	0.08948	0.48121	5.71935
	A3->X (RR)	0.07754	0.46018	5.64573
	B1->X (RR)	0.08424	0.51833	6.43805
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.09801	0.42666	6.11347
	A2->X (RR)	0.09379	0.41216	5.97091
	A3->X (RR)	0.08021	0.39166	5.92625
	B1->X (RR)	0.08917	0.45911	6.65480

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.19437	0.59293	5.00940
	A2->X (FF)	0.18036	0.61627	5.26484
	A3->X (FF)	0.15174	0.61388	5.32162
	B1->X (FF)	0.07110	0.48118	4.77466
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.24494	0.62060	4.85018
	A2->X (FF)	0.23041	0.64753	5.10187
	A3->X (FF)	0.20127	0.64933	5.15925
	B1->X (FF)	0.07375	0.44277	4.36133
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.24894	0.59562	5.29278
	A2->X (FF)	0.23443	0.61847	5.47192
	A3->X (FF)	0.19497	0.61304	5.51355
	B1->X (FF)	0.06901	0.40960	4.73094

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01499	0.01618	0.05744
	A1	0.00672	0.00792	0.04967
	A2	0.01287	0.01441	0.05273
	A2	0.00580	0.00736	0.04619
	A3	0.01070	0.01268	0.05690
	A3	0.00470	0.00669	0.05091
	B1	0.00875	0.01337	0.09602
	B1	0.00450	0.00913	0.09215
sky130_fd_sc_hs__o31a_2	A1	0.01870	0.01985	0.05509
	A1	0.00993	0.01112	0.04649
	A2	0.01646	0.01801	0.05074
	A2	0.00896	0.01054	0.04355
	A3	0.01425	0.01616	0.05393
	A3	0.00776	0.00967	0.04790
	B1	0.01213	0.01672	0.10258
	B1	0.00712	0.01173	0.09826
sky130_fd_sc_hs__o31a_4	A1	0.03650	0.03952	0.13892
	A1	0.02031	0.02347	0.12475
	A2	0.03226	0.03573	0.12646
	A2	0.01778	0.02128	0.11408
	A3	0.02637	0.03085	0.13278
	A3	0.01459	0.01910	0.12102
	B1	0.02219	0.03099	0.18448
	B1	0.01371	0.02259	0.17759

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00540	0.00605	0.05219
	A1	0.01362	0.01426	0.06026
	A2	0.00540	0.00664	0.05307
	A2	0.01241	0.01364	0.05867
	A3	0.00538	0.00795	0.06123
	A3	0.01132	0.01388	0.06603
	B1	0.00364	0.00904	0.08852
	B1	0.00907	0.01414	0.09077
sky130_fd_sc_hs__o31a_2	A1	0.01082	0.00920	0.05475
	A1	0.01950	0.01789	0.06271
	A2	0.01087	0.00986	0.05323
	A2	0.01829	0.01727	0.06024
	A3	0.01081	0.01115	0.06259
	A3	0.01724	0.01759	0.06769
	B1	0.00673	0.01188	0.09249
	B1	0.01284	0.01787	0.09726
sky130_fd_sc_hs__o31a_4	A1	0.02265	0.01958	0.12039
	A1	0.03873	0.03562	0.13342
	A2	0.02223	0.02013	0.11380
	A2	0.03657	0.03447	0.12323
	A3	0.02263	0.02313	0.12859
	A3	0.03426	0.03476	0.13634
	B1	0.01350	0.02322	0.18076
	B1	0.02465	0.03430	0.19021

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)**	0.00191	0.00183	0.00182
	(A2 * A3 * B1 * X)	-0.00164	-0.00176	-0.00175
	(A2 * !B1 * !X)	0.00149	0.00150	0.00149
	(A2 * !B1 * !X)	-0.00205	-0.00209	-0.00209
	(A2 * !A3 * B1 * X)	0.00222	0.00192	0.00188
	(A2 * !A3 * B1 * X)	-0.00136	-0.00169	-0.00170
	(!A2 * A3 * B1 * X)	0.00230	0.00197	0.00192
	(!A2 * A3 * B1 * X)	-0.00123	-0.00163	-0.00165
	(!A2 * A3 * !B1 * !X)	0.00148	0.00150	0.00149
	(!A2 * A3 * !B1 * !X)	-0.00193	-0.00205	-0.00207
	(!A2 * !A3 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A2 * !A3 * !B1 * !X)	-0.00210	-0.00211	-0.00209
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00202	0.00195	0.00193
	(A2 * A3 * B1 * X)	-0.00177	-0.00189	-0.00189
	(A2 * !B1 * !X)	0.00183	0.00184	0.00183
	(A2 * !B1 * !X)	-0.00197	-0.00200	-0.00200
	(A2 * !A3 * B1 * X)	0.00235	0.00203	0.00199
	(A2 * !A3 * B1 * X)	-0.00148	-0.00182	-0.00184
	(!A2 * A3 * B1 * X)	0.00243	0.00209	0.00203
	(!A2 * A3 * B1 * X)	-0.00135	-0.00176	-0.00179
	(!A2 * A3 * !B1 * !X)	0.00182	0.00184	0.00183
	(!A2 * A3 * !B1 * !X)	-0.00184	-0.00197	-0.00198
	(!A2 * !A3 * !B1 * !X)	0.00176	0.00177	0.00176
	(!A2 * !A3 * !B1 * !X)	-0.00201	-0.00201	-0.00200

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00325	0.00306	0.00302
	(A2 * A3 * B1 * X)	-0.00348	-0.00378	-0.00378
	(A2 * !B1 * !X)	0.00305	0.00307	0.00305
	(A2 * !B1 * !X)	-0.00367	-0.00376	-0.00375
	(A2 * !A3 * B1 * X)	0.00403	0.00331	0.00318
	(A2 * !A3 * B1 * X)	-0.00280	-0.00357	-0.00363
	(!A2 * A3 * B1 * X)	0.00419	0.00336	0.00321
	(!A2 * A3 * B1 * X)	-0.00256	-0.00350	-0.00358
	(!A2 * A3 * !B1 * !X)	0.00306	0.00308	0.00305
	(!A2 * A3 * !B1 * !X)	-0.00342	-0.00369	-0.00373
	(!A2 * !A3 * !B1 * !X)	0.00292	0.00294	0.00292
	(!A2 * !A3 * !B1 * !X)	-0.00381	-0.00382	-0.00380

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)**	-0.00149	-0.00149	-0.00149
	(A2 * A3 * B1 * X)	0.00208	0.00209	0.00208
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * !B1 * !X)	0.00220	0.00223	0.00221
	(A2 * !A3 * B1 * X)	-0.00142	-0.00144	-0.00143
	(A2 * !A3 * B1 * X)	0.00215	0.00217	0.00215
	(!A2 * A3 * B1 * X)	-0.00139	-0.00139	-0.00139
	(!A2 * A3 * B1 * X)	0.00215	0.00215	0.00216
	(!A2 * A3 * !B1 * !X)	-0.00136	-0.00136	-0.00136
	(!A2 * A3 * !B1 * !X)	0.00215	0.00215	0.00215
	(!A2 * !A3 * !B1 * !X)	-0.00118	-0.00130	-0.00132
	(!A2 * !A3 * !B1 * !X)	0.00231	0.00226	0.00223

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00172	-0.00173	-0.00172
	(A2 * A3 * B1 * X)	0.00210	0.00211	0.00210
	(A2 * !B1 * !X)	-0.00157	-0.00158	-0.00158
	(A2 * !B1 * !X)	0.00223	0.00226	0.00224
	(A2 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00166
	(A2 * !A3 * B1 * X)	0.00217	0.00219	0.00217
	(!A2 * A3 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * A3 * B1 * X)	0.00217	0.00218	0.00218
	(!A2 * A3 * !B1 * !X)	-0.00158	-0.00157	-0.00158
	(!A2 * A3 * !B1 * !X)	0.00218	0.00218	0.00218
	(!A2 * !A3 * !B1 * !X)	-0.00139	-0.00151	-0.00153
	(!A2 * !A3 * !B1 * !X)	0.00233	0.00229	0.00226
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00258	-0.00260	-0.00259
	(A2 * A3 * B1 * X)	0.00417	0.00421	0.00419
	(A2 * !B1 * !X)	-0.00253	-0.00255	-0.00254
	(A2 * !B1 * !X)	0.00421	0.00425	0.00423
	(A2 * !A3 * B1 * X)	-0.00252	-0.00255	-0.00251
	(A2 * !A3 * B1 * X)	0.00426	0.00432	0.00429
	(!A2 * A3 * B1 * X)	-0.00239	-0.00241	-0.00238
	(!A2 * A3 * B1 * X)	0.00434	0.00438	0.00437
	(!A2 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00254
	(!A2 * A3 * !B1 * !X)	0.00410	0.00412	0.00411
	(!A2 * !A3 * !B1 * !X)	-0.00217	-0.00242	-0.00245
	(!A2 * !A3 * !B1 * !X)	0.00448	0.00436	0.00431

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)**	0.00187	0.00189	0.00180
	(A1 * A3 * B1 * X)	-0.00103	-0.00104	-0.00108
	(A1 * A3 * !B1 * !X)	0.00153	0.00155	0.00153
	(A1 * A3 * !B1 * !X)	-0.00142	-0.00143	-0.00138
	(A1 * !A3 * B1 * X)	0.00178	0.00181	0.00175
	(A1 * !A3 * B1 * X)	-0.00072	-0.00074	-0.00074
	(A1 * !A3 * !B1 * !X)	0.00154	0.00154	0.00153
	(A1 * !A3 * !B1 * !X)	-0.00190	-0.00190	-0.00190
	(!A1 * A3 * B1 * X)	0.00232	0.00187	0.00180
	(!A1 * A3 * B1 * X)	-0.00115	-0.00161	-0.00163
	(!A1 * A3 * !B1 * !X)	0.00154	0.00155	0.00153
	(!A1 * A3 * !B1 * !X)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * !X)	0.00146	0.00148	0.00146
	(!A1 * !A3 * !B1 * !X)	-0.00191	-0.00192	-0.00191
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00198	0.00200	0.00191
	(A1 * A3 * B1 * X)	-0.00114	-0.00113	-0.00118
	(A1 * A3 * !B1 * !X)	0.00177	0.00178	0.00177
	(A1 * A3 * !B1 * !X)	-0.00139	-0.00140	-0.00135
	(A1 * !A3 * B1 * X)	0.00189	0.00192	0.00186
	(A1 * !A3 * B1 * X)	-0.00081	-0.00083	-0.00083
	(A1 * !A3 * !B1 * !X)	0.00178	0.00177	0.00177
	(A1 * !A3 * !B1 * !X)	-0.00187	-0.00187	-0.00186
	(!A1 * A3 * B1 * X)	0.00244	0.00198	0.00191
	(!A1 * A3 * B1 * X)	-0.00122	-0.00169	-0.00172
	(!A1 * A3 * !B1 * !X)	0.00178	0.00176	0.00177
	(!A1 * A3 * !B1 * !X)	-0.00187	-0.00186	-0.00186
	(!A1 * !A3 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00391	0.00398	0.00375
	(A1 * A3 * B1 * X)	-0.00233	-0.00231	-0.00243
	(A1 * A3 * !B1 * !X)	0.00354	0.00359	0.00356
	(A1 * A3 * !B1 * !X)	-0.00278	-0.00281	-0.00269
	(A1 * !A3 * B1 * X)	0.00372	0.00375	0.00364
	(A1 * !A3 * B1 * X)	-0.00167	-0.00170	-0.00174
	(A1 * !A3 * !B1 * !X)	0.00354	0.00358	0.00355
	(A1 * !A3 * !B1 * !X)	-0.00372	-0.00375	-0.00375
	(!A1 * A3 * B1 * X)	0.00486	0.00387	0.00372
	(!A1 * A3 * B1 * X)	-0.00244	-0.00350	-0.00357
	(!A1 * A3 * !B1 * !X)	0.00354	0.00358	0.00355
	(!A1 * A3 * !B1 * !X)	-0.00367	-0.00373	-0.00373
	(!A1 * !A3 * !B1 * !X)	0.00342	0.00345	0.00343
	(!A1 * !A3 * !B1 * !X)	-0.00376	-0.00378	-0.00376

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)**	-0.00138	-0.00139	-0.00138
	(A1 * A3 * B1 * X)	0.00139	0.00140	0.00139
	(A1 * A3 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * !B1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A3 * B1 * X)	-0.00135	-0.00136	-0.00136
	(A1 * !A3 * B1 * X)	0.00115	0.00115	0.00114
	(A1 * !A3 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * !A3 * !B1 * !X)	0.00202	0.00202	0.00202
	(!A1 * A3 * B1 * X)	-0.00127	-0.00128	-0.00129
	(!A1 * A3 * B1 * X)	0.00216	0.00217	0.00215
	(!A1 * A3 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * A3 * !B1 * !X)	0.00202	0.00203	0.00202
	(!A1 * !A3 * !B1 * !X)	-0.00120	-0.00133	-0.00135
	(!A1 * !A3 * !B1 * !X)	0.00214	0.00207	0.00204
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00160	-0.00162	-0.00161
	(A1 * A3 * B1 * X)	0.00137	0.00138	0.00137
	(A1 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00151
	(A1 * !A3 * B1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A3 * B1 * X)	0.00112	0.00113	0.00111
	(A1 * !A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A1 * !A3 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A1 * A3 * B1 * X)	-0.00150	-0.00151	-0.00151
	(!A1 * A3 * B1 * X)	0.00213	0.00214	0.00213
	(!A1 * A3 * !B1 * !X)	-0.00152	-0.00151	-0.00152
	(!A1 * A3 * !B1 * !X)	0.00210	0.00210	0.00210
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00145	-0.00147
	(!A1 * !A3 * !B1 * !X)	0.00220	0.00215	0.00212

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00312	-0.00314	-0.00312
	(A1 * A3 * B1 * X)	0.00282	0.00284	0.00282
	(A1 * A3 * !B1 * !X)	-0.00305	-0.00306	-0.00305
	(A1 * A3 * !B1 * !X)	0.00299	0.00301	0.00299
	(A1 * !A3 * B1 * X)	-0.00306	-0.00307	-0.00304
	(A1 * !A3 * B1 * X)	0.00233	0.00234	0.00232
	(A1 * !A3 * !B1 * !X)	-0.00304	-0.00305	-0.00305
	(A1 * !A3 * !B1 * !X)	0.00422	0.00423	0.00422
	(!A1 * A3 * B1 * X)	-0.00290	-0.00290	-0.00291
	(!A1 * A3 * B1 * X)	0.00440	0.00439	0.00439
	(!A1 * A3 * !B1 * !X)	-0.00304	-0.00306	-0.00305
	(!A1 * A3 * !B1 * !X)	0.00418	0.00420	0.00419
	(!A1 * !A3 * !B1 * !X)	-0.00267	-0.00294	-0.00296
	(!A1 * !A3 * !B1 * !X)	0.00442	0.00432	0.00428

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00182	0.00183	0.00181
	(A2 * B1 * X)	-0.00072	-0.00073	-0.00072
	(A2 * !B1 * !X)	0.00151	0.00152	0.00152
	(A2 * !B1 * !X)	-0.00189	-0.00193	-0.00193
	(A1 * !A2 * B1 * X)	0.00182	0.00182	0.00182
	(A1 * !A2 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !B1 * !X)	0.00151	0.00153	0.00152
	(A1 * !A2 * !B1 * !X)	-0.00177	-0.00189	-0.00191
	(!A1 * !A2 * !B1 * !X)	0.00145	0.00145	0.00145
	(!A1 * !A2 * !B1 * !X)	-0.00195	-0.00195	-0.00194

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00203	0.00204	0.00202
	(A2 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * !X)	0.00181	0.00183	0.00181
	(A2 * !B1 * !X)	-0.00186	-0.00190	-0.00190
	(A1 * !A2 * B1 * X)	0.00203	0.00206	0.00203
	(A1 * !A2 * B1 * X)	-0.00076	-0.00078	-0.00076
	(A1 * !A2 * !B1 * !X)	0.00181	0.00183	0.00181
	(A1 * !A2 * !B1 * !X)	-0.00174	-0.00186	-0.00188
	(!A1 * !A2 * !B1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !A2 * !B1 * !X)	-0.00191	-0.00192	-0.00190
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00348	0.00352	0.00350
	(A2 * B1 * X)	-0.00173	-0.00176	-0.00175
	(A2 * !B1 * !X)	0.00323	0.00326	0.00324
	(A2 * !B1 * !X)	-0.00379	-0.00390	-0.00392
	(A1 * !A2 * B1 * X)	0.00349	0.00355	0.00350
	(A1 * !A2 * B1 * X)	-0.00172	-0.00175	-0.00171
	(A1 * !A2 * !B1 * !X)	0.00323	0.00327	0.00324
	(A1 * !A2 * !B1 * !X)	-0.00355	-0.00381	-0.00387
	(!A1 * !A2 * !B1 * !X)	0.00308	0.00309	0.00308
	(!A1 * !A2 * !B1 * !X)	-0.00396	-0.00396	-0.00395

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00142	-0.00143	-0.00148
	(A2 * B1 * X)	0.00111	0.00111	0.00106
	(A2 * !B1 * !X)	-0.00138	-0.00139	-0.00139
	(A2 * !B1 * !X)	0.00204	0.00205	0.00205
	(A1 * !A2 * B1 * X)	-0.00132	-0.00133	-0.00145
	(A1 * !A2 * B1 * X)	0.00117	0.00117	0.00108
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00139	-0.00139
	(A1 * !A2 * !B1 * !X)	0.00197	0.00197	0.00198
	(!A1 * !A2 * !B1 * !X)	-0.00119	-0.00132	-0.00134
	(!A1 * !A2 * !B1 * !X)	0.00217	0.00210	0.00207
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00174	-0.00175	-0.00180
	(A2 * B1 * X)	0.00105	0.00105	0.00100
	(A2 * !B1 * !X)	-0.00155	-0.00157	-0.00156
	(A2 * !B1 * !X)	0.00213	0.00214	0.00214
	(A1 * !A2 * B1 * X)	-0.00164	-0.00165	-0.00178
	(A1 * !A2 * B1 * X)	0.00111	0.00112	0.00102
	(A1 * !A2 * !B1 * !X)	-0.00156	-0.00156	-0.00156
	(A1 * !A2 * !B1 * !X)	0.00206	0.00206	0.00207
	(!A1 * !A2 * !B1 * !X)	-0.00136	-0.00150	-0.00151
	(!A1 * !A2 * !B1 * !X)	0.00224	0.00218	0.00216
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00289	-0.00291	-0.00306
	(A2 * B1 * X)	0.00232	0.00232	0.00220
	(A2 * !B1 * !X)	-0.00273	-0.00275	-0.00273
	(A2 * !B1 * !X)	0.00437	0.00438	0.00437
	(A1 * !A2 * B1 * X)	-0.00265	-0.00268	-0.00299
	(A1 * !A2 * B1 * X)	0.00247	0.00248	0.00224
	(A1 * !A2 * !B1 * !X)	-0.00273	-0.00276	-0.00273
	(A1 * !A2 * !B1 * !X)	0.00420	0.00423	0.00421
	(!A1 * !A2 * !B1 * !X)	-0.00227	-0.00258	-0.00263
	(!A1 * !A2 * !B1 * !X)	0.00470	0.00451	0.00447

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)	0.00060	0.00060	0.00055
	(!A1 * !A2 * !A3 * !X)	-0.00191	-0.00191	-0.00200
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00081	0.00081	0.00075
	(!A1 * !A2 * !A3 * !X)	-0.00232	-0.00232	-0.00242
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00127	0.00128	0.00116
	(!A1 * !A2 * !A3 * !X)	-0.00435	-0.00438	-0.00457

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)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * !X)	0.00213	0.00217	0.00213
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !A3 * !X)	0.00268	0.00272	0.00268
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00062	-0.00065	-0.00063
	(!A1 * !A2 * !A3 * !X)	0.00507	0.00517	0.00510

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00275	0.00302	0.00294	0.00290	0.00300	0.43333
sky130_fd_sc_hs__o32ai_2	0.00583	0.00546	0.00588	0.00557	0.00565	0.75756
sky130_fd_sc_hs__o32ai_4	0.01102	0.01105	0.01114	0.01137	0.01104	1.38122

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	4.10566	13.92510
sky130_fd_sc_hs__o32ai_2	0.00000	8.21262	27.84500
sky130_fd_sc_hs__o32ai_4	0.00000	16.42010	55.68430

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)	0.16877	0.95569	8.97385
	A2->Y (FR)	0.15747	0.98801	9.58540
	A3->Y (FR)	0.12721	0.98001	9.86096
	B1->Y (FR)	0.06467	0.69181	7.30027
	B2->Y (FR)	0.05175	0.71664	7.83613
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.17839	0.82114	8.68147
	A2->Y (FR)	0.16549	0.86256	9.46815
	A3->Y (FR)	0.12795	0.85326	9.74786
	B1->Y (FR)	0.06776	0.62438	7.43608
	B2->Y (FR)	0.04956	0.64806	7.93936
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.17895	0.71362	8.53074
	A2->Y (FR)	0.16578	0.75466	9.33712
	A3->Y (FR)	0.12719	0.75424	9.72371
	B1->Y (FR)	0.06459	0.52545	7.13219
	B2->Y (FR)	0.04495	0.55603	7.75296

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.05498	0.37236	3.39362
	A2->Y (RF)	0.05469	0.37398	3.46892
	A3->Y (RF)	0.04528	0.36096	3.43434
	B1->Y (RF)	0.04299	0.42086	4.16949
	B2->Y (RF)	0.03534	0.40552	4.10516
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.05675	0.31599	3.15166
	A2->Y (RF)	0.05692	0.32273	3.30060
	A3->Y (RF)	0.03782	0.29254	3.25714
	B1->Y (RF)	0.04416	0.36546	4.03226
	B2->Y (RF)	0.03439	0.35473	4.05717
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.05902	0.28858	3.35827
	A2->Y (RF)	0.05290	0.26998	3.26053
	A3->Y (RF)	0.03891	0.24700	3.15293
	B1->Y (RF)	0.06052	0.37977	4.51000
	B2->Y (RF)	0.04845	0.38131	4.72770

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00207	0.00234	0.02423
	A1	0.01271	0.01297	0.03381
	A2	0.00220	0.00269	0.02212
	A2	0.01164	0.01211	0.03084
	A3	0.00217	0.00359	0.02878
	A3	0.01022	0.01156	0.03543
	B1	-0.00020	0.00071	0.02489
	B1	0.00621	0.00715	0.03137
	B2	-0.00021	0.00191	0.03181
	B2	0.00488	0.00701	0.03711
sky130_fd_sc_hs__o32ai_2	A1	0.00373	0.00419	0.04737
	A1	0.02601	0.02649	0.06821
	A2	0.00400	0.00484	0.04211
	A2	0.02312	0.02394	0.05955
	A3	0.00384	0.00665	0.05415
	A3	0.02070	0.02342	0.06898
	B1	-0.00074	0.00114	0.04719
	B1	0.01214	0.01401	0.06004
	B2	-0.00099	0.00327	0.05789
	B2	0.00949	0.01373	0.06870

sky130_fd_sc_hs__o32ai_4	**A1**	0.00742	0.00880	0.09569
	A1	0.05125	0.05259	0.13791
	A2	0.00756	0.00982	0.08655
	A2	0.04603	0.04795	0.12259
	A3	0.00752	0.01370	0.10886
	A3	0.04071	0.04603	0.13917
	B1	-0.00160	0.00224	0.08520
	B1	0.02450	0.02838	0.11160
	B2	-0.00173	0.00606	0.09716
	B2	0.01896	0.02677	0.11839

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01514	0.01560	0.03326
	A1	0.00290	0.00334	0.02144
	A2	0.01267	0.01317	0.02968
	A2	0.00291	0.00340	0.01975
	A3	0.01005	0.01071	0.02633
	A3	0.00032	0.00107	0.01702
	B1	0.01047	0.01146	0.03245
	B1	0.00135	0.00245	0.02421
	B2	0.00816	0.00931	0.02907
	B2	0.00031	0.00150	0.02225

sky130_fd_sc_hs__o32ai_2	**A1**	0.03180	0.03269	0.06863
	A1	0.00896	0.00984	0.04589
	A2	0.02672	0.02770	0.06003
	A2	0.00698	0.00795	0.03983
	A3	0.02100	0.02248	0.05294
	A3	0.00352	0.00500	0.03547
	B1	0.02207	0.02425	0.06415
	B1	0.00316	0.00562	0.04777
	B2	0.01664	0.01910	0.05607
	B2	-0.00007	0.00256	0.04135
sky130_fd_sc_hs__o32ai_4	**A1**	0.06201	0.06439	0.14639
	A1	0.01093	0.01336	0.09669
	A2	0.05212	0.05488	0.12927
	A2	0.01247	0.01516	0.08957
	A3	0.04067	0.04449	0.11519
	A3	0.00629	0.01011	0.08056
	B1	0.03145	0.03619	0.11816
	B1	0.00539	0.01008	0.09172
	B2	0.02045	0.02574	0.09717
	B2	-0.00027	0.00498	0.07594

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)**	0.00184	0.00178	0.00177
	(A2 * A3 * B2 * !Y)	-0.00207	-0.00218	-0.00218
	(A2 * A3 * B1 * !B2 * !Y)	0.00187	0.00181	0.00180
	(A2 * A3 * B1 * !B2 * !Y)	-0.00204	-0.00215	-0.00215
	(A2 * !B1 * !B2 * Y)	0.00177	0.00178	0.00177
	(A2 * !B1 * !B2 * Y)	-0.00214	-0.00219	-0.00218
	(A2 * !A3 * B2 * !Y)	0.00217	0.00185	0.00181
	(A2 * !A3 * B2 * !Y)	-0.00178	-0.00213	-0.00214
	(A2 * !A3 * B1 * !B2 * !Y)	0.00220	0.00188	0.00184
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00175	-0.00209	-0.00211
	(!A2 * A3 * B2 * !Y)	0.00220	0.00188	0.00183
	(!A2 * A3 * B2 * !Y)	-0.00167	-0.00207	-0.00211
	(!A2 * A3 * B1 * !B2 * !Y)	0.00223	0.00191	0.00186
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00164	-0.00204	-0.00207
	(!A2 * A3 * !B1 * !B2 * Y)	0.00177	0.00177	0.00176
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00200	-0.00214	-0.00213
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00169	0.00169	0.00169
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00219	-0.00219	-0.00219

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00378	0.00368	0.00365
	(A2 * A3 * B2 * !Y)	-0.00433	-0.00456	-0.00456
	(A2 * A3 * B1 * !B2 * !Y)	0.00385	0.00374	0.00371
	(A2 * A3 * B1 * !B2 * !Y)	-0.00427	-0.00450	-0.00450
	(A2 * !B1 * !B2 * Y)	0.00366	0.00367	0.00364
	(A2 * !B1 * !B2 * Y)	-0.00449	-0.00457	-0.00456
	(A2 * !A3 * B2 * !Y)	0.00453	0.00384	0.00375
	(A2 * !A3 * B2 * !Y)	-0.00367	-0.00443	-0.00446
	(A2 * !A3 * B1 * !B2 * !Y)	0.00460	0.00391	0.00381
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00361	-0.00436	-0.00440
	(!A2 * A3 * B2 * !Y)	0.00455	0.00391	0.00377
	(!A2 * A3 * B2 * !Y)	-0.00350	-0.00431	-0.00440
	(!A2 * A3 * B1 * !B2 * !Y)	0.00462	0.00397	0.00384
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00344	-0.00425	-0.00434
	(!A2 * A3 * !B1 * !B2 * Y)	0.00364	0.00367	0.00364
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00420	-0.00447	-0.00443
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00345	0.00347	0.00345
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00461	-0.00462	-0.00459

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00720	0.00694	0.00688
	(A2 * A3 * B2 * !Y)	-0.00843	-0.00890	-0.00889
	(A2 * A3 * B1 * !B2 * !Y)	0.00733	0.00707	0.00700
	(A2 * A3 * B1 * !B2 * !Y)	-0.00830	-0.00877	-0.00876
	(A2 * !B1 * !B2 * Y)	0.00690	0.00693	0.00687
	(A2 * !B1 * !B2 * Y)	-0.00873	-0.00891	-0.00888
	(A2 * !A3 * B2 * !Y)	0.00868	0.00728	0.00709
	(A2 * !A3 * B2 * !Y)	-0.00713	-0.00863	-0.00870
	(A2 * !A3 * B1 * !B2 * !Y)	0.00880	0.00740	0.00721
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00700	-0.00850	-0.00858
	(!A2 * A3 * B2 * !Y)	0.00872	0.00740	0.00713
	(!A2 * A3 * B2 * !Y)	-0.00680	-0.00841	-0.00858
	(!A2 * A3 * B1 * !B2 * !Y)	0.00885	0.00753	0.00726
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00667	-0.00829	-0.00845
	(!A2 * A3 * !B1 * !B2 * Y)	0.00690	0.00693	0.00687
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00818	-0.00870	-0.00861
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00657	0.00659	0.00655
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00900	-0.00900	-0.00896

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)**	-0.00174	-0.00176	-0.00175
	(A2 * A3 * B2 * !Y)	0.00217	0.00220	0.00219
	(A2 * A3 * B1 * !B2 * !Y)	-0.00171	-0.00173	-0.00172
	(A2 * A3 * B1 * !B2 * !Y)	0.00220	0.00223	0.00222
	(A2 * !B1 * !B2 * Y)	-0.00174	-0.00176	-0.00175
	(A2 * !B1 * !B2 * Y)	0.00217	0.00221	0.00219
	(A2 * !A3 * B2 * !Y)	-0.00171	-0.00172	-0.00171
	(A2 * !A3 * B2 * !Y)	0.00223	0.00226	0.00224
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00168	-0.00169	-0.00168
	(A2 * !A3 * B1 * !B2 * !Y)	0.00226	0.00229	0.00227
	(!A2 * A3 * B2 * !Y)	-0.00168	-0.00170	-0.00168
	(!A2 * A3 * B2 * !Y)	0.00220	0.00223	0.00222
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00165	-0.00167	-0.00165
	(!A2 * A3 * B1 * !B2 * !Y)	0.00224	0.00226	0.00225
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00175	-0.00176	-0.00175
	(!A2 * A3 * !B1 * !B2 * Y)	0.00212	0.00215	0.00213
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00152	-0.00168	-0.00169
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00229	0.00225	0.00221

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00360	-0.00363	-0.00361
	(A2 * A3 * B2 * !Y)	0.00454	0.00459	0.00456
	(A2 * A3 * B1 * !B2 * !Y)	-0.00354	-0.00356	-0.00355
	(A2 * A3 * B1 * !B2 * !Y)	0.00461	0.00465	0.00462
	(A2 * !B1 * !B2 * Y)	-0.00361	-0.00364	-0.00362
	(A2 * !B1 * !B2 * Y)	0.00455	0.00460	0.00456
	(A2 * !A3 * B2 * !Y)	-0.00353	-0.00355	-0.00353
	(A2 * !A3 * B2 * !Y)	0.00465	0.00470	0.00468
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00346	-0.00348	-0.00347
	(A2 * !A3 * B1 * !B2 * !Y)	0.00472	0.00476	0.00474
	(!A2 * A3 * B2 * !Y)	-0.00348	-0.00351	-0.00347
	(!A2 * A3 * B2 * !Y)	0.00459	0.00464	0.00463
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00342	-0.00345	-0.00341
	(!A2 * A3 * B1 * !B2 * !Y)	0.00466	0.00471	0.00469
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00361	-0.00364	-0.00361
	(!A2 * A3 * !B1 * !B2 * Y)	0.00442	0.00447	0.00443
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00305	-0.00342	-0.00345
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00489	0.00473	0.00464

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00679	-0.00685	-0.00681
	(A2 * A3 * B2 * !Y)	0.00885	0.00898	0.00889
	(A2 * A3 * B1 * !B2 * !Y)	-0.00667	-0.00673	-0.00669
	(A2 * A3 * B1 * !B2 * !Y)	0.00898	0.00911	0.00902
	(A2 * !B1 * !B2 * Y)	-0.00681	-0.00686	-0.00682
	(A2 * !B1 * !B2 * Y)	0.00886	0.00898	0.00888
	(A2 * !A3 * B2 * !Y)	-0.00662	-0.00664	-0.00663
	(A2 * !A3 * B2 * !Y)	0.00909	0.00913	0.00913
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00650	-0.00651	-0.00650
	(A2 * !A3 * B1 * !B2 * !Y)	0.00922	0.00926	0.00926
	(!A2 * A3 * B2 * !Y)	-0.00657	-0.00661	-0.00653
	(!A2 * A3 * B2 * !Y)	0.00898	0.00907	0.00903
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00645	-0.00648	-0.00640
	(!A2 * A3 * B1 * !B2 * !Y)	0.00910	0.00919	0.00916
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00681	-0.00686	-0.00682
	(!A2 * A3 * !B1 * !B2 * Y)	0.00861	0.00870	0.00861
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00578	-0.00644	-0.00655
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00952	0.00909	0.00904

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)**	0.00192	0.00193	0.00182
	(A1 * A3 * B2 * !Y)	-0.00149	-0.00150	-0.00154
	(A1 * A3 * B1 * !B2 * !Y)	0.00195	0.00197	0.00185
	(A1 * A3 * B1 * !B2 * !Y)	-0.00146	-0.00147	-0.00153
	(A1 * A3 * !B1 * !B2 * Y)	0.00170	0.00172	0.00171
	(A1 * A3 * !B1 * !B2 * Y)	-0.00160	-0.00162	-0.00161
	(A1 * !A3 * B2 * !Y)	0.00180	0.00183	0.00176
	(A1 * !A3 * B2 * !Y)	-0.00112	-0.00114	-0.00115
	(A1 * !A3 * B1 * !B2 * !Y)	0.00183	0.00186	0.00180
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00109	-0.00111	-0.00112
	(A1 * !A3 * !B1 * !B2 * Y)	0.00172	0.00172	0.00171
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00227	-0.00228	-0.00227
	(!A1 * A3 * B2 * !Y)	0.00238	0.00189	0.00179
	(!A1 * A3 * B2 * !Y)	-0.00164	-0.00214	-0.00219
	(!A1 * A3 * B1 * !B2 * !Y)	0.00241	0.00192	0.00182
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00161	-0.00211	-0.00216
	(!A1 * A3 * !B1 * !B2 * Y)	0.00172	0.00173	0.00170
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00227	-0.00229	-0.00228
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00162	0.00164	0.00163
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00228	-0.00230	-0.00228

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00383	0.00390	0.00364
	(A1 * A3 * B2 * !Y)	-0.00283	-0.00280	-0.00290
	(A1 * A3 * B1 * !B2 * !Y)	0.00390	0.00397	0.00370
	(A1 * A3 * B1 * !B2 * !Y)	-0.00277	-0.00274	-0.00287
	(A1 * A3 * !B1 * !B2 * Y)	0.00335	0.00338	0.00334
	(A1 * A3 * !B1 * !B2 * Y)	-0.00310	-0.00313	-0.00309
	(A1 * !A3 * B2 * !Y)	0.00356	0.00362	0.00348
	(A1 * !A3 * B2 * !Y)	-0.00203	-0.00207	-0.00209
	(A1 * !A3 * B1 * !B2 * !Y)	0.00363	0.00368	0.00354
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00197	-0.00200	-0.00202
	(A1 * !A3 * !B1 * !B2 * Y)	0.00336	0.00336	0.00334
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00435	-0.00439	-0.00437
	(!A1 * A3 * B2 * !Y)	0.00484	0.00366	0.00351
	(!A1 * A3 * B2 * !Y)	-0.00295	-0.00412	-0.00424
	(!A1 * A3 * B1 * !B2 * !Y)	0.00490	0.00373	0.00357
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00289	-0.00406	-0.00417
	(!A1 * A3 * !B1 * !B2 * Y)	0.00335	0.00335	0.00334
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00439	-0.00440	-0.00440
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00317	0.00318	0.00318
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00443	-0.00443	-0.00442

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00777	0.00788	0.00739
	(A1 * A3 * B2 * !Y)	-0.00575	-0.00569	-0.00585
	(A1 * A3 * B1 * !B2 * !Y)	0.00790	0.00801	0.00752
	(A1 * A3 * B1 * !B2 * !Y)	-0.00562	-0.00556	-0.00580
	(A1 * A3 * !B1 * !B2 * Y)	0.00691	0.00694	0.00687
	(A1 * A3 * !B1 * !B2 * Y)	-0.00617	-0.00622	-0.00617
	(A1 * !A3 * B2 * !Y)	0.00727	0.00738	0.00711
	(A1 * !A3 * B2 * !Y)	-0.00418	-0.00426	-0.00429
	(A1 * !A3 * B1 * !B2 * !Y)	0.00739	0.00750	0.00724
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00405	-0.00413	-0.00416
	(A1 * !A3 * !B1 * !B2 * Y)	0.00692	0.00693	0.00688
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00885	-0.00885	-0.00886
	(!A1 * A3 * B2 * !Y)	0.00984	0.00753	0.00719
	(!A1 * A3 * B2 * !Y)	-0.00610	-0.00840	-0.00863
	(!A1 * A3 * B1 * !B2 * !Y)	0.00997	0.00765	0.00732
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00597	-0.00827	-0.00850
	(!A1 * A3 * !B1 * !B2 * Y)	0.00692	0.00689	0.00687
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00890	-0.00889	-0.00892
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00655	0.00655	0.00655
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00900	-0.00899	-0.00897

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)**	-0.00171	-0.00171	-0.00171
	(A1 * A3 * B2 * !Y)	0.00155	0.00155	0.00154
	(A1 * A3 * B1 * !B2 * !Y)	-0.00168	-0.00168	-0.00168
	(A1 * A3 * B1 * !B2 * !Y)	0.00158	0.00158	0.00157
	(A1 * A3 * !B1 * !B2 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * !B1 * !B2 * Y)	0.00160	0.00162	0.00161
	(A1 * !A3 * B2 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * B2 * !Y)	0.00123	0.00123	0.00122
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A3 * B1 * !B2 * !Y)	0.00126	0.00126	0.00126
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * !B1 * !B2 * Y)	0.00227	0.00229	0.00227
	(!A1 * A3 * B2 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * A3 * B2 * !Y)	0.00233	0.00234	0.00234
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00162	-0.00162	-0.00162
	(!A1 * A3 * B1 * !B2 * !Y)	0.00237	0.00237	0.00237
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * !B1 * !B2 * Y)	0.00227	0.00229	0.00228
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00143	-0.00161	-0.00163
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00241	0.00234	0.00230

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00338	-0.00341	-0.00339
	(A1 * A3 * B2 * !Y)	0.00289	0.00292	0.00290
	(A1 * A3 * B1 * !B2 * !Y)	-0.00333	-0.00335	-0.00333
	(A1 * A3 * B1 * !B2 * !Y)	0.00294	0.00298	0.00296
	(A1 * A3 * !B1 * !B2 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * A3 * !B1 * !B2 * Y)	0.00310	0.00313	0.00309
	(A1 * !A3 * B2 * !Y)	-0.00331	-0.00332	-0.00329
	(A1 * !A3 * B2 * !Y)	0.00226	0.00227	0.00227
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00322	-0.00326	-0.00323
	(A1 * !A3 * B1 * !B2 * !Y)	0.00230	0.00233	0.00233
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00330	-0.00332	-0.00331
	(A1 * !A3 * !B1 * !B2 * Y)	0.00435	0.00439	0.00437
	(!A1 * A3 * B2 * !Y)	-0.00323	-0.00324	-0.00322
	(!A1 * A3 * B2 * !Y)	0.00452	0.00456	0.00452
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00317	-0.00318	-0.00316
	(!A1 * A3 * B1 * !B2 * !Y)	0.00459	0.00462	0.00459
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00331	-0.00333	-0.00331
	(!A1 * A3 * !B1 * !B2 * Y)	0.00440	0.00444	0.00440
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00278	-0.00313	-0.00318
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00468	0.00449	0.00446

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00692	-0.00696	-0.00692
	(A1 * A3 * B2 * !Y)	0.00585	0.00590	0.00585
	(A1 * A3 * B1 * !B2 * !Y)	-0.00680	-0.00684	-0.00680
	(A1 * A3 * B1 * !B2 * !Y)	0.00597	0.00602	0.00597
	(A1 * A3 * !B1 * !B2 * Y)	-0.00681	-0.00685	-0.00682
	(A1 * A3 * !B1 * !B2 * Y)	0.00617	0.00622	0.00617
	(A1 * !A3 * B2 * !Y)	-0.00677	-0.00680	-0.00676
	(A1 * !A3 * B2 * !Y)	0.00462	0.00463	0.00463
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00665	-0.00667	-0.00663
	(A1 * !A3 * B1 * !B2 * !Y)	0.00474	0.00476	0.00476
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00682	-0.00682	-0.00682
	(A1 * !A3 * !B1 * !B2 * Y)	0.00885	0.00885	0.00886
	(!A1 * A3 * B2 * !Y)	-0.00662	-0.00666	-0.00662
	(!A1 * A3 * B2 * !Y)	0.00919	0.00927	0.00920
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00649	-0.00653	-0.00649
	(!A1 * A3 * B1 * !B2 * !Y)	0.00932	0.00939	0.00933
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00681	-0.00680	-0.00682
	(!A1 * A3 * !B1 * !B2 * Y)	0.00890	0.00889	0.00892
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00572	-0.00643	-0.00655
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00953	0.00910	0.00905

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00183	0.00185	0.00184
	(A2 * B2 * !Y)	-0.00097	-0.00098	-0.00097
	(A2 * B1 * !B2 * !Y)	0.00186	0.00188	0.00187
	(A2 * B1 * !B2 * !Y)	-0.00094	-0.00095	-0.00094
	(A2 * !B1 * !B2 * Y)	0.00171	0.00170	0.00170
	(A2 * !B1 * !B2 * Y)	-0.00212	-0.00215	-0.00215
	(A1 * !A2 * B2 * !Y)	0.00184	0.00186	0.00184
	(A1 * !A2 * B2 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * B1 * !B2 * !Y)	0.00187	0.00189	0.00187
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !B2 * Y)	0.00171	0.00171	0.00169
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00197	-0.00207	-0.00206
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00161	0.00162	0.00162
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00216	-0.00217	-0.00216
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00402	0.00409	0.00402
	(A2 * B2 * !Y)	-0.00193	-0.00195	-0.00192
	(A2 * B1 * !B2 * !Y)	0.00408	0.00415	0.00409
	(A2 * B1 * !B2 * !Y)	-0.00186	-0.00189	-0.00186
	(A2 * !B1 * !B2 * Y)	0.00331	0.00335	0.00332
	(A2 * !B1 * !B2 * Y)	-0.00455	-0.00469	-0.00468
	(A1 * !A2 * B2 * !Y)	0.00402	0.00409	0.00403
	(A1 * !A2 * B2 * !Y)	-0.00190	-0.00193	-0.00189
	(A1 * !A2 * B1 * !B2 * !Y)	0.00409	0.00416	0.00409
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00184	-0.00186	-0.00183
	(A1 * !A2 * !B1 * !B2 * Y)	0.00331	0.00332	0.00332
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00426	-0.00447	-0.00445
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00316	0.00317	0.00316
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00473	-0.00473	-0.00472

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00763	0.00775	0.00764
	(A2 * B2 * !Y)	-0.00381	-0.00386	-0.00380
	(A2 * B1 * !B2 * !Y)	0.00779	0.00788	0.00776
	(A2 * B1 * !B2 * !Y)	-0.00371	-0.00374	-0.00367
	(A2 * !B1 * !B2 * Y)	0.00652	0.00653	0.00648
	(A2 * !B1 * !B2 * Y)	-0.00889	-0.00909	-0.00907
	(A1 * !A2 * B2 * !Y)	0.00760	0.00776	0.00765
	(A1 * !A2 * B2 * !Y)	-0.00372	-0.00381	-0.00374
	(A1 * !A2 * B1 * !B2 * !Y)	0.00773	0.00790	0.00777
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00360	-0.00368	-0.00361
	(A1 * !A2 * !B1 * !B2 * Y)	0.00646	0.00656	0.00648
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00823	-0.00859	-0.00858
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00619	0.00620	0.00621
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00915	-0.00915	-0.00915

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00175	-0.00176	-0.00182
	(A2 * B2 * !Y)	0.00105	0.00105	0.00100
	(A2 * B1 * !B2 * !Y)	-0.00172	-0.00173	-0.00179
	(A2 * B1 * !B2 * !Y)	0.00108	0.00109	0.00103
	(A2 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * !B1 * !B2 * Y)	0.00215	0.00216	0.00215
	(A1 * !A2 * B2 * !Y)	-0.00163	-0.00165	-0.00179
	(A1 * !A2 * B2 * !Y)	0.00112	0.00112	0.00101
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00160	-0.00162	-0.00176
	(A1 * !A2 * B1 * !B2 * !Y)	0.00115	0.00115	0.00104
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * !B1 * !B2 * Y)	0.00205	0.00207	0.00206
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00143	-0.00160	-0.00162
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00228	0.00222	0.00218
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00378	-0.00380	-0.00398
	(A2 * B2 * !Y)	0.00212	0.00212	0.00198
	(A2 * B1 * !B2 * !Y)	-0.00373	-0.00374	-0.00393
	(A2 * B1 * !B2 * !Y)	0.00217	0.00217	0.00204
	(A2 * !B1 * !B2 * Y)	-0.00330	-0.00331	-0.00329
	(A2 * !B1 * !B2 * Y)	0.00468	0.00469	0.00468
	(A1 * !A2 * B2 * !Y)	-0.00353	-0.00354	-0.00392
	(A1 * !A2 * B2 * !Y)	0.00226	0.00225	0.00201
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00348	-0.00350	-0.00386
	(A1 * !A2 * B1 * !B2 * !Y)	0.00231	0.00232	0.00206
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00329	-0.00331	-0.00329
	(A1 * !A2 * !B1 * !B2 * Y)	0.00444	0.00447	0.00445
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00278	-0.00316	-0.00316
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00495	0.00478	0.00476

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00718	-0.00727	-0.00755
	(A2 * B2 * !Y)	0.00416	0.00420	0.00392
	(A2 * B1 * !B2 * !Y)	-0.00706	-0.00709	-0.00743
	(A2 * B1 * !B2 * !Y)	0.00427	0.00427	0.00403
	(A2 * !B1 * !B2 * Y)	-0.00641	-0.00644	-0.00643
	(A2 * !B1 * !B2 * Y)	0.00904	0.00909	0.00907
	(A1 * !A2 * B2 * !Y)	-0.00668	-0.00669	-0.00743
	(A1 * !A2 * B2 * !Y)	0.00443	0.00441	0.00395
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00656	-0.00661	-0.00731
	(A1 * !A2 * B1 * !B2 * !Y)	0.00455	0.00455	0.00407
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00641	-0.00644	-0.00643
	(A1 * !A2 * !B1 * !B2 * Y)	0.00855	0.00859	0.00858
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00547	-0.00616	-0.00621
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00958	0.00928	0.00922

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00237	0.00200	0.00195
	(A3 * B2 * !Y)	-0.00168	-0.00207	-0.00209
	(A2 * !A3 * B2 * !Y)	0.00237	0.00200	0.00195
	(A2 * !A3 * B2 * !Y)	-0.00168	-0.00207	-0.00209
	(A1 * !A2 * !A3 * B2 * !Y)	0.00239	0.00202	0.00198
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00165	-0.00204	-0.00206
	(!A1 * !A2 * !A3 * B2 * Y)	0.00063	0.00063	0.00062
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00255	-0.00257	-0.00256
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00073	0.00073	0.00065
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00242	-0.00243	-0.00256

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00461	0.00368	0.00354
	(A3 * B2 * !Y)	-0.00309	-0.00408	-0.00415
	(A2 * !A3 * B2 * !Y)	0.00461	0.00368	0.00354
	(A2 * !A3 * B2 * !Y)	-0.00309	-0.00408	-0.00415
	(A1 * !A2 * !A3 * B2 * !Y)	0.00467	0.00374	0.00360
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00303	-0.00402	-0.00409
	(!A1 * !A2 * !A3 * B2 * Y)	0.00099	0.00099	0.00098
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00505	-0.00510	-0.00509
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00120	0.00120	0.00104
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00480	-0.00483	-0.00509
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00951	0.00771	0.00741
	(A3 * B2 * !Y)	-0.00631	-0.00820	-0.00835
	(A2 * !A3 * B2 * !Y)	0.00951	0.00771	0.00741
	(A2 * !A3 * B2 * !Y)	-0.00630	-0.00819	-0.00834
	(A1 * !A2 * !A3 * B2 * !Y)	0.00962	0.00782	0.00753
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00619	-0.00807	-0.00822
	(!A1 * !A2 * !A3 * B2 * Y)	0.00198	0.00199	0.00197
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01047	-0.01056	-0.01052
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00240	0.00239	0.00209
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00999	-0.01005	-0.01054

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00181	-0.00181	-0.00181
	(A3 * B2 * !Y)	0.00224	0.00224	0.00223
	(A2 * !A3 * B2 * !Y)	-0.00181	-0.00181	-0.00181
	(A2 * !A3 * B2 * !Y)	0.00224	0.00224	0.00223
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00178	-0.00178	-0.00178
	(A1 * !A2 * !A3 * B2 * !Y)	0.00227	0.00228	0.00226
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00058	-0.00059	-0.00060
	(!A1 * !A2 * !A3 * B2 * Y)	0.00262	0.00264	0.00258
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00258	0.00263	0.00259
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00325	-0.00327	-0.00326
	(A3 * B2 * !Y)	0.00441	0.00446	0.00444
	(A2 * !A3 * B2 * !Y)	-0.00325	-0.00327	-0.00325
	(A2 * !A3 * B2 * !Y)	0.00442	0.00447	0.00444
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00319	-0.00322	-0.00319
	(A1 * !A2 * !A3 * B2 * !Y)	0.00447	0.00453	0.00450
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00092	-0.00094	-0.00095
	(!A1 * !A2 * !A3 * B2 * Y)	0.00514	0.00523	0.00511
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00098	-0.00100	-0.00098
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00511	0.00522	0.00514
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00684	-0.00685	-0.00685
	(A3 * B2 * !Y)	0.00889	0.00893	0.00891
	(A2 * !A3 * B2 * !Y)	-0.00683	-0.00685	-0.00684
	(A2 * !A3 * B2 * !Y)	0.00890	0.00894	0.00892
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00672	-0.00676	-0.00672
	(A1 * !A2 * !A3 * B2 * !Y)	0.00901	0.00910	0.00904
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00185	-0.00187	-0.00191
	(!A1 * !A2 * !A3 * B2 * Y)	0.01067	0.01077	0.01057
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00198	-0.00201	-0.00198
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01060	0.01079	0.01063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00195	0.00199	0.00196
	(A3 * B1 * !Y)	-0.00094	-0.00096	-0.00094
	(A2 * !A3 * B1 * !Y)	0.00195	0.00199	0.00196
	(A2 * !A3 * B1 * !Y)	-0.00094	-0.00095	-0.00093
	(A1 * !A2 * !A3 * B1 * !Y)	0.00198	0.00202	0.00199
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * !A3 * B1 * Y)	0.00053	0.00053	0.00052
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00260	-0.00260	-0.00259
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00063	0.00063	0.00055
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00246	-0.00247	-0.00260
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00384	0.00390	0.00384
	(A3 * B1 * !Y)	-0.00196	-0.00197	-0.00193
	(A2 * !A3 * B1 * !Y)	0.00383	0.00390	0.00384
	(A2 * !A3 * B1 * !Y)	-0.00194	-0.00197	-0.00193
	(A1 * !A2 * !A3 * B1 * !Y)	0.00389	0.00388	0.00390
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00188	-0.00186	-0.00187
	(!A1 * !A2 * !A3 * B1 * Y)	0.00105	0.00105	0.00104
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00516	-0.00518	-0.00518
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00126	0.00125	0.00110
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00490	-0.00493	-0.00518

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00751	0.00751	0.00754
	(A3 * B1 * !Y)	-0.00384	-0.00382	-0.00382
	(A2 * !A3 * B1 * !Y)	0.00752	0.00755	0.00754
	(A2 * !A3 * B1 * !Y)	-0.00383	-0.00384	-0.00381
	(A1 * !A2 * !A3 * B1 * !Y)	0.00764	0.00766	0.00766
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00371	-0.00372	-0.00370
	(!A1 * !A2 * !A3 * B1 * Y)	0.00202	0.00201	0.00199
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01026	-0.01028	-0.01028
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00240	0.00242	0.00211
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00970	-0.00980	-0.01029

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00186	-0.00188	-0.00193
	(A3 * B1 * !Y)	0.00102	0.00103	0.00097
	(A2 * !A3 * B1 * !Y)	-0.00185	-0.00188	-0.00193
	(A2 * !A3 * B1 * !Y)	0.00102	0.00103	0.00098
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00184	-0.00184	-0.00190
	(A1 * !A2 * !A3 * B1 * !Y)	0.00106	0.00106	0.00101
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00049	-0.00050	-0.00051
	(!A1 * !A2 * !A3 * B1 * Y)	0.00263	0.00263	0.00260
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00261	0.00262	0.00262

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00356	-0.00361	-0.00377
	(A3 * B1 * !Y)	0.00217	0.00219	0.00202
	(A2 * !A3 * B1 * !Y)	-0.00356	-0.00358	-0.00377
	(A2 * !A3 * B1 * !Y)	0.00217	0.00218	0.00202
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00352	-0.00354	-0.00372
	(A1 * !A2 * !A3 * B1 * !Y)	0.00224	0.00223	0.00207
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00099	-0.00098	-0.00101
	(!A1 * !A2 * !A3 * B1 * Y)	0.00525	0.00524	0.00518
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00520	0.00522	0.00523
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00702	-0.00707	-0.00741
	(A3 * B1 * !Y)	0.00425	0.00427	0.00399
	(A2 * !A3 * B1 * !Y)	-0.00700	-0.00707	-0.00740
	(A2 * !A3 * B1 * !Y)	0.00424	0.00428	0.00400
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00693	-0.00697	-0.00730
	(A1 * !A2 * !A3 * B1 * !Y)	0.00439	0.00439	0.00411
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00186	-0.00188	-0.00193
	(!A1 * !A2 * !A3 * B1 * Y)	0.01036	0.01041	0.01028
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00199	-0.00200	-0.00199
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01034	0.01037	0.01038

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00272	0.00265	0.00263	0.00265	0.00269	1.25215
sky130_fd_sc_hs__o32a_2	0.00285	0.00281	0.00285	0.00304	0.00285	2.40154
sky130_fd_sc_hs__o32a_4	0.00491	0.00524	0.00489	0.00648	0.00516	4.71159

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	8.83755	22.30930
sky130_fd_sc_hs__o32a_2	0.00000	11.35710	22.59030
sky130_fd_sc_hs__o32a_4	0.00000	22.83160	45.17600

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)	0.10457	0.59554	6.18543
	A2->X (RR)	0.10085	0.58576	6.07819
	A3->X (RR)	0.08964	0.56446	6.01440
	B1->X (RR)	0.09375	0.60931	6.50260
	B2->X (RR)	0.08315	0.58438	6.39657
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.10627	0.51073	6.00506
	A2->X (RR)	0.10363	0.50360	5.90447
	A3->X (RR)	0.09364	0.48586	5.84697
	B1->X (RR)	0.09607	0.53127	6.32500
	B2->X (RR)	0.08589	0.50677	6.21059
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.12146	0.47106	6.28881
	A2->X (RR)	0.11323	0.45398	6.15012
	A3->X (RR)	0.09812	0.42959	6.07765
	B1->X (RR)	0.11232	0.49821	6.60978
	B2->X (RR)	0.09562	0.46718	6.48032

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.21448	0.64711	5.14121
	A2->X (FF)	0.20031	0.67271	5.40291
	A3->X (FF)	0.17126	0.67419	5.47366
	B1->X (FF)	0.11361	0.52889	4.90553
	B2->X (FF)	0.09923	0.54123	5.04417
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.26610	0.68051	5.26906
	A2->X (FF)	0.25239	0.70984	5.53478
	A3->X (FF)	0.22428	0.71415	5.61280
	B1->X (FF)	0.14530	0.54562	4.99584
	B2->X (FF)	0.12989	0.56434	5.14357
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.27100	0.64905	5.43350
	A2->X (FF)	0.25476	0.66963	5.62304
	A3->X (FF)	0.21269	0.66662	5.70656
	B1->X (FF)	0.13654	0.49790	5.06923
	B2->X (FF)	0.11761	0.51010	5.21509

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01780	0.01868	0.05903
	A1	0.00624	0.00737	0.04933
	A2	0.01567	0.01699	0.05463
	A2	0.00537	0.00685	0.04595
	A3	0.01156	0.01342	0.05780
	A3	0.00428	0.00613	0.05051
	B1	0.01371	0.01637	0.07627
	B1	0.00515	0.00826	0.07021
	B2	0.01154	0.01469	0.08140
	B2	0.00419	0.00790	0.07710
sky130_fd_sc_hs__o32a_2	A1	0.01977	0.02103	0.06290
	A1	0.00938	0.01068	0.05363
	A2	0.01763	0.01929	0.05801
	A2	0.00846	0.01015	0.04904
	A3	0.01546	0.01746	0.06182
	A3	0.00734	0.00934	0.05399
	B1	0.01982	0.02190	0.07855
	B1	0.00804	0.01111	0.07367
	B2	0.01747	0.02010	0.08335
	B2	0.00726	0.01079	0.08007

sky130_fd_sc_hs__o32a_4	**A1**	0.03884	0.04172	0.14042
	A1	0.02003	0.02304	0.12351
	A2	0.03874	0.04127	0.12926
	A2	0.01736	0.02073	0.11238
	A3	0.02814	0.03268	0.13465
	A3	0.01420	0.01879	0.12283
	B1	0.03504	0.04015	0.14989
	B1	0.01965	0.02487	0.13570
	B2	0.02954	0.03584	0.15715
	B2	0.01404	0.02132	0.14897

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00632	0.00648	0.05242
	A1	0.01631	0.01649	0.06237
	A2	0.00639	0.00710	0.05296
	A2	0.01515	0.01586	0.06041
	A3	0.00632	0.00837	0.06003
	A3	0.01400	0.01607	0.06769
	B1	0.00397	0.00639	0.06308
	B1	0.01123	0.01363	0.06985
	B2	0.00400	0.00801	0.07206
	B2	0.01115	0.01487	0.07461

sky130_fd_sc_hs__o32a_2	**A1**	0.01332	0.01090	0.05892
	A1	0.02396	0.02154	0.06809
	A2	0.01335	0.01136	0.05776
	A2	0.02278	0.02084	0.06515
	A3	0.01332	0.01266	0.06768
	A3	0.02172	0.02108	0.07268
	B1	0.00891	0.01009	0.06733
	B1	0.01810	0.01897	0.07123
	B2	0.00918	0.01177	0.07432
	B2	0.01670	0.01922	0.07953
sky130_fd_sc_hs__o32a_4	**A1**	0.02645	0.02112	0.11911
	A1	0.04621	0.04095	0.13670
	A2	0.02643	0.02226	0.10939
	A2	0.04417	0.03999	0.12675
	A3	0.02648	0.02486	0.12743
	A3	0.04134	0.03978	0.13985
	B1	0.01691	0.01906	0.13475
	B1	0.03472	0.03622	0.14431
	B2	0.01690	0.02242	0.14907
	B2	0.03117	0.03597	0.15801

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)**	0.00177	0.00170	0.00169
	(A2 * A3 * B2 * X)	-0.00181	-0.00193	-0.00192
	(A2 * A3 * B1 * !B2 * X)	0.00182	0.00175	0.00174
	(A2 * A3 * B1 * !B2 * X)	-0.00176	-0.00188	-0.00188
	(A2 * !B1 * !B2 * !X)	0.00151	0.00152	0.00151
	(A2 * !B1 * !B2 * !X)	-0.00207	-0.00211	-0.00211
	(A2 * !A3 * B2 * X)	0.00209	0.00179	0.00175
	(A2 * !A3 * B2 * X)	-0.00153	-0.00186	-0.00187
	(A2 * !A3 * B1 * !B2 * X)	0.00214	0.00184	0.00180
	(A2 * !A3 * B1 * !B2 * X)	-0.00148	-0.00181	-0.00182
	(!A2 * A3 * B2 * X)	0.00217	0.00184	0.00179
	(!A2 * A3 * B2 * X)	-0.00140	-0.00180	-0.00182
	(!A2 * A3 * B1 * !B2 * X)	0.00222	0.00189	0.00183
	(!A2 * A3 * B1 * !B2 * X)	-0.00136	-0.00175	-0.00177
	(!A2 * A3 * !B1 * !B2 * !X)	0.00150	0.00152	0.00151
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00195	-0.00207	-0.00209
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00144	0.00145	0.00145
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00211	-0.00212	-0.00211

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00198	0.00191	0.00189
	(A2 * A3 * B2 * X)	-0.00181	-0.00193	-0.00192
	(A2 * A3 * B1 * !B2 * X)	0.00202	0.00195	0.00194
	(A2 * A3 * B1 * !B2 * X)	-0.00176	-0.00188	-0.00188
	(A2 * !B1 * !B2 * !X)	0.00178	0.00179	0.00178
	(A2 * !B1 * !B2 * !X)	-0.00200	-0.00204	-0.00204
	(A2 * !A3 * B2 * X)	0.00229	0.00199	0.00195
	(A2 * !A3 * B2 * X)	-0.00153	-0.00186	-0.00187
	(A2 * !A3 * B1 * !B2 * X)	0.00234	0.00204	0.00200
	(A2 * !A3 * B1 * !B2 * X)	-0.00148	-0.00181	-0.00182
	(!A2 * A3 * B2 * X)	0.00237	0.00204	0.00199
	(!A2 * A3 * B2 * X)	-0.00140	-0.00179	-0.00182
	(!A2 * A3 * B1 * !B2 * X)	0.00242	0.00209	0.00204
	(!A2 * A3 * B1 * !B2 * X)	-0.00136	-0.00175	-0.00177
	(!A2 * A3 * !B1 * !B2 * !X)	0.00177	0.00179	0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00188	-0.00200	-0.00202
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00171	0.00172	0.00171
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00205	-0.00205	-0.00204

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00312	0.00297	0.00293
	(A2 * A3 * B2 * X)	-0.00363	-0.00390	-0.00389
	(A2 * A3 * B1 * !B2 * X)	0.00321	0.00306	0.00303
	(A2 * A3 * B1 * !B2 * X)	-0.00354	-0.00380	-0.00380
	(A2 * !B1 * !B2 * !X)	0.00317	0.00319	0.00316
	(A2 * !B1 * !B2 * !X)	-0.00358	-0.00368	-0.00367
	(A2 * !A3 * B2 * X)	0.00391	0.00319	0.00308
	(A2 * !A3 * B2 * X)	-0.00294	-0.00372	-0.00376
	(A2 * !A3 * B1 * !B2 * X)	0.00401	0.00328	0.00317
	(A2 * !A3 * B1 * !B2 * X)	-0.00285	-0.00362	-0.00367
	(!A2 * A3 * B2 * X)	0.00405	0.00327	0.00313
	(!A2 * A3 * B2 * X)	-0.00270	-0.00362	-0.00369
	(!A2 * A3 * B1 * !B2 * X)	0.00414	0.00337	0.00322
	(!A2 * A3 * B1 * !B2 * X)	-0.00260	-0.00352	-0.00360
	(!A2 * A3 * !B1 * !B2 * !X)	0.00316	0.00319	0.00316
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00332	-0.00360	-0.00364
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00303	0.00306	0.00304
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00370	-0.00372	-0.00370

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)**	-0.00166	-0.00167	-0.00167
	(A2 * A3 * B2 * X)	0.00193	0.00196	0.00194
	(A2 * A3 * B1 * !B2 * X)	-0.00161	-0.00163	-0.00162
	(A2 * A3 * B1 * !B2 * X)	0.00198	0.00200	0.00199
	(A2 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00137
	(A2 * !B1 * !B2 * !X)	0.00223	0.00226	0.00223
	(A2 * !A3 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * B2 * X)	0.00202	0.00203	0.00201
	(A2 * !A3 * B1 * !B2 * X)	-0.00156	-0.00157	-0.00156
	(A2 * !A3 * B1 * !B2 * X)	0.00206	0.00208	0.00206
	(!A2 * A3 * B2 * X)	-0.00157	-0.00157	-0.00157
	(!A2 * A3 * B2 * X)	0.00201	0.00202	0.00202
	(!A2 * A3 * B1 * !B2 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * A3 * B1 * !B2 * X)	0.00206	0.00206	0.00207
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00137	-0.00137	-0.00137
	(!A2 * A3 * !B1 * !B2 * !X)	0.00217	0.00218	0.00218
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00117	-0.00131	-0.00133
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00235	0.00229	0.00226

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00186	-0.00187	-0.00186
	(A2 * A3 * B2 * X)	0.00194	0.00196	0.00195
	(A2 * A3 * B1 * !B2 * X)	-0.00181	-0.00182	-0.00181
	(A2 * A3 * B1 * !B2 * X)	0.00198	0.00201	0.00199
	(A2 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * !B2 * !X)	0.00228	0.00231	0.00228
	(A2 * !A3 * B2 * X)	-0.00180	-0.00181	-0.00180
	(A2 * !A3 * B2 * X)	0.00202	0.00204	0.00202
	(A2 * !A3 * B1 * !B2 * X)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * B1 * !B2 * X)	0.00207	0.00209	0.00206
	(!A2 * A3 * B2 * X)	-0.00176	-0.00177	-0.00176
	(!A2 * A3 * B2 * X)	0.00202	0.00202	0.00203
	(!A2 * A3 * B1 * !B2 * X)	-0.00172	-0.00172	-0.00172
	(!A2 * A3 * B1 * !B2 * X)	0.00206	0.00207	0.00208
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00152	-0.00152	-0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	0.00223	0.00223	0.00223
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00130	-0.00146	-0.00147
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00239	0.00234	0.00231

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00287	-0.00288	-0.00287
	(A2 * A3 * B2 * X)	0.00391	0.00393	0.00393
	(A2 * A3 * B1 * !B2 * X)	-0.00278	-0.00278	-0.00278
	(A2 * A3 * B1 * !B2 * X)	0.00400	0.00402	0.00402
	(A2 * !B1 * !B2 * !X)	-0.00264	-0.00265	-0.00264
	(A2 * !B1 * !B2 * !X)	0.00415	0.00418	0.00416
	(A2 * !A3 * B2 * X)	-0.00279	-0.00281	-0.00278
	(A2 * !A3 * B2 * X)	0.00403	0.00406	0.00405
	(A2 * !A3 * B1 * !B2 * X)	-0.00270	-0.00271	-0.00269
	(A2 * !A3 * B1 * !B2 * X)	0.00413	0.00416	0.00415
	(!A2 * A3 * B2 * X)	-0.00268	-0.00270	-0.00266
	(!A2 * A3 * B2 * X)	0.00407	0.00411	0.00410
	(!A2 * A3 * B1 * !B2 * X)	-0.00259	-0.00260	-0.00257
	(!A2 * A3 * B1 * !B2 * X)	0.00416	0.00421	0.00419
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00264	-0.00265	-0.00264
	(!A2 * A3 * !B1 * !B2 * !X)	0.00402	0.00404	0.00403
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00218	-0.00251	-0.00255
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00446	0.00431	0.00423

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)**	0.00171	0.00174	0.00165
	(A1 * A3 * B2 * X)	-0.00120	-0.00120	-0.00125
	(A1 * A3 * B1 * !B2 * X)	0.00176	0.00179	0.00169
	(A1 * A3 * B1 * !B2 * X)	-0.00115	-0.00115	-0.00120
	(A1 * A3 * !B1 * !B2 * !X)	0.00154	0.00156	0.00154
	(A1 * A3 * !B1 * !B2 * !X)	-0.00143	-0.00144	-0.00139
	(A1 * !A3 * B2 * X)	0.00163	0.00166	0.00160
	(A1 * !A3 * B2 * X)	-0.00089	-0.00090	-0.00091
	(A1 * !A3 * B1 * !B2 * X)	0.00168	0.00170	0.00165
	(A1 * !A3 * B1 * !B2 * X)	-0.00084	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00155	0.00155	0.00154
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00190	-0.00190	-0.00190
	(!A1 * A3 * B2 * X)	0.00217	0.00172	0.00165
	(!A1 * A3 * B2 * X)	-0.00131	-0.00177	-0.00179
	(!A1 * A3 * B1 * !B2 * X)	0.00222	0.00177	0.00170
	(!A1 * A3 * B1 * !B2 * X)	-0.00126	-0.00172	-0.00175
	(!A1 * A3 * !B1 * !B2 * !X)	0.00155	0.00156	0.00154
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00147	0.00148	0.00147
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00193	0.00196	0.00186
	(A1 * A3 * B2 * X)	-0.00121	-0.00121	-0.00125
	(A1 * A3 * B1 * !B2 * X)	0.00198	0.00200	0.00191
	(A1 * A3 * B1 * !B2 * X)	-0.00116	-0.00116	-0.00120
	(A1 * A3 * !B1 * !B2 * !X)	0.00180	0.00182	0.00181
	(A1 * A3 * !B1 * !B2 * !X)	-0.00138	-0.00139	-0.00134
	(A1 * !A3 * B2 * X)	0.00184	0.00187	0.00181
	(A1 * !A3 * B2 * X)	-0.00089	-0.00091	-0.00091
	(A1 * !A3 * B1 * !B2 * X)	0.00189	0.00192	0.00186
	(A1 * !A3 * B1 * !B2 * X)	-0.00084	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00182	0.00181	0.00181
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00185	-0.00185	-0.00185
	(!A1 * A3 * B2 * X)	0.00239	0.00193	0.00187
	(!A1 * A3 * B2 * X)	-0.00131	-0.00177	-0.00180
	(!A1 * A3 * B1 * !B2 * X)	0.00243	0.00198	0.00191
	(!A1 * A3 * B1 * !B2 * X)	-0.00126	-0.00172	-0.00175
	(!A1 * A3 * !B1 * !B2 * !X)	0.00182	0.00183	0.00181
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00172	0.00174	0.00173
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00337	0.00344	0.00320
	(A1 * A3 * B2 * X)	-0.00271	-0.00266	-0.00278
	(A1 * A3 * B1 * !B2 * X)	0.00347	0.00353	0.00329
	(A1 * A3 * B1 * !B2 * X)	-0.00261	-0.00257	-0.00268
	(A1 * A3 * !B1 * !B2 * !X)	0.00324	0.00326	0.00323
	(A1 * A3 * !B1 * !B2 * !X)	-0.00295	-0.00295	-0.00282
	(A1 * !A3 * B2 * X)	0.00320	0.00325	0.00311
	(A1 * !A3 * B2 * X)	-0.00199	-0.00203	-0.00206
	(A1 * !A3 * B1 * !B2 * X)	0.00329	0.00335	0.00320
	(A1 * !A3 * B1 * !B2 * X)	-0.00189	-0.00194	-0.00196
	(A1 * !A3 * !B1 * !B2 * !X)	0.00325	0.00324	0.00322
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00390	-0.00390	-0.00390
	(!A1 * A3 * B2 * X)	0.00442	0.00335	0.00321
	(!A1 * A3 * B2 * X)	-0.00278	-0.00382	-0.00393
	(!A1 * A3 * B1 * !B2 * X)	0.00452	0.00345	0.00330
	(!A1 * A3 * B1 * !B2 * X)	-0.00269	-0.00372	-0.00383
	(!A1 * A3 * !B1 * !B2 * !X)	0.00324	0.00323	0.00322
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00388	-0.00389	-0.00390
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00307	0.00311	0.00309
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00392	-0.00394	-0.00392

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)**	-0.00153	-0.00154	-0.00154
	(A1 * A3 * B2 * X)	0.00125	0.00126	0.00125
	(A1 * A3 * B1 * !B2 * X)	-0.00149	-0.00150	-0.00149
	(A1 * A3 * B1 * !B2 * X)	0.00129	0.00131	0.00130
	(A1 * A3 * !B1 * !B2 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * !B1 * !B2 * !X)	0.00143	0.00144	0.00143
	(A1 * !A3 * B2 * X)	-0.00151	-0.00151	-0.00151
	(A1 * !A3 * B2 * X)	0.00101	0.00101	0.00100
	(A1 * !A3 * B1 * !B2 * X)	-0.00146	-0.00147	-0.00146
	(A1 * !A3 * B1 * !B2 * X)	0.00105	0.00106	0.00104
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A3 * !B1 * !B2 * !X)	0.00202	0.00202	0.00203
	(!A1 * A3 * B2 * X)	-0.00143	-0.00144	-0.00144
	(!A1 * A3 * B2 * X)	0.00201	0.00202	0.00201
	(!A1 * A3 * B1 * !B2 * X)	-0.00138	-0.00139	-0.00140
	(!A1 * A3 * B1 * !B2 * X)	0.00206	0.00207	0.00206
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * A3 * !B1 * !B2 * !X)	0.00202	0.00203	0.00203
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00117	-0.00133	-0.00136
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00216	0.00209	0.00205

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00174	-0.00176	-0.00175
	(A1 * A3 * B2 * X)	0.00126	0.00127	0.00126
	(A1 * A3 * B1 * !B2 * X)	-0.00170	-0.00171	-0.00170
	(A1 * A3 * B1 * !B2 * X)	0.00131	0.00132	0.00131
	(A1 * A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * !B2 * !X)	0.00150	0.00151	0.00150
	(A1 * !A3 * B2 * X)	-0.00172	-0.00172	-0.00172
	(A1 * !A3 * B2 * X)	0.00101	0.00102	0.00101
	(A1 * !A3 * B1 * !B2 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * B1 * !B2 * X)	0.00106	0.00106	0.00105
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * !B1 * !B2 * !X)	0.00209	0.00210	0.00210
	(!A1 * A3 * B2 * X)	-0.00164	-0.00164	-0.00165
	(!A1 * A3 * B2 * X)	0.00202	0.00203	0.00202
	(!A1 * A3 * B1 * !B2 * X)	-0.00159	-0.00160	-0.00160
	(!A1 * A3 * B1 * !B2 * X)	0.00207	0.00207	0.00206
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * !B1 * !B2 * !X)	0.00209	0.00211	0.00210
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00130	-0.00147	-0.00150
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00222	0.00215	0.00212

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00294	-0.00296	-0.00294
	(A1 * A3 * B2 * X)	0.00279	0.00282	0.00279
	(A1 * A3 * B1 * !B2 * X)	-0.00284	-0.00286	-0.00285
	(A1 * A3 * B1 * !B2 * X)	0.00288	0.00291	0.00289
	(A1 * A3 * !B1 * !B2 * !X)	-0.00271	-0.00272	-0.00271
	(A1 * A3 * !B1 * !B2 * !X)	0.00314	0.00316	0.00313
	(A1 * !A3 * B2 * X)	-0.00291	-0.00292	-0.00288
	(A1 * !A3 * B2 * X)	0.00227	0.00228	0.00228
	(A1 * !A3 * B1 * !B2 * X)	-0.00282	-0.00282	-0.00279
	(A1 * !A3 * B1 * !B2 * X)	0.00236	0.00237	0.00237
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00270	-0.00271	-0.00271
	(A1 * !A3 * !B1 * !B2 * !X)	0.00438	0.00439	0.00438
	(!A1 * A3 * B2 * X)	-0.00274	-0.00276	-0.00276
	(!A1 * A3 * B2 * X)	0.00437	0.00440	0.00438
	(!A1 * A3 * B1 * !B2 * X)	-0.00265	-0.00267	-0.00267
	(!A1 * A3 * B1 * !B2 * X)	0.00447	0.00450	0.00447
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00270	-0.00272	-0.00271
	(!A1 * A3 * !B1 * !B2 * !X)	0.00437	0.00441	0.00438
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00221	-0.00257	-0.00261
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00470	0.00453	0.00445

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00166	0.00168	0.00167
	(A2 * B2 * X)	-0.00086	-0.00088	-0.00087
	(A2 * B1 * !B2 * X)	0.00170	0.00173	0.00171
	(A2 * B1 * !B2 * X)	-0.00081	-0.00083	-0.00082
	(A2 * !B1 * !B2 * !X)	0.00154	0.00155	0.00155
	(A2 * !B1 * !B2 * !X)	-0.00186	-0.00190	-0.00190
	(A1 * !A2 * B2 * X)	0.00167	0.00167	0.00167
	(A1 * !A2 * B2 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * B1 * !B2 * X)	0.00172	0.00171	0.00172
	(A1 * !A2 * B1 * !B2 * X)	-0.00081	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	0.00156	0.00156	0.00155
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00175	-0.00186	-0.00188
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00191	-0.00191	-0.00191
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00191	0.00193	0.00192
	(A2 * B2 * X)	-0.00086	-0.00087	-0.00086
	(A2 * B1 * !B2 * X)	0.00196	0.00198	0.00197
	(A2 * B1 * !B2 * X)	-0.00081	-0.00083	-0.00082
	(A2 * !B1 * !B2 * !X)	0.00181	0.00181	0.00181
	(A2 * !B1 * !B2 * !X)	-0.00185	-0.00188	-0.00189
	(A1 * !A2 * B2 * X)	0.00192	0.00192	0.00193
	(A1 * !A2 * B2 * X)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * B1 * !B2 * X)	0.00197	0.00197	0.00197
	(A1 * !A2 * B1 * !B2 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	0.00183	0.00182	0.00181
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00174	-0.00184	-0.00187
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00173	0.00175	0.00173
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00189	-0.00191	-0.00189

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00312	0.00316	0.00313
	(A2 * B2 * X)	-0.00173	-0.00175	-0.00174
	(A2 * B1 * !B2 * X)	0.00322	0.00325	0.00323
	(A2 * B1 * !B2 * X)	-0.00163	-0.00166	-0.00164
	(A2 * !B1 * !B2 * !X)	0.00312	0.00314	0.00313
	(A2 * !B1 * !B2 * !X)	-0.00346	-0.00357	-0.00359
	(A1 * !A2 * B2 * X)	0.00314	0.00317	0.00314
	(A1 * !A2 * B2 * X)	-0.00170	-0.00172	-0.00170
	(A1 * !A2 * B1 * !B2 * X)	0.00323	0.00326	0.00324
	(A1 * !A2 * B1 * !B2 * X)	-0.00161	-0.00163	-0.00160
	(A1 * !A2 * !B1 * !B2 * !X)	0.00312	0.00316	0.00313
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00321	-0.00348	-0.00355
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00301	0.00302	0.00301
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00361	-0.00362	-0.00360

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00157	-0.00158	-0.00164
	(A2 * B2 * X)	0.00095	0.00095	0.00090
	(A2 * B1 * !B2 * X)	-0.00153	-0.00154	-0.00159
	(A2 * B1 * !B2 * X)	0.00100	0.00100	0.00095
	(A2 * !B1 * !B2 * !X)	-0.00140	-0.00141	-0.00141
	(A2 * !B1 * !B2 * !X)	0.00202	0.00203	0.00203
	(A1 * !A2 * B2 * X)	-0.00147	-0.00149	-0.00161
	(A1 * !A2 * B2 * X)	0.00101	0.00102	0.00092
	(A1 * !A2 * B1 * !B2 * X)	-0.00143	-0.00144	-0.00156
	(A1 * !A2 * B1 * !B2 * X)	0.00106	0.00106	0.00097
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00140	-0.00142	-0.00141
	(A1 * !A2 * !B1 * !B2 * !X)	0.00194	0.00196	0.00194
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00117	-0.00134	-0.00136
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00217	0.00209	0.00205
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00182	-0.00183	-0.00189
	(A2 * B2 * X)	0.00095	0.00096	0.00090
	(A2 * B1 * !B2 * X)	-0.00178	-0.00179	-0.00184
	(A2 * B1 * !B2 * X)	0.00100	0.00100	0.00095
	(A2 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00156
	(A2 * !B1 * !B2 * !X)	0.00213	0.00213	0.00213
	(A1 * !A2 * B2 * X)	-0.00172	-0.00173	-0.00186
	(A1 * !A2 * B2 * X)	0.00102	0.00102	0.00092
	(A1 * !A2 * B1 * !B2 * X)	-0.00168	-0.00169	-0.00181
	(A1 * !A2 * B1 * !B2 * X)	0.00107	0.00107	0.00097
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * !A2 * !B1 * !B2 * !X)	0.00204	0.00205	0.00205
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00130	-0.00148	-0.00150
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00226	0.00219	0.00216

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00288	-0.00291	-0.00307
	(A2 * B2 * X)	0.00195	0.00196	0.00182
	(A2 * B1 * !B2 * X)	-0.00279	-0.00281	-0.00297
	(A2 * B1 * !B2 * X)	0.00205	0.00205	0.00191
	(A2 * !B1 * !B2 * !X)	-0.00260	-0.00263	-0.00261
	(A2 * !B1 * !B2 * !X)	0.00404	0.00407	0.00405
	(A1 * !A2 * B2 * X)	-0.00264	-0.00267	-0.00300
	(A1 * !A2 * B2 * X)	0.00211	0.00211	0.00186
	(A1 * !A2 * B1 * !B2 * X)	-0.00255	-0.00257	-0.00291
	(A1 * !A2 * B1 * !B2 * X)	0.00220	0.00220	0.00196
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00260	-0.00263	-0.00261
	(A1 * !A2 * !B1 * !B2 * !X)	0.00386	0.00388	0.00387
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00214	-0.00248	-0.00252
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00436	0.00420	0.00413

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00220	0.00183	0.00180
	(A3 * B2 * X)	-0.00149	-0.00187	-0.00188
	(A2 * !A3 * B2 * X)	0.00220	0.00183	0.00180
	(A2 * !A3 * B2 * X)	-0.00149	-0.00187	-0.00187
	(A1 * !A2 * !A3 * B2 * X)	0.00224	0.00188	0.00184
	(A1 * !A2 * !A3 * B2 * X)	-0.00144	-0.00183	-0.00183
	(!A1 * !A2 * !A3 * B2 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00232	-0.00234	-0.00233
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00072	0.00072	0.00066
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00220	-0.00222	-0.00233

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00256	0.00220	0.00216
	(A3 * B2 * X)	-0.00165	-0.00204	-0.00204
	(A2 * !A3 * B2 * X)	0.00256	0.00220	0.00216
	(A2 * !A3 * B2 * X)	-0.00165	-0.00204	-0.00204
	(A1 * !A2 * !A3 * B2 * X)	0.00261	0.00224	0.00221
	(A1 * !A2 * !A3 * B2 * X)	-0.00161	-0.00199	-0.00199
	(!A1 * !A2 * !A3 * B2 * !X)	0.00081	0.00081	0.00080
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00256	-0.00257	-0.00256
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00091	0.00091	0.00084
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00242	-0.00243	-0.00256
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00473	0.00397	0.00383
	(A3 * B2 * X)	-0.00345	-0.00429	-0.00433
	(A2 * !A3 * B2 * X)	0.00474	0.00398	0.00384
	(A2 * !A3 * B2 * X)	-0.00343	-0.00426	-0.00431
	(A1 * !A2 * !A3 * B2 * X)	0.00488	0.00413	0.00395
	(A1 * !A2 * !A3 * B2 * X)	-0.00330	-0.00413	-0.00420
	(!A1 * !A2 * !A3 * B2 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00552	-0.00557	-0.00554
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00142	0.00143	0.00129
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00530	-0.00535	-0.00556

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00158	-0.00159	-0.00159
	(A3 * B2 * X)	0.00209	0.00211	0.00209
	(A2 * !A3 * B2 * X)	-0.00158	-0.00159	-0.00159
	(A2 * !A3 * B2 * X)	0.00209	0.00211	0.00209
	(A1 * !A2 * !A3 * B2 * X)	-0.00154	-0.00154	-0.00155
	(A1 * !A2 * !A3 * B2 * X)	0.00214	0.00215	0.00213
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00047	-0.00047	-0.00049
	(!A1 * !A2 * !A3 * B2 * !X)	0.00251	0.00252	0.00248
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00247	0.00251	0.00247
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00194	-0.00195	-0.00195
	(A3 * B2 * X)	0.00226	0.00229	0.00225
	(A2 * !A3 * B2 * X)	-0.00194	-0.00194	-0.00195
	(A2 * !A3 * B2 * X)	0.00226	0.00227	0.00226
	(A1 * !A2 * !A3 * B2 * X)	-0.00189	-0.00191	-0.00191
	(A1 * !A2 * !A3 * B2 * X)	0.00230	0.00233	0.00230
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00052	-0.00053	-0.00054
	(!A1 * !A2 * !A3 * B2 * !X)	0.00285	0.00287	0.00282
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00056	-0.00058	-0.00056
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00282	0.00287	0.00283
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00337	-0.00340	-0.00340
	(A3 * B2 * X)	0.00479	0.00484	0.00478
	(A2 * !A3 * B2 * X)	-0.00337	-0.00340	-0.00340
	(A2 * !A3 * B2 * X)	0.00478	0.00483	0.00477
	(A1 * !A2 * !A3 * B2 * X)	-0.00333	-0.00336	-0.00334
	(A1 * !A2 * !A3 * B2 * X)	0.00482	0.00488	0.00483
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00067	-0.00069	-0.00071
	(!A1 * !A2 * !A3 * B2 * !X)	0.00612	0.00617	0.00607
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00607	0.00610	0.00609

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00173	0.00177	0.00174
	(A3 * B1 * X)	-0.00087	-0.00089	-0.00087
	(A2 * !A3 * B1 * X)	0.00173	0.00177	0.00174
	(A2 * !A3 * B1 * X)	-0.00087	-0.00089	-0.00087
	(A1 * !A2 * !A3 * B1 * X)	0.00178	0.00181	0.00179
	(A1 * !A2 * !A3 * B1 * X)	-0.00083	-0.00085	-0.00083
	(!A1 * !A2 * !A3 * B1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00229	-0.00230	-0.00230
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00056
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00230
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00195	0.00198	0.00196
	(A3 * B1 * X)	-0.00088	-0.00089	-0.00087
	(A2 * !A3 * B1 * X)	0.00195	0.00199	0.00196
	(A2 * !A3 * B1 * X)	-0.00087	-0.00089	-0.00087
	(A1 * !A2 * !A3 * B1 * X)	0.00199	0.00203	0.00200
	(A1 * !A2 * !A3 * B1 * X)	-0.00083	-0.00085	-0.00083
	(!A1 * !A2 * !A3 * B1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00226	-0.00227	-0.00228
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00076	0.00076	0.00068
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00214	-0.00215	-0.00228

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00334	0.00336	0.00337
	(A3 * B1 * X)	-0.00175	-0.00176	-0.00176
	(A2 * !A3 * B1 * X)	0.00335	0.00336	0.00337
	(A2 * !A3 * B1 * X)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * !A3 * B1 * X)	0.00345	0.00345	0.00346
	(A1 * !A2 * !A3 * B1 * X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * B1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00437	-0.00439	-0.00439
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00414	-0.00418	-0.00440

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00162	-0.00163	-0.00170
	(A3 * B1 * X)	0.00100	0.00100	0.00093
	(A2 * !A3 * B1 * X)	-0.00162	-0.00163	-0.00169
	(A2 * !A3 * B1 * X)	0.00100	0.00100	0.00093
	(A1 * !A2 * !A3 * B1 * X)	-0.00157	-0.00157	-0.00165
	(A1 * !A2 * !A3 * B1 * X)	0.00104	0.00103	0.00097
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00037	-0.00038	-0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	0.00247	0.00248	0.00243
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00243	0.00247	0.00244

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00183	-0.00184	-0.00191
	(A3 * B1 * X)	0.00100	0.00100	0.00093
	(A2 * !A3 * B1 * X)	-0.00183	-0.00184	-0.00190
	(A2 * !A3 * B1 * X)	0.00101	0.00100	0.00094
	(A1 * !A2 * !A3 * B1 * X)	-0.00179	-0.00178	-0.00186
	(A1 * !A2 * !A3 * B1 * X)	0.00105	0.00104	0.00098
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00037	-0.00038	-0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	0.00256	0.00257	0.00253
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00254	0.00257	0.00254
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00308	-0.00309	-0.00327
	(A3 * B1 * X)	0.00200	0.00200	0.00188
	(A2 * !A3 * B1 * X)	-0.00308	-0.00310	-0.00326
	(A2 * !A3 * B1 * X)	0.00201	0.00202	0.00189
	(A1 * !A2 * !A3 * B1 * X)	-0.00299	-0.00302	-0.00318
	(A1 * !A2 * !A3 * B1 * X)	0.00209	0.00211	0.00197
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00063	-0.00065	-0.00068
	(!A1 * !A2 * !A3 * B1 * !X)	0.00495	0.00496	0.00489
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00491	0.00492	0.00492

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00281	0.00288	0.00298	0.00295	0.00299	0.32744
sky130_fd_sc_hs__o41ai_2	0.00555	0.00564	0.00543	0.00552	0.00581	0.56156
sky130_fd_sc_hs__o41ai_4	0.01080	0.01074	0.01089	0.01106	0.00801	1.04266

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	4.07528	13.92450
sky130_fd_sc_hs__o41ai_2	0.00000	8.15072	27.84560
sky130_fd_sc_hs__o41ai_4	0.00000	9.76901	41.75870

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)	0.21790	1.05696	8.71420
	A2->Y (FR)	0.20526	1.06998	9.18694
	A3->Y (FR)	0.17740	1.07836	9.66512
	A4->Y (FR)	0.13186	1.05448	9.82669
	B1->Y (FR)	0.02794	0.47197	4.94941
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.23304	0.92571	8.51646
	A2->Y (FR)	0.21745	0.92793	8.95570
	A3->Y (FR)	0.18506	0.94464	9.59195
	A4->Y (FR)	0.12005	0.90951	9.74306
	B1->Y (FR)	0.02200	0.39284	4.59017
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.22188	0.78444	8.32487
	A2->Y (FR)	0.20654	0.79421	8.85467
	A3->Y (FR)	0.17430	0.80909	9.49653
	A4->Y (FR)	0.11064	0.78402	9.72262
	B1->Y (FR)	0.02909	0.49187	6.51176

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.04376	0.33847	2.78987
	A2->Y (RF)	0.04484	0.33103	2.76309
	A3->Y (RF)	0.04328	0.32171	2.74272
	A4->Y (RF)	0.03465	0.30710	2.70011
	B1->Y (RF)	0.03421	0.38832	3.44667
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.04197	0.28844	2.59993
	A2->Y (RF)	0.04306	0.28052	2.57356
	A3->Y (RF)	0.04215	0.26911	2.53073
	A4->Y (RF)	0.03257	0.25157	2.49294
	B1->Y (RF)	0.03080	0.34240	3.36086
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.04679	0.25006	2.54669
	A2->Y (RF)	0.04568	0.23753	2.47808
	A3->Y (RF)	0.04204	0.22247	2.41617
	A4->Y (RF)	0.02953	0.19817	2.30794
	B1->Y (RF)	0.03432	0.34077	3.78682

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00164	0.00162	0.02359
	A1	0.01228	0.01228	0.03424
	A2	0.00169	0.00182	0.02203
	A2	0.01103	0.01117	0.03139
	A3	0.00168	0.00209	0.02098
	A3	0.00984	0.01025	0.02911
	A4	0.00163	0.00295	0.02758
	A4	0.00854	0.00988	0.03446
	B1	-0.00064	0.00245	0.04583
	B1	0.00436	0.00750	0.05118
sky130_fd_sc_hs__o41ai_2	A1	0.00250	0.00232	0.04540
	A1	0.02398	0.02377	0.06687
	A2	0.00259	0.00270	0.04222
	A2	0.02139	0.02146	0.06106
	A3	0.00268	0.00332	0.03928
	A3	0.01872	0.01935	0.05529
	A4	0.00251	0.00527	0.05119
	A4	0.01598	0.01874	0.06466
	B1	-0.00248	0.00437	0.09193
	B1	0.00723	0.01411	0.10168

sky130_fd_sc_hs__o41ai_4	**A1**	0.00426	0.00417	0.08322
	A1	0.04646	0.04634	0.12529
	A2	0.00440	0.00490	0.07810
	A2	0.04120	0.04175	0.11493
	A3	0.00438	0.00610	0.07392
	A3	0.03614	0.03783	0.10561
	A4	0.00406	0.00992	0.09676
	A4	0.03061	0.03645	0.12303
	B1	-0.00384	0.00526	0.10343
	B1	0.00996	0.01911	0.11803

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01457	0.01487	0.03373
	A1	0.00390	0.00419	0.02307
	A2	0.01217	0.01258	0.03036
	A2	0.00277	0.00316	0.02096
	A3	0.00963	0.01022	0.02712
	A3	0.00140	0.00200	0.01886
	A4	0.00705	0.00789	0.02435
	A4	0.00007	0.00089	0.01735
	B1	0.00475	0.00639	0.03623
	B1	-0.00026	0.00134	0.03120

sky130_fd_sc_hs__o41ai_2	**A1**	0.03072	0.03118	0.06819
	A1	0.00926	0.00970	0.04682
	A2	0.02518	0.02604	0.06098
	A2	0.00627	0.00712	0.04209
	A3	0.02011	0.02126	0.05373
	A3	0.00393	0.00509	0.03756
	A4	0.01363	0.01556	0.04754
	A4	0.00000	0.00193	0.03386
	B1	0.00918	0.01331	0.07558
	B1	-0.00055	0.00355	0.06581
sky130_fd_sc_hs__o41ai_4	**A1**	0.05793	0.05920	0.13370
	A1	0.01578	0.01696	0.09155
	A2	0.04734	0.04922	0.11872
	A2	0.01034	0.01224	0.08188
	A3	0.03730	0.04001	0.10485
	A3	0.00528	0.00798	0.07271
	A4	0.02523	0.02972	0.09364
	A4	-0.00157	0.00284	0.06679
	B1	0.01436	0.01939	0.08447
	B1	0.00058	0.00558	0.07060

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)**	0.00181	0.00182	0.00181
	(A2 * A4 * B1 * !Y)	-0.00210	-0.00216	-0.00216
	(A2 * A3 * !A4 * B1 * !Y)	0.00182	0.00182	0.00181
	(A2 * A3 * !A4 * B1 * !Y)	-0.00209	-0.00216	-0.00215
	(A2 * !B1 * Y)	0.00175	0.00176	0.00175
	(A2 * !B1 * Y)	-0.00217	-0.00222	-0.00221
	(A2 * !A3 * !A4 * B1 * !Y)	0.00213	0.00188	0.00186
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00181	-0.00211	-0.00211
	(!A2 * A3 * A4 * B1 * !Y)	0.00182	0.00182	0.00181
	(!A2 * A3 * A4 * B1 * !Y)	-0.00195	-0.00211	-0.00213
	(!A2 * A3 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A2 * A3 * !B1 * Y)	-0.00202	-0.00217	-0.00215
	(!A2 * A3 * !A4 * B1 * !Y)	0.00206	0.00188	0.00185
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00177	-0.00208	-0.00210
	(!A2 * !A3 * A4 * B1 * !Y)	0.00210	0.00192	0.00188
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00171	-0.00202	-0.00207
	(!A2 * !A3 * A4 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00197	-0.00212	-0.00212
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00167	0.00167	0.00167
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00223	-0.00223	-0.00223

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00361	0.00362	0.00360
	(A2 * A4 * B1 * !Y)	-0.00417	-0.00431	-0.00431
	(A2 * A3 * !A4 * B1 * !Y)	0.00362	0.00363	0.00360
	(A2 * A3 * !A4 * B1 * !Y)	-0.00414	-0.00431	-0.00431
	(A2 * !B1 * Y)	0.00348	0.00350	0.00348
	(A2 * !B1 * Y)	-0.00430	-0.00443	-0.00441
	(A2 * !A3 * !A4 * B1 * !Y)	0.00432	0.00374	0.00369
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00351	-0.00421	-0.00422
	(!A2 * A3 * A4 * B1 * !Y)	0.00361	0.00363	0.00360
	(!A2 * A3 * A4 * B1 * !Y)	-0.00385	-0.00422	-0.00426
	(!A2 * A3 * !B1 * Y)	0.00347	0.00350	0.00348
	(!A2 * A3 * !B1 * Y)	-0.00399	-0.00429	-0.00427
	(!A2 * A3 * !A4 * B1 * !Y)	0.00414	0.00374	0.00368
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00345	-0.00415	-0.00419
	(!A2 * !A3 * A4 * B1 * !Y)	0.00424	0.00383	0.00373
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00332	-0.00403	-0.00413
	(!A2 * !A3 * A4 * !B1 * Y)	0.00347	0.00350	0.00348
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00389	-0.00424	-0.00420
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00332	0.00333	0.00331
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00447	-0.00448	-0.00446

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00685	0.00688	0.00682
	(A2 * A4 * B1 * !Y)	-0.00844	-0.00873	-0.00872
	(A2 * A3 * !A4 * B1 * !Y)	0.00688	0.00689	0.00683
	(A2 * A3 * !A4 * B1 * !Y)	-0.00838	-0.00872	-0.00871
	(A2 * !B1 * Y)	0.00673	0.00677	0.00671
	(A2 * !B1 * Y)	-0.00858	-0.00885	-0.00880
	(A2 * !A3 * !A4 * B1 * !Y)	0.00837	0.00715	0.00704
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00707	-0.00849	-0.00853
	(!A2 * A3 * A4 * B1 * !Y)	0.00690	0.00689	0.00683
	(!A2 * A3 * A4 * B1 * !Y)	-0.00782	-0.00852	-0.00861
	(!A2 * A3 * !B1 * Y)	0.00674	0.00677	0.00671
	(!A2 * A3 * !B1 * Y)	-0.00798	-0.00858	-0.00849
	(!A2 * A3 * !A4 * B1 * !Y)	0.00799	0.00712	0.00699
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00701	-0.00838	-0.00847
	(!A2 * !A3 * A4 * B1 * !Y)	0.00815	0.00731	0.00708
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00679	-0.00815	-0.00835
	(!A2 * !A3 * A4 * !B1 * Y)	0.00674	0.00676	0.00671
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00777	-0.00844	-0.00836
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00639	0.00642	0.00637
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00893	-0.00894	-0.00890

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)**	-0.00168	-0.00169	-0.00169
	(A2 * A4 * B1 * !Y)	0.00226	0.00229	0.00227
	(A2 * A3 * !A4 * B1 * !Y)	-0.00168	-0.00169	-0.00169
	(A2 * A3 * !A4 * B1 * !Y)	0.00227	0.00228	0.00227
	(A2 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(A2 * !B1 * Y)	0.00221	0.00223	0.00221
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00168	-0.00168	-0.00168
	(A2 * !A3 * !A4 * B1 * !Y)	0.00229	0.00231	0.00230
	(!A2 * A3 * A4 * B1 * !Y)	-0.00168	-0.00170	-0.00168
	(!A2 * A3 * A4 * B1 * !Y)	0.00220	0.00223	0.00221
	(!A2 * A3 * !B1 * Y)	-0.00174	-0.00176	-0.00174
	(!A2 * A3 * !B1 * Y)	0.00215	0.00217	0.00215
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00165	-0.00167	-0.00165
	(!A2 * A3 * !A4 * B1 * !Y)	0.00225	0.00228	0.00226
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00162	-0.00163	-0.00161
	(!A2 * !A3 * A4 * B1 * !Y)	0.00226	0.00228	0.00227
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(!A2 * !A3 * A4 * !B1 * Y)	0.00211	0.00212	0.00212
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00151	-0.00166	-0.00167
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00230	0.00227	0.00224

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00333	-0.00334	-0.00334
	(A2 * A4 * B1 * !Y)	0.00451	0.00452	0.00453
	(A2 * A3 * !A4 * B1 * !Y)	-0.00334	-0.00334	-0.00334
	(A2 * A3 * !A4 * B1 * !Y)	0.00452	0.00452	0.00453
	(A2 * !B1 * Y)	-0.00346	-0.00348	-0.00346
	(A2 * !B1 * Y)	0.00440	0.00445	0.00441
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00332	-0.00334	-0.00333
	(A2 * !A3 * !A4 * B1 * !Y)	0.00456	0.00460	0.00459
	(!A2 * A3 * A4 * B1 * !Y)	-0.00334	-0.00336	-0.00334
	(!A2 * A3 * A4 * B1 * !Y)	0.00438	0.00443	0.00439
	(!A2 * A3 * !B1 * Y)	-0.00346	-0.00347	-0.00346
	(!A2 * A3 * !B1 * Y)	0.00426	0.00429	0.00427
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00330	-0.00332	-0.00330
	(!A2 * A3 * !A4 * B1 * !Y)	0.00447	0.00452	0.00449
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00322	-0.00322	-0.00319
	(!A2 * !A3 * A4 * B1 * !Y)	0.00449	0.00450	0.00452
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00346	-0.00348	-0.00346
	(!A2 * !A3 * A4 * !B1 * Y)	0.00420	0.00424	0.00420
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00299	-0.00328	-0.00331
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00462	0.00449	0.00449

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00653	-0.00659	-0.00656
	(A2 * A4 * B1 * !Y)	0.00886	0.00898	0.00892
	(A2 * A3 * !A4 * B1 * !Y)	-0.00653	-0.00658	-0.00656
	(A2 * A3 * !A4 * B1 * !Y)	0.00886	0.00897	0.00892
	(A2 * !B1 * Y)	-0.00664	-0.00672	-0.00667
	(A2 * !B1 * Y)	0.00874	0.00889	0.00880
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00652	-0.00655	-0.00652
	(A2 * !A3 * !A4 * B1 * !Y)	0.00902	0.00910	0.00904
	(!A2 * A3 * A4 * B1 * !Y)	-0.00656	-0.00660	-0.00656
	(!A2 * A3 * A4 * B1 * !Y)	0.00861	0.00870	0.00861
	(!A2 * A3 * !B1 * Y)	-0.00667	-0.00671	-0.00668
	(!A2 * A3 * !B1 * Y)	0.00849	0.00858	0.00849
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00646	-0.00650	-0.00644
	(!A2 * A3 * !A4 * B1 * !Y)	0.00880	0.00889	0.00884
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00631	-0.00632	-0.00626
	(!A2 * !A3 * A4 * B1 * !Y)	0.00884	0.00887	0.00890
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00667	-0.00671	-0.00668
	(!A2 * !A3 * A4 * !B1 * Y)	0.00836	0.00844	0.00836
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00577	-0.00636	-0.00637
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00921	0.00909	0.00895

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)**	0.00188	0.00190	0.00181
	(A1 * A3 * A4 * B1 * !Y)	-0.00148	-0.00149	-0.00151
	(A1 * A3 * !B1 * Y)	0.00169	0.00171	0.00170
	(A1 * A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(A1 * A3 * !A4 * B1 * !Y)	0.00193	0.00194	0.00181
	(A1 * A3 * !A4 * B1 * !Y)	-0.00138	-0.00140	-0.00146
	(A1 * !A3 * A4 * B1 * !Y)	0.00196	0.00208	0.00190
	(A1 * !A3 * A4 * B1 * !Y)	-0.00135	-0.00128	-0.00134
	(A1 * !A3 * A4 * !B1 * Y)	0.00169	0.00172	0.00170
	(A1 * !A3 * A4 * !B1 * Y)	-0.00146	-0.00146	-0.00145
	(A1 * !A3 * !A4 * B1 * !Y)	0.00183	0.00184	0.00180
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00097	-0.00098	-0.00100
	(A1 * !A3 * !A4 * !B1 * Y)	0.00171	0.00171	0.00170
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00215	-0.00217	-0.00216
	(!A1 * A3 * A4 * B1 * !Y)	0.00191	0.00178	0.00176
	(!A1 * A3 * A4 * B1 * !Y)	-0.00193	-0.00210	-0.00210
	(!A1 * A3 * !B1 * Y)	0.00171	0.00172	0.00170
	(!A1 * A3 * !B1 * Y)	-0.00213	-0.00215	-0.00216
	(!A1 * A3 * !A4 * B1 * !Y)	0.00230	0.00187	0.00181
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00158	-0.00202	-0.00206
	(!A1 * !A3 * A4 * B1 * !Y)	0.00234	0.00191	0.00182
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00143	-0.00197	-0.00202
	(!A1 * !A3 * A4 * !B1 * Y)	0.00171	0.00172	0.00170
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00198	-0.00208	-0.00207
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00161	0.00163	0.00161
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00217	-0.00219	-0.00218

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00396	0.00396	0.00378
	(A1 * A3 * A4 * B1 * !Y)	-0.00303	-0.00305	-0.00307
	(A1 * A3 * !B1 * Y)	0.00350	0.00352	0.00348
	(A1 * A3 * !B1 * Y)	-0.00310	-0.00312	-0.00311
	(A1 * A3 * !A4 * B1 * !Y)	0.00407	0.00407	0.00379
	(A1 * A3 * !A4 * B1 * !Y)	-0.00282	-0.00285	-0.00297
	(A1 * !A3 * A4 * B1 * !Y)	0.00397	0.00421	0.00390
	(A1 * !A3 * A4 * B1 * !Y)	-0.00290	-0.00268	-0.00282
	(A1 * !A3 * A4 * !B1 * Y)	0.00349	0.00351	0.00348
	(A1 * !A3 * A4 * !B1 * Y)	-0.00307	-0.00308	-0.00307
	(A1 * !A3 * !A4 * B1 * !Y)	0.00374	0.00377	0.00369
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00204	-0.00207	-0.00209
	(A1 * !A3 * !A4 * !B1 * Y)	0.00351	0.00351	0.00348
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00443	-0.00445	-0.00445
	(!A1 * A3 * A4 * B1 * !Y)	0.00381	0.00362	0.00361
	(!A1 * A3 * A4 * B1 * !Y)	-0.00411	-0.00436	-0.00437
	(!A1 * A3 * !B1 * Y)	0.00350	0.00350	0.00348
	(!A1 * A3 * !B1 * Y)	-0.00441	-0.00449	-0.00448
	(!A1 * A3 * !A4 * B1 * !Y)	0.00464	0.00379	0.00371
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00336	-0.00422	-0.00428
	(!A1 * !A3 * A4 * B1 * !Y)	0.00463	0.00390	0.00373
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00315	-0.00410	-0.00422
	(!A1 * !A3 * A4 * !B1 * Y)	0.00347	0.00353	0.00348
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00409	-0.00432	-0.00431
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00331	0.00331	0.00331
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00453	-0.00453	-0.00452

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00743	0.00741	0.00706
	(A1 * A3 * A4 * B1 * !Y)	-0.00587	-0.00592	-0.00592
	(A1 * A3 * !B1 * Y)	0.00669	0.00672	0.00665
	(A1 * A3 * !B1 * Y)	-0.00585	-0.00590	-0.00587
	(A1 * A3 * !A4 * B1 * !Y)	0.00765	0.00761	0.00706
	(A1 * A3 * !A4 * B1 * !Y)	-0.00548	-0.00554	-0.00579
	(A1 * !A3 * A4 * B1 * !Y)	0.00757	0.00801	0.00736
	(A1 * !A3 * A4 * B1 * !Y)	-0.00560	-0.00517	-0.00548
	(A1 * !A3 * A4 * !B1 * Y)	0.00663	0.00669	0.00665
	(A1 * !A3 * A4 * !B1 * Y)	-0.00583	-0.00583	-0.00583
	(A1 * !A3 * !A4 * B1 * !Y)	0.00717	0.00723	0.00694
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00404	-0.00408	-0.00410
	(A1 * !A3 * !A4 * !B1 * Y)	0.00660	0.00669	0.00664
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00869	-0.00876	-0.00873
	(!A1 * A3 * A4 * B1 * !Y)	0.00735	0.00680	0.00677
	(!A1 * A3 * A4 * B1 * !Y)	-0.00798	-0.00864	-0.00867
	(!A1 * A3 * !B1 * Y)	0.00669	0.00666	0.00664
	(!A1 * A3 * !B1 * Y)	-0.00862	-0.00878	-0.00876
	(!A1 * A3 * !A4 * B1 * !Y)	0.00905	0.00718	0.00698
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00647	-0.00834	-0.00849
	(!A1 * !A3 * A4 * B1 * !Y)	0.00908	0.00730	0.00702
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00600	-0.00805	-0.00836
	(!A1 * !A3 * A4 * !B1 * Y)	0.00662	0.00664	0.00664
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00796	-0.00846	-0.00839
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00631	0.00632	0.00631
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00889	-0.00889	-0.00887

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)**	-0.00163	-0.00164	-0.00163
	(A1 * A3 * A4 * B1 * !Y)	0.00155	0.00156	0.00154
	(A1 * A3 * !B1 * Y)	-0.00168	-0.00169	-0.00169
	(A1 * A3 * !B1 * Y)	0.00150	0.00151	0.00150
	(A1 * A3 * !A4 * B1 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * A3 * !A4 * B1 * !Y)	0.00152	0.00152	0.00151
	(A1 * !A3 * A4 * B1 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * A4 * B1 * !Y)	0.00146	0.00147	0.00146
	(A1 * !A3 * A4 * !B1 * Y)	-0.00169	-0.00169	-0.00169
	(A1 * !A3 * A4 * !B1 * Y)	0.00146	0.00146	0.00145
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * !A3 * !A4 * B1 * !Y)	0.00123	0.00124	0.00123
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * !A4 * !B1 * Y)	0.00215	0.00217	0.00216
	(!A1 * A3 * A4 * B1 * !Y)	-0.00162	-0.00163	-0.00163
	(!A1 * A3 * A4 * B1 * !Y)	0.00221	0.00222	0.00222
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00169	-0.00169
	(!A1 * A3 * !B1 * Y)	0.00215	0.00215	0.00216
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * !A4 * B1 * !Y)	0.00228	0.00229	0.00229
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00156	-0.00157	-0.00155
	(!A1 * !A3 * A4 * B1 * !Y)	0.00223	0.00225	0.00225
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00168	-0.00170	-0.00169
	(!A1 * !A3 * A4 * !B1 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00146	-0.00161	-0.00161
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00225	0.00222	0.00219

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00336	-0.00336	-0.00335
	(A1 * A3 * A4 * B1 * !Y)	0.00321	0.00320	0.00319
	(A1 * A3 * !B1 * Y)	-0.00346	-0.00347	-0.00347
	(A1 * A3 * !B1 * Y)	0.00310	0.00312	0.00311
	(A1 * A3 * !A4 * B1 * !Y)	-0.00336	-0.00336	-0.00335
	(A1 * A3 * !A4 * B1 * !Y)	0.00315	0.00315	0.00314
	(A1 * !A3 * A4 * B1 * !Y)	-0.00336	-0.00339	-0.00336
	(A1 * !A3 * A4 * B1 * !Y)	0.00306	0.00309	0.00306
	(A1 * !A3 * A4 * !B1 * Y)	-0.00346	-0.00347	-0.00347
	(A1 * !A3 * A4 * !B1 * Y)	0.00307	0.00308	0.00307
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00314	-0.00316	-0.00314
	(A1 * !A3 * !A4 * B1 * !Y)	0.00260	0.00263	0.00260
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00346	-0.00347	-0.00347
	(A1 * !A3 * !A4 * !B1 * Y)	0.00443	0.00445	0.00445
	(!A1 * A3 * A4 * B1 * !Y)	-0.00334	-0.00335	-0.00334
	(!A1 * A3 * A4 * B1 * !Y)	0.00460	0.00462	0.00460
	(!A1 * A3 * !B1 * Y)	-0.00346	-0.00349	-0.00347
	(!A1 * A3 * !B1 * Y)	0.00447	0.00452	0.00448
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00329	-0.00329	-0.00328
	(!A1 * A3 * !A4 * B1 * !Y)	0.00470	0.00471	0.00470
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00322	-0.00324	-0.00319
	(!A1 * !A3 * A4 * B1 * !Y)	0.00461	0.00465	0.00465
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00346	-0.00347	-0.00347
	(!A1 * !A3 * A4 * !B1 * Y)	0.00430	0.00432	0.00431
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00296	-0.00328	-0.00331
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00469	0.00456	0.00454

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00651	-0.00651	-0.00650
	(A1 * A3 * A4 * B1 * !Y)	0.00594	0.00594	0.00592
	(A1 * A3 * !B1 * Y)	-0.00659	-0.00663	-0.00661
	(A1 * A3 * !B1 * Y)	0.00585	0.00590	0.00587
	(A1 * A3 * !A4 * B1 * !Y)	-0.00651	-0.00651	-0.00650
	(A1 * A3 * !A4 * B1 * !Y)	0.00584	0.00584	0.00582
	(A1 * !A3 * A4 * B1 * !Y)	-0.00651	-0.00656	-0.00651
	(A1 * !A3 * A4 * B1 * !Y)	0.00572	0.00579	0.00572
	(A1 * !A3 * A4 * !B1 * Y)	-0.00661	-0.00661	-0.00661
	(A1 * !A3 * A4 * !B1 * Y)	0.00583	0.00583	0.00583
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00613	-0.00616	-0.00611
	(A1 * !A3 * !A4 * B1 * !Y)	0.00485	0.00487	0.00485
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00659	-0.00663	-0.00661
	(A1 * !A3 * !A4 * !B1 * Y)	0.00871	0.00876	0.00873
	(!A1 * A3 * A4 * B1 * !Y)	-0.00647	-0.00650	-0.00648
	(!A1 * A3 * A4 * B1 * !Y)	0.00886	0.00891	0.00889
	(!A1 * A3 * !B1 * Y)	-0.00660	-0.00662	-0.00661
	(!A1 * A3 * !B1 * Y)	0.00873	0.00878	0.00876
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00627	-0.00630	-0.00629
	(!A1 * A3 * !A4 * B1 * !Y)	0.00908	0.00913	0.00914
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00624	-0.00627	-0.00617
	(!A1 * !A3 * A4 * B1 * !Y)	0.00891	0.00899	0.00899
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00660	-0.00664	-0.00661
	(!A1 * !A3 * A4 * !B1 * Y)	0.00837	0.00846	0.00839
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00568	-0.00626	-0.00631
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00917	0.00894	0.00892

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)**	0.00205	0.00206	0.00195
	(A2 * A4 * B1 * !Y)	-0.00130	-0.00132	-0.00138
	(A2 * A4 * !B1 * Y)	0.00170	0.00172	0.00170
	(A2 * A4 * !B1 * Y)	-0.00153	-0.00154	-0.00153
	(A2 * !A4 * B1 * !Y)	0.00186	0.00188	0.00183
	(A2 * !A4 * B1 * !Y)	-0.00098	-0.00099	-0.00100
	(A2 * !A4 * !B1 * Y)	0.00171	0.00171	0.00170
	(A2 * !A4 * !B1 * Y)	-0.00218	-0.00221	-0.00221
	(A1 * !A2 * A4 * B1 * !Y)	0.00224	0.00209	0.00199
	(A1 * !A2 * A4 * B1 * !Y)	-0.00113	-0.00129	-0.00131
	(A1 * !A2 * A4 * !B1 * Y)	0.00169	0.00172	0.00170
	(A1 * !A2 * A4 * !B1 * Y)	-0.00151	-0.00151	-0.00150
	(A1 * !A2 * !A4 * B1 * !Y)	0.00188	0.00192	0.00185
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00094	-0.00097	-0.00098
	(A1 * !A2 * !A4 * !B1 * Y)	0.00171	0.00172	0.00170
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00203	-0.00212	-0.00211
	(!A1 * !A2 * A4 * B1 * !Y)	0.00248	0.00197	0.00189
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00146	-0.00197	-0.00202
	(!A1 * !A2 * A4 * !B1 * Y)	0.00171	0.00171	0.00170
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00220	-0.00221	-0.00221
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00162	0.00163	0.00163
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00222	-0.00223	-0.00223

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00391	0.00399	0.00370
	(A2 * A4 * B1 * !Y)	-0.00273	-0.00273	-0.00287
	(A2 * A4 * !B1 * Y)	0.00331	0.00333	0.00330
	(A2 * A4 * !B1 * Y)	-0.00309	-0.00313	-0.00309
	(A2 * !A4 * B1 * !Y)	0.00352	0.00355	0.00346
	(A2 * !A4 * B1 * !Y)	-0.00202	-0.00204	-0.00206
	(A2 * !A4 * !B1 * Y)	0.00331	0.00332	0.00330
	(A2 * !A4 * !B1 * Y)	-0.00430	-0.00439	-0.00438
	(A1 * !A2 * A4 * B1 * !Y)	0.00435	0.00394	0.00371
	(A1 * !A2 * A4 * B1 * !Y)	-0.00228	-0.00260	-0.00273
	(A1 * !A2 * A4 * !B1 * Y)	0.00330	0.00332	0.00330
	(A1 * !A2 * A4 * !B1 * Y)	-0.00300	-0.00302	-0.00300
	(A1 * !A2 * !A4 * B1 * !Y)	0.00359	0.00366	0.00351
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00191	-0.00196	-0.00199
	(A1 * !A2 * !A4 * !B1 * Y)	0.00329	0.00334	0.00330
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00398	-0.00416	-0.00416
	(!A1 * !A2 * A4 * B1 * !Y)	0.00498	0.00373	0.00356
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00277	-0.00402	-0.00414
	(!A1 * !A2 * A4 * !B1 * Y)	0.00331	0.00332	0.00330
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00437	-0.00438	-0.00436
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00313	0.00313	0.00314
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00442	-0.00441	-0.00442

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00772	0.00791	0.00740
	(A2 * A4 * B1 * !Y)	-0.00546	-0.00550	-0.00575
	(A2 * A4 * !B1 * Y)	0.00681	0.00685	0.00676
	(A2 * A4 * !B1 * Y)	-0.00603	-0.00609	-0.00603
	(A2 * !A4 * B1 * !Y)	0.00707	0.00712	0.00694
	(A2 * !A4 * B1 * !Y)	-0.00421	-0.00424	-0.00428
	(A2 * !A4 * !B1 * Y)	0.00674	0.00681	0.00675
	(A2 * !A4 * !B1 * Y)	-0.00866	-0.00891	-0.00886
	(A1 * !A2 * A4 * B1 * !Y)	0.00876	0.00795	0.00753
	(A1 * !A2 * A4 * B1 * !Y)	-0.00469	-0.00528	-0.00551
	(A1 * !A2 * A4 * !B1 * Y)	0.00679	0.00679	0.00676
	(A1 * !A2 * A4 * !B1 * Y)	-0.00593	-0.00596	-0.00593
	(A1 * !A2 * !A4 * B1 * !Y)	0.00718	0.00730	0.00703
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00405	-0.00414	-0.00417
	(A1 * !A2 * !A4 * !B1 * Y)	0.00678	0.00675	0.00675
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00808	-0.00833	-0.00832
	(!A1 * !A2 * A4 * B1 * !Y)	0.00986	0.00750	0.00716
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00584	-0.00834	-0.00855
	(!A1 * !A2 * A4 * !B1 * Y)	0.00674	0.00681	0.00675
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00886	-0.00892	-0.00890
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00645	0.00646	0.00643
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00902	-0.00902	-0.00899

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)**	-0.00169	-0.00170	-0.00169
	(A2 * A4 * B1 * !Y)	0.00148	0.00148	0.00148
	(A2 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A2 * A4 * !B1 * Y)	0.00153	0.00154	0.00153
	(A2 * !A4 * B1 * !Y)	-0.00168	-0.00169	-0.00167
	(A2 * !A4 * B1 * !Y)	0.00117	0.00117	0.00117
	(A2 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A2 * !A4 * !B1 * Y)	0.00220	0.00222	0.00221
	(A1 * !A2 * A4 * B1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * A4 * B1 * !Y)	0.00147	0.00148	0.00147
	(A1 * !A2 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * A4 * !B1 * Y)	0.00151	0.00151	0.00150
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00161	-0.00162	-0.00168
	(A1 * !A2 * !A4 * B1 * !Y)	0.00120	0.00120	0.00115
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !A4 * !B1 * Y)	0.00210	0.00212	0.00211
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00163	-0.00164	-0.00164
	(!A1 * !A2 * A4 * B1 * !Y)	0.00228	0.00230	0.00228
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00169	-0.00169	-0.00169
	(!A1 * !A2 * A4 * !B1 * Y)	0.00220	0.00221	0.00221
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00146	-0.00161	-0.00163
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00230	0.00227	0.00224

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00319	-0.00321	-0.00319
	(A2 * A4 * B1 * !Y)	0.00305	0.00307	0.00305
	(A2 * A4 * !B1 * Y)	-0.00327	-0.00330	-0.00328
	(A2 * A4 * !B1 * Y)	0.00309	0.00313	0.00309
	(A2 * !A4 * B1 * !Y)	-0.00314	-0.00315	-0.00310
	(A2 * !A4 * B1 * !Y)	0.00239	0.00240	0.00241
	(A2 * !A4 * !B1 * Y)	-0.00326	-0.00329	-0.00328
	(A2 * !A4 * !B1 * Y)	0.00435	0.00439	0.00438
	(A1 * !A2 * A4 * B1 * !Y)	-0.00316	-0.00319	-0.00316
	(A1 * !A2 * A4 * B1 * !Y)	0.00301	0.00306	0.00303
	(A1 * !A2 * A4 * !B1 * Y)	-0.00327	-0.00328	-0.00328
	(A1 * !A2 * A4 * !B1 * Y)	0.00300	0.00302	0.00300
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00298	-0.00302	-0.00310
	(A1 * !A2 * !A4 * B1 * !Y)	0.00242	0.00244	0.00238
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00327	-0.00328	-0.00328
	(A1 * !A2 * !A4 * !B1 * Y)	0.00415	0.00416	0.00416
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00304	-0.00305	-0.00303
	(!A1 * !A2 * A4 * B1 * !Y)	0.00465	0.00466	0.00465
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00328	-0.00329	-0.00328
	(!A1 * !A2 * A4 * !B1 * Y)	0.00437	0.00438	0.00436
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00282	-0.00312	-0.00314
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00456	0.00446	0.00444

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00663	-0.00667	-0.00664
	(A2 * A4 * B1 * !Y)	0.00586	0.00592	0.00588
	(A2 * A4 * !B1 * Y)	-0.00673	-0.00677	-0.00673
	(A2 * A4 * !B1 * Y)	0.00603	0.00609	0.00603
	(A2 * !A4 * B1 * !Y)	-0.00656	-0.00658	-0.00651
	(A2 * !A4 * B1 * !Y)	0.00466	0.00469	0.00472
	(A2 * !A4 * !B1 * Y)	-0.00670	-0.00676	-0.00672
	(A2 * !A4 * !B1 * Y)	0.00883	0.00891	0.00886
	(A1 * !A2 * A4 * B1 * !Y)	-0.00659	-0.00665	-0.00658
	(A1 * !A2 * A4 * B1 * !Y)	0.00587	0.00595	0.00590
	(A1 * !A2 * A4 * !B1 * Y)	-0.00672	-0.00674	-0.00672
	(A1 * !A2 * A4 * !B1 * Y)	0.00593	0.00596	0.00593
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00622	-0.00631	-0.00650
	(A1 * !A2 * !A4 * B1 * !Y)	0.00474	0.00480	0.00466
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00671	-0.00673	-0.00672
	(A1 * !A2 * !A4 * !B1 * Y)	0.00830	0.00833	0.00832
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00636	-0.00638	-0.00635
	(!A1 * !A2 * A4 * B1 * !Y)	0.00934	0.00938	0.00935
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00669	-0.00673	-0.00672
	(!A1 * !A2 * A4 * !B1 * Y)	0.00886	0.00892	0.00890
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00577	-0.00641	-0.00643
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00931	0.00910	0.00904

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00197	0.00199	0.00198
	(A3 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A3 * !B1 * Y)	0.00170	0.00171	0.00169
	(A3 * !B1 * Y)	-0.00217	-0.00222	-0.00221
	(A2 * !A3 * B1 * !Y)	0.00197	0.00199	0.00198
	(A2 * !A3 * B1 * !Y)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00169
	(A2 * !A3 * !B1 * Y)	-0.00201	-0.00214	-0.00213
	(A1 * !A2 * !A3 * B1 * !Y)	0.00198	0.00200	0.00198
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00169
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00194	-0.00210	-0.00209
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00161	0.00162	0.00161
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00223	-0.00224	-0.00223
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00384	0.00390	0.00384
	(A3 * B1 * !Y)	-0.00184	-0.00187	-0.00184
	(A3 * !B1 * Y)	0.00335	0.00335	0.00334
	(A3 * !B1 * Y)	-0.00430	-0.00443	-0.00442
	(A2 * !A3 * B1 * !Y)	0.00384	0.00390	0.00384
	(A2 * !A3 * B1 * !Y)	-0.00184	-0.00186	-0.00183
	(A2 * !A3 * !B1 * Y)	0.00333	0.00334	0.00334
	(A2 * !A3 * !B1 * Y)	-0.00395	-0.00422	-0.00424
	(A1 * !A2 * !A3 * B1 * !Y)	0.00384	0.00391	0.00385
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00181	-0.00184	-0.00181
	(A1 * !A2 * !A3 * !B1 * Y)	0.00332	0.00338	0.00334
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00380	-0.00415	-0.00412
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00317	0.00318	0.00317
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00448	-0.00448	-0.00447

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00780	0.00789	0.00777
	(A3 * B1 * !Y)	-0.00371	-0.00374	-0.00367
	(A3 * !B1 * Y)	0.00680	0.00680	0.00677
	(A3 * !B1 * Y)	-0.00852	-0.00882	-0.00880
	(A2 * !A3 * B1 * !Y)	0.00779	0.00789	0.00777
	(A2 * !A3 * B1 * !Y)	-0.00368	-0.00371	-0.00365
	(A2 * !A3 * !B1 * Y)	0.00675	0.00679	0.00676
	(A2 * !A3 * !B1 * Y)	-0.00780	-0.00834	-0.00834
	(A1 * !A2 * !A3 * B1 * !Y)	0.00773	0.00790	0.00778
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00359	-0.00367	-0.00361
	(A1 * !A2 * !A3 * !B1 * Y)	0.00676	0.00685	0.00676
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00751	-0.00804	-0.00805
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00644	0.00645	0.00643
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00891	-0.00891	-0.00888

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00178	-0.00179	-0.00184
	(A3 * B1 * !Y)	0.00108	0.00108	0.00103
	(A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A3 * !B1 * Y)	0.00220	0.00223	0.00221
	(A2 * !A3 * B1 * !Y)	-0.00168	-0.00169	-0.00182
	(A2 * !A3 * B1 * !Y)	0.00114	0.00114	0.00103
	(A2 * !A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * !A3 * !B1 * Y)	0.00212	0.00214	0.00213
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00153	-0.00155	-0.00179
	(A1 * !A2 * !A3 * B1 * !Y)	0.00123	0.00123	0.00106
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * !A3 * !B1 * Y)	0.00208	0.00210	0.00209
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00146	-0.00160	-0.00161
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00230	0.00227	0.00224
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00336	-0.00341	-0.00357
	(A3 * B1 * !Y)	0.00227	0.00229	0.00213
	(A3 * !B1 * Y)	-0.00333	-0.00333	-0.00332
	(A3 * !B1 * Y)	0.00442	0.00443	0.00442
	(A2 * !A3 * B1 * !Y)	-0.00315	-0.00320	-0.00352
	(A2 * !A3 * B1 * !Y)	0.00238	0.00240	0.00213
	(A2 * !A3 * !B1 * Y)	-0.00332	-0.00331	-0.00332
	(A2 * !A3 * !B1 * Y)	0.00423	0.00422	0.00424
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00279	-0.00285	-0.00342
	(A1 * !A2 * !A3 * B1 * !Y)	0.00260	0.00262	0.00220
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332
	(A1 * !A2 * !A3 * !B1 * Y)	0.00411	0.00415	0.00412
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00286	-0.00317	-0.00317
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00461	0.00451	0.00449

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00711	-0.00719	-0.00746
	(A3 * B1 * !Y)	0.00424	0.00427	0.00401
	(A3 * !B1 * Y)	-0.00671	-0.00675	-0.00673
	(A3 * !B1 * Y)	0.00875	0.00882	0.00880
	(A2 * !A3 * B1 * !Y)	-0.00669	-0.00678	-0.00738
	(A2 * !A3 * B1 * !Y)	0.00442	0.00445	0.00399
	(A2 * !A3 * !B1 * Y)	-0.00673	-0.00674	-0.00673
	(A2 * !A3 * !B1 * Y)	0.00832	0.00834	0.00834
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00600	-0.00610	-0.00719
	(A1 * !A2 * !A3 * B1 * !Y)	0.00486	0.00489	0.00413
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00675	-0.00672	-0.00673
	(A1 * !A2 * !A3 * !B1 * Y)	0.00807	0.00804	0.00805
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00582	-0.00641	-0.00643
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00921	0.00899	0.00893

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)	0.00071	0.00071	0.00064
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00254	-0.00255	-0.00268
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00165	0.00165	0.00151
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00486	-0.00488	-0.00515
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00240	0.00241	0.00215
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00525	-0.00530	-0.00580

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)	-0.00060	-0.00061	-0.00061
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00269	0.00270	0.00271
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00145	-0.00147	-0.00144
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00518	0.00528	0.00520
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00203	-0.00207	-0.00203
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00586	0.00597	0.00588

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00268	0.00278	0.00278	0.00280	0.00254	1.24390
sky130_fd_sc_hs__o41a_2	0.00284	0.00297	0.00304	0.00290	0.00290	2.56841
sky130_fd_sc_hs__o41a_4	0.00516	0.00554	0.00557	0.00521	0.00476	4.53294

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	13.17650	25.33310
sky130_fd_sc_hs__o41a_2	0.00000	13.64170	18.54460
sky130_fd_sc_hs__o41a_4	0.00000	34.01160	51.22320

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)	0.09602	0.59170	6.20961
	A2->X (RR)	0.09381	0.57596	6.05466
	A3->X (RR)	0.08732	0.55552	5.92220
	A4->X (RR)	0.07496	0.52999	5.84566
	B1->X (RR)	0.08570	0.61032	6.55303
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.09626	0.50226	6.17887
	A2->X (RR)	0.09458	0.49000	6.03915
	A3->X (RR)	0.08946	0.47376	5.91985
	A4->X (RR)	0.07643	0.45043	5.84888
	B1->X (RR)	0.08657	0.52731	6.64640
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.10634	0.45075	6.15118
	A2->X (RR)	0.10459	0.43866	6.01588
	A3->X (RR)	0.09363	0.41650	5.87347
	A4->X (RR)	0.08231	0.39190	5.82161
	B1->X (RR)	0.09562	0.48646	6.65136

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.26232	0.66194	5.16517
	A2->X (FF)	0.24863	0.67249	5.33836
	A3->X (FF)	0.21937	0.68137	5.46318
	A4->X (FF)	0.17665	0.66903	5.48295
	B1->X (FF)	0.06730	0.49513	4.85288
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.31630	0.70513	5.52911
	A2->X (FF)	0.30455	0.72032	5.71402
	A3->X (FF)	0.27720	0.73174	5.85900
	A4->X (FF)	0.22930	0.72088	5.89798
	B1->X (FF)	0.07081	0.47215	5.02160
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.32832	0.67184	5.35562
	A2->X (FF)	0.31267	0.67849	5.52307
	A3->X (FF)	0.27410	0.68090	5.65875
	A4->X (FF)	0.21937	0.66243	5.67743
	B1->X (FF)	0.07839	0.44664	4.90169

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01831	0.01957	0.07023
	A1	0.00827	0.00955	0.06068
	A2	0.01580	0.01713	0.06260
	A2	0.00706	0.00841	0.05440
	A3	0.01313	0.01469	0.05681
	A3	0.00567	0.00725	0.04939
	A4	0.01077	0.01280	0.06075
	A4	0.00448	0.00653	0.05455
	B1	0.00862	0.01271	0.08289
	B1	0.00446	0.00857	0.07923
sky130_fd_sc_hs__o41a_2	A1	0.02213	0.02344	0.07498
	A1	0.01138	0.01274	0.06528
	A2	0.01977	0.02116	0.06703
	A2	0.01028	0.01172	0.05868
	A3	0.01711	0.01875	0.06121
	A3	0.00881	0.01047	0.05292
	A4	0.01435	0.01653	0.06464
	A4	0.00737	0.00956	0.05794
	B1	0.01187	0.01638	0.09760
	B1	0.00708	0.01167	0.09375

sky130_fd_sc_hs__o41a_4	**A1**	0.04414	0.04605	0.14181
	A1	0.02412	0.02610	0.12373
	A2	0.03971	0.04199	0.12867
	A2	0.02153	0.02384	0.11255
	A3	0.03326	0.03640	0.11665
	A3	0.01782	0.02100	0.10155
	A4	0.02722	0.03136	0.12244
	A4	0.01484	0.01903	0.11050
	B1	0.02822	0.03567	0.18177
	B1	0.01468	0.02332	0.17365

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00647	0.00626	0.05793
	A1	0.01645	0.01626	0.06689
	A2	0.00654	0.00672	0.05356
	A2	0.01520	0.01539	0.06071
	A3	0.00654	0.00732	0.05092
	A3	0.01392	0.01469	0.05656
	A4	0.00647	0.00847	0.05735
	A4	0.01267	0.01468	0.06273
	B1	0.00358	0.00866	0.08830
	B1	0.01025	0.01521	0.09281

sky130_fd_sc_hs__o41a_2	**A1**	0.01280	0.00978	0.06260
	A1	0.02345	0.02052	0.07143
	A2	0.01286	0.01029	0.05627
	A2	0.02224	0.01967	0.06493
	A3	0.01285	0.01087	0.05244
	A3	0.02104	0.01905	0.06058
	A4	0.01283	0.01204	0.06022
	A4	0.01970	0.01891	0.06698
	B1	0.00685	0.01208	0.09627
	B1	0.01418	0.01921	0.10155
sky130_fd_sc_hs__o41a_4	**A1**	0.02587	0.01856	0.11656
	A1	0.04580	0.03945	0.13311
	A2	0.02518	0.01946	0.10624
	A2	0.04323	0.03749	0.12235
	A3	0.02535	0.02097	0.10073
	A3	0.04061	0.03624	0.11431
	A4	0.02580	0.02365	0.11622
	A4	0.03803	0.03593	0.12610
	B1	0.01432	0.02349	0.17918
	B1	0.02757	0.03672	0.18913

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)**	0.00169	0.00170	0.00169
	(A2 * A4 * B1 * X)	-0.00203	-0.00209	-0.00208
	(A2 * A3 * !A4 * B1 * X)	0.00170	0.00170	0.00169
	(A2 * A3 * !A4 * B1 * X)	-0.00202	-0.00209	-0.00208
	(A2 * !B1 * !X)	0.00160	0.00161	0.00160
	(A2 * !B1 * !X)	-0.00213	-0.00218	-0.00218
	(A2 * !A3 * !A4 * B1 * X)	0.00202	0.00176	0.00174
	(A2 * !A3 * !A4 * B1 * X)	-0.00172	-0.00204	-0.00204
	(!A2 * A3 * A4 * B1 * X)	0.00170	0.00170	0.00169
	(!A2 * A3 * A4 * B1 * X)	-0.00187	-0.00204	-0.00206
	(!A2 * A3 * !B1 * !X)	0.00159	0.00160	0.00160
	(!A2 * A3 * !B1 * !X)	-0.00198	-0.00214	-0.00216
	(!A2 * A3 * !A4 * B1 * X)	0.00195	0.00176	0.00173
	(!A2 * A3 * !A4 * B1 * X)	-0.00168	-0.00201	-0.00203
	(!A2 * !A3 * A4 * B1 * X)	0.00199	0.00180	0.00176
	(!A2 * !A3 * A4 * B1 * X)	-0.00163	-0.00195	-0.00200
	(!A2 * !A3 * A4 * !B1 * !X)	0.00159	0.00160	0.00160
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00193	-0.00211	-0.00215
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00219	-0.00219	-0.00219

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00185	0.00186	0.00185
	(A2 * A4 * B1 * X)	-0.00205	-0.00211	-0.00210
	(A2 * A3 * !A4 * B1 * X)	0.00186	0.00187	0.00185
	(A2 * A3 * !A4 * B1 * X)	-0.00204	-0.00210	-0.00210
	(A2 * !B1 * !X)	0.00188	0.00189	0.00187
	(A2 * !B1 * !X)	-0.00203	-0.00209	-0.00208
	(A2 * !A3 * !A4 * B1 * X)	0.00217	0.00192	0.00190
	(A2 * !A3 * !A4 * B1 * X)	-0.00177	-0.00206	-0.00206
	(!A2 * A3 * A4 * B1 * X)	0.00186	0.00186	0.00185
	(!A2 * A3 * A4 * B1 * X)	-0.00190	-0.00206	-0.00208
	(!A2 * A3 * !B1 * !X)	0.00187	0.00188	0.00187
	(!A2 * A3 * !B1 * !X)	-0.00188	-0.00204	-0.00206
	(!A2 * A3 * !A4 * B1 * X)	0.00210	0.00192	0.00189
	(!A2 * A3 * !A4 * B1 * X)	-0.00172	-0.00202	-0.00205
	(!A2 * !A3 * A4 * B1 * X)	0.00214	0.00196	0.00192
	(!A2 * !A3 * A4 * B1 * X)	-0.00166	-0.00197	-0.00202
	(!A2 * !A3 * A4 * !B1 * !X)	0.00187	0.00188	0.00187
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00183	-0.00201	-0.00205
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00178	0.00179	0.00178
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00209	-0.00210	-0.00209

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00317	0.00318	0.00315
	(A2 * A4 * B1 * X)	-0.00394	-0.00408	-0.00407
	(A2 * A3 * !A4 * B1 * X)	0.00319	0.00318	0.00316
	(A2 * A3 * !A4 * B1 * X)	-0.00391	-0.00407	-0.00407
	(A2 * !B1 * !X)	0.00308	0.00310	0.00307
	(A2 * !B1 * !X)	-0.00404	-0.00416	-0.00415
	(A2 * !A3 * !A4 * B1 * X)	0.00399	0.00335	0.00327
	(A2 * !A3 * !A4 * B1 * X)	-0.00319	-0.00393	-0.00396
	(!A2 * A3 * A4 * B1 * X)	0.00321	0.00319	0.00316
	(!A2 * A3 * A4 * B1 * X)	-0.00360	-0.00398	-0.00404
	(!A2 * A3 * !B1 * !X)	0.00309	0.00310	0.00307
	(!A2 * A3 * !B1 * !X)	-0.00373	-0.00407	-0.00412
	(!A2 * A3 * !A4 * B1 * X)	0.00383	0.00331	0.00324
	(!A2 * A3 * !A4 * B1 * X)	-0.00313	-0.00390	-0.00397
	(!A2 * !A3 * A4 * B1 * X)	0.00390	0.00340	0.00328
	(!A2 * !A3 * A4 * B1 * X)	-0.00300	-0.00380	-0.00390
	(!A2 * !A3 * A4 * !B1 * !X)	0.00308	0.00310	0.00307
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00359	-0.00402	-0.00410
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00421	-0.00422	-0.00420

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)**	-0.00136	-0.00137	-0.00137
	(A2 * A4 * B1 * X)	0.00239	0.00241	0.00240
	(A2 * A3 * !A4 * B1 * X)	-0.00136	-0.00137	-0.00137
	(A2 * A3 * !A4 * B1 * X)	0.00239	0.00241	0.00240
	(A2 * !B1 * !X)	-0.00146	-0.00147	-0.00147
	(A2 * !B1 * !X)	0.00229	0.00232	0.00230
	(A2 * !A3 * !A4 * B1 * X)	-0.00136	-0.00137	-0.00136
	(A2 * !A3 * !A4 * B1 * X)	0.00242	0.00245	0.00243
	(!A2 * A3 * A4 * B1 * X)	-0.00136	-0.00138	-0.00137
	(!A2 * A3 * A4 * B1 * X)	0.00233	0.00236	0.00234
	(!A2 * A3 * !B1 * !X)	-0.00146	-0.00147	-0.00147
	(!A2 * A3 * !B1 * !X)	0.00223	0.00226	0.00224
	(!A2 * A3 * !A4 * B1 * X)	-0.00133	-0.00135	-0.00133
	(!A2 * A3 * !A4 * B1 * X)	0.00238	0.00241	0.00239
	(!A2 * !A3 * A4 * B1 * X)	-0.00130	-0.00131	-0.00129
	(!A2 * !A3 * A4 * B1 * X)	0.00238	0.00240	0.00240
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00146	-0.00147	-0.00146
	(!A2 * !A3 * A4 * !B1 * !X)	0.00220	0.00221	0.00220
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00127	-0.00140	-0.00142
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00239	0.00236	0.00233

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00164	-0.00165	-0.00165
	(A2 * A4 * B1 * X)	0.00228	0.00232	0.00230
	(A2 * A3 * !A4 * B1 * X)	-0.00164	-0.00165	-0.00165
	(A2 * A3 * !A4 * B1 * X)	0.00228	0.00232	0.00230
	(A2 * !B1 * !X)	-0.00162	-0.00163	-0.00162
	(A2 * !B1 * !X)	0.00232	0.00234	0.00232
	(A2 * !A3 * !A4 * B1 * X)	-0.00164	-0.00164	-0.00164
	(A2 * !A3 * !A4 * B1 * X)	0.00233	0.00233	0.00233
	(!A2 * A3 * A4 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * A3 * A4 * B1 * X)	0.00223	0.00223	0.00224
	(!A2 * A3 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * !B1 * !X)	0.00225	0.00225	0.00226
	(!A2 * A3 * !A4 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * A3 * !A4 * B1 * X)	0.00228	0.00231	0.00229
	(!A2 * !A3 * A4 * B1 * X)	-0.00158	-0.00159	-0.00157
	(!A2 * !A3 * A4 * B1 * X)	0.00228	0.00230	0.00230
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * !A3 * A4 * !B1 * !X)	0.00222	0.00223	0.00222
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00139	-0.00154	-0.00156
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00241	0.00238	0.00235

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00249	-0.00250	-0.00249
	(A2 * A4 * B1 * X)	0.00468	0.00472	0.00470
	(A2 * A3 * !A4 * B1 * X)	-0.00248	-0.00250	-0.00249
	(A2 * A3 * !A4 * B1 * X)	0.00468	0.00472	0.00471
	(A2 * !B1 * !X)	-0.00256	-0.00258	-0.00257
	(A2 * !B1 * !X)	0.00461	0.00465	0.00463
	(A2 * !A3 * !A4 * B1 * X)	-0.00248	-0.00250	-0.00248
	(A2 * !A3 * !A4 * B1 * X)	0.00473	0.00478	0.00475
	(!A2 * A3 * A4 * B1 * X)	-0.00249	-0.00251	-0.00249
	(!A2 * A3 * A4 * B1 * X)	0.00454	0.00459	0.00456
	(!A2 * A3 * !B1 * !X)	-0.00256	-0.00258	-0.00257
	(!A2 * A3 * !B1 * !X)	0.00447	0.00452	0.00449
	(!A2 * A3 * !A4 * B1 * X)	-0.00242	-0.00244	-0.00242
	(!A2 * A3 * !A4 * B1 * X)	0.00465	0.00471	0.00469
	(!A2 * !A3 * A4 * B1 * X)	-0.00236	-0.00237	-0.00234
	(!A2 * !A3 * A4 * B1 * X)	0.00465	0.00468	0.00470
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00256	-0.00258	-0.00257
	(!A2 * !A3 * A4 * !B1 * !X)	0.00440	0.00444	0.00441
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00217	-0.00243	-0.00247
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00484	0.00478	0.00471

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)**	0.00176	0.00177	0.00169
	(A1 * A3 * A4 * B1 * X)	-0.00141	-0.00142	-0.00144
	(A1 * A3 * !B1 * !X)	0.00154	0.00156	0.00154
	(A1 * A3 * !B1 * !X)	-0.00160	-0.00161	-0.00159
	(A1 * A3 * !A4 * B1 * X)	0.00180	0.00182	0.00169
	(A1 * A3 * !A4 * B1 * X)	-0.00132	-0.00133	-0.00139
	(A1 * !A3 * A4 * B1 * X)	0.00184	0.00196	0.00178
	(A1 * !A3 * A4 * B1 * X)	-0.00128	-0.00121	-0.00127
	(A1 * !A3 * A4 * !B1 * !X)	0.00154	0.00156	0.00154
	(A1 * !A3 * A4 * !B1 * !X)	-0.00154	-0.00154	-0.00154
	(A1 * !A3 * !A4 * B1 * X)	0.00170	0.00173	0.00168
	(A1 * !A3 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00093
	(A1 * !A3 * !A4 * !B1 * !X)	0.00155	0.00155	0.00154
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00213	-0.00214	-0.00213
	(!A1 * A3 * A4 * B1 * X)	0.00180	0.00166	0.00164
	(!A1 * A3 * A4 * B1 * X)	-0.00186	-0.00203	-0.00203
	(!A1 * A3 * !B1 * !X)	0.00155	0.00156	0.00154
	(!A1 * A3 * !B1 * !X)	-0.00210	-0.00214	-0.00213
	(!A1 * A3 * !A4 * B1 * X)	0.00217	0.00175	0.00169
	(!A1 * A3 * !A4 * B1 * X)	-0.00152	-0.00196	-0.00199
	(!A1 * !A3 * A4 * B1 * X)	0.00223	0.00178	0.00170
	(!A1 * !A3 * A4 * B1 * X)	-0.00139	-0.00190	-0.00196
	(!A1 * !A3 * A4 * !B1 * !X)	0.00155	0.00156	0.00154
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00195	-0.00209	-0.00211
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00214	-0.00214	-0.00214

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00191	0.00192	0.00184
	(A1 * A3 * A4 * B1 * X)	-0.00143	-0.00144	-0.00145
	(A1 * A3 * !B1 * !X)	0.00180	0.00182	0.00181
	(A1 * A3 * !B1 * !X)	-0.00157	-0.00158	-0.00152
	(A1 * A3 * !A4 * B1 * X)	0.00194	0.00196	0.00184
	(A1 * A3 * !A4 * B1 * X)	-0.00135	-0.00135	-0.00141
	(A1 * !A3 * A4 * B1 * X)	0.00200	0.00209	0.00193
	(A1 * !A3 * A4 * B1 * X)	-0.00132	-0.00122	-0.00132
	(A1 * !A3 * A4 * !B1 * !X)	0.00180	0.00183	0.00181
	(A1 * !A3 * A4 * !B1 * !X)	-0.00159	-0.00159	-0.00149
	(A1 * !A3 * !A4 * B1 * X)	0.00187	0.00189	0.00182
	(A1 * !A3 * !A4 * B1 * X)	-0.00096	-0.00097	-0.00098
	(A1 * !A3 * !A4 * !B1 * !X)	0.00182	0.00182	0.00181
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00208	-0.00208	-0.00208
	(!A1 * A3 * A4 * B1 * X)	0.00194	0.00181	0.00179
	(!A1 * A3 * A4 * B1 * X)	-0.00192	-0.00209	-0.00209
	(!A1 * A3 * !B1 * !X)	0.00182	0.00183	0.00181
	(!A1 * A3 * !B1 * !X)	-0.00204	-0.00208	-0.00208
	(!A1 * A3 * !A4 * B1 * X)	0.00234	0.00190	0.00184
	(!A1 * A3 * !A4 * B1 * X)	-0.00156	-0.00201	-0.00205
	(!A1 * !A3 * A4 * B1 * X)	0.00240	0.00194	0.00185
	(!A1 * !A3 * A4 * B1 * X)	-0.00143	-0.00195	-0.00201
	(!A1 * !A3 * A4 * !B1 * !X)	0.00182	0.00183	0.00181
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00189	-0.00202	-0.00205
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00171	0.00173	0.00172
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00208	-0.00209	-0.00209

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00414	0.00418	0.00400
	(A1 * A3 * A4 * B1 * X)	-0.00271	-0.00272	-0.00277
	(A1 * A3 * !B1 * !X)	0.00373	0.00377	0.00375
	(A1 * A3 * !B1 * !X)	-0.00317	-0.00319	-0.00307
	(A1 * A3 * !A4 * B1 * X)	0.00422	0.00429	0.00401
	(A1 * A3 * !A4 * B1 * X)	-0.00253	-0.00252	-0.00267
	(A1 * !A3 * A4 * B1 * X)	0.00425	0.00446	0.00413
	(A1 * !A3 * A4 * B1 * X)	-0.00248	-0.00231	-0.00246
	(A1 * !A3 * A4 * !B1 * !X)	0.00374	0.00378	0.00375
	(A1 * !A3 * A4 * !B1 * !X)	-0.00315	-0.00314	-0.00295
	(A1 * !A3 * !A4 * B1 * X)	0.00402	0.00402	0.00392
	(A1 * !A3 * !A4 * B1 * X)	-0.00172	-0.00173	-0.00176
	(A1 * !A3 * !A4 * !B1 * !X)	0.00373	0.00378	0.00374
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00406	-0.00411	-0.00411
	(!A1 * A3 * A4 * B1 * X)	0.00410	0.00386	0.00383
	(!A1 * A3 * A4 * B1 * X)	-0.00360	-0.00400	-0.00401
	(!A1 * A3 * !B1 * !X)	0.00374	0.00377	0.00374
	(!A1 * A3 * !B1 * !X)	-0.00395	-0.00409	-0.00410
	(!A1 * A3 * !A4 * B1 * X)	0.00494	0.00402	0.00393
	(!A1 * A3 * !A4 * B1 * X)	-0.00285	-0.00387	-0.00392
	(!A1 * !A3 * A4 * B1 * X)	0.00499	0.00409	0.00396
	(!A1 * !A3 * A4 * B1 * X)	-0.00266	-0.00374	-0.00385
	(!A1 * !A3 * A4 * !B1 * !X)	0.00374	0.00377	0.00374
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00367	-0.00400	-0.00405
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00359	0.00361	0.00360
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00412	-0.00413	-0.00412

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)**	-0.00131	-0.00132	-0.00131
	(A1 * A3 * A4 * B1 * X)	0.00168	0.00169	0.00167
	(A1 * A3 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * A3 * !B1 * !X)	0.00160	0.00161	0.00159
	(A1 * A3 * !A4 * B1 * X)	-0.00132	-0.00132	-0.00131
	(A1 * A3 * !A4 * B1 * X)	0.00165	0.00165	0.00164
	(A1 * !A3 * A4 * B1 * X)	-0.00131	-0.00132	-0.00131
	(A1 * !A3 * A4 * B1 * X)	0.00159	0.00160	0.00159
	(A1 * !A3 * A4 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !A3 * A4 * !B1 * !X)	0.00154	0.00154	0.00154
	(A1 * !A3 * !A4 * B1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * !A4 * B1 * X)	0.00136	0.00138	0.00136
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * !A3 * !A4 * !B1 * !X)	0.00224	0.00225	0.00225
	(!A1 * A3 * A4 * B1 * X)	-0.00131	-0.00131	-0.00131
	(!A1 * A3 * A4 * B1 * X)	0.00235	0.00236	0.00235
	(!A1 * A3 * !B1 * !X)	-0.00140	-0.00142	-0.00141
	(!A1 * A3 * !B1 * !X)	0.00224	0.00226	0.00225
	(!A1 * A3 * !A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * !A4 * B1 * X)	0.00241	0.00243	0.00242
	(!A1 * !A3 * A4 * B1 * X)	-0.00125	-0.00126	-0.00124
	(!A1 * !A3 * A4 * B1 * X)	0.00236	0.00238	0.00238
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(!A1 * !A3 * A4 * !B1 * !X)	0.00216	0.00216	0.00217
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00122	-0.00135	-0.00137
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00234	0.00231	0.00228

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00157	-0.00158	-0.00158
	(A1 * A3 * A4 * B1 * X)	0.00157	0.00158	0.00157
	(A1 * A3 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(A1 * A3 * !B1 * !X)	0.00161	0.00161	0.00161
	(A1 * A3 * !A4 * B1 * X)	-0.00157	-0.00158	-0.00158
	(A1 * A3 * !A4 * B1 * X)	0.00154	0.00156	0.00155
	(A1 * !A3 * A4 * B1 * X)	-0.00157	-0.00158	-0.00157
	(A1 * !A3 * A4 * B1 * X)	0.00151	0.00151	0.00151
	(A1 * !A3 * A4 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * A4 * !B1 * !X)	0.00159	0.00159	0.00159
	(A1 * !A3 * !A4 * B1 * X)	-0.00150	-0.00151	-0.00149
	(A1 * !A3 * !A4 * B1 * X)	0.00128	0.00129	0.00129
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00155	-0.00157	-0.00155
	(A1 * !A3 * !A4 * !B1 * !X)	0.00231	0.00233	0.00231
	(!A1 * A3 * A4 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * A4 * B1 * X)	0.00228	0.00230	0.00229
	(!A1 * A3 * !B1 * !X)	-0.00155	-0.00157	-0.00155
	(!A1 * A3 * !B1 * !X)	0.00230	0.00233	0.00231
	(!A1 * A3 * !A4 * B1 * X)	-0.00152	-0.00152	-0.00151
	(!A1 * A3 * !A4 * B1 * X)	0.00235	0.00237	0.00236
	(!A1 * !A3 * A4 * B1 * X)	-0.00151	-0.00152	-0.00150
	(!A1 * !A3 * A4 * B1 * X)	0.00230	0.00232	0.00232
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * !A3 * A4 * !B1 * !X)	0.00222	0.00224	0.00223
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00133	-0.00148	-0.00150
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00240	0.00237	0.00234

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00320	-0.00323	-0.00320
	(A1 * A3 * A4 * B1 * X)	0.00326	0.00330	0.00327
	(A1 * A3 * !B1 * !X)	-0.00324	-0.00325	-0.00325
	(A1 * A3 * !B1 * !X)	0.00326	0.00327	0.00326
	(A1 * A3 * !A4 * B1 * X)	-0.00320	-0.00321	-0.00320
	(A1 * A3 * !A4 * B1 * X)	0.00320	0.00322	0.00320
	(A1 * !A3 * A4 * B1 * X)	-0.00317	-0.00320	-0.00318
	(A1 * !A3 * A4 * B1 * X)	0.00309	0.00313	0.00310
	(A1 * !A3 * A4 * !B1 * !X)	-0.00325	-0.00325	-0.00324
	(A1 * !A3 * A4 * !B1 * !X)	0.00316	0.00317	0.00315
	(A1 * !A3 * !A4 * B1 * X)	-0.00300	-0.00301	-0.00297
	(A1 * !A3 * !A4 * B1 * X)	0.00264	0.00266	0.00266
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00324	-0.00326	-0.00324
	(A1 * !A3 * !A4 * !B1 * !X)	0.00456	0.00459	0.00457
	(!A1 * A3 * A4 * B1 * X)	-0.00316	-0.00318	-0.00317
	(!A1 * A3 * A4 * B1 * X)	0.00461	0.00465	0.00463
	(!A1 * A3 * !B1 * !X)	-0.00324	-0.00326	-0.00324
	(!A1 * A3 * !B1 * !X)	0.00453	0.00458	0.00455
	(!A1 * A3 * !A4 * B1 * X)	-0.00306	-0.00307	-0.00304
	(!A1 * A3 * !A4 * B1 * X)	0.00475	0.00479	0.00477
	(!A1 * !A3 * A4 * B1 * X)	-0.00304	-0.00305	-0.00301
	(!A1 * !A3 * A4 * B1 * X)	0.00465	0.00468	0.00470
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00324	-0.00326	-0.00324
	(!A1 * !A3 * A4 * !B1 * !X)	0.00437	0.00442	0.00439
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00285	-0.00314	-0.00315
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00475	0.00467	0.00464

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)**	0.00185	0.00186	0.00176
	(A2 * A4 * B1 * X)	-0.00119	-0.00121	-0.00126
	(A2 * A4 * !B1 * !X)	0.00153	0.00155	0.00153
	(A2 * A4 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A2 * !A4 * B1 * X)	0.00167	0.00168	0.00164
	(A2 * !A4 * B1 * X)	-0.00089	-0.00089	-0.00090
	(A2 * !A4 * !B1 * !X)	0.00154	0.00154	0.00153
	(A2 * !A4 * !B1 * !X)	-0.00204	-0.00208	-0.00208
	(A1 * !A2 * A4 * B1 * X)	0.00205	0.00189	0.00180
	(A1 * !A2 * A4 * B1 * X)	-0.00103	-0.00118	-0.00120
	(A1 * !A2 * A4 * !B1 * !X)	0.00153	0.00155	0.00153
	(A1 * !A2 * A4 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * !A4 * B1 * X)	0.00169	0.00169	0.00166
	(A1 * !A2 * !A4 * B1 * X)	-0.00084	-0.00085	-0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	0.00152	0.00155	0.00153
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00188	-0.00203	-0.00206
	(!A1 * !A2 * A4 * B1 * X)	0.00227	0.00177	0.00170
	(!A1 * !A2 * A4 * B1 * X)	-0.00138	-0.00187	-0.00192
	(!A1 * !A2 * A4 * !B1 * !X)	0.00154	0.00154	0.00153
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00209	-0.00209	-0.00208
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00145	0.00147	0.00146
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00209	-0.00210	-0.00209

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00211	0.00213	0.00201
	(A2 * A4 * B1 * X)	-0.00128	-0.00129	-0.00135
	(A2 * A4 * !B1 * !X)	0.00182	0.00184	0.00183
	(A2 * A4 * !B1 * !X)	-0.00164	-0.00165	-0.00159
	(A2 * !A4 * B1 * X)	0.00191	0.00193	0.00189
	(A2 * !A4 * B1 * X)	-0.00095	-0.00096	-0.00097
	(A2 * !A4 * !B1 * !X)	0.00184	0.00183	0.00183
	(A2 * !A4 * !B1 * !X)	-0.00208	-0.00211	-0.00212
	(A1 * !A2 * A4 * B1 * X)	0.00230	0.00216	0.00204
	(A1 * !A2 * A4 * B1 * X)	-0.00110	-0.00124	-0.00127
	(A1 * !A2 * A4 * !B1 * !X)	0.00182	0.00185	0.00183
	(A1 * !A2 * A4 * !B1 * !X)	-0.00163	-0.00164	-0.00153
	(A1 * !A2 * !A4 * B1 * X)	0.00194	0.00196	0.00191
	(A1 * !A2 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00094
	(A1 * !A2 * !A4 * !B1 * !X)	0.00184	0.00184	0.00182
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00193	-0.00206	-0.00210
	(!A1 * !A2 * A4 * B1 * X)	0.00255	0.00202	0.00195
	(!A1 * !A2 * A4 * B1 * X)	-0.00142	-0.00194	-0.00200
	(!A1 * !A2 * A4 * !B1 * !X)	0.00184	0.00183	0.00183
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00211	-0.00212	-0.00212
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00212	-0.00213	-0.00213

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00438	0.00435	0.00414
	(A2 * A4 * B1 * X)	-0.00233	-0.00241	-0.00253
	(A2 * A4 * !B1 * !X)	0.00367	0.00371	0.00370
	(A2 * A4 * !B1 * !X)	-0.00317	-0.00319	-0.00306
	(A2 * !A4 * B1 * X)	0.00389	0.00390	0.00383
	(A2 * !A4 * B1 * X)	-0.00173	-0.00175	-0.00177
	(A2 * !A4 * !B1 * !X)	0.00368	0.00372	0.00369
	(A2 * !A4 * !B1 * !X)	-0.00393	-0.00407	-0.00408
	(A1 * !A2 * A4 * B1 * X)	0.00467	0.00432	0.00413
	(A1 * !A2 * A4 * B1 * X)	-0.00203	-0.00232	-0.00241
	(A1 * !A2 * A4 * !B1 * !X)	0.00368	0.00372	0.00369
	(A1 * !A2 * A4 * !B1 * !X)	-0.00314	-0.00313	-0.00295
	(A1 * !A2 * !A4 * B1 * X)	0.00394	0.00396	0.00388
	(A1 * !A2 * !A4 * B1 * X)	-0.00166	-0.00169	-0.00172
	(A1 * !A2 * !A4 * !B1 * !X)	0.00368	0.00371	0.00369
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00365	-0.00395	-0.00404
	(!A1 * !A2 * A4 * B1 * X)	0.00508	0.00411	0.00393
	(!A1 * !A2 * A4 * B1 * X)	-0.00269	-0.00374	-0.00384
	(!A1 * !A2 * A4 * !B1 * !X)	0.00368	0.00372	0.00369
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00404	-0.00409	-0.00409
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00353	0.00356	0.00354
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00410	-0.00412	-0.00410

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)**	-0.00130	-0.00130	-0.00130
	(A2 * A4 * B1 * X)	0.00157	0.00156	0.00156
	(A2 * A4 * !B1 * !X)	-0.00139	-0.00140	-0.00140
	(A2 * A4 * !B1 * !X)	0.00151	0.00152	0.00152
	(A2 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00129
	(A2 * !A4 * B1 * X)	0.00126	0.00127	0.00126
	(A2 * !A4 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A2 * !A4 * !B1 * !X)	0.00220	0.00220	0.00220
	(A1 * !A2 * A4 * B1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * !A2 * A4 * B1 * X)	0.00155	0.00156	0.00156
	(A1 * !A2 * A4 * !B1 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * A4 * !B1 * !X)	0.00149	0.00150	0.00149
	(A1 * !A2 * !A4 * B1 * X)	-0.00121	-0.00122	-0.00129
	(A1 * !A2 * !A4 * B1 * X)	0.00130	0.00130	0.00124
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !A4 * !B1 * !X)	0.00209	0.00210	0.00209
	(!A1 * !A2 * A4 * B1 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * !A2 * A4 * B1 * X)	0.00237	0.00239	0.00237
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !A2 * A4 * !B1 * !X)	0.00220	0.00221	0.00220
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00120	-0.00134	-0.00136
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00229	0.00226	0.00223

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00167	-0.00167	-0.00166
	(A2 * A4 * B1 * X)	0.00154	0.00154	0.00154
	(A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A2 * A4 * !B1 * !X)	0.00168	0.00169	0.00168
	(A2 * !A4 * B1 * X)	-0.00165	-0.00166	-0.00165
	(A2 * !A4 * B1 * X)	0.00122	0.00122	0.00122
	(A2 * !A4 * !B1 * !X)	-0.00157	-0.00159	-0.00157
	(A2 * !A4 * !B1 * !X)	0.00235	0.00236	0.00235
	(A1 * !A2 * A4 * B1 * X)	-0.00166	-0.00167	-0.00165
	(A1 * !A2 * A4 * B1 * X)	0.00151	0.00153	0.00152
	(A1 * !A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * A4 * !B1 * !X)	0.00164	0.00164	0.00164
	(A1 * !A2 * !A4 * B1 * X)	-0.00159	-0.00161	-0.00165
	(A1 * !A2 * !A4 * B1 * X)	0.00124	0.00124	0.00120
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00157	-0.00159	-0.00157
	(A1 * !A2 * !A4 * !B1 * !X)	0.00225	0.00227	0.00225
	(!A1 * !A2 * A4 * B1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A2 * A4 * B1 * X)	0.00234	0.00234	0.00234
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(!A1 * !A2 * A4 * !B1 * !X)	0.00235	0.00236	0.00235
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00134	-0.00149	-0.00152
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00244	0.00241	0.00238

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00316	-0.00317	-0.00317
	(A2 * A4 * B1 * X)	0.00316	0.00318	0.00317
	(A2 * A4 * !B1 * !X)	-0.00320	-0.00320	-0.00319
	(A2 * A4 * !B1 * !X)	0.00326	0.00327	0.00326
	(A2 * !A4 * B1 * X)	-0.00310	-0.00312	-0.00310
	(A2 * !A4 * B1 * X)	0.00250	0.00252	0.00251
	(A2 * !A4 * !B1 * !X)	-0.00319	-0.00319	-0.00319
	(A2 * !A4 * !B1 * !X)	0.00452	0.00453	0.00453
	(A1 * !A2 * A4 * B1 * X)	-0.00313	-0.00315	-0.00313
	(A1 * !A2 * A4 * B1 * X)	0.00310	0.00313	0.00313
	(A1 * !A2 * A4 * !B1 * !X)	-0.00317	-0.00320	-0.00319
	(A1 * !A2 * A4 * !B1 * !X)	0.00314	0.00317	0.00315
	(A1 * !A2 * !A4 * B1 * X)	-0.00291	-0.00295	-0.00310
	(A1 * !A2 * !A4 * B1 * X)	0.00259	0.00261	0.00249
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00318	-0.00318	-0.00318
	(A1 * !A2 * !A4 * !B1 * !X)	0.00430	0.00431	0.00432
	(!A1 * !A2 * A4 * B1 * X)	-0.00301	-0.00302	-0.00301
	(!A1 * !A2 * A4 * B1 * X)	0.00476	0.00478	0.00477
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00319	-0.00321	-0.00318
	(!A1 * !A2 * A4 * !B1 * !X)	0.00455	0.00459	0.00455
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00277	-0.00308	-0.00308
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00474	0.00465	0.00462

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00184	0.00185	0.00184
	(A3 * B1 * X)	-0.00080	-0.00080	-0.00079
	(A3 * !B1 * !X)	0.00155	0.00156	0.00155
	(A3 * !B1 * !X)	-0.00206	-0.00212	-0.00212
	(A2 * !A3 * B1 * X)	0.00184	0.00185	0.00184
	(A2 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !A3 * !B1 * !X)	0.00155	0.00157	0.00155
	(A2 * !A3 * !B1 * !X)	-0.00190	-0.00207	-0.00210
	(A1 * !A2 * !A3 * B1 * X)	0.00184	0.00185	0.00184
	(A1 * !A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * !A3 * !B1 * !X)	0.00155	0.00157	0.00155
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00183	-0.00204	-0.00209
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00149	0.00150	0.00149
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00213	-0.00214	-0.00213
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00196	0.00199	0.00197
	(A3 * B1 * X)	-0.00085	-0.00087	-0.00086
	(A3 * !B1 * !X)	0.00181	0.00184	0.00182
	(A3 * !B1 * !X)	-0.00198	-0.00205	-0.00205
	(A2 * !A3 * B1 * X)	0.00196	0.00199	0.00197
	(A2 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A2 * !A3 * !B1 * !X)	0.00181	0.00184	0.00182
	(A2 * !A3 * !B1 * !X)	-0.00183	-0.00200	-0.00203
	(A1 * !A2 * !A3 * B1 * X)	0.00197	0.00199	0.00197
	(A1 * !A2 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !A3 * !B1 * !X)	0.00181	0.00184	0.00182
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00177	-0.00198	-0.00202
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00173	0.00175	0.00173
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00206	-0.00207	-0.00206

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00349	0.00352	0.00350
	(A3 * B1 * X)	-0.00160	-0.00163	-0.00161
	(A3 * !B1 * !X)	0.00308	0.00310	0.00308
	(A3 * !B1 * !X)	-0.00398	-0.00411	-0.00412
	(A2 * !A3 * B1 * X)	0.00350	0.00353	0.00350
	(A2 * !A3 * B1 * X)	-0.00159	-0.00161	-0.00159
	(A2 * !A3 * !B1 * !X)	0.00308	0.00311	0.00308
	(A2 * !A3 * !B1 * !X)	-0.00364	-0.00400	-0.00408
	(A1 * !A2 * !A3 * B1 * X)	0.00351	0.00353	0.00351
	(A1 * !A2 * !A3 * B1 * X)	-0.00158	-0.00159	-0.00157
	(A1 * !A2 * !A3 * !B1 * !X)	0.00308	0.00311	0.00308
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00350	-0.00394	-0.00406
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00293	0.00294	0.00292
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00416	-0.00417	-0.00415

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00145	-0.00146	-0.00151
	(A3 * B1 * X)	0.00117	0.00118	0.00113
	(A3 * !B1 * !X)	-0.00142	-0.00143	-0.00142
	(A3 * !B1 * !X)	0.00223	0.00224	0.00224
	(A2 * !A3 * B1 * X)	-0.00134	-0.00136	-0.00149
	(A2 * !A3 * B1 * X)	0.00123	0.00123	0.00113
	(A2 * !A3 * !B1 * !X)	-0.00141	-0.00142	-0.00142
	(A2 * !A3 * !B1 * !X)	0.00213	0.00214	0.00215
	(A1 * !A2 * !A3 * B1 * X)	-0.00120	-0.00121	-0.00145
	(A1 * !A2 * !A3 * B1 * X)	0.00132	0.00132	0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * !A3 * !B1 * !X)	0.00209	0.00211	0.00210
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00122	-0.00136	-0.00138
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00233	0.00229	0.00226
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00169	-0.00170	-0.00176
	(A3 * B1 * X)	0.00113	0.00113	0.00108
	(A3 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A3 * !B1 * !X)	0.00228	0.00230	0.00228
	(A2 * !A3 * B1 * X)	-0.00158	-0.00160	-0.00174
	(A2 * !A3 * B1 * X)	0.00119	0.00119	0.00108
	(A2 * !A3 * !B1 * !X)	-0.00156	-0.00157	-0.00157
	(A2 * !A3 * !B1 * !X)	0.00220	0.00220	0.00220
	(A1 * !A2 * !A3 * B1 * X)	-0.00145	-0.00147	-0.00170
	(A1 * !A2 * !A3 * B1 * X)	0.00127	0.00127	0.00111
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * !A3 * !B1 * !X)	0.00215	0.00217	0.00215
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00134	-0.00149	-0.00151
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00237	0.00234	0.00231

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00269	-0.00271	-0.00283
	(A3 * B1 * X)	0.00240	0.00240	0.00230
	(A3 * !B1 * !X)	-0.00257	-0.00259	-0.00258
	(A3 * !B1 * !X)	0.00457	0.00460	0.00459
	(A2 * !A3 * B1 * X)	-0.00243	-0.00246	-0.00278
	(A2 * !A3 * B1 * X)	0.00254	0.00254	0.00230
	(A2 * !A3 * !B1 * !X)	-0.00257	-0.00259	-0.00258
	(A2 * !A3 * !B1 * !X)	0.00437	0.00440	0.00438
	(A1 * !A2 * !A3 * B1 * X)	-0.00214	-0.00216	-0.00270
	(A1 * !A2 * !A3 * B1 * X)	0.00273	0.00273	0.00236
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00257	-0.00260	-0.00258
	(A1 * !A2 * !A3 * !B1 * !X)	0.00425	0.00429	0.00427
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00216	-0.00244	-0.00248
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00479	0.00472	0.00466

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)**	0.00064	0.00064	0.00057
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00200	-0.00201	-0.00212
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00076	0.00076	0.00069
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00224	-0.00225	-0.00239
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00130	0.00131	0.00119
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00365	-0.00369	-0.00392

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)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00226	0.00230	0.00227
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00264	0.00269	0.00265
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00064	-0.00067	-0.00065
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00442	0.00451	0.00445

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00260	0.00242	1.30104
sky130_fd_sc_hs__or2b_2	0.00270	0.00234	2.13192
sky130_fd_sc_hs__or2b_4	0.00514	0.00291	4.71243

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	15.49010	25.38850
sky130_fd_sc_hs__or2b_2	0.00000	17.54500	32.77040
sky130_fd_sc_hs__or2b_4	0.00000	22.53310	40.38370

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)	0.06123	0.53035	6.28818
	B_N->X (FR)	0.10309	0.66317	7.74356
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.06106	0.44535	5.75204
	B_N->X (FR)	0.11271	0.59527	7.52724
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.05659	0.36215	6.05197
	B_N->X (FR)	0.11678	0.53877	7.77598

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.10202	0.49367	4.89107
	B_N->X (RF)	0.11049	0.38277	3.11467
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.13289	0.49693	4.59055
	B_N->X (RF)	0.14676	0.37032	2.54163
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.13178	0.46246	5.05868
	B_N->X (RF)	0.14242	0.35529	2.92853

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00926	0.01168	0.05818
	A	0.00506	0.00751	0.05438
	B_N	0.00807	0.01357	0.09528
	B_N	0.01163	0.01716	0.09927
sky130_fd_sc_hs__or2b_2	A	0.01277	0.01557	0.05920
	A	0.00832	0.01113	0.05503
	B_N	0.01153	0.01708	0.09460
	B_N	0.01507	0.02070	0.09879
sky130_fd_sc_hs__or2b_4	A	0.02405	0.03070	0.14873
	A	0.01576	0.02251	0.14184
	B_N	0.02205	0.02864	0.12461
	B_N	0.02602	0.03261	0.13016

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00549	0.00790	0.05414
	A	0.00968	0.01202	0.05714
	B_N	0.01156	0.01623	0.09870
	B_N	0.00799	0.01263	0.09471
sky130_fd_sc_hs__or2b_2	A	0.00934	0.01076	0.06352
	A	0.01378	0.01520	0.06625
	B_N	0.01627	0.01936	0.09399
	B_N	0.01273	0.01574	0.09046
sky130_fd_sc_hs__or2b_4	A	0.01890	0.02231	0.14001
	A	0.02722	0.03057	0.14593
	B_N	0.02780	0.03153	0.12791
	B_N	0.02383	0.02752	0.12392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00197	0.00163	0.00160
	(!B_N * X)	-0.00165	-0.00200	-0.00201
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00211	0.00176	0.00173
	(!B_N * X)	-0.00173	-0.00210	-0.00211
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00428	0.00346	0.00334
	(!B_N * X)	-0.00298	-0.00382	-0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00139	-0.00140	-0.00140
	(!B_N * X)	0.00223	0.00224	0.00221
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00151	-0.00152	-0.00152
	(!B_N * X)	0.00233	0.00235	0.00232
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00288	-0.00291	-0.00290
	(!B_N * X)	0.00432	0.00437	0.00433

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00491	0.00935	0.08704
	(A * X)	0.00083	0.00525	0.08294
sky130_fd_sc_hs__or2b_2	(A * X)	0.00521	0.00947	0.08533
	(A * X)	0.00112	0.00537	0.08123
sky130_fd_sc_hs__or2b_4	(A * X)	0.00659	0.01093	0.09780
	(A * X)	0.00177	0.00610	0.09298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00133	0.00649	0.08454
	(A * X)	0.00543	0.01059	0.08863
sky130_fd_sc_hs__or2b_2	(A * X)	0.00133	0.00635	0.08264
	(A * X)	0.00544	0.01045	0.08674
sky130_fd_sc_hs__or2b_4	(A * X)	0.00361	0.00883	0.09583
	(A * X)	0.00840	0.01367	0.10063

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00236	0.00226	1.27666
sky130_fd_sc_hs__or2_2	0.00291	0.00257	2.13824
sky130_fd_sc_hs__or2_4	0.00466	0.00407	4.61099

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	8.78295	18.36240
sky130_fd_sc_hs__or2_2	0.00000	8.41649	14.68050
sky130_fd_sc_hs__or2_4	0.00000	16.59630	28.42500

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)	0.05856	0.51685	6.08864
	B->X (RR)	0.05341	0.49917	6.03163
sky130_fd_sc_hs__or2_2	A->X (RR)	0.06208	0.44582	5.74539
	B->X (RR)	0.05587	0.42727	5.65905
sky130_fd_sc_hs__or2_4	A->X (RR)	0.08186	0.44562	6.60459
	B->X (RR)	0.06794	0.41104	6.45828

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.10926	0.50794	4.92869
	B->X (FF)	0.09443	0.51482	5.18465
sky130_fd_sc_hs__or2_2	A->X (FF)	0.13107	0.49462	4.52593
	B->X (FF)	0.11365	0.50585	4.78494
sky130_fd_sc_hs__or2_4	A->X (FF)	0.12190	0.44135	4.52919
	B->X (FF)	0.10424	0.44859	4.79215

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00949	0.01194	0.05770
	A	0.00458	0.00704	0.05332
	B	0.00816	0.01134	0.06663
	B	0.00419	0.00738	0.06320
sky130_fd_sc_hs__or2_2	A	0.01363	0.01615	0.05867
	A	0.00773	0.01026	0.05310
	B	0.01156	0.01495	0.06408
	B	0.00697	0.01037	0.05997
sky130_fd_sc_hs__or2_4	A	0.02529	0.02966	0.11582
	A	0.01554	0.01993	0.10655
	B	0.02023	0.02611	0.12802
	B	0.01328	0.01917	0.12206

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00391	0.00635	0.05117
	A	0.00882	0.01116	0.05556
	B	0.00372	0.00766	0.06889
	B	0.00769	0.01155	0.07223
sky130_fd_sc_hs__or2_2	A	0.00738	0.00887	0.05643
	A	0.01328	0.01464	0.06186
	B	0.00726	0.01049	0.07397
	B	0.01186	0.01490	0.07775
sky130_fd_sc_hs__or2_4	A	0.01614	0.01869	0.09911
	A	0.02590	0.02824	0.10785
	B	0.01609	0.02177	0.13384
	B	0.02305	0.02854	0.13759

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00192	0.00163	0.00164
	(B * X)	-0.00119	-0.00151	-0.00146
sky130_fd_sc_hs__or2_2	(B * X)	0.00231	0.00195	0.00192
	(B * X)	-0.00143	-0.00181	-0.00181
sky130_fd_sc_hs__or2_4	(B * X)	0.00326	0.00247	0.00240
	(B * X)	-0.00288	-0.00371	-0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00131	-0.00132	-0.00134
	(B * X)	0.00180	0.00180	0.00177
sky130_fd_sc_hs__or2_2	(B * X)	-0.00171	-0.00172	-0.00172
	(B * X)	0.00204	0.00205	0.00202
sky130_fd_sc_hs__or2_4	(B * X)	-0.00196	-0.00197	-0.00198
	(B * X)	0.00417	0.00419	0.00416

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00159	0.00162	0.00159
	(A * X)	-0.00070	-0.00071	-0.00069
sky130_fd_sc_hs__or2_2	(A * X)	0.00171	0.00174	0.00171
	(A * X)	-0.00086	-0.00088	-0.00086
sky130_fd_sc_hs__or2_4	(A * X)	0.00201	0.00204	0.00202
	(A * X)	-0.00174	-0.00176	-0.00172

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00147	-0.00148	-0.00154
	(A * X)	0.00082	0.00082	0.00076
sky130_fd_sc_hs__or2_2	(A * X)	-0.00160	-0.00161	-0.00167
	(A * X)	0.00097	0.00097	0.00092
sky130_fd_sc_hs__or2_4	(A * X)	-0.00175	-0.00177	-0.00192
	(A * X)	0.00198	0.00199	0.00185

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00255	0.00277	0.00235	1.30066
sky130_fd_sc_hs__or3b_2	0.00271	0.00263	0.00234	2.14170
sky130_fd_sc_hs__or3b_4	0.00479	0.00439	0.00273	4.70705

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3b_1	0.00000	13.27450	25.55480
sky130_fd_sc_hs__or3b_2	0.00000	14.46880	33.14690
sky130_fd_sc_hs__or3b_4	0.00000	16.20120	39.73160

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)	0.06788	0.55484	6.29173
	B->X (RR)	0.06584	0.54000	6.13481
	C_N->X (FR)	0.10638	0.66856	7.76016
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.06644	0.46393	5.75304
	B->X (RR)	0.06422	0.45197	5.61945
	C_N->X (FR)	0.11379	0.59632	7.51515
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.08842	0.46808	6.68927
	B->X (RR)	0.08272	0.44734	6.51569
	C_N->X (FR)	0.13178	0.55503	7.83659

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.16350	0.56262	5.06602
	B->X (FF)	0.15282	0.58505	5.37857
	C_N->X (RF)	0.14941	0.44040	3.18364
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.20843	0.57573	4.80580
	B->X (FF)	0.19316	0.59948	5.11458
	C_N->X (RF)	0.19200	0.44417	2.72182
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.18366	0.50029	4.73285
	B->X (FF)	0.16889	0.52077	5.04845
	C_N->X (RF)	0.16779	0.39072	3.03259

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01153	0.01325	0.05641
	A	0.00609	0.00781	0.05134
	B	0.00982	0.01203	0.05300
	B	0.00516	0.00739	0.04884
	C_N	0.00831	0.01388	0.09504
	C_N	0.01136	0.01696	0.09851
sky130_fd_sc_hs__or3b_2	A	0.01511	0.01708	0.05641
	A	0.00949	0.01148	0.05111
	B	0.01308	0.01562	0.05314
	B	0.00853	0.01109	0.04915
	C_N	0.01157	0.01716	0.09339
	C_N	0.01483	0.02051	0.09730
sky130_fd_sc_hs__or3b_4	A	0.02826	0.03130	0.11304
	A	0.01834	0.02159	0.10329
	B	0.02354	0.02778	0.10572
	B	0.01616	0.02046	0.09904
	C_N	0.02050	0.02662	0.11848
	C_N	0.02422	0.03046	0.12372

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00666	0.00771	0.05156
	A	0.01209	0.01314	0.05572
	B	0.00648	0.00801	0.05400
	B	0.01112	0.01265	0.05758
	C_N	0.01271	0.01711	0.09775
	C_N	0.00966	0.01391	0.09470
sky130_fd_sc_hs__or3b_2	A	0.01124	0.01044	0.05445
	A	0.01684	0.01600	0.05994
	B	0.01104	0.01079	0.05917
	B	0.01557	0.01532	0.06114
	C_N	0.01792	0.01981	0.09309
	C_N	0.01465	0.01654	0.08944
sky130_fd_sc_hs__or3b_4	A	0.02113	0.02025	0.09650
	A	0.03100	0.02971	0.10490
	B	0.02115	0.02093	0.10424
	B	0.02855	0.02828	0.10892
	C_N	0.02947	0.03104	0.12361
	C_N	0.02574	0.02728	0.11880

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)	0.00199	0.00169	0.00164
	(B * C_N * X)	-0.00140	-0.00172	-0.00174
	(B * !C_N * X)	0.00153	0.00144	0.00143
	(B * !C_N * X)	-0.00184	-0.00195	-0.00195
	(!B * !C_N * X)	0.00192	0.00158	0.00153
	(!B * !C_N * X)	-0.00144	-0.00182	-0.00185
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00224	0.00193	0.00189
	(B * C_N * X)	-0.00139	-0.00174	-0.00175
	(B * !C_N * X)	0.00170	0.00162	0.00161
	(B * !C_N * X)	-0.00192	-0.00203	-0.00202
	(!B * !C_N * X)	0.00211	0.00176	0.00171
	(!B * !C_N * X)	-0.00149	-0.00189	-0.00192
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00338	0.00271	0.00264
	(B * C_N * X)	-0.00295	-0.00364	-0.00367
	(B * !C_N * X)	0.00236	0.00220	0.00218
	(B * !C_N * X)	-0.00391	-0.00413	-0.00412
	(!B * !C_N * X)	0.00317	0.00248	0.00238
	(!B * !C_N * X)	-0.00308	-0.00387	-0.00392

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)	-0.00120	-0.00121	-0.00120
	(B * C_N * X)	0.00219	0.00221	0.00219
	(B * !C_N * X)	-0.00141	-0.00142	-0.00141
	(B * !C_N * X)	0.00196	0.00198	0.00196
	(!B * !C_N * X)	-0.00132	-0.00132	-0.00131
	(!B * !C_N * X)	0.00204	0.00205	0.00205
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00142	-0.00145	-0.00144
	(B * C_N * X)	0.00219	0.00223	0.00220
	(B * !C_N * X)	-0.00158	-0.00159	-0.00159
	(B * !C_N * X)	0.00204	0.00205	0.00204
	(!B * !C_N * X)	-0.00149	-0.00149	-0.00149
	(!B * !C_N * X)	0.00212	0.00211	0.00213
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00216	-0.00218	-0.00217
	(B * C_N * X)	0.00413	0.00419	0.00415
	(B * !C_N * X)	-0.00213	-0.00214	-0.00214
	(B * !C_N * X)	0.00413	0.00417	0.00415
	(!B * !C_N * X)	-0.00195	-0.00196	-0.00193
	(!B * !C_N * X)	0.00433	0.00437	0.00434

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)	0.00192	0.00195	0.00190
	(A * C_N * X)	-0.00081	-0.00083	-0.00083
	(A * !C_N * X)	0.00167	0.00169	0.00160
	(A * !C_N * X)	-0.00146	-0.00147	-0.00151
	(!A * !C_N * X)	0.00212	0.00169	0.00162
	(!A * !C_N * X)	-0.00157	-0.00201	-0.00204
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00198	0.00201	0.00195
	(A * C_N * X)	-0.00073	-0.00075	-0.00075
	(A * !C_N * X)	0.00163	0.00167	0.00156
	(A * !C_N * X)	-0.00151	-0.00152	-0.00156
	(!A * !C_N * X)	0.00209	0.00165	0.00158
	(!A * !C_N * X)	-0.00157	-0.00202	-0.00205
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00243	0.00246	0.00238
	(A * C_N * X)	-0.00177	-0.00180	-0.00181
	(A * !C_N * X)	0.00222	0.00224	0.00205
	(A * !C_N * X)	-0.00290	-0.00292	-0.00301
	(!A * !C_N * X)	0.00303	0.00214	0.00202
	(!A * !C_N * X)	-0.00310	-0.00398	-0.00405

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)	-0.00150	-0.00151	-0.00151
	(A * C_N * X)	0.00123	0.00123	0.00122
	(A * !C_N * X)	-0.00150	-0.00150	-0.00149
	(A * !C_N * X)	0.00152	0.00152	0.00151
	(!A * !C_N * X)	-0.00140	-0.00142	-0.00142
	(!A * !C_N * X)	0.00225	0.00227	0.00225
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00154	-0.00155	-0.00156
	(A * C_N * X)	0.00116	0.00117	0.00115
	(A * !C_N * X)	-0.00145	-0.00146	-0.00145
	(A * !C_N * X)	0.00156	0.00157	0.00156
	(!A * !C_N * X)	-0.00135	-0.00136	-0.00137
	(!A * !C_N * X)	0.00226	0.00228	0.00227
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00199	-0.00201	-0.00202
	(A * C_N * X)	0.00219	0.00220	0.00218
	(A * !C_N * X)	-0.00181	-0.00181	-0.00180
	(A * !C_N * X)	0.00303	0.00302	0.00301
	(!A * !C_N * X)	-0.00158	-0.00159	-0.00160
	(!A * !C_N * X)	0.00449	0.00452	0.00447

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00476	0.00927	0.08646
	(B * X)	0.00078	0.00528	0.08248
	(A * !B * X)	0.00487	0.00937	0.08654
	(A * !B * X)	0.00084	0.00534	0.08252
sky130_fd_sc_hs__or3b_2	(B * X)	0.00531	0.00960	0.08541
	(B * X)	0.00120	0.00546	0.08129
	(A * !B * X)	0.00542	0.00971	0.08549
	(A * !B * X)	0.00126	0.00552	0.08132
sky130_fd_sc_hs__or3b_4	(B * X)	0.00662	0.01127	0.09698
	(B * X)	0.00167	0.00632	0.09203
	(A * !B * X)	0.00686	0.01151	0.09716
	(A * !B * X)	0.00181	0.00645	0.09212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00111	0.00630	0.08388
	(B * X)	0.00508	0.01029	0.08786
	(A * !B * X)	0.00112	0.00630	0.08389
	(A * !B * X)	0.00511	0.01031	0.08789
sky130_fd_sc_hs__or3b_2	(B * X)	0.00118	0.00619	0.08245
	(B * X)	0.00530	0.01032	0.08656
	(A * !B * X)	0.00118	0.00620	0.08247
	(A * !B * X)	0.00534	0.01035	0.08661
sky130_fd_sc_hs__or3b_4	(B * X)	0.00156	0.00701	0.09281
	(B * X)	0.00649	0.01196	0.09774
	(A * !B * X)	0.00157	0.00702	0.09285
	(A * !B * X)	0.00656	0.01202	0.09783

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00263	0.00261	0.00256	1.30303
sky130_fd_sc_hs__or3_2	0.00268	0.00271	0.00278	2.45862
sky130_fd_sc_hs__or3_4	0.00499	0.00446	0.00436	4.62477

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	4.14618	11.29730
sky130_fd_sc_hs__or3_2	0.00000	5.34081	15.05820
sky130_fd_sc_hs__or3_4	0.00000	10.50190	28.70980

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)	0.06785	0.54893	6.18915
	B->X (RR)	0.06564	0.53372	6.03378
	C->X (RR)	0.05906	0.51122	5.97148
sky130_fd_sc_hs__or3_2	A->X (RR)	0.06543	0.45552	5.99035
	B->X (RR)	0.06302	0.44208	5.84168
	C->X (RR)	0.05785	0.42495	5.77577
sky130_fd_sc_hs__or3_4	A->X (RR)	0.08893	0.46630	6.57537
	B->X (RR)	0.08323	0.44538	6.40302
	C->X (RR)	0.07248	0.41953	6.33549

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.16660	0.56714	5.05709
	B->X (FF)	0.15282	0.58818	5.37821
	C->X (FF)	0.12531	0.58286	5.42980
sky130_fd_sc_hs__or3_2	A->X (FF)	0.20217	0.58000	5.18395
	B->X (FF)	0.18708	0.60502	5.50562
	C->X (FF)	0.16183	0.60686	5.56372
sky130_fd_sc_hs__or3_4	A->X (FF)	0.18323	0.50011	4.67883
	B->X (FF)	0.16811	0.51996	4.98935
	C->X (FF)	0.13823	0.51378	5.03067

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01296	0.01461	0.05968
	A	0.00590	0.00756	0.05312
	B	0.01077	0.01305	0.05579
	B	0.00491	0.00727	0.05049
	C	0.00876	0.01154	0.06044
	C	0.00394	0.00674	0.05617
sky130_fd_sc_hs__or3_2	A	0.01616	0.01839	0.06715
	A	0.00907	0.01132	0.06114
	B	0.01384	0.01660	0.06249
	B	0.00788	0.01072	0.05675
	C	0.01194	0.01509	0.06688
	C	0.00698	0.01016	0.06222
sky130_fd_sc_hs__or3_4	A	0.03084	0.03383	0.11556
	A	0.01811	0.02129	0.10347
	B	0.02560	0.02981	0.10763
	B	0.01587	0.02019	0.09907
	C	0.02095	0.02602	0.11516
	C	0.01323	0.01834	0.10870

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00490	0.00591	0.04987
	A	0.01195	0.01294	0.05579
	B	0.00495	0.00653	0.05295
	B	0.01079	0.01237	0.05771
	C	0.00483	0.00772	0.06118
	C	0.00965	0.01253	0.06501
sky130_fd_sc_hs__or3_2	A	0.00985	0.00946	0.05791
	A	0.01696	0.01651	0.06341
	B	0.00993	0.00996	0.05931
	B	0.01587	0.01588	0.06429
	C	0.00978	0.01120	0.06827
	C	0.01475	0.01615	0.07186
sky130_fd_sc_hs__or3_4	A	0.01830	0.01725	0.09464
	A	0.03100	0.02967	0.10498
	B	0.01883	0.01861	0.10307
	B	0.02859	0.02827	0.10884
	C	0.01843	0.02100	0.11913
	C	0.02613	0.02843	0.12252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00163	0.00156	0.00155
	(B * C * X)	-0.00182	-0.00194	-0.00194
	(B * !C * X)	0.00195	0.00164	0.00160
	(B * !C * X)	-0.00154	-0.00187	-0.00189
	(!B * C * X)	0.00201	0.00169	0.00164
	(!B * C * X)	-0.00143	-0.00180	-0.00183
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00172	0.00164	0.00163
	(B * C * X)	-0.00183	-0.00196	-0.00195
	(B * !C * X)	0.00204	0.00173	0.00169
	(B * !C * X)	-0.00155	-0.00188	-0.00190
	(!B * C * X)	0.00211	0.00178	0.00173
	(!B * C * X)	-0.00144	-0.00182	-0.00185
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00274	0.00258	0.00256
	(B * C * X)	-0.00366	-0.00388	-0.00388
	(B * !C * X)	0.00342	0.00275	0.00268
	(B * !C * X)	-0.00306	-0.00374	-0.00377
	(!B * C * X)	0.00355	0.00286	0.00275
	(!B * C * X)	-0.00284	-0.00363	-0.00367

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00153	-0.00153	-0.00153
	(B * C * X)	0.00195	0.00196	0.00195
	(B * !C * X)	-0.00146	-0.00147	-0.00147
	(B * !C * X)	0.00201	0.00202	0.00202
	(!B * C * X)	-0.00143	-0.00143	-0.00143
	(!B * C * X)	0.00202	0.00202	0.00203
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00161	-0.00161	-0.00161
	(B * C * X)	0.00196	0.00198	0.00197
	(B * !C * X)	-0.00154	-0.00154	-0.00155
	(B * !C * X)	0.00204	0.00204	0.00204
	(!B * C * X)	-0.00151	-0.00151	-0.00151
	(!B * C * X)	0.00203	0.00205	0.00205
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00251	-0.00253	-0.00252
	(B * C * X)	0.00388	0.00392	0.00390
	(B * !C * X)	-0.00238	-0.00240	-0.00238
	(B * !C * X)	0.00405	0.00409	0.00406
	(!B * C * X)	-0.00232	-0.00234	-0.00231
	(!B * C * X)	0.00404	0.00410	0.00407

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00162	0.00162	0.00154
	(A * C * X)	-0.00120	-0.00122	-0.00126
	(A * !C * X)	0.00151	0.00153	0.00148
	(A * !C * X)	-0.00090	-0.00092	-0.00092
	(!A * C * X)	0.00203	0.00159	0.00153
	(!A * C * X)	-0.00135	-0.00178	-0.00180
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00165	0.00166	0.00157
	(A * C * X)	-0.00131	-0.00134	-0.00138
	(A * !C * X)	0.00155	0.00158	0.00152
	(A * !C * X)	-0.00102	-0.00104	-0.00104
	(!A * C * X)	0.00207	0.00164	0.00158
	(!A * C * X)	-0.00145	-0.00190	-0.00192
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00222	0.00223	0.00205
	(A * C * X)	-0.00250	-0.00251	-0.00260
	(A * !C * X)	0.00200	0.00202	0.00193
	(A * !C * X)	-0.00188	-0.00191	-0.00192
	(!A * C * X)	0.00306	0.00214	0.00202
	(!A * C * X)	-0.00277	-0.00369	-0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00143	-0.00142	-0.00142
	(A * C * X)	0.00127	0.00126	0.00126
	(A * !C * X)	-0.00139	-0.00140	-0.00140
	(A * !C * X)	0.00102	0.00102	0.00100
	(!A * C * X)	-0.00132	-0.00132	-0.00133
	(!A * C * X)	0.00202	0.00202	0.00201
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00145	-0.00145	-0.00145
	(A * C * X)	0.00139	0.00138	0.00138
	(A * !C * X)	-0.00143	-0.00144	-0.00144
	(A * !C * X)	0.00113	0.00114	0.00112
	(!A * C * X)	-0.00136	-0.00137	-0.00138
	(!A * C * X)	0.00215	0.00216	0.00213
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00181	-0.00182	-0.00181
	(A * C * X)	0.00264	0.00264	0.00262
	(A * !C * X)	-0.00175	-0.00176	-0.00175
	(A * !C * X)	0.00212	0.00213	0.00211
	(!A * C * X)	-0.00159	-0.00160	-0.00161
	(!A * C * X)	0.00419	0.00420	0.00417

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00158	0.00160	0.00159
	(B * X)	-0.00088	-0.00089	-0.00088
	(A * !B * X)	0.00160	0.00160	0.00159
	(A * !B * X)	-0.00088	-0.00087	-0.00087
sky130_fd_sc_hs__or3_2	(B * X)	0.00180	0.00180	0.00179
	(B * X)	-0.00092	-0.00091	-0.00090
	(A * !B * X)	0.00180	0.00180	0.00179
	(A * !B * X)	-0.00090	-0.00089	-0.00088
sky130_fd_sc_hs__or3_4	(B * X)	0.00226	0.00230	0.00226
	(B * X)	-0.00178	-0.00181	-0.00178
	(A * !B * X)	0.00226	0.00231	0.00228
	(A * !B * X)	-0.00172	-0.00177	-0.00173

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00151	-0.00152	-0.00157
	(B * X)	0.00096	0.00096	0.00091
	(A * !B * X)	-0.00140	-0.00141	-0.00154
	(A * !B * X)	0.00103	0.00103	0.00093
sky130_fd_sc_hs__or3_2	(B * X)	-0.00170	-0.00172	-0.00176
	(B * X)	0.00097	0.00098	0.00093
	(A * !B * X)	-0.00159	-0.00161	-0.00174
	(A * !B * X)	0.00104	0.00105	0.00095
sky130_fd_sc_hs__or3_4	(B * X)	-0.00209	-0.00211	-0.00222
	(B * X)	0.00194	0.00194	0.00184
	(A * !B * X)	-0.00185	-0.00187	-0.00216
	(A * !B * X)	0.00208	0.00209	0.00187

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00259	0.00256	0.00240	0.00243	1.28642
sky130_fd_sc_hs__or4bb_2	0.00258	0.00272	0.00236	0.00234	2.12128
sky130_fd_sc_hs__or4bb_4	0.00410	0.00417	0.00263	0.00260	3.99117

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	20.92830	43.80530
sky130_fd_sc_hs__or4bb_2	0.00000	21.67980	51.61420
sky130_fd_sc_hs__or4bb_4	0.00000	18.12980	51.04020

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)	0.06903	0.56573	6.19818
	B->X (RR)	0.06901	0.55384	6.06947
	C_N->X (FR)	0.12393	0.69300	7.76552
	D_N->X (FR)	0.11042	0.67241	7.72833
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.06718	0.47674	5.80913
	B->X (RR)	0.06829	0.47024	5.69311
	C_N->X (FR)	0.11433	0.59284	7.43287
	D_N->X (FR)	0.11334	0.59486	7.48946
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.09614	0.49789	6.37843
	B->X (RR)	0.09793	0.48853	6.24874
	C_N->X (FR)	0.16099	0.60056	7.72696
	D_N->X (FR)	0.15669	0.60123	7.74270

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.23347	0.63423	5.17142
	B->X (FF)	0.21671	0.64481	5.48743
	C_N->X (RF)	0.22114	0.53446	3.23061
	D_N->X (RF)	0.17193	0.48480	3.18553
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.28290	0.64828	5.04639
	B->X (FF)	0.27236	0.66485	5.19662
	C_N->X (RF)	0.27057	0.53700	2.74461
	D_N->X (RF)	0.23212	0.50295	2.75085
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.31169	0.63112	4.64442
	B->X (FF)	0.29809	0.63442	4.81357
	C_N->X (RF)	0.29910	0.53234	2.63714
	D_N->X (RF)	0.23886	0.48166	2.60992

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01309	0.01426	0.05429
	A	0.00779	0.00897	0.04947
	B	0.01112	0.01302	0.05084
	B	0.00673	0.00865	0.04698
	C_N	0.00977	0.01505	0.09382
	C_N	0.01324	0.01853	0.09771
	D_N	0.00864	0.01408	0.09314
	D_N	0.01173	0.01719	0.09666
sky130_fd_sc_hs__or4bb_2	A	0.01614	0.01851	0.07318
	A	0.01080	0.01319	0.06803
	B	0.01445	0.01685	0.06595
	B	0.00985	0.01228	0.06171
	C_N	0.01248	0.01832	0.09891
	C_N	0.01583	0.02173	0.10288
	D_N	0.01208	0.01722	0.09452
	D_N	0.01516	0.02036	0.09824
sky130_fd_sc_hs__or4bb_4	A	0.03239	0.03527	0.12063
	A	0.02280	0.02570	0.11218
	B	0.02720	0.03043	0.10701
	B	0.01990	0.02316	0.10137
	C_N	0.02580	0.03136	0.11696
	C_N	0.02898	0.03463	0.12169
	D_N	0.02279	0.02841	0.11725
	D_N	0.02600	0.03173	0.12204

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00888	0.00869	0.04926
	A	0.01417	0.01401	0.05377
	B	0.00865	0.00904	0.05141
	B	0.01302	0.01341	0.05499
	C_N	0.01553	0.01888	0.09659
	C_N	0.01206	0.01539	0.09301
	D_N	0.01371	0.01755	0.09641
	D_N	0.01063	0.01442	0.09331
sky130_fd_sc_hs__or4bb_2	A	0.01452	0.01225	0.06390
	A	0.01986	0.01759	0.06923
	B	0.01421	0.01230	0.05934
	B	0.01879	0.01691	0.06279
	C_N	0.02086	0.02210	0.10099
	C_N	0.01751	0.01856	0.09685
	D_N	0.01986	0.02078	0.09439
	D_N	0.01679	0.01766	0.09047
sky130_fd_sc_hs__or4bb_4	A	0.03064	0.02454	0.10548
	A	0.04025	0.03432	0.11449
	B	0.03079	0.02502	0.09950
	B	0.03805	0.03280	0.10486
	C_N	0.03864	0.03592	0.11628
	C_N	0.03545	0.03275	0.11228
	D_N	0.03713	0.03459	0.11852
	D_N	0.03390	0.03115	0.11459

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)**	0.00216	0.00188	0.00184
	(B * C_N * D_N * X)	-0.00127	-0.00157	-0.00158
	(B * !D_N * X)	0.00170	0.00164	0.00163
	(B * !D_N * X)	-0.00171	-0.00180	-0.00179
	(B * !C_N * D_N * X)	0.00165	0.00164	0.00163
	(B * !C_N * D_N * X)	-0.00175	-0.00180	-0.00179
	(!B * C_N * !D_N * X)	0.00203	0.00178	0.00174
	(!B * C_N * !D_N * X)	-0.00135	-0.00165	-0.00168
	(!B * !C_N * D_N * X)	0.00194	0.00171	0.00168
	(!B * !C_N * D_N * X)	-0.00141	-0.00171	-0.00173
	(!B * !C_N * !D_N * X)	0.00148	0.00148	0.00147
	(!B * !C_N * !D_N * X)	-0.00180	-0.00190	-0.00192
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00226	0.00198	0.00194
	(B * C_N * D_N * X)	-0.00126	-0.00156	-0.00157
	(B * !D_N * X)	0.00180	0.00174	0.00173
	(B * !D_N * X)	-0.00170	-0.00178	-0.00178
	(B * !C_N * D_N * X)	0.00159	0.00158	0.00157
	(B * !C_N * D_N * X)	-0.00190	-0.00195	-0.00194
	(!B * C_N * !D_N * X)	0.00213	0.00188	0.00184
	(!B * C_N * !D_N * X)	-0.00133	-0.00163	-0.00167
	(!B * !C_N * D_N * X)	0.00189	0.00165	0.00162
	(!B * !C_N * D_N * X)	-0.00155	-0.00186	-0.00188
	(!B * !C_N * !D_N * X)	0.00142	0.00142	0.00141
	(!B * !C_N * !D_N * X)	-0.00195	-0.00206	-0.00207

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00298	0.00231	0.00224
	(B * C_N * D_N * X)	-0.00294	-0.00366	-0.00368
	(B * !D_N * X)	0.00219	0.00205	0.00203
	(B * !D_N * X)	-0.00368	-0.00390	-0.00390
	(B * !C_N * D_N * X)	0.00207	0.00204	0.00202
	(B * !C_N * D_N * X)	-0.00378	-0.00391	-0.00390
	(!B * C_N * !D_N * X)	0.00291	0.00236	0.00225
	(!B * C_N * !D_N * X)	-0.00292	-0.00358	-0.00367
	(!B * !C_N * D_N * X)	0.00271	0.00220	0.00214
	(!B * !C_N * D_N * X)	-0.00306	-0.00372	-0.00376
	(!B * !C_N * !D_N * X)	0.00196	0.00195	0.00193
	(!B * !C_N * !D_N * X)	-0.00366	-0.00392	-0.00391

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)**	-0.00111	-0.00111	-0.00111
	(B * C_N * D_N * X)	0.00231	0.00232	0.00232
	(B * !D_N * X)	-0.00129	-0.00130	-0.00129
	(B * !D_N * X)	0.00212	0.00213	0.00212
	(B * !C_N * D_N * X)	-0.00129	-0.00130	-0.00130
	(B * !C_N * D_N * X)	0.00212	0.00213	0.00212
	(!B * C_N * !D_N * X)	-0.00123	-0.00123	-0.00122
	(!B * C_N * !D_N * X)	0.00216	0.00217	0.00218
	(!B * !C_N * D_N * X)	-0.00124	-0.00125	-0.00124
	(!B * !C_N * D_N * X)	0.00214	0.00216	0.00216
	(!B * !C_N * !D_N * X)	-0.00145	-0.00145	-0.00145
	(!B * !C_N * !D_N * X)	0.00191	0.00190	0.00192

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00120	-0.00121	-0.00121
	(B * C_N * D_N * X)	0.00230	0.00231	0.00231
	(B * !D_N * X)	-0.00138	-0.00140	-0.00139
	(B * !D_N * X)	0.00210	0.00213	0.00211
	(B * !C_N * D_N * X)	-0.00123	-0.00124	-0.00123
	(B * !C_N * D_N * X)	0.00226	0.00228	0.00227
	(!B * C_N * !D_N * X)	-0.00133	-0.00133	-0.00132
	(!B * C_N * !D_N * X)	0.00216	0.00216	0.00217
	(!B * !C_N * D_N * X)	-0.00117	-0.00118	-0.00117
	(!B * !C_N * D_N * X)	0.00229	0.00231	0.00231
	(!B * !C_N * !D_N * X)	-0.00138	-0.00139	-0.00139
	(!B * !C_N * !D_N * X)	0.00206	0.00206	0.00207
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00165	-0.00166	-0.00165
	(B * C_N * D_N * X)	0.00426	0.00429	0.00427
	(B * !D_N * X)	-0.00179	-0.00180	-0.00179
	(B * !D_N * X)	0.00410	0.00413	0.00411
	(B * !C_N * D_N * X)	-0.00179	-0.00180	-0.00179
	(B * !C_N * D_N * X)	0.00410	0.00413	0.00411
	(!B * C_N * !D_N * X)	-0.00167	-0.00167	-0.00165
	(!B * C_N * !D_N * X)	0.00420	0.00420	0.00423
	(!B * !C_N * D_N * X)	-0.00171	-0.00171	-0.00169
	(!B * !C_N * D_N * X)	0.00414	0.00417	0.00415
	(!B * !C_N * !D_N * X)	-0.00189	-0.00190	-0.00188
	(!B * !C_N * !D_N * X)	0.00391	0.00395	0.00391

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)**	0.00196	0.00199	0.00194
	(A * C_N * D_N * X)	-0.00070	-0.00072	-0.00072
	(A * C_N * !D_N * X)	0.00213	0.00222	0.00214
	(A * C_N * !D_N * X)	-0.00119	-0.00110	-0.00119
	(A * !C_N * D_N * X)	0.00158	0.00159	0.00148
	(A * !C_N * D_N * X)	-0.00152	-0.00154	-0.00161
	(A * !C_N * !D_N * X)	0.00138	0.00139	0.00132
	(A * !C_N * !D_N * X)	-0.00173	-0.00175	-0.00173
	(!A * C_N * !D_N * X)	0.00236	0.00190	0.00183
	(!A * C_N * !D_N * X)	-0.00125	-0.00171	-0.00175
	(!A * !C_N * D_N * X)	0.00195	0.00156	0.00149
	(!A * !C_N * D_N * X)	-0.00167	-0.00206	-0.00209
	(!A * !C_N * !D_N * X)	0.00143	0.00130	0.00128
	(!A * !C_N * !D_N * X)	-0.00217	-0.00231	-0.00230
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00230	0.00231	0.00228
	(A * C_N * D_N * X)	-0.00058	-0.00059	-0.00061
	(A * C_N * !D_N * X)	0.00250	0.00258	0.00249
	(A * C_N * !D_N * X)	-0.00109	-0.00100	-0.00107
	(A * !C_N * D_N * X)	0.00201	0.00202	0.00193
	(A * !C_N * D_N * X)	-0.00131	-0.00131	-0.00138
	(A * !C_N * !D_N * X)	0.00182	0.00183	0.00177
	(A * !C_N * !D_N * X)	-0.00151	-0.00153	-0.00151
	(!A * C_N * !D_N * X)	0.00271	0.00223	0.00217
	(!A * C_N * !D_N * X)	-0.00112	-0.00159	-0.00164
	(!A * !C_N * D_N * X)	0.00240	0.00199	0.00194
	(!A * !C_N * D_N * X)	-0.00143	-0.00184	-0.00188
	(!A * !C_N * !D_N * X)	0.00188	0.00174	0.00173
	(!A * !C_N * !D_N * X)	-0.00194	-0.00209	-0.00209

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00234	0.00237	0.00227
	(A * C_N * D_N * X)	-0.00171	-0.00175	-0.00178
	(A * C_N * !D_N * X)	0.00280	0.00303	0.00283
	(A * C_N * !D_N * X)	-0.00261	-0.00243	-0.00258
	(A * !C_N * D_N * X)	0.00244	0.00240	0.00216
	(A * !C_N * D_N * X)	-0.00261	-0.00266	-0.00282
	(A * !C_N * !D_N * X)	0.00221	0.00219	0.00204
	(A * !C_N * !D_N * X)	-0.00289	-0.00293	-0.00290
	(!A * C_N * !D_N * X)	0.00327	0.00241	0.00224
	(!A * C_N * !D_N * X)	-0.00264	-0.00357	-0.00368
	(!A * !C_N * D_N * X)	0.00305	0.00221	0.00210
	(!A * !C_N * D_N * X)	-0.00291	-0.00374	-0.00382
	(!A * !C_N * !D_N * X)	0.00212	0.00189	0.00188
	(!A * !C_N * !D_N * X)	-0.00382	-0.00405	-0.00404

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)**	-0.00117	-0.00118	-0.00119
	(A * C_N * D_N * X)	0.00148	0.00148	0.00146
	(A * C_N * !D_N * X)	-0.00164	-0.00165	-0.00164
	(A * C_N * !D_N * X)	0.00151	0.00152	0.00151
	(A * !C_N * D_N * X)	-0.00110	-0.00110	-0.00110
	(A * !C_N * D_N * X)	0.00187	0.00186	0.00186
	(A * !C_N * !D_N * X)	-0.00126	-0.00127	-0.00126
	(A * !C_N * !D_N * X)	0.00173	0.00175	0.00173
	(!A * C_N * !D_N * X)	-0.00132	-0.00133	-0.00132
	(!A * C_N * !D_N * X)	0.00225	0.00227	0.00227
	(!A * !C_N * D_N * X)	-0.00103	-0.00104	-0.00103
	(!A * !C_N * D_N * X)	0.00254	0.00256	0.00255
	(!A * !C_N * !D_N * X)	-0.00125	-0.00126	-0.00125
	(!A * !C_N * !D_N * X)	0.00232	0.00233	0.00232
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00152	-0.00153	-0.00154
	(A * C_N * D_N * X)	0.00136	0.00136	0.00136
	(A * C_N * !D_N * X)	-0.00198	-0.00200	-0.00198
	(A * C_N * !D_N * X)	0.00139	0.00140	0.00140
	(A * !C_N * D_N * X)	-0.00154	-0.00155	-0.00154
	(A * !C_N * D_N * X)	0.00164	0.00166	0.00164
	(A * !C_N * !D_N * X)	-0.00170	-0.00171	-0.00170
	(A * !C_N * !D_N * X)	0.00151	0.00153	0.00151
	(!A * C_N * !D_N * X)	-0.00166	-0.00167	-0.00165
	(!A * C_N * !D_N * X)	0.00215	0.00217	0.00216
	(!A * !C_N * D_N * X)	-0.00147	-0.00148	-0.00148
	(!A * !C_N * D_N * X)	0.00233	0.00234	0.00234
	(!A * !C_N * !D_N * X)	-0.00169	-0.00170	-0.00169
	(!A * !C_N * !D_N * X)	0.00210	0.00213	0.00211

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00156	-0.00157	-0.00160
	(A * C_N * D_N * X)	0.00247	0.00248	0.00246
	(A * C_N * !D_N * X)	-0.00227	-0.00230	-0.00228
	(A * C_N * !D_N * X)	0.00279	0.00282	0.00279
	(A * !C_N * D_N * X)	-0.00175	-0.00177	-0.00176
	(A * !C_N * D_N * X)	0.00293	0.00296	0.00294
	(A * !C_N * !D_N * X)	-0.00184	-0.00186	-0.00185
	(A * !C_N * !D_N * X)	0.00289	0.00293	0.00290
	(!A * C_N * !D_N * X)	-0.00166	-0.00168	-0.00164
	(!A * C_N * !D_N * X)	0.00424	0.00429	0.00428
	(!A * !C_N * D_N * X)	-0.00160	-0.00162	-0.00161
	(!A * !C_N * D_N * X)	0.00430	0.00434	0.00432
	(!A * !C_N * !D_N * X)	-0.00181	-0.00183	-0.00182
	(!A * !C_N * !D_N * X)	0.00407	0.00410	0.00409

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00560	0.00979	0.08554
	(B * X)	0.00138	0.00558	0.08132
	(A * !B * X) + (!A * !B * !D_N * X)	0.00570	0.00990	0.08559
	(A * !B * X) + (!A * !B * !D_N * X)	0.00141	0.00561	0.08130
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00513	0.00957	0.08683
	(B * X)	0.00106	0.00548	0.08275
	(A * !B * X) + (!A * !B * !D_N * X)	0.00523	0.00967	0.08684
	(A * !B * X) + (!A * !B * !D_N * X)	0.00108	0.00551	0.08269
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00606	0.01056	0.09493
	(B * X)	0.00170	0.00620	0.09059
	(A * !B * X) + (!A * !B * !D_N * X)	0.00630	0.01080	0.09506
	(A * !B * X) + (!A * !B * !D_N * X)	0.00180	0.00629	0.09059

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00149	0.00642	0.08254
	(B * X)	0.00569	0.01065	0.08675
	(A * !B * X) + (!A * !B * !D_N * X)	0.00152	0.00645	0.08258
	(A * !B * X) + (!A * !B * !D_N * X)	0.00575	0.01070	0.08682
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00135	0.00650	0.08412
	(B * X)	0.00541	0.01058	0.08820
	(A * !B * X) + (!A * !B * !D_N * X)	0.00138	0.00652	0.08411
	(A * !B * X) + (!A * !B * !D_N * X)	0.00547	0.01063	0.08821
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00232	0.00761	0.09193
	(B * X)	0.00665	0.01196	0.09627
	(A * !B * X) + (!A * !B * !D_N * X)	0.00241	0.00769	0.09201
	(A * !B * X) + (!A * !B * !D_N * X)	0.00678	0.01208	0.09638

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)	0.00494	0.00929	0.08507
	(B * C_N * X)	0.00113	0.00546	0.08125
	(A * !B * C_N * X)	0.00508	0.00942	0.08518
	(A * !B * C_N * X)	0.00122	0.00555	0.08132
	(!C_N * X)	0.00490	0.00924	0.08504
	(!C_N * X)	0.00110	0.00542	0.08124
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00502	0.00932	0.08522
	(B * C_N * X)	0.00123	0.00553	0.08144
	(A * !B * C_N * X)	0.00515	0.00945	0.08532
	(A * !B * C_N * X)	0.00131	0.00560	0.08149
	(!C_N * X)	0.00499	0.00928	0.08520
	(!C_N * X)	0.00121	0.00550	0.08143
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00689	0.01129	0.09602
	(B * C_N * X)	0.00254	0.00692	0.09167
	(A * !B * C_N * X)	0.00724	0.01163	0.09628
	(A * !B * C_N * X)	0.00278	0.00715	0.09185
	(!C_N * X)	0.00718	0.01158	0.09635
	(!C_N * X)	0.00287	0.00725	0.09203

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)	0.00146	0.00651	0.08268
	(B * C_N * X)	0.00526	0.01033	0.08650
	(A * !B * C_N * X)	0.00147	0.00652	0.08270
	(A * !B * C_N * X)	0.00529	0.01035	0.08653
	(!C_N * X)	0.00114	0.00621	0.08239
	(!C_N * X)	0.00494	0.01002	0.08620
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00173	0.00676	0.08309
	(B * C_N * X)	0.00552	0.01056	0.08688
	(A * !B * C_N * X)	0.00174	0.00677	0.08311
	(A * !B * C_N * X)	0.00554	0.01058	0.08692
	(!C_N * X)	0.00140	0.00643	0.08277
	(!C_N * X)	0.00518	0.01023	0.08655
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00270	0.00791	0.09273
	(B * C_N * X)	0.00701	0.01224	0.09705
	(A * !B * C_N * X)	0.00271	0.00792	0.09277
	(A * !B * C_N * X)	0.00706	0.01228	0.09711
	(!C_N * X)	0.00212	0.00733	0.09215
	(!C_N * X)	0.00642	0.01166	0.09647

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00264	0.00252	0.00261	0.00245	1.23431
sky130_fd_sc_hs__or4b_2	0.00273	0.00263	0.00264	0.00233	2.14882
sky130_fd_sc_hs__or4b_4	0.00405	0.00457	0.00460	0.00257	4.76692

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4b_1	0.00000	11.80100	25.72150
sky130_fd_sc_hs__or4b_2	0.00000	12.55210	33.52210
sky130_fd_sc_hs__or4b_4	0.00000	12.42870	40.02120

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)	0.07242	0.57459	6.13487
	B->X (RR)	0.07222	0.56344	6.01121
	C->X (RR)	0.06902	0.54702	5.88332
	D_N->X (FR)	0.11084	0.67327	7.62210
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.06825	0.47728	5.75152
	B->X (RR)	0.06860	0.47035	5.64003
	C->X (RR)	0.06583	0.45625	5.53330
	D_N->X (FR)	0.11822	0.60475	7.54809
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.09800	0.49770	6.65521
	B->X (RR)	0.09742	0.48433	6.52226
	C->X (RR)	0.08856	0.45805	6.36844
	D_N->X (FR)	0.13928	0.56715	7.86376

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.24377	0.64512	5.07251
	B->X (FF)	0.22672	0.65552	5.38465
	C->X (FF)	0.20235	0.66644	5.49773
	D_N->X (RF)	0.17828	0.49496	3.10787
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.29675	0.66555	4.97538
	B->X (FF)	0.28017	0.67712	5.27402
	C->X (FF)	0.25080	0.68838	5.39642
	D_N->X (RF)	0.23732	0.51709	2.81078
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.29917	0.63761	5.16814
	B->X (FF)	0.28619	0.64241	5.32618
	C->X (FF)	0.24612	0.64043	5.45623
	D_N->X (RF)	0.22305	0.47591	3.16233

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01437	0.01549	0.05300
	A	0.00749	0.00862	0.04662
	B	0.01216	0.01398	0.04955
	B	0.00658	0.00841	0.04449
	C	0.01021	0.01219	0.04548
	C	0.00545	0.00745	0.04078
	D_N	0.00873	0.01419	0.09389
	D_N	0.01157	0.01707	0.09718
sky130_fd_sc_hs__or4b_2	A	0.01777	0.01925	0.05584
	A	0.01080	0.01230	0.04917
	B	0.01562	0.01772	0.05257
	B	0.00990	0.01202	0.04735
	C	0.01352	0.01584	0.04838
	C	0.00863	0.01097	0.04408
	D_N	0.01221	0.01776	0.09353
	D_N	0.01523	0.02087	0.09720
sky130_fd_sc_hs__or4b_4	A	0.03401	0.03657	0.11994
	A	0.02190	0.02450	0.10815
	B	0.02997	0.03299	0.10927
	B	0.01957	0.02273	0.09968
	C	0.02445	0.02825	0.10043
	C	0.01610	0.01997	0.09332
	D_N	0.02189	0.02793	0.11574
	D_N	0.02470	0.03079	0.11995

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00747	0.00707	0.04705
	A	0.01435	0.01396	0.05304
	B	0.00747	0.00768	0.04890
	B	0.01305	0.01327	0.05392
	C	0.00733	0.00808	0.04588
	C	0.01208	0.01285	0.05053
	D_N	0.01337	0.01730	0.09756
	D_N	0.01051	0.01436	0.09450
sky130_fd_sc_hs__or4b_2	A	0.01291	0.00985	0.05182
	A	0.01987	0.01686	0.05809
	B	0.01293	0.00992	0.05423
	B	0.01864	0.01619	0.05822
	C	0.01269	0.01094	0.05186
	C	0.01757	0.01581	0.05444
	D_N	0.01984	0.02060	0.09313
	D_N	0.01681	0.01734	0.08961
sky130_fd_sc_hs__or4b_4	A	0.02832	0.02211	0.10242
	A	0.04045	0.03422	0.11272
	B	0.02798	0.02248	0.09926
	B	0.03836	0.03284	0.10476
	C	0.02746	0.02295	0.09301
	C	0.03580	0.03125	0.09888
	D_N	0.03597	0.03383	0.12179
	D_N	0.03316	0.03080	0.11737

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)**	0.00171	0.00169	0.00168
	(B * C * D_N * X)	-0.00170	-0.00178	-0.00177
	(B * !D_N * X)	0.00153	0.00154	0.00153
	(B * !D_N * X)	-0.00189	-0.00194	-0.00193
	(B * !C * D_N * X)	0.00206	0.00177	0.00175
	(B * !C * D_N * X)	-0.00140	-0.00171	-0.00172
	(!B * C * D_N * X)	0.00201	0.00177	0.00174
	(!B * C * D_N * X)	-0.00136	-0.00169	-0.00171
	(!B * C * !D_N * X)	0.00154	0.00154	0.00153
	(!B * C * !D_N * X)	-0.00175	-0.00188	-0.00188
	(!B * !C * !D_N * X)	0.00190	0.00168	0.00163
	(!B * !C * !D_N * X)	-0.00148	-0.00178	-0.00182
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00186	0.00184	0.00183
	(B * C * D_N * X)	-0.00173	-0.00180	-0.00179
	(B * !D_N * X)	0.00162	0.00163	0.00162
	(B * !D_N * X)	-0.00197	-0.00201	-0.00201
	(B * !C * D_N * X)	0.00221	0.00193	0.00190
	(B * !C * D_N * X)	-0.00142	-0.00173	-0.00174
	(!B * C * D_N * X)	0.00216	0.00192	0.00189
	(!B * C * D_N * X)	-0.00138	-0.00171	-0.00173
	(!B * C * !D_N * X)	0.00163	0.00163	0.00162
	(!B * C * !D_N * X)	-0.00183	-0.00196	-0.00196
	(!B * !C * !D_N * X)	0.00199	0.00177	0.00172
	(!B * !C * !D_N * X)	-0.00154	-0.00186	-0.00189

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00184	0.00179	0.00177
	(B * C * D_N * X)	-0.00371	-0.00386	-0.00386
	(B * !D_N * X)	0.00168	0.00169	0.00167
	(B * !D_N * X)	-0.00387	-0.00397	-0.00396
	(B * !C * D_N * X)	0.00265	0.00199	0.00192
	(B * !C * D_N * X)	-0.00299	-0.00369	-0.00372
	(!B * C * D_N * X)	0.00254	0.00196	0.00188
	(!B * C * D_N * X)	-0.00293	-0.00368	-0.00373
	(!B * C * !D_N * X)	0.00172	0.00169	0.00167
	(!B * C * !D_N * X)	-0.00358	-0.00389	-0.00386
	(!B * !C * !D_N * X)	0.00253	0.00199	0.00187
	(!B * !C * !D_N * X)	-0.00291	-0.00366	-0.00374

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)**	-0.00135	-0.00136	-0.00136
	(B * C * D_N * X)	0.00209	0.00211	0.00210
	(B * !D_N * X)	-0.00151	-0.00152	-0.00151
	(B * !D_N * X)	0.00193	0.00195	0.00194
	(B * !C * D_N * X)	-0.00132	-0.00133	-0.00133
	(B * !C * D_N * X)	0.00213	0.00214	0.00214
	(!B * C * D_N * X)	-0.00130	-0.00131	-0.00130
	(!B * C * D_N * X)	0.00211	0.00213	0.00212
	(!B * C * !D_N * X)	-0.00151	-0.00151	-0.00151
	(!B * C * !D_N * X)	0.00188	0.00188	0.00188
	(!B * !C * !D_N * X)	-0.00141	-0.00142	-0.00141
	(!B * !C * !D_N * X)	0.00199	0.00199	0.00200

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00150	-0.00151	-0.00150
	(B * C * D_N * X)	0.00212	0.00213	0.00212
	(B * !D_N * X)	-0.00160	-0.00161	-0.00160
	(B * !D_N * X)	0.00202	0.00203	0.00202
	(B * !C * D_N * X)	-0.00147	-0.00148	-0.00148
	(B * !C * D_N * X)	0.00215	0.00216	0.00216
	(!B * C * D_N * X)	-0.00145	-0.00146	-0.00144
	(!B * C * D_N * X)	0.00213	0.00215	0.00215
	(!B * C * !D_N * X)	-0.00159	-0.00160	-0.00160
	(!B * C * !D_N * X)	0.00195	0.00196	0.00196
	(!B * !C * !D_N * X)	-0.00150	-0.00151	-0.00149
	(!B * !C * !D_N * X)	0.00206	0.00207	0.00208
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00154	-0.00154	-0.00154
	(B * C * D_N * X)	0.00405	0.00406	0.00407
	(B * !D_N * X)	-0.00163	-0.00164	-0.00163
	(B * !D_N * X)	0.00395	0.00400	0.00398
	(B * !C * D_N * X)	-0.00152	-0.00152	-0.00152
	(B * !C * D_N * X)	0.00412	0.00414	0.00413
	(!B * C * D_N * X)	-0.00143	-0.00144	-0.00142
	(!B * C * D_N * X)	0.00409	0.00413	0.00412
	(!B * C * !D_N * X)	-0.00163	-0.00164	-0.00163
	(!B * C * !D_N * X)	0.00384	0.00389	0.00386
	(!B * !C * !D_N * X)	-0.00144	-0.00144	-0.00141
	(!B * !C * !D_N * X)	0.00407	0.00409	0.00410

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)**	0.00166	0.00166	0.00156
	(A * C * D_N * X)	-0.00106	-0.00107	-0.00113
	(A * C * !D_N * X)	0.00146	0.00146	0.00140
	(A * C * !D_N * X)	-0.00128	-0.00129	-0.00127
	(A * !C * D_N * X)	0.00158	0.00160	0.00155
	(A * !C * D_N * X)	-0.00073	-0.00075	-0.00075
	(A * !C * !D_N * X)	0.00153	0.00164	0.00148
	(A * !C * !D_N * X)	-0.00122	-0.00116	-0.00122
	(!A * C * D_N * X)	0.00201	0.00162	0.00155
	(!A * C * D_N * X)	-0.00124	-0.00164	-0.00168
	(!A * C * !D_N * X)	0.00150	0.00136	0.00134
	(!A * C * !D_N * X)	-0.00173	-0.00189	-0.00188
	(!A * !C * !D_N * X)	0.00194	0.00151	0.00144
	(!A * !C * !D_N * X)	-0.00124	-0.00174	-0.00178
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00181	0.00183	0.00173
	(A * C * D_N * X)	-0.00108	-0.00109	-0.00114
	(A * C * !D_N * X)	0.00157	0.00158	0.00152
	(A * C * !D_N * X)	-0.00133	-0.00134	-0.00134
	(A * !C * D_N * X)	0.00175	0.00178	0.00172
	(A * !C * D_N * X)	-0.00074	-0.00076	-0.00076
	(A * !C * !D_N * X)	0.00165	0.00176	0.00160
	(A * !C * !D_N * X)	-0.00129	-0.00123	-0.00130
	(!A * C * D_N * X)	0.00220	0.00179	0.00172
	(!A * C * D_N * X)	-0.00125	-0.00166	-0.00169
	(!A * C * !D_N * X)	0.00162	0.00147	0.00147
	(!A * C * !D_N * X)	-0.00180	-0.00194	-0.00195
	(!A * !C * !D_N * X)	0.00209	0.00164	0.00156
	(!A * !C * !D_N * X)	-0.00132	-0.00180	-0.00184

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00259	0.00263	0.00237
	(A * C * D_N * X)	-0.00254	-0.00251	-0.00265
	(A * C * !D_N * X)	0.00236	0.00237	0.00220
	(A * C * !D_N * X)	-0.00279	-0.00282	-0.00280
	(A * !C * D_N * X)	0.00240	0.00243	0.00230
	(A * !C * D_N * X)	-0.00180	-0.00184	-0.00187
	(A * !C * !D_N * X)	0.00247	0.00263	0.00235
	(A * !C * !D_N * X)	-0.00265	-0.00247	-0.00267
	(!A * C * D_N * X)	0.00337	0.00241	0.00229
	(!A * C * D_N * X)	-0.00274	-0.00367	-0.00378
	(!A * C * !D_N * X)	0.00240	0.00208	0.00207
	(!A * C * !D_N * X)	-0.00364	-0.00397	-0.00399
	(!A * !C * !D_N * X)	0.00336	0.00245	0.00227
	(!A * !C * !D_N * X)	-0.00261	-0.00366	-0.00378

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)**	-0.00118	-0.00117	-0.00118
	(A * C * D_N * X)	0.00141	0.00140	0.00140
	(A * C * !D_N * X)	-0.00134	-0.00134	-0.00133
	(A * C * !D_N * X)	0.00128	0.00129	0.00127
	(A * !C * D_N * X)	-0.00110	-0.00111	-0.00112
	(A * !C * D_N * X)	0.00118	0.00119	0.00118
	(A * !C * !D_N * X)	-0.00133	-0.00134	-0.00133
	(A * !C * !D_N * X)	0.00122	0.00123	0.00122
	(!A * C * D_N * X)	-0.00109	-0.00110	-0.00110
	(!A * C * D_N * X)	0.00212	0.00213	0.00213
	(!A * C * !D_N * X)	-0.00131	-0.00132	-0.00132
	(!A * C * !D_N * X)	0.00189	0.00191	0.00190
	(!A * !C * !D_N * X)	-0.00122	-0.00123	-0.00121
	(!A * !C * !D_N * X)	0.00197	0.00198	0.00198
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00134	-0.00135	-0.00134
	(A * C * D_N * X)	0.00141	0.00143	0.00142
	(A * C * !D_N * X)	-0.00144	-0.00144	-0.00144
	(A * C * !D_N * X)	0.00133	0.00134	0.00134
	(A * !C * D_N * X)	-0.00127	-0.00127	-0.00128
	(A * !C * D_N * X)	0.00121	0.00120	0.00120
	(A * !C * !D_N * X)	-0.00144	-0.00145	-0.00144
	(A * !C * !D_N * X)	0.00130	0.00131	0.00130
	(!A * C * D_N * X)	-0.00126	-0.00127	-0.00126
	(!A * C * D_N * X)	0.00215	0.00216	0.00215
	(!A * C * !D_N * X)	-0.00143	-0.00144	-0.00144
	(!A * C * !D_N * X)	0.00195	0.00197	0.00196
	(!A * !C * !D_N * X)	-0.00135	-0.00135	-0.00134
	(!A * !C * !D_N * X)	0.00204	0.00205	0.00205

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00200	-0.00201	-0.00200
	(A * C * D_N * X)	0.00277	0.00280	0.00278
	(A * C * !D_N * X)	-0.00203	-0.00205	-0.00204
	(A * C * !D_N * X)	0.00279	0.00282	0.00280
	(A * !C * D_N * X)	-0.00183	-0.00183	-0.00181
	(A * !C * D_N * X)	0.00234	0.00235	0.00235
	(A * !C * !D_N * X)	-0.00203	-0.00204	-0.00203
	(A * !C * !D_N * X)	0.00267	0.00270	0.00268
	(!A * C * D_N * X)	-0.00179	-0.00178	-0.00178
	(!A * C * D_N * X)	0.00426	0.00426	0.00428
	(!A * C * !D_N * X)	-0.00202	-0.00203	-0.00202
	(!A * C * !D_N * X)	0.00400	0.00403	0.00401
	(!A * !C * !D_N * X)	-0.00183	-0.00184	-0.00180
	(!A * !C * !D_N * X)	0.00416	0.00419	0.00419

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)	0.00178	0.00179	0.00176
	(B * D_N * X)	-0.00076	-0.00076	-0.00077
	(B * !D_N * X)	0.00166	0.00167	0.00159
	(B * !D_N * X)	-0.00131	-0.00132	-0.00136
	(A * !B * D_N * X)	0.00180	0.00182	0.00178
	(A * !B * D_N * X)	-0.00072	-0.00072	-0.00074
	(A * !B * !D_N * X)	0.00185	0.00168	0.00163
	(A * !B * !D_N * X)	-0.00114	-0.00125	-0.00130
	(!A * !B * !D_N * X)	0.00208	0.00161	0.00157
	(!A * !B * !D_N * X)	-0.00142	-0.00187	-0.00190

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00194	0.00196	0.00193
	(B * D_N * X)	-0.00077	-0.00079	-0.00080
	(B * !D_N * X)	0.00165	0.00168	0.00158
	(B * !D_N * X)	-0.00154	-0.00156	-0.00161
	(A * !B * D_N * X)	0.00198	0.00199	0.00196
	(A * !B * D_N * X)	-0.00073	-0.00074	-0.00076
	(A * !B * !D_N * X)	0.00183	0.00170	0.00161
	(A * !B * !D_N * X)	-0.00135	-0.00149	-0.00152
	(!A * !B * !D_N * X)	0.00209	0.00161	0.00156
	(!A * !B * !D_N * X)	-0.00160	-0.00206	-0.00210
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00273	0.00276	0.00270
	(B * D_N * X)	-0.00182	-0.00185	-0.00186
	(B * !D_N * X)	0.00264	0.00260	0.00241
	(B * !D_N * X)	-0.00298	-0.00303	-0.00315
	(A * !B * D_N * X)	0.00281	0.00284	0.00275
	(A * !B * D_N * X)	-0.00176	-0.00178	-0.00179
	(A * !B * !D_N * X)	0.00288	0.00257	0.00241
	(A * !B * !D_N * X)	-0.00263	-0.00293	-0.00300
	(!A * !B * !D_N * X)	0.00336	0.00241	0.00231
	(!A * !B * !D_N * X)	-0.00317	-0.00407	-0.00415

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)**	-0.00140	-0.00140	-0.00141
	(B * D_N * X)	0.00113	0.00113	0.00113
	(B * !D_N * X)	-0.00145	-0.00145	-0.00145
	(B * !D_N * X)	0.00137	0.00137	0.00136
	(A * !B * D_N * X)	-0.00131	-0.00132	-0.00140
	(A * !B * D_N * X)	0.00117	0.00118	0.00112
	(A * !B * !D_N * X)	-0.00145	-0.00145	-0.00144
	(A * !B * !D_N * X)	0.00136	0.00136	0.00136
	(!A * !B * !D_N * X)	-0.00134	-0.00136	-0.00136
	(!A * !B * !D_N * X)	0.00211	0.00212	0.00210
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00156	-0.00157	-0.00157
	(B * D_N * X)	0.00116	0.00117	0.00116
	(B * !D_N * X)	-0.00143	-0.00143	-0.00143
	(B * !D_N * X)	0.00162	0.00161	0.00161
	(A * !B * D_N * X)	-0.00148	-0.00149	-0.00156
	(A * !B * D_N * X)	0.00119	0.00120	0.00115
	(A * !B * !D_N * X)	-0.00142	-0.00143	-0.00141
	(A * !B * !D_N * X)	0.00158	0.00160	0.00159
	(!A * !B * !D_N * X)	-0.00133	-0.00135	-0.00135
	(!A * !B * !D_N * X)	0.00232	0.00234	0.00231
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00238	-0.00240	-0.00242
	(B * D_N * X)	0.00216	0.00217	0.00216
	(B * !D_N * X)	-0.00206	-0.00208	-0.00206
	(B * !D_N * X)	0.00317	0.00320	0.00318
	(A * !B * D_N * X)	-0.00216	-0.00219	-0.00239
	(A * !B * D_N * X)	0.00227	0.00228	0.00215
	(A * !B * !D_N * X)	-0.00205	-0.00205	-0.00204
	(A * !B * !D_N * X)	0.00310	0.00311	0.00312
	(!A * !B * !D_N * X)	-0.00187	-0.00189	-0.00189
	(!A * !B * !D_N * X)	0.00459	0.00462	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00491	0.00930	0.08659
	(C * X)	0.00082	0.00519	0.08250
	(B * !C * X)	0.00500	0.00940	0.08665
	(B * !C * X)	0.00086	0.00524	0.08251
	(A * !B * !C * X)	0.00513	0.00953	0.08674
	(A * !B * !C * X)	0.00095	0.00533	0.08257
sky130_fd_sc_hs__or4b_2	(C * X)	0.00549	0.00973	0.08549
	(C * X)	0.00132	0.00553	0.08130
	(B * !C * X)	0.00559	0.00982	0.08555
	(B * !C * X)	0.00135	0.00556	0.08131
	(A * !B * !C * X)	0.00572	0.00995	0.08565
	(A * !B * !C * X)	0.00143	0.00564	0.08137
sky130_fd_sc_hs__or4b_4	(C * X)	0.00642	0.01098	0.09705
	(C * X)	0.00183	0.00638	0.09246
	(B * !C * X)	0.00667	0.01123	0.09722
	(B * !C * X)	0.00194	0.00649	0.09251
	(A * !B * !C * X)	0.00696	0.01153	0.09744
	(A * !B * !C * X)	0.00212	0.00666	0.09264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00111	0.00625	0.08387
	(C * X)	0.00517	0.01034	0.08796
	(B * !C * X)	0.00111	0.00625	0.08386
	(B * !C * X)	0.00518	0.01035	0.08796
	(A * !B * !C * X)	0.00112	0.00627	0.08387
	(A * !B * !C * X)	0.00521	0.01039	0.08798
sky130_fd_sc_hs__or4b_2	(C * X)	0.00133	0.00629	0.08253
	(C * X)	0.00552	0.01049	0.08671
	(B * !C * X)	0.00133	0.00629	0.08253
	(B * !C * X)	0.00553	0.01049	0.08672
	(A * !B * !C * X)	0.00133	0.00629	0.08254
	(A * !B * !C * X)	0.00556	0.01052	0.08676
sky130_fd_sc_hs__or4b_4	(C * X)	0.00205	0.00740	0.09351
	(C * X)	0.00662	0.01200	0.09810
	(B * !C * X)	0.00205	0.00740	0.09352
	(B * !C * X)	0.00665	0.01203	0.09813
	(A * !B * !C * X)	0.00206	0.00740	0.09355
	(A * !B * !C * X)	0.00670	0.01207	0.09819

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage 1.80, Temp 100.00

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	0.00262	0.00250	0.00255	0.00248	1.23335
sky130_fd_sc_hs__or4_2	0.00273	0.00269	0.00280	0.00279	2.49462
sky130_fd_sc_hs__or4_4	0.00401	0.00461	0.00466	0.00440	4.76438

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	2.67244	11.29260
sky130_fd_sc_hs__or4_2	0.00000	3.42301	15.43220
sky130_fd_sc_hs__or4_4	0.00000	6.72925	28.99130

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)	0.06975	0.57182	6.16200
	B->X (RR)	0.07034	0.56132	6.04082
	C->X (RR)	0.06712	0.54367	5.90990
	D->X (RR)	0.05976	0.52049	5.84803
sky130_fd_sc_hs__or4_2	A->X (RR)	0.06636	0.46841	6.03198
	B->X (RR)	0.06655	0.45960	5.90642
	C->X (RR)	0.06435	0.44581	5.79330
	D->X (RR)	0.05883	0.42836	5.73779
sky130_fd_sc_hs__or4_4	A->X (RR)	0.08970	0.47996	6.61218
	B->X (RR)	0.09258	0.47376	6.51543
	C->X (RR)	0.08430	0.44474	6.33650
	D->X (RR)	0.07504	0.42194	6.28693

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.23474	0.63060	5.02398
	B->X (FF)	0.21832	0.64085	5.33142
	C->X (FF)	0.19026	0.64857	5.44332
	D->X (FF)	0.14532	0.63206	5.45595
sky130_fd_sc_hs__or4_2	A->X (FF)	0.28561	0.66675	5.39495
	B->X (FF)	0.26917	0.68035	5.69937
	C->X (FF)	0.24469	0.69370	5.82913
	D->X (FF)	0.20208	0.68399	5.84679
sky130_fd_sc_hs__or4_4	A->X (FF)	0.28657	0.62089	5.16009
	B->X (FF)	0.27527	0.62606	5.18898
	C->X (FF)	0.23630	0.62623	5.43838
	D->X (FF)	0.18156	0.60551	5.44155

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01544	0.01658	0.05450
	A	0.00714	0.00828	0.04667
	B	0.01324	0.01502	0.05089
	B	0.00617	0.00798	0.04435
	C	0.01093	0.01291	0.04648
	C	0.00490	0.00690	0.04047
	D	0.00890	0.01118	0.05026
	D	0.00389	0.00618	0.04537
sky130_fd_sc_hs__or4_2	A	0.01869	0.02036	0.06552
	A	0.01003	0.01170	0.05794
	B	0.01640	0.01868	0.06107
	B	0.00892	0.01122	0.05360
	C	0.01429	0.01673	0.05625
	C	0.00786	0.01034	0.05003
	D	0.01224	0.01509	0.06017
	D	0.00681	0.00974	0.05506
sky130_fd_sc_hs__or4_4	A	0.03663	0.03952	0.12392
	A	0.02186	0.02488	0.10960
	B	0.03263	0.03512	0.10876
	B	0.01949	0.02218	0.09644
	C	0.02685	0.03070	0.10332
	C	0.01612	0.02010	0.09382
	D	0.02203	0.02702	0.11126
	D	0.01355	0.01855	0.10434

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00505	0.00476	0.04509
	A	0.01337	0.01308	0.05242
	B	0.00512	0.00536	0.04694
	B	0.01219	0.01242	0.05339
	C	0.00509	0.00595	0.04533
	C	0.01110	0.01197	0.04994
	D	0.00495	0.00713	0.05303
	D	0.00997	0.01213	0.05670
sky130_fd_sc_hs__or4_2	A	0.01119	0.00853	0.05451
	A	0.01987	0.01723	0.06105
	B	0.01124	0.00918	0.05493
	B	0.01870	0.01664	0.06121
	C	0.01124	0.00971	0.05056
	C	0.01766	0.01612	0.05696
	D	0.01114	0.01085	0.05895
	D	0.01656	0.01627	0.06432
sky130_fd_sc_hs__or4_4	A	0.02324	0.01760	0.10044
	A	0.03802	0.03241	0.11225
	B	0.02316	0.01793	0.08472
	B	0.03630	0.03106	0.09539
	C	0.02305	0.01921	0.08946
	C	0.03376	0.02993	0.09824
	D	0.02256	0.02099	0.10625
	D	0.03104	0.02946	0.11078

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00150	0.00151	0.00150
	(B * D * X)	-0.00191	-0.00195	-0.00195
	(B * C * !D * X)	0.00151	0.00151	0.00150
	(B * C * !D * X)	-0.00189	-0.00195	-0.00195
	(B * !C * !D * X)	0.00186	0.00159	0.00157
	(B * !C * !D * X)	-0.00158	-0.00188	-0.00189
	(!B * C * D * X)	0.00152	0.00151	0.00150
	(!B * C * D * X)	-0.00176	-0.00191	-0.00190
	(!B * C * !D * X)	0.00181	0.00159	0.00156
	(!B * C * !D * X)	-0.00155	-0.00186	-0.00188
	(!B * !C * D * X)	0.00186	0.00165	0.00160
	(!B * !C * D * X)	-0.00149	-0.00180	-0.00184
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00165	0.00166	0.00165
	(B * D * X)	-0.00193	-0.00198	-0.00198
	(B * C * !D * X)	0.00166	0.00166	0.00165
	(B * C * !D * X)	-0.00191	-0.00198	-0.00197
	(B * !C * !D * X)	0.00202	0.00174	0.00172
	(B * !C * !D * X)	-0.00160	-0.00191	-0.00192
	(!B * C * D * X)	0.00166	0.00166	0.00165
	(!B * C * D * X)	-0.00179	-0.00192	-0.00193
	(!B * C * !D * X)	0.00196	0.00174	0.00171
	(!B * C * !D * X)	-0.00157	-0.00189	-0.00191
	(!B * !C * D * X)	0.00201	0.00180	0.00175
	(!B * !C * D * X)	-0.00152	-0.00183	-0.00186

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00169	0.00169	0.00168
	(B * D * X)	-0.00381	-0.00393	-0.00392
	(B * C * !D * X)	0.00171	0.00170	0.00168
	(B * C * !D * X)	-0.00378	-0.00392	-0.00391
	(B * !C * !D * X)	0.00252	0.00190	0.00183
	(B * !C * !D * X)	-0.00306	-0.00375	-0.00378
	(!B * C * D * X)	0.00173	0.00170	0.00168
	(!B * C * D * X)	-0.00351	-0.00382	-0.00381
	(!B * C * !D * X)	0.00241	0.00186	0.00179
	(!B * C * !D * X)	-0.00300	-0.00374	-0.00379
	(!B * !C * D * X)	0.00252	0.00199	0.00188
	(!B * !C * D * X)	-0.00286	-0.00361	-0.00369

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00149	-0.00150	-0.00149
	(B * D * X)	0.00195	0.00197	0.00195
	(B * C * !D * X)	-0.00149	-0.00150	-0.00149
	(B * C * !D * X)	0.00195	0.00197	0.00196
	(B * !C * !D * X)	-0.00147	-0.00148	-0.00147
	(B * !C * !D * X)	0.00199	0.00200	0.00199
	(!B * C * D * X)	-0.00149	-0.00150	-0.00149
	(!B * C * D * X)	0.00189	0.00192	0.00190
	(!B * C * !D * X)	-0.00143	-0.00144	-0.00143
	(!B * C * !D * X)	0.00197	0.00199	0.00198
	(!B * !C * D * X)	-0.00140	-0.00139	-0.00138
	(!B * !C * D * X)	0.00200	0.00200	0.00201

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00163	-0.00164	-0.00164
	(B * D * X)	0.00198	0.00200	0.00199
	(B * C * !D * X)	-0.00163	-0.00164	-0.00164
	(B * C * !D * X)	0.00198	0.00200	0.00199
	(B * !C * !D * X)	-0.00161	-0.00161	-0.00162
	(B * !C * !D * X)	0.00202	0.00202	0.00203
	(!B * C * D * X)	-0.00163	-0.00163	-0.00164
	(!B * C * D * X)	0.00193	0.00192	0.00193
	(!B * C * !D * X)	-0.00158	-0.00159	-0.00157
	(!B * C * !D * X)	0.00200	0.00202	0.00201
	(!B * !C * D * X)	-0.00153	-0.00154	-0.00153
	(!B * !C * D * X)	0.00202	0.00204	0.00204
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00164	-0.00165	-0.00165
	(B * D * X)	0.00390	0.00395	0.00393
	(B * C * !D * X)	-0.00164	-0.00165	-0.00165
	(B * C * !D * X)	0.00391	0.00395	0.00393
	(B * !C * !D * X)	-0.00163	-0.00164	-0.00163
	(B * !C * !D * X)	0.00397	0.00402	0.00399
	(!B * C * D * X)	-0.00164	-0.00165	-0.00165
	(!B * C * D * X)	0.00379	0.00382	0.00381
	(!B * C * !D * X)	-0.00154	-0.00154	-0.00152
	(!B * C * !D * X)	0.00396	0.00400	0.00398
	(!B * !C * D * X)	-0.00145	-0.00145	-0.00143
	(!B * !C * D * X)	0.00400	0.00402	0.00404

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)**	0.00145	0.00146	0.00139
	(A * C * D * X)	-0.00134	-0.00135	-0.00134
	(A * C * !D * X)	0.00149	0.00151	0.00139
	(A * C * !D * X)	-0.00128	-0.00129	-0.00131
	(A * !C * D * X)	0.00153	0.00163	0.00148
	(A * !C * D * X)	-0.00125	-0.00118	-0.00124
	(A * !C * !D * X)	0.00141	0.00144	0.00138
	(A * !C * !D * X)	-0.00092	-0.00094	-0.00095
	(!A * C * D * X)	0.00149	0.00135	0.00134
	(!A * C * D * X)	-0.00174	-0.00192	-0.00192
	(!A * C * !D * X)	0.00186	0.00146	0.00139
	(!A * C * !D * X)	-0.00142	-0.00184	-0.00187
	(!A * !C * D * X)	0.00195	0.00151	0.00143
	(!A * !C * D * X)	-0.00129	-0.00178	-0.00182
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00159	0.00160	0.00153
	(A * C * D * X)	-0.00141	-0.00142	-0.00140
	(A * C * !D * X)	0.00163	0.00164	0.00152
	(A * C * !D * X)	-0.00134	-0.00136	-0.00138
	(A * !C * D * X)	0.00167	0.00178	0.00162
	(A * !C * D * X)	-0.00132	-0.00125	-0.00130
	(A * !C * !D * X)	0.00156	0.00158	0.00153
	(A * !C * !D * X)	-0.00101	-0.00103	-0.00103
	(!A * C * D * X)	0.00164	0.00150	0.00148
	(!A * C * D * X)	-0.00184	-0.00201	-0.00201
	(!A * C * !D * X)	0.00199	0.00161	0.00154
	(!A * C * !D * X)	-0.00153	-0.00193	-0.00196
	(!A * !C * D * X)	0.00210	0.00166	0.00158
	(!A * !C * D * X)	-0.00138	-0.00187	-0.00191

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00242	0.00244	0.00228
	(A * C * D * X)	-0.00275	-0.00278	-0.00276
	(A * C * !D * X)	0.00250	0.00254	0.00228
	(A * C * !D * X)	-0.00266	-0.00263	-0.00270
	(A * !C * D * X)	0.00253	0.00273	0.00241
	(A * !C * D * X)	-0.00258	-0.00244	-0.00256
	(A * !C * !D * X)	0.00233	0.00236	0.00223
	(A * !C * !D * X)	-0.00190	-0.00194	-0.00196
	(!A * C * D * X)	0.00244	0.00213	0.00213
	(!A * C * D * X)	-0.00359	-0.00395	-0.00398
	(!A * C * !D * X)	0.00330	0.00236	0.00225
	(!A * C * !D * X)	-0.00283	-0.00375	-0.00386
	(!A * !C * D * X)	0.00340	0.00250	0.00232
	(!A * !C * D * X)	-0.00259	-0.00364	-0.00376

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)**	-0.00133	-0.00134	-0.00133
	(A * C * D * X)	0.00134	0.00135	0.00134
	(A * C * !D * X)	-0.00133	-0.00133	-0.00133
	(A * C * !D * X)	0.00132	0.00132	0.00131
	(A * !C * D * X)	-0.00132	-0.00133	-0.00133
	(A * !C * D * X)	0.00126	0.00127	0.00126
	(A * !C * !D * X)	-0.00125	-0.00125	-0.00125
	(A * !C * !D * X)	0.00108	0.00108	0.00107
	(!A * C * D * X)	-0.00132	-0.00132	-0.00132
	(!A * C * D * X)	0.00193	0.00194	0.00193
	(!A * C * !D * X)	-0.00124	-0.00125	-0.00125
	(!A * C * !D * X)	0.00201	0.00202	0.00201
	(!A * !C * D * X)	-0.00122	-0.00123	-0.00121
	(!A * !C * D * X)	0.00200	0.00201	0.00201
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00146	-0.00147	-0.00146
	(A * C * D * X)	0.00141	0.00142	0.00140
	(A * C * !D * X)	-0.00146	-0.00146	-0.00146
	(A * C * !D * X)	0.00139	0.00138	0.00138
	(A * !C * D * X)	-0.00146	-0.00147	-0.00146
	(A * !C * D * X)	0.00133	0.00134	0.00133
	(A * !C * !D * X)	-0.00138	-0.00139	-0.00139
	(A * !C * !D * X)	0.00116	0.00116	0.00115
	(!A * C * D * X)	-0.00145	-0.00146	-0.00146
	(!A * C * D * X)	0.00202	0.00204	0.00203
	(!A * C * !D * X)	-0.00138	-0.00139	-0.00139
	(!A * C * !D * X)	0.00210	0.00211	0.00210
	(!A * !C * D * X)	-0.00137	-0.00137	-0.00136
	(!A * !C * D * X)	0.00210	0.00210	0.00210

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00212	-0.00213	-0.00212
	(A * C * D * X)	0.00275	0.00278	0.00276
	(A * C * !D * X)	-0.00212	-0.00213	-0.00212
	(A * C * !D * X)	0.00270	0.00272	0.00270
	(A * !C * D * X)	-0.00210	-0.00211	-0.00210
	(A * !C * D * X)	0.00261	0.00263	0.00261
	(A * !C * !D * X)	-0.00194	-0.00194	-0.00191
	(A * !C * !D * X)	0.00224	0.00225	0.00225
	(!A * C * D * X)	-0.00208	-0.00209	-0.00208
	(!A * C * D * X)	0.00397	0.00400	0.00398
	(!A * C * !D * X)	-0.00192	-0.00194	-0.00192
	(!A * C * !D * X)	0.00414	0.00419	0.00416
	(!A * !C * D * X)	-0.00189	-0.00190	-0.00186
	(!A * !C * D * X)	0.00412	0.00414	0.00415

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00157	0.00158	0.00149
	(B * D * X)	-0.00120	-0.00122	-0.00127
	(B * !D * X)	0.00140	0.00141	0.00137
	(B * !D * X)	-0.00095	-0.00096	-0.00096
	(A * !B * D * X)	0.00174	0.00160	0.00153
	(A * !B * D * X)	-0.00106	-0.00120	-0.00121
	(A * !B * !D * X)	0.00143	0.00144	0.00140
	(A * !B * !D * X)	-0.00091	-0.00092	-0.00093
	(!A * !B * D * X)	0.00198	0.00151	0.00147
	(!A * !B * D * X)	-0.00134	-0.00179	-0.00182

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00177	0.00178	0.00169
	(B * D * X)	-0.00121	-0.00122	-0.00126
	(B * !D * X)	0.00162	0.00163	0.00159
	(B * !D * X)	-0.00097	-0.00097	-0.00097
	(A * !B * D * X)	0.00197	0.00183	0.00174
	(A * !B * D * X)	-0.00106	-0.00120	-0.00121
	(A * !B * !D * X)	0.00165	0.00166	0.00161
	(A * !B * !D * X)	-0.00092	-0.00093	-0.00094
	(!A * !B * D * X)	0.00222	0.00173	0.00168
	(!A * !B * D * X)	-0.00134	-0.00181	-0.00184
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00272	0.00268	0.00250
	(B * D * X)	-0.00249	-0.00253	-0.00263
	(B * !D * X)	0.00225	0.00226	0.00220
	(B * !D * X)	-0.00197	-0.00198	-0.00200
	(A * !B * D * X)	0.00296	0.00265	0.00249
	(A * !B * D * X)	-0.00219	-0.00247	-0.00252
	(A * !B * !D * X)	0.00232	0.00236	0.00226
	(A * !B * !D * X)	-0.00188	-0.00192	-0.00192
	(!A * !B * D * X)	0.00344	0.00248	0.00238
	(!A * !B * D * X)	-0.00276	-0.00369	-0.00375

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00135	-0.00135	-0.00135
	(B * D * X)	0.00128	0.00127	0.00127
	(B * !D * X)	-0.00133	-0.00134	-0.00133
	(B * !D * X)	0.00101	0.00102	0.00101
	(A * !B * D * X)	-0.00134	-0.00135	-0.00134
	(A * !B * D * X)	0.00125	0.00127	0.00127
	(A * !B * !D * X)	-0.00125	-0.00126	-0.00133
	(A * !B * !D * X)	0.00106	0.00106	0.00100
	(!A * !B * D * X)	-0.00125	-0.00126	-0.00127
	(!A * !B * D * X)	0.00203	0.00205	0.00202
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00156	-0.00156	-0.00156
	(B * D * X)	0.00127	0.00127	0.00126
	(B * !D * X)	-0.00155	-0.00156	-0.00154
	(B * !D * X)	0.00102	0.00103	0.00102
	(A * !B * D * X)	-0.00155	-0.00155	-0.00154
	(A * !B * D * X)	0.00127	0.00127	0.00127
	(A * !B * !D * X)	-0.00148	-0.00149	-0.00154
	(A * !B * !D * X)	0.00106	0.00106	0.00102
	(!A * !B * D * X)	-0.00146	-0.00147	-0.00148
	(!A * !B * D * X)	0.00206	0.00207	0.00205
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00216	-0.00217	-0.00216
	(B * D * X)	0.00268	0.00270	0.00268
	(B * !D * X)	-0.00209	-0.00211	-0.00210
	(B * !D * X)	0.00212	0.00212	0.00210
	(A * !B * D * X)	-0.00214	-0.00215	-0.00212
	(A * !B * D * X)	0.00263	0.00266	0.00264
	(A * !B * !D * X)	-0.00191	-0.00193	-0.00210
	(A * !B * !D * X)	0.00222	0.00223	0.00209
	(!A * !B * D * X)	-0.00194	-0.00196	-0.00196
	(!A * !B * D * X)	0.00420	0.00422	0.00418

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00152	0.00152	0.00151
	(C * X)	-0.00092	-0.00092	-0.00092
	(B * !C * X)	0.00151	0.00152	0.00151
	(B * !C * X)	-0.00092	-0.00092	-0.00091
	(A * !B * !C * X)	0.00151	0.00154	0.00152
	(A * !B * !C * X)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__or4_2	(C * X)	0.00178	0.00181	0.00179
	(C * X)	-0.00090	-0.00092	-0.00091
	(B * !C * X)	0.00178	0.00181	0.00179
	(B * !C * X)	-0.00090	-0.00091	-0.00090
	(A * !B * !C * X)	0.00179	0.00182	0.00180
	(A * !B * !C * X)	-0.00089	-0.00091	-0.00089
sky130_fd_sc_hs__or4_4	(C * X)	0.00245	0.00246	0.00246
	(C * X)	-0.00177	-0.00178	-0.00178
	(B * !C * X)	0.00245	0.00247	0.00246
	(B * !C * X)	-0.00176	-0.00177	-0.00176
	(A * !B * !C * X)	0.00246	0.00247	0.00247
	(A * !B * !C * X)	-0.00173	-0.00174	-0.00173

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00144	-0.00145	-0.00149
	(C * X)	0.00098	0.00098	0.00094
	(B * !C * X)	-0.00135	-0.00136	-0.00148
	(B * !C * X)	0.00103	0.00103	0.00094
	(A * !B * !C * X)	-0.00121	-0.00122	-0.00144
	(A * !B * !C * X)	0.00113	0.00113	0.00098
sky130_fd_sc_hs__or4_2	(C * X)	-0.00171	-0.00172	-0.00177
	(C * X)	0.00098	0.00098	0.00094
	(B * !C * X)	-0.00163	-0.00164	-0.00175
	(B * !C * X)	0.00102	0.00102	0.00094
	(A * !B * !C * X)	-0.00149	-0.00151	-0.00171
	(A * !B * !C * X)	0.00112	0.00112	0.00097
sky130_fd_sc_hs__or4_4	(C * X)	-0.00229	-0.00230	-0.00242
	(C * X)	0.00193	0.00193	0.00184
	(B * !C * X)	-0.00205	-0.00206	-0.00237
	(B * !C * X)	0.00206	0.00206	0.00184
	(A * !B * !C * X)	-0.00177	-0.00178	-0.00228
	(A * !B * !C * X)	0.00226	0.00225	0.00191

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00201	0.00183	0.00425	0.00186	0.00567	0.00307	1.26519	1.27025
sky130_fd_sc_hs__sdfbbn_2	0.00203	0.00185	0.00429	0.00173	0.00558	0.00303	2.54039	2.52459

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	69.13440	117.78200
sky130_fd_sc_hs__sdfbbn_2	0.00000	72.21900	125.23600

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)	0.34284	0.93219	8.06573
	SET_B->Q (FR)	0.16512	0.78843	8.10689
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.38864	0.87672	8.11085
	SET_B->Q (FR)	0.19606	0.73563	8.18302

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)	0.35225	0.74761	4.87813
	RESET_B->Q (FF)	0.22913	0.65466	4.86626
	SET_B->Q (RF)	0.14414	0.43024	2.95648
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.38035	0.73196	4.93923
	RESET_B->Q (FF)	0.25994	0.64335	4.95046
	SET_B->Q (RF)	0.17461	0.43183	3.11679

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)	0.31736	0.92226	8.11496
	RESET_B->Q_N (FR)	0.19475	0.83428	8.10854
	SET_B->Q_N (RR)	0.10997	0.61690	6.54770
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.31663	0.82872	7.97171
	RESET_B->Q_N (FR)	0.19707	0.74184	7.98865
	SET_B->Q_N (RR)	0.11223	0.53556	6.45969

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)	0.29064	0.74971	5.00220
	SET_B->Q_N (FF)	0.11746	0.61248	5.27058
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.30889	0.73232	4.93024
	SET_B->Q_N (FF)	0.12534	0.58719	5.22359

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)	-0.04894	-0.02160	1.43722
	setup	CLK_N (F)	0.14492	0.10552	-1.41444
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05279	-0.02837	1.42193
	setup	CLK_N (F)	0.15146	0.11355	-1.40118

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)	-0.18305	-0.23153	-0.69875
	setup	CLK_N (F)	0.20996	0.25117	0.70782
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20473	-0.24907	-0.75804
	setup	CLK_N (F)	0.22891	0.26642	0.76852

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)	-0.04894	-0.02160	1.43722
	setup	CLK_N (F)	0.14492	0.10552	-1.41444
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05279	-0.02837	1.42193
	setup	CLK_N (F)	0.15146	0.11355	-1.40118

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)	-0.18305	-0.23153	-0.69875
	setup	CLK_N (F)	0.20996	0.25117	0.70782
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20473	-0.24907	-0.75804
	setup	CLK_N (F)	0.22891	0.26642	0.76852

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)	-0.07227	-0.03068	1.41030
	setup	CLK_N (F)	0.17176	0.12195	-1.36672
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07274	-0.03684	1.40071
	setup	CLK_N (F)	0.17688	0.12479	-1.36003

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)	-0.23628	-0.26293	-0.73811
	setup	CLK_N (F)	0.26569	0.28549	0.75577
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25385	-0.28224	-0.80155
	setup	CLK_N (F)	0.28663	0.30507	0.81827

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)	-0.07227	-0.03068	1.41030
	hold	CLK_N (F)	-0.07621	-0.03747	1.38698
	setup	CLK_N (F)	0.17054	0.11525	-1.38783
	setup	CLK_N (F)	0.17176	0.12195	-1.36672
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07274	-0.03684	1.40071
	hold	CLK_N (F)	-0.07705	-0.04191	1.37967
	setup	CLK_N (F)	0.16968	0.11807	-1.37784
	setup	CLK_N (F)	0.17688	0.12479	-1.36003

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)	-0.24167	-0.26768	-0.74657
	hold	CLK_N (F)	-0.23628	-0.26293	-0.73811
	setup	CLK_N (F)	0.26569	0.28549	0.75577
	setup	CLK_N (F)	0.26288	0.28295	0.74627
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25828	-0.28606	-0.81036
	hold	CLK_N (F)	-0.25385	-0.28224	-0.80155
	setup	CLK_N (F)	0.28663	0.30507	0.81827
	setup	CLK_N (F)	0.28216	0.30138	0.81044

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)	-0.06192	-0.04264	1.25901
	setup	CLK_N (F)	0.26314	0.21654	-1.19122
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06531	-0.04639	1.23719
	setup	CLK_N (F)	0.28209	0.23606	-1.18433

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)	-0.10097	-0.09037	-0.04073
	setup	CLK_N (F)	0.21284	0.22909	0.53340
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10435	-0.09477	-0.05490
	setup	CLK_N (F)	0.23175	0.25117	0.59521

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)	-0.23856	-0.20104	1.25901
	hold	CLK_N (F)	-0.06192	-0.04264	1.21268
	setup	CLK_N (F)	0.26314	0.21654	-1.24723
	setup	CLK_N (F)	0.16059	0.12641	-1.19122
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25433	-0.21814	1.23719
	hold	CLK_N (F)	-0.06531	-0.04639	1.20618
	setup	CLK_N (F)	0.28209	0.23606	-1.21958
	setup	CLK_N (F)	0.16119	0.12933	-1.18433

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)	-0.10097	-0.09037	-0.04073
	hold	CLK_N (F)	-0.19000	-0.21146	-0.52175
	setup	CLK_N (F)	0.19766	0.17800	0.07070
	setup	CLK_N (F)	0.21284	0.22909	0.53340
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10435	-0.09477	-0.05490
	hold	CLK_N (F)	-0.20619	-0.23151	-0.58370
	setup	CLK_N (F)	0.20210	0.18000	0.08559
	setup	CLK_N (F)	0.23175	0.25117	0.59521

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)	0.09701	0.03773	-1.59833
	removal	CLK_N (F)	0.01290	0.06151	1.69236
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09673	0.03412	-1.58996
	removal	CLK_N (F)	0.01425	0.06413	1.69385

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)	0.09690	0.03771	-1.59834
	recovery	CLK_N (F)	0.09701	0.03773	-1.59833
	recovery	CLK_N (F)	0.09699	0.03771	-1.59839
	removal	CLK_N (F)	0.01290	0.06151	1.69236
	removal	CLK_N (F)	0.01290	0.06151	1.69236
	removal	CLK_N (F)	0.01290	0.06151	1.69236
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09656	0.03412	-1.59016
	recovery	CLK_N (F)	0.09673	0.03412	-1.58996
	recovery	CLK_N (F)	0.09671	0.03412	-1.59006
	removal	CLK_N (F)	0.01425	0.06413	1.69385
	removal	CLK_N (F)	0.01425	0.06413	1.69385
	removal	CLK_N (F)	0.01425	0.06413	1.69385

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 ()	0.18988	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17012	0.65918	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.19729	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17259	0.65918	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)	-0.01673	-0.09379	-1.23932
	removal	CLK_N (F)	0.03255	0.10864	1.73570
	hold	RESET_B (R)	-0.05505	-0.09033	-0.45465
	setup	RESET_B (R)	0.10738	0.13364	0.93904
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01568	-0.08691	-0.97884
	removal	CLK_N (F)	0.02980	0.10212	1.71578
	hold	RESET_B (R)	-0.07524	-0.11307	-0.54896
	setup	RESET_B (R)	0.11455	0.15078	1.23918

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)	-0.01673	-0.09382	-1.23932
	recovery	CLK_N (F)	-0.01687	-0.09379	-1.23938
	recovery	CLK_N (F)	-0.01697	-0.09383	-1.24222
	removal	CLK_N (F)	0.03255	0.10864	1.73570
	removal	CLK_N (F)	0.03255	0.10864	1.73464
	removal	CLK_N (F)	0.03023	0.10864	1.73570
	hold	RESET_B (R)	-0.05505	-0.09033	-0.45465
	hold	RESET_B (R)	-0.05656	-0.09117	-0.45719
	setup	RESET_B (R)	0.10738	0.13364	0.93904
	setup	RESET_B (R)	0.08756	0.11775	0.92489
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01584	-0.08691	-0.98201
	recovery	CLK_N (F)	-0.01576	-0.08691	-0.98166
	recovery	CLK_N (F)	-0.01568	-0.08691	-0.97884
	removal	CLK_N (F)	0.02980	0.10212	1.71578
	removal	CLK_N (F)	0.02580	0.10212	1.71578
	removal	CLK_N (F)	0.02580	0.10212	1.71578
	hold	RESET_B (R)	-0.07524	-0.11920	-0.54896
	hold	RESET_B (R)	-0.07550	-0.11307	-0.54948
	setup	RESET_B (R)	0.11455	0.15078	1.23918
	setup	RESET_B (R)	0.09032	0.13600	1.19925

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 ()	0.13307	0.65918	16.50020
	min_pulse_width	SET_B ()	0.11578	0.65918	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.14789	0.65918	16.50020
	min_pulse_width	SET_B ()	0.13307	0.65918	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 ()	0.17753	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.13801	0.65918	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.18000	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.14295	0.65918	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 ()	0.15283	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.17753	0.65918	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.16765	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.18247	0.65918	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	0.01681	0.01927	0.06649
	CLK_N	0.01929	0.02178	0.06845
	SET_B	0.01725	0.02145	0.10101
	SET_B	0.02189	0.02608	0.10514
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02110	0.02268	0.07030
	CLK_N	0.02348	0.02507	0.07180
	SET_B	0.02109	0.02490	0.10490
	SET_B	0.02560	0.02938	0.10875

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01713	0.01990	0.06519
	CLK_N	0.01929	0.02207	0.06717
	RESET_B	0.02053	0.02214	0.05043
	RESET_B	0.02188	0.02349	0.05120
	SET_B	0.02143	0.02360	0.10013
	SET_B	0.01681	0.01895	0.09541
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02061	0.02327	0.06912
	CLK_N	0.02282	0.02548	0.07063
	RESET_B	0.02447	0.02597	0.05401
	RESET_B	0.02586	0.02735	0.05525
	SET_B	0.02525	0.02725	0.10350
	SET_B	0.02073	0.02273	0.09887

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01770	0.02047	0.06637
	CLK_N	0.01986	0.02264	0.06809
	RESET_B	0.02097	0.02254	0.05099
	RESET_B	0.02231	0.02389	0.05186
	SET_B	0.02188	0.02409	0.10080
	SET_B	0.01726	0.01940	0.09604
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02120	0.02387	0.07059
	CLK_N	0.02341	0.02607	0.07171
	RESET_B	0.02493	0.02643	0.05597
	RESET_B	0.02632	0.02780	0.05625
	SET_B	0.02572	0.02782	0.10476
	SET_B	0.02120	0.02322	0.09988

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01637	0.01884	0.06541
	CLK_N	0.01885	0.02133	0.06765
	SET_B	0.01687	0.02109	0.10001
	SET_B	0.02151	0.02572	0.10423
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02064	0.02222	0.06932
	CLK_N	0.02302	0.02463	0.07099
	SET_B	0.02071	0.02461	0.10466
	SET_B	0.02522	0.02911	0.10795

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)**	0.00188	0.00188	0.00188
	(CLK_N * SCD * SCE)	-0.00006	-0.00006	-0.00006
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01370	0.01531	0.05854
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01075	0.01237	0.05559
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00956	0.01091	0.04953
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00614	0.00747	0.04611
	(CLK_N * !SCD * SCE)	0.00147	0.00148	0.00146
	(CLK_N * !SCD * SCE)	-0.00071	-0.00072	-0.00074
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00812	0.00945	0.04802
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00473	0.00605	0.04463
	(!CLK_N * SCD * SCE)	0.00230	0.00232	0.00230
	(!CLK_N * SCD * SCE)	0.00037	0.00036	0.00037
	(!CLK_N * !SCE)	0.00594	0.00766	0.04768
	(!CLK_N * !SCE)	0.00256	0.00426	0.04428
	(!CLK_N * !SCD * SCE)	0.00134	0.00135	0.00133
	(!CLK_N * !SCD * SCE)	-0.00084	-0.00085	-0.00087

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00191	0.00193	0.00191
	(CLK_N * SCD * SCE)	-0.00006	-0.00008	-0.00006
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01391	0.01548	0.05831
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01086	0.01245	0.05528
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00974	0.01104	0.04924
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00625	0.00755	0.04576
	(CLK_N * !SCD * SCE)	0.00151	0.00151	0.00149
	(CLK_N * !SCD * SCE)	-0.00071	-0.00072	-0.00074
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00826	0.00954	0.04769
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00480	0.00608	0.04425
	(!CLK_N * SCD * SCE)	0.00198	0.00199	0.00198
	(!CLK_N * SCD * SCE)	0.00001	0.00000	0.00001
	(!CLK_N * !SCE)	0.00556	0.00725	0.04695
	(!CLK_N * !SCE)	0.00210	0.00379	0.04350
	(!CLK_N * !SCD * SCE)	0.00121	0.00121	0.00120
	(!CLK_N * !SCD * SCE)	-0.00100	-0.00101	-0.00103

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)**	-0.00070	-0.00071	-0.00075
	(CLK_N * SCD * SCE)	0.00124	0.00124	0.00120
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01358	0.01564	0.05891
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01653	0.01859	0.06185
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00427	0.00607	0.04519
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00771	0.00950	0.04862
	(CLK_N * !SCD * SCE)	0.00046	0.00045	0.00046
	(CLK_N * !SCD * SCE)	0.00264	0.00265	0.00264
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00548	0.00733	0.04664
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00888	0.01073	0.05003
	(!CLK_N * SCD * SCE)	-0.00027	-0.00028	-0.00033
	(!CLK_N * SCD * SCE)	0.00167	0.00167	0.00163
	(!CLK_N * !SCE)	0.00310	0.00526	0.04558
	(!CLK_N * !SCE)	0.00650	0.00866	0.04897
	(!CLK_N * !SCD * SCE)	0.00033	0.00032	0.00033
	(!CLK_N * !SCD * SCE)	0.00251	0.00252	0.00251

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00073	-0.00074	-0.00078
	(CLK_N * SCD * SCE)	0.00125	0.00125	0.00121
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01464	0.01663	0.05948
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01769	0.01967	0.06252
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00461	0.00636	0.04506
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00810	0.00985	0.04854
	(CLK_N * !SCD * SCE)	0.00043	0.00043	0.00043
	(CLK_N * !SCD * SCE)	0.00264	0.00265	0.00265
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00598	0.00777	0.04666
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00943	0.01122	0.05011
	(!CLK_N * SCD * SCE)	-0.00065	-0.00067	-0.00071
	(!CLK_N * SCD * SCE)	0.00132	0.00132	0.00128
	(!CLK_N * !SCE)	0.00320	0.00530	0.04515
	(!CLK_N * !SCE)	0.00666	0.00875	0.04860
	(!CLK_N * !SCD * SCE)	0.00013	0.00012	0.00013
	(!CLK_N * !SCD * SCE)	0.00234	0.00235	0.00234

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)**	0.01180	0.01281	0.04728
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00721	0.00821	0.04269
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01593	0.01719	0.05562
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01181	0.01305	0.05150
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01035	0.01136	0.04573
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00579	0.00677	0.04117
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01283	0.01375	0.04776
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00799	0.00889	0.04293
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01697	0.01814	0.05627
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01260	0.01375	0.05190
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01138	0.01230	0.04621
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00657	0.00747	0.04141
	(!CLK_N * D * SCE)	0.00819	0.00938	0.04489
	(!CLK_N * D * SCE)	0.00363	0.00480	0.04033
	(!CLK_N * !D * SCE)	0.00923	0.01029	0.04533
	(!CLK_N * !D * SCE)	0.00440	0.00546	0.04052
	!SCE	0.00195	0.00165	0.00160
	!SCE	-0.00051	-0.00083	-0.00086

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01192	0.01290	0.04692
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00734	0.00831	0.04236
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01608	0.01729	0.05531
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01194	0.01315	0.05119
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01043	0.01140	0.04533
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00589	0.00686	0.04080
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01293	0.01382	0.04742
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00810	0.00900	0.04261
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01710	0.01823	0.05590
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01272	0.01384	0.05153
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01145	0.01234	0.04583
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00665	0.00754	0.04105
	(!CLK_N * D * SCE)	0.00775	0.00891	0.04409
	(!CLK_N * D * SCE)	0.00320	0.00436	0.03956
	(!CLK_N * !D * SCE)	0.00876	0.00981	0.04453
	(!CLK_N * !D * SCE)	0.00396	0.00501	0.03974
	!SCE	0.00194	0.00164	0.00159
	!SCE	-0.00052	-0.00083	-0.00086

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)**	0.00609	0.00698	0.04178
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01071	0.01160	0.04637
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01550	0.01651	0.05452
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01964	0.02064	0.05863
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00731	0.00821	0.04322
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01188	0.01280	0.04777
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00562	0.00654	0.04158
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01047	0.01140	0.04642
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01509	0.01621	0.05475
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01947	0.02060	0.05911
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00683	0.00778	0.04303
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01165	0.01260	0.04783
	(!CLK_N * D * SCE)	0.00495	0.00601	0.04180
	(!CLK_N * D * SCE)	0.00952	0.01060	0.04635
	(!CLK_N * !D * SCE)	0.00447	0.00559	0.04163
	(!CLK_N * !D * SCE)	0.00929	0.01043	0.04644
	!SCE	-0.00040	-0.00043	-0.00043
	!SCE	0.00203	0.00206	0.00204

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00644	0.00731	0.04167
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01103	0.01190	0.04623
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01656	0.01755	0.05515
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02070	0.02169	0.05926
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00781	0.00870	0.04327
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01236	0.01326	0.04779
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00596	0.00688	0.04147
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01079	0.01172	0.04627
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01615	0.01726	0.05534
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02053	0.02165	0.05971
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00733	0.00827	0.04307
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01212	0.01306	0.04784
	(!CLK_N * D * SCE)	0.00505	0.00609	0.04138
	(!CLK_N * D * SCE)	0.00960	0.01066	0.04591
	(!CLK_N * !D * SCE)	0.00457	0.00568	0.04121
	(!CLK_N * !D * SCE)	0.00936	0.01047	0.04598
	!SCE	-0.00041	-0.00042	-0.00042
	!SCE	0.00206	0.00206	0.00205

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00618	0.00891	0.06174
	(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	0.00272	0.05558
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02131	0.02421	0.07920
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01645	0.01932	0.07429
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01192	0.01487	0.06970
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00754	0.01046	0.06528
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01315	0.01609	0.07101
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00872	0.01163	0.06656
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01481	0.01903	0.10739
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00707	0.01127	0.09966
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01894	0.02345	0.11638
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01167	0.01615	0.10912
	(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)	0.00634	0.00920	0.06192
	(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)	0.00064	0.00346	0.05618
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01336	0.01758	0.10584
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00566	0.00983	0.09814
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00670	0.00944	0.06226
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00054	0.00324	0.05610
	(!CLK_N * D * !SCD)	0.01101	0.01387	0.06900
	(!CLK_N * D * !SCD)	0.00659	0.00942	0.06455
	(!CLK_N * !D * SCD)	0.01132	0.01579	0.10517
	(!CLK_N * !D * SCD)	0.00361	0.00805	0.09747

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)	0.00632	0.00907	0.06198
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00009	0.00279	0.05575
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02243	0.02534	0.08039
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01755	0.02045	0.07547
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01231	0.01526	0.07017
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00788	0.01084	0.06568
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01369	0.01666	0.07164
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00922	0.01217	0.06711
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01503	0.01923	0.10727
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00720	0.01136	0.09944
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01919	0.02368	0.11632
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01180	0.01626	0.10893
	(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)	0.00647	0.00934	0.06214
	(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)	0.00069	0.00354	0.05633
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01355	0.01772	0.10567
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00575	0.00991	0.09789
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00643	0.00917	0.06209
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00019	0.00290	0.05585
	(!CLK_N * D * !SCD)	0.01117	0.01405	0.06917
	(!CLK_N * D * !SCD)	0.00670	0.00955	0.06465
	(!CLK_N * !D * SCD)	0.01098	0.01543	0.10459
	(!CLK_N * !D * SCD)	0.00318	0.00760	0.09680

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)	-0.00009	0.00333	0.05634
	(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)	0.00606	0.00951	0.06251
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01310	0.01641	0.07055
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01797	0.02130	0.07527
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00897	0.01224	0.06604
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01337	0.01668	0.07028
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00752	0.01079	0.06456
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01195	0.01527	0.06883
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00433	0.00876	0.09710
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01206	0.01652	0.10486
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01361	0.01821	0.10980
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02088	0.02549	0.11707
	(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)	0.00047	0.00387	0.05664
	(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)	0.00620	0.00961	0.06235
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00554	0.01001	0.09856
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01323	0.01775	0.10626
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00019	0.00362	0.05663
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00635	0.00979	0.06280
	(!CLK_N * D * !SCD)	0.00527	0.00847	0.06278
	(!CLK_N * D * !SCD)	0.00970	0.01295	0.06706
	(!CLK_N * !D * SCD)	0.00304	0.00776	0.09742
	(!CLK_N * !D * SCD)	0.01074	0.01548	0.10513

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)**	-0.00011	0.00332	0.05641
	(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)	0.00612	0.00958	0.06266
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01320	0.01651	0.07062
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01809	0.02143	0.07535
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00904	0.01232	0.06612
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01348	0.01679	0.07041
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00756	0.01083	0.06461
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01203	0.01535	0.06894
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00461	0.00900	0.09697
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01244	0.01688	0.10481
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01461	0.01917	0.11042
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02200	0.02658	0.11783
	(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)	0.00047	0.00387	0.05672
	(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)	0.00628	0.00970	0.06253
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00598	0.01041	0.09860
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01377	0.01824	0.10641
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00025	0.00318	0.05628
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00598	0.00944	0.06252
	(!CLK_N * D * !SCD)	0.00477	0.00799	0.06241
	(!CLK_N * D * !SCD)	0.00925	0.01251	0.06674
	(!CLK_N * !D * SCD)	0.00308	0.00775	0.09699
	(!CLK_N * !D * SCD)	0.01087	0.01558	0.10480

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)	0.01414	0.01609	0.07019
	(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)	0.01113	0.01307	0.06719
	(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)	0.00881	0.01090	0.06195
	(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)	0.00536	0.00743	0.05850
	(!SET_B * Q * !Q_N)	0.00852	0.01075	0.06222
	(!SET_B * Q * !Q_N)	0.00500	0.00722	0.05868

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)**	0.01391	0.01583	0.06986
	(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)	0.01096	0.01289	0.06692
	(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)	0.00854	0.01063	0.06163
	(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)	0.00519	0.00726	0.05827
	(!SET_B * Q * !Q_N)	0.00836	0.01059	0.06201
	(!SET_B * Q * !Q_N)	0.00494	0.00716	0.05859

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)**	0.01251	0.01528	0.06952
	(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)	0.01552	0.01830	0.07253
	(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)	0.00450	0.00718	0.05840
	(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)	0.00796	0.01064	0.06185
	(!SET_B * Q * !Q_N)	0.00292	0.00570	0.05717
	(!SET_B * Q * !Q_N)	0.00647	0.00925	0.06071

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)**	0.01324	0.01598	0.07012
	(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)	0.01619	0.01894	0.07306
	(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)	0.00476	0.00743	0.05857
	(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)	0.00812	0.01078	0.06193
	(!SET_B * Q * !Q_N)	0.00295	0.00571	0.05713
	(!SET_B * Q * !Q_N)	0.00640	0.00917	0.06057

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)**	0.00409	0.00408	0.00408
	(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	-0.00400	-0.00399
	(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)	0.01322	0.01539	0.08394
	(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)	0.00458	0.00669	0.07528

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)**	0.00415	0.00421	0.00418
	(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)	-0.00383	-0.00388	-0.00384
	(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)	0.01387	0.01597	0.08428
	(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)	0.00531	0.00734	0.07568

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)**	-0.00276	-0.00296	-0.00297
	(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)	0.00533	0.00516	0.00510
	(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)	0.00259	0.00619	0.07640
	(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)	0.01130	0.01489	0.08508

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)**	-0.00287	-0.00305	-0.00307
	(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)	0.00517	0.00501	0.00497
	(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)	0.00246	0.00609	0.07608
	(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)	0.01106	0.01471	0.08468

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)	0.02274	0.02738	0.12023
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01854	0.02315	0.11601
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01405	0.01833	0.10894
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00941	0.01366	0.10429
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02279	0.02734	0.12026
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01858	0.02312	0.11604
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01408	0.01845	0.10897
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00944	0.01378	0.10432
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02462	0.02901	0.12208
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01956	0.02394	0.11701
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01420	0.01847	0.10917
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00956	0.01380	0.10451
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01522	0.01963	0.11285
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01060	0.01500	0.10824
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01721	0.02181	0.11442
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01256	0.01714	0.10976
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01724	0.02176	0.11445
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01259	0.01709	0.10979
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02279	0.02734	0.12028
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01859	0.02313	0.11606
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01409	0.01846	0.10898
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00945	0.01379	0.10433
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02458	0.02891	0.12207
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01949	0.02380	0.11698
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02460	0.02901	0.12210
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01954	0.02392	0.11702
	(!D * !SCE * SET_B * !Q * Q_N)	0.01420	0.01846	0.10916
	(!D * !SCE * SET_B * !Q * Q_N)	0.00955	0.01379	0.10451
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01521	0.01962	0.11289
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01060	0.01499	0.10825
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01420	0.01852	0.10917
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00956	0.01384	0.10451
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01522	0.01963	0.11290
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01061	0.01502	0.10827
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01725	0.02178	0.11446
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01261	0.01710	0.10981

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02306	0.02773	0.12046
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01889	0.02353	0.11627
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01396	0.01829	0.10881
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00938	0.01370	0.10422
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02310	0.02765	0.12050
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01893	0.02348	0.11631
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01398	0.01837	0.10884
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00940	0.01378	0.10425
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02514	0.02955	0.12258
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02017	0.02458	0.11760
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01423	0.01851	0.10917
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00965	0.01390	0.10457
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01511	0.01955	0.11272
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01055	0.01499	0.10817
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01741	0.02204	0.11455
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01282	0.01743	0.10995
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01743	0.02196	0.11457
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01285	0.01735	0.10997
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02311	0.02767	0.12050
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01894	0.02348	0.11631
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01401	0.01840	0.10886
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00942	0.01380	0.10427
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02509	0.02944	0.12255
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02010	0.02444	0.11756
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02512	0.02948	0.12260
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02015	0.02449	0.11761
	(!D * !SCE * SET_B * !Q * Q_N)	0.01422	0.01851	0.10915
	(!D * !SCE * SET_B * !Q * Q_N)	0.00964	0.01389	0.10455
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01510	0.01953	0.11274
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01054	0.01497	0.10819
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01423	0.01852	0.10916
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00965	0.01391	0.10457
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01511	0.01958	0.11277
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01056	0.01499	0.10821
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01745	0.02199	0.11459
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01287	0.01738	0.10999

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)**	0.01082	0.01611	0.10619
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01546	0.02078	0.11085
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01068	0.01597	0.10605
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01532	0.02064	0.11071
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01169	0.01690	0.10685
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01634	0.02156	0.11149
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01497	0.02034	0.11268
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01959	0.02500	0.11732
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01504	0.02028	0.10990
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01968	0.02493	0.11455
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01490	0.02015	0.10976
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01955	0.02480	0.11442
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01087	0.01615	0.10623
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01551	0.02083	0.11090
	(!D * !SCE * SET_B * !Q * Q_N)	0.01151	0.01672	0.10667
	(!D * !SCE * SET_B * !Q * Q_N)	0.01616	0.02139	0.11131
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01479	0.02016	0.11251
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01942	0.02482	0.11715
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01169	0.01691	0.10685
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01634	0.02157	0.11149
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01496	0.02037	0.11271
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01958	0.02499	0.11735
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01509	0.02033	0.10995
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01973	0.02499	0.11460

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.01081	0.01607	0.10612
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01540	0.02067	0.11072
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01068	0.01593	0.10599
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01526	0.02054	0.11059
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01169	0.01687	0.10678
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01628	0.02148	0.11136
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01496	0.02032	0.11264
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01953	0.02492	0.11722
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01529	0.02049	0.11005
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01988	0.02507	0.11464
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01516	0.02036	0.10992
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01975	0.02494	0.11451
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01086	0.01611	0.10617
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01544	0.02072	0.11077
	(!D * !SCE * SET_B * !Q * Q_N)	0.01152	0.01670	0.10661
	(!D * !SCE * SET_B * !Q * Q_N)	0.01610	0.02131	0.11119
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01479	0.02014	0.11254
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01936	0.02474	0.11712
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01169	0.01688	0.10678
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01628	0.02149	0.11136
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01495	0.02033	0.11267
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01952	0.02492	0.11725
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01534	0.02054	0.11010
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01993	0.02513	0.11469

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00201	0.00185	0.00415	0.00174	0.00642	0.00302	1.22985	1.17193

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	69.12970	117.77600

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)	0.34176	0.81334	6.26621
	SET_B->Q (FR)	0.15278	0.77528	8.02623

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.27450	0.54221	2.93240
	RESET_B->Q (FF)	0.22254	0.63858	4.76130
	SET_B->Q (RF)	0.14667	0.41835	2.83641

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)	0.24043	0.73189	6.29020
	RESET_B->Q_N (FR)	0.18882	0.83553	8.12984
	SET_B->Q_N (RR)	0.11261	0.62046	6.52927

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)	0.28888	0.61196	2.96006
	SET_B->Q_N (FF)	0.10579	0.57358	4.94890

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)	-0.09119	-0.15795	-0.69033
	setup	CLK (R)	0.12202	0.17316	0.73392

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)	-0.15956	-0.24857	-2.36963
	setup	CLK (R)	0.21233	0.29377	2.55431

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)	-0.09119	-0.15795	-0.69033
	setup	CLK (R)	0.12202	0.17316	0.73392

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)	-0.15956	-0.24857	-2.36963
	setup	CLK (R)	0.21233	0.29377	2.55431

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)	-0.11313	-0.16891	-0.69261
	setup	CLK (R)	0.14984	0.19099	0.74935

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)	-0.21621	-0.28839	-2.42104
	setup	CLK (R)	0.26995	0.33588	2.61308

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)	-0.11313	-0.16891	-0.69261
	hold	CLK (R)	-0.11829	-0.17619	-0.70126
	setup	CLK (R)	0.14245	0.18394	0.74075
	setup	CLK (R)	0.14984	0.19099	0.74935

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)	-0.21845	-0.29248	-2.42104
	hold	CLK (R)	-0.21621	-0.28839	-2.42777
	setup	CLK (R)	0.26995	0.33588	2.61308
	setup	CLK (R)	0.26816	0.32992	2.60783

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)	-0.10559	-0.17970	-0.25443
	setup	CLK (R)	0.26923	0.26622	0.92375

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)	-0.14855	-0.23035	-2.11966
	setup	CLK (R)	0.21511	0.27514	2.39413

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)	-0.21695	-0.22074	-0.25443
	hold	CLK (R)	-0.10559	-0.17970	-0.87949
	setup	CLK (R)	0.26923	0.26622	0.57176
	setup	CLK (R)	0.13701	0.19488	0.92375

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)	-0.14855	-0.23574	-2.11966
	hold	CLK (R)	-0.16194	-0.23035	-2.16982
	setup	CLK (R)	0.17468	0.25050	2.14536
	setup	CLK (R)	0.21511	0.27514	2.39413

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)	0.06772	0.07266	0.45154
	removal	CLK (R)	-0.03412	-0.04234	-0.05980

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)	0.06772	0.07262	0.43868
	recovery	CLK (R)	0.06772	0.07263	0.42725
	recovery	CLK (R)	0.06769	0.07266	0.45154
	removal	CLK (R)	-0.03412	-0.04234	-0.06085
	removal	CLK (R)	-0.03412	-0.04234	-0.05980
	removal	CLK (R)	-0.03412	-0.04234	-0.05980

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 ()	0.16765	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.17506	0.65918	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)	0.00703	0.00400	2.98346
	removal	CLK (R)	0.06173	0.08257	0.02110
	hold	RESET_B (R)	-0.05950	-0.09705	-0.53674
	setup	RESET_B (R)	0.09992	0.13225	0.96304

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)	0.00703	0.00400	2.95405
	recovery	CLK (R)	0.00698	0.00400	2.98346
	recovery	CLK (R)	0.00686	0.00400	2.97622
	removal	CLK (R)	0.06173	0.08257	0.02110
	removal	CLK (R)	0.06173	0.08257	0.02110
	removal	CLK (R)	0.06173	0.08257	0.02110
	hold	RESET_B (R)	-0.05950	-0.09845	-0.54276
	hold	RESET_B (R)	-0.05989	-0.09705	-0.53674
	setup	RESET_B (R)	0.09638	0.12757	0.95765
	setup	RESET_B (R)	0.09992	0.13225	0.96304

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 ()	0.10096	0.65918	16.50020
	min_pulse_width	SET_B ()	0.11578	0.65918	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 ()	0.10096	0.65918	16.50020
	min_pulse_width	CLK ()	0.11825	0.65918	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 ()	0.15283	0.65918	16.50020
	min_pulse_width	CLK ()	0.20964	0.65918	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	0.01918	0.02133	0.06738
	CLK	0.01682	0.01897	0.06473
	SET_B	0.01685	0.02137	0.10308
	SET_B	0.02179	0.02630	0.10742

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01838	0.02102	0.06841
	CLK	0.01580	0.01827	0.06566
	RESET_B	0.01888	0.02048	0.04797
	RESET_B	0.02012	0.02171	0.04907
	SET_B	0.02033	0.02248	0.10063
	SET_B	0.01538	0.01746	0.09557

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01893	0.02135	0.06960
	CLK	0.01635	0.01877	0.06689
	RESET_B	0.01934	0.02091	0.04905
	RESET_B	0.02057	0.02214	0.04992
	SET_B	0.02079	0.02293	0.10141
	SET_B	0.01584	0.01793	0.09637

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01875	0.02091	0.06625
	CLK	0.01638	0.01854	0.06379
	SET_B	0.01646	0.02096	0.10158
	SET_B	0.02139	0.02590	0.10638

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00231	0.00233	0.00232
	(CLK * SCD * SCE)	0.00038	0.00036	0.00037
	(CLK * !SCE)	0.00580	0.00763	0.04769
	(CLK * !SCE)	0.00239	0.00419	0.04427
	(CLK * !SCD * SCE)	0.00136	0.00135	0.00134
	(CLK * !SCD * SCE)	-0.00084	-0.00084	-0.00086
	(!CLK * SCD * SCE)	0.00189	0.00189	0.00189
	(!CLK * SCD * SCE)	-0.00006	-0.00006	-0.00006
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01363	0.01527	0.05851
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01042	0.01205	0.05530
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00918	0.01051	0.04898
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00547	0.00680	0.04527
	(!CLK * !SCD * SCE)	0.00148	0.00149	0.00147
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00073
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00789	0.00921	0.04764
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00420	0.00552	0.04395

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00028	-0.00029	-0.00034
	(CLK * SCD * SCE)	0.00166	0.00167	0.00163
	(CLK * !SCE)	0.00194	0.00422	0.04449
	(CLK * !SCE)	0.00536	0.00764	0.04790
	(CLK * !SCD * SCE)	0.00032	0.00031	0.00032
	(CLK * !SCD * SCE)	0.00250	0.00251	0.00251
	(!CLK * SCD * SCE)	-0.00071	-0.00072	-0.00076
	(!CLK * SCD * SCE)	0.00124	0.00124	0.00120
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01129	0.01343	0.05669
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01451	0.01665	0.05989
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00412	0.00593	0.04482
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00784	0.00966	0.04853
	(!CLK * !SCD * SCE)	0.00046	0.00045	0.00045
	(!CLK * !SCD * SCE)	0.00264	0.00265	0.00264
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00514	0.00700	0.04609
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00883	0.01070	0.04978

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00807	0.00931	0.04467
	(CLK * D * SCE)	0.00348	0.00471	0.04009
	(CLK * !D * SCE)	0.00910	0.01021	0.04509
	(CLK * !D * SCE)	0.00427	0.00536	0.04027
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01143	0.01243	0.04659
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00655	0.00756	0.04173
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01588	0.01714	0.05541
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01150	0.01276	0.05105
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01014	0.01113	0.04520
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00528	0.00627	0.04036
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01246	0.01337	0.04709
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00734	0.00825	0.04198
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01692	0.01809	0.05597
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01229	0.01346	0.05135
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01117	0.01208	0.04568
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00606	0.00696	0.04059
	!SCE	0.00238	0.00209	0.00203
	!SCE	-0.00009	-0.00041	-0.00044

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00377	0.00488	0.04050
	(CLK * D * SCE)	0.00837	0.00949	0.04506
	(CLK * !D * SCE)	0.00331	0.00450	0.04034
	(CLK * !D * SCE)	0.00814	0.00933	0.04516
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00592	0.00681	0.04128
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01081	0.01171	0.04613
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01324	0.01430	0.05216
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01763	0.01869	0.05652
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00693	0.00786	0.04254
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01180	0.01273	0.04737
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00546	0.00640	0.04109
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01058	0.01153	0.04620
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01286	0.01403	0.05246
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01748	0.01866	0.05707
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00647	0.00745	0.04235
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01157	0.01257	0.04744
	!SCE	0.00001	-0.00001	-0.00001
	!SCE	0.00248	0.00249	0.00247

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)	0.00654	0.00921	0.06143
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00048	0.00312	0.05537
	(CLK * D * !SCD)	0.00972	0.01249	0.06707
	(CLK * D * !SCD)	0.00543	0.00816	0.06273
	(CLK * !D * SCD)	0.01104	0.01552	0.10421
	(CLK * !D * SCD)	0.00342	0.00790	0.09659
	(!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)	0.00635	0.00900	0.06124
	(!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)	0.00029	0.00293	0.05518
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01920	0.02205	0.07648
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01470	0.01752	0.07193
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01192	0.01481	0.06902
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00792	0.01078	0.06498
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01295	0.01583	0.07015
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00892	0.01177	0.06607
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01461	0.01889	0.10629
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00670	0.01096	0.09839
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01905	0.02353	0.11573
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01164	0.01610	0.10833
	(!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)	0.00652	0.00933	0.06144
	(!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)	0.00092	0.00369	0.05581
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01332	0.01748	0.10491
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00543	0.00956	0.09702

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)**	0.00042	0.00380	0.05619
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00646	0.00987	0.06226
	(CLK * D * !SCD)	0.00534	0.00851	0.06231
	(CLK * D * !SCD)	0.00964	0.01283	0.06645
	(CLK * !D * SCD)	0.00208	0.00688	0.09591
	(CLK * !D * SCD)	0.00971	0.01453	0.10355
	(!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)	-0.00020	0.00318	0.05557
	(!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)	0.00585	0.00926	0.06164
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01291	0.01618	0.06967
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01742	0.02071	0.07403
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00845	0.01169	0.06486
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01247	0.01575	0.06872
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00716	0.01041	0.06355
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01120	0.01446	0.06740
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00405	0.00848	0.09598
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01197	0.01643	0.10390
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01122	0.01585	0.10687
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01863	0.02328	0.11430
	(!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)	0.00035	0.00369	0.05586
	(!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)	0.00598	0.00933	0.06147
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00507	0.00953	0.09726
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01296	0.01746	0.10516

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)	0.00778	0.00997	0.06079
	(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)	0.00489	0.00707	0.05790
	(!SET_B * Q * !Q_N)	0.00795	0.01031	0.06156
	(!SET_B * Q * !Q_N)	0.00500	0.00734	0.05860
	(!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)	0.01335	0.01533	0.06919
	(!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)	0.01094	0.01292	0.06678

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)	0.00446	0.00717	0.05804
	(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)	0.00735	0.01006	0.06093
	(!SET_B * Q * !Q_N)	0.00224	0.00507	0.05620
	(!SET_B * Q * !Q_N)	0.00522	0.00803	0.05916
	(!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)	0.01048	0.01326	0.06712
	(!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)	0.01289	0.01567	0.06953

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)	0.00433	0.00434	0.00432
	(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)	-0.00474	-0.00474	-0.00473
	(!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)	0.01090	0.01332	0.08332
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00122	0.00360	0.07363

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)	-0.00286	-0.00308	-0.00308
	(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)	0.00615	0.00602	0.00599
	(!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)	0.00324	0.00713	0.07834
	(!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)	0.01289	0.01680	0.08804

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)**	0.01609	0.02035	0.11044
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01115	0.01538	0.10549
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01628	0.02054	0.11063
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01134	0.01556	0.10568
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01641	0.02063	0.11088
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01147	0.01566	0.10594
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02052	0.02477	0.11466
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01530	0.01953	0.10942
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01942	0.02365	0.11543
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01475	0.01897	0.11075
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01962	0.02384	0.11561
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01495	0.01916	0.11093
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01614	0.02040	0.11049
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01120	0.01543	0.10554
	(!D * !SCE * SET_B * !Q * Q_N)	0.01655	0.02078	0.11102
	(!D * !SCE * SET_B * !Q * Q_N)	0.01162	0.01582	0.10608
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02066	0.02493	0.11480
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01545	0.01968	0.10957
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01641	0.02064	0.11088
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01147	0.01568	0.10593
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02052	0.02477	0.11464
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01531	0.01953	0.10940
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01948	0.02370	0.11547
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01481	0.01902	0.11080

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)	0.01730	0.02255	0.11441
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02244	0.02772	0.11957
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00881	0.01406	0.10395
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01375	0.01901	0.10890
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01702	0.02227	0.11413
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02216	0.02744	0.11929
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00852	0.01378	0.10366
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01345	0.01872	0.10861
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01948	0.02491	0.11609
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02426	0.02970	0.12089
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00953	0.01474	0.10441
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01446	0.01969	0.10937
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01217	0.01768	0.10865
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01739	0.02291	0.11388
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01120	0.01649	0.10801
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01586	0.02119	0.11270
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01090	0.01620	0.10772
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01557	0.02087	0.11240
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01734	0.02260	0.11446
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02249	0.02776	0.11962
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00886	0.01411	0.10400
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01380	0.01906	0.10895
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01909	0.02452	0.11569
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02384	0.02929	0.12045
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01949	0.02491	0.11596
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02426	0.02970	0.12073
	(!D * !SCE * SET_B * !Q * Q_N)	0.00919	0.01440	0.10408
	(!D * !SCE * SET_B * !Q * Q_N)	0.01413	0.01935	0.10903
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01185	0.01735	0.10832
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01708	0.02259	0.11354
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00953	0.01473	0.10441
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01446	0.01968	0.10937
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01219	0.01769	0.10870
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01742	0.02293	0.11392
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01124	0.01653	0.10805
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01591	0.02120	0.11274

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00192	0.00199	0.00433	0.00591	0.00316	1.27375	1.29392
sky130_fd_sc_hs__sdfrbp_2	0.00194	0.00201	0.00444	0.00597	0.00310	2.55642	2.53551

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	45.00310	70.21890
sky130_fd_sc_hs__sdfrbp_2	0.00000	50.02880	70.38980

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)	0.20992	0.67249	6.13840
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.24497	0.61951	6.43926

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.19990	0.46876	2.88300
	RESET_B->Q (FF)	0.27774	0.73498	5.26811
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.22898	0.46079	3.07238
	RESET_B->Q (FF)	0.30988	0.73204	5.48347

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)	0.16491	0.64275	6.10480
	RESET_B->Q_N (FR)	0.24259	0.90517	8.48172
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.16725	0.55739	6.03779
	RESET_B->Q_N (FR)	0.24838	0.82555	8.44247

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)	0.15919	0.49546	3.17604
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.16873	0.46674	3.03461

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)	-0.09451	-0.19273	-1.12265
	setup	CLK (R)	0.16767	0.23462	1.20232
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09707	-0.19812	-1.15705
	setup	CLK (R)	0.16876	0.24216	1.19560

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)	-0.09757	-0.20255	-2.11588
	setup	CLK (R)	0.19302	0.28876	2.35973
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10884	-0.21551	-2.28790
	setup	CLK (R)	0.20228	0.29696	2.40833

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)	-0.09451	-0.19273	-1.12265
	hold	CLK (R)	-0.09720	-0.19273	-1.12290
	setup	CLK (R)	0.16767	0.23375	1.20077
	setup	CLK (R)	0.16680	0.23462	1.20232
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09707	-0.19812	-1.15709
	hold	CLK (R)	-0.10048	-0.19812	-1.15705
	setup	CLK (R)	0.16876	0.23929	1.19421
	setup	CLK (R)	0.16814	0.24216	1.19560

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)	-0.09757	-0.20255	-2.11588
	hold	CLK (R)	-0.09774	-0.20339	-2.12681
	setup	CLK (R)	0.19302	0.28698	2.35973
	setup	CLK (R)	0.19246	0.28876	2.35856
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10886	-0.21562	-2.28905
	hold	CLK (R)	-0.10884	-0.21551	-2.28790
	setup	CLK (R)	0.20228	0.29689	2.40833
	setup	CLK (R)	0.20205	0.29696	2.40807

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)	-0.12044	-0.20551	-1.11297
	setup	CLK (R)	0.19768	0.25719	1.18437
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12260	-0.20951	-1.13876
	setup	CLK (R)	0.19825	0.26119	1.18187

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)	-0.12989	-0.22894	-2.23429
	setup	CLK (R)	0.24377	0.32407	2.44365
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14266	-0.23667	-2.37627
	setup	CLK (R)	0.25131	0.33247	2.48743

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)	-0.12044	-0.20551	-1.11297
	hold	CLK (R)	-0.12739	-0.21674	-1.11857
	setup	CLK (R)	0.19417	0.24771	1.17638
	setup	CLK (R)	0.19768	0.25719	1.18437
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12260	-0.20951	-1.13876
	hold	CLK (R)	-0.13039	-0.22039	-1.14813
	setup	CLK (R)	0.19294	0.25084	1.17076
	setup	CLK (R)	0.19825	0.26119	1.18187

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)	-0.14375	-0.23426	-2.23666
	hold	CLK (R)	-0.12989	-0.22894	-2.23429
	setup	CLK (R)	0.24377	0.32407	2.43878
	setup	CLK (R)	0.24130	0.31889	2.44365
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14937	-0.24747	-2.37627
	hold	CLK (R)	-0.14266	-0.23667	-2.38912
	setup	CLK (R)	0.25131	0.33247	2.47961
	setup	CLK (R)	0.24847	0.32770	2.48743

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)	-0.10197	-0.18004	-0.29373
	setup	CLK (R)	0.24789	0.26768	1.28772
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10563	-0.18495	-0.34423
	setup	CLK (R)	0.25442	0.27143	1.28304

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)	-0.11092	-0.19314	-2.02417
	setup	CLK (R)	0.22861	0.31343	2.33202
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11924	-0.20428	-2.16836
	setup	CLK (R)	0.22747	0.31213	2.34631

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)	-0.14583	-0.18004	-0.29373
	hold	CLK (R)	-0.10197	-0.20220	-1.21432
	setup	CLK (R)	0.24789	0.26768	0.45193
	setup	CLK (R)	0.17424	0.24706	1.28772
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15520	-0.18495	-0.34423
	hold	CLK (R)	-0.10563	-0.20563	-1.24877
	setup	CLK (R)	0.25442	0.27143	0.47399
	setup	CLK (R)	0.17296	0.24775	1.28304

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)	-0.15678	-0.27560	-2.30802
	hold	CLK (R)	-0.11092	-0.19314	-2.02417
	setup	CLK (R)	0.22861	0.31343	2.33202
	setup	CLK (R)	0.20353	0.28036	2.24283
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16070	-0.27299	-2.32191
	hold	CLK (R)	-0.11924	-0.20428	-2.16836
	setup	CLK (R)	0.22747	0.31213	2.34631
	setup	CLK (R)	0.21259	0.28603	2.27910

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)	0.21717	0.25503	1.52559
	removal	CLK (R)	-0.16104	-0.20348	-1.41961
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.21726	0.25719	1.52589
	removal	CLK (R)	-0.16759	-0.21130	-1.44581

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)	0.21287	0.24771	1.52559
	recovery	CLK (R)	0.20061	0.23262	1.48870
	recovery	CLK (R)	0.19856	0.22438	1.47439
	recovery	CLK (R)	0.21717	0.25503	1.52295
	removal	CLK (R)	-0.17718	-0.22700	-1.47553
	removal	CLK (R)	-0.16522	-0.21367	-1.43579
	removal	CLK (R)	-0.16104	-0.20348	-1.41961
	removal	CLK (R)	-0.18364	-0.23498	-1.47395
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.21004	0.24926	1.52559
	recovery	CLK (R)	0.20394	0.23723	1.49406
	recovery	CLK (R)	0.19862	0.22682	1.47605
	recovery	CLK (R)	0.21726	0.25719	1.52589
	removal	CLK (R)	-0.18143	-0.23247	-1.49819
	removal	CLK (R)	-0.17255	-0.21983	-1.46729
	removal	CLK (R)	-0.16759	-0.21130	-1.44581
	removal	CLK (R)	-0.18809	-0.24292	-1.50005

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 ()	0.13801	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.12072	0.65918	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.13801	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.13801	0.65918	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 ()	0.12072	0.65918	16.50020
	min_pulse_width	CLK ()	0.08120	0.65918	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.14542	0.65918	16.50020
	min_pulse_width	CLK ()	0.09602	0.65918	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 ()	0.16765	0.65918	16.50020
	min_pulse_width	CLK ()	0.18494	0.65918	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.16271	0.65918	16.50020
	min_pulse_width	CLK ()	0.18741	0.65918	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	0.01757	0.01954	0.06664
	CLK	0.01503	0.01699	0.06385
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02181	0.02328	0.07087
	CLK	0.01923	0.02061	0.06793

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01689	0.01924	0.06493
	CLK	0.01439	0.01671	0.06227
	RESET_B	0.01436	0.01710	0.06691
	RESET_B	0.02050	0.02317	0.07234
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02026	0.02267	0.06853
	CLK	0.01793	0.02027	0.06604
	RESET_B	0.01813	0.02083	0.07089
	RESET_B	0.02399	0.02674	0.07600

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01712	0.01942	0.06587
	CLK	0.01462	0.01693	0.06305
	RESET_B	0.01459	0.01735	0.06738
	RESET_B	0.02058	0.02331	0.07302
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02038	0.02297	0.06974
	CLK	0.01804	0.02043	0.06697
	RESET_B	0.01839	0.02110	0.07091
	RESET_B	0.02426	0.02701	0.07664

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01717	0.01915	0.06531
	CLK	0.01464	0.01659	0.06279
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02138	0.02274	0.06937
	CLK	0.01879	0.02016	0.06661

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00178	0.00179	0.00178
	(CLK * RESET_B * SCD * SCE)	-0.00012	-0.00012	-0.00011
	(CLK * RESET_B * SCD * !SCE)	0.00610	0.00769	0.04528
	(CLK * RESET_B * SCD * !SCE)	0.00234	0.00392	0.04152
	(CLK * RESET_B * !SCD * !SCE)	0.00616	0.00775	0.04531
	(CLK * RESET_B * !SCD * !SCE)	0.00240	0.00398	0.04154
	(CLK * !SCD * SCE)	0.00098	0.00099	0.00097
	(CLK * !SCD * SCE)	-0.00115	-0.00116	-0.00118
	(CLK * !RESET_B * SCD * SCE)	0.00097	0.00097	0.00095
	(CLK * !RESET_B * SCD * SCE)	-0.00116	-0.00116	-0.00119
	(CLK * !RESET_B * SCD * !SCE)	0.00069	0.00069	0.00062
	(CLK * !RESET_B * SCD * !SCE)	-0.00141	-0.00142	-0.00152
	(CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00068	0.00063
	(CLK * !RESET_B * !SCD * !SCE)	-0.00146	-0.00147	-0.00153
	(!CLK * RESET_B * SCD * SCE)	0.00186	0.00187	0.00186
	(!CLK * RESET_B * SCD * SCE)	-0.00004	-0.00005	-0.00003
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01393	0.01577	0.06047
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00998	0.01181	0.05651
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01398	0.01583	0.06049
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01003	0.01187	0.05654
	(!CLK * !SCD * SCE)	0.00125	0.00126	0.00124
	(!CLK * !SCD * SCE)	-0.00088	-0.00090	-0.00091
	(!CLK * !RESET_B * SCD * SCE)	0.00097	0.00098	0.00096
	(!CLK * !RESET_B * SCD * SCE)	-0.00115	-0.00117	-0.00118
	(!CLK * !RESET_B * SCD * !SCE)	0.00069	0.00069	0.00062
	(!CLK * !RESET_B * SCD * !SCE)	-0.00140	-0.00142	-0.00151
	(!CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00069	0.00063
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00145	-0.00146	-0.00153

	(CLK * RESET_B * SCD * SCE)	0.00187	0.00188	0.00188
	(CLK * RESET_B * SCD * SCE)	-0.00005	-0.00005	-0.00004
	(CLK * RESET_B * SCD * !SCE)	0.00650	0.00804	0.04552
	(CLK * RESET_B * SCD * !SCE)	0.00267	0.00420	0.04168
	(CLK * RESET_B * !SCD * !SCE)	0.00657	0.00810	0.04555
	(CLK * RESET_B * !SCD * !SCE)	0.00274	0.00426	0.04171
	(CLK * !SCD * SCE)	0.00106	0.00106	0.00104
	(CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00113
	(CLK * !RESET_B * SCD * SCE)	0.00104	0.00104	0.00103
	(CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00112	-0.00114
	(CLK * !RESET_B * SCD * !SCE)	0.00074	0.00074	0.00067
	(CLK * !RESET_B * SCD * !SCE)	-0.00138	-0.00140	-0.00149
	(CLK * !RESET_B * !SCD * !SCE)	0.00073	0.00073	0.00068
	(CLK * !RESET_B * !SCD * !SCE)	-0.00143	-0.00145	-0.00151
	(!CLK * RESET_B * SCD * SCE)	0.00189	0.00191	0.00189
	(!CLK * RESET_B * SCD * SCE)	-0.00003	-0.00005	-0.00003
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01431	0.01612	0.06079
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01028	0.01209	0.05675
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01437	0.01618	0.06081
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01035	0.01215	0.05678
	(!CLK * !SCD * SCE)	0.00126	0.00127	0.00125
	(!CLK * !SCD * SCE)	-0.00090	-0.00091	-0.00093
	(!CLK * !RESET_B * SCD * SCE)	0.00105	0.00105	0.00103
	(!CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00111	-0.00113
	(!CLK * !RESET_B * SCD * !SCE)	0.00074	0.00074	0.00068
	(!CLK * !RESET_B * SCD * !SCE)	-0.00138	-0.00139	-0.00149
	(!CLK * !RESET_B * !SCD * !SCE)	0.00073	0.00074	0.00068
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00143	-0.00144	-0.00151

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00073	-0.00075	-0.00080
	(CLK * RESET_B * SCD * SCE)	0.00116	0.00116	0.00112
	(CLK * RESET_B * SCD * !SCE)	0.00094	0.00300	0.04107
	(CLK * RESET_B * SCD * !SCE)	0.00469	0.00677	0.04483
	(CLK * RESET_B * !SCD * !SCE)	0.00093	0.00300	0.04111
	(CLK * RESET_B * !SCD * !SCE)	0.00470	0.00677	0.04487
	(CLK * !SCD * SCE)	-0.00031	-0.00032	-0.00032
	(CLK * !SCD * SCE)	0.00182	0.00182	0.00182
	(CLK * !RESET_B * SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !RESET_B * SCD * SCE)	0.00182	0.00183	0.00182
	(CLK * !RESET_B * SCD * !SCE)	-0.00015	-0.00015	-0.00015
	(CLK * !RESET_B * SCD * !SCE)	0.00198	0.00201	0.00199
	(CLK * !RESET_B * !SCD * !SCE)	-0.00015	-0.00016	-0.00015
	(CLK * !RESET_B * !SCD * !SCE)	0.00198	0.00202	0.00199
	(!CLK * RESET_B * SCD * SCE)	-0.00066	-0.00067	-0.00072
	(!CLK * RESET_B * SCD * SCE)	0.00124	0.00124	0.00119
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00952	0.01207	0.05766
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01347	0.01602	0.06160
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00954	0.01207	0.05772
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01349	0.01603	0.06168
	(!CLK * !SCD * SCE)	-0.00004	-0.00005	-0.00005
	(!CLK * !SCD * SCE)	0.00209	0.00210	0.00209
	(!CLK * !RESET_B * SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !RESET_B * SCD * SCE)	0.00182	0.00183	0.00183
	(!CLK * !RESET_B * SCD * !SCE)	-0.00014	-0.00015	-0.00014
	(!CLK * !RESET_B * SCD * !SCE)	0.00199	0.00200	0.00199
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00015	-0.00015	-0.00014
	(!CLK * !RESET_B * !SCD * !SCE)	0.00199	0.00201	0.00200

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00070	-0.00071	-0.00076
	(CLK * RESET_B * SCD * SCE)	0.00122	0.00122	0.00118
	(CLK * RESET_B * SCD * !SCE)	0.00112	0.00313	0.04112
	(CLK * RESET_B * SCD * !SCE)	0.00495	0.00697	0.04496
	(CLK * RESET_B * !SCD * !SCE)	0.00113	0.00314	0.04117
	(CLK * RESET_B * !SCD * !SCE)	0.00495	0.00697	0.04500
	(CLK * !SCD * SCE)	-0.00026	-0.00027	-0.00026
	(CLK * !SCD * SCE)	0.00190	0.00190	0.00190
	(CLK * !RESET_B * SCD * SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * SCD * SCE)	0.00190	0.00191	0.00190
	(CLK * !RESET_B * SCD * !SCE)	-0.00007	-0.00007	-0.00006
	(CLK * !RESET_B * SCD * !SCE)	0.00209	0.00212	0.00210
	(CLK * !RESET_B * !SCD * !SCE)	-0.00007	-0.00008	-0.00006
	(CLK * !RESET_B * !SCD * !SCE)	0.00209	0.00213	0.00210
	(!CLK * RESET_B * SCD * SCE)	-0.00069	-0.00070	-0.00075
	(!CLK * RESET_B * SCD * SCE)	0.00124	0.00124	0.00119
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00974	0.01223	0.05779
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01378	0.01625	0.06182
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00972	0.01223	0.05783
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01376	0.01625	0.06186
	(!CLK * !SCD * SCE)	-0.00005	-0.00006	-0.00006
	(!CLK * !SCD * SCE)	0.00211	0.00211	0.00211
	(!CLK * !RESET_B * SCD * SCE)	-0.00024	-0.00025	-0.00024
	(!CLK * !RESET_B * SCD * SCE)	0.00191	0.00191	0.00191
	(!CLK * !RESET_B * SCD * !SCE)	-0.00006	-0.00007	-0.00006
	(!CLK * !RESET_B * SCD * !SCE)	0.00209	0.00213	0.00210
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00006	-0.00007	-0.00006
	(!CLK * !RESET_B * !SCD * !SCE)	0.00210	0.00213	0.00211

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00799	0.00907	0.04248
	(CLK * D * RESET_B * SCE)	0.00309	0.00417	0.03759
	(CLK * D * RESET_B * !SCE)	0.00186	0.00164	0.00161
	(CLK * D * RESET_B * !SCE)	-0.00067	-0.00091	-0.00091
	(CLK * D * !RESET_B * SCE)	0.00091	0.00091	0.00088
	(CLK * D * !RESET_B * SCE)	-0.00124	-0.00124	-0.00122
	(CLK * D * !RESET_B * !SCE)	0.00064	0.00064	0.00064
	(CLK * D * !RESET_B * !SCE)	-0.00145	-0.00146	-0.00145
	(CLK * !D * RESET_B * SCE)	0.00902	0.00998	0.04292
	(CLK * !D * RESET_B * SCE)	0.00388	0.00483	0.03779
	(CLK * !D * !RESET_B * SCE)	0.00091	0.00091	0.00088
	(CLK * !D * !RESET_B * SCE)	-0.00124	-0.00124	-0.00122
	(!D * RESET_B * !SCE)	0.00112	0.00112	0.00112
	(!D * RESET_B * !SCE)	-0.00142	-0.00142	-0.00141
	(!D * !RESET_B * !SCE)	0.00077	0.00077	0.00077
	(!D * !RESET_B * !SCE)	-0.00155	-0.00155	-0.00155
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01584	0.01726	0.05676
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01075	0.01216	0.05168
	(!CLK * D * RESET_B * !SCE)	0.00194	0.00172	0.00169
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00083	-0.00083
	(!CLK * D * !RESET_B * SCE)	0.00091	0.00091	0.00089
	(!CLK * D * !RESET_B * SCE)	-0.00124	-0.00123	-0.00122
	(!CLK * D * !RESET_B * !SCE)	0.00065	0.00065	0.00065
	(!CLK * D * !RESET_B * !SCE)	-0.00144	-0.00145	-0.00145
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01688	0.01820	0.05734
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01155	0.01285	0.05200
	(!CLK * !D * !RESET_B * SCE)	0.00091	0.00091	0.00089
	(!CLK * !D * !RESET_B * SCE)	-0.00124	-0.00123	-0.00122

	(CLK * D * RESET_B * SCE)	0.00829	0.00935	0.04268
	(CLK * D * RESET_B * SCE)	0.00332	0.00437	0.03772
	(CLK * D * RESET_B * !SCE)	0.00195	0.00173	0.00171
	(CLK * D * RESET_B * !SCE)	-0.00062	-0.00085	-0.00085
	(CLK * D * !RESET_B * SCE)	0.00099	0.00100	0.00097
	(CLK * D * !RESET_B * SCE)	-0.00116	-0.00117	-0.00116
	(CLK * D * !RESET_B * !SCE)	0.00072	0.00072	0.00072
	(CLK * D * !RESET_B * !SCE)	-0.00140	-0.00140	-0.00140
	(CLK * !D * RESET_B * SCE)	0.00932	0.01025	0.04313
	(CLK * !D * RESET_B * SCE)	0.00411	0.00503	0.03792
	(CLK * !D * !RESET_B * SCE)	0.00099	0.00100	0.00097
	(CLK * !D * !RESET_B * SCE)	-0.00117	-0.00118	-0.00116
	(!D * RESET_B * !SCE)	0.00120	0.00121	0.00120
	(!D * RESET_B * !SCE)	-0.00137	-0.00137	-0.00136
	(!D * !RESET_B * !SCE)	0.00084	0.00084	0.00084
	(!D * !RESET_B * !SCE)	-0.00150	-0.00151	-0.00150
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01611	0.01752	0.05698
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01095	0.01234	0.05182
	(!CLK * D * RESET_B * !SCE)	0.00196	0.00174	0.00172
	(!CLK * D * RESET_B * !SCE)	-0.00061	-0.00084	-0.00084
	(!CLK * D * !RESET_B * SCE)	0.00099	0.00100	0.00098
	(!CLK * D * !RESET_B * SCE)	-0.00116	-0.00117	-0.00116
	(!CLK * D * !RESET_B * !SCE)	0.00072	0.00073	0.00073
	(!CLK * D * !RESET_B * !SCE)	-0.00139	-0.00140	-0.00140
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01717	0.01850	0.05762
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01175	0.01308	0.05221
	(!CLK * !D * !RESET_B * SCE)	0.00100	0.00100	0.00098
	(!CLK * !D * !RESET_B * SCE)	-0.00116	-0.00117	-0.00116

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00268	0.00376	0.03744
	(CLK * D * RESET_B * SCE)	0.00758	0.00868	0.04232
	(CLK * D * RESET_B * !SCE)	-0.00056	-0.00058	-0.00060
	(CLK * D * RESET_B * !SCE)	0.00195	0.00196	0.00195
	(CLK * D * !RESET_B * SCE)	-0.00021	-0.00022	-0.00022
	(CLK * D * !RESET_B * SCE)	0.00189	0.00192	0.00187
	(CLK * D * !RESET_B * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * D * !RESET_B * !SCE)	0.00191	0.00192	0.00191
	(CLK * !D * RESET_B * SCE)	0.00212	0.00331	0.03724
	(CLK * !D * RESET_B * SCE)	0.00726	0.00846	0.04236
	(CLK * !D * !RESET_B * SCE)	-0.00021	-0.00022	-0.00022
	(CLK * !D * !RESET_B * SCE)	0.00189	0.00192	0.00187
	(!D * RESET_B * !SCE)	-0.00056	-0.00065	-0.00066
	(!D * RESET_B * !SCE)	0.00195	0.00191	0.00188
	(!D * !RESET_B * !SCE)	-0.00030	-0.00032	-0.00034
	(!D * !RESET_B * !SCE)	0.00211	0.00208	0.00202
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01157	0.01298	0.05240
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01667	0.01809	0.05748
	(!CLK * D * RESET_B * !SCE)	-0.00049	-0.00051	-0.00052
	(!CLK * D * RESET_B * !SCE)	0.00203	0.00205	0.00202
	(!CLK * D * !RESET_B * SCE)	-0.00020	-0.00021	-0.00021
	(!CLK * D * !RESET_B * SCE)	0.00190	0.00192	0.00188
	(!CLK * D * !RESET_B * !SCE)	-0.00017	-0.00018	-0.00018
	(!CLK * D * !RESET_B * !SCE)	0.00191	0.00193	0.00192
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01117	0.01273	0.05288
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01650	0.01808	0.05819
	(!CLK * !D * !RESET_B * SCE)	-0.00020	-0.00021	-0.00021
	(!CLK * !D * !RESET_B * SCE)	0.00190	0.00192	0.00188

	(CLK * D * RESET_B * SCE)	0.00281	0.00389	0.03753
	(CLK * D * RESET_B * SCE)	0.00779	0.00888	0.04248
	(CLK * D * RESET_B * !SCE)	-0.00053	-0.00055	-0.00056
	(CLK * D * RESET_B * !SCE)	0.00202	0.00204	0.00201
	(CLK * D * !RESET_B * SCE)	-0.00017	-0.00018	-0.00018
	(CLK * D * !RESET_B * SCE)	0.00196	0.00199	0.00194
	(CLK * D * !RESET_B * !SCE)	-0.00013	-0.00013	-0.00013
	(CLK * D * !RESET_B * !SCE)	0.00199	0.00201	0.00199
	(CLK * !D * RESET_B * SCE)	0.00233	0.00350	0.03737
	(CLK * !D * RESET_B * SCE)	0.00755	0.00873	0.04257
	(CLK * !D * !RESET_B * SCE)	-0.00017	-0.00018	-0.00018
	(CLK * !D * !RESET_B * SCE)	0.00196	0.00199	0.00194
	(!D * RESET_B * !SCE)	-0.00052	-0.00060	-0.00061
	(!D * RESET_B * !SCE)	0.00204	0.00198	0.00195
	(!D * !RESET_B * !SCE)	-0.00023	-0.00026	-0.00028
	(!D * !RESET_B * !SCE)	0.00218	0.00218	0.00211
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01165	0.01308	0.05252
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01683	0.01827	0.05767
	(!CLK * D * RESET_B * !SCE)	-0.00051	-0.00054	-0.00055
	(!CLK * D * RESET_B * !SCE)	0.00204	0.00206	0.00203
	(!CLK * D * !RESET_B * SCE)	-0.00016	-0.00017	-0.00017
	(!CLK * D * !RESET_B * SCE)	0.00197	0.00199	0.00195
	(!CLK * D * !RESET_B * !SCE)	-0.00012	-0.00013	-0.00013
	(!CLK * D * !RESET_B * !SCE)	0.00199	0.00201	0.00200
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01137	0.01291	0.05304
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01679	0.01834	0.05843
	(!CLK * !D * !RESET_B * SCE)	-0.00016	-0.00017	-0.00017
	(!CLK * !D * !RESET_B * SCE)	0.00197	0.00199	0.00195

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)**	0.00715	0.00951	0.06233
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00055	0.00289	0.05573
	(CLK * D * RESET_B * !SCD)	0.00967	0.01223	0.06730
	(CLK * D * RESET_B * !SCD)	0.00523	0.00777	0.06281
	(CLK * !D * RESET_B * SCD)	0.01269	0.01665	0.10300
	(CLK * !D * RESET_B * SCD)	0.00413	0.00806	0.09446
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00723	0.00959	0.06241
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00063	0.00297	0.05581
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01836	0.02096	0.07654
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01411	0.01669	0.07226
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00685	0.00947	0.06232
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00061	0.00319	0.05607
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02049	0.02492	0.11874
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01174	0.01615	0.10999

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00675	0.00918	0.06210
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00006	0.00234	0.05529
	(CLK * D * RESET_B * !SCD)	0.00940	0.01204	0.06716
	(CLK * D * RESET_B * !SCD)	0.00478	0.00739	0.06250
	(CLK * !D * RESET_B * SCD)	0.01256	0.01656	0.10311
	(CLK * !D * RESET_B * SCD)	0.00375	0.00773	0.09431
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00677	0.00920	0.06212
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00005	0.00235	0.05531
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01810	0.02076	0.07637
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01368	0.01633	0.07191
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00650	0.00920	0.06213
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00005	0.00271	0.05568
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02036	0.02487	0.11894
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01135	0.01584	0.10994

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)**	0.00007	0.00321	0.05627
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00665	0.00984	0.06288
	(CLK * D * RESET_B * !SCD)	0.00584	0.00871	0.06337
	(CLK * D * RESET_B * !SCD)	0.01031	0.01319	0.06766
	(CLK * !D * RESET_B * SCD)	0.00144	0.00576	0.09242
	(CLK * !D * RESET_B * SCD)	0.01000	0.01435	0.10099
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00015	0.00326	0.05635
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00673	0.00988	0.06296
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01365	0.01663	0.07144
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01792	0.02091	0.07551
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00012	0.00294	0.05589
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00612	0.00921	0.06213
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01002	0.01461	0.10676
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01878	0.02338	0.11552

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00017	0.00337	0.05648
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00697	0.01020	0.06331
	(CLK * D * RESET_B * !SCD)	0.00629	0.00923	0.06385
	(CLK * D * RESET_B * !SCD)	0.01093	0.01385	0.06828
	(CLK * !D * RESET_B * SCD)	0.00161	0.00594	0.09273
	(CLK * !D * RESET_B * SCD)	0.01041	0.01478	0.10156
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00019	0.00334	0.05650
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00699	0.01018	0.06332
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01408	0.01708	0.07192
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01852	0.02153	0.07618
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00005	0.00309	0.05607
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00640	0.00954	0.06252
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01019	0.01481	0.10712
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01920	0.02385	0.11614

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)**	0.01139	0.01255	0.05868
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00005	0.00122	0.04732
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01084	0.01208	0.05871
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00008	0.00112	0.04779
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00395	0.00400	0.00396
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00444	-0.00447	-0.00444
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01036	0.01175	0.05853
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00000	0.00136	0.04818
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01242	0.01350	0.05912
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00087	0.00188	0.04753
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00383	0.00382	0.00384
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00454	-0.00453	-0.00454
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00395	0.00400	0.00396
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00444	-0.00447	-0.00444
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00384	0.00388	0.00385
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00455	-0.00458	-0.00455
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01991	0.02115	0.08294
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00838	0.00959	0.07140
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01930	0.02059	0.08321
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00825	0.00945	0.07210
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00396	0.00401	0.00397
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00442	-0.00446	-0.00443
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01885	0.02026	0.08298
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00830	0.00966	0.07241
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02096	0.02207	0.08331
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00919	0.01028	0.07155
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00383	0.00389	0.00385
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00453	-0.00456	-0.00453
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00396	0.00401	0.00397
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00442	-0.00446	-0.00443
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00384	0.00389	0.00386
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00453	-0.00457	-0.00454

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01154	0.01270	0.05868
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00017	0.00130	0.04729
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01111	0.01232	0.05879
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00018	0.00134	0.04785
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00389	0.00394	0.00390
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00448	-0.00451	-0.00448
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01064	0.01200	0.05862
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00025	0.00156	0.04824
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01258	0.01362	0.05912
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00096	0.00197	0.04748
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00377	0.00381	0.00378
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00458	-0.00461	-0.00458
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00389	0.00394	0.00390
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00448	-0.00451	-0.00448
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00378	0.00382	0.00379
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00459	-0.00462	-0.00459
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02006	0.02129	0.08299
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00850	0.00969	0.07142
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01962	0.02086	0.08336
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00848	0.00968	0.07221
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00388	0.00394	0.00390
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00447	-0.00451	-0.00448
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01915	0.02052	0.08307
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00855	0.00988	0.07246
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02113	0.02223	0.08348
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00932	0.01040	0.07165
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00377	0.00381	0.00378
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00459	-0.00462	-0.00458
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00388	0.00394	0.00390
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00447	-0.00451	-0.00448
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00377	0.00382	0.00378
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00458	-0.00462	-0.00459

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)**	0.00123	0.00349	0.05081
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01259	0.01490	0.06214
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00000	0.00225	0.04951
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01092	0.01321	0.06042
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00317	-0.00333	-0.00332
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00518	0.00513	0.00509
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00035	0.00204	0.04952
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01002	0.01240	0.05990
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00067	0.00306	0.05058
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01227	0.01470	0.06216
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00319	-0.00339	-0.00340
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00514	0.00505	0.00501
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00317	-0.00333	-0.00332
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00518	0.00513	0.00509
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00321	-0.00340	-0.00340
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00515	0.00505	0.00501
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00902	0.01181	0.07794
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02057	0.02337	0.08945
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00777	0.01045	0.07610
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01887	0.02161	0.08721
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00320	-0.00333	-0.00332
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00515	0.00512	0.00509
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00742	0.00997	0.07609
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01797	0.02059	0.08666
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00847	0.01136	0.07822
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02024	0.02317	0.09000
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00322	-0.00339	-0.00340
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00511	0.00504	0.00501
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00320	-0.00333	-0.00332
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00515	0.00512	0.00509
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00324	-0.00340	-0.00340
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00511	0.00504	0.00501

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00148	0.00370	0.05095
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01287	0.01513	0.06232
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00020	0.00239	0.04961
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01116	0.01339	0.06055
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00297	-0.00311	-0.00313
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00535	0.00529	0.00526
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00015	0.00218	0.04961
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01026	0.01260	0.06002
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00100	0.00333	0.05078
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01263	0.01500	0.06239
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00300	-0.00318	-0.00320
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00531	0.00522	0.00518
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00297	-0.00311	-0.00313
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00535	0.00530	0.00526
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00302	-0.00319	-0.00321
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00532	0.00522	0.00518
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00930	0.01202	0.07811
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02089	0.02364	0.08965
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00800	0.01062	0.07628
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01915	0.02178	0.08742
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00299	-0.00313	-0.00312
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00533	0.00531	0.00527
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00765	0.01037	0.07625
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01824	0.02101	0.08686
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00883	0.01169	0.07843
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02064	0.02356	0.09023
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00301	-0.00320	-0.00319
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00529	0.00523	0.00519
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00299	-0.00313	-0.00312
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00533	0.00531	0.00527
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00303	-0.00320	-0.00320
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00530	0.00523	0.00519

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)**	0.01580	0.01972	0.10766
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01077	0.01471	0.10263
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01574	0.01967	0.10761
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01072	0.01466	0.10258
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01583	0.01976	0.10770
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01080	0.01475	0.10267
	(D * !SCD * SCE * !Q * Q_N)	0.01588	0.01979	0.10773
	(D * !SCD * SCE * !Q * Q_N)	0.01086	0.01478	0.10270
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01588	0.01980	0.10772
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01086	0.01478	0.10269
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01579	0.01971	0.10763
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01076	0.01469	0.10261
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01579	0.01971	0.10763
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01076	0.01469	0.10261
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01584	0.01977	0.10771
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01082	0.01476	0.10268
	(!D * !SCE * !Q * Q_N)	0.01579	0.01970	0.10764
	(!D * !SCE * !Q * Q_N)	0.01076	0.01468	0.10261
	(!D * !SCD * SCE * !Q * Q_N)	0.01588	0.01980	0.10772
	(!D * !SCD * SCE * !Q * Q_N)	0.01086	0.01477	0.10269
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01588	0.01980	0.10771
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01086	0.01478	0.10269

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01590	0.01983	0.10829
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01096	0.01488	0.10335
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01584	0.01977	0.10823
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01091	0.01482	0.10330
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01593	0.01986	0.10832
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01099	0.01491	0.10339
	(D * !SCD * SCE * !Q * Q_N)	0.01596	0.01988	0.10824
	(D * !SCD * SCE * !Q * Q_N)	0.01103	0.01493	0.10331
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01596	0.01985	0.10823
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01103	0.01493	0.10329
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01587	0.01979	0.10823
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01094	0.01484	0.10330
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01587	0.01979	0.10823
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01094	0.01484	0.10330
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01594	0.01988	0.10833
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01101	0.01492	0.10340
	(!D * !SCE * !Q * Q_N)	0.01587	0.01979	0.10815
	(!D * !SCE * !Q * Q_N)	0.01094	0.01484	0.10322
	(!D * !SCD * SCE * !Q * Q_N)	0.01596	0.01985	0.10833
	(!D * !SCD * SCE * !Q * Q_N)	0.01103	0.01492	0.10340
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01596	0.01985	0.10822
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01103	0.01493	0.10329

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)	0.00858	0.01374	0.10177
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01359	0.01878	0.10680
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01557	0.02084	0.11145
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02039	0.02569	0.11627
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00852	0.01369	0.10171
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01354	0.01873	0.10675
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01551	0.02079	0.11136
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02034	0.02560	0.11618
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01749	0.02283	0.11211
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02273	0.02809	0.11736
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00861	0.01377	0.10180
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01363	0.01881	0.10683
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01560	0.02087	0.11144
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02042	0.02572	0.11627
	(D * !SCD * SCE * !Q * Q_N)	0.00778	0.01295	0.10106
	(D * !SCD * SCE * !Q * Q_N)	0.01280	0.01800	0.10610
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00778	0.01295	0.10104
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01280	0.01800	0.10605
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00769	0.01286	0.10094
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01271	0.01790	0.10595
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00769	0.01286	0.10094
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01271	0.01790	0.10595
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00862	0.01379	0.10181
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01364	0.01883	0.10685
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01564	0.02091	0.11150
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02045	0.02574	0.11633
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01734	0.02267	0.11195
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02255	0.02791	0.11717
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01745	0.02280	0.11213
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02268	0.02805	0.11738
	(!D * !SCE * !Q * Q_N)	0.00769	0.01286	0.10097
	(!D * !SCE * !Q * Q_N)	0.01271	0.01791	0.10600
	(!D * !SCD * SCE * !Q * Q_N)	0.00778	0.01296	0.10106
	(!D * !SCD * SCE * !Q * Q_N)	0.01280	0.01800	0.10610
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00778	0.01296	0.10104
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01280	0.01800	0.10605

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00852	0.01379	0.10293
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01344	0.01874	0.10784
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01565	0.02104	0.11260
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02038	0.02579	0.11732
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00847	0.01374	0.10287
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01339	0.01869	0.10779
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01560	0.02098	0.11264
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02032	0.02573	0.11736
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01743	0.02287	0.11313
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02258	0.02805	0.11828
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00856	0.01382	0.10296
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01348	0.01877	0.10788
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01569	0.02106	0.11261
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02041	0.02581	0.11735
	(D * !SCD * SCE * !Q * Q_N)	0.00788	0.01316	0.10215
	(D * !SCD * SCE * !Q * Q_N)	0.01280	0.01811	0.10709
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00788	0.01315	0.10212
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01280	0.01810	0.10706
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00778	0.01306	0.10203
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01270	0.01801	0.10697
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00778	0.01306	0.10203
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01270	0.01801	0.10697
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00857	0.01384	0.10297
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01349	0.01879	0.10789
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01572	0.02110	0.11266
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02044	0.02584	0.11739
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01728	0.02272	0.11298
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02240	0.02786	0.11813
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01738	0.02284	0.11311
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02252	0.02801	0.11828
	(!D * !SCE * !Q * Q_N)	0.00778	0.01306	0.10206
	(!D * !SCE * !Q * Q_N)	0.01270	0.01801	0.10700
	(!D * !SCD * SCE * !Q * Q_N)	0.00788	0.01316	0.10215
	(!D * !SCD * SCE * !Q * Q_N)	0.01280	0.01811	0.10709
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00788	0.01316	0.10212
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01280	0.01811	0.10706

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00203	0.00198	0.00427	0.00587	0.00297	1.26639

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	42.49170	63.25360

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)	0.22669	0.82377	7.99604

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)	0.19558	0.59884	4.77510
	RESET_B->Q (FF)	0.26589	0.72057	5.22254

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)	-0.03556	-0.02756	1.10875
	setup	CLK_N (F)	0.13296	0.11018	-1.04060

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)	-0.11607	-0.15818	-0.39175
	setup	CLK_N (F)	0.24764	0.27182	0.43885

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)	-0.03556	-0.02756	1.10875
	hold	CLK_N (F)	-0.03915	-0.02760	1.10856
	setup	CLK_N (F)	0.13075	0.11018	-1.04198
	setup	CLK_N (F)	0.13296	0.10814	-1.04060

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)	-0.11614	-0.15831	-0.39188
	hold	CLK_N (F)	-0.11607	-0.15818	-0.39175
	setup	CLK_N (F)	0.24764	0.27180	0.43885
	setup	CLK_N (F)	0.24741	0.27182	0.43874

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)	-0.05822	-0.03708	1.09122
	setup	CLK_N (F)	0.16109	0.12500	-1.01280

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)	-0.14682	-0.17356	-0.45358
	setup	CLK_N (F)	0.29844	0.30223	0.50676

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)	-0.05822	-0.03708	1.09122
	hold	CLK_N (F)	-0.06731	-0.04766	1.06843
	setup	CLK_N (F)	0.15350	0.11661	-1.03301
	setup	CLK_N (F)	0.16109	0.12500	-1.01280

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)	-0.15823	-0.18414	-0.46605
	hold	CLK_N (F)	-0.14682	-0.17356	-0.45358
	setup	CLK_N (F)	0.29769	0.30223	0.50676
	setup	CLK_N (F)	0.29844	0.30012	0.49705

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)	-0.04300	-0.03487	1.40730
	setup	CLK_N (F)	0.30076	0.24283	-0.93754

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)	-0.09764	-0.10258	-0.14242
	setup	CLK_N (F)	0.26680	0.26769	0.36701

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)	-0.16116	-0.12654	1.40730
	hold	CLK_N (F)	-0.04300	-0.03487	1.00058
	setup	CLK_N (F)	0.30076	0.24283	-1.38034
	setup	CLK_N (F)	0.13694	0.11853	-0.93754

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)	-0.09764	-0.10258	-0.14242
	hold	CLK_N (F)	-0.13281	-0.15395	-0.32202
	setup	CLK_N (F)	0.19452	0.18143	0.17385
	setup	CLK_N (F)	0.26680	0.26769	0.36701

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)	0.18068	0.12266	-0.77782
	removal	CLK_N (F)	-0.12847	-0.07185	0.86334

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)	0.17279	0.11459	-0.79019
	recovery	CLK_N (F)	0.16466	0.10111	-0.84216
	recovery	CLK_N (F)	0.16135	0.09395	-0.85613
	recovery	CLK_N (F)	0.18068	0.12266	-0.77782
	removal	CLK_N (F)	-0.14570	-0.09117	0.79402
	removal	CLK_N (F)	-0.13456	-0.07908	0.84716
	removal	CLK_N (F)	-0.12847	-0.07185	0.86334
	removal	CLK_N (F)	-0.15013	-0.10074	0.78359

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 ()	0.11331	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.13801	0.65918	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 ()	0.13801	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.18000	0.65918	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 ()	0.12566	0.65918	16.50020
	min_pulse_width	CLK_N ()	0.12319	0.65918	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	0.02752	0.03309	0.12525
	CLK_N	0.03261	0.03817	0.13060

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.02446	0.02983	0.12306
	CLK_N	0.02895	0.03431	0.12746
	RESET_B	0.02654	0.03162	0.13020
	RESET_B	0.03753	0.04265	0.14071

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)**	0.00184	0.00186	0.00184
	(CLK_N * RESET_B * SCD * SCE)	-0.00020	-0.00021	-0.00019
	(CLK_N * RESET_B * SCD * !SCE)	0.01460	0.01634	0.06018
	(CLK_N * RESET_B * SCD * !SCE)	0.01074	0.01247	0.05630
	(CLK_N * RESET_B * !SCD * !SCE)	0.01465	0.01640	0.06020
	(CLK_N * RESET_B * !SCD * !SCE)	0.01079	0.01253	0.05633
	(CLK_N * !SCD * SCE)	0.00127	0.00128	0.00126
	(CLK_N * !SCD * SCE)	-0.00101	-0.00102	-0.00103
	(CLK_N * !RESET_B * SCD * SCE)	0.00105	0.00106	0.00104
	(CLK_N * !RESET_B * SCD * SCE)	-0.00122	-0.00123	-0.00124
	(CLK_N * !RESET_B * SCD * !SCE)	0.00062	0.00062	0.00056
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00161	-0.00164	-0.00172
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00061	0.00061	0.00056
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00166	-0.00168	-0.00174
	(!CLK_N * RESET_B * SCD * SCE)	0.00182	0.00182	0.00182
	(!CLK_N * RESET_B * SCD * SCE)	-0.00022	-0.00022	-0.00021
	(!CLK_N * RESET_B * SCD * !SCE)	0.00638	0.00781	0.04491
	(!CLK_N * RESET_B * SCD * !SCE)	0.00247	0.00390	0.04100
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00644	0.00787	0.04494
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00254	0.00395	0.04103
	(!CLK_N * !SCD * SCE)	0.00106	0.00106	0.00105
	(!CLK_N * !SCD * SCE)	-0.00122	-0.00123	-0.00124
	(!CLK_N * !RESET_B * SCD * SCE)	0.00105	0.00105	0.00104
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00122	-0.00123	-0.00125
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00062	0.00062	0.00056
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00164	-0.00164	-0.00173
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00061	0.00061	0.00056
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00169	-0.00169	-0.00174

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)**	-0.00076	-0.00077	-0.00082
	(CLK_N * RESET_B * SCD * SCE)	0.00128	0.00127	0.00123
	(CLK_N * RESET_B * SCD * !SCE)	0.01088	0.01339	0.05819
	(CLK_N * RESET_B * SCD * !SCE)	0.01476	0.01726	0.06206
	(CLK_N * RESET_B * !SCD * !SCE)	0.01088	0.01340	0.05824
	(CLK_N * RESET_B * !SCD * !SCE)	0.01477	0.01727	0.06211
	(CLK_N * !SCD * SCE)	-0.00019	-0.00019	-0.00019
	(CLK_N * !SCD * SCE)	0.00209	0.00209	0.00209
	(CLK_N * !RESET_B * SCD * SCE)	-0.00039	-0.00039	-0.00039
	(CLK_N * !RESET_B * SCD * SCE)	0.00188	0.00189	0.00188
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00008	-0.00009	-0.00008
	(CLK_N * !RESET_B * SCD * !SCE)	0.00219	0.00223	0.00220
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00009	-0.00009	-0.00008
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00220	0.00223	0.00220
	(!CLK_N * RESET_B * SCD * SCE)	-0.00078	-0.00079	-0.00084
	(!CLK_N * RESET_B * SCD * SCE)	0.00126	0.00126	0.00121
	(!CLK_N * RESET_B * SCD * !SCE)	0.00151	0.00348	0.04108
	(!CLK_N * RESET_B * SCD * !SCE)	0.00541	0.00740	0.04499
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00151	0.00349	0.04113
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00541	0.00740	0.04504
	(!CLK_N * !SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK_N * !SCD * SCE)	0.00188	0.00188	0.00188
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK_N * !RESET_B * SCD * SCE)	0.00188	0.00188	0.00188
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00009	-0.00009	-0.00009
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00219	0.00222	0.00220
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00009	-0.00010	-0.00009
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00219	0.00222	0.00220

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)**	0.01645	0.01783	0.05679
	(CLK_N * D * RESET_B * SCE)	0.01157	0.01293	0.05190
	(CLK_N * D * RESET_B * !SCE)	0.00180	0.00158	0.00156
	(CLK_N * D * RESET_B * !SCE)	-0.00076	-0.00099	-0.00099
	(CLK_N * D * !RESET_B * SCE)	0.00099	0.00099	0.00097
	(CLK_N * D * !RESET_B * SCE)	-0.00117	-0.00117	-0.00116
	(CLK_N * D * !RESET_B * !SCE)	0.00065	0.00065	0.00065
	(CLK_N * D * !RESET_B * !SCE)	-0.00146	-0.00147	-0.00147
	(CLK_N * !D * RESET_B * SCE)	0.01749	0.01889	0.05742
	(CLK_N * !D * RESET_B * SCE)	0.01236	0.01376	0.05229
	(CLK_N * !D * !RESET_B * SCE)	0.00099	0.00099	0.00097
	(CLK_N * !D * !RESET_B * SCE)	-0.00117	-0.00117	-0.00116
	(!D * RESET_B * !SCE)	0.00134	0.00135	0.00134
	(!D * RESET_B * !SCE)	-0.00121	-0.00122	-0.00121
	(!D * !RESET_B * !SCE)	0.00076	0.00076	0.00076
	(!D * !RESET_B * !SCE)	-0.00157	-0.00158	-0.00157
	(!CLK_N * D * RESET_B * SCE)	0.00822	0.00929	0.04242
	(!CLK_N * D * RESET_B * SCE)	0.00330	0.00435	0.03750
	(!CLK_N * D * RESET_B * !SCE)	0.00178	0.00156	0.00155
	(!CLK_N * D * RESET_B * !SCE)	-0.00078	-0.00101	-0.00101
	(!CLK_N * D * !RESET_B * SCE)	0.00098	0.00098	0.00096
	(!CLK_N * D * !RESET_B * SCE)	-0.00117	-0.00118	-0.00116
	(!CLK_N * D * !RESET_B * !SCE)	0.00064	0.00065	0.00065
	(!CLK_N * D * !RESET_B * !SCE)	-0.00147	-0.00148	-0.00147
	(!CLK_N * !D * RESET_B * SCE)	0.00924	0.01018	0.04288
	(!CLK_N * !D * RESET_B * SCE)	0.00407	0.00500	0.03771
	(!CLK_N * !D * !RESET_B * SCE)	0.00098	0.00098	0.00096
	(!CLK_N * !D * !RESET_B * SCE)	-0.00117	-0.00118	-0.00116

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)**	0.01270	0.01401	0.05319
	(CLK_N * D * RESET_B * SCE)	0.01759	0.01892	0.05806
	(CLK_N * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00052
	(CLK_N * D * RESET_B * !SCE)	0.00207	0.00208	0.00205
	(CLK_N * D * !RESET_B * SCE)	-0.00029	-0.00030	-0.00030
	(CLK_N * D * !RESET_B * SCE)	0.00183	0.00186	0.00181
	(CLK_N * D * !RESET_B * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK_N * D * !RESET_B * !SCE)	0.00194	0.00194	0.00193
	(CLK_N * !D * RESET_B * SCE)	0.01239	0.01384	0.05353
	(CLK_N * !D * RESET_B * SCE)	0.01752	0.01898	0.05866
	(CLK_N * !D * !RESET_B * SCE)	-0.00029	-0.00030	-0.00030
	(CLK_N * !D * !RESET_B * SCE)	0.00183	0.00186	0.00181
	(!D * RESET_B * !SCE)	-0.00037	-0.00046	-0.00047
	(!D * RESET_B * !SCE)	0.00218	0.00212	0.00209
	(!D * !RESET_B * !SCE)	-0.00028	-0.00030	-0.00032
	(!D * !RESET_B * !SCE)	0.00213	0.00212	0.00206
	(!CLK_N * D * RESET_B * SCE)	0.00306	0.00414	0.03761
	(!CLK_N * D * RESET_B * SCE)	0.00799	0.00909	0.04252
	(!CLK_N * D * RESET_B * !SCE)	-0.00050	-0.00052	-0.00054
	(!CLK_N * D * RESET_B * !SCE)	0.00205	0.00206	0.00204
	(!CLK_N * D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK_N * D * !RESET_B * SCE)	0.00183	0.00185	0.00181
	(!CLK_N * D * !RESET_B * !SCE)	-0.00019	-0.00019	-0.00019
	(!CLK_N * D * !RESET_B * !SCE)	0.00193	0.00194	0.00193
	(!CLK_N * !D * RESET_B * SCE)	0.00259	0.00376	0.03745
	(!CLK_N * !D * RESET_B * SCE)	0.00776	0.00895	0.04260
	(!CLK_N * !D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK_N * !D * !RESET_B * SCE)	0.00183	0.00185	0.00181

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)	0.00663	0.00906	0.06133
	(CLK_N * D * RESET_B * SCD)	-0.00003	0.00238	0.05467
	(CLK_N * D * RESET_B * !SCD)	0.01901	0.02168	0.07653
	(CLK_N * D * RESET_B * !SCD)	0.01447	0.01714	0.07198
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00633	0.00902	0.06132
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00002	0.00268	0.05501
	(CLK_N * !D * RESET_B * SCD)	0.02065	0.02503	0.11681
	(CLK_N * !D * RESET_B * SCD)	0.01208	0.01643	0.10825
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00661	0.00905	0.06131
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00005	0.00236	0.05466
	(!CLK_N * D * RESET_B * !SCD)	0.00957	0.01221	0.06666
	(!CLK_N * D * RESET_B * !SCD)	0.00508	0.00771	0.06213
	(!CLK_N * !D * RESET_B * SCD)	0.01244	0.01633	0.10087
	(!CLK_N * !D * RESET_B * SCD)	0.00383	0.00769	0.09228

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)	0.00010	0.00326	0.05575
	(CLK_N * D * RESET_B * SCD)	0.00677	0.00993	0.06242
	(CLK_N * D * RESET_B * !SCD)	0.01446	0.01749	0.07154
	(CLK_N * D * RESET_B * !SCD)	0.01902	0.02205	0.07593
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00011	0.00297	0.05534
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00617	0.00926	0.06164
	(CLK_N * !D * RESET_B * SCD)	0.01133	0.01576	0.10577
	(CLK_N * !D * RESET_B * SCD)	0.01990	0.02436	0.11436
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00008	0.00322	0.05573
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00675	0.00990	0.06240
	(!CLK_N * D * RESET_B * !SCD)	0.00626	0.00918	0.06310
	(!CLK_N * D * RESET_B * !SCD)	0.01078	0.01369	0.06743
	(!CLK_N * !D * RESET_B * SCD)	0.00196	0.00615	0.09090
	(!CLK_N * !D * RESET_B * SCD)	0.01057	0.01478	0.09952

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.02102	0.02217	0.08318
	(CLK_N * D * SCD * SCE * !Q)	0.00970	0.01078	0.07186
	(CLK_N * D * SCD * !SCE * !Q)	0.02061	0.02172	0.08355
	(CLK_N * D * SCD * !SCE * !Q)	0.00970	0.01080	0.07263
	(CLK_N * D * !SCD * SCE * !Q)	0.00446	0.00449	0.00445
	(CLK_N * D * !SCD * SCE * !Q)	-0.00400	-0.00401	-0.00398
	(CLK_N * D * !SCD * !SCE * !Q)	0.02014	0.02140	0.08345
	(CLK_N * D * !SCD * !SCE * !Q)	0.00977	0.01102	0.07307
	(CLK_N * !D * SCD * SCE * !Q)	0.02207	0.02309	0.08396
	(CLK_N * !D * SCD * SCE * !Q)	0.01050	0.01145	0.07236
	(CLK_N * !D * SCD * !SCE * !Q)	0.00433	0.00436	0.00432
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00411	-0.00412	-0.00409
	(CLK_N * !D * !SCD * SCE * !Q)	0.00446	0.00449	0.00445
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00400	-0.00401	-0.00398
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00434	0.00437	0.00433
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00412	-0.00413	-0.00410
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01204	0.01316	0.05887
	(!CLK_N * D * SCD * SCE * !Q)	0.00064	0.00173	0.04749
	(!CLK_N * D * SCD * !SCE * !Q)	0.01164	0.01281	0.05903
	(!CLK_N * D * SCD * !SCE * !Q)	0.00068	0.00181	0.04805
	(!CLK_N * D * !SCD * SCE * !Q)	0.00433	0.00439	0.00434
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00409	-0.00412	-0.00409
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01115	0.01249	0.05887
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00076	0.00202	0.04843
	(!CLK_N * !D * SCD * SCE * !Q)	0.01307	0.01405	0.05931
	(!CLK_N * !D * SCD * SCE * !Q)	0.00142	0.00240	0.04765
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00420	0.00426	0.00422
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00420	-0.00423	-0.00420
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00433	0.00439	0.00434
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00409	-0.00412	-0.00409
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00421	0.00427	0.00422
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00421	-0.00424	-0.00421

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00971	0.01214	0.07787
	(CLK_N * D * SCD * SCE * !Q)	0.02113	0.02355	0.08917
	(CLK_N * D * SCD * !SCE * !Q)	0.00840	0.01074	0.07602
	(CLK_N * D * SCD * !SCE * !Q)	0.01939	0.02171	0.08694
	(CLK_N * D * !SCD * SCE * !Q)	-0.00367	-0.00381	-0.00382
	(CLK_N * D * !SCD * SCE * !Q)	0.00469	0.00466	0.00464
	(CLK_N * D * !SCD * !SCE * !Q)	0.00806	0.01054	0.07600
	(CLK_N * D * !SCD * !SCE * !Q)	0.01848	0.02097	0.08639
	(CLK_N * !D * SCD * SCE * !Q)	0.00927	0.01190	0.07818
	(CLK_N * !D * SCD * SCE * !Q)	0.02090	0.02352	0.08973
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00369	-0.00387	-0.00389
	(CLK_N * !D * SCD * !SCE * !Q)	0.00465	0.00459	0.00455
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00368	-0.00381	-0.00382
	(CLK_N * !D * !SCD * SCE * !Q)	0.00469	0.00466	0.00464
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00371	-0.00388	-0.00389
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00466	0.00460	0.00456
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00113	0.00334	0.05036
	(!CLK_N * D * SCD * SCE * !Q)	0.01252	0.01479	0.06175
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00017	0.00204	0.04903
	(!CLK_N * D * SCD * !SCE * !Q)	0.01080	0.01304	0.05999
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00355	-0.00371	-0.00371
	(!CLK_N * D * !SCD * SCE * !Q)	0.00482	0.00476	0.00474
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00052	0.00181	0.04903
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00990	0.01227	0.05946
	(!CLK_N * !D * SCD * SCE * !Q)	0.00067	0.00300	0.05020
	(!CLK_N * !D * SCD * SCE * !Q)	0.01230	0.01469	0.06184
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00357	-0.00377	-0.00379
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00478	0.00469	0.00466
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00355	-0.00371	-0.00371
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00482	0.00476	0.00474
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00359	-0.00378	-0.00379
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00479	0.00470	0.00466

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)**	0.01455	0.01869	0.10817
	(D * RESET_B * SCD * SCE * Q)	0.00975	0.01387	0.10337
	(D * RESET_B * SCD * SCE * !Q)	0.02312	0.02738	0.11824
	(D * RESET_B * SCD * SCE * !Q)	0.01835	0.02260	0.11347
	(D * RESET_B * SCD * !SCE * Q)	0.01449	0.01864	0.10812
	(D * RESET_B * SCD * !SCE * Q)	0.00969	0.01382	0.10332
	(D * RESET_B * SCD * !SCE * !Q)	0.02308	0.02734	0.11819
	(D * RESET_B * SCD * !SCE * !Q)	0.01831	0.02257	0.11341
	(D * RESET_B * !SCD * SCE * Q)	0.02272	0.02674	0.11845
	(D * RESET_B * !SCD * SCE * Q)	0.01791	0.02191	0.11366
	(D * RESET_B * !SCD * !SCE * Q)	0.01458	0.01872	0.10821
	(D * RESET_B * !SCD * !SCE * Q)	0.00978	0.01391	0.10341
	(D * RESET_B * !SCD * !SCE * !Q)	0.02317	0.02736	0.11829
	(D * RESET_B * !SCD * !SCE * !Q)	0.01840	0.02259	0.11352
	(D * !SCD * SCE * !Q)	0.01416	0.01831	0.10780
	(D * !SCD * SCE * !Q)	0.00936	0.01350	0.10300
	(D * !RESET_B * SCD * SCE * !Q)	0.01416	0.01832	0.10778
	(D * !RESET_B * SCD * SCE * !Q)	0.00936	0.01351	0.10298
	(D * !RESET_B * SCD * !SCE * !Q)	0.01407	0.01823	0.10768
	(D * !RESET_B * SCD * !SCE * !Q)	0.00927	0.01341	0.10289
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01407	0.01823	0.10768
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00927	0.01341	0.10289
	(!D * RESET_B * SCD * SCE * Q)	0.01460	0.01874	0.10822
	(!D * RESET_B * SCD * SCE * Q)	0.00979	0.01392	0.10342
	(!D * RESET_B * SCD * SCE * !Q)	0.02319	0.02738	0.11832
	(!D * RESET_B * SCD * SCE * !Q)	0.01842	0.02261	0.11353
	(!D * RESET_B * !SCE * Q)	0.02260	0.02662	0.11833
	(!D * RESET_B * !SCE * Q)	0.01776	0.02176	0.11351
	(!D * RESET_B * !SCD * SCE * Q)	0.02267	0.02670	0.11844
	(!D * RESET_B * !SCD * SCE * Q)	0.01785	0.02186	0.11362
	(!D * !SCE * !Q)	0.01407	0.01822	0.10770
	(!D * !SCE * !Q)	0.00927	0.01341	0.10291
	(!D * !SCD * SCE * !Q)	0.01416	0.01831	0.10780
	(!D * !SCD * SCE * !Q)	0.00936	0.01350	0.10300
	(!D * !RESET_B * SCD * SCE * !Q)	0.01416	0.01832	0.10778
	(!D * !RESET_B * SCD * SCE * !Q)	0.00936	0.01351	0.10298

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)	0.01076	0.01590	0.10506
	(D * RESET_B * SCD * SCE * Q)	0.01555	0.02071	0.10986
	(D * RESET_B * SCD * !SCE * Q)	0.01071	0.01584	0.10500
	(D * RESET_B * SCD * !SCE * Q)	0.01550	0.02066	0.10981
	(D * RESET_B * !SCD * !SCE * Q)	0.01080	0.01593	0.10509
	(D * RESET_B * !SCD * !SCE * Q)	0.01559	0.02074	0.10989
	(D * !SCD * SCE * !Q)	0.01051	0.01565	0.10482
	(D * !SCD * SCE * !Q)	0.01529	0.02046	0.10962
	(D * !RESET_B * SCD * SCE * !Q)	0.01051	0.01559	0.10480
	(D * !RESET_B * SCD * SCE * !Q)	0.01530	0.02040	0.10960
	(D * !RESET_B * SCD * !SCE * !Q)	0.01042	0.01549	0.10470
	(D * !RESET_B * SCD * !SCE * !Q)	0.01520	0.02031	0.10951
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01042	0.01549	0.10470
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01520	0.02031	0.10951
	(!D * RESET_B * SCD * SCE * Q)	0.01081	0.01595	0.10510
	(!D * RESET_B * SCD * SCE * Q)	0.01560	0.02076	0.10991
	(!D * !SCE * !Q)	0.01041	0.01556	0.10472
	(!D * !SCE * !Q)	0.01520	0.02037	0.10953
	(!D * !SCD * SCE * !Q)	0.01051	0.01566	0.10482
	(!D * !SCD * SCE * !Q)	0.01529	0.02047	0.10962
	(!D * !RESET_B * SCD * SCE * !Q)	0.01051	0.01559	0.10480
	(!D * !RESET_B * SCD * SCE * !Q)	0.01530	0.02040	0.10960

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00195	0.00202	0.00427	0.00580	0.00317	1.27834
sky130_fd_sc_hs__sdfrtp_2	0.00188	0.00203	0.00436	0.00590	0.00317	2.56219
sky130_fd_sc_hs__sdfrtp_4	0.00189	0.00201	0.00439	0.00581	0.00317	4.73177

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	42.49010	63.25160
sky130_fd_sc_hs__sdfrtp_2	0.00000	44.96230	68.84370
sky130_fd_sc_hs__sdfrtp_4	0.00000	62.77870	82.77410

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)	0.18213	0.64321	6.08043
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.19373	0.56416	6.15989
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.22501	0.52979	6.14229

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.18934	0.45748	2.87185
	RESET_B->Q (FF)	0.26432	0.71982	5.24986
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.19556	0.42391	2.91185
	RESET_B->Q (FF)	0.27181	0.68929	5.29841
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.20452	0.39562	2.75798
	RESET_B->Q (FF)	0.27904	0.65925	5.13971

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)	-0.10697	-0.20883	-1.17286
	setup	CLK (R)	0.19285	0.25757	1.27553
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10487	-0.20131	-1.16091
	setup	CLK (R)	0.18912	0.25078	1.26532
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10545	-0.20131	-1.16010
	setup	CLK (R)	0.17730	0.24626	1.26536

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)	-0.09891	-0.20753	-2.08765
	setup	CLK (R)	0.20261	0.30268	2.40200
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09797	-0.19873	-2.04633
	setup	CLK (R)	0.19317	0.29141	2.36518
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10247	-0.20461	-2.03295
	setup	CLK (R)	0.19083	0.28672	2.35795

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)	-0.10697	-0.20883	-1.17286
	hold	CLK (R)	-0.11051	-0.20890	-1.17564
	setup	CLK (R)	0.19285	0.25685	1.27553
	setup	CLK (R)	0.19084	0.25757	1.27381
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10526	-0.20131	-1.16091
	hold	CLK (R)	-0.10487	-0.20322	-1.16155
	setup	CLK (R)	0.18912	0.25074	1.26532
	setup	CLK (R)	0.18820	0.25078	1.26366
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10545	-0.20131	-1.16010
	hold	CLK (R)	-0.10749	-0.20370	-1.16048
	setup	CLK (R)	0.17728	0.24602	1.26515
	setup	CLK (R)	0.17730	0.24626	1.26536

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)	-0.09891	-0.20767	-2.08777
	hold	CLK (R)	-0.10019	-0.20753	-2.08765
	setup	CLK (R)	0.20256	0.30078	2.40200
	setup	CLK (R)	0.20261	0.30268	2.40062
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09797	-0.19873	-2.05363
	hold	CLK (R)	-0.09893	-0.19878	-2.04633
	setup	CLK (R)	0.19317	0.29141	2.36353
	setup	CLK (R)	0.19115	0.29072	2.36518
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10247	-0.20467	-2.03342
	hold	CLK (R)	-0.10260	-0.20461	-2.03295
	setup	CLK (R)	0.19083	0.28672	2.35749
	setup	CLK (R)	0.19064	0.28672	2.35795

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)	-0.13159	-0.22029	-1.15525
	setup	CLK (R)	0.22267	0.27806	1.24445
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12783	-0.21429	-1.14230
	setup	CLK (R)	0.22232	0.27406	1.23424
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13058	-0.21429	-1.13635
	setup	CLK (R)	0.20778	0.26444	1.22692

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)	-0.13009	-0.22775	-2.19938
	setup	CLK (R)	0.25287	0.33428	2.47268
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13348	-0.22789	-2.18384
	setup	CLK (R)	0.24703	0.32737	2.45555
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13723	-0.23039	-2.17410
	setup	CLK (R)	0.24770	0.32660	2.45460

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)	-0.13159	-0.22029	-1.15525
	hold	CLK (R)	-0.13976	-0.23008	-1.16678
	setup	CLK (R)	0.21457	0.26782	1.24060
	setup	CLK (R)	0.22267	0.27806	1.24445
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12783	-0.21429	-1.14230
	hold	CLK (R)	-0.13872	-0.22592	-1.14929
	setup	CLK (R)	0.21485	0.26262	1.22684
	setup	CLK (R)	0.22232	0.27406	1.23424
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13058	-0.21429	-1.13635
	hold	CLK (R)	-0.13759	-0.22461	-1.14175
	setup	CLK (R)	0.20420	0.25648	1.22338
	setup	CLK (R)	0.20778	0.26444	1.22692

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)	-0.14164	-0.23529	-2.20431
	hold	CLK (R)	-0.13009	-0.22775	-2.19938
	setup	CLK (R)	0.25287	0.33428	2.46660
	setup	CLK (R)	0.24808	0.33070	2.47268
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14137	-0.23406	-2.18384
	hold	CLK (R)	-0.13348	-0.22789	-2.18442
	setup	CLK (R)	0.24703	0.32737	2.45205
	setup	CLK (R)	0.24369	0.32617	2.45555
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14669	-0.23859	-2.18023
	hold	CLK (R)	-0.13723	-0.23039	-2.17410
	setup	CLK (R)	0.24770	0.32660	2.45333
	setup	CLK (R)	0.23902	0.32217	2.45460

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)	-0.11464	-0.17813	-0.30233
	setup	CLK (R)	0.25687	0.27171	1.35695
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11267	-0.17040	-0.28480
	setup	CLK (R)	0.24604	0.26287	1.36543
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11348	-0.17595	-0.27391
	setup	CLK (R)	0.24454	0.26263	1.35791

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)	-0.11056	-0.19593	-2.01080
	setup	CLK (R)	0.25207	0.32748	2.37144
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10715	-0.18874	-1.95288
	setup	CLK (R)	0.24592	0.32160	2.34680
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11370	-0.19412	-1.94455
	setup	CLK (R)	0.23521	0.31396	2.34288

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)	-0.14353	-0.17813	-0.30233
	hold	CLK (R)	-0.11464	-0.21642	-1.26743
	setup	CLK (R)	0.25687	0.27171	0.44988
	setup	CLK (R)	0.19371	0.26444	1.35695
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14356	-0.17040	-0.28480
	hold	CLK (R)	-0.11267	-0.21290	-1.26935
	setup	CLK (R)	0.24604	0.26232	0.44340
	setup	CLK (R)	0.19506	0.26287	1.36543
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14771	-0.17595	-0.27391
	hold	CLK (R)	-0.11348	-0.21306	-1.26234
	setup	CLK (R)	0.24454	0.26263	0.44477
	setup	CLK (R)	0.18433	0.25646	1.35791

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)	-0.16696	-0.28254	-2.31963
	hold	CLK (R)	-0.11056	-0.19593	-2.01080
	setup	CLK (R)	0.25207	0.32748	2.37144
	setup	CLK (R)	0.21407	0.29141	2.27282
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16089	-0.27299	-2.29506
	hold	CLK (R)	-0.10715	-0.18874	-1.95288
	setup	CLK (R)	0.24592	0.32160	2.34680
	setup	CLK (R)	0.20023	0.27906	2.22193
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16315	-0.27299	-2.29244
	hold	CLK (R)	-0.11370	-0.19412	-1.94455
	setup	CLK (R)	0.23521	0.31396	2.34288
	setup	CLK (R)	0.20177	0.27734	2.21985

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)	0.24310	0.27406	1.57016
	removal	CLK (R)	-0.17206	-0.21569	-1.44574
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.23983	0.27006	1.56384
	removal	CLK (R)	-0.16880	-0.21028	-1.43847
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.22761	0.26281	1.56165
	removal	CLK (R)	-0.17007	-0.21028	-1.43656

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)	0.23398	0.26610	1.57016
	recovery	CLK (R)	0.22496	0.25270	1.53976
	recovery	CLK (R)	0.21985	0.24461	1.52112
	recovery	CLK (R)	0.24310	0.27406	1.56598
	removal	CLK (R)	-0.18510	-0.23618	-1.49705
	removal	CLK (R)	-0.17411	-0.22351	-1.46325
	removal	CLK (R)	-0.17206	-0.21569	-1.44574
	removal	CLK (R)	-0.19240	-0.24518	-1.49812
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.23420	0.26186	1.56282
	recovery	CLK (R)	0.22275	0.25008	1.52909
	recovery	CLK (R)	0.21849	0.23934	1.51642
	recovery	CLK (R)	0.23983	0.27006	1.56384
	removal	CLK (R)	-0.18525	-0.23376	-1.49043
	removal	CLK (R)	-0.17208	-0.21870	-1.45607
	removal	CLK (R)	-0.16880	-0.21028	-1.43847
	removal	CLK (R)	-0.19210	-0.24277	-1.49253
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.22287	0.25577	1.56165
	recovery	CLK (R)	0.21278	0.24368	1.53240
	recovery	CLK (R)	0.20983	0.23514	1.51233
	recovery	CLK (R)	0.22761	0.26281	1.55991
	removal	CLK (R)	-0.18394	-0.23314	-1.48844
	removal	CLK (R)	-0.17146	-0.21809	-1.45009
	removal	CLK (R)	-0.17007	-0.21028	-1.43656
	removal	CLK (R)	-0.18713	-0.24132	-1.49069

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 ()	0.13554	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.10837	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.13801	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.11084	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.13554	0.65918	16.50020
	min_pulse_width	RESET_B ()	0.11331	0.65918	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 ()	0.09108	0.65918	16.50020
	min_pulse_width	CLK ()	0.07379	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.10096	0.65918	16.50020
	min_pulse_width	CLK ()	0.07379	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.11825	0.65918	16.50020
	min_pulse_width	CLK ()	0.07873	0.65918	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 ()	0.17753	0.65918	16.50020
	min_pulse_width	CLK ()	0.18247	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.18741	0.65918	16.50020
	min_pulse_width	CLK ()	0.18741	0.65918	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.17506	0.65918	16.50020
	min_pulse_width	CLK ()	0.18247	0.65918	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	0.03061	0.03499	0.12868
	CLK	0.02554	0.02994	0.12399
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03453	0.03909	0.13296
	CLK	0.02930	0.03389	0.12849
sky130_fd_sc_hs__sdfrtp_4	CLK	0.04286	0.04709	0.14097
	CLK	0.03775	0.04206	0.13727

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.03053	0.03523	0.12611
	CLK	0.02556	0.03010	0.12087
	RESET_B	0.02593	0.03117	0.13046
	RESET_B	0.03737	0.04269	0.14105
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03405	0.03890	0.13017
	CLK	0.02916	0.03387	0.12444
	RESET_B	0.02994	0.03538	0.13643
	RESET_B	0.04148	0.04695	0.14551
sky130_fd_sc_hs__sdfrtp_4	CLK	0.04295	0.04786	0.13934
	CLK	0.03796	0.04280	0.13360
	RESET_B	0.03837	0.04414	0.14807
	RESET_B	0.05023	0.05592	0.15476

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)**	0.00181	0.00182	0.00182
	(CLK * RESET_B * SCD * SCE)	-0.00016	-0.00016	-0.00015
	(CLK * RESET_B * SCD * !SCE)	0.00704	0.00851	0.04584
	(CLK * RESET_B * SCD * !SCE)	0.00318	0.00464	0.04198
	(CLK * RESET_B * !SCD * !SCE)	0.00710	0.00857	0.04587
	(CLK * RESET_B * !SCD * !SCE)	0.00325	0.00470	0.04201
	(CLK * !SCD * SCE)	0.00100	0.00100	0.00098
	(CLK * !SCD * SCE)	-0.00121	-0.00122	-0.00124
	(CLK * !RESET_B * SCD * SCE)	0.00098	0.00098	0.00097
	(CLK * !RESET_B * SCD * SCE)	-0.00122	-0.00122	-0.00124
	(CLK * !RESET_B * SCD * !SCE)	0.00070	0.00070	0.00064
	(CLK * !RESET_B * SCD * !SCE)	-0.00146	-0.00148	-0.00157
	(CLK * !RESET_B * !SCD * !SCE)	0.00069	0.00069	0.00064
	(CLK * !RESET_B * !SCD * !SCE)	-0.00151	-0.00153	-0.00159
	(!CLK * RESET_B * SCD * SCE)	0.00183	0.00185	0.00184
	(!CLK * RESET_B * SCD * SCE)	-0.00013	-0.00015	-0.00013
	(!CLK * RESET_B * SCD * !SCE)	0.01489	0.01668	0.06120
	(!CLK * RESET_B * SCD * !SCE)	0.01084	0.01260	0.05715
	(!CLK * RESET_B * !SCD * !SCE)	0.01496	0.01673	0.06123
	(!CLK * RESET_B * !SCD * !SCE)	0.01090	0.01266	0.05717
	(!CLK * !SCD * SCE)	0.00121	0.00121	0.00119
	(!CLK * !SCD * SCE)	-0.00100	-0.00102	-0.00103
	(!CLK * !RESET_B * SCD * SCE)	0.00099	0.00099	0.00097
	(!CLK * !RESET_B * SCD * SCE)	-0.00121	-0.00123	-0.00124
	(!CLK * !RESET_B * SCD * !SCE)	0.00070	0.00071	0.00064
	(!CLK * !RESET_B * SCD * !SCE)	-0.00146	-0.00148	-0.00157
	(!CLK * !RESET_B * !SCD * !SCE)	0.00070	0.00070	0.00064
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00151	-0.00152	-0.00159

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00181	0.00182	0.00181
	(CLK * RESET_B * SCD * SCE)	-0.00005	-0.00006	-0.00005
	(CLK * RESET_B * SCD * !SCE)	0.00612	0.00773	0.04549
	(CLK * RESET_B * SCD * !SCE)	0.00242	0.00402	0.04179
	(CLK * RESET_B * !SCD * !SCE)	0.00618	0.00778	0.04552
	(CLK * RESET_B * !SCD * !SCE)	0.00249	0.00408	0.04182
	(CLK * !SCD * SCE)	0.00104	0.00104	0.00102
	(CLK * !SCD * SCE)	-0.00107	-0.00107	-0.00109
	(CLK * !RESET_B * SCD * SCE)	0.00102	0.00102	0.00101
	(CLK * !RESET_B * SCD * SCE)	-0.00107	-0.00108	-0.00110
	(CLK * !RESET_B * SCD * !SCE)	0.00074	0.00075	0.00068
	(CLK * !RESET_B * SCD * !SCE)	-0.00131	-0.00133	-0.00142
	(CLK * !RESET_B * !SCD * !SCE)	0.00074	0.00074	0.00069
	(CLK * !RESET_B * !SCD * !SCE)	-0.00136	-0.00138	-0.00144
	(!CLK * RESET_B * SCD * SCE)	0.00171	0.00172	0.00171
	(!CLK * RESET_B * SCD * SCE)	-0.00016	-0.00017	-0.00015
	(!CLK * RESET_B * SCD * !SCE)	0.01412	0.01595	0.06066
	(!CLK * RESET_B * SCD * !SCE)	0.01024	0.01206	0.05677
	(!CLK * RESET_B * !SCD * !SCE)	0.01418	0.01601	0.06069
	(!CLK * RESET_B * !SCD * !SCE)	0.01030	0.01212	0.05680
	(!CLK * !SCD * SCE)	0.00112	0.00113	0.00111
	(!CLK * !SCD * SCE)	-0.00098	-0.00099	-0.00101
	(!CLK * !RESET_B * SCD * SCE)	0.00103	0.00103	0.00101
	(!CLK * !RESET_B * SCD * SCE)	-0.00107	-0.00108	-0.00110
	(!CLK * !RESET_B * SCD * !SCE)	0.00075	0.00075	0.00069
	(!CLK * !RESET_B * SCD * !SCE)	-0.00131	-0.00133	-0.00142
	(!CLK * !RESET_B * !SCD * !SCE)	0.00074	0.00074	0.00069
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00136	-0.00137	-0.00144

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00193	0.00194	0.00194
	(CLK * RESET_B * SCD * SCE)	0.00006	0.00006	0.00007
	(CLK * RESET_B * SCD * !SCE)	0.00631	0.00791	0.04564
	(CLK * RESET_B * SCD * !SCE)	0.00258	0.00416	0.04190
	(CLK * RESET_B * !SCD * !SCE)	0.00638	0.00797	0.04567
	(CLK * RESET_B * !SCD * !SCE)	0.00265	0.00422	0.04193
	(CLK * !SCD * SCE)	0.00115	0.00115	0.00114
	(CLK * !SCD * SCE)	-0.00096	-0.00096	-0.00099
	(CLK * !RESET_B * SCD * SCE)	0.00114	0.00114	0.00112
	(CLK * !RESET_B * SCD * SCE)	-0.00096	-0.00097	-0.00099
	(CLK * !RESET_B * SCD * !SCE)	0.00087	0.00087	0.00081
	(CLK * !RESET_B * SCD * !SCE)	-0.00119	-0.00120	-0.00130
	(CLK * !RESET_B * !SCD * !SCE)	0.00086	0.00087	0.00081
	(CLK * !RESET_B * !SCD * !SCE)	-0.00124	-0.00125	-0.00131
	(!CLK * RESET_B * SCD * SCE)	0.00193	0.00194	0.00194
	(!CLK * RESET_B * SCD * SCE)	0.00007	0.00006	0.00007
	(!CLK * RESET_B * SCD * !SCE)	0.01447	0.01633	0.06140
	(!CLK * RESET_B * SCD * !SCE)	0.01053	0.01240	0.05747
	(!CLK * RESET_B * !SCD * !SCE)	0.01453	0.01639	0.06143
	(!CLK * RESET_B * !SCD * !SCE)	0.01060	0.01246	0.05749
	(!CLK * !SCD * SCE)	0.00134	0.00135	0.00133
	(!CLK * !SCD * SCE)	-0.00076	-0.00078	-0.00080
	(!CLK * !RESET_B * SCD * SCE)	0.00114	0.00115	0.00112
	(!CLK * !RESET_B * SCD * SCE)	-0.00096	-0.00097	-0.00099
	(!CLK * !RESET_B * SCD * !SCE)	0.00087	0.00088	0.00081
	(!CLK * !RESET_B * SCD * !SCE)	-0.00118	-0.00120	-0.00129
	(!CLK * !RESET_B * !SCD * !SCE)	0.00087	0.00087	0.00082
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00123	-0.00125	-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)**	-0.00077	-0.00078	-0.00083
	(CLK * RESET_B * SCD * SCE)	0.00119	0.00120	0.00115
	(CLK * RESET_B * SCD * !SCE)	0.00102	0.00298	0.04089
	(CLK * RESET_B * SCD * !SCE)	0.00487	0.00684	0.04475
	(CLK * RESET_B * !SCD * !SCE)	0.00101	0.00298	0.04094
	(CLK * RESET_B * !SCD * !SCE)	0.00488	0.00685	0.04480
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !SCD * SCE)	0.00187	0.00188	0.00187
	(CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(CLK * !RESET_B * SCD * SCE)	0.00187	0.00188	0.00188
	(CLK * !RESET_B * SCD * !SCE)	-0.00017	-0.00017	-0.00016
	(CLK * !RESET_B * SCD * !SCE)	0.00204	0.00207	0.00205
	(CLK * !RESET_B * !SCD * !SCE)	-0.00017	-0.00017	-0.00016
	(CLK * !RESET_B * !SCD * !SCE)	0.00204	0.00207	0.00205
	(!CLK * RESET_B * SCD * SCE)	-0.00075	-0.00076	-0.00082
	(!CLK * RESET_B * SCD * SCE)	0.00122	0.00122	0.00117
	(!CLK * RESET_B * SCD * !SCE)	0.00978	0.01225	0.05788
	(!CLK * RESET_B * SCD * !SCE)	0.01386	0.01632	0.06194
	(!CLK * RESET_B * !SCD * !SCE)	0.00978	0.01225	0.05790
	(!CLK * RESET_B * !SCD * !SCE)	0.01385	0.01632	0.06196
	(!CLK * !SCD * SCE)	-0.00012	-0.00013	-0.00012
	(!CLK * !SCD * SCE)	0.00208	0.00209	0.00209
	(!CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * !RESET_B * SCD * SCE)	0.00188	0.00189	0.00188
	(!CLK * !RESET_B * SCD * !SCE)	-0.00016	-0.00017	-0.00016
	(!CLK * !RESET_B * SCD * !SCE)	0.00205	0.00207	0.00205
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00016	-0.00017	-0.00016
	(!CLK * !RESET_B * !SCD * !SCE)	0.00205	0.00208	0.00205

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00064	-0.00066	-0.00071
	(CLK * RESET_B * SCD * SCE)	0.00122	0.00122	0.00118
	(CLK * RESET_B * SCD * !SCE)	0.00113	0.00319	0.04145
	(CLK * RESET_B * SCD * !SCE)	0.00482	0.00690	0.04515
	(CLK * RESET_B * !SCD * !SCE)	0.00113	0.00320	0.04149
	(CLK * RESET_B * !SCD * !SCE)	0.00483	0.00690	0.04519
	(CLK * !SCD * SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !SCD * SCE)	0.00185	0.00186	0.00185
	(CLK * !RESET_B * SCD * SCE)	-0.00024	-0.00024	-0.00024
	(CLK * !RESET_B * SCD * SCE)	0.00185	0.00186	0.00186
	(CLK * !RESET_B * SCD * !SCE)	-0.00009	-0.00009	-0.00008
	(CLK * !RESET_B * SCD * !SCE)	0.00201	0.00204	0.00202
	(CLK * !RESET_B * !SCD * !SCE)	-0.00009	-0.00010	-0.00008
	(CLK * !RESET_B * !SCD * !SCE)	0.00202	0.00205	0.00202
	(!CLK * RESET_B * SCD * SCE)	-0.00075	-0.00076	-0.00081
	(!CLK * RESET_B * SCD * SCE)	0.00112	0.00112	0.00107
	(!CLK * RESET_B * SCD * !SCE)	0.01033	0.01285	0.05859
	(!CLK * RESET_B * SCD * !SCE)	0.01421	0.01674	0.06248
	(!CLK * RESET_B * !SCD * !SCE)	0.01035	0.01285	0.05864
	(!CLK * RESET_B * !SCD * !SCE)	0.01423	0.01674	0.06252
	(!CLK * !SCD * SCE)	-0.00016	-0.00017	-0.00016
	(!CLK * !SCD * SCE)	0.00194	0.00195	0.00194
	(!CLK * !RESET_B * SCD * SCE)	-0.00023	-0.00024	-0.00023
	(!CLK * !RESET_B * SCD * SCE)	0.00186	0.00187	0.00186
	(!CLK * !RESET_B * SCD * !SCE)	-0.00008	-0.00009	-0.00008
	(!CLK * !RESET_B * SCD * !SCE)	0.00202	0.00205	0.00203
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00008	-0.00008	-0.00008
	(!CLK * !RESET_B * !SCD * !SCE)	0.00202	0.00202	0.00203

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00052	-0.00054	-0.00059
	(CLK * RESET_B * SCD * SCE)	0.00134	0.00134	0.00130
	(CLK * RESET_B * SCD * !SCE)	0.00119	0.00325	0.04147
	(CLK * RESET_B * SCD * !SCE)	0.00492	0.00700	0.04521
	(CLK * RESET_B * !SCD * !SCE)	0.00120	0.00326	0.04152
	(CLK * RESET_B * !SCD * !SCE)	0.00492	0.00700	0.04526
	(CLK * !SCD * SCE)	-0.00012	-0.00012	-0.00012
	(CLK * !SCD * SCE)	0.00198	0.00199	0.00199
	(CLK * !RESET_B * SCD * SCE)	-0.00010	-0.00011	-0.00010
	(CLK * !RESET_B * SCD * SCE)	0.00199	0.00199	0.00199
	(CLK * !RESET_B * SCD * !SCE)	0.00002	0.00002	0.00002
	(CLK * !RESET_B * SCD * !SCE)	0.00212	0.00215	0.00213
	(CLK * !RESET_B * !SCD * !SCE)	0.00002	0.00001	0.00002
	(CLK * !RESET_B * !SCD * !SCE)	0.00213	0.00216	0.00213
	(!CLK * RESET_B * SCD * SCE)	-0.00052	-0.00053	-0.00059
	(!CLK * RESET_B * SCD * SCE)	0.00134	0.00134	0.00130
	(!CLK * RESET_B * SCD * !SCE)	0.01021	0.01275	0.05881
	(!CLK * RESET_B * SCD * !SCE)	0.01415	0.01670	0.06274
	(!CLK * RESET_B * !SCD * !SCE)	0.01022	0.01276	0.05885
	(!CLK * RESET_B * !SCD * !SCE)	0.01415	0.01670	0.06278
	(!CLK * !SCD * SCE)	0.00007	0.00006	0.00007
	(!CLK * !SCD * SCE)	0.00218	0.00219	0.00218
	(!CLK * !RESET_B * SCD * SCE)	-0.00010	-0.00011	-0.00010
	(!CLK * !RESET_B * SCD * SCE)	0.00199	0.00200	0.00200
	(!CLK * !RESET_B * SCD * !SCE)	0.00003	0.00002	0.00003
	(!CLK * !RESET_B * SCD * !SCE)	0.00213	0.00214	0.00213
	(!CLK * !RESET_B * !SCD * !SCE)	0.00002	0.00002	0.00003
	(!CLK * !RESET_B * !SCD * !SCE)	0.00213	0.00215	0.00214

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)**	0.00877	0.00980	0.04299
	(CLK * D * RESET_B * SCE)	0.00380	0.00481	0.03802
	(CLK * D * RESET_B * !SCE)	0.00189	0.00167	0.00165
	(CLK * D * RESET_B * !SCE)	-0.00071	-0.00094	-0.00094
	(CLK * D * !RESET_B * SCE)	0.00094	0.00095	0.00092
	(CLK * D * !RESET_B * SCE)	-0.00124	-0.00125	-0.00124
	(CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00066
	(CLK * D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00149
	(CLK * !D * RESET_B * SCE)	0.00981	0.01071	0.04345
	(CLK * !D * RESET_B * SCE)	0.00459	0.00548	0.03823
	(CLK * !D * !RESET_B * SCE)	0.00094	0.00095	0.00092
	(CLK * !D * !RESET_B * SCE)	-0.00124	-0.00125	-0.00124
	(!D * RESET_B * !SCE)	0.00114	0.00115	0.00114
	(!D * RESET_B * !SCE)	-0.00145	-0.00146	-0.00145
	(!D * !RESET_B * !SCE)	0.00077	0.00078	0.00078
	(!D * !RESET_B * !SCE)	-0.00157	-0.00159	-0.00158
	(!CLK * D * RESET_B * SCE)	0.01665	0.01803	0.05738
	(!CLK * D * RESET_B * SCE)	0.01147	0.01285	0.05221
	(!CLK * D * RESET_B * !SCE)	0.00191	0.00169	0.00167
	(!CLK * D * RESET_B * !SCE)	-0.00069	-0.00092	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00094	0.00095	0.00093
	(!CLK * D * !RESET_B * SCE)	-0.00124	-0.00124	-0.00123
	(!CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00067
	(!CLK * D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00148
	(!CLK * !D * RESET_B * SCE)	0.01770	0.01898	0.05798
	(!CLK * !D * RESET_B * SCE)	0.01228	0.01356	0.05256
	(!CLK * !D * !RESET_B * SCE)	0.00095	0.00095	0.00093
	(!CLK * !D * !RESET_B * SCE)	-0.00124	-0.00125	-0.00123

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00808	0.00914	0.04252
	(CLK * D * RESET_B * SCE)	0.00317	0.00422	0.03761
	(CLK * D * RESET_B * !SCE)	0.00197	0.00175	0.00172
	(CLK * D * RESET_B * !SCE)	-0.00062	-0.00085	-0.00085
	(CLK * D * !RESET_B * SCE)	0.00097	0.00097	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(CLK * D * !RESET_B * !SCE)	0.00070	0.00071	0.00071
	(CLK * D * !RESET_B * !SCE)	-0.00142	-0.00143	-0.00143
	(CLK * !D * RESET_B * SCE)	0.00911	0.01005	0.04295
	(CLK * !D * RESET_B * SCE)	0.00396	0.00488	0.03781
	(CLK * !D * !RESET_B * SCE)	0.00097	0.00097	0.00094
	(CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!D * RESET_B * !SCE)	0.00119	0.00120	0.00119
	(!D * RESET_B * !SCE)	-0.00139	-0.00140	-0.00139
	(!D * !RESET_B * !SCE)	0.00083	0.00083	0.00082
	(!D * !RESET_B * !SCE)	-0.00153	-0.00154	-0.00153
	(!CLK * D * RESET_B * SCE)	0.01609	0.01748	0.05681
	(!CLK * D * RESET_B * SCE)	0.01099	0.01237	0.05172
	(!CLK * D * RESET_B * !SCE)	0.00187	0.00164	0.00162
	(!CLK * D * RESET_B * !SCE)	-0.00072	-0.00095	-0.00096
	(!CLK * D * !RESET_B * SCE)	0.00097	0.00097	0.00095
	(!CLK * D * !RESET_B * SCE)	-0.00122	-0.00121	-0.00120
	(!CLK * D * !RESET_B * !SCE)	0.00071	0.00071	0.00071
	(!CLK * D * !RESET_B * !SCE)	-0.00142	-0.00143	-0.00143
	(!CLK * !D * RESET_B * SCE)	0.01715	0.01855	0.05740
	(!CLK * !D * RESET_B * SCE)	0.01180	0.01319	0.05207
	(!CLK * !D * !RESET_B * SCE)	0.00097	0.00097	0.00095
	(!CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00120

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00823	0.00930	0.04271
	(CLK * D * RESET_B * SCE)	0.00331	0.00437	0.03779
	(CLK * D * RESET_B * !SCE)	0.00206	0.00184	0.00181
	(CLK * D * RESET_B * !SCE)	-0.00049	-0.00073	-0.00073
	(CLK * D * !RESET_B * SCE)	0.00109	0.00108	0.00106
	(CLK * D * !RESET_B * SCE)	-0.00107	-0.00107	-0.00106
	(CLK * D * !RESET_B * !SCE)	0.00082	0.00083	0.00083
	(CLK * D * !RESET_B * !SCE)	-0.00127	-0.00129	-0.00128
	(CLK * !D * RESET_B * SCE)	0.00926	0.01021	0.04314
	(CLK * !D * RESET_B * SCE)	0.00409	0.00503	0.03799
	(CLK * !D * !RESET_B * SCE)	0.00109	0.00108	0.00106
	(CLK * !D * !RESET_B * SCE)	-0.00107	-0.00107	-0.00106
	(!D * RESET_B * !SCE)	0.00131	0.00132	0.00131
	(!D * RESET_B * !SCE)	-0.00124	-0.00125	-0.00124
	(!D * !RESET_B * !SCE)	0.00095	0.00095	0.00094
	(!D * !RESET_B * !SCE)	-0.00138	-0.00139	-0.00138
	(!CLK * D * RESET_B * SCE)	0.01640	0.01783	0.05752
	(!CLK * D * RESET_B * SCE)	0.01128	0.01270	0.05241
	(!CLK * D * RESET_B * !SCE)	0.00207	0.00184	0.00181
	(!CLK * D * RESET_B * !SCE)	-0.00049	-0.00073	-0.00073
	(!CLK * D * !RESET_B * SCE)	0.00109	0.00108	0.00107
	(!CLK * D * !RESET_B * SCE)	-0.00107	-0.00106	-0.00105
	(!CLK * D * !RESET_B * !SCE)	0.00083	0.00083	0.00083
	(!CLK * D * !RESET_B * !SCE)	-0.00127	-0.00128	-0.00128
	(!CLK * !D * RESET_B * SCE)	0.01745	0.01876	0.05809
	(!CLK * !D * RESET_B * SCE)	0.01208	0.01340	0.05274
	(!CLK * !D * !RESET_B * SCE)	0.00109	0.00109	0.00107
	(!CLK * !D * !RESET_B * SCE)	-0.00107	-0.00107	-0.00105

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)	0.00275	0.00380	0.03733
	(CLK * D * RESET_B * SCE)	0.00773	0.00879	0.04229
	(CLK * D * RESET_B * !SCE)	-0.00060	-0.00062	-0.00064
	(CLK * D * RESET_B * !SCE)	0.00198	0.00199	0.00197
	(CLK * D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(CLK * D * !RESET_B * SCE)	0.00190	0.00193	0.00188
	(CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00020
	(CLK * D * !RESET_B * !SCE)	0.00194	0.00196	0.00194
	(CLK * !D * RESET_B * SCE)	0.00226	0.00339	0.03715
	(CLK * !D * RESET_B * SCE)	0.00748	0.00863	0.04236
	(CLK * !D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(CLK * !D * !RESET_B * SCE)	0.00190	0.00193	0.00188
	(!D * RESET_B * !SCE)	-0.00059	-0.00068	-0.00069
	(!D * RESET_B * !SCE)	0.00199	0.00193	0.00190
	(!D * !RESET_B * !SCE)	-0.00030	-0.00033	-0.00036
	(!D * !RESET_B * !SCE)	0.00213	0.00213	0.00206
	(!CLK * D * RESET_B * SCE)	0.01174	0.01316	0.05269
	(!CLK * D * RESET_B * SCE)	0.01693	0.01835	0.05785
	(!CLK * D * RESET_B * !SCE)	-0.00058	-0.00060	-0.00062
	(!CLK * D * RESET_B * !SCE)	0.00199	0.00201	0.00198
	(!CLK * D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(!CLK * D * !RESET_B * SCE)	0.00191	0.00193	0.00189
	(!CLK * D * !RESET_B * !SCE)	-0.00019	-0.00020	-0.00020
	(!CLK * D * !RESET_B * !SCE)	0.00195	0.00196	0.00195
	(!CLK * !D * RESET_B * SCE)	0.01145	0.01295	0.05306
	(!CLK * !D * RESET_B * SCE)	0.01688	0.01839	0.05847
	(!CLK * !D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(!CLK * !D * !RESET_B * SCE)	0.00191	0.00193	0.00189

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00279	0.00386	0.03751
	(CLK * D * RESET_B * SCE)	0.00771	0.00877	0.04241
	(CLK * D * RESET_B * !SCE)	-0.00055	-0.00057	-0.00058
	(CLK * D * RESET_B * !SCE)	0.00202	0.00204	0.00201
	(CLK * D * !RESET_B * SCE)	-0.00015	-0.00016	-0.00016
	(CLK * D * !RESET_B * SCE)	0.00200	0.00202	0.00198
	(CLK * D * !RESET_B * !SCE)	-0.00012	-0.00013	-0.00013
	(CLK * D * !RESET_B * !SCE)	0.00201	0.00202	0.00201
	(CLK * !D * RESET_B * SCE)	0.00230	0.00346	0.03736
	(CLK * !D * RESET_B * SCE)	0.00745	0.00863	0.04249
	(CLK * !D * !RESET_B * SCE)	-0.00015	-0.00016	-0.00016
	(CLK * !D * !RESET_B * SCE)	0.00200	0.00202	0.00198
	(!D * RESET_B * !SCE)	-0.00052	-0.00060	-0.00061
	(!D * RESET_B * !SCE)	0.00205	0.00200	0.00197
	(!D * !RESET_B * !SCE)	-0.00023	-0.00025	-0.00028
	(!D * !RESET_B * !SCE)	0.00221	0.00218	0.00213
	(!CLK * D * RESET_B * SCE)	0.01227	0.01367	0.05308
	(!CLK * D * RESET_B * SCE)	0.01737	0.01879	0.05816
	(!CLK * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00069
	(!CLK * D * RESET_B * !SCE)	0.00191	0.00193	0.00190
	(!CLK * D * !RESET_B * SCE)	-0.00015	-0.00016	-0.00015
	(!CLK * D * !RESET_B * SCE)	0.00200	0.00203	0.00198
	(!CLK * D * !RESET_B * !SCE)	-0.00012	-0.00012	-0.00012
	(!CLK * D * !RESET_B * !SCE)	0.00201	0.00203	0.00202
	(!CLK * !D * RESET_B * SCE)	0.01200	0.01349	0.05354
	(!CLK * !D * RESET_B * SCE)	0.01733	0.01884	0.05887
	(!CLK * !D * !RESET_B * SCE)	-0.00015	-0.00016	-0.00015
	(!CLK * !D * !RESET_B * SCE)	0.00200	0.00203	0.00198

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00295	0.00401	0.03769
	(CLK * D * RESET_B * SCE)	0.00788	0.00895	0.04259
	(CLK * D * RESET_B * !SCE)	-0.00040	-0.00042	-0.00044
	(CLK * D * RESET_B * !SCE)	0.00214	0.00215	0.00213
	(CLK * D * !RESET_B * SCE)	-0.00003	-0.00004	-0.00004
	(CLK * D * !RESET_B * SCE)	0.00209	0.00211	0.00207
	(CLK * D * !RESET_B * !SCE)	-0.00000	-0.00001	-0.00000
	(CLK * D * !RESET_B * !SCE)	0.00210	0.00213	0.00210
	(CLK * !D * RESET_B * SCE)	0.00238	0.00355	0.03748
	(CLK * !D * RESET_B * SCE)	0.00754	0.00873	0.04263
	(CLK * !D * !RESET_B * SCE)	-0.00003	-0.00004	-0.00004
	(CLK * !D * !RESET_B * SCE)	0.00209	0.00211	0.00207
	(!D * RESET_B * !SCE)	-0.00039	-0.00048	-0.00049
	(!D * RESET_B * !SCE)	0.00214	0.00210	0.00206
	(!D * !RESET_B * !SCE)	-0.00011	-0.00013	-0.00016
	(!D * !RESET_B * !SCE)	0.00230	0.00227	0.00222
	(!CLK * D * RESET_B * SCE)	0.01227	0.01369	0.05344
	(!CLK * D * RESET_B * SCE)	0.01739	0.01883	0.05854
	(!CLK * D * RESET_B * !SCE)	-0.00040	-0.00042	-0.00044
	(!CLK * D * RESET_B * !SCE)	0.00214	0.00215	0.00213
	(!CLK * D * !RESET_B * SCE)	-0.00003	-0.00004	-0.00003
	(!CLK * D * !RESET_B * SCE)	0.00209	0.00212	0.00207
	(!CLK * D * !RESET_B * !SCE)	0.00000	0.00000	0.00000
	(!CLK * D * !RESET_B * !SCE)	0.00211	0.00211	0.00211
	(!CLK * !D * RESET_B * SCE)	0.01190	0.01344	0.05379
	(!CLK * !D * RESET_B * SCE)	0.01726	0.01881	0.05914
	(!CLK * !D * !RESET_B * SCE)	-0.00003	-0.00004	-0.00003
	(!CLK * !D * !RESET_B * SCE)	0.00209	0.00212	0.00207

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)	0.00655	0.00903	0.06195
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00004	0.00241	0.05537
	(CLK * D * RESET_B * !SCD)	0.00922	0.01189	0.06700
	(CLK * D * RESET_B * !SCD)	0.00481	0.00746	0.06255
	(CLK * !D * RESET_B * SCD)	0.01289	0.01688	0.10322
	(CLK * !D * RESET_B * SCD)	0.00433	0.00831	0.09468
	(!CLK * D * RESET_B * SCD)	0.00657	0.00903	0.06196
	(!CLK * D * RESET_B * SCD)	-0.00002	0.00242	0.05539
	(!CLK * D * RESET_B * !SCD)	0.01807	0.02077	0.07638
	(!CLK * D * RESET_B * !SCD)	0.01387	0.01655	0.07214
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00634	0.00905	0.06201
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00011	0.00283	0.05580
	(!CLK * !D * RESET_B * SCD)	0.02074	0.02527	0.11919
	(!CLK * !D * RESET_B * SCD)	0.01198	0.01651	0.11043

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00662	0.00916	0.06250
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00003	0.00247	0.05584
	(CLK * D * RESET_B * !SCD)	0.00919	0.01192	0.06750
	(CLK * D * RESET_B * !SCD)	0.00465	0.00736	0.06293
	(CLK * !D * RESET_B * SCD)	0.01214	0.01631	0.10388
	(CLK * !D * RESET_B * SCD)	0.00356	0.00771	0.09531
	(!CLK * D * RESET_B * SCD)	0.00652	0.00906	0.06240
	(!CLK * D * RESET_B * SCD)	-0.00013	0.00236	0.05574
	(!CLK * D * RESET_B * !SCD)	0.01855	0.02127	0.07730
	(!CLK * D * RESET_B * !SCD)	0.01420	0.01690	0.07292
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00634	0.00912	0.06250
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00004	0.00279	0.05619
	(!CLK * !D * RESET_B * SCD)	0.02012	0.02478	0.11967
	(!CLK * !D * RESET_B * SCD)	0.01136	0.01598	0.11091

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00676	0.00930	0.06264
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00009	0.00259	0.05597
	(CLK * D * RESET_B * !SCD)	0.00934	0.01208	0.06765
	(CLK * D * RESET_B * !SCD)	0.00483	0.00755	0.06312
	(CLK * !D * RESET_B * SCD)	0.01232	0.01650	0.10410
	(CLK * !D * RESET_B * SCD)	0.00369	0.00784	0.09547
	(!CLK * D * RESET_B * SCD)	0.00676	0.00930	0.06264
	(!CLK * D * RESET_B * SCD)	0.00009	0.00259	0.05597
	(!CLK * D * RESET_B * !SCD)	0.01853	0.02127	0.07732
	(!CLK * D * RESET_B * !SCD)	0.01422	0.01694	0.07298
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00645	0.00924	0.06262
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00014	0.00289	0.05630
	(!CLK * !D * RESET_B * SCD)	0.02046	0.02512	0.12042
	(!CLK * !D * RESET_B * SCD)	0.01163	0.01629	0.11160

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)**	0.00014	0.00330	0.05649
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00671	0.00992	0.06308
	(CLK * D * RESET_B * !SCD)	0.00681	0.00974	0.06433
	(CLK * D * RESET_B * !SCD)	0.01125	0.01415	0.06857
	(CLK * !D * RESET_B * SCD)	0.00153	0.00585	0.09240
	(CLK * !D * RESET_B * SCD)	0.01009	0.01443	0.10097
	(!CLK * D * RESET_B * SCD)	0.00016	0.00334	0.05651
	(!CLK * D * RESET_B * SCD)	0.00673	0.00996	0.06310
	(!CLK * D * RESET_B * !SCD)	0.01466	0.01769	0.07247
	(!CLK * D * RESET_B * !SCD)	0.01889	0.02191	0.07652
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00013	0.00303	0.05604
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00609	0.00925	0.06226
	(!CLK * !D * RESET_B * SCD)	0.01025	0.01488	0.10705
	(!CLK * !D * RESET_B * SCD)	0.01901	0.02367	0.11580

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00008	0.00332	0.05690
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00673	0.01000	0.06357
	(CLK * D * RESET_B * !SCD)	0.00584	0.00881	0.06393
	(CLK * D * RESET_B * !SCD)	0.01041	0.01339	0.06831
	(CLK * !D * RESET_B * SCD)	0.00158	0.00604	0.09388
	(CLK * !D * RESET_B * SCD)	0.01015	0.01465	0.10248
	(!CLK * D * RESET_B * SCD)	-0.00002	0.00321	0.05680
	(!CLK * D * RESET_B * SCD)	0.00663	0.00989	0.06347
	(!CLK * D * RESET_B * !SCD)	0.01381	0.01690	0.07211
	(!CLK * D * RESET_B * !SCD)	0.01820	0.02128	0.07631
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	0.00310	0.05652
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00619	0.00940	0.06282
	(!CLK * !D * RESET_B * SCD)	0.01078	0.01548	0.10877
	(!CLK * !D * RESET_B * SCD)	0.01953	0.02426	0.11754

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00016	0.00343	0.05700
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00683	0.01013	0.06368
	(CLK * D * RESET_B * !SCD)	0.00598	0.00896	0.06407
	(CLK * D * RESET_B * !SCD)	0.01053	0.01352	0.06842
	(CLK * !D * RESET_B * SCD)	0.00164	0.00609	0.09397
	(CLK * !D * RESET_B * SCD)	0.01026	0.01475	0.10261
	(!CLK * D * RESET_B * SCD)	0.00017	0.00340	0.05700
	(!CLK * D * RESET_B * SCD)	0.00683	0.01010	0.06368
	(!CLK * D * RESET_B * !SCD)	0.01411	0.01722	0.07251
	(!CLK * D * RESET_B * !SCD)	0.01846	0.02153	0.07667
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00001	0.00317	0.05664
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00632	0.00948	0.06295
	(!CLK * !D * RESET_B * SCD)	0.01065	0.01538	0.10895
	(!CLK * !D * RESET_B * SCD)	0.01945	0.02424	0.11780

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)**	0.01206	0.01316	0.05894
	(CLK * D * SCD * SCE * !Q)	0.00078	0.00184	0.04766
	(CLK * D * SCD * !SCE * !Q)	0.01166	0.01280	0.05908
	(CLK * D * SCD * !SCE * !Q)	0.00082	0.00191	0.04824
	(CLK * D * !SCD * SCE * !Q)	0.00386	0.00391	0.00387
	(CLK * D * !SCD * SCE * !Q)	-0.00443	-0.00446	-0.00443
	(CLK * D * !SCD * !SCE * !Q)	0.01119	0.01246	0.05893
	(CLK * D * !SCD * !SCE * !Q)	0.00089	0.00213	0.04859
	(CLK * !D * SCD * SCE * !Q)	0.01310	0.01408	0.05938
	(CLK * !D * SCD * SCE * !Q)	0.00157	0.00252	0.04787
	(CLK * !D * SCD * !SCE * !Q)	0.00374	0.00378	0.00375
	(CLK * !D * SCD * !SCE * !Q)	-0.00454	-0.00456	-0.00453
	(CLK * !D * !SCD * SCE * !Q)	0.00386	0.00386	0.00387
	(CLK * !D * !SCD * SCE * !Q)	-0.00443	-0.00442	-0.00443
	(CLK * !D * !SCD * !SCE * !Q)	0.00375	0.00378	0.00375
	(CLK * !D * !SCD * !SCE * !Q)	-0.00454	-0.00457	-0.00454
	(!CLK * D * SCD * SCE * !Q)	0.02065	0.02181	0.08331
	(!CLK * D * SCD * SCE * !Q)	0.00920	0.01031	0.07183
	(!CLK * D * SCD * !SCE * !Q)	0.02023	0.02140	0.08366
	(!CLK * D * SCD * !SCE * !Q)	0.00922	0.01031	0.07259
	(!CLK * D * !SCD * SCE * !Q)	0.00388	0.00393	0.00389
	(!CLK * D * !SCD * SCE * !Q)	-0.00440	-0.00444	-0.00441
	(!CLK * D * !SCD * !SCE * !Q)	0.01977	0.02107	0.08343
	(!CLK * D * !SCD * !SCE * !Q)	0.00926	0.01052	0.07290
	(!CLK * !D * SCD * SCE * !Q)	0.02171	0.02273	0.08400
	(!CLK * !D * SCD * SCE * !Q)	0.01002	0.01098	0.07228
	(!CLK * !D * SCD * !SCE * !Q)	0.00375	0.00380	0.00377
	(!CLK * !D * SCD * !SCE * !Q)	-0.00451	-0.00454	-0.00451
	(!CLK * !D * !SCD * SCE * !Q)	0.00388	0.00393	0.00389
	(!CLK * !D * !SCD * SCE * !Q)	-0.00440	-0.00444	-0.00441
	(!CLK * !D * !SCD * !SCE * !Q)	0.00376	0.00381	0.00377
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00451	-0.00455	-0.00452

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.01134	0.01254	0.05860
	(CLK * D * SCD * SCE * !Q)	0.00009	0.00125	0.04734
	(CLK * D * SCD * !SCE * !Q)	0.01076	0.01203	0.05863
	(CLK * D * SCD * !SCE * !Q)	-0.00004	0.00117	0.04780
	(CLK * D * !SCD * SCE * !Q)	0.00393	0.00398	0.00394
	(CLK * D * !SCD * SCE * !Q)	-0.00439	-0.00442	-0.00439
	(CLK * D * !SCD * !SCE * !Q)	0.01030	0.01171	0.05847
	(CLK * D * !SCD * !SCE * !Q)	0.00002	0.00140	0.04819
	(CLK * !D * SCD * SCE * !Q)	0.01239	0.01346	0.05902
	(CLK * !D * SCD * SCE * !Q)	0.00089	0.00192	0.04752
	(CLK * !D * SCD * !SCE * !Q)	0.00381	0.00385	0.00382
	(CLK * !D * SCD * !SCE * !Q)	-0.00450	-0.00453	-0.00450
	(CLK * !D * !SCD * SCE * !Q)	0.00393	0.00397	0.00394
	(CLK * !D * !SCD * SCE * !Q)	-0.00439	-0.00442	-0.00439
	(CLK * !D * !SCD * !SCE * !Q)	0.00382	0.00385	0.00382
	(CLK * !D * !SCD * !SCE * !Q)	-0.00451	-0.00453	-0.00451
	(!CLK * D * SCD * SCE * !Q)	0.02024	0.02146	0.08300
	(!CLK * D * SCD * SCE * !Q)	0.00885	0.01000	0.07159
	(!CLK * D * SCD * !SCE * !Q)	0.01968	0.02094	0.08332
	(!CLK * D * SCD * !SCE * !Q)	0.00867	0.00989	0.07230
	(!CLK * D * !SCD * SCE * !Q)	0.00392	0.00397	0.00393
	(!CLK * D * !SCD * SCE * !Q)	-0.00439	-0.00443	-0.00440
	(!CLK * D * !SCD * !SCE * !Q)	0.01921	0.02056	0.08301
	(!CLK * D * !SCD * !SCE * !Q)	0.00874	0.01007	0.07254
	(!CLK * !D * SCD * SCE * !Q)	0.02131	0.02238	0.08379
	(!CLK * !D * SCD * SCE * !Q)	0.00966	0.01070	0.07209
	(!CLK * !D * SCD * !SCE * !Q)	0.00380	0.00385	0.00381
	(!CLK * !D * SCD * !SCE * !Q)	-0.00450	-0.00453	-0.00450
	(!CLK * !D * !SCD * SCE * !Q)	0.00392	0.00397	0.00393
	(!CLK * !D * !SCD * SCE * !Q)	-0.00439	-0.00443	-0.00440
	(!CLK * !D * !SCD * !SCE * !Q)	0.00380	0.00386	0.00382
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00450	-0.00454	-0.00451

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01150	0.01270	0.05876
	(CLK * D * SCD * SCE * !Q)	0.00028	0.00144	0.04752
	(CLK * D * SCD * !SCE * !Q)	0.01093	0.01218	0.05876
	(CLK * D * SCD * !SCE * !Q)	0.00015	0.00135	0.04797
	(CLK * D * !SCD * SCE * !Q)	0.00400	0.00404	0.00401
	(CLK * D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00425
	(CLK * D * !SCD * !SCE * !Q)	0.01046	0.01185	0.05860
	(CLK * D * !SCD * !SCE * !Q)	0.00022	0.00158	0.04835
	(CLK * !D * SCD * SCE * !Q)	0.01255	0.01361	0.05921
	(CLK * !D * SCD * SCE * !Q)	0.00108	0.00211	0.04774
	(CLK * !D * SCD * !SCE * !Q)	0.00388	0.00393	0.00389
	(CLK * !D * SCD * !SCE * !Q)	-0.00435	-0.00439	-0.00435
	(CLK * !D * !SCD * SCE * !Q)	0.00400	0.00404	0.00400
	(CLK * !D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00425
	(CLK * !D * !SCD * !SCE * !Q)	0.00389	0.00394	0.00389
	(CLK * !D * !SCD * !SCE * !Q)	-0.00436	-0.00439	-0.00436
	(!CLK * D * SCD * SCE * !Q)	0.02036	0.02163	0.08347
	(!CLK * D * SCD * SCE * !Q)	0.00898	0.01018	0.07205
	(!CLK * D * SCD * !SCE * !Q)	0.01979	0.02105	0.08373
	(!CLK * D * SCD * !SCE * !Q)	0.00881	0.01002	0.07274
	(!CLK * D * !SCD * SCE * !Q)	0.00398	0.00404	0.00400
	(!CLK * D * !SCD * SCE * !Q)	-0.00425	-0.00429	-0.00426
	(!CLK * D * !SCD * !SCE * !Q)	0.01932	0.02076	0.08343
	(!CLK * D * !SCD * !SCE * !Q)	0.00888	0.01030	0.07298
	(!CLK * !D * SCD * SCE * !Q)	0.02143	0.02254	0.08425
	(!CLK * !D * SCD * SCE * !Q)	0.00980	0.01086	0.07257
	(!CLK * !D * SCD * !SCE * !Q)	0.00386	0.00391	0.00387
	(!CLK * !D * SCD * !SCE * !Q)	-0.00436	-0.00439	-0.00436
	(!CLK * !D * !SCD * SCE * !Q)	0.00398	0.00399	0.00399
	(!CLK * !D * !SCD * SCE * !Q)	-0.00425	-0.00426	-0.00426
	(!CLK * !D * !SCD * !SCE * !Q)	0.00387	0.00392	0.00388
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00436	-0.00440	-0.00437

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)**	0.00142	0.00363	0.05077
	(CLK * D * SCD * SCE * !Q)	0.01273	0.01498	0.06205
	(CLK * D * SCD * !SCE * !Q)	0.00011	0.00229	0.04940
	(CLK * D * SCD * !SCE * !Q)	0.01098	0.01322	0.06024
	(CLK * D * !SCD * SCE * !Q)	-0.00308	-0.00324	-0.00323
	(CLK * D * !SCD * SCE * !Q)	0.00517	0.00511	0.00508
	(CLK * D * !SCD * !SCE * !Q)	-0.00024	0.00205	0.04941
	(CLK * D * !SCD * !SCE * !Q)	0.01009	0.01243	0.05973
	(CLK * !D * SCD * SCE * !Q)	0.00094	0.00325	0.05059
	(CLK * !D * SCD * SCE * !Q)	0.01248	0.01482	0.06212
	(CLK * !D * SCD * !SCE * !Q)	-0.00310	-0.00330	-0.00331
	(CLK * !D * SCD * !SCE * !Q)	0.00513	0.00503	0.00499
	(CLK * !D * !SCD * SCE * !Q)	-0.00308	-0.00324	-0.00323
	(CLK * !D * !SCD * SCE * !Q)	0.00517	0.00511	0.00508
	(CLK * !D * !SCD * !SCE * !Q)	-0.00312	-0.00331	-0.00331
	(CLK * !D * !SCD * !SCE * !Q)	0.00514	0.00503	0.00500
	(!CLK * D * SCD * SCE * !Q)	0.00935	0.01188	0.07808
	(!CLK * D * SCD * SCE * !Q)	0.02084	0.02340	0.08952
	(!CLK * D * SCD * !SCE * !Q)	0.00802	0.01044	0.07622
	(!CLK * D * SCD * !SCE * !Q)	0.01908	0.02156	0.08727
	(!CLK * D * !SCD * SCE * !Q)	-0.00312	-0.00325	-0.00325
	(!CLK * D * !SCD * SCE * !Q)	0.00512	0.00508	0.00506
	(!CLK * D * !SCD * !SCE * !Q)	0.00766	0.01017	0.07618
	(!CLK * D * !SCD * !SCE * !Q)	0.01817	0.02074	0.08671
	(!CLK * !D * SCD * SCE * !Q)	0.00887	0.01155	0.07837
	(!CLK * !D * SCD * SCE * !Q)	0.02060	0.02330	0.09008
	(!CLK * !D * SCD * !SCE * !Q)	-0.00314	-0.00331	-0.00332
	(!CLK * !D * SCD * !SCE * !Q)	0.00508	0.00501	0.00498
	(!CLK * !D * !SCD * SCE * !Q)	-0.00312	-0.00325	-0.00325
	(!CLK * !D * !SCD * SCE * !Q)	0.00512	0.00508	0.00506
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00316	-0.00332	-0.00333
	(!CLK * !D * !SCD * !SCE * !Q)	0.00509	0.00501	0.00498

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00136	0.00363	0.05092
	(CLK * D * SCD * SCE * !Q)	0.01263	0.01495	0.06217
	(CLK * D * SCD * !SCE * !Q)	0.00015	0.00240	0.04966
	(CLK * D * SCD * !SCE * !Q)	0.01098	0.01329	0.06048
	(CLK * D * !SCD * SCE * !Q)	-0.00302	-0.00318	-0.00318
	(CLK * D * !SCD * SCE * !Q)	0.00526	0.00521	0.00517
	(CLK * D * !SCD * !SCE * !Q)	-0.00020	0.00217	0.04966
	(CLK * D * !SCD * !SCE * !Q)	0.01009	0.01252	0.05995
	(CLK * !D * SCD * SCE * !Q)	0.00088	0.00328	0.05074
	(CLK * !D * SCD * SCE * !Q)	0.01238	0.01479	0.06224
	(CLK * !D * SCD * !SCE * !Q)	-0.00304	-0.00325	-0.00325
	(CLK * !D * SCD * !SCE * !Q)	0.00522	0.00513	0.00508
	(CLK * !D * !SCD * SCE * !Q)	-0.00302	-0.00318	-0.00318
	(CLK * !D * !SCD * SCE * !Q)	0.00526	0.00521	0.00517
	(CLK * !D * !SCD * !SCE * !Q)	-0.00306	-0.00326	-0.00326
	(CLK * !D * !SCD * !SCE * !Q)	0.00523	0.00513	0.00509
	(!CLK * D * SCD * SCE * !Q)	0.00994	0.01265	0.07863
	(!CLK * D * SCD * SCE * !Q)	0.02138	0.02411	0.09005
	(!CLK * D * SCD * !SCE * !Q)	0.00871	0.01130	0.07685
	(!CLK * D * SCD * !SCE * !Q)	0.01972	0.02235	0.08786
	(!CLK * D * !SCD * SCE * !Q)	-0.00303	-0.00317	-0.00317
	(!CLK * D * !SCD * SCE * !Q)	0.00524	0.00521	0.00518
	(!CLK * D * !SCD * !SCE * !Q)	0.00835	0.01085	0.07684
	(!CLK * D * !SCD * !SCE * !Q)	0.01881	0.02131	0.08731
	(!CLK * !D * SCD * SCE * !Q)	0.00947	0.01212	0.07895
	(!CLK * !D * SCD * SCE * !Q)	0.02115	0.02386	0.09062
	(!CLK * !D * SCD * !SCE * !Q)	-0.00305	-0.00324	-0.00324
	(!CLK * !D * SCD * !SCE * !Q)	0.00520	0.00514	0.00510
	(!CLK * !D * !SCD * SCE * !Q)	-0.00303	-0.00317	-0.00317
	(!CLK * !D * !SCD * SCE * !Q)	0.00524	0.00521	0.00518
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00308	-0.00325	-0.00324
	(!CLK * !D * !SCD * !SCE * !Q)	0.00521	0.00513	0.00510

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00151	0.00380	0.05105
	(CLK * D * SCD * SCE * !Q)	0.01274	0.01503	0.06226
	(CLK * D * SCD * !SCE * !Q)	0.00028	0.00252	0.04977
	(CLK * D * SCD * !SCE * !Q)	0.01109	0.01339	0.06055
	(CLK * D * !SCD * SCE * !Q)	-0.00285	-0.00301	-0.00301
	(CLK * D * !SCD * SCE * !Q)	0.00535	0.00529	0.00526
	(CLK * D * !SCD * !SCE * !Q)	-0.00006	0.00231	0.04977
	(CLK * D * !SCD * !SCE * !Q)	0.01019	0.01260	0.06003
	(CLK * !D * SCD * SCE * !Q)	0.00094	0.00333	0.05082
	(CLK * !D * SCD * SCE * !Q)	0.01242	0.01486	0.06228
	(CLK * !D * SCD * !SCE * !Q)	-0.00287	-0.00307	-0.00308
	(CLK * !D * SCD * !SCE * !Q)	0.00531	0.00521	0.00518
	(CLK * !D * !SCD * SCE * !Q)	-0.00285	-0.00301	-0.00301
	(CLK * !D * !SCD * SCE * !Q)	0.00535	0.00529	0.00526
	(CLK * !D * !SCD * !SCE * !Q)	-0.00289	-0.00308	-0.00309
	(CLK * !D * !SCD * !SCE * !Q)	0.00532	0.00521	0.00518
	(!CLK * D * SCD * SCE * !Q)	0.00976	0.01237	0.07884
	(!CLK * D * SCD * SCE * !Q)	0.02118	0.02382	0.09026
	(!CLK * D * SCD * !SCE * !Q)	0.00852	0.01096	0.07703
	(!CLK * D * SCD * !SCE * !Q)	0.01951	0.02197	0.08800
	(!CLK * D * !SCD * SCE * !Q)	-0.00286	-0.00299	-0.00299
	(!CLK * D * !SCD * SCE * !Q)	0.00534	0.00530	0.00528
	(!CLK * D * !SCD * !SCE * !Q)	0.00816	0.01069	0.07702
	(!CLK * D * !SCD * !SCE * !Q)	0.01860	0.02116	0.08747
	(!CLK * !D * SCD * SCE * !Q)	0.00921	0.01198	0.07913
	(!CLK * !D * SCD * SCE * !Q)	0.02087	0.02366	0.09078
	(!CLK * !D * SCD * !SCE * !Q)	-0.00288	-0.00305	-0.00306
	(!CLK * !D * SCD * !SCE * !Q)	0.00530	0.00523	0.00520
	(!CLK * !D * !SCD * SCE * !Q)	-0.00286	-0.00299	-0.00299
	(!CLK * !D * !SCD * SCE * !Q)	0.00534	0.00530	0.00528
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00290	-0.00306	-0.00307
	(!CLK * !D * !SCD * !SCE * !Q)	0.00531	0.00523	0.00520

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)	0.01595	0.01987	0.10774
	(D * RESET_B * SCD * SCE * Q)	0.01094	0.01484	0.10272
	(D * RESET_B * SCD * !SCE * Q)	0.01589	0.01982	0.10769
	(D * RESET_B * SCD * !SCE * Q)	0.01088	0.01479	0.10267
	(D * RESET_B * !SCD * !SCE * Q)	0.01598	0.01991	0.10778
	(D * RESET_B * !SCD * !SCE * Q)	0.01097	0.01488	0.10276
	(D * !SCD * SCE * !Q)	0.01608	0.02002	0.10785
	(D * !SCD * SCE * !Q)	0.01107	0.01500	0.10284
	(D * !RESET_B * SCD * SCE * !Q)	0.01608	0.02003	0.10784
	(D * !RESET_B * SCD * SCE * !Q)	0.01107	0.01500	0.10283
	(D * !RESET_B * SCD * !SCE * !Q)	0.01599	0.01991	0.10775
	(D * !RESET_B * SCD * !SCE * !Q)	0.01097	0.01487	0.10274
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01599	0.01991	0.10775
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01097	0.01487	0.10274
	(!D * RESET_B * SCD * SCE * Q)	0.01600	0.01992	0.10779
	(!D * RESET_B * SCD * SCE * Q)	0.01098	0.01489	0.10277
	(!D * !SCE * !Q)	0.01599	0.01993	0.10776
	(!D * !SCE * !Q)	0.01097	0.01490	0.10275
	(!D * !SCD * SCE * !Q)	0.01608	0.01999	0.10784
	(!D * !SCD * SCE * !Q)	0.01107	0.01496	0.10282
	(!D * !RESET_B * SCD * SCE * !Q)	0.01608	0.02000	0.10784
	(!D * !RESET_B * SCD * SCE * !Q)	0.01107	0.01497	0.10282

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01586	0.01978	0.10772
	(D * RESET_B * SCD * SCE * Q)	0.01081	0.01472	0.10267
	(D * RESET_B * SCD * !SCE * Q)	0.01581	0.01973	0.10767
	(D * RESET_B * SCD * !SCE * Q)	0.01076	0.01466	0.10262
	(D * RESET_B * !SCD * !SCE * Q)	0.01589	0.01982	0.10776
	(D * RESET_B * !SCD * !SCE * Q)	0.01085	0.01475	0.10271
	(D * !SCD * SCE * !Q)	0.01620	0.02010	0.10801
	(D * !SCD * SCE * !Q)	0.01115	0.01504	0.10296
	(D * !RESET_B * SCD * SCE * !Q)	0.01620	0.02011	0.10801
	(D * !RESET_B * SCD * SCE * !Q)	0.01115	0.01505	0.10296
	(D * !RESET_B * SCD * !SCE * !Q)	0.01610	0.02002	0.10793
	(D * !RESET_B * SCD * !SCE * !Q)	0.01106	0.01495	0.10288
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01610	0.02002	0.10793
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01106	0.01495	0.10288
	(!D * RESET_B * SCD * SCE * Q)	0.01591	0.01983	0.10777
	(!D * RESET_B * SCD * SCE * Q)	0.01086	0.01477	0.10272
	(!D * !SCE * !Q)	0.01611	0.02001	0.10792
	(!D * !SCE * !Q)	0.01106	0.01494	0.10287
	(!D * !SCD * SCE * !Q)	0.01620	0.02011	0.10801
	(!D * !SCD * SCE * !Q)	0.01115	0.01504	0.10296
	(!D * !RESET_B * SCD * SCE * !Q)	0.01620	0.02011	0.10801
	(!D * !RESET_B * SCD * SCE * !Q)	0.01115	0.01505	0.10296

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01588	0.01982	0.10772
	(D * RESET_B * SCD * SCE * Q)	0.01083	0.01476	0.10267
	(D * RESET_B * SCD * !SCE * Q)	0.01582	0.01976	0.10767
	(D * RESET_B * SCD * !SCE * Q)	0.01078	0.01470	0.10262
	(D * RESET_B * !SCD * !SCE * Q)	0.01591	0.01985	0.10776
	(D * RESET_B * !SCD * !SCE * Q)	0.01087	0.01479	0.10271
	(D * !SCD * SCE * !Q)	0.01606	0.02002	0.10789
	(D * !SCD * SCE * !Q)	0.01102	0.01497	0.10285
	(D * !RESET_B * SCD * SCE * !Q)	0.01606	0.01998	0.10787
	(D * !RESET_B * SCD * SCE * !Q)	0.01102	0.01495	0.10283
	(D * !RESET_B * SCD * !SCE * !Q)	0.01597	0.01990	0.10779
	(D * !RESET_B * SCD * !SCE * !Q)	0.01093	0.01484	0.10275
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01597	0.01990	0.10779
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01093	0.01484	0.10275
	(!D * RESET_B * SCD * SCE * Q)	0.01592	0.01987	0.10777
	(!D * RESET_B * SCD * SCE * Q)	0.01088	0.01480	0.10272
	(!D * !SCE * !Q)	0.01597	0.01993	0.10780
	(!D * !SCE * !Q)	0.01093	0.01487	0.10275
	(!D * !SCD * SCE * !Q)	0.01606	0.01999	0.10788
	(!D * !SCD * SCE * !Q)	0.01102	0.01493	0.10283
	(!D * !RESET_B * SCD * SCE * !Q)	0.01606	0.01998	0.10787
	(!D * !RESET_B * SCD * SCE * !Q)	0.01102	0.01495	0.10283

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)**	0.00851	0.01368	0.10153
	(D * RESET_B * SCD * SCE * Q)	0.01351	0.01871	0.10654
	(D * RESET_B * SCD * SCE * !Q)	0.01560	0.02089	0.11137
	(D * RESET_B * SCD * SCE * !Q)	0.02040	0.02571	0.11617
	(D * RESET_B * SCD * !SCE * Q)	0.00845	0.01363	0.10148
	(D * RESET_B * SCD * !SCE * Q)	0.01345	0.01865	0.10649
	(D * RESET_B * SCD * !SCE * !Q)	0.01555	0.02083	0.11129
	(D * RESET_B * SCD * !SCE * !Q)	0.02035	0.02565	0.11609
	(D * RESET_B * !SCD * SCE * Q)	0.01753	0.02287	0.11207
	(D * RESET_B * !SCD * SCE * Q)	0.02276	0.02812	0.11730
	(D * RESET_B * !SCD * !SCE * Q)	0.00854	0.01371	0.10157
	(D * RESET_B * !SCD * !SCE * Q)	0.01354	0.01874	0.10658
	(D * RESET_B * !SCD * !SCE * !Q)	0.01563	0.02091	0.11138
	(D * RESET_B * !SCD * !SCE * !Q)	0.02043	0.02573	0.11618
	(D * !SCD * SCE * !Q)	0.00779	0.01297	0.10090
	(D * !SCD * SCE * !Q)	0.01279	0.01800	0.10591
	(D * !RESET_B * SCD * SCE * !Q)	0.00779	0.01297	0.10087
	(D * !RESET_B * SCD * SCE * !Q)	0.01279	0.01800	0.10588
	(D * !RESET_B * SCD * !SCE * !Q)	0.00769	0.01287	0.10078
	(D * !RESET_B * SCD * !SCE * !Q)	0.01270	0.01790	0.10579
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00769	0.01287	0.10078
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01270	0.01790	0.10579
	(!D * RESET_B * SCD * SCE * Q)	0.00855	0.01372	0.10158
	(!D * RESET_B * SCD * SCE * Q)	0.01356	0.01875	0.10659
	(!D * RESET_B * SCD * SCE * !Q)	0.01567	0.02095	0.11143
	(!D * RESET_B * SCD * SCE * !Q)	0.02046	0.02577	0.11623
	(!D * RESET_B * !SCE * Q)	0.01738	0.02272	0.11190
	(!D * RESET_B * !SCE * Q)	0.02259	0.02794	0.11713
	(!D * RESET_B * !SCD * SCE * Q)	0.01748	0.02283	0.11204
	(!D * RESET_B * !SCD * SCE * Q)	0.02270	0.02808	0.11729
	(!D * !SCE * !Q)	0.00769	0.01288	0.10080
	(!D * !SCE * !Q)	0.01270	0.01791	0.10582
	(!D * !SCD * SCE * !Q)	0.00779	0.01297	0.10089
	(!D * !SCD * SCE * !Q)	0.01279	0.01800	0.10591
	(!D * !RESET_B * SCD * SCE * !Q)	0.00779	0.01297	0.10087
	(!D * !RESET_B * SCD * SCE * !Q)	0.01279	0.01800	0.10588

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00846	0.01364	0.10162
	(D * RESET_B * SCD * SCE * Q)	0.01350	0.01870	0.10667
	(D * RESET_B * SCD * SCE * !Q)	0.01603	0.02131	0.11192
	(D * RESET_B * SCD * SCE * !Q)	0.02088	0.02618	0.11678
	(D * RESET_B * SCD * !SCE * Q)	0.00841	0.01359	0.10157
	(D * RESET_B * SCD * !SCE * Q)	0.01345	0.01865	0.10662
	(D * RESET_B * SCD * !SCE * !Q)	0.01597	0.02126	0.11179
	(D * RESET_B * SCD * !SCE * !Q)	0.02082	0.02613	0.11665
	(D * RESET_B * !SCD * SCE * Q)	0.01822	0.02356	0.11286
	(D * RESET_B * !SCD * SCE * Q)	0.02347	0.02881	0.11811
	(D * RESET_B * !SCD * !SCE * Q)	0.00850	0.01367	0.10166
	(D * RESET_B * !SCD * !SCE * Q)	0.01353	0.01874	0.10670
	(D * RESET_B * !SCD * !SCE * !Q)	0.01606	0.02134	0.11188
	(D * RESET_B * !SCD * !SCE * !Q)	0.02091	0.02621	0.11674
	(D * !SCD * SCE * !Q)	0.00787	0.01306	0.10109
	(D * !SCD * SCE * !Q)	0.01291	0.01813	0.10614
	(D * !RESET_B * SCD * SCE * !Q)	0.00788	0.01306	0.10107
	(D * !RESET_B * SCD * SCE * !Q)	0.01291	0.01813	0.10611
	(D * !RESET_B * SCD * !SCE * !Q)	0.00778	0.01296	0.10097
	(D * !RESET_B * SCD * !SCE * !Q)	0.01282	0.01803	0.10602
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00778	0.01296	0.10097
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01282	0.01803	0.10602
	(!D * RESET_B * SCD * SCE * Q)	0.00851	0.01369	0.10167
	(!D * RESET_B * SCD * SCE * Q)	0.01355	0.01875	0.10672
	(!D * RESET_B * SCD * SCE * !Q)	0.01610	0.02138	0.11198
	(!D * RESET_B * SCD * SCE * !Q)	0.02094	0.02624	0.11683
	(!D * RESET_B * !SCE * Q)	0.01805	0.02338	0.11268
	(!D * RESET_B * !SCE * Q)	0.02327	0.02862	0.11791
	(!D * RESET_B * !SCD * SCE * Q)	0.01819	0.02354	0.11283
	(!D * RESET_B * !SCD * SCE * Q)	0.02343	0.02880	0.11810
	(!D * !SCE * !Q)	0.00778	0.01297	0.10100
	(!D * !SCE * !Q)	0.01282	0.01803	0.10605
	(!D * !SCD * SCE * !Q)	0.00787	0.01307	0.10109
	(!D * !SCD * SCE * !Q)	0.01291	0.01813	0.10614
	(!D * !RESET_B * SCD * SCE * !Q)	0.00788	0.01306	0.10107
	(!D * !RESET_B * SCD * SCE * !Q)	0.01291	0.01813	0.10611

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00865	0.01383	0.10178
	(D * RESET_B * SCD * SCE * Q)	0.01368	0.01889	0.10683
	(D * RESET_B * SCD * SCE * !Q)	0.01602	0.02132	0.11185
	(D * RESET_B * SCD * SCE * !Q)	0.02085	0.02617	0.11668
	(D * RESET_B * SCD * !SCE * Q)	0.00859	0.01378	0.10173
	(D * RESET_B * SCD * !SCE * Q)	0.01362	0.01884	0.10678
	(D * RESET_B * SCD * !SCE * !Q)	0.01597	0.02126	0.11176
	(D * RESET_B * SCD * !SCE * !Q)	0.02080	0.02612	0.11659
	(D * RESET_B * !SCD * SCE * Q)	0.01808	0.02343	0.11264
	(D * RESET_B * !SCD * SCE * Q)	0.02334	0.02872	0.11792
	(D * RESET_B * !SCD * !SCE * Q)	0.00868	0.01386	0.10182
	(D * RESET_B * !SCD * !SCE * Q)	0.01371	0.01892	0.10687
	(D * RESET_B * !SCD * !SCE * !Q)	0.01605	0.02135	0.11185
	(D * RESET_B * !SCD * !SCE * !Q)	0.02089	0.02621	0.11668
	(D * !SCD * SCE * !Q)	0.00791	0.01310	0.10113
	(D * !SCD * SCE * !Q)	0.01294	0.01816	0.10618
	(D * !RESET_B * SCD * SCE * !Q)	0.00791	0.01310	0.10111
	(D * !RESET_B * SCD * SCE * !Q)	0.01294	0.01816	0.10614
	(D * !RESET_B * SCD * !SCE * !Q)	0.00781	0.01300	0.10102
	(D * !RESET_B * SCD * !SCE * !Q)	0.01284	0.01806	0.10605
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00781	0.01300	0.10102
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01284	0.01806	0.10605
	(!D * RESET_B * SCD * SCE * Q)	0.00869	0.01388	0.10183
	(!D * RESET_B * SCD * SCE * Q)	0.01372	0.01894	0.10688
	(!D * RESET_B * SCD * SCE * !Q)	0.01609	0.02139	0.11191
	(!D * RESET_B * SCD * SCE * !Q)	0.02091	0.02624	0.11674
	(!D * RESET_B * !SCE * Q)	0.01790	0.02325	0.11247
	(!D * RESET_B * !SCE * Q)	0.02313	0.02851	0.11771
	(!D * RESET_B * !SCD * SCE * Q)	0.01804	0.02341	0.11261
	(!D * RESET_B * !SCD * SCE * Q)	0.02329	0.02868	0.11787
	(!D * !SCE * !Q)	0.00781	0.01301	0.10104
	(!D * !SCE * !Q)	0.01284	0.01807	0.10609
	(!D * !SCD * SCE * !Q)	0.00791	0.01310	0.10113
	(!D * !SCD * SCE * !Q)	0.01294	0.01817	0.10619
	(!D * !RESET_B * SCD * SCE * !Q)	0.00791	0.01310	0.10111
	(!D * !RESET_B * SCD * SCE * !Q)	0.01294	0.01816	0.10614

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00195	0.00215	0.00413	0.00350	0.00307	1.24099	1.17476
sky130_fd_sc_hs__sdfsbp_2	0.00201	0.00209	0.00432	0.00352	0.00309	2.51353	2.52233

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	43.07280	57.69820
sky130_fd_sc_hs__sdfsbp_2	0.00000	49.76440	83.30910

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)	0.25085	0.71290	6.17636
	SET_B->Q (FR)	0.23211	0.91404	8.59992
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.27926	0.64909	6.20357
	SET_B->Q (FR)	0.31561	0.90765	8.73292

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.22590	0.49012	2.81765
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.24557	0.48418	2.99636

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)	0.19185	0.68931	6.19207
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.18556	0.58561	6.17176

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)	0.19963	0.52531	2.73559
	SET_B->Q_N (FF)	0.17881	0.72701	5.17172
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.20216	0.49731	3.10996
	SET_B->Q_N (FF)	0.22138	0.76908	5.67202

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)	-0.08695	-0.17360	-0.88909
	setup	CLK (R)	0.12921	0.19739	0.93766
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10940	-0.19572	-0.91520
	setup	CLK (R)	0.16346	0.22808	1.07389

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)	-0.09613	-0.19849	-2.13552
	setup	CLK (R)	0.20838	0.30858	2.58056
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12608	-0.22451	-1.72469
	setup	CLK (R)	0.25140	0.34110	2.68547

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)	-0.08695	-0.17360	-0.88909
	setup	CLK (R)	0.12921	0.19739	0.93766
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10940	-0.19572	-0.91520
	setup	CLK (R)	0.16346	0.22808	1.07389

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)	-0.09613	-0.19849	-2.13552
	setup	CLK (R)	0.20838	0.30858	2.58056
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12608	-0.22451	-1.72469
	setup	CLK (R)	0.25140	0.34110	2.68547

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)	-0.10944	-0.18069	-0.86796
	setup	CLK (R)	0.15677	0.21180	0.91582
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12829	-0.20103	-0.86899
	setup	CLK (R)	0.18754	0.23955	1.00597

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)	-0.12086	-0.22016	-2.24032
	setup	CLK (R)	0.25740	0.33577	2.61950
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15379	-0.24845	-1.84020
	setup	CLK (R)	0.30250	0.37369	2.71467

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)	-0.10944	-0.18069	-0.86796
	hold	CLK (R)	-0.11477	-0.18793	-0.87196
	setup	CLK (R)	0.15367	0.20410	0.91304
	setup	CLK (R)	0.15677	0.21180	0.91582
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12829	-0.20103	-0.86899
	hold	CLK (R)	-0.13669	-0.20843	-0.87320
	setup	CLK (R)	0.18327	0.23155	1.00094
	setup	CLK (R)	0.18754	0.23955	1.00597

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)	-0.13003	-0.22713	-2.24032
	hold	CLK (R)	-0.12086	-0.22016	-2.24100
	setup	CLK (R)	0.25740	0.33577	2.61378
	setup	CLK (R)	0.25426	0.33263	2.61950
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16595	-0.25137	-1.87698
	hold	CLK (R)	-0.15379	-0.24845	-1.84020
	setup	CLK (R)	0.30250	0.37314	2.70871
	setup	CLK (R)	0.29838	0.37369	2.71467

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)	-0.09876	-0.16227	-0.20658
	setup	CLK (R)	0.25663	0.27029	1.04590
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11954	-0.18507	-0.03421
	setup	CLK (R)	0.30007	0.30728	1.17882

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)	-0.10898	-0.19364	-2.07425
	setup	CLK (R)	0.22525	0.29967	2.46417
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13685	-0.21414	-1.64508
	setup	CLK (R)	0.26381	0.33486	2.53531

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)	-0.13310	-0.16227	-0.20658
	hold	CLK (R)	-0.09876	-0.18824	-0.99459
	setup	CLK (R)	0.25663	0.27029	0.48285
	setup	CLK (R)	0.14025	0.21415	1.04590
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16324	-0.18507	-0.03421
	hold	CLK (R)	-0.11954	-0.21257	-1.03470
	setup	CLK (R)	0.30007	0.30728	0.74419
	setup	CLK (R)	0.17445	0.24502	1.17882

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)	-0.14313	-0.25267	-2.28501
	hold	CLK (R)	-0.10898	-0.19364	-2.07425
	setup	CLK (R)	0.18733	0.27324	2.29840
	setup	CLK (R)	0.22525	0.29967	2.46417
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16505	-0.26745	-2.21824
	hold	CLK (R)	-0.13685	-0.21414	-1.64508
	setup	CLK (R)	0.21519	0.29656	2.27481
	setup	CLK (R)	0.26381	0.33486	2.53531

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)	-0.08209	-0.12484	-0.42760
	removal	CLK (R)	0.10806	0.14558	0.49887
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11922	-0.18194	-0.58964
	removal	CLK (R)	0.13396	0.19804	1.15490

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)	-0.08247	-0.12484	-0.42780
	recovery	CLK (R)	-0.08245	-0.12484	-0.42780
	recovery	CLK (R)	-0.08209	-0.12504	-0.42760
	removal	CLK (R)	0.10806	0.14558	0.49781
	removal	CLK (R)	0.10806	0.14558	0.49781
	removal	CLK (R)	0.10806	0.14558	0.49887
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11922	-0.18194	-0.58964
	recovery	CLK (R)	-0.11925	-0.18194	-0.59019
	recovery	CLK (R)	-0.11931	-0.18194	-0.59060
	removal	CLK (R)	0.13396	0.19804	1.15460
	removal	CLK (R)	0.13396	0.19804	1.15490
	removal	CLK (R)	0.13396	0.19804	1.15490

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 ()	0.18741	0.65918	16.50020
	min_pulse_width	SET_B ()	0.17753	0.65918	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.21952	0.65918	16.50020
	min_pulse_width	SET_B ()	0.24422	0.65918	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 ()	0.15036	0.65918	16.50020
	min_pulse_width	CLK ()	0.09602	0.65918	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.10096	0.65918	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 ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.22446	0.65918	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.20223	0.65918	16.50020
	min_pulse_width	CLK ()	0.27880	0.65918	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	0.01836	0.02005	0.06713
	CLK	0.01597	0.01764	0.06451
	SET_B	0.01114	0.01244	0.04201
	SET_B	0.01400	0.01529	0.04484
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02553	0.02689	0.07673
	CLK	0.02305	0.02443	0.07380
	SET_B	0.01688	0.01663	0.04739
	SET_B	0.01976	0.01951	0.04915

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01779	0.01992	0.06467
	CLK	0.01526	0.01740	0.06204
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02399	0.02650	0.07242
	CLK	0.02150	0.02391	0.06980

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01802	0.02029	0.06564
	CLK	0.01549	0.01764	0.06298
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02431	0.02677	0.07378
	CLK	0.02183	0.02421	0.07088

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01798	0.01965	0.06580
	CLK	0.01559	0.01725	0.06335
	SET_B	0.01085	0.01215	0.04188
	SET_B	0.01371	0.01499	0.04434
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02516	0.02654	0.07533
	CLK	0.02268	0.02406	0.07265
	SET_B	0.01661	0.01638	0.04629
	SET_B	0.01948	0.01924	0.04853

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00177	0.00179	0.00177
	(CLK * SCD * SCE)	-0.00017	-0.00018	-0.00017
	(CLK * !SCE)	0.00494	0.00690	0.04713
	(CLK * !SCE)	0.00149	0.00343	0.04368
	(CLK * !SCD * SCE)	0.00108	0.00108	0.00107
	(CLK * !SCD * SCE)	-0.00109	-0.00110	-0.00112
	(!CLK * SCD * SCE)	0.00175	0.00178	0.00176
	(!CLK * SCD * SCE)	-0.00017	-0.00019	-0.00017
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01278	0.01430	0.05443
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00894	0.01046	0.05059
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01029	0.01166	0.04952
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00633	0.00771	0.04557
	(!CLK * !SCD * SCE)	0.00108	0.00109	0.00107
	(!CLK * !SCD * SCE)	-0.00109	-0.00110	-0.00112

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00193	0.00193	0.00193
	(CLK * SCD * SCE)	-0.00007	-0.00007	-0.00007
	(CLK * !SCE)	0.00522	0.00713	0.04767
	(CLK * !SCE)	0.00170	0.00361	0.04416
	(CLK * !SCD * SCE)	0.00118	0.00118	0.00116
	(CLK * !SCD * SCE)	-0.00105	-0.00106	-0.00108
	(!CLK * SCD * SCE)	0.00185	0.00186	0.00185
	(!CLK * SCD * SCE)	-0.00015	-0.00016	-0.00014
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01443	0.01585	0.05565
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01070	0.01212	0.05193
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01197	0.01324	0.05064
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00810	0.00937	0.04678
	(!CLK * !SCD * SCE)	0.00113	0.00113	0.00111
	(!CLK * !SCD * SCE)	-0.00110	-0.00112	-0.00113

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00077	-0.00079	-0.00084
	(CLK * SCD * SCE)	0.00116	0.00116	0.00112
	(CLK * !SCE)	0.00117	0.00354	0.04391
	(CLK * !SCE)	0.00462	0.00700	0.04736
	(CLK * !SCD * SCE)	-0.00025	-0.00026	-0.00025
	(CLK * !SCD * SCE)	0.00192	0.00193	0.00192
	(!CLK * SCD * SCE)	-0.00078	-0.00078	-0.00084
	(!CLK * SCD * SCE)	0.00116	0.00115	0.00111
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00878	0.01082	0.05196
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01262	0.01464	0.05579
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00505	0.00686	0.04526
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00899	0.01081	0.04921
	(!CLK * !SCD * SCE)	-0.00025	-0.00026	-0.00025
	(!CLK * !SCD * SCE)	0.00192	0.00193	0.00193

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00078	-0.00080	-0.00085
	(CLK * SCD * SCE)	0.00121	0.00121	0.00117
	(CLK * !SCE)	0.00140	0.00373	0.04440
	(CLK * !SCE)	0.00493	0.00724	0.04792
	(CLK * !SCD * SCE)	-0.00023	-0.00024	-0.00023
	(CLK * !SCD * SCE)	0.00200	0.00201	0.00200
	(!CLK * SCD * SCE)	-0.00086	-0.00086	-0.00092
	(!CLK * SCD * SCE)	0.00113	0.00112	0.00109
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01122	0.01312	0.05416
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01495	0.01685	0.05789
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00717	0.00885	0.04698
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01104	0.01272	0.05085
	(!CLK * !SCD * SCE)	-0.00028	-0.00029	-0.00028
	(!CLK * !SCD * SCE)	0.00195	0.00195	0.00195

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00706	0.00840	0.04430
	(CLK * D * SCE)	0.00216	0.00350	0.03941
	(CLK * !D * SCE)	0.00809	0.00929	0.04473
	(CLK * !D * SCE)	0.00295	0.00415	0.03960
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01472	0.01588	0.05180
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00947	0.01061	0.04654
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01223	0.01330	0.04743
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00686	0.00791	0.04204
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01577	0.01683	0.05237
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01026	0.01131	0.04687
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01327	0.01423	0.04796
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00765	0.00860	0.04233
	!SCE	0.00216	0.00195	0.00193
	!SCE	-0.00070	-0.00094	-0.00094

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00716	0.00853	0.04437
	(CLK * D * SCE)	0.00234	0.00369	0.03955
	(CLK * !D * SCE)	0.00820	0.00942	0.04480
	(CLK * !D * SCE)	0.00313	0.00434	0.03973
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01624	0.01740	0.05285
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01122	0.01235	0.04783
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01377	0.01483	0.04839
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00861	0.00965	0.04323
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01728	0.01834	0.05342
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01201	0.01306	0.04815
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01481	0.01577	0.04894
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00940	0.01035	0.04354
	!SCE	0.00216	0.00194	0.00191
	!SCE	-0.00065	-0.00088	-0.00088

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00260	0.00391	0.03982
	(CLK * D * SCE)	0.00749	0.00883	0.04469
	(CLK * !D * SCE)	0.00212	0.00354	0.03967
	(CLK * !D * SCE)	0.00725	0.00870	0.04479
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01040	0.01151	0.04802
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01568	0.01678	0.05326
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00660	0.00755	0.04195
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01200	0.01294	0.04731
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00997	0.01117	0.04807
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01549	0.01669	0.05355
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00613	0.00714	0.04175
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01175	0.01277	0.04735
	!SCE	-0.00094	-0.00096	-0.00097
	!SCE	0.00194	0.00195	0.00192

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00289	0.00421	0.04006
	(CLK * D * SCE)	0.00772	0.00905	0.04486
	(CLK * !D * SCE)	0.00241	0.00383	0.03990
	(CLK * !D * SCE)	0.00748	0.00891	0.04495
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01288	0.01396	0.05004
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01792	0.01900	0.05505
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00875	0.00966	0.04352
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01393	0.01485	0.04867
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01247	0.01359	0.05003
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01774	0.01887	0.05529
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00827	0.00922	0.04330
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01369	0.01465	0.04870
	!SCE	-0.00078	-0.00079	-0.00080
	!SCE	0.00202	0.00204	0.00201

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)**	0.00621	0.00873	0.06110
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00008	0.00241	0.05480
	(CLK * D * !SCD)	0.00904	0.01168	0.06649
	(CLK * D * !SCD)	0.00456	0.00718	0.06196
	(CLK * !D * SCD)	0.01060	0.01488	0.10184
	(CLK * !D * SCD)	0.00269	0.00696	0.09394
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00621	0.00872	0.06109
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00009	0.00240	0.05479
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01646	0.01922	0.07388
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01235	0.01511	0.06972
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01267	0.01546	0.06984
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00868	0.01145	0.06581
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01843	0.02250	0.10992
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01015	0.01421	0.10165
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01594	0.01989	0.10512
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00754	0.01146	0.09672
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00603	0.00869	0.06093
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00018	0.00282	0.05505

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00653	0.00907	0.06202
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00001	0.00253	0.05551
	(CLK * D * !SCD)	0.00949	0.01216	0.06755
	(CLK * D * !SCD)	0.00479	0.00745	0.06281
	(CLK * !D * SCD)	0.01102	0.01537	0.10405
	(CLK * !D * SCD)	0.00288	0.00720	0.09593
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00645	0.00900	0.06194
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00007	0.00245	0.05543
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01913	0.02194	0.07709
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01464	0.01744	0.07257
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01499	0.01782	0.07271
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01065	0.01346	0.06832
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02022	0.02435	0.11310
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01188	0.01598	0.10476
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01775	0.02173	0.10815
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00928	0.01323	0.09968
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00619	0.00887	0.06169
	(!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	0.00280	0.05560

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)**	0.00006	0.00328	0.05585
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00637	0.00960	0.06216
	(CLK * D * !SCD)	0.00482	0.00778	0.06203
	(CLK * D * !SCD)	0.00933	0.01230	0.06637
	(CLK * !D * SCD)	0.00159	0.00618	0.09329
	(CLK * !D * SCD)	0.00949	0.01413	0.10120
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00005	0.00328	0.05585
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00637	0.00959	0.06216
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01262	0.01568	0.06906
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01676	0.01982	0.07302
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01013	0.01318	0.06652
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01415	0.01722	0.07035
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00919	0.01346	0.10064
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01747	0.02176	0.10894
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00547	0.00957	0.09464
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01387	0.01800	0.10303
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00045	0.00368	0.05597
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00631	0.00957	0.06183

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00006	0.00319	0.05637
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00647	0.00973	0.06289
	(CLK * D * !SCD)	0.00479	0.00778	0.06257
	(CLK * D * !SCD)	0.00951	0.01251	0.06710
	(CLK * !D * SCD)	0.00181	0.00644	0.09532
	(CLK * !D * SCD)	0.00995	0.01461	0.10346
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00014	0.00312	0.05629
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00639	0.00965	0.06281
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01395	0.01705	0.07086
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01847	0.02156	0.07520
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01149	0.01458	0.06834
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01587	0.01896	0.07252
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01163	0.01588	0.10430
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01998	0.02422	0.11265
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00758	0.01167	0.09784
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01607	0.02016	0.10633
	(!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	0.00361	0.05648
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00642	0.00972	0.06257

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)	0.00327	0.00331	0.00328
	(CLK * Q * !Q_N)	-0.00205	-0.00207	-0.00206
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00344	0.00348	0.00345
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00188	-0.00190	-0.00188
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00611	0.00733	0.03620
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00057	0.00177	0.03065
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00333	0.00337	0.00334
	(CLK * Q * !Q_N)	-0.00213	-0.00216	-0.00214
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00344	0.00348	0.00345
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00202	-0.00204	-0.00203
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00641	0.00761	0.03630
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00072	0.00189	0.03060

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)	-0.00231	-0.00236	-0.00237
	(CLK * Q * !Q_N)	0.00305	0.00299	0.00297
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00247	-0.00254	-0.00255
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00289	0.00281	0.00279
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00038	0.00194	0.03100
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00589	0.00752	0.03654
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00233	-0.00242	-0.00242
	(CLK * Q * !Q_N)	0.00312	0.00310	0.00306
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00244	-0.00254	-0.00255
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00302	0.00297	0.00294
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00016	0.00170	0.03059
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00584	0.00743	0.03628

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)	0.01607	0.01990	0.10824
	(D * SCD * SCE * Q * !Q_N)	0.01116	0.01501	0.10333
	(D * !SCE * Q * !Q_N)	0.01601	0.01985	0.10819
	(D * !SCE * Q * !Q_N)	0.01110	0.01496	0.10328
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01571	0.01959	0.10785
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01080	0.01466	0.10295
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02955	0.03372	0.12293
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02417	0.02834	0.11754
	(!D * SCD * SCE * Q * !Q_N)	0.01611	0.01995	0.10829
	(!D * SCD * SCE * Q * !Q_N)	0.01120	0.01506	0.10338
	(!D * !SCE * SET_B * !Q * Q_N)	0.01562	0.01949	0.10776
	(!D * !SCE * SET_B * !Q * Q_N)	0.01071	0.01457	0.10285
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02945	0.03363	0.12283
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02405	0.02824	0.11743
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01572	0.01959	0.10785
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01081	0.01466	0.10295
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02960	0.03373	0.12289
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02420	0.02834	0.11749

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.02079	0.02453	0.11503
	(D * SCD * SCE * Q * !Q_N)	0.01583	0.01955	0.11007
	(D * !SCE * Q * !Q_N)	0.02073	0.02447	0.11498
	(D * !SCE * Q * !Q_N)	0.01578	0.01950	0.11002
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02032	0.02426	0.11448
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01536	0.01929	0.10952
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05195	0.05636	0.14992
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04667	0.05107	0.14464
	(!D * SCD * SCE * Q * !Q_N)	0.02084	0.02457	0.11508
	(!D * SCD * SCE * Q * !Q_N)	0.01588	0.01960	0.11012
	(!D * !SCE * SET_B * !Q * Q_N)	0.02023	0.02417	0.11438
	(!D * !SCE * SET_B * !Q * Q_N)	0.01526	0.01920	0.10942
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05185	0.05627	0.14970
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04655	0.05096	0.14440
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02032	0.02426	0.11448
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01536	0.01929	0.10951
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05206	0.05637	0.14984
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04677	0.05107	0.14454

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01651	0.02177	0.11267
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02104	0.02631	0.11722
	(D * SCD * SCE * Q * !Q_N)	0.00910	0.01430	0.10310
	(D * SCD * SCE * Q * !Q_N)	0.01399	0.01922	0.10801
	(D * !SCE * SET_B * !Q * Q_N)	0.01644	0.02169	0.11299
	(D * !SCE * SET_B * !Q * Q_N)	0.02097	0.02624	0.11754
	(D * !SCE * Q * !Q_N)	0.00904	0.01424	0.10304
	(D * !SCE * Q * !Q_N)	0.01394	0.01916	0.10795
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01832	0.02372	0.11363
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02362	0.02902	0.11894
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00905	0.01427	0.10315
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01395	0.01919	0.10806
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01459	0.02002	0.10993
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01998	0.02543	0.11534
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01658	0.02182	0.11274
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02110	0.02637	0.11727
	(!D * SCD * SCE * Q * !Q_N)	0.00914	0.01434	0.10314
	(!D * SCD * SCE * Q * !Q_N)	0.01404	0.01926	0.10806
	(!D * !SCE * SET_B * Q * !Q_N)	0.01821	0.02364	0.11355
	(!D * !SCE * SET_B * Q * !Q_N)	0.02348	0.02891	0.11882
	(!D * !SCE * SET_B * !Q * Q_N)	0.00896	0.01417	0.10305
	(!D * !SCE * SET_B * !Q * Q_N)	0.01386	0.01910	0.10796
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01450	0.01993	0.10983
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01989	0.02535	0.11523
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01832	0.02375	0.11365
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02361	0.02904	0.11894
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00905	0.01426	0.10315
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01395	0.01919	0.10805
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01460	0.02003	0.10992
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01998	0.02541	0.11533

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.02016	0.02524	0.11811
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02490	0.03000	0.12285
	(D * SCD * SCE * Q * !Q_N)	0.01093	0.01597	0.10630
	(D * SCD * SCE * Q * !Q_N)	0.01588	0.02093	0.11127
	(D * !SCE * SET_B * !Q * Q_N)	0.02009	0.02516	0.11801
	(D * !SCE * SET_B * !Q * Q_N)	0.02483	0.02993	0.12277
	(D * !SCE * Q * !Q_N)	0.01088	0.01592	0.10625
	(D * !SCE * Q * !Q_N)	0.01582	0.02088	0.11122
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02314	0.02834	0.11997
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02832	0.03353	0.12517
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01109	0.01614	0.10665
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01604	0.02111	0.11162
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01896	0.02420	0.11576
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02426	0.02951	0.12109
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02022	0.02530	0.11863
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02496	0.03005	0.12338
	(!D * SCD * SCE * Q * !Q_N)	0.01098	0.01602	0.10635
	(!D * SCD * SCE * Q * !Q_N)	0.01593	0.02098	0.11132
	(!D * !SCE * SET_B * Q * !Q_N)	0.02300	0.02821	0.11984
	(!D * !SCE * SET_B * Q * !Q_N)	0.02816	0.03337	0.12501
	(!D * !SCE * SET_B * !Q * Q_N)	0.01100	0.01605	0.10656
	(!D * !SCE * SET_B * !Q * Q_N)	0.01595	0.02101	0.11152
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01887	0.02411	0.11566
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02416	0.02940	0.12097
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02314	0.02836	0.11997
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02831	0.03353	0.12515
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01109	0.01614	0.10665
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01604	0.02110	0.11161
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01896	0.02420	0.11580
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02426	0.02951	0.12110

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00194	0.00216	0.00411	0.00341	0.00306	1.23863
sky130_fd_sc_hs__sdfstp_2	0.00194	0.00211	0.00411	0.00351	0.00305	2.49379
sky130_fd_sc_hs__sdfstp_4	0.00194	0.00216	0.00417	0.00352	0.00305	4.74100

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfstp_1	0.00000	38.33420	50.73090
sky130_fd_sc_hs__sdfstp_2	0.00000	40.28410	82.74250
sky130_fd_sc_hs__sdfstp_4	0.00000	62.04490	96.57870

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)	0.20867	0.67200	6.08796
	SET_B->Q (FR)	0.19975	0.86974	8.45512
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.19566	0.56357	6.01306
	SET_B->Q (FR)	0.22747	0.81034	8.49926
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.22686	0.53092	6.09126
	SET_B->Q (FR)	0.26801	0.79273	8.60891

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.21328	0.47760	2.80945
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.22085	0.45261	2.89301
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.22668	0.42969	2.94667

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)	-0.08906	-0.17444	-0.88341
	setup	CLK (R)	0.13512	0.19837	0.93120
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10955	-0.19587	-0.94288
	setup	CLK (R)	0.16231	0.22612	1.02885
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11132	-0.19735	-0.94387
	setup	CLK (R)	0.15668	0.22552	1.04267

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)	-0.08296	-0.19012	-2.16197
	setup	CLK (R)	0.20241	0.29957	2.55979
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09870	-0.20340	-2.23193
	setup	CLK (R)	0.23249	0.33264	2.64346
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10713	-0.21160	-2.16536
	setup	CLK (R)	0.23607	0.33092	2.65255

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)	-0.08906	-0.17444	-0.88341
	setup	CLK (R)	0.13512	0.19837	0.93120
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10955	-0.19587	-0.94288
	setup	CLK (R)	0.16231	0.22612	1.02885
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11132	-0.19735	-0.94387
	setup	CLK (R)	0.15668	0.22552	1.04267

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)	-0.08296	-0.19012	-2.16197
	setup	CLK (R)	0.20241	0.29957	2.55979
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09870	-0.20340	-2.23193
	setup	CLK (R)	0.23249	0.33264	2.64346
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10713	-0.21160	-2.16536
	setup	CLK (R)	0.23607	0.33092	2.65255

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)	-0.11082	-0.18198	-0.86287
	setup	CLK (R)	0.16200	0.21465	0.91155
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13083	-0.20212	-0.90999
	setup	CLK (R)	0.18793	0.23780	0.98853
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13057	-0.20212	-0.91329
	setup	CLK (R)	0.18220	0.23462	0.99891

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)	-0.10906	-0.20586	-2.24643
	setup	CLK (R)	0.25145	0.33124	2.60052
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12464	-0.22460	-2.31709
	setup	CLK (R)	0.28230	0.36196	2.67133
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13181	-0.23243	-2.24217
	setup	CLK (R)	0.28450	0.36013	2.67801

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)	-0.11082	-0.18198	-0.86287
	hold	CLK (R)	-0.11437	-0.18969	-0.86954
	setup	CLK (R)	0.15625	0.20755	0.90775
	setup	CLK (R)	0.16200	0.21465	0.91155
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13083	-0.20212	-0.90999
	hold	CLK (R)	-0.13467	-0.20967	-0.91907
	setup	CLK (R)	0.18195	0.23364	0.98541
	setup	CLK (R)	0.18793	0.23780	0.98853
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13057	-0.20212	-0.91329
	hold	CLK (R)	-0.13362	-0.20967	-0.92032
	setup	CLK (R)	0.18061	0.23130	0.99148
	setup	CLK (R)	0.18220	0.23462	0.99891

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)	-0.11730	-0.21492	-2.25548
	hold	CLK (R)	-0.10906	-0.20586	-2.24643
	setup	CLK (R)	0.25145	0.33124	2.59238
	setup	CLK (R)	0.24530	0.32649	2.60052
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13677	-0.23337	-2.31723
	hold	CLK (R)	-0.12464	-0.22460	-2.31709
	setup	CLK (R)	0.28230	0.36196	2.66170
	setup	CLK (R)	0.27926	0.35918	2.67133
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14462	-0.23791	-2.26284
	hold	CLK (R)	-0.13181	-0.23243	-2.24217
	setup	CLK (R)	0.28450	0.36013	2.66880
	setup	CLK (R)	0.28013	0.35949	2.67801

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)	-0.09939	-0.15106	-0.22576
	setup	CLK (R)	0.25047	0.26304	1.03665
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11947	-0.16558	-0.26637
	setup	CLK (R)	0.28143	0.29300	1.12682
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11896	-0.17011	-0.22940
	setup	CLK (R)	0.28268	0.29280	1.13417

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)	-0.09862	-0.18115	-2.08536
	setup	CLK (R)	0.21541	0.29498	2.43808
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11400	-0.19588	-2.14883
	setup	CLK (R)	0.24738	0.32301	2.51574
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12188	-0.20244	-2.08862
	setup	CLK (R)	0.24726	0.32434	2.53085

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)	-0.11588	-0.15106	-0.22576
	hold	CLK (R)	-0.09939	-0.18901	-0.99057
	setup	CLK (R)	0.25047	0.26304	0.46714
	setup	CLK (R)	0.14636	0.21347	1.03665
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13490	-0.16558	-0.26637
	hold	CLK (R)	-0.11947	-0.21062	-1.04790
	setup	CLK (R)	0.28143	0.29300	0.53615
	setup	CLK (R)	0.17368	0.24216	1.12682
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14192	-0.17011	-0.22940
	hold	CLK (R)	-0.11896	-0.21169	-1.05209
	setup	CLK (R)	0.28268	0.29280	0.54480
	setup	CLK (R)	0.16972	0.23816	1.13417

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)	-0.14391	-0.25187	-2.28620
	hold	CLK (R)	-0.09862	-0.18115	-2.08536
	setup	CLK (R)	0.18874	0.27584	2.29630
	setup	CLK (R)	0.21541	0.29498	2.43808
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16508	-0.26844	-2.29121
	hold	CLK (R)	-0.11400	-0.19588	-2.14883
	setup	CLK (R)	0.21590	0.29514	2.32106
	setup	CLK (R)	0.24738	0.32301	2.51574
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16299	-0.27153	-2.29549
	hold	CLK (R)	-0.12188	-0.20244	-2.08862
	setup	CLK (R)	0.21369	0.29332	2.32352
	setup	CLK (R)	0.24726	0.32434	2.53085

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)	-0.08471	-0.13424	-0.45486
	removal	CLK (R)	0.11022	0.14993	0.58184
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.13156	-0.17383	-0.47326
	removal	CLK (R)	0.17669	0.38676	5.00187
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12325	-0.17383	-0.50264
	removal	CLK (R)	0.15004	0.31289	3.55825

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)	-0.08472	-0.13425	-0.45486
	recovery	CLK (R)	-0.08471	-0.13424	-0.45488
	recovery	CLK (R)	-0.08482	-0.13459	-0.45717
	removal	CLK (R)	0.10622	0.14993	0.58184
	removal	CLK (R)	0.10622	0.14993	0.58184
	removal	CLK (R)	0.11022	0.14993	0.58184
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.13156	-0.17383	-0.47326
	recovery	CLK (R)	-0.13156	-0.17383	-0.47326
	recovery	CLK (R)	-0.13156	-0.17383	-0.47326
	removal	CLK (R)	0.17310	0.38676	5.00187
	removal	CLK (R)	0.17310	0.38676	5.00187
	removal	CLK (R)	0.17669	0.38676	4.97595
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12325	-0.17383	-0.50664
	recovery	CLK (R)	-0.12325	-0.17383	-0.50664
	recovery	CLK (R)	-0.12325	-0.17383	-0.50264
	removal	CLK (R)	0.15004	0.31289	3.55327
	removal	CLK (R)	0.15004	0.31289	3.55825
	removal	CLK (R)	0.14961	0.31289	3.52621

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 ()	0.17012	0.65918	16.50020
	min_pulse_width	SET_B ()	0.14542	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.18494	0.65918	16.50020
	min_pulse_width	SET_B ()	0.16765	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.18988	0.65918	16.50020
	min_pulse_width	SET_B ()	0.18494	0.65918	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 ()	0.11084	0.65918	16.50020
	min_pulse_width	CLK ()	0.08367	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.09355	0.65918	16.50020
	min_pulse_width	CLK ()	0.08861	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.11084	0.65918	16.50020
	min_pulse_width	CLK ()	0.08861	0.65918	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 ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.21952	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.26645	0.65918	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.19482	0.65918	16.50020
	min_pulse_width	CLK ()	0.25904	0.65918	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	0.03118	0.03528	0.12880
	CLK	0.02653	0.03065	0.12451
	SET_B	0.01667	0.02016	0.07846
	SET_B	0.03483	0.03667	0.08582
sky130_fd_sc_hs__sdfstp_2	CLK	0.03793	0.04215	0.13740
	CLK	0.03333	0.03757	0.13349
	SET_B	0.03904	0.04037	0.08744
	SET_B	0.04424	0.04554	0.09340
sky130_fd_sc_hs__sdfstp_4	CLK	0.04639	0.05063	0.14595
	CLK	0.04186	0.04622	0.14284
	SET_B	0.04726	0.04887	0.09631
	SET_B	0.05253	0.05410	0.10170

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.03222	0.03628	0.12554
	CLK	0.02718	0.03122	0.12027
sky130_fd_sc_hs__sdfstp_2	CLK	0.03967	0.04377	0.13253
	CLK	0.03472	0.03878	0.12752
sky130_fd_sc_hs__sdfstp_4	CLK	0.04819	0.05274	0.14229
	CLK	0.04314	0.04746	0.13622

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00170	0.00172	0.00170
	(CLK * SCD * SCE)	-0.00023	-0.00024	-0.00022
	(CLK * !SCE)	0.00493	0.00690	0.04716
	(CLK * !SCE)	0.00150	0.00345	0.04372
	(CLK * !SCD * SCE)	0.00102	0.00102	0.00100
	(CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
	(!CLK * SCD * SCE)	0.00168	0.00171	0.00169
	(!CLK * SCD * SCE)	-0.00023	-0.00024	-0.00023
	(!CLK * !SCE * SET_B)	0.01237	0.01390	0.05408
	(!CLK * !SCE * SET_B)	0.00863	0.01016	0.05035
	(!CLK * !SCE * !SET_B * Q)	0.01002	0.01140	0.04929
	(!CLK * !SCE * !SET_B * Q)	0.00618	0.00755	0.04546
	(!CLK * !SCD * SCE)	0.00102	0.00102	0.00100
	(!CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00164	0.00166	0.00164
	(CLK * SCD * SCE)	-0.00029	-0.00030	-0.00028
	(CLK * !SCE)	0.00482	0.00678	0.04704
	(CLK * !SCE)	0.00140	0.00334	0.04361
	(CLK * !SCD * SCE)	0.00096	0.00096	0.00095
	(CLK * !SCD * SCE)	-0.00120	-0.00121	-0.00123
	(!CLK * SCD * SCE)	0.00162	0.00165	0.00163
	(!CLK * SCD * SCE)	-0.00029	-0.00031	-0.00029
	(!CLK * !SCE * SET_B)	0.01415	0.01563	0.05526
	(!CLK * !SCE * SET_B)	0.01029	0.01175	0.05138
	(!CLK * !SCE * !SET_B * Q)	0.01163	0.01292	0.05017
	(!CLK * !SCE * !SET_B * Q)	0.00765	0.00894	0.04619
	(!CLK * !SCD * SCE)	0.00096	0.00097	0.00095
	(!CLK * !SCD * SCE)	-0.00120	-0.00121	-0.00123

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00194	0.00196	0.00195
	(CLK * SCD * SCE)	0.00003	0.00001	0.00003
	(CLK * !SCE)	0.00529	0.00722	0.04739
	(CLK * !SCE)	0.00185	0.00378	0.04396
	(CLK * !SCD * SCE)	0.00125	0.00125	0.00124
	(CLK * !SCD * SCE)	-0.00090	-0.00091	-0.00093
	(!CLK * SCD * SCE)	0.00185	0.00187	0.00185
	(!CLK * SCD * SCE)	-0.00007	-0.00008	-0.00006
	(!CLK * !SCE * SET_B)	0.01426	0.01573	0.05537
	(!CLK * !SCE * SET_B)	0.01049	0.01193	0.05158
	(!CLK * !SCE * !SET_B * Q)	0.01178	0.01306	0.05029
	(!CLK * !SCE * !SET_B * Q)	0.00790	0.00917	0.04641
	(!CLK * !SCD * SCE)	0.00119	0.00119	0.00117
	(!CLK * !SCD * SCE)	-0.00097	-0.00098	-0.00099

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00083	-0.00084	-0.00089
	(CLK * SCD * SCE)	0.00110	0.00109	0.00105
	(CLK * !SCE)	0.00098	0.00337	0.04377
	(CLK * !SCE)	0.00442	0.00681	0.04720
	(CLK * !SCD * SCE)	-0.00031	-0.00031	-0.00031
	(CLK * !SCD * SCE)	0.00185	0.00186	0.00185
	(!CLK * SCD * SCE)	-0.00082	-0.00084	-0.00089
	(!CLK * SCD * SCE)	0.00108	0.00108	0.00104
	(!CLK * !SCE * SET_B)	0.00865	0.01070	0.05188
	(!CLK * !SCE * SET_B)	0.01240	0.01445	0.05561
	(!CLK * !SCE * !SET_B * Q)	0.00510	0.00692	0.04535
	(!CLK * !SCE * !SET_B * Q)	0.00894	0.01076	0.04919
	(!CLK * !SCD * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK * !SCD * SCE)	0.00185	0.00186	0.00185
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00088	-0.00089	-0.00094
	(CLK * SCD * SCE)	0.00104	0.00104	0.00100
	(CLK * !SCE)	0.00098	0.00337	0.04376
	(CLK * !SCE)	0.00441	0.00681	0.04719
	(CLK * !SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCD * SCE)	0.00180	0.00181	0.00180
	(!CLK * SCD * SCE)	-0.00088	-0.00089	-0.00095
	(!CLK * SCD * SCE)	0.00102	0.00103	0.00099
	(!CLK * !SCE * SET_B)	0.01006	0.01203	0.05285
	(!CLK * !SCE * SET_B)	0.01395	0.01590	0.05672
	(!CLK * !SCE * !SET_B * Q)	0.00626	0.00795	0.04594
	(!CLK * !SCE * !SET_B * Q)	0.01024	0.01193	0.04992
	(!CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCD * SCE)	0.00180	0.00180	0.00180

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00057	-0.00058	-0.00063
	(CLK * SCD * SCE)	0.00135	0.00134	0.00130
	(CLK * !SCE)	0.00142	0.00376	0.04409
	(CLK * !SCE)	0.00484	0.00720	0.04752
	(CLK * !SCD * SCE)	-0.00007	-0.00008	-0.00007
	(CLK * !SCD * SCE)	0.00208	0.00209	0.00208
	(!CLK * SCD * SCE)	-0.00065	-0.00066	-0.00072
	(!CLK * SCD * SCE)	0.00125	0.00125	0.00121
	(!CLK * !SCE * SET_B)	0.01040	0.01236	0.05315
	(!CLK * !SCE * SET_B)	0.01420	0.01615	0.05694
	(!CLK * !SCE * !SET_B * Q)	0.00664	0.00835	0.04629
	(!CLK * !SCE * !SET_B * Q)	0.01052	0.01224	0.05017
	(!CLK * !SCD * SCE)	-0.00014	-0.00014	-0.00014
	(!CLK * !SCD * SCE)	0.00202	0.00202	0.00202

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00704	0.00838	0.04428
	(CLK * D * SCE)	0.00214	0.00348	0.03938
	(CLK * !D * SCE)	0.00807	0.00927	0.04471
	(CLK * !D * SCE)	0.00293	0.00412	0.03957
	(!CLK * D * SCE * SET_B)	0.01431	0.01548	0.05142
	(!CLK * D * SCE * SET_B)	0.00913	0.01027	0.04622
	(!CLK * D * SCE * !SET_B * Q)	0.01196	0.01303	0.04715
	(!CLK * D * SCE * !SET_B * Q)	0.00668	0.00773	0.04187
	(!CLK * !D * SCE * SET_B)	0.01536	0.01643	0.05199
	(!CLK * !D * SCE * SET_B)	0.00993	0.01098	0.04655
	(!CLK * !D * SCE * !SET_B * Q)	0.01300	0.01396	0.04769
	(!CLK * !D * SCE * !SET_B * Q)	0.00747	0.00842	0.04215
	!SCE	0.00209	0.00188	0.00186
	!SCE	-0.00078	-0.00102	-0.00102
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00689	0.00823	0.04413
	(CLK * D * SCE)	0.00204	0.00338	0.03929
	(CLK * !D * SCE)	0.00793	0.00913	0.04455
	(CLK * !D * SCE)	0.00283	0.00402	0.03946
	(!CLK * D * SCE * SET_B)	0.01607	0.01722	0.05276
	(!CLK * D * SCE * SET_B)	0.01079	0.01192	0.04747
	(!CLK * D * SCE * !SET_B * Q)	0.01354	0.01457	0.04823
	(!CLK * D * SCE * !SET_B * Q)	0.00816	0.00919	0.04284
	(!CLK * !D * SCE * SET_B)	0.01711	0.01815	0.05330
	(!CLK * !D * SCE * SET_B)	0.01158	0.01262	0.04776
	(!CLK * !D * SCE * !SET_B * Q)	0.01458	0.01553	0.04879
	(!CLK * !D * SCE * !SET_B * Q)	0.00895	0.00988	0.04316
	!SCE	0.00201	0.00179	0.00177
	!SCE	-0.00084	-0.00107	-0.00107

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00739	0.00872	0.04456
	(CLK * D * SCE)	0.00250	0.00382	0.03967
	(CLK * !D * SCE)	0.00843	0.00961	0.04499
	(CLK * !D * SCE)	0.00329	0.00446	0.03985
	(!CLK * D * SCE * SET_B)	0.01621	0.01733	0.05288
	(!CLK * D * SCE * SET_B)	0.01097	0.01209	0.04764
	(!CLK * D * SCE * !SET_B * Q)	0.01372	0.01475	0.04840
	(!CLK * D * SCE * !SET_B * Q)	0.00838	0.00940	0.04306
	(!CLK * !D * SCE * SET_B)	0.01725	0.01828	0.05366
	(!CLK * !D * SCE * SET_B)	0.01176	0.01280	0.04818
	(!CLK * !D * SCE * !SET_B * Q)	0.01476	0.01569	0.04896
	(!CLK * !D * SCE * !SET_B * Q)	0.00917	0.01011	0.04338
	!SCE	0.00234	0.00213	0.00211
	!SCE	-0.00053	-0.00077	-0.00077

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00244	0.00376	0.03966
	(CLK * D * SCE)	0.00733	0.00867	0.04453
	(CLK * !D * SCE)	0.00196	0.00338	0.03950
	(CLK * !D * SCE)	0.00708	0.00854	0.04463
	(!CLK * D * SCE * SET_B)	0.01028	0.01140	0.04794
	(!CLK * D * SCE * SET_B)	0.01549	0.01660	0.05312
	(!CLK * D * SCE * !SET_B * Q)	0.00667	0.00762	0.04200
	(!CLK * D * SCE * !SET_B * Q)	0.01196	0.01292	0.04728
	(!CLK * !D * SCE * SET_B)	0.00985	0.01106	0.04794
	(!CLK * !D * SCE * SET_B)	0.01530	0.01650	0.05338
	(!CLK * !D * SCE * !SET_B * Q)	0.00619	0.00720	0.04180
	(!CLK * !D * SCE * !SET_B * Q)	0.01172	0.01274	0.04731
	!SCE	-0.00099	-0.00101	-0.00102
	!SCE	0.00190	0.00190	0.00187
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00251	0.00383	0.03973
	(CLK * D * SCE)	0.00737	0.00870	0.04456
	(CLK * !D * SCE)	0.00202	0.00346	0.03958
	(CLK * !D * SCE)	0.00712	0.00857	0.04466
	(!CLK * D * SCE * SET_B)	0.01175	0.01284	0.04904
	(!CLK * D * SCE * SET_B)	0.01706	0.01814	0.05432
	(!CLK * D * SCE * !SET_B * Q)	0.00788	0.00879	0.04279
	(!CLK * D * SCE * !SET_B * Q)	0.01329	0.01420	0.04817
	(!CLK * !D * SCE * SET_B)	0.01134	0.01248	0.04905
	(!CLK * !D * SCE * SET_B)	0.01688	0.01801	0.05457
	(!CLK * !D * SCE * !SET_B * Q)	0.00740	0.00836	0.04257
	(!CLK * !D * SCE * !SET_B * Q)	0.01305	0.01402	0.04820
	!SCE	-0.00101	-0.00103	-0.00104
	!SCE	0.00183	0.00184	0.00182

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00286	0.00416	0.04002
	(CLK * D * SCE)	0.00776	0.00907	0.04489
	(CLK * !D * SCE)	0.00237	0.00378	0.03987
	(CLK * !D * SCE)	0.00752	0.00894	0.04498
	(!CLK * D * SCE * SET_B)	0.01204	0.01311	0.04931
	(!CLK * D * SCE * SET_B)	0.01729	0.01836	0.05454
	(!CLK * D * SCE * !SET_B * Q)	0.00819	0.00909	0.04308
	(!CLK * D * SCE * !SET_B * Q)	0.01355	0.01444	0.04841
	(!CLK * !D * SCE * SET_B)	0.01162	0.01274	0.04932
	(!CLK * !D * SCE * SET_B)	0.01712	0.01824	0.05479
	(!CLK * !D * SCE * !SET_B * Q)	0.00771	0.00866	0.04286
	(!CLK * !D * SCE * !SET_B * Q)	0.01331	0.01427	0.04845
	!SCE	-0.00074	-0.00076	-0.00076
	!SCE	0.00215	0.00216	0.00213

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00617	0.00868	0.06104
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00012	0.00237	0.05476
	(CLK * D * !SCD)	0.00889	0.01152	0.06634
	(CLK * D * !SCD)	0.00442	0.00703	0.06182
	(CLK * !D * SCD)	0.01060	0.01491	0.10185
	(CLK * !D * SCD)	0.00271	0.00698	0.09397
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00616	0.00867	0.06103
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00012	0.00237	0.05475
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.01637	0.01914	0.07379
	(!CLK * D * !SCD * SET_B)	0.01219	0.01495	0.06957
	(!CLK * D * !SCD * !SET_B * Q)	0.01275	0.01554	0.06992
	(!CLK * D * !SCD * !SET_B * Q)	0.00869	0.01145	0.06581
	(!CLK * !D * SCD * SET_B)	0.01803	0.02213	0.10956
	(!CLK * !D * SCD * SET_B)	0.00984	0.01391	0.10137
	(!CLK * !D * SCD * !SET_B * Q)	0.01568	0.01964	0.10487
	(!CLK * !D * SCD * !SET_B * Q)	0.00739	0.01132	0.09659
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00599	0.00865	0.06089
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00016	0.00280	0.05503

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00612	0.00862	0.06095
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00017	0.00231	0.05466
	(CLK * D * !SCD)	0.00893	0.01159	0.06634
	(CLK * D * !SCD)	0.00446	0.00707	0.06181
	(CLK * !D * SCD)	0.01050	0.01480	0.10169
	(CLK * !D * SCD)	0.00261	0.00686	0.09381
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00612	0.00861	0.06094
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00018	0.00230	0.05465
	(!CLK * D * !SCD * SET_B)	0.01782	0.02059	0.07510
	(!CLK * D * !SCD * SET_B)	0.01378	0.01652	0.07101
	(!CLK * D * !SCD * !SET_B * Q)	0.01394	0.01673	0.07101
	(!CLK * D * !SCD * !SET_B * Q)	0.01000	0.01278	0.06701
	(!CLK * !D * SCD * SET_B)	0.01982	0.02387	0.11091
	(!CLK * !D * SCD * SET_B)	0.01149	0.01552	0.10259
	(!CLK * !D * SCD * !SET_B * Q)	0.01729	0.02118	0.10591
	(!CLK * !D * SCD * !SET_B * Q)	0.00887	0.01274	0.09749
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00596	0.00861	0.06081
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00011	0.00274	0.05493

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00648	0.00897	0.06134
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00012	0.00260	0.05499
	(CLK * D * !SCD)	0.00935	0.01199	0.06678
	(CLK * D * !SCD)	0.00482	0.00743	0.06220
	(CLK * !D * SCD)	0.01101	0.01526	0.10217
	(CLK * !D * SCD)	0.00306	0.00728	0.09422
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00639	0.00888	0.06124
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00003	0.00251	0.05490
	(!CLK * D * !SCD * SET_B)	0.01816	0.02093	0.07554
	(!CLK * D * !SCD * SET_B)	0.01397	0.01672	0.07132
	(!CLK * D * !SCD * !SET_B * Q)	0.01432	0.01711	0.07139
	(!CLK * D * !SCD * !SET_B * Q)	0.01023	0.01300	0.06727
	(!CLK * !D * SCD * SET_B)	0.01998	0.02401	0.11111
	(!CLK * !D * SCD * SET_B)	0.01168	0.01569	0.10282
	(!CLK * !D * SCD * !SET_B * Q)	0.01750	0.02137	0.10615
	(!CLK * !D * SCD * !SET_B * Q)	0.00910	0.01295	0.09775
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00622	0.00887	0.06110
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00031	0.00294	0.05518

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)**	0.00003	0.00323	0.05580
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00631	0.00953	0.06209
	(CLK * D * !SCD)	0.00485	0.00780	0.06205
	(CLK * D * !SCD)	0.00933	0.01231	0.06637
	(CLK * !D * SCD)	0.00142	0.00602	0.09313
	(CLK * !D * SCD)	0.00930	0.01392	0.10102
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00002	0.00323	0.05579
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00631	0.00953	0.06208
	(!CLK * D * !SCD * SET_B)	0.01225	0.01530	0.06869
	(!CLK * D * !SCD * SET_B)	0.01644	0.01950	0.07271
	(!CLK * D * !SCD * !SET_B * Q)	0.00990	0.01294	0.06627
	(!CLK * D * !SCD * !SET_B * Q)	0.01398	0.01705	0.07020
	(!CLK * !D * SCD * SET_B)	0.00908	0.01335	0.10053
	(!CLK * !D * SCD * SET_B)	0.01726	0.02156	0.10873
	(!CLK * !D * SCD * !SET_B * Q)	0.00553	0.00963	0.09470
	(!CLK * !D * SCD * !SET_B * Q)	0.01382	0.01793	0.10298
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00039	0.00362	0.05590
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00625	0.00949	0.06174

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00003	0.00317	0.05571
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00625	0.00948	0.06201
	(CLK * D * !SCD)	0.00472	0.00767	0.06191
	(CLK * D * !SCD)	0.00924	0.01220	0.06624
	(CLK * !D * SCD)	0.00141	0.00601	0.09309
	(CLK * !D * SCD)	0.00930	0.01393	0.10098
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00004	0.00317	0.05570
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00626	0.00947	0.06200
	(!CLK * D * !SCD * SET_B)	0.01401	0.01708	0.07029
	(!CLK * D * !SCD * SET_B)	0.01809	0.02116	0.07419
	(!CLK * D * !SCD * !SET_B * Q)	0.01149	0.01454	0.06769
	(!CLK * D * !SCD * !SET_B * Q)	0.01547	0.01853	0.07148
	(!CLK * !D * SCD * SET_B)	0.01049	0.01469	0.10146
	(!CLK * !D * SCD * SET_B)	0.01881	0.02303	0.10980
	(!CLK * !D * SCD * !SET_B * Q)	0.00668	0.01072	0.09524
	(!CLK * !D * SCD * !SET_B * Q)	0.01512	0.01919	0.10369
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00033	0.00356	0.05580
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00618	0.00945	0.06166

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00023	0.00343	0.05600
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00657	0.00980	0.06236
	(CLK * D * !SCD)	0.00514	0.00808	0.06229
	(CLK * D * !SCD)	0.00971	0.01266	0.06668
	(CLK * !D * SCD)	0.00180	0.00637	0.09344
	(CLK * !D * SCD)	0.00975	0.01434	0.10140
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00013	0.00335	0.05591
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00649	0.00970	0.06226
	(!CLK * D * !SCD * SET_B)	0.01408	0.01714	0.07036
	(!CLK * D * !SCD * SET_B)	0.01830	0.02136	0.07440
	(!CLK * D * !SCD * !SET_B * Q)	0.01159	0.01465	0.06781
	(!CLK * D * !SCD * !SET_B * Q)	0.01572	0.01877	0.07175
	(!CLK * !D * SCD * SET_B)	0.01079	0.01499	0.10180
	(!CLK * !D * SCD * SET_B)	0.01908	0.02330	0.11011
	(!CLK * !D * SCD * !SET_B * Q)	0.00702	0.01105	0.09559
	(!CLK * !D * SCD * !SET_B * Q)	0.01543	0.01949	0.10401
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00051	0.00375	0.05602
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00642	0.00969	0.06193

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00300	0.00302	0.00301
	(CLK * Q)	-0.00214	-0.00214	-0.00214
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00322	0.00326	0.00323
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00192	-0.00194	-0.00192
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00581	0.00706	0.03597
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00049	0.00172	0.03063
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00323	0.00327	0.00323
	(CLK * Q)	-0.00213	-0.00215	-0.00213
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00348	0.00352	0.00349
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00188	-0.00189	-0.00188
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00603	0.00725	0.03626
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00048	0.00169	0.03069

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00325	0.00328	0.00325
	(CLK * Q)	-0.00203	-0.00204	-0.00202
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00350	0.00353	0.00350
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00177	-0.00179	-0.00177
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00610	0.00733	0.03608
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00064	0.00185	0.03061

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00215	-0.00221	-0.00222
	(CLK * Q)	0.00301	0.00296	0.00293
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00237	-0.00245	-0.00245
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00280	0.00273	0.00270
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00025	0.00187	0.03094
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00561	0.00725	0.03628

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00246	-0.00254	-0.00256
	(CLK * Q)	0.00288	0.00284	0.00282
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00272	-0.00282	-0.00283
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00262	0.00257	0.00254
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00016	0.00172	0.03093
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00569	0.00732	0.03647
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00204	-0.00211	-0.00213
	(CLK * Q)	0.00321	0.00318	0.00316
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00229	-0.00240	-0.00240
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00297	0.00291	0.00289
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00048	0.00203	0.03097
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00592	0.00753	0.03644

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)**	0.01611	0.01998	0.10821
	(D * SCD * SCE * Q)	0.01127	0.01513	0.10338
	(D * !SCE * Q)	0.01605	0.01996	0.10816
	(D * !SCE * Q)	0.01122	0.01513	0.10333
	(D * !SCD * SCE * SET_B * !Q)	0.01569	0.01953	0.10776
	(D * !SCD * SCE * SET_B * !Q)	0.01085	0.01468	0.10293
	(D * !SCD * SCE * !SET_B * Q)	0.02953	0.03374	0.12278
	(D * !SCD * SCE * !SET_B * Q)	0.02431	0.02851	0.11756
	(!D * SCD * SCE * Q)	0.01615	0.02006	0.10826
	(!D * SCD * SCE * Q)	0.01132	0.01523	0.10343
	(!D * !SCE * SET_B * !Q)	0.01559	0.01944	0.10767
	(!D * !SCE * SET_B * !Q)	0.01076	0.01459	0.10284
	(!D * !SCE * !SET_B * Q)	0.02942	0.03363	0.12267
	(!D * !SCE * !SET_B * Q)	0.02419	0.02839	0.11744
	(!D * !SCD * SCE * SET_B * !Q)	0.01569	0.01953	0.10776
	(!D * !SCD * SCE * SET_B * !Q)	0.01085	0.01468	0.10293
	(!D * !SCD * SCE * !SET_B * Q)	0.02957	0.03373	0.12275
	(!D * !SCD * SCE * !SET_B * Q)	0.02434	0.02849	0.11752

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01847	0.02217	0.10977
	(D * SCD * SCE * Q)	0.01368	0.01737	0.10499
	(D * !SCE * Q)	0.01841	0.02212	0.10971
	(D * !SCE * Q)	0.01363	0.01732	0.10494
	(D * !SCD * SCE * SET_B * !Q)	0.01865	0.02226	0.10987
	(D * !SCD * SCE * SET_B * !Q)	0.01384	0.01744	0.10506
	(D * !SCD * SCE * !SET_B * Q)	0.04541	0.04971	0.13996
	(D * !SCD * SCE * !SET_B * Q)	0.04015	0.04444	0.13469
	(!D * SCD * SCE * Q)	0.01851	0.02222	0.10981
	(!D * SCD * SCE * Q)	0.01373	0.01742	0.10504
	(!D * !SCE * SET_B * !Q)	0.01856	0.02217	0.10978
	(!D * !SCE * SET_B * !Q)	0.01375	0.01735	0.10496
	(!D * !SCE * !SET_B * Q)	0.04530	0.04960	0.13984
	(!D * !SCE * !SET_B * Q)	0.04002	0.04431	0.13458
	(!D * !SCD * SCE * SET_B * !Q)	0.01866	0.02227	0.10986
	(!D * !SCD * SCE * SET_B * !Q)	0.01385	0.01744	0.10507
	(!D * !SCD * SCE * !SET_B * Q)	0.04549	0.04972	0.13989
	(!D * !SCD * SCE * !SET_B * Q)	0.04022	0.04444	0.13463

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01847	0.02221	0.10986
	(D * SCD * SCE * Q)	0.01367	0.01740	0.10507
	(D * !SCE * Q)	0.01841	0.02216	0.10981
	(D * !SCE * Q)	0.01362	0.01735	0.10501
	(D * !SCD * SCE * SET_B * !Q)	0.01862	0.02226	0.10992
	(D * !SCD * SCE * SET_B * !Q)	0.01381	0.01744	0.10512
	(D * !SCD * SCE * !SET_B * Q)	0.04598	0.05036	0.14113
	(D * !SCD * SCE * !SET_B * Q)	0.04079	0.04515	0.13593
	(!D * SCD * SCE * Q)	0.01852	0.02226	0.10991
	(!D * SCD * SCE * Q)	0.01372	0.01745	0.10512
	(!D * !SCE * SET_B * !Q)	0.01853	0.02217	0.10983
	(!D * !SCE * SET_B * !Q)	0.01371	0.01735	0.10503
	(!D * !SCE * !SET_B * Q)	0.04587	0.05032	0.14100
	(!D * !SCE * !SET_B * Q)	0.04066	0.04508	0.13578
	(!D * !SCD * SCE * SET_B * !Q)	0.01862	0.02227	0.10992
	(!D * !SCD * SCE * SET_B * !Q)	0.01381	0.01744	0.10512
	(!D * !SCD * SCE * !SET_B * Q)	0.04607	0.05044	0.14100
	(!D * !SCD * SCE * !SET_B * Q)	0.04086	0.04521	0.13580

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)**	0.01618	0.02142	0.11225
	(D * SCD * SCE * SET_B * !Q)	0.02071	0.02595	0.11681
	(D * SCD * SCE * Q)	0.00899	0.01417	0.10288
	(D * SCD * SCE * Q)	0.01380	0.01902	0.10772
	(D * !SCE * SET_B * !Q)	0.01610	0.02134	0.11219
	(D * !SCE * SET_B * !Q)	0.02064	0.02588	0.11672
	(D * !SCE * Q)	0.00893	0.01412	0.10283
	(D * !SCE * Q)	0.01375	0.01896	0.10766
	(D * !SCD * SCE * SET_B * Q)	0.01836	0.02373	0.11356
	(D * !SCD * SCE * SET_B * Q)	0.02350	0.02889	0.11872
	(D * !SCD * SCE * SET_B * !Q)	0.00913	0.01432	0.10312
	(D * !SCD * SCE * SET_B * !Q)	0.01395	0.01917	0.10794
	(D * !SCD * SCE * !SET_B * Q)	0.01480	0.02018	0.11001
	(D * !SCD * SCE * !SET_B * Q)	0.02002	0.02544	0.11526
	(!D * SCD * SCE * SET_B * !Q)	0.01624	0.02148	0.11232
	(!D * SCD * SCE * SET_B * !Q)	0.02077	0.02600	0.11685
	(!D * SCD * SCE * Q)	0.00903	0.01422	0.10293
	(!D * SCD * SCE * Q)	0.01385	0.01906	0.10776
	(!D * !SCE * SET_B * Q)	0.01825	0.02362	0.11345
	(!D * !SCE * SET_B * Q)	0.02337	0.02876	0.11859
	(!D * !SCE * SET_B * !Q)	0.00904	0.01423	0.10303
	(!D * !SCE * SET_B * !Q)	0.01385	0.01907	0.10785
	(!D * !SCE * !SET_B * Q)	0.01470	0.02008	0.10991
	(!D * !SCE * !SET_B * Q)	0.01993	0.02533	0.11515
	(!D * !SCD * SCE * SET_B * Q)	0.01836	0.02373	0.11356
	(!D * !SCD * SCE * SET_B * Q)	0.02349	0.02888	0.11872
	(!D * !SCD * SCE * SET_B * !Q)	0.00913	0.01432	0.10312
	(!D * !SCD * SCE * SET_B * !Q)	0.01395	0.01917	0.10795
	(!D * !SCD * SCE * !SET_B * Q)	0.01480	0.02018	0.11001
	(!D * !SCD * SCE * !SET_B * Q)	0.02001	0.02540	0.11525

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01932	0.02441	0.11499
	(D * SCD * SCE * SET_B * !Q)	0.02367	0.02878	0.11934
	(D * SCD * SCE * Q)	0.01030	0.01534	0.10371
	(D * SCD * SCE * Q)	0.01507	0.02014	0.10849
	(D * !SCE * SET_B * !Q)	0.01925	0.02434	0.11526
	(D * !SCE * SET_B * !Q)	0.02360	0.02870	0.11963
	(D * !SCE * Q)	0.01025	0.01529	0.10366
	(D * !SCE * Q)	0.01502	0.02009	0.10844
	(D * !SCD * SCE * SET_B * Q)	0.02157	0.02682	0.11628
	(D * !SCD * SCE * SET_B * Q)	0.02676	0.03202	0.12149
	(D * !SCD * SCE * SET_B * !Q)	0.01008	0.01515	0.10376
	(D * !SCD * SCE * SET_B * !Q)	0.01488	0.01997	0.10858
	(D * !SCD * SCE * !SET_B * Q)	0.01767	0.02293	0.11234
	(D * !SCD * SCE * !SET_B * Q)	0.02295	0.02822	0.11764
	(!D * SCD * SCE * SET_B * !Q)	0.01938	0.02448	0.11539
	(!D * SCD * SCE * SET_B * !Q)	0.02373	0.02883	0.11976
	(!D * SCD * SCE * Q)	0.01035	0.01539	0.10376
	(!D * SCD * SCE * Q)	0.01512	0.02019	0.10854
	(!D * !SCE * SET_B * Q)	0.02145	0.02669	0.11616
	(!D * !SCE * SET_B * Q)	0.02661	0.03186	0.12134
	(!D * !SCE * SET_B * !Q)	0.00999	0.01505	0.10367
	(!D * !SCE * SET_B * !Q)	0.01479	0.01985	0.10848
	(!D * !SCE * !SET_B * Q)	0.01758	0.02283	0.11223
	(!D * !SCE * !SET_B * Q)	0.02285	0.02812	0.11752
	(!D * !SCD * SCE * SET_B * Q)	0.02157	0.02683	0.11626
	(!D * !SCD * SCE * SET_B * Q)	0.02675	0.03202	0.12146
	(!D * !SCD * SCE * SET_B * !Q)	0.01008	0.01514	0.10376
	(!D * !SCD * SCE * SET_B * !Q)	0.01488	0.01995	0.10858
	(!D * !SCD * SCE * !SET_B * Q)	0.01768	0.02293	0.11234
	(!D * !SCD * SCE * !SET_B * Q)	0.02295	0.02823	0.11762

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01897	0.02408	0.11507
	(D * SCD * SCE * SET_B * !Q)	0.02342	0.02853	0.11951
	(D * SCD * SCE * Q)	0.01032	0.01538	0.10379
	(D * SCD * SCE * Q)	0.01510	0.02019	0.10859
	(D * !SCE * SET_B * !Q)	0.01890	0.02401	0.11462
	(D * !SCE * SET_B * !Q)	0.02335	0.02847	0.11909
	(D * !SCE * Q)	0.01027	0.01533	0.10374
	(D * !SCE * Q)	0.01505	0.02014	0.10853
	(D * !SCD * SCE * SET_B * Q)	0.02138	0.02666	0.11617
	(D * !SCD * SCE * SET_B * Q)	0.02650	0.03179	0.12130
	(D * !SCD * SCE * SET_B * !Q)	0.00994	0.01502	0.10367
	(D * !SCD * SCE * SET_B * !Q)	0.01473	0.01984	0.10848
	(D * !SCD * SCE * !SET_B * Q)	0.01752	0.02280	0.11228
	(D * !SCD * SCE * !SET_B * Q)	0.02273	0.02801	0.11752
	(!D * SCD * SCE * SET_B * !Q)	0.01903	0.02414	0.11512
	(!D * SCD * SCE * SET_B * !Q)	0.02347	0.02859	0.11957
	(!D * SCD * SCE * Q)	0.01037	0.01543	0.10384
	(!D * SCD * SCE * Q)	0.01515	0.02024	0.10863
	(!D * !SCE * SET_B * Q)	0.02127	0.02653	0.11604
	(!D * !SCE * SET_B * Q)	0.02636	0.03163	0.12115
	(!D * !SCE * SET_B * !Q)	0.00984	0.01491	0.10358
	(!D * !SCE * SET_B * !Q)	0.01464	0.01973	0.10839
	(!D * !SCE * !SET_B * Q)	0.01742	0.02270	0.11218
	(!D * !SCE * !SET_B * Q)	0.02263	0.02793	0.11739
	(!D * !SCD * SCE * SET_B * Q)	0.02138	0.02666	0.11615
	(!D * !SCD * SCE * SET_B * Q)	0.02649	0.03178	0.12128
	(!D * !SCD * SCE * SET_B * !Q)	0.00994	0.01501	0.10367
	(!D * !SCD * SCE * SET_B * !Q)	0.01473	0.01982	0.10848
	(!D * !SCD * SCE * !SET_B * Q)	0.01752	0.02280	0.11228
	(!D * !SCD * SCE * !SET_B * Q)	0.02272	0.02801	0.11748

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00195	0.00197	0.00417	0.00305	1.29930	1.24451
sky130_fd_sc_hs__sdfxbp_2	0.00193	0.00194	0.00422	0.00305	2.52487	2.51349

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	55.75280	75.17630
sky130_fd_sc_hs__sdfxbp_2	0.00000	59.52110	80.46030

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)	0.19594	0.66143	6.17829
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.18958	0.56106	6.09142

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.20786	0.49077	2.98399
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.22177	0.46669	2.90969

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)	0.24538	0.71208	6.19333
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.28465	0.64792	6.18880

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)	0.22988	0.49293	2.86261
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.24437	0.46926	3.00316

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)	-0.06600	-0.13906	-0.73392
	setup	CLK (R)	0.12734	0.18092	0.82429
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06588	-0.13959	-0.75011
	setup	CLK (R)	0.13039	0.18042	0.83744

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)	-0.08391	-0.18709	-2.13186
	setup	CLK (R)	0.17316	0.26901	2.46211
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08360	-0.18784	-2.16884
	setup	CLK (R)	0.17470	0.27578	2.48674

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)	-0.06600	-0.13906	-0.73392
	setup	CLK (R)	0.12734	0.18092	0.82429
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06588	-0.13959	-0.75011
	setup	CLK (R)	0.13039	0.18042	0.83744

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)	-0.08391	-0.18709	-2.13186
	setup	CLK (R)	0.17316	0.26901	2.46211
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08360	-0.18784	-2.16884
	setup	CLK (R)	0.17470	0.27578	2.48674

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)	-0.08642	-0.14775	-0.72481
	setup	CLK (R)	0.15635	0.19797	0.81436
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08424	-0.14829	-0.73254
	setup	CLK (R)	0.15536	0.19641	0.79995

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)	-0.11898	-0.21694	-2.38994
	setup	CLK (R)	0.22374	0.30746	2.56184
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11688	-0.21856	-2.45542
	setup	CLK (R)	0.22752	0.30996	2.60714

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)	-0.08642	-0.14775	-0.72481
	hold	CLK (R)	-0.09148	-0.15644	-0.73782
	setup	CLK (R)	0.15183	0.19133	0.80988
	setup	CLK (R)	0.15635	0.19797	0.81436
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08424	-0.14829	-0.73254
	hold	CLK (R)	-0.08693	-0.15495	-0.73825
	setup	CLK (R)	0.15368	0.18945	0.79270
	setup	CLK (R)	0.15536	0.19641	0.79995

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)	-0.12865	-0.22459	-2.38994
	hold	CLK (R)	-0.11898	-0.21694	-2.39343
	setup	CLK (R)	0.22374	0.30746	2.55415
	setup	CLK (R)	0.22129	0.30127	2.56184
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12857	-0.22534	-2.45542
	hold	CLK (R)	-0.11688	-0.21856	-2.46102
	setup	CLK (R)	0.22752	0.30996	2.59934
	setup	CLK (R)	0.22126	0.30433	2.60714

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)	-0.07707	-0.15342	-0.33084
	setup	CLK (R)	0.22416	0.23867	1.02679
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07548	-0.15506	-0.35379
	setup	CLK (R)	0.22656	0.24112	0.99776

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)	-0.10125	-0.17809	-1.59355
	setup	CLK (R)	0.18882	0.26152	2.27838
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10046	-0.18233	-1.87280
	setup	CLK (R)	0.18917	0.26553	2.32305

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)	-0.12746	-0.15986	-0.33084
	hold	CLK (R)	-0.07707	-0.15342	-0.88781
	setup	CLK (R)	0.22416	0.23867	0.41232
	setup	CLK (R)	0.14174	0.19928	1.02679
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12776	-0.16393	-0.35379
	hold	CLK (R)	-0.07548	-0.15506	-0.89475
	setup	CLK (R)	0.22656	0.24112	0.43471
	setup	CLK (R)	0.14000	0.19816	0.99776

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)	-0.11926	-0.22266	-2.17737
	hold	CLK (R)	-0.10125	-0.17809	-1.59355
	setup	CLK (R)	0.18304	0.25955	2.22161
	setup	CLK (R)	0.18882	0.26152	2.27838
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11862	-0.22505	-2.19857
	hold	CLK (R)	-0.10046	-0.18233	-1.87280
	setup	CLK (R)	0.18394	0.26208	2.24130
	setup	CLK (R)	0.18917	0.26553	2.32305

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 ()	0.09108	0.65918	16.50020
	min_pulse_width	CLK ()	0.07379	0.65918	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.09108	0.65918	16.50020
	min_pulse_width	CLK ()	0.07873	0.65918	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 ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.18741	0.65918	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.18988	0.65918	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	0.01692	0.01944	0.06777
	CLK	0.01449	0.01702	0.06505
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02059	0.02335	0.07206
	CLK	0.01817	0.02091	0.06923

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01725	0.01984	0.06623
	CLK	0.01482	0.01742	0.06367
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02098	0.02359	0.07036
	CLK	0.01855	0.02109	0.06771

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01763	0.02024	0.06745
	CLK	0.01520	0.01780	0.06482
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02122	0.02374	0.07172
	CLK	0.01880	0.02133	0.06878

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01660	0.01916	0.06661
	CLK	0.01418	0.01671	0.06407
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02026	0.02300	0.07046
	CLK	0.01783	0.02057	0.06799

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00200	0.00203	0.00201
	(CLK * SCD * SCE)	-0.00001	-0.00002	-0.00001
	(CLK * !SCE)	0.00522	0.00717	0.04774
	(CLK * !SCE)	0.00162	0.00357	0.04414
	(CLK * !SCD * SCE)	0.00133	0.00133	0.00131
	(CLK * !SCD * SCE)	-0.00094	-0.00094	-0.00096
	(!CLK * SCD * SCE)	0.00177	0.00179	0.00178
	(!CLK * SCD * SCE)	-0.00023	-0.00024	-0.00023
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01141	0.01352	0.05951
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00783	0.00992	0.05592
	(!CLK * !SCD * SCE)	0.00142	0.00142	0.00140
	(!CLK * !SCD * SCE)	-0.00084	-0.00084	-0.00086
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00202	0.00204	0.00203
	(CLK * SCD * SCE)	0.00001	-0.00000	0.00001
	(CLK * !SCE)	0.00513	0.00707	0.04762
	(CLK * !SCE)	0.00157	0.00351	0.04407
	(CLK * !SCD * SCE)	0.00136	0.00136	0.00134
	(CLK * !SCD * SCE)	-0.00091	-0.00091	-0.00093
	(!CLK * SCD * SCE)	0.00185	0.00187	0.00186
	(!CLK * SCD * SCE)	-0.00015	-0.00016	-0.00015
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01154	0.01365	0.05958
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00799	0.01009	0.05602
	(!CLK * !SCD * SCE)	0.00151	0.00152	0.00150
	(!CLK * !SCD * SCE)	-0.00075	-0.00076	-0.00077

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00070	-0.00072	-0.00077
	(CLK * SCD * SCE)	0.00130	0.00130	0.00126
	(CLK * !SCE)	0.00144	0.00379	0.04451
	(CLK * !SCE)	0.00502	0.00738	0.04810
	(CLK * !SCD * SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !SCD * SCE)	0.00203	0.00203	0.00203
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00099
	(!CLK * SCD * SCE)	0.00108	0.00108	0.00104
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00937	0.01189	0.05765
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01297	0.01549	0.06125
	(!CLK * !SCD * SCE)	-0.00012	-0.00013	-0.00012
	(!CLK * !SCD * SCE)	0.00213	0.00214	0.00213
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00072	-0.00073	-0.00078
	(CLK * SCD * SCE)	0.00129	0.00129	0.00125
	(CLK * !SCE)	0.00157	0.00392	0.04462
	(CLK * !SCE)	0.00511	0.00747	0.04817
	(CLK * !SCD * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * !SCD * SCE)	0.00200	0.00201	0.00201
	(!CLK * SCD * SCE)	-0.00088	-0.00090	-0.00095
	(!CLK * SCD * SCE)	0.00113	0.00113	0.00108
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00946	0.01198	0.05773
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01303	0.01554	0.06128
	(!CLK * !SCD * SCE)	-0.00008	-0.00010	-0.00009
	(!CLK * !SCD * SCE)	0.00217	0.00217	0.00217

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00723	0.00856	0.04436
	(CLK * D * SCE)	0.00256	0.00388	0.03968
	(CLK * !D * SCE)	0.00827	0.00947	0.04478
	(CLK * !D * SCE)	0.00335	0.00453	0.03986
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01344	0.01502	0.05546
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00877	0.01032	0.05079
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01449	0.01596	0.05619
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00957	0.01103	0.05126
	!SCE	0.00204	0.00182	0.00180
	!SCE	-0.00056	-0.00080	-0.00081
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00711	0.00846	0.04432
	(CLK * D * SCE)	0.00250	0.00383	0.03971
	(CLK * !D * SCE)	0.00814	0.00936	0.04475
	(CLK * !D * SCE)	0.00329	0.00448	0.03989
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01353	0.01512	0.05560
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00892	0.01049	0.05098
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01458	0.01606	0.05633
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00972	0.01119	0.05146
	!SCE	0.00200	0.00178	0.00176
	!SCE	-0.00058	-0.00082	-0.00082

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00299	0.00429	0.04009
	(CLK * D * SCE)	0.00768	0.00899	0.04476
	(CLK * !D * SCE)	0.00251	0.00391	0.03994
	(CLK * !D * SCE)	0.00743	0.00884	0.04485
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01110	0.01259	0.05227
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01578	0.01728	0.05694
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01080	0.01240	0.05274
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01573	0.01734	0.05764
	!SCE	-0.00050	-0.00052	-0.00053
	!SCE	0.00211	0.00212	0.00209
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00310	0.00443	0.04030
	(CLK * D * SCE)	0.00773	0.00906	0.04490
	(CLK * !D * SCE)	0.00261	0.00404	0.04014
	(CLK * !D * SCE)	0.00748	0.00892	0.04499
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01119	0.01266	0.05242
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01581	0.01730	0.05702
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01088	0.01248	0.05284
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01574	0.01736	0.05769
	!SCE	-0.00046	-0.00047	-0.00049
	!SCE	0.00212	0.00213	0.00211

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)**	0.00668	0.00923	0.06220
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00011	0.00266	0.05565
	(CLK * D * !SCD)	0.00941	0.01214	0.06755
	(CLK * D * !SCD)	0.00474	0.00745	0.06283
	(CLK * !D * SCD)	0.01125	0.01562	0.10434
	(CLK * !D * SCD)	0.00305	0.00739	0.09613
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00645	0.00900	0.06197
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00012	0.00243	0.05543
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01732	0.02013	0.07573
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01264	0.01543	0.07101
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01744	0.02212	0.11642
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00924	0.01387	0.10821
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00645	0.00913	0.06198
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00033	0.00302	0.05585

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00691	0.00942	0.06237
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00021	0.00271	0.05569
	(CLK * D * !SCD)	0.00975	0.01244	0.06782
	(CLK * D * !SCD)	0.00490	0.00757	0.06294
	(CLK * !D * SCD)	0.01142	0.01575	0.10447
	(CLK * !D * SCD)	0.00311	0.00741	0.09617
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00675	0.00926	0.06220
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00004	0.00255	0.05552
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01762	0.02039	0.07598
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01277	0.01552	0.07109
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01783	0.02245	0.11673
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00952	0.01410	0.10842
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00673	0.00937	0.06220
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00047	0.00312	0.05593

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)**	0.00002	0.00324	0.05641
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00657	0.00980	0.06296
	(CLK * D * !SCD)	0.00492	0.00794	0.06266
	(CLK * D * !SCD)	0.00960	0.01265	0.06716
	(CLK * !D * SCD)	0.00181	0.00639	0.09526
	(CLK * !D * SCD)	0.01001	0.01461	0.10348
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00020	0.00302	0.05618
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00635	0.00957	0.06274
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01109	0.01420	0.06878
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01577	0.01891	0.07330
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00972	0.01442	0.10702
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01792	0.02264	0.11524
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00059	0.00386	0.05670
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00671	0.01000	0.06283

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00002	0.00316	0.05631
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00667	0.00986	0.06300
	(CLK * D * !SCD)	0.00482	0.00780	0.06251
	(CLK * D * !SCD)	0.00967	0.01269	0.06719
	(CLK * !D * SCD)	0.00191	0.00642	0.09531
	(CLK * !D * SCD)	0.01021	0.01476	0.10364
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00018	0.00303	0.05614
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00651	0.00974	0.06284
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01119	0.01428	0.06884
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01604	0.01917	0.07353
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00979	0.01442	0.10699
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01809	0.02277	0.11532
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00063	0.00386	0.05669
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00689	0.01013	0.06295

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)	0.01513	0.01954	0.10913
	(D * SCD * SCE * Q * !Q_N)	0.01028	0.01468	0.10429
	(D * !SCE * Q * !Q_N)	0.01506	0.01947	0.10904
	(D * !SCE * Q * !Q_N)	0.01021	0.01462	0.10420
	(D * !SCD * SCE * !Q * Q_N)	0.01501	0.01942	0.10907
	(D * !SCD * SCE * !Q * Q_N)	0.01016	0.01456	0.10422
	(!D * SCD * SCE * Q * !Q_N)	0.01517	0.01959	0.10917
	(!D * SCD * SCE * Q * !Q_N)	0.01032	0.01473	0.10433
	(!D * !SCE * !Q * Q_N)	0.01492	0.01932	0.10891
	(!D * !SCE * !Q * Q_N)	0.01007	0.01446	0.10406
	(!D * !SCD * SCE * !Q * Q_N)	0.01501	0.01942	0.10907
	(!D * !SCD * SCE * !Q * Q_N)	0.01016	0.01456	0.10422
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01549	0.01991	0.10981
	(D * SCD * SCE * Q * !Q_N)	0.01064	0.01505	0.10497
	(D * !SCE * Q * !Q_N)	0.01543	0.01985	0.10973
	(D * !SCE * Q * !Q_N)	0.01058	0.01500	0.10489
	(D * !SCD * SCE * !Q * Q_N)	0.01534	0.01976	0.10973
	(D * !SCD * SCE * !Q * Q_N)	0.01050	0.01490	0.10488
	(!D * SCD * SCE * Q * !Q_N)	0.01554	0.01995	0.10986
	(!D * SCD * SCE * Q * !Q_N)	0.01069	0.01510	0.10502
	(!D * !SCE * !Q * Q_N)	0.01525	0.01967	0.10955
	(!D * !SCE * !Q * Q_N)	0.01040	0.01481	0.10471
	(!D * !SCD * SCE * !Q * Q_N)	0.01535	0.01976	0.10970
	(!D * !SCD * SCE * !Q * Q_N)	0.01050	0.01490	0.10487

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)**	0.00872	0.01386	0.10312
	(D * SCD * SCE * Q * !Q_N)	0.01357	0.01873	0.10796
	(D * SCD * SCE * !Q * Q_N)	0.01498	0.02020	0.11138
	(D * SCD * SCE * !Q * Q_N)	0.01982	0.02506	0.11623
	(D * !SCE * Q * !Q_N)	0.00867	0.01381	0.10303
	(D * !SCE * Q * !Q_N)	0.01351	0.01868	0.10786
	(D * !SCE * !Q * Q_N)	0.01490	0.02015	0.11200
	(D * !SCE * !Q * Q_N)	0.01974	0.02500	0.11686
	(D * !SCD * SCE * Q * !Q_N)	0.01800	0.02327	0.11457
	(D * !SCD * SCE * Q * !Q_N)	0.02287	0.02816	0.11945
	(D * !SCD * SCE * !Q * Q_N)	0.00895	0.01411	0.10349
	(D * !SCD * SCE * !Q * Q_N)	0.01379	0.01898	0.10833
	(!D * SCD * SCE * Q * !Q_N)	0.00877	0.01391	0.10317
	(!D * SCD * SCE * Q * !Q_N)	0.01361	0.01878	0.10801
	(!D * SCD * SCE * !Q * Q_N)	0.01504	0.02027	0.11144
	(!D * SCD * SCE * !Q * Q_N)	0.01987	0.02511	0.11628
	(!D * !SCE * Q * !Q_N)	0.01779	0.02304	0.11374
	(!D * !SCE * Q * !Q_N)	0.02263	0.02791	0.11859
	(!D * !SCE * !Q * Q_N)	0.00885	0.01399	0.10331
	(!D * !SCE * !Q * Q_N)	0.01369	0.01886	0.10816
	(!D * !SCD * SCE * Q * !Q_N)	0.01801	0.02329	0.11455
	(!D * !SCD * SCE * Q * !Q_N)	0.02287	0.02817	0.11942
	(!D * !SCD * SCE * !Q * Q_N)	0.00895	0.01411	0.10349
	(!D * !SCD * SCE * !Q * Q_N)	0.01379	0.01898	0.10832

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00890	0.01409	0.10362
	(D * SCD * SCE * Q * !Q_N)	0.01374	0.01895	0.10847
	(D * SCD * SCE * !Q * Q_N)	0.01524	0.02052	0.11223
	(D * SCD * SCE * !Q * Q_N)	0.02008	0.02537	0.11708
	(D * !SCE * Q * !Q_N)	0.00885	0.01404	0.10355
	(D * !SCE * Q * !Q_N)	0.01369	0.01890	0.10839
	(D * !SCE * !Q * Q_N)	0.01516	0.02045	0.11259
	(D * !SCE * !Q * Q_N)	0.02000	0.02532	0.11744
	(D * !SCD * SCE * Q * !Q_N)	0.01807	0.02340	0.11489
	(D * !SCD * SCE * Q * !Q_N)	0.02293	0.02829	0.11978
	(D * !SCD * SCE * !Q * Q_N)	0.00904	0.01425	0.10392
	(D * !SCD * SCE * !Q * Q_N)	0.01389	0.01911	0.10878
	(!D * SCD * SCE * Q * !Q_N)	0.00895	0.01414	0.10367
	(!D * SCD * SCE * Q * !Q_N)	0.01379	0.01900	0.10852
	(!D * SCD * SCE * !Q * Q_N)	0.01530	0.02058	0.11229
	(!D * SCD * SCE * !Q * Q_N)	0.02013	0.02543	0.11713
	(!D * !SCE * Q * !Q_N)	0.01786	0.02317	0.11414
	(!D * !SCE * Q * !Q_N)	0.02270	0.02803	0.11900
	(!D * !SCE * !Q * Q_N)	0.00894	0.01414	0.10374
	(!D * !SCE * !Q * Q_N)	0.01378	0.01900	0.10859
	(!D * !SCD * SCE * Q * !Q_N)	0.01807	0.02342	0.11488
	(!D * !SCD * SCE * Q * !Q_N)	0.02293	0.02830	0.11975
	(!D * !SCD * SCE * !Q * Q_N)	0.00904	0.01425	0.10392
	(!D * !SCD * SCE * !Q * Q_N)	0.01388	0.01912	0.10877

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00196	0.00207	0.00432	0.00303	1.27285
sky130_fd_sc_hs__sdfxtp_2	0.00200	0.00203	0.00418	0.00305	2.45053
sky130_fd_sc_hs__sdfxtp_4	0.00197	0.00201	0.00431	0.00303	4.66897

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	46.42940	72.95520
sky130_fd_sc_hs__sdfxtp_2	0.00000	46.57570	66.15400
sky130_fd_sc_hs__sdfxtp_4	0.00000	66.40780	91.93170

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)**	0.17982	0.64326	6.09988
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.18263	0.55274	5.99156
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.21763	0.52353	6.12376

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.19841	0.47172	2.89126
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.20557	0.43952	2.83117
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.20747	0.40544	2.86295

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)	-0.06536	-0.14123	-0.74034
	setup	CLK (R)	0.13176	0.18181	0.82402
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06763	-0.14306	-0.74547
	setup	CLK (R)	0.13658	0.18772	0.83611
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06396	-0.13906	-0.73323
	setup	CLK (R)	0.12629	0.17783	0.82744

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)	-0.08763	-0.18978	-2.14924
	setup	CLK (R)	0.17775	0.27499	2.47184
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08998	-0.19494	-2.14122
	setup	CLK (R)	0.18623	0.28492	2.49531
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08877	-0.18975	-2.08771
	setup	CLK (R)	0.17767	0.27393	2.46781

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)	-0.06536	-0.14123	-0.74034
	setup	CLK (R)	0.13176	0.18181	0.82402
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06763	-0.14306	-0.74547
	setup	CLK (R)	0.13658	0.18772	0.83611
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06396	-0.13906	-0.73323
	setup	CLK (R)	0.12629	0.17783	0.82744

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)	-0.08763	-0.18978	-2.14924
	setup	CLK (R)	0.17775	0.27499	2.47184
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08998	-0.19494	-2.14122
	setup	CLK (R)	0.18623	0.28492	2.49531
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08877	-0.18975	-2.08771
	setup	CLK (R)	0.17767	0.27393	2.46781

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)	-0.08644	-0.14869	-0.73570
	setup	CLK (R)	0.15833	0.20057	0.82071
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08796	-0.15031	-0.73948
	setup	CLK (R)	0.16620	0.20500	0.83220
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08320	-0.14687	-0.72519
	setup	CLK (R)	0.15323	0.19676	0.82216

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)	-0.12098	-0.22321	-2.39811
	setup	CLK (R)	0.23082	0.31084	2.56595
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12477	-0.22417	-2.40711
	setup	CLK (R)	0.24107	0.31953	2.58537
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12350	-0.22103	-2.39855
	setup	CLK (R)	0.22900	0.30996	2.56258

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)	-0.08644	-0.14869	-0.73570
	hold	CLK (R)	-0.09185	-0.15542	-0.74289
	setup	CLK (R)	0.15693	0.19360	0.81479
	setup	CLK (R)	0.15833	0.20057	0.82071
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08796	-0.15031	-0.73948
	hold	CLK (R)	-0.09239	-0.15880	-0.74925
	setup	CLK (R)	0.16111	0.19833	0.82504
	setup	CLK (R)	0.16620	0.20500	0.83220
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08320	-0.14687	-0.72519
	hold	CLK (R)	-0.08959	-0.15444	-0.73127
	setup	CLK (R)	0.15037	0.19208	0.81805
	setup	CLK (R)	0.15323	0.19676	0.82216

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)	-0.13136	-0.22996	-2.39883
	hold	CLK (R)	-0.12098	-0.22321	-2.39811
	setup	CLK (R)	0.23082	0.31084	2.55920
	setup	CLK (R)	0.22684	0.30850	2.56595
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13567	-0.23347	-2.40711
	hold	CLK (R)	-0.12477	-0.22417	-2.40824
	setup	CLK (R)	0.24107	0.31953	2.57737
	setup	CLK (R)	0.23572	0.31553	2.58537
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13310	-0.22776	-2.39855
	hold	CLK (R)	-0.12350	-0.22103	-2.40440
	setup	CLK (R)	0.22900	0.30996	2.55493
	setup	CLK (R)	0.22591	0.30711	2.56258

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)	-0.07846	-0.15560	-0.34037
	setup	CLK (R)	0.22919	0.24409	1.03370
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07821	-0.15708	-0.33536
	setup	CLK (R)	0.23824	0.25202	1.04186
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07765	-0.15342	-0.34181
	setup	CLK (R)	0.22764	0.24260	1.04630

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)	-0.10215	-0.18325	-1.55692
	setup	CLK (R)	0.19260	0.26986	2.28039
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10603	-0.18737	-1.55237
	setup	CLK (R)	0.20124	0.27608	2.30564
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10548	-0.18367	-1.43985
	setup	CLK (R)	0.19254	0.26597	2.28030

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)	-0.12962	-0.16809	-0.34037
	hold	CLK (R)	-0.07846	-0.15560	-0.89497
	setup	CLK (R)	0.22919	0.24409	0.41933
	setup	CLK (R)	0.14337	0.20212	1.03370
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13457	-0.16990	-0.33536
	hold	CLK (R)	-0.07821	-0.15708	-0.89434
	setup	CLK (R)	0.23824	0.25202	0.42169
	setup	CLK (R)	0.15157	0.20675	1.04186
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13227	-0.16662	-0.34181
	hold	CLK (R)	-0.07765	-0.15342	-0.88077
	setup	CLK (R)	0.22764	0.24260	0.42192
	setup	CLK (R)	0.14139	0.19788	1.04630

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)	-0.12054	-0.22861	-2.19277
	hold	CLK (R)	-0.10215	-0.18325	-1.55692
	setup	CLK (R)	0.18556	0.26564	2.23427
	setup	CLK (R)	0.19260	0.26986	2.28039
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12268	-0.22571	-2.18657
	hold	CLK (R)	-0.10603	-0.18737	-1.55237
	setup	CLK (R)	0.19394	0.26373	2.22901
	setup	CLK (R)	0.20124	0.27608	2.30564
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12016	-0.22640	-2.18321
	hold	CLK (R)	-0.10548	-0.18367	-1.43985
	setup	CLK (R)	0.18168	0.26164	2.22834
	setup	CLK (R)	0.19254	0.26597	2.28030

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 ()	0.08367	0.65918	16.50020
	min_pulse_width	CLK ()	0.07132	0.65918	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.07626	0.65918	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.11578	0.65918	16.50020
	min_pulse_width	CLK ()	0.07873	0.65918	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 ()	0.15777	0.65918	16.50020
	min_pulse_width	CLK ()	0.18741	0.65918	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.16518	0.65918	16.50020
	min_pulse_width	CLK ()	0.19482	0.65918	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.15283	0.65918	16.50020
	min_pulse_width	CLK ()	0.18988	0.65918	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	0.02635	0.03131	0.12679
	CLK	0.02155	0.02652	0.12236
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03016	0.03528	0.13074
	CLK	0.02531	0.03044	0.12660
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03891	0.04370	0.13926
	CLK	0.03409	0.03895	0.13584

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02710	0.03215	0.12540
	CLK	0.02229	0.02731	0.11994
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03108	0.03615	0.12897
	CLK	0.02624	0.03130	0.12368
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03951	0.04466	0.13794
	CLK	0.03469	0.03977	0.13251

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00188	0.00191	0.00189
	(CLK * SCD * SCE)	-0.00016	-0.00018	-0.00016
	(CLK * !SCE)	0.00508	0.00701	0.04752
	(CLK * !SCE)	0.00140	0.00331	0.04384
	(CLK * !SCD * SCE)	0.00120	0.00120	0.00118
	(CLK * !SCD * SCE)	-0.00110	-0.00109	-0.00112
	(!CLK * SCD * SCE)	0.00181	0.00183	0.00182
	(!CLK * SCD * SCE)	-0.00023	-0.00024	-0.00023
	(!CLK * !SCE)	0.01165	0.01376	0.05971
	(!CLK * !SCE)	0.00798	0.01007	0.05603
	(!CLK * !SCD * SCE)	0.00145	0.00145	0.00144
	(!CLK * !SCD * SCE)	-0.00084	-0.00083	-0.00086
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00199	0.00199	0.00199
	(CLK * SCD * SCE)	-0.00011	-0.00011	-0.00010
	(CLK * !SCE)	0.00551	0.00738	0.04780
	(CLK * !SCE)	0.00177	0.00363	0.04405
	(CLK * !SCD * SCE)	0.00129	0.00129	0.00128
	(CLK * !SCD * SCE)	-0.00105	-0.00105	-0.00107
	(!CLK * SCD * SCE)	0.00180	0.00182	0.00180
	(!CLK * SCD * SCE)	-0.00029	-0.00030	-0.00029
	(!CLK * !SCE)	0.01248	0.01453	0.06027
	(!CLK * !SCE)	0.00875	0.01077	0.05652
	(!CLK * !SCD * SCE)	0.00143	0.00143	0.00141
	(!CLK * !SCD * SCE)	-0.00092	-0.00092	-0.00094

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00208	0.00211	0.00209
	(CLK * SCD * SCE)	0.00003	0.00001	0.00003
	(CLK * !SCE)	0.00526	0.00721	0.04775
	(CLK * !SCE)	0.00160	0.00353	0.04408
	(CLK * !SCD * SCE)	0.00141	0.00141	0.00139
	(CLK * !SCD * SCE)	-0.00090	-0.00091	-0.00092
	(!CLK * SCD * SCE)	0.00200	0.00202	0.00201
	(!CLK * SCD * SCE)	-0.00006	-0.00007	-0.00006
	(!CLK * !SCE)	0.01184	0.01393	0.05983
	(!CLK * !SCE)	0.00818	0.01025	0.05615
	(!CLK * !SCD * SCE)	0.00165	0.00164	0.00163
	(!CLK * !SCD * SCE)	-0.00067	-0.00066	-0.00069

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00090	-0.00092	-0.00097
	(CLK * SCD * SCE)	0.00114	0.00114	0.00109
	(CLK * !SCE)	0.00137	0.00371	0.04437
	(CLK * !SCE)	0.00506	0.00739	0.04805
	(CLK * !SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCD * SCE)	0.00187	0.00187	0.00187
	(!CLK * SCD * SCE)	-0.00097	-0.00098	-0.00104
	(!CLK * SCD * SCE)	0.00107	0.00107	0.00103
	(!CLK * !SCE)	0.00920	0.01172	0.05750
	(!CLK * !SCE)	0.01290	0.01542	0.06118
	(!CLK * !SCD * SCE)	-0.00016	-0.00016	-0.00016
	(!CLK * !SCD * SCE)	0.00213	0.00213	0.00213

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00088	-0.00090	-0.00095
	(CLK * SCD * SCE)	0.00120	0.00120	0.00116
	(CLK * !SCE)	0.00149	0.00379	0.04437
	(CLK * !SCE)	0.00525	0.00754	0.04812
	(CLK * !SCD * SCE)	-0.00038	-0.00039	-0.00038
	(CLK * !SCD * SCE)	0.00194	0.00195	0.00195
	(!CLK * SCD * SCE)	-0.00108	-0.00109	-0.00114
	(!CLK * SCD * SCE)	0.00102	0.00101	0.00097
	(!CLK * !SCE)	0.00932	0.01180	0.05745
	(!CLK * !SCE)	0.01308	0.01555	0.06120
	(!CLK * !SCD * SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !SCD * SCE)	0.00208	0.00209	0.00208
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00074	-0.00076	-0.00081
	(CLK * SCD * SCE)	0.00131	0.00131	0.00127
	(CLK * !SCE)	0.00151	0.00386	0.04455
	(CLK * !SCE)	0.00519	0.00752	0.04822
	(CLK * !SCD * SCE)	-0.00026	-0.00027	-0.00026
	(CLK * !SCD * SCE)	0.00204	0.00205	0.00204
	(!CLK * SCD * SCE)	-0.00083	-0.00084	-0.00089
	(!CLK * SCD * SCE)	0.00123	0.00123	0.00119
	(!CLK * !SCE)	0.00971	0.01222	0.05790
	(!CLK * !SCE)	0.01340	0.01590	0.06157
	(!CLK * !SCD * SCE)	-0.00002	-0.00003	-0.00002
	(!CLK * !SCD * SCE)	0.00228	0.00229	0.00228

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00720	0.00850	0.04420
	(CLK * D * SCE)	0.00237	0.00366	0.03937
	(CLK * !D * SCE)	0.00824	0.00941	0.04464
	(CLK * !D * SCE)	0.00316	0.00431	0.03956
	(!CLK * D * SCE)	0.01379	0.01533	0.05573
	(!CLK * D * SCE)	0.00896	0.01049	0.05090
	(!CLK * !D * SCE)	0.01484	0.01630	0.05630
	(!CLK * !D * SCE)	0.00976	0.01121	0.05122
	!SCE	0.00190	0.00168	0.00166
	!SCE	-0.00079	-0.00104	-0.00104
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00743	0.00871	0.04437
	(CLK * D * SCE)	0.00263	0.00391	0.03957
	(CLK * !D * SCE)	0.00847	0.00962	0.04479
	(CLK * !D * SCE)	0.00342	0.00456	0.03975
	(!CLK * D * SCE)	0.01442	0.01594	0.05618
	(!CLK * D * SCE)	0.00963	0.01113	0.05138
	(!CLK * !D * SCE)	0.01547	0.01689	0.05676
	(!CLK * !D * SCE)	0.01043	0.01185	0.05172
	!SCE	0.00196	0.00176	0.00173
	!SCE	-0.00067	-0.00091	-0.00091
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00733	0.00866	0.04443
	(CLK * D * SCE)	0.00260	0.00391	0.03969
	(CLK * !D * SCE)	0.00837	0.00956	0.04486
	(CLK * !D * SCE)	0.00339	0.00456	0.03987
	(!CLK * D * SCE)	0.01392	0.01546	0.05586
	(!CLK * D * SCE)	0.00919	0.01072	0.05112
	(!CLK * !D * SCE)	0.01498	0.01644	0.05658
	(!CLK * !D * SCE)	0.00999	0.01143	0.05159
	!SCE	0.00206	0.00184	0.00181
	!SCE	-0.00057	-0.00082	-0.00082

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00286	0.00412	0.03984
	(CLK * D * SCE)	0.00769	0.00897	0.04465
	(CLK * !D * SCE)	0.00237	0.00374	0.03968
	(CLK * !D * SCE)	0.00744	0.00883	0.04474
	(!CLK * D * SCE)	0.01088	0.01234	0.05200
	(!CLK * D * SCE)	0.01573	0.01719	0.05681
	(!CLK * !D * SCE)	0.01057	0.01215	0.05241
	(!CLK * !D * SCE)	0.01565	0.01724	0.05747
	!SCE	-0.00068	-0.00070	-0.00071
	!SCE	0.00202	0.00203	0.00200
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00308	0.00435	0.04002
	(CLK * D * SCE)	0.00788	0.00916	0.04480
	(CLK * !D * SCE)	0.00259	0.00396	0.03985
	(CLK * !D * SCE)	0.00763	0.00900	0.04488
	(!CLK * D * SCE)	0.01115	0.01252	0.05209
	(!CLK * D * SCE)	0.01595	0.01733	0.05688
	(!CLK * !D * SCE)	0.01079	0.01233	0.05253
	(!CLK * !D * SCE)	0.01583	0.01738	0.05757
	!SCE	-0.00063	-0.00065	-0.00066
	!SCE	0.00201	0.00202	0.00199

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00302	0.00431	0.04010
	(CLK * D * SCE)	0.00777	0.00907	0.04482
	(CLK * !D * SCE)	0.00253	0.00392	0.03994
	(CLK * !D * SCE)	0.00752	0.00892	0.04491
	(!CLK * D * SCE)	0.01139	0.01287	0.05254
	(!CLK * D * SCE)	0.01614	0.01762	0.05725
	(!CLK * !D * SCE)	0.01110	0.01267	0.05292
	(!CLK * !D * SCE)	0.01609	0.01767	0.05790
	!SCE	-0.00047	-0.00049	-0.00050
	!SCE	0.00217	0.00218	0.00215

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)**	0.00685	0.00932	0.06227
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00006	0.00243	0.05539
	(CLK * D * !SCD)	0.00968	0.01233	0.06771
	(CLK * D * !SCD)	0.00472	0.00738	0.06272
	(CLK * !D * SCD)	0.01144	0.01575	0.10435
	(CLK * !D * SCD)	0.00284	0.00711	0.09575
	(!CLK * D * SCD)	0.00678	0.00925	0.06220
	(!CLK * D * SCD)	-0.00013	0.00236	0.05532
	(!CLK * D * !SCD)	0.01749	0.02023	0.07579
	(!CLK * D * !SCD)	0.01253	0.01525	0.07079
	(!CLK * !D * SCD)	0.01802	0.02262	0.11687
	(!CLK * !D * SCD)	0.00941	0.01398	0.10826
	(!CLK * !D * !SCD)	0.00677	0.00940	0.06221
	(!CLK * !D * !SCD)	0.00031	0.00294	0.05574

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00667	0.00921	0.06215
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00000	0.00254	0.05551
	(CLK * D * !SCD)	0.00962	0.01234	0.06769
	(CLK * D * !SCD)	0.00493	0.00763	0.06296
	(CLK * !D * SCD)	0.01156	0.01587	0.10443
	(CLK * !D * SCD)	0.00318	0.00745	0.09605
	(!CLK * D * SCD)	0.00648	0.00902	0.06196
	(!CLK * D * SCD)	-0.00018	0.00235	0.05532
	(!CLK * D * !SCD)	0.01744	0.02024	0.07576
	(!CLK * D * !SCD)	0.01275	0.01553	0.07103
	(!CLK * !D * SCD)	0.01854	0.02316	0.11725
	(!CLK * !D * SCD)	0.01016	0.01474	0.10887
	(!CLK * !D * !SCD)	0.00652	0.00918	0.06201
	(!CLK * !D * !SCD)	0.00030	0.00297	0.05579
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00702	0.00950	0.06239
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00013	0.00260	0.05552
	(CLK * D * !SCD)	0.00981	0.01245	0.06779
	(CLK * D * !SCD)	0.00483	0.00745	0.06278
	(CLK * !D * SCD)	0.01163	0.01592	0.10452
	(CLK * !D * SCD)	0.00308	0.00734	0.09597
	(!CLK * D * SCD)	0.00694	0.00942	0.06230
	(!CLK * D * SCD)	0.00005	0.00251	0.05543
	(!CLK * D * !SCD)	0.01797	0.02070	0.07622
	(!CLK * D * !SCD)	0.01300	0.01571	0.07121
	(!CLK * !D * SCD)	0.01821	0.02275	0.11691
	(!CLK * !D * SCD)	0.00966	0.01418	0.10835
	(!CLK * !D * !SCD)	0.00692	0.00953	0.06230
	(!CLK * !D * !SCD)	0.00047	0.00309	0.05584

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)	-0.00016	0.00299	0.05613
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00673	0.00990	0.06303
	(CLK * D * !SCD)	0.00479	0.00775	0.06244
	(CLK * D * !SCD)	0.00975	0.01275	0.06722
	(CLK * !D * SCD)	0.00171	0.00618	0.09496
	(CLK * !D * SCD)	0.01032	0.01483	0.10358
	(!CLK * D * SCD)	-0.00023	0.00296	0.05606
	(!CLK * D * SCD)	0.00667	0.00988	0.06296
	(!CLK * D * !SCD)	0.01133	0.01441	0.06892
	(!CLK * D * !SCD)	0.01629	0.01936	0.07372
	(!CLK * !D * SCD)	0.00953	0.01414	0.10666
	(!CLK * !D * SCD)	0.01813	0.02276	0.11529
	(!CLK * !D * !SCD)	0.00057	0.00380	0.05659
	(!CLK * !D * !SCD)	0.00704	0.01028	0.06307

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00008	0.00311	0.05626
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00657	0.00977	0.06292
	(CLK * D * !SCD)	0.00518	0.00818	0.06281
	(CLK * D * !SCD)	0.00987	0.01289	0.06733
	(CLK * !D * SCD)	0.00185	0.00637	0.09505
	(CLK * !D * SCD)	0.01023	0.01476	0.10346
	(!CLK * D * SCD)	-0.00027	0.00291	0.05607
	(!CLK * D * SCD)	0.00638	0.00958	0.06273
	(!CLK * D * !SCD)	0.01213	0.01522	0.06970
	(!CLK * D * !SCD)	0.01682	0.01993	0.07424
	(!CLK * !D * SCD)	0.00966	0.01430	0.10667
	(!CLK * !D * SCD)	0.01804	0.02271	0.11507
	(!CLK * !D * !SCD)	0.00049	0.00375	0.05656
	(!CLK * !D * !SCD)	0.00671	0.00998	0.06279
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00005	0.00320	0.05630
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00692	0.01009	0.06318
	(CLK * D * !SCD)	0.00501	0.00796	0.06262
	(CLK * D * !SCD)	0.00998	0.01298	0.06742
	(CLK * !D * SCD)	0.00189	0.00636	0.09514
	(CLK * !D * SCD)	0.01045	0.01496	0.10372
	(!CLK * D * SCD)	-0.00003	0.00315	0.05621
	(!CLK * D * SCD)	0.00684	0.01005	0.06309
	(!CLK * D * !SCD)	0.01155	0.01461	0.06909
	(!CLK * D * !SCD)	0.01652	0.01962	0.07391
	(!CLK * !D * SCD)	0.01007	0.01468	0.10710
	(!CLK * !D * SCD)	0.01863	0.02328	0.11569
	(!CLK * !D * !SCD)	0.00077	0.00400	0.05675
	(!CLK * !D * !SCD)	0.00722	0.01047	0.06321

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)	0.01497	0.01939	0.10886
	(D * SCD * SCE * Q)	0.01017	0.01458	0.10407
	(D * !SCE * Q)	0.01490	0.01932	0.10877
	(D * !SCE * Q)	0.01010	0.01452	0.10398
	(D * !SCD * SCE * !Q)	0.01484	0.01926	0.10880
	(D * !SCD * SCE * !Q)	0.01004	0.01445	0.10399
	(!D * SCD * SCE * Q)	0.01502	0.01944	0.10891
	(!D * SCD * SCE * Q)	0.01021	0.01463	0.10412
	(!D * !SCE * !Q)	0.01475	0.01917	0.10864
	(!D * !SCE * !Q)	0.00995	0.01436	0.10383
	(!D * !SCD * SCE * !Q)	0.01484	0.01927	0.10879
	(!D * !SCD * SCE * !Q)	0.01004	0.01445	0.10398
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01517	0.01955	0.10889
	(D * SCD * SCE * Q)	0.01032	0.01470	0.10406
	(D * !SCE * Q)	0.01510	0.01948	0.10880
	(D * !SCE * Q)	0.01025	0.01463	0.10397
	(D * !SCD * SCE * !Q)	0.01531	0.01969	0.10909
	(D * !SCD * SCE * !Q)	0.01047	0.01483	0.10425
	(!D * SCD * SCE * Q)	0.01522	0.01959	0.10894
	(!D * SCD * SCE * Q)	0.01037	0.01474	0.10411
	(!D * !SCE * !Q)	0.01522	0.01960	0.10892
	(!D * !SCE * !Q)	0.01037	0.01474	0.10409
	(!D * !SCD * SCE * !Q)	0.01532	0.01969	0.10908
	(!D * !SCD * SCE * !Q)	0.01047	0.01483	0.10423

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01530	0.01970	0.10917
	(D * SCD * SCE * Q)	0.01048	0.01487	0.10436
	(D * !SCE * Q)	0.01523	0.01963	0.10908
	(D * !SCE * Q)	0.01041	0.01481	0.10427
	(D * !SCD * SCE * !Q)	0.01513	0.01953	0.10906
	(D * !SCD * SCE * !Q)	0.01031	0.01470	0.10425
	(!D * SCD * SCE * Q)	0.01535	0.01974	0.10922
	(!D * SCD * SCE * Q)	0.01053	0.01492	0.10441
	(!D * !SCE * !Q)	0.01504	0.01944	0.10888
	(!D * !SCE * !Q)	0.01022	0.01461	0.10408
	(!D * !SCD * SCE * !Q)	0.01513	0.01953	0.10905
	(!D * !SCD * SCE * !Q)	0.01031	0.01471	0.10424

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)**	0.00888	0.01400	0.10316
	(D * SCD * SCE * Q)	0.01367	0.01882	0.10795
	(D * SCD * SCE * !Q)	0.01506	0.02027	0.11137
	(D * SCD * SCE * !Q)	0.01985	0.02508	0.11618
	(D * !SCE * Q)	0.00883	0.01395	0.10306
	(D * !SCE * Q)	0.01362	0.01877	0.10786
	(D * !SCE * !Q)	0.01498	0.02021	0.11209
	(D * !SCE * !Q)	0.01977	0.02503	0.11690
	(D * !SCD * SCE * Q)	0.01784	0.02309	0.11417
	(D * !SCD * SCE * Q)	0.02266	0.02794	0.11901
	(D * !SCD * SCE * !Q)	0.00878	0.01393	0.10322
	(D * !SCD * SCE * !Q)	0.01358	0.01876	0.10801
	(!D * SCD * SCE * Q)	0.00893	0.01405	0.10321
	(!D * SCD * SCE * Q)	0.01372	0.01887	0.10800
	(!D * SCD * SCE * !Q)	0.01512	0.02033	0.11143
	(!D * SCD * SCE * !Q)	0.01990	0.02513	0.11623
	(!D * !SCE * Q)	0.01762	0.02286	0.11341
	(!D * !SCE * Q)	0.02241	0.02767	0.11822
	(!D * !SCE * !Q)	0.00868	0.01382	0.10304
	(!D * !SCE * !Q)	0.01348	0.01865	0.10784
	(!D * !SCD * SCE * Q)	0.01784	0.02310	0.11421
	(!D * !SCD * SCE * Q)	0.02266	0.02793	0.11903
	(!D * !SCD * SCE * !Q)	0.00878	0.01393	0.10322
	(!D * !SCD * SCE * !Q)	0.01358	0.01876	0.10801

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00915	0.01428	0.10332
	(D * SCD * SCE * Q)	0.01400	0.01913	0.10817
	(D * SCD * SCE * !Q)	0.01594	0.02115	0.11214
	(D * SCD * SCE * !Q)	0.02078	0.02599	0.11699
	(D * !SCE * Q)	0.00910	0.01423	0.10323
	(D * !SCE * Q)	0.01394	0.01910	0.10809
	(D * !SCE * !Q)	0.01586	0.02109	0.11281
	(D * !SCE * !Q)	0.02070	0.02595	0.11767
	(D * !SCD * SCE * Q)	0.01819	0.02346	0.11448
	(D * !SCD * SCE * Q)	0.02306	0.02835	0.11935
	(D * !SCD * SCE * !Q)	0.00905	0.01422	0.10337
	(D * !SCD * SCE * !Q)	0.01389	0.01909	0.10822
	(!D * SCD * SCE * Q)	0.00920	0.01433	0.10337
	(!D * SCD * SCE * Q)	0.01404	0.01918	0.10822
	(!D * SCD * SCE * !Q)	0.01599	0.02122	0.11220
	(!D * SCD * SCE * !Q)	0.02083	0.02604	0.11703
	(!D * !SCE * Q)	0.01797	0.02323	0.11367
	(!D * !SCE * Q)	0.02282	0.02809	0.11852
	(!D * !SCE * !Q)	0.00894	0.01410	0.10319
	(!D * !SCE * !Q)	0.01379	0.01896	0.10804
	(!D * !SCD * SCE * Q)	0.01818	0.02348	0.11447
	(!D * !SCD * SCE * Q)	0.02304	0.02835	0.11933
	(!D * !SCD * SCE * !Q)	0.00905	0.01421	0.10336
	(!D * !SCD * SCE * !Q)	0.01389	0.01908	0.10822

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00898	0.01411	0.10328
	(D * SCD * SCE * Q)	0.01379	0.01894	0.10808
	(D * SCD * SCE * !Q)	0.01529	0.02048	0.11152
	(D * SCD * SCE * !Q)	0.02009	0.02531	0.11633
	(D * !SCE * Q)	0.00893	0.01406	0.10318
	(D * !SCE * Q)	0.01374	0.01889	0.10799
	(D * !SCE * !Q)	0.01520	0.02043	0.11217
	(D * !SCE * !Q)	0.02001	0.02525	0.11699
	(D * !SCD * SCE * Q)	0.01838	0.02365	0.11478
	(D * !SCD * SCE * Q)	0.02322	0.02851	0.11963
	(D * !SCD * SCE * !Q)	0.00897	0.01413	0.10341
	(D * !SCD * SCE * !Q)	0.01379	0.01897	0.10822
	(!D * SCD * SCE * Q)	0.00903	0.01416	0.10332
	(!D * SCD * SCE * Q)	0.01384	0.01899	0.10813
	(!D * SCD * SCE * !Q)	0.01534	0.02055	0.11157
	(!D * SCD * SCE * !Q)	0.02014	0.02535	0.11639
	(!D * !SCE * Q)	0.01818	0.02342	0.11401
	(!D * !SCE * Q)	0.02299	0.02825	0.11883
	(!D * !SCE * !Q)	0.00887	0.01401	0.10323
	(!D * !SCE * !Q)	0.01368	0.01885	0.10805
	(!D * !SCD * SCE * Q)	0.01839	0.02367	0.11481
	(!D * !SCD * SCE * Q)	0.02322	0.02852	0.11965
	(!D * !SCD * SCE * !Q)	0.00897	0.01412	0.10340
	(!D * !SCD * SCE * !Q)	0.01378	0.01896	0.10821

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00243	0.00225	0.00482	1.23162
sky130_fd_sc_hs__sdlclkp_2	0.00242	0.00223	0.00512	2.40572
sky130_fd_sc_hs__sdlclkp_4	0.00231	0.00212	0.00523	4.74256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	51.66040	74.37950
sky130_fd_sc_hs__sdlclkp_2	0.00000	51.63590	75.92870
sky130_fd_sc_hs__sdlclkp_4	0.00000	58.40970	89.85930

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)	0.06875	0.52120	6.25723
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.07228	0.44188	6.13571
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.09522	0.43403	6.45980

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.07870	0.48043	4.84261
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.08756	0.47284	4.90648
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.11337	0.50340	5.10632

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)	-0.04154	-0.10430	-0.59797
	setup	CLK (R)	0.13576	0.21849	0.74163
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04200	-0.10212	-0.59346
	setup	CLK (R)	0.13098	0.20108	0.74840
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04476	-0.10430	-0.59504
	setup	CLK (R)	0.13100	0.18421	0.80389

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)	-0.10673	-0.20378	-2.54000
	setup	CLK (R)	0.13892	0.25622	2.62067
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10575	-0.20149	-2.53076
	setup	CLK (R)	0.13001	0.24329	2.61114
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.10754	-0.20640	-2.53721
	setup	CLK (R)	0.13448	0.24573	2.61518

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)	-0.04154	-0.10430	-0.59797
	setup	CLK (R)	0.13576	0.21849	0.74163
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04200	-0.10212	-0.59346
	setup	CLK (R)	0.13098	0.20108	0.74840
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04476	-0.10430	-0.59504
	setup	CLK (R)	0.13100	0.18421	0.80389

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)	-0.10673	-0.20378	-2.54000
	setup	CLK (R)	0.13892	0.25622	2.62067
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10575	-0.20149	-2.53076
	setup	CLK (R)	0.13001	0.24329	2.61114
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.10754	-0.20640	-2.53721
	setup	CLK (R)	0.13448	0.24573	2.61518

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)	-0.04773	-0.11516	-0.71644
	setup	CLK (R)	0.13883	0.22689	0.86735
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04605	-0.11516	-0.71269
	setup	CLK (R)	0.13410	0.21320	0.88265
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04503	-0.11516	-0.71750
	setup	CLK (R)	0.13255	0.19670	0.94210

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)	-0.11776	-0.19591	-2.41718
	setup	CLK (R)	0.14897	0.24590	2.48887
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11502	-0.19398	-2.41211
	setup	CLK (R)	0.14178	0.23301	2.48221
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12059	-0.19888	-2.41645
	setup	CLK (R)	0.14742	0.23806	2.48871

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)	-0.04773	-0.11516	-0.71644
	setup	CLK (R)	0.13883	0.22689	0.86735
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04605	-0.11516	-0.71269
	setup	CLK (R)	0.13410	0.21320	0.88265
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04503	-0.11516	-0.71750
	setup	CLK (R)	0.13255	0.19670	0.94210

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)	-0.11776	-0.19591	-2.41718
	setup	CLK (R)	0.14897	0.24590	2.48887
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11502	-0.19398	-2.41211
	setup	CLK (R)	0.14178	0.23301	2.48221
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12059	-0.19888	-2.41645
	setup	CLK (R)	0.14742	0.23806	2.48871

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 ()	0.04909	0.65918	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.05650	0.65918	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.08120	0.65918	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 ()	0.18494	0.65918	16.50020
	min_pulse_width	CLK ()	0.14789	0.65918	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.17753	0.65918	16.50020
	min_pulse_width	CLK ()	0.14789	0.65918	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.17753	0.65918	16.50020
	min_pulse_width	CLK ()	0.15036	0.65918	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	0.02019	0.02849	0.19081
	CLK	0.01255	0.02085	0.18358
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02372	0.03181	0.19573
	CLK	0.01563	0.02373	0.18833
sky130_fd_sc_hs__sdlclkp_4	CLK	0.03115	0.03860	0.20005
	CLK	0.02284	0.03035	0.19264

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.02278	0.03310	0.18517
	CLK	0.02997	0.04022	0.19220
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02590	0.03636	0.19001
	CLK	0.02242	0.03276	0.19588
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02374	0.03284	0.19835
	CLK	0.03207	0.04084	0.20178

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00203	0.00205	0.00203
	(CLK * SCE)	-0.00032	-0.00033	-0.00031
	(CLK * !SCE)	0.00565	0.00903	0.07153
	(CLK * !SCE)	0.00170	0.00506	0.06757
	(!CLK * SCE * !GCLK)	0.00177	0.00180	0.00177
	(!CLK * SCE * !GCLK)	-0.00058	-0.00059	-0.00057
	(!CLK * !SCE * !GCLK)	0.01342	0.01651	0.08314
	(!CLK * !SCE * !GCLK)	0.00989	0.01297	0.07960
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00208	0.00211	0.00209
	(CLK * SCE)	-0.00026	-0.00027	-0.00025
	(CLK * !SCE)	0.00566	0.00905	0.07155
	(CLK * !SCE)	0.00173	0.00509	0.06761
	(!CLK * SCE * !GCLK)	0.00182	0.00185	0.00183
	(!CLK * SCE * !GCLK)	-0.00052	-0.00053	-0.00051
	(!CLK * !SCE * !GCLK)	0.01329	0.01637	0.08319
	(!CLK * !SCE * !GCLK)	0.00982	0.01288	0.07971
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00214	0.00217	0.00214
	(CLK * SCE)	-0.00011	-0.00012	-0.00010
	(CLK * !SCE)	0.00564	0.00901	0.07137
	(CLK * !SCE)	0.00188	0.00522	0.06760
	(!CLK * SCE * !GCLK)	0.00190	0.00193	0.00190
	(!CLK * SCE * !GCLK)	-0.00035	-0.00036	-0.00034
	(!CLK * !SCE * !GCLK)	0.01348	0.01641	0.08319
	(!CLK * !SCE * !GCLK)	0.01013	0.01306	0.07985

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00102	-0.00103	-0.00109
	(CLK * SCE)	0.00132	0.00132	0.00127
	(CLK * !SCE)	0.00112	0.00508	0.06779
	(CLK * !SCE)	0.00508	0.00903	0.07174
	(!CLK * SCE * !GCLK)	-0.00120	-0.00121	-0.00127
	(!CLK * SCE * !GCLK)	0.00115	0.00115	0.00109
	(!CLK * !SCE * !GCLK)	0.01230	0.01640	0.08411
	(!CLK * !SCE * !GCLK)	0.01585	0.01994	0.08765
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00095	-0.00097	-0.00103
	(CLK * SCE)	0.00138	0.00138	0.00133
	(CLK * !SCE)	0.00121	0.00518	0.06789
	(CLK * !SCE)	0.00516	0.00911	0.07182
	(!CLK * SCE * !GCLK)	-0.00114	-0.00115	-0.00120
	(!CLK * SCE * !GCLK)	0.00121	0.00121	0.00115
	(!CLK * !SCE * !GCLK)	0.01243	0.01654	0.08436
	(!CLK * !SCE * !GCLK)	0.01593	0.02004	0.08785
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00077	-0.00078	-0.00084
	(CLK * SCE)	0.00148	0.00148	0.00142
	(CLK * !SCE)	0.00163	0.00556	0.06814
	(CLK * !SCE)	0.00540	0.00933	0.07190
	(!CLK * SCE * !GCLK)	-0.00097	-0.00097	-0.00104
	(!CLK * SCE * !GCLK)	0.00129	0.00129	0.00123
	(!CLK * !SCE * !GCLK)	0.01294	0.01700	0.08468
	(!CLK * !SCE * !GCLK)	0.01630	0.02035	0.08803

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00222	0.00192	0.00194
	(CLK * GATE)	-0.00088	-0.00120	-0.00115
	(CLK * !GATE)	0.00718	0.00992	0.06413
	(CLK * !GATE)	0.00236	0.00509	0.05932
	(!CLK * GATE * !GCLK)	0.00200	0.00170	0.00172
	(!CLK * GATE * !GCLK)	-0.00110	-0.00141	-0.00137
	(!CLK * !GATE * !GCLK)	0.01494	0.01755	0.07677
	(!CLK * !GATE * !GCLK)	0.01055	0.01315	0.07239
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00227	0.00197	0.00199
	(CLK * GATE)	-0.00082	-0.00114	-0.00109
	(CLK * !GATE)	0.00719	0.00993	0.06415
	(CLK * !GATE)	0.00239	0.00513	0.05936
	(!CLK * GATE * !GCLK)	0.00205	0.00175	0.00177
	(!CLK * GATE * !GCLK)	-0.00103	-0.00135	-0.00130
	(!CLK * !GATE * !GCLK)	0.01481	0.01744	0.07683
	(!CLK * !GATE * !GCLK)	0.01048	0.01309	0.07251
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00233	0.00203	0.00205
	(CLK * GATE)	-0.00066	-0.00098	-0.00094
	(CLK * !GATE)	0.00719	0.00991	0.06407
	(CLK * !GATE)	0.00256	0.00529	0.05945
	(!CLK * GATE * !GCLK)	0.00212	0.00182	0.00183
	(!CLK * GATE * !GCLK)	-0.00088	-0.00120	-0.00115
	(!CLK * !GATE * !GCLK)	0.01501	0.01761	0.07691
	(!CLK * !GATE * !GCLK)	0.01081	0.01341	0.07273

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00073	-0.00073	-0.00076
	(CLK * GATE)	0.00237	0.00238	0.00234
	(CLK * !GATE)	0.00119	0.00379	0.05811
	(CLK * !GATE)	0.00601	0.00862	0.06293
	(!CLK * GATE * !GCLK)	-0.00094	-0.00095	-0.00097
	(!CLK * GATE * !GCLK)	0.00216	0.00216	0.00213
	(!CLK * !GATE * !GCLK)	0.01232	0.01500	0.07262
	(!CLK * !GATE * !GCLK)	0.01672	0.01941	0.07703
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00066	-0.00066	-0.00069
	(CLK * GATE)	0.00243	0.00244	0.00240
	(CLK * !GATE)	0.00130	0.00389	0.05821
	(CLK * !GATE)	0.00609	0.00869	0.06300
	(!CLK * GATE * !GCLK)	-0.00087	-0.00088	-0.00090
	(!CLK * GATE * !GCLK)	0.00222	0.00222	0.00218
	(!CLK * !GATE * !GCLK)	0.01245	0.01515	0.07289
	(!CLK * !GATE * !GCLK)	0.01679	0.01951	0.07724
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00047	-0.00048	-0.00050
	(CLK * GATE)	0.00252	0.00252	0.00249
	(CLK * !GATE)	0.00171	0.00428	0.05853
	(CLK * !GATE)	0.00633	0.00892	0.06315
	(!CLK * GATE * !GCLK)	-0.00069	-0.00069	-0.00072
	(!CLK * GATE * !GCLK)	0.00230	0.00231	0.00228
	(!CLK * !GATE * !GCLK)	0.01297	0.01563	0.07325
	(!CLK * !GATE * !GCLK)	0.01716	0.01985	0.07747

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01171	0.01670	0.10797
	(!GATE * !SCE * !GCLK)	0.00444	0.00936	0.10066
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01193	0.01685	0.10838
	(!GATE * !SCE * !GCLK)	0.00421	0.00914	0.10064
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01222	0.01715	0.10862
	(!GATE * !SCE * !GCLK)	0.00431	0.00919	0.10071

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01319	0.01915	0.12341
	(GATE * SCE * !GCLK)	0.02104	0.02702	0.13124
	(GATE * !SCE * !GCLK)	0.01333	0.01926	0.12327
	(GATE * !SCE * !GCLK)	0.02117	0.02713	0.13114
	(!GATE * SCE * !GCLK)	0.01328	0.01923	0.12336
	(!GATE * SCE * !GCLK)	0.02112	0.02711	0.13121
	(!GATE * !SCE * !GCLK)	0.00555	0.01121	0.10182
	(!GATE * !SCE * !GCLK)	0.01284	0.01855	0.10912
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01287	0.01885	0.12398
	(GATE * SCE * !GCLK)	0.02119	0.02719	0.13231
	(GATE * !SCE * !GCLK)	0.01300	0.01895	0.12383
	(GATE * !SCE * !GCLK)	0.02132	0.02733	0.13217
	(!GATE * SCE * !GCLK)	0.01295	0.01893	0.12391
	(!GATE * SCE * !GCLK)	0.02126	0.02730	0.13223
	(!GATE * !SCE * !GCLK)	0.00535	0.01102	0.10180
	(!GATE * !SCE * !GCLK)	0.01306	0.01879	0.10952
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01344	0.01939	0.12448
	(GATE * SCE * !GCLK)	0.02192	0.02789	0.13298
	(GATE * !SCE * !GCLK)	0.01358	0.01948	0.12431
	(GATE * !SCE * !GCLK)	0.02206	0.02802	0.13280
	(!GATE * SCE * !GCLK)	0.01353	0.01946	0.12441
	(!GATE * SCE * !GCLK)	0.02200	0.02799	0.13290
	(!GATE * !SCE * !GCLK)	0.00571	0.01136	0.10212
	(!GATE * !SCE * !GCLK)	0.01361	0.01932	0.11004

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00204	0.00393	0.00183	0.00395	0.00290	1.28289	1.27436
sky130_fd_sc_hs__sedfxbp_2	0.00213	0.00398	0.00185	0.00402	0.00290	2.16973	2.22714

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	56.49620	93.33030
sky130_fd_sc_hs__sedfxbp_2	0.00000	61.66520	96.51860

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)	0.18381	0.66072	6.16072
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.18946	0.58598	5.96836

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.16242	0.48609	3.07907
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.18232	0.45685	2.54001

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)	0.24350	0.70518	6.19931
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.28723	0.65445	6.02723

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)	0.25619	0.54514	3.01177
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.28203	0.51467	2.65715

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)	-0.16265	-0.25556	-1.10903
	setup	CLK (R)	0.19637	0.27777	1.14150
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16468	-0.25762	-1.13607
	setup	CLK (R)	0.19822	0.27930	1.16522

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)	-0.26852	-0.38557	-2.77529
	setup	CLK (R)	0.33578	0.43818	2.89818
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26892	-0.38719	-2.80209
	setup	CLK (R)	0.33328	0.43953	2.91761

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)	-0.16265	-0.25556	-1.10903
	setup	CLK (R)	0.19637	0.27777	1.14150
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16468	-0.25762	-1.13607
	setup	CLK (R)	0.19822	0.27930	1.16522

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)	-0.26852	-0.38557	-2.77529
	setup	CLK (R)	0.33578	0.43818	2.89818
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26892	-0.38719	-2.80209
	setup	CLK (R)	0.33328	0.43953	2.91761

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)	-0.04162	-0.05598	0.05692
	setup	CLK (R)	0.37495	0.39181	0.97259
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04227	-0.05877	0.03603
	setup	CLK (R)	0.36897	0.38960	0.99633

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)	-0.22528	-0.32930	-2.33246
	setup	CLK (R)	0.30400	0.39388	2.73579
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22368	-0.33041	-2.36097
	setup	CLK (R)	0.30101	0.39379	2.76177

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)	-0.04162	-0.05598	0.05692
	hold	CLK (R)	-0.13957	-0.15808	-0.29911
	setup	CLK (R)	0.19473	0.25402	0.97259
	setup	CLK (R)	0.37495	0.39181	0.69821
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04227	-0.05877	0.03603
	hold	CLK (R)	-0.13937	-0.15833	-0.31992
	setup	CLK (R)	0.19880	0.25603	0.99633
	setup	CLK (R)	0.36897	0.38960	0.71808

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)	-0.28523	-0.38033	-2.72783
	hold	CLK (R)	-0.22528	-0.32930	-2.33246
	setup	CLK (R)	0.30400	0.39388	2.73579
	setup	CLK (R)	0.24185	0.33734	2.33816
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28043	-0.37928	-2.75312
	hold	CLK (R)	-0.22368	-0.33041	-2.36097
	setup	CLK (R)	0.30101	0.39379	2.76177
	setup	CLK (R)	0.24190	0.33705	2.36620

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)	-0.10274	-0.16474	-0.75398
	setup	CLK (R)	0.11893	0.17594	0.77532
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10160	-0.16724	-0.78196
	setup	CLK (R)	0.12315	0.17796	0.80117

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)	-0.18939	-0.27036	-2.45802
	setup	CLK (R)	0.24236	0.32379	2.61351
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18846	-0.27371	-2.49000
	setup	CLK (R)	0.24254	0.32300	2.64917

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)	-0.10274	-0.16474	-0.75398
	setup	CLK (R)	0.11893	0.17594	0.77532
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10160	-0.16724	-0.78196
	setup	CLK (R)	0.12315	0.17796	0.80117

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)	-0.18939	-0.27036	-2.45802
	setup	CLK (R)	0.24236	0.32379	2.61351
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18846	-0.27371	-2.49000
	setup	CLK (R)	0.24254	0.32300	2.64917

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)	0.00236	0.01055	0.39022
	setup	CLK (R)	0.26157	0.27555	0.67495
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00192	0.00875	0.36316
	setup	CLK (R)	0.25947	0.27497	0.69994

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)	-0.14397	-0.25038	-2.33067
	setup	CLK (R)	0.21566	0.30972	2.73758
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14601	-0.25258	-2.37147
	setup	CLK (R)	0.21541	0.30878	2.76934

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)	-0.20201	-0.22048	-0.30411
	hold	CLK (R)	0.00236	0.01055	0.39022
	hold	CLK (R)	-0.08706	-0.16091	-0.63156
	hold	CLK (R)	-0.09289	-0.11554	-0.19488
	setup	CLK (R)	0.26103	0.27555	0.57253
	setup	CLK (R)	0.10333	0.17385	0.67495
	setup	CLK (R)	0.10333	0.17385	0.67492
	setup	CLK (R)	0.26157	0.27359	0.56968
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.20514	-0.22456	-0.34974
	hold	CLK (R)	0.00192	0.00875	0.36316
	hold	CLK (R)	-0.08448	-0.16320	-0.65683
	hold	CLK (R)	-0.09260	-0.11711	-0.23216
	setup	CLK (R)	0.25937	0.27497	0.59894
	setup	CLK (R)	0.10664	0.17483	0.69807
	setup	CLK (R)	0.10690	0.17483	0.69994
	setup	CLK (R)	0.25947	0.27490	0.60053

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)	-0.15647	-0.27140	-2.34764
	hold	CLK (R)	-0.15119	-0.25373	-2.59843
	hold	CLK (R)	-0.14397	-0.25038	-2.61528
	hold	CLK (R)	-0.14858	-0.26422	-2.33067
	setup	CLK (R)	0.18318	0.28675	2.36176
	setup	CLK (R)	0.16892	0.26742	2.60628
	setup	CLK (R)	0.21566	0.30972	2.73758
	setup	CLK (R)	0.16648	0.27336	2.33736
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15867	-0.27708	-2.38862
	hold	CLK (R)	-0.14873	-0.25606	-2.62989
	hold	CLK (R)	-0.14601	-0.25258	-2.64734
	hold	CLK (R)	-0.15275	-0.27009	-2.37147
	setup	CLK (R)	0.18615	0.29163	2.40236
	setup	CLK (R)	0.17180	0.27010	2.63758
	setup	CLK (R)	0.21541	0.30878	2.76934
	setup	CLK (R)	0.16947	0.27854	2.37775

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 ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
	min_pulse_width	CLK ()	0.09108	0.65918	16.50020
	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
	min_pulse_width	CLK ()	0.08861	0.65918	16.50020
	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
	min_pulse_width	CLK ()	0.09108	0.65918	16.50020
	min_pulse_width	CLK ()	0.13060	0.65918	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.17259	0.65918	16.50020
	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.17259	0.65918	16.50020
	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.17259	0.65918	16.50020
	min_pulse_width	CLK ()	0.17259	0.65918	16.50020
	min_pulse_width	CLK ()	0.10343	0.65918	16.50020
	min_pulse_width	CLK ()	0.17259	0.65918	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 ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.14295	0.65918	16.50020
	min_pulse_width	CLK ()	0.20470	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20470	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.21458	0.65918	16.50020
	min_pulse_width	CLK ()	0.20470	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20470	0.65918	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.14295	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.20964	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13554	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	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	0.02088	0.02314	0.06897
	CLK	0.01793	0.02019	0.06579
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02448	0.02631	0.07283
	CLK	0.02156	0.02332	0.06978

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01796	0.01995	0.06675
	CLK	0.01556	0.01754	0.06433
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02322	0.02439	0.07159
	CLK	0.02143	0.02261	0.06977

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01936	0.02139	0.06914
	CLK	0.01759	0.01957	0.06715
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02363	0.02485	0.07316
	CLK	0.02184	0.02302	0.07121

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02053	0.02278	0.06764
	CLK	0.01758	0.01984	0.06469
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02407	0.02582	0.07141
	CLK	0.02115	0.02290	0.06835

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00606	0.00771	0.04739
	(DE * SCE)	0.00256	0.00421	0.04390
	(CLK * DE * !SCE)	0.01151	0.01269	0.05044
	(CLK * DE * !SCE)	0.00689	0.00807	0.04583
	(CLK * !DE * !SCE)	0.00078	0.00077	0.00076
	(CLK * !DE * !SCE)	-0.00154	-0.00154	-0.00156
	(!DE * SCE)	0.00103	0.00103	0.00101
	(!DE * SCE)	-0.00129	-0.00129	-0.00131
	(!CLK * DE * !SCE * Q * !Q_N)	0.02039	0.02214	0.06629
	(!CLK * DE * !SCE * Q * !Q_N)	0.01581	0.01758	0.06172
	(!CLK * DE * !SCE * !Q * Q_N)	0.01987	0.02154	0.06571
	(!CLK * DE * !SCE * !Q * Q_N)	0.01525	0.01692	0.06109
	(!CLK * !DE * !SCE)	0.00077	0.00077	0.00076
	(!CLK * !DE * !SCE)	-0.00155	-0.00156	-0.00157
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00618	0.00782	0.04755
	(DE * SCE)	0.00256	0.00421	0.04393
	(CLK * DE * !SCE)	0.01176	0.01294	0.05065
	(CLK * DE * !SCE)	0.00698	0.00815	0.04588
	(CLK * !DE * !SCE)	0.00082	0.00082	0.00080
	(CLK * !DE * !SCE)	-0.00160	-0.00160	-0.00162
	(!DE * SCE)	0.00107	0.00107	0.00105
	(!DE * SCE)	-0.00135	-0.00135	-0.00137
	(!CLK * DE * !SCE * Q * !Q_N)	0.02055	0.02230	0.06644
	(!CLK * DE * !SCE * Q * !Q_N)	0.01582	0.01757	0.06171
	(!CLK * DE * !SCE * !Q * Q_N)	0.01996	0.02163	0.06579
	(!CLK * DE * !SCE * !Q * Q_N)	0.01519	0.01684	0.06101
	(!CLK * !DE * !SCE)	0.00082	0.00081	0.00080
	(!CLK * !DE * !SCE)	-0.00160	-0.00161	-0.00162

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00278	0.00506	0.04516
	(DE * SCE)	0.00627	0.00855	0.04865
	(CLK * DE * !SCE)	0.00415	0.00594	0.04473
	(CLK * DE * !SCE)	0.00877	0.01057	0.04934
	(CLK * !DE * !SCE)	0.00002	0.00001	0.00002
	(CLK * !DE * !SCE)	0.00233	0.00234	0.00234
	(!DE * SCE)	0.00026	0.00026	0.00026
	(!DE * SCE)	0.00258	0.00259	0.00258
	(!CLK * DE * !SCE * Q * !Q_N)	0.01424	0.01637	0.06233
	(!CLK * DE * !SCE * Q * !Q_N)	0.01881	0.02093	0.06689
	(!CLK * DE * !SCE * !Q * Q_N)	0.01534	0.01760	0.06424
	(!CLK * DE * !SCE * !Q * Q_N)	0.01995	0.02221	0.06885
	(!CLK * !DE * !SCE)	0.00002	0.00001	0.00002
	(!CLK * !DE * !SCE)	0.00233	0.00234	0.00233
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00255	0.00485	0.04499
	(DE * SCE)	0.00618	0.00847	0.04860
	(CLK * DE * !SCE)	0.00402	0.00581	0.04457
	(CLK * DE * !SCE)	0.00881	0.01060	0.04934
	(CLK * !DE * !SCE)	0.00003	0.00003	0.00003
	(CLK * !DE * !SCE)	0.00244	0.00245	0.00245
	(!DE * SCE)	0.00028	0.00028	0.00028
	(!DE * SCE)	0.00268	0.00270	0.00269
	(!CLK * DE * !SCE * Q * !Q_N)	0.01407	0.01620	0.06214
	(!CLK * DE * !SCE * Q * !Q_N)	0.01881	0.02092	0.06687
	(!CLK * DE * !SCE * !Q * Q_N)	0.01515	0.01740	0.06401
	(!CLK * DE * !SCE * !Q * Q_N)	0.01993	0.02218	0.06879
	(!CLK * !DE * !SCE)	0.00004	0.00003	0.00003
	(!CLK * !DE * !SCE)	0.00244	0.00245	0.00245

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01107	0.01499	0.10108
	SCE	0.00353	0.00744	0.09352
	(CLK * !SCE)	0.01651	0.02013	0.10466
	(CLK * !SCE)	0.00784	0.01144	0.09597
	(!CLK * D * !SCE * Q * !Q_N)	0.00680	0.00918	0.06113
	(!CLK * D * !SCE * Q * !Q_N)	0.00055	0.00291	0.05489
	(!CLK * D * !SCE * !Q * Q_N)	0.02487	0.02878	0.11832
	(!CLK * D * !SCE * !Q * Q_N)	0.01620	0.02010	0.10963
	(!CLK * !D * !SCE * Q * !Q_N)	0.02158	0.02412	0.07786
	(!CLK * !D * !SCE * Q * !Q_N)	0.01786	0.02039	0.07413
	(!CLK * !D * !SCE * !Q * Q_N)	0.00670	0.00934	0.06127
	(!CLK * !D * !SCE * !Q * Q_N)	0.00051	0.00312	0.05506
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01112	0.01508	0.10118
	SCE	0.00345	0.00738	0.09350
	(CLK * !SCE)	0.01669	0.02034	0.10484
	(CLK * !SCE)	0.00786	0.01148	0.09600
	(!CLK * D * !SCE * Q * !Q_N)	0.00683	0.00923	0.06118
	(!CLK * D * !SCE * Q * !Q_N)	0.00049	0.00287	0.05486
	(!CLK * D * !SCE * !Q * Q_N)	0.02489	0.02882	0.11835
	(!CLK * D * !SCE * !Q * Q_N)	0.01606	0.01998	0.10950
	(!CLK * !D * !SCE * Q * !Q_N)	0.02144	0.02400	0.07775
	(!CLK * !D * !SCE * Q * !Q_N)	0.01770	0.02024	0.07401
	(!CLK * !D * !SCE * !Q * Q_N)	0.00673	0.00937	0.06133
	(!CLK * !D * !SCE * !Q * Q_N)	0.00045	0.00308	0.05502

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00358	0.00797	0.09432
	SCE	0.01114	0.01556	0.10186
	(CLK * !SCE)	0.00492	0.00897	0.09420
	(CLK * !SCE)	0.01360	0.01769	0.10288
	(!CLK * D * !SCE * Q * !Q_N)	0.00030	0.00325	0.05526
	(!CLK * D * !SCE * Q * !Q_N)	0.00653	0.00949	0.06150
	(!CLK * D * !SCE * !Q * Q_N)	0.01582	0.02014	0.11046
	(!CLK * D * !SCE * !Q * Q_N)	0.02449	0.02882	0.11914
	(!CLK * !D * !SCE * Q * !Q_N)	0.02048	0.02345	0.07633
	(!CLK * !D * !SCE * Q * !Q_N)	0.02419	0.02717	0.08006
	(!CLK * !D * !SCE * !Q * Q_N)	0.00019	0.00333	0.05527
	(!CLK * !D * !SCE * !Q * Q_N)	0.00638	0.00955	0.06147
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00336	0.00776	0.09413
	SCE	0.01102	0.01547	0.10180
	(CLK * !SCE)	0.00479	0.00885	0.09406
	(CLK * !SCE)	0.01361	0.01768	0.10287
	(!CLK * D * !SCE * Q * !Q_N)	0.00032	0.00328	0.05530
	(!CLK * D * !SCE * Q * !Q_N)	0.00665	0.00963	0.06162
	(!CLK * D * !SCE * !Q * Q_N)	0.01562	0.01995	0.11026
	(!CLK * D * !SCE * !Q * Q_N)	0.02445	0.02879	0.11910
	(!CLK * !D * !SCE * Q * !Q_N)	0.02054	0.02357	0.07640
	(!CLK * !D * !SCE * Q * !Q_N)	0.02427	0.02732	0.08016
	(!CLK * !D * !SCE * !Q * Q_N)	0.00014	0.00323	0.05523
	(!CLK * !D * !SCE * !Q * Q_N)	0.00643	0.00955	0.06153

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00702	0.00833	0.04392
	(CLK * SCE)	0.00333	0.00463	0.04023
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01519	0.01676	0.05723
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01150	0.01306	0.05354
	!SCE	0.00197	0.00176	0.00174
	!SCE	-0.00051	-0.00074	-0.00074
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00718	0.00849	0.04405
	(CLK * SCE)	0.00342	0.00472	0.04029
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01519	0.01680	0.05722
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01143	0.01302	0.05346
	!SCE	0.00200	0.00178	0.00176
	!SCE	-0.00053	-0.00076	-0.00076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00402	0.00539	0.04113
	(CLK * SCE)	0.00770	0.00909	0.04480
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01373	0.01542	0.05549
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01742	0.01912	0.05916
	!SCE	-0.00028	-0.00029	-0.00030
	!SCE	0.00221	0.00222	0.00219
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00400	0.00537	0.04109
	(CLK * SCE)	0.00777	0.00914	0.04484
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01370	0.01525	0.05542
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01746	0.01902	0.05917
	!SCE	-0.00024	-0.00026	-0.00027
	!SCE	0.00229	0.00230	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00977	0.01413	0.10065
	(CLK * D)	0.00323	0.00757	0.09409
	(CLK * !D)	0.00985	0.01422	0.10004
	(CLK * !D)	0.00331	0.00765	0.09349
	(!CLK * D * SCD * Q * !Q_N)	0.00585	0.00858	0.06065
	(!CLK * D * SCD * Q * !Q_N)	0.00044	0.00314	0.05523
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00578	0.00852	0.06058
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00037	0.00308	0.05517
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02005	0.02245	0.09219
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01564	0.01800	0.08773
	(!CLK * D * !SCD * Q * !Q_N)	0.01998	0.02235	0.09211
	(!CLK * D * !SCD * Q * !Q_N)	0.01556	0.01791	0.08765
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01793	0.02252	0.11452
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01139	0.01595	0.10797
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00644	0.00916	0.06124
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00087	0.00355	0.05565
	(!CLK * !D * SCD * !Q * Q_N)	0.01801	0.02261	0.11393
	(!CLK * !D * SCD * !Q * Q_N)	0.01147	0.01604	0.10738
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01862	0.02316	0.11447
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01208	0.01660	0.10792
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00673	0.00945	0.06153
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00117	0.00385	0.05595
	(!CLK * !D * !SCD * !Q * Q_N)	0.00653	0.00925	0.06133
	(!CLK * !D * !SCD * !Q * Q_N)	0.00096	0.00366	0.05574
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00580	0.00854	0.06060
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00039	0.00310	0.05518
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01994	0.02231	0.09212
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01552	0.01786	0.08766

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00993	0.01426	0.10074
	(CLK * D)	0.00321	0.00751	0.09400
	(CLK * !D)	0.01001	0.01436	0.10012
	(CLK * !D)	0.00330	0.00762	0.09338
	(!CLK * D * SCD * Q * !Q_N)	0.00601	0.00871	0.06069
	(!CLK * D * SCD * Q * !Q_N)	0.00044	0.00312	0.05513
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00593	0.00863	0.06061
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00036	0.00304	0.05505
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02022	0.02256	0.09219
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01568	0.01800	0.08761
	(!CLK * D * !SCD * Q * !Q_N)	0.02007	0.02243	0.09209
	(!CLK * D * !SCD * Q * !Q_N)	0.01555	0.01787	0.08751
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01793	0.02249	0.11445
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01120	0.01576	0.10772
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00664	0.00932	0.06133
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00092	0.00357	0.05559
	(!CLK * !D * SCD * !Q * Q_N)	0.01801	0.02260	0.11385
	(!CLK * !D * SCD * !Q * Q_N)	0.01129	0.01584	0.10712
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01868	0.02321	0.11445
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01197	0.01648	0.10773
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00695	0.00964	0.06164
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00123	0.00388	0.05591
	(!CLK * !D * !SCD * !Q * Q_N)	0.00673	0.00942	0.06142
	(!CLK * !D * !SCD * !Q * Q_N)	0.00101	0.00367	0.05568
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00597	0.00866	0.06065
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00039	0.00307	0.05508
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02004	0.02239	0.09208
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01551	0.01782	0.08751

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00166	0.00700	0.09380
	(CLK * D)	0.00821	0.01358	0.10035
	(CLK * !D)	0.00176	0.00711	0.09330
	(CLK * !D)	0.00829	0.01365	0.09985
	(!CLK * D * SCD * Q * !Q_N)	0.00036	0.00369	0.05584
	(!CLK * D * SCD * Q * !Q_N)	0.00579	0.00913	0.06126
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00069	0.00402	0.05617
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00612	0.00945	0.06159
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01487	0.02005	0.09601
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01932	0.02450	0.10028
	(!CLK * D * !SCD * Q * !Q_N)	0.01501	0.02017	0.09612
	(!CLK * D * !SCD * Q * !Q_N)	0.01946	0.02460	0.10039
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01223	0.01771	0.11104
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01877	0.02425	0.11757
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00003	0.00333	0.05533
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00562	0.00893	0.06092
	(!CLK * !D * SCD * !Q * Q_N)	0.01242	0.01791	0.11086
	(!CLK * !D * SCD * !Q * Q_N)	0.01898	0.02447	0.11741
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01195	0.01739	0.11033
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01851	0.02395	0.11688
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00007	0.00323	0.05523
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00552	0.00884	0.06082
	(!CLK * !D * !SCD * !Q * Q_N)	0.00012	0.00342	0.05542
	(!CLK * !D * !SCD * !Q * Q_N)	0.00571	0.00902	0.06101
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00031	0.00365	0.05579
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00574	0.00909	0.06121
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01492	0.02009	0.09610
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01937	0.02454	0.10037

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00173	0.00705	0.09376
	(CLK * D)	0.00847	0.01380	0.10050
	(CLK * !D)	0.00182	0.00713	0.09324
	(CLK * !D)	0.00857	0.01389	0.09998
	(!CLK * D * SCD * Q * !Q_N)	0.00053	0.00382	0.05588
	(!CLK * D * SCD * Q * !Q_N)	0.00610	0.00940	0.06146
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00081	0.00409	0.05616
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00638	0.00968	0.06174
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01499	0.02013	0.09615
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01956	0.02469	0.10054
	(!CLK * D * !SCD * Q * !Q_N)	0.01524	0.02036	0.09629
	(!CLK * D * !SCD * Q * !Q_N)	0.01980	0.02491	0.10068
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01224	0.01767	0.11088
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01897	0.02442	0.11761
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00009	0.00334	0.05526
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00583	0.00909	0.06100
	(!CLK * !D * SCD * !Q * Q_N)	0.01243	0.01788	0.11069
	(!CLK * !D * SCD * !Q * Q_N)	0.01917	0.02462	0.11743
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01197	0.01737	0.11015
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01871	0.02411	0.11689
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00004	0.00329	0.05522
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00579	0.00905	0.06096
	(!CLK * !D * !SCD * !Q * Q_N)	0.00018	0.00343	0.05536
	(!CLK * !D * !SCD * !Q * Q_N)	0.00592	0.00918	0.06110
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00048	0.00377	0.05585
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00606	0.00936	0.06141
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01515	0.02028	0.09628
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01971	0.02485	0.10066

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)	0.01625	0.02070	0.10981
	(SCD * SCE * Q * !Q_N)	0.01158	0.01601	0.10514
	(D * !SCE * Q * !Q_N)	0.01610	0.02055	0.10966
	(D * !SCE * Q * !Q_N)	0.01143	0.01586	0.10500
	(D * !DE * !SCE * !Q * Q_N)	0.01632	0.02068	0.11006
	(D * !DE * !SCE * !Q * Q_N)	0.01165	0.01599	0.10539
	(!SCD * SCE * !Q * Q_N)	0.01676	0.02111	0.11050
	(!SCD * SCE * !Q * Q_N)	0.01208	0.01642	0.10583
	(!D * !SCE * !Q * Q_N)	0.01641	0.02077	0.11016
	(!D * !SCE * !Q * Q_N)	0.01174	0.01608	0.10548
	(!D * !DE * !SCE * Q * !Q_N)	0.01606	0.02050	0.10962
	(!D * !DE * !SCE * Q * !Q_N)	0.01138	0.01582	0.10495
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01623	0.02047	0.11051
	(SCD * SCE * Q * !Q_N)	0.01156	0.01579	0.10584
	(D * !SCE * Q * !Q_N)	0.01607	0.02031	0.11035
	(D * !SCE * Q * !Q_N)	0.01140	0.01563	0.10568
	(D * !DE * !SCE * !Q * Q_N)	0.01639	0.02083	0.11082
	(D * !DE * !SCE * !Q * Q_N)	0.01173	0.01615	0.10615
	(!SCD * SCE * !Q * Q_N)	0.01684	0.02126	0.11129
	(!SCD * SCE * !Q * Q_N)	0.01217	0.01658	0.10662
	(!D * !SCE * !Q * Q_N)	0.01649	0.02092	0.11091
	(!D * !SCE * !Q * Q_N)	0.01182	0.01624	0.10625
	(!D * !DE * !SCE * Q * !Q_N)	0.01603	0.02026	0.11030
	(!D * !DE * !SCE * Q * !Q_N)	0.01136	0.01559	0.10564

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)	0.00909	0.01417	0.10337
	(SCD * SCE * Q * !Q_N)	0.01376	0.01884	0.10803
	(SCD * SCE * !Q * Q_N)	0.01752	0.02264	0.11402
	(SCD * SCE * !Q * Q_N)	0.02218	0.02731	0.11868
	(D * DE * !SCE * !Q * Q_N)	0.01737	0.02247	0.11384
	(D * DE * !SCE * !Q * Q_N)	0.02203	0.02715	0.11852
	(D * !SCE * Q * !Q_N)	0.00896	0.01403	0.10324
	(D * !SCE * Q * !Q_N)	0.01362	0.01870	0.10790
	(D * !DE * !SCE * !Q * Q_N)	0.00914	0.01415	0.10316
	(D * !DE * !SCE * !Q * Q_N)	0.01380	0.01883	0.10783
	(!SCD * SCE * Q * !Q_N)	0.01991	0.02512	0.11546
	(!SCD * SCE * Q * !Q_N)	0.02459	0.02982	0.12015
	(!SCD * SCE * !Q * Q_N)	0.00955	0.01457	0.10356
	(!SCD * SCE * !Q * Q_N)	0.01422	0.01925	0.10824
	(!D * DE * !SCE * Q * !Q_N)	0.02010	0.02534	0.11560
	(!D * DE * !SCE * Q * !Q_N)	0.02477	0.03002	0.12027
	(!D * !SCE * !Q * Q_N)	0.00923	0.01424	0.10325
	(!D * !SCE * !Q * Q_N)	0.01389	0.01893	0.10792
	(!D * !DE * !SCE * Q * !Q_N)	0.00892	0.01404	0.10320
	(!D * !DE * !SCE * Q * !Q_N)	0.01358	0.01873	0.10785

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00929	0.01444	0.10425
	(SCD * SCE * Q * !Q_N)	0.01395	0.01911	0.10892
	(SCD * SCE * !Q * Q_N)	0.01741	0.02260	0.11494
	(SCD * SCE * !Q * Q_N)	0.02206	0.02727	0.11961
	(D * DE * !SCE * !Q * Q_N)	0.01727	0.02245	0.11436
	(D * DE * !SCE * !Q * Q_N)	0.02193	0.02712	0.11901
	(D * !SCE * Q * !Q_N)	0.00917	0.01431	0.10413
	(D * !SCE * Q * !Q_N)	0.01382	0.01898	0.10880
	(D * !DE * !SCE * !Q * Q_N)	0.00918	0.01427	0.10388
	(D * !DE * !SCE * !Q * Q_N)	0.01383	0.01894	0.10854
	(!SCD * SCE * Q * !Q_N)	0.02001	0.02533	0.11625
	(!SCD * SCE * Q * !Q_N)	0.02468	0.03002	0.12092
	(!SCD * SCE * !Q * Q_N)	0.00958	0.01468	0.10428
	(!SCD * SCE * !Q * Q_N)	0.01424	0.01935	0.10894
	(!D * DE * !SCE * Q * !Q_N)	0.02019	0.02551	0.11638
	(!D * DE * !SCE * Q * !Q_N)	0.02484	0.03017	0.12103
	(!D * !SCE * !Q * Q_N)	0.00927	0.01436	0.10397
	(!D * !SCE * !Q * Q_N)	0.01393	0.01903	0.10863
	(!D * !DE * !SCE * Q * !Q_N)	0.00912	0.01426	0.10408
	(!D * !DE * !SCE * Q * !Q_N)	0.01378	0.01893	0.10875

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00205	0.00400	0.00187	0.00390	0.00288	1.26436
sky130_fd_sc_hs__sedfxtp_2	0.00215	0.00403	0.00189	0.00395	0.00290	2.51607
sky130_fd_sc_hs__sedfxtp_4	0.00216	0.00401	0.00189	0.00393	0.00300	4.76413

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	52.58990	92.77360
sky130_fd_sc_hs__sedfxtp_2	0.00000	56.21230	99.73690
sky130_fd_sc_hs__sedfxtp_4	0.00000	63.45940	113.66700

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)**	0.17905	0.64926	6.05562
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.18468	0.57301	6.13723
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.21032	0.53861	6.15611

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.15247	0.45888	2.91765
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.17386	0.45780	3.00777
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.23037	0.50109	3.14442

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)	-0.16436	-0.25553	-1.11040
	setup	CLK (R)	0.19488	0.27681	1.14279
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16604	-0.25901	-1.11476
	setup	CLK (R)	0.19579	0.28076	1.14641
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16767	-0.25940	-1.11181
	setup	CLK (R)	0.19606	0.27977	1.14925

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)	-0.26694	-0.38801	-2.78351
	setup	CLK (R)	0.33675	0.43787	2.89562
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.26709	-0.38678	-2.77724
	setup	CLK (R)	0.33771	0.43765	2.90812
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.26780	-0.38686	-2.78457
	setup	CLK (R)	0.32716	0.43333	2.97278

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)	-0.04229	-0.05630	0.05744
	setup	CLK (R)	0.37142	0.39097	0.97091
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.04353	-0.05598	0.05664
	setup	CLK (R)	0.36998	0.38932	0.97498
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04353	-0.05598	0.05354
	setup	CLK (R)	0.36380	0.38661	0.98046

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)	-0.22441	-0.33025	-2.34255
	setup	CLK (R)	0.30267	0.39617	2.74531
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.22725	-0.33226	-2.34488
	setup	CLK (R)	0.30485	0.39392	2.73915
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.22615	-0.33078	-2.34344
	setup	CLK (R)	0.30450	0.39673	2.74703

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)	-0.04229	-0.05630	0.05744
	hold	CLK (R)	-0.13922	-0.16176	-0.30167
	setup	CLK (R)	0.19579	0.25356	0.97091
	setup	CLK (R)	0.37142	0.39097	0.68650
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.04353	-0.05598	0.05664
	hold	CLK (R)	-0.13430	-0.15462	-0.29271
	setup	CLK (R)	0.19528	0.25603	0.97498
	setup	CLK (R)	0.36998	0.38932	0.72491
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04353	-0.05598	0.05354
	hold	CLK (R)	-0.13771	-0.15819	-0.29936
	setup	CLK (R)	0.19428	0.25402	0.98046
	setup	CLK (R)	0.36380	0.38661	0.78919

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)	-0.28367	-0.38146	-2.73679
	hold	CLK (R)	-0.22441	-0.33025	-2.34255
	setup	CLK (R)	0.30267	0.39617	2.74531
	setup	CLK (R)	0.24002	0.33812	2.35019
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.28434	-0.38061	-2.73017
	hold	CLK (R)	-0.22725	-0.33226	-2.34488
	setup	CLK (R)	0.30485	0.39392	2.73915
	setup	CLK (R)	0.24250	0.34068	2.35174
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28541	-0.38286	-2.73622
	hold	CLK (R)	-0.22615	-0.33078	-2.34344
	setup	CLK (R)	0.30450	0.39673	2.74703
	setup	CLK (R)	0.24068	0.33792	2.35042

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)	-0.10111	-0.16729	-0.76119
	setup	CLK (R)	0.12081	0.17796	0.77957
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10309	-0.16681	-0.76044
	setup	CLK (R)	0.11954	0.17796	0.77921
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10120	-0.16660	-0.76504
	setup	CLK (R)	0.12081	0.17796	0.78739

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)	-0.18757	-0.27201	-2.47172
	setup	CLK (R)	0.24675	0.32494	2.61165
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.18475	-0.26882	-2.46310
	setup	CLK (R)	0.24395	0.32224	2.64496
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.19024	-0.27320	-2.47725
	setup	CLK (R)	0.23883	0.31919	2.70961

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)	0.00371	0.01097	0.38739
	setup	CLK (R)	0.26375	0.27941	0.67804
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00329	0.01097	0.39033
	setup	CLK (R)	0.26172	0.27496	0.67842
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00329	0.01097	0.38445
	setup	CLK (R)	0.25529	0.27160	0.68265

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)	-0.14733	-0.25401	-2.34837
	setup	CLK (R)	0.21746	0.31167	2.73472
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14174	-0.25242	-2.34939
	setup	CLK (R)	0.21536	0.30897	2.75713
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14808	-0.25249	-2.35219
	setup	CLK (R)	0.20748	0.30480	2.81051

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)	-0.20726	-0.22335	-0.32121
	hold	CLK (R)	0.00371	0.01097	0.38739
	hold	CLK (R)	-0.08406	-0.15985	-0.63495
	hold	CLK (R)	-0.09801	-0.11842	-0.21390
	setup	CLK (R)	0.26375	0.27923	0.57074
	setup	CLK (R)	0.10379	0.17275	0.67652
	setup	CLK (R)	0.10404	0.17283	0.67804
	setup	CLK (R)	0.26335	0.27941	0.57358
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.20301	-0.22260	-0.31335
	hold	CLK (R)	0.00329	0.01097	0.39033
	hold	CLK (R)	-0.08676	-0.15967	-0.63192
	hold	CLK (R)	-0.09193	-0.11424	-0.20487
	setup	CLK (R)	0.26172	0.27496	0.60928
	setup	CLK (R)	0.10432	0.17283	0.67708
	setup	CLK (R)	0.10462	0.17283	0.67842
	setup	CLK (R)	0.26170	0.27490	0.60542
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20536	-0.22529	-0.32071
	hold	CLK (R)	0.00329	0.01097	0.38445
	hold	CLK (R)	-0.08615	-0.16185	-0.63810
	hold	CLK (R)	-0.09611	-0.11842	-0.21407
	setup	CLK (R)	0.25425	0.27120	0.66543
	setup	CLK (R)	0.10261	0.17526	0.68252
	setup	CLK (R)	0.10273	0.17526	0.68265
	setup	CLK (R)	0.25529	0.27160	0.66538

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)	-0.15842	-0.27381	-2.36994
	hold	CLK (R)	-0.15016	-0.25401	-2.60861
	hold	CLK (R)	-0.14733	-0.25463	-2.62546
	hold	CLK (R)	-0.15363	-0.27014	-2.34837
	setup	CLK (R)	0.18447	0.29324	2.37969
	setup	CLK (R)	0.17052	0.26831	2.61689
	setup	CLK (R)	0.21746	0.31167	2.73472
	setup	CLK (R)	0.16828	0.27674	2.35529
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15873	-0.27771	-2.36918
	hold	CLK (R)	-0.14772	-0.25381	-2.60114
	hold	CLK (R)	-0.14174	-0.25242	-2.61584
	hold	CLK (R)	-0.15225	-0.26789	-2.34939
	setup	CLK (R)	0.18447	0.29324	2.38075
	setup	CLK (R)	0.16729	0.26766	2.60967
	setup	CLK (R)	0.21536	0.30897	2.75713
	setup	CLK (R)	0.16969	0.27739	2.35619
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15849	-0.27827	-2.36927
	hold	CLK (R)	-0.15213	-0.25583	-2.61057
	hold	CLK (R)	-0.14808	-0.25249	-2.62489
	hold	CLK (R)	-0.15345	-0.27069	-2.35219
	setup	CLK (R)	0.18447	0.29324	2.38369
	setup	CLK (R)	0.16909	0.26957	2.61923
	setup	CLK (R)	0.20748	0.30480	2.81051
	setup	CLK (R)	0.16842	0.27683	2.35723

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 ()**	0.08614	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.08614	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12319	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.08861	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12319	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.08861	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12072	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12072	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.08861	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12319	0.65918	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.09849	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.09849	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.16024	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.10096	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.16271	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.10096	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.16024	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.16024	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.10096	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.16271	0.65918	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.12566	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12566	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.22940	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12813	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.23187	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12813	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.22693	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.22693	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.12813	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.23187	0.65918	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 ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.14295	0.65918	16.50020
	min_pulse_width	CLK ()	0.20223	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20223	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20964	0.65918	16.50020
	min_pulse_width	CLK ()	0.20223	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20223	0.65918	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.14295	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.20964	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020
	min_pulse_width	CLK ()	0.13307	0.65918	16.50020
	min_pulse_width	CLK ()	0.19976	0.65918	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.13060	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.14048	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.19235	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.13060	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.19235	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.13060	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.19976	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.19235	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.13060	0.65918	16.50020
	min_pulse_width	**CLK ()**	0.19235	0.65918	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	0.03603	0.04084	0.13164
	CLK	0.03030	0.03513	0.12629
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03993	0.04443	0.13598
	CLK	0.03415	0.03867	0.13093
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04792	0.05188	0.14351
	CLK	0.04201	0.04609	0.13901

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.03262	0.03709	0.13135
	CLK	0.02900	0.03342	0.12751
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03596	0.03882	0.13318
	CLK	0.03104	0.03392	0.12759
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04871	0.04680	0.13956
	CLK	0.04362	0.04138	0.13402

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00599	0.00765	0.04739
	(DE * SCE)	0.00249	0.00416	0.04389
	(CLK * DE * !SCE)	0.01149	0.01269	0.05045
	(CLK * DE * !SCE)	0.00685	0.00804	0.04582
	(CLK * !DE * !SCE)	0.00078	0.00078	0.00077
	(CLK * !DE * !SCE)	-0.00156	-0.00155	-0.00157
	(!DE * SCE)	0.00104	0.00103	0.00102
	(!DE * SCE)	-0.00130	-0.00131	-0.00132
	(!CLK * DE * !SCE * Q)	0.02035	0.02211	0.06627
	(!CLK * DE * !SCE * Q)	0.01574	0.01750	0.06167
	(!CLK * DE * !SCE * !Q)	0.01985	0.02153	0.06572
	(!CLK * DE * !SCE * !Q)	0.01521	0.01688	0.06107
	(!CLK * !DE * !SCE)	0.00078	0.00078	0.00076
	(!CLK * !DE * !SCE)	-0.00156	-0.00157	-0.00158
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00624	0.00786	0.04757
	(DE * SCE)	0.00257	0.00421	0.04391
	(CLK * DE * !SCE)	0.01180	0.01297	0.05069
	(CLK * DE * !SCE)	0.00698	0.00815	0.04588
	(CLK * !DE * !SCE)	0.00084	0.00084	0.00083
	(CLK * !DE * !SCE)	-0.00160	-0.00160	-0.00162
	(!DE * SCE)	0.00110	0.00109	0.00108
	(!DE * SCE)	-0.00134	-0.00135	-0.00137
	(!CLK * DE * !SCE * Q)	0.02048	0.02221	0.06637
	(!CLK * DE * !SCE * Q)	0.01571	0.01745	0.06160
	(!CLK * DE * !SCE * !Q)	0.02011	0.02177	0.06593
	(!CLK * DE * !SCE * !Q)	0.01529	0.01695	0.06112
	(!CLK * !DE * !SCE)	0.00084	0.00084	0.00082
	(!CLK * !DE * !SCE)	-0.00160	-0.00161	-0.00162

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00636	0.00799	0.04771
	(DE * SCE)	0.00269	0.00432	0.04405
	(CLK * DE * !SCE)	0.01196	0.01313	0.05080
	(CLK * DE * !SCE)	0.00714	0.00831	0.04599
	(CLK * !DE * !SCE)	0.00097	0.00096	0.00095
	(CLK * !DE * !SCE)	-0.00148	-0.00148	-0.00150
	(!DE * SCE)	0.00122	0.00121	0.00120
	(!DE * SCE)	-0.00123	-0.00123	-0.00125
	(!CLK * DE * !SCE * Q)	0.02037	0.02211	0.06626
	(!CLK * DE * !SCE * Q)	0.01560	0.01734	0.06149
	(!CLK * DE * !SCE * !Q)	0.02005	0.02171	0.06588
	(!CLK * DE * !SCE * !Q)	0.01523	0.01689	0.06106
	(!CLK * !DE * !SCE)	0.00096	0.00096	0.00095
	(!CLK * !DE * !SCE)	-0.00148	-0.00149	-0.00150

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00266	0.00497	0.04511
	(DE * SCE)	0.00616	0.00847	0.04860
	(CLK * DE * !SCE)	0.00405	0.00586	0.04465
	(CLK * DE * !SCE)	0.00870	0.01051	0.04930
	(CLK * !DE * !SCE)	0.00000	0.00000	0.00000
	(CLK * !DE * !SCE)	0.00233	0.00234	0.00234
	(!DE * SCE)	0.00025	0.00025	0.00025
	(!DE * SCE)	0.00258	0.00259	0.00259
	(!CLK * DE * !SCE * Q)	0.01396	0.01609	0.06207
	(!CLK * DE * !SCE * Q)	0.01857	0.02068	0.06667
	(!CLK * DE * !SCE * !Q)	0.01513	0.01740	0.06404
	(!CLK * DE * !SCE * !Q)	0.01978	0.02204	0.06868
	(!CLK * !DE * !SCE)	0.00000	-0.00000	0.00000
	(!CLK * !DE * !SCE)	0.00233	0.00234	0.00234
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00266	0.00495	0.04505
	(DE * SCE)	0.00632	0.00860	0.04870
	(CLK * DE * !SCE)	0.00403	0.00582	0.04458
	(CLK * DE * !SCE)	0.00886	0.01065	0.04939
	(CLK * !DE * !SCE)	0.00007	0.00006	0.00006
	(CLK * !DE * !SCE)	0.00249	0.00251	0.00250
	(!DE * SCE)	0.00031	0.00031	0.00031
	(!DE * SCE)	0.00274	0.00275	0.00275
	(!CLK * DE * !SCE * Q)	0.01389	0.01602	0.06196
	(!CLK * DE * !SCE * Q)	0.01866	0.02078	0.06673
	(!CLK * DE * !SCE * !Q)	0.01505	0.01731	0.06392
	(!CLK * DE * !SCE * !Q)	0.01987	0.02212	0.06874
	(!CLK * !DE * !SCE)	0.00007	0.00006	0.00006
	(!CLK * !DE * !SCE)	0.00249	0.00251	0.00250

sky130_fd_sc_hs__sedfxtp_4	(DE * SCE)	0.00270	0.00500	0.04512
	(DE * SCE)	0.00638	0.00867	0.04878
	(CLK * DE * !SCE)	0.00436	0.00613	0.04485
	(CLK * DE * !SCE)	0.00919	0.01096	0.04965
	(CLK * !DE * !SCE)	0.00019	0.00018	0.00018
	(CLK * !DE * !SCE)	0.00262	0.00263	0.00263
	(!DE * SCE)	0.00043	0.00042	0.00043
	(!DE * SCE)	0.00286	0.00289	0.00287
	(!CLK * DE * !SCE * Q)	0.01401	0.01613	0.06204
	(!CLK * DE * !SCE * Q)	0.01880	0.02089	0.06681
	(!CLK * DE * !SCE * !Q)	0.01536	0.01760	0.06418
	(!CLK * DE * !SCE * !Q)	0.02018	0.02241	0.06900
	(!CLK * !DE * !SCE)	0.00019	0.00018	0.00018
	(!CLK * !DE * !SCE)	0.00262	0.00263	0.00263

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	SCE	0.01106	0.01503	0.10112
	SCE	0.00343	0.00736	0.09349
	(CLK * !SCE)	0.01655	0.02021	0.10476
	(CLK * !SCE)	0.00777	0.01139	0.09595
	(!CLK * D * !SCE * Q)	0.00678	0.00915	0.06115
	(!CLK * D * !SCE * Q)	0.00043	0.00281	0.05482
	(!CLK * D * !SCE * !Q)	0.02491	0.02886	0.11840
	(!CLK * D * !SCE * !Q)	0.01612	0.02004	0.10959
	(!CLK * !D * !SCE * Q)	0.02135	0.02391	0.07769
	(!CLK * !D * !SCE * Q)	0.01756	0.02008	0.07387
	(!CLK * !D * !SCE * !Q)	0.00675	0.00938	0.06136
	(!CLK * !D * !SCE * !Q)	0.00044	0.00305	0.05504

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01126	0.01522	0.10129
	SCE	0.00349	0.00740	0.09351
	(CLK * !SCE)	0.01681	0.02046	0.10498
	(CLK * !SCE)	0.00788	0.01149	0.09602
	(!CLK * D * !SCE * Q)	0.00682	0.00919	0.06119
	(!CLK * D * !SCE * Q)	0.00038	0.00276	0.05477
	(!CLK * D * !SCE * !Q)	0.02512	0.02906	0.11860
	(!CLK * D * !SCE * !Q)	0.01618	0.02009	0.10963
	(!CLK * !D * !SCE * Q)	0.02136	0.02390	0.07769
	(!CLK * !D * !SCE * Q)	0.01754	0.02007	0.07388
	(!CLK * !D * !SCE * !Q)	0.00684	0.00948	0.06145
	(!CLK * !D * !SCE * !Q)	0.00045	0.00306	0.05505
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01136	0.01533	0.10142
	SCE	0.00361	0.00753	0.09367
	(CLK * !SCE)	0.01696	0.02060	0.10509
	(CLK * !SCE)	0.00806	0.01167	0.09617
	(!CLK * D * !SCE * Q)	0.00681	0.00917	0.06118
	(!CLK * D * !SCE * Q)	0.00039	0.00278	0.05480
	(!CLK * D * !SCE * !Q)	0.02504	0.02899	0.11854
	(!CLK * D * !SCE * !Q)	0.01614	0.02005	0.10961
	(!CLK * !D * !SCE * Q)	0.02146	0.02402	0.07780
	(!CLK * !D * !SCE * Q)	0.01767	0.02020	0.07400
	(!CLK * !D * !SCE * !Q)	0.00695	0.00958	0.06157
	(!CLK * !D * !SCE * !Q)	0.00058	0.00320	0.05520

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00348	0.00788	0.09422
	SCE	0.01111	0.01555	0.10186
	(CLK * !SCE)	0.00483	0.00890	0.09410
	(CLK * !SCE)	0.01362	0.01771	0.10289
	(!CLK * D * !SCE * Q)	0.00022	0.00314	0.05518
	(!CLK * D * !SCE * Q)	0.00654	0.00950	0.06152
	(!CLK * D * !SCE * !Q)	0.01562	0.01993	0.11024
	(!CLK * D * !SCE * !Q)	0.02442	0.02872	0.11904
	(!CLK * !D * !SCE * Q)	0.02039	0.02338	0.07627
	(!CLK * !D * !SCE * Q)	0.02418	0.02719	0.08009
	(!CLK * !D * !SCE * !Q)	0.00016	0.00328	0.05525
	(!CLK * !D * !SCE * !Q)	0.00645	0.00961	0.06155
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00354	0.00792	0.09424
	SCE	0.01132	0.01573	0.10203
	(CLK * !SCE)	0.00486	0.00891	0.09410
	(CLK * !SCE)	0.01380	0.01788	0.10305
	(!CLK * D * !SCE * Q)	0.00020	0.00312	0.05516
	(!CLK * D * !SCE * Q)	0.00661	0.00957	0.06158
	(!CLK * D * !SCE * !Q)	0.01559	0.01989	0.11023
	(!CLK * D * !SCE * !Q)	0.02455	0.02884	0.11918
	(!CLK * !D * !SCE * Q)	0.02041	0.02339	0.07627
	(!CLK * !D * !SCE * Q)	0.02422	0.02722	0.08011
	(!CLK * !D * !SCE * !Q)	0.00019	0.00332	0.05528
	(!CLK * !D * !SCE * !Q)	0.00658	0.00972	0.06167

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00359	0.00798	0.09432
	SCE	0.01134	0.01577	0.10208
	(CLK * !SCE)	0.00519	0.00924	0.09439
	(CLK * !SCE)	0.01410	0.01817	0.10327
	(!CLK * D * !SCE * Q)	0.00021	0.00313	0.05517
	(!CLK * D * !SCE * Q)	0.00659	0.00955	0.06157
	(!CLK * D * !SCE * !Q)	0.01589	0.02019	0.11048
	(!CLK * D * !SCE * !Q)	0.02481	0.02911	0.11939
	(!CLK * !D * !SCE * Q)	0.02030	0.02329	0.07616
	(!CLK * !D * !SCE * Q)	0.02408	0.02710	0.07998
	(!CLK * !D * !SCE * !Q)	0.00032	0.00344	0.05541
	(!CLK * !D * !SCE * !Q)	0.00667	0.00983	0.06177

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00702	0.00834	0.04391
	(CLK * SCE)	0.00324	0.00456	0.04013
	(!CLK * SCE)	0.01519	0.01672	0.05720
	(!CLK * SCE)	0.01141	0.01294	0.05343
	!SCE	0.00195	0.00174	0.00172
	!SCE	-0.00060	-0.00083	-0.00083
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00721	0.00854	0.04411
	(CLK * SCE)	0.00339	0.00470	0.04029
	(!CLK * SCE)	0.01533	0.01689	0.05735
	(!CLK * SCE)	0.01151	0.01306	0.05353
	!SCE	0.00204	0.00183	0.00180
	!SCE	-0.00055	-0.00078	-0.00078
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00734	0.00864	0.04416
	(CLK * SCE)	0.00354	0.00483	0.04035
	(!CLK * SCE)	0.01523	0.01679	0.05726
	(!CLK * SCE)	0.01143	0.01297	0.05346
	!SCE	0.00215	0.00194	0.00192
	!SCE	-0.00043	-0.00065	-0.00065

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00403	0.00541	0.04113
	(CLK * SCE)	0.00781	0.00921	0.04490
	(!CLK * SCE)	0.01366	0.01523	0.05542
	(!CLK * SCE)	0.01744	0.01901	0.05919
	!SCE	-0.00026	-0.00028	-0.00029
	!SCE	0.00229	0.00230	0.00227
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00399	0.00536	0.04110
	(CLK * SCE)	0.00782	0.00920	0.04491
	(!CLK * SCE)	0.01359	0.01513	0.05534
	(!CLK * SCE)	0.01741	0.01895	0.05915
	!SCE	-0.00023	-0.00024	-0.00026
	!SCE	0.00236	0.00237	0.00234
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00444	0.00580	0.04147
	(CLK * SCE)	0.00826	0.00962	0.04526
	(!CLK * SCE)	0.01398	0.01566	0.05572
	(!CLK * SCE)	0.01779	0.01948	0.05951
	!SCE	-0.00010	-0.00012	-0.00013
	!SCE	0.00248	0.00249	0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00961	0.01400	0.10049
	(CLK * D)	0.00310	0.00746	0.09396
	(CLK * !D)	0.00970	0.01408	0.09988
	(CLK * !D)	0.00318	0.00754	0.09334
	(!CLK * D * SCD * Q)	0.00563	0.00838	0.06040
	(!CLK * D * SCD * Q)	0.00028	0.00298	0.05502
	(!CLK * D * DE * SCD * !Q)	0.00566	0.00841	0.06043
	(!CLK * D * DE * SCD * !Q)	0.00031	0.00301	0.05506
	(!CLK * D * DE * !SCD * !Q)	0.02003	0.02240	0.09205
	(!CLK * D * DE * !SCD * !Q)	0.01569	0.01803	0.08765
	(!CLK * D * !SCD * Q)	0.01980	0.02217	0.09183
	(!CLK * D * !SCD * Q)	0.01545	0.01780	0.08745
	(!CLK * D * !DE * SCD * !Q)	0.01777	0.02238	0.11434
	(!CLK * D * !DE * SCD * !Q)	0.01125	0.01583	0.10781
	(!CLK * D * !DE * !SCD * !Q)	0.00641	0.00914	0.06117
	(!CLK * D * !DE * !SCD * !Q)	0.00089	0.00359	0.05563
	(!CLK * !D * SCD * !Q)	0.01785	0.02248	0.11374
	(!CLK * !D * SCD * !Q)	0.01134	0.01592	0.10721
	(!CLK * !D * DE * SCD * Q)	0.01840	0.02297	0.11421
	(!CLK * !D * DE * SCD * Q)	0.01188	0.01642	0.10769
	(!CLK * !D * DE * !SCD * Q)	0.00661	0.00934	0.06137
	(!CLK * !D * DE * !SCD * Q)	0.00109	0.00379	0.05583
	(!CLK * !D * !SCD * !Q)	0.00650	0.00923	0.06127
	(!CLK * !D * !SCD * !Q)	0.00099	0.00368	0.05573
	(!CLK * !D * !DE * SCD * Q)	0.00558	0.00833	0.06035
	(!CLK * !D * !DE * SCD * Q)	0.00023	0.00293	0.05498
	(!CLK * !D * !DE * !SCD * Q)	0.01976	0.02213	0.09185
	(!CLK * !D * !DE * !SCD * Q)	0.01542	0.01775	0.08746

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00983	0.01420	0.10069
	(CLK * D)	0.00322	0.00756	0.09406
	(CLK * !D)	0.00991	0.01428	0.10007
	(CLK * !D)	0.00330	0.00765	0.09344
	(!CLK * D * SCD * Q)	0.00572	0.00844	0.06043
	(!CLK * D * SCD * Q)	0.00025	0.00295	0.05497
	(!CLK * D * DE * SCD * !Q)	0.00582	0.00854	0.06054
	(!CLK * D * DE * SCD * !Q)	0.00035	0.00306	0.05508
	(!CLK * D * DE * !SCD * !Q)	0.02003	0.02240	0.09203
	(!CLK * D * DE * !SCD * !Q)	0.01561	0.01795	0.08756
	(!CLK * D * !SCD * Q)	0.01978	0.02214	0.09183
	(!CLK * D * !SCD * Q)	0.01536	0.01770	0.08736
	(!CLK * D * !DE * SCD * !Q)	0.01793	0.02254	0.11449
	(!CLK * D * !DE * SCD * !Q)	0.01132	0.01589	0.10787
	(!CLK * D * !DE * !SCD * !Q)	0.00654	0.00925	0.06126
	(!CLK * D * !DE * !SCD * !Q)	0.00093	0.00361	0.05564
	(!CLK * !D * SCD * !Q)	0.01802	0.02262	0.11389
	(!CLK * !D * SCD * !Q)	0.01141	0.01598	0.10726
	(!CLK * !D * DE * SCD * Q)	0.01844	0.02300	0.11424
	(!CLK * !D * DE * SCD * Q)	0.01183	0.01636	0.10763
	(!CLK * !D * DE * !SCD * Q)	0.00667	0.00938	0.06140
	(!CLK * !D * DE * !SCD * Q)	0.00106	0.00374	0.05577
	(!CLK * !D * !SCD * !Q)	0.00663	0.00934	0.06136
	(!CLK * !D * !SCD * !Q)	0.00102	0.00371	0.05573
	(!CLK * !D * !DE * SCD * Q)	0.00567	0.00839	0.06039
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00291	0.05493
	(!CLK * !D * !DE * !SCD * Q)	0.01975	0.02209	0.09182
	(!CLK * !D * !DE * !SCD * Q)	0.01533	0.01766	0.08735

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00997	0.01432	0.10077
	(CLK * D)	0.00341	0.00772	0.09419
	(CLK * !D)	0.01006	0.01440	0.10015
	(CLK * !D)	0.00349	0.00780	0.09357
	(!CLK * D * SCD * Q)	0.00567	0.00841	0.06046
	(!CLK * D * SCD * Q)	0.00027	0.00297	0.05504
	(!CLK * D * DE * SCD * !Q)	0.00589	0.00863	0.06068
	(!CLK * D * DE * SCD * !Q)	0.00049	0.00319	0.05526
	(!CLK * D * DE * !SCD * !Q)	0.02039	0.02277	0.09244
	(!CLK * D * DE * !SCD * !Q)	0.01601	0.01835	0.08800
	(!CLK * D * !SCD * Q)	0.01998	0.02236	0.09205
	(!CLK * D * !SCD * Q)	0.01560	0.01795	0.08764
	(!CLK * D * !DE * SCD * !Q)	0.01784	0.02245	0.11446
	(!CLK * D * !DE * SCD * !Q)	0.01128	0.01585	0.10788
	(!CLK * D * !DE * !SCD * !Q)	0.00663	0.00935	0.06141
	(!CLK * D * !DE * !SCD * !Q)	0.00106	0.00375	0.05583
	(!CLK * !D * SCD * !Q)	0.01793	0.02254	0.11385
	(!CLK * !D * SCD * !Q)	0.01137	0.01594	0.10727
	(!CLK * !D * DE * SCD * Q)	0.01829	0.02285	0.11414
	(!CLK * !D * DE * SCD * Q)	0.01172	0.01624	0.10756
	(!CLK * !D * DE * !SCD * Q)	0.00664	0.00937	0.06143
	(!CLK * !D * DE * !SCD * Q)	0.00108	0.00376	0.05584
	(!CLK * !D * !SCD * !Q)	0.00672	0.00944	0.06150
	(!CLK * !D * !SCD * !Q)	0.00116	0.00385	0.05592
	(!CLK * !D * !DE * SCD * Q)	0.00562	0.00837	0.06041
	(!CLK * !D * !DE * SCD * Q)	0.00023	0.00293	0.05499
	(!CLK * !D * !DE * !SCD * Q)	0.01995	0.02231	0.09207
	(!CLK * !D * !DE * !SCD * Q)	0.01556	0.01790	0.08763

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00175	0.00711	0.09384
	(CLK * D)	0.00829	0.01366	0.10038
	(CLK * !D)	0.00184	0.00719	0.09333
	(CLK * !D)	0.00838	0.01373	0.09987
	(!CLK * D * SCD * Q)	0.00052	0.00384	0.05594
	(!CLK * D * SCD * Q)	0.00590	0.00923	0.06131
	(!CLK * D * DE * SCD * !Q)	0.00087	0.00419	0.05629
	(!CLK * D * DE * SCD * !Q)	0.00625	0.00958	0.06166
	(!CLK * D * DE * !SCD * !Q)	0.01511	0.02028	0.09633
	(!CLK * D * DE * !SCD * !Q)	0.01949	0.02464	0.10054
	(!CLK * D * !SCD * Q)	0.01527	0.02041	0.09639
	(!CLK * D * !SCD * Q)	0.01965	0.02478	0.10059
	(!CLK * D * !DE * SCD * !Q)	0.01222	0.01771	0.11095
	(!CLK * D * !DE * SCD * !Q)	0.01875	0.02422	0.11748
	(!CLK * D * !DE * !SCD * !Q)	0.00012	0.00341	0.05535
	(!CLK * D * !DE * !SCD * !Q)	0.00567	0.00897	0.06090
	(!CLK * !D * SCD * !Q)	0.01242	0.01790	0.11076
	(!CLK * !D * SCD * !Q)	0.01895	0.02444	0.11730
	(!CLK * !D * DE * SCD * Q)	0.01189	0.01731	0.11017
	(!CLK * !D * DE * SCD * Q)	0.01842	0.02385	0.11671
	(!CLK * !D * DE * !SCD * Q)	0.00000	0.00329	0.05524
	(!CLK * !D * DE * !SCD * Q)	0.00555	0.00885	0.06078
	(!CLK * !D * !SCD * !Q)	0.00021	0.00350	0.05545
	(!CLK * !D * !SCD * !Q)	0.00576	0.00906	0.06099
	(!CLK * !D * !DE * SCD * Q)	0.00047	0.00379	0.05590
	(!CLK * !D * !DE * SCD * Q)	0.00585	0.00919	0.06127
	(!CLK * !D * !DE * !SCD * Q)	0.01518	0.02034	0.09636
	(!CLK * !D * !DE * !SCD * Q)	0.01956	0.02471	0.10056

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00175	0.00710	0.09383
	(CLK * D)	0.00838	0.01375	0.10046
	(CLK * !D)	0.00184	0.00718	0.09331
	(CLK * !D)	0.00847	0.01381	0.09994
	(!CLK * D * SCD * Q)	0.00048	0.00379	0.05588
	(!CLK * D * SCD * Q)	0.00595	0.00927	0.06134
	(!CLK * D * DE * SCD * !Q)	0.00088	0.00419	0.05628
	(!CLK * D * DE * SCD * !Q)	0.00635	0.00967	0.06174
	(!CLK * D * DE * !SCD * !Q)	0.01515	0.02029	0.09626
	(!CLK * D * DE * !SCD * !Q)	0.01960	0.02475	0.10053
	(!CLK * D * !SCD * Q)	0.01520	0.02034	0.09631
	(!CLK * D * !SCD * Q)	0.01965	0.02479	0.10057
	(!CLK * D * !DE * SCD * !Q)	0.01215	0.01763	0.11088
	(!CLK * D * !DE * SCD * !Q)	0.01877	0.02427	0.11750
	(!CLK * D * !DE * !SCD * !Q)	0.00015	0.00342	0.05535
	(!CLK * D * !DE * !SCD * !Q)	0.00578	0.00908	0.06098
	(!CLK * !D * SCD * !Q)	0.01235	0.01782	0.11069
	(!CLK * !D * SCD * !Q)	0.01898	0.02446	0.11731
	(!CLK * !D * DE * SCD * Q)	0.01183	0.01724	0.11009
	(!CLK * !D * DE * SCD * Q)	0.01846	0.02387	0.11673
	(!CLK * !D * DE * !SCD * Q)	-0.00002	0.00325	0.05519
	(!CLK * !D * DE * !SCD * Q)	0.00562	0.00890	0.06082
	(!CLK * !D * !SCD * !Q)	0.00024	0.00351	0.05545
	(!CLK * !D * !SCD * !Q)	0.00587	0.00917	0.06107
	(!CLK * !D * !DE * SCD * Q)	0.00044	0.00375	0.05583
	(!CLK * !D * !DE * SCD * Q)	0.00591	0.00923	0.06129
	(!CLK * !D * !DE * !SCD * Q)	0.01512	0.02027	0.09629
	(!CLK * !D * !DE * !SCD * Q)	0.01957	0.02472	0.10055

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00220	0.00751	0.09421
	(CLK * D)	0.00878	0.01410	0.10079
	(CLK * !D)	0.00229	0.00758	0.09370
	(CLK * !D)	0.00888	0.01419	0.10028
	(!CLK * D * SCD * Q)	0.00051	0.00383	0.05596
	(!CLK * D * SCD * Q)	0.00594	0.00927	0.06138
	(!CLK * D * DE * SCD * !Q)	0.00103	0.00435	0.05648
	(!CLK * D * DE * SCD * !Q)	0.00646	0.00979	0.06189
	(!CLK * D * DE * !SCD * !Q)	0.01509	0.02025	0.09637
	(!CLK * D * DE * !SCD * !Q)	0.01951	0.02467	0.10060
	(!CLK * D * !SCD * Q)	0.01507	0.02022	0.09623
	(!CLK * D * !SCD * Q)	0.01950	0.02464	0.10048
	(!CLK * D * !DE * SCD * !Q)	0.01257	0.01804	0.11129
	(!CLK * D * !DE * SCD * !Q)	0.01914	0.02463	0.11788
	(!CLK * D * !DE * !SCD * !Q)	0.00029	0.00358	0.05555
	(!CLK * D * !DE * !SCD * !Q)	0.00588	0.00918	0.06113
	(!CLK * !D * SCD * !Q)	0.01277	0.01823	0.11111
	(!CLK * !D * SCD * !Q)	0.01935	0.02481	0.11769
	(!CLK * !D * DE * SCD * Q)	0.01208	0.01750	0.11036
	(!CLK * !D * DE * SCD * Q)	0.01866	0.02407	0.11694
	(!CLK * !D * DE * !SCD * Q)	0.00001	0.00330	0.05527
	(!CLK * !D * DE * !SCD * Q)	0.00560	0.00890	0.06085
	(!CLK * !D * !SCD * !Q)	0.00038	0.00367	0.05564
	(!CLK * !D * !SCD * !Q)	0.00597	0.00927	0.06123
	(!CLK * !D * !DE * SCD * Q)	0.00047	0.00379	0.05592
	(!CLK * !D * !DE * SCD * Q)	0.00590	0.00923	0.06133
	(!CLK * !D * !DE * !SCD * Q)	0.01499	0.02014	0.09620
	(!CLK * !D * !DE * !SCD * Q)	0.01941	0.02456	0.10045

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01580	0.02029	0.10958
	(SCD * SCE * Q)	0.01117	0.01565	0.10496
	(D * !SCE * Q)	0.01564	0.02013	0.10943
	(D * !SCE * Q)	0.01102	0.01548	0.10480
	(D * !DE * !SCE * !Q)	0.01620	0.02064	0.11016
	(D * !DE * !SCE * !Q)	0.01157	0.01600	0.10553
	(!SCD * SCE * !Q)	0.01664	0.02103	0.11060
	(!SCD * SCE * !Q)	0.01201	0.01639	0.10597
	(!D * !SCE * !Q)	0.01629	0.02074	0.11025
	(!D * !SCE * !Q)	0.01166	0.01610	0.10562
	(!D * !DE * !SCE * Q)	0.01560	0.02008	0.10938
	(!D * !DE * !SCE * Q)	0.01097	0.01544	0.10476
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01598	0.02020	0.10976
	(SCD * SCE * Q)	0.01133	0.01554	0.10511
	(D * !SCE * Q)	0.01583	0.02004	0.10961
	(D * !SCE * Q)	0.01118	0.01538	0.10496
	(D * !DE * !SCE * !Q)	0.01645	0.02087	0.11040
	(D * !DE * !SCE * !Q)	0.01179	0.01620	0.10575
	(!SCD * SCE * !Q)	0.01688	0.02130	0.11084
	(!SCD * SCE * !Q)	0.01223	0.01664	0.10619
	(!D * !SCE * !Q)	0.01654	0.02096	0.11050
	(!D * !SCE * !Q)	0.01188	0.01630	0.10584
	(!D * !DE * !SCE * Q)	0.01579	0.02000	0.10956
	(!D * !DE * !SCE * Q)	0.01113	0.01534	0.10491

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01599	0.02041	0.10970
	(SCD * SCE * Q)	0.01119	0.01560	0.10490
	(D * !SCE * Q)	0.01583	0.02025	0.10954
	(D * !SCE * Q)	0.01103	0.01544	0.10475
	(D * !DE * !SCE * !Q)	0.01642	0.02081	0.11031
	(D * !DE * !SCE * !Q)	0.01162	0.01599	0.10551
	(!SCD * SCE * !Q)	0.01686	0.02120	0.11075
	(!SCD * SCE * !Q)	0.01206	0.01638	0.10595
	(!D * !SCE * !Q)	0.01651	0.02090	0.11040
	(!D * !SCE * !Q)	0.01171	0.01608	0.10560
	(!D * !DE * !SCE * Q)	0.01579	0.02020	0.10950
	(!D * !DE * !SCE * Q)	0.01099	0.01539	0.10470

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00911	0.01423	0.10361
	(SCD * SCE * Q)	0.01373	0.01886	0.10822
	(SCD * SCE * !Q)	0.01733	0.02249	0.11406
	(SCD * SCE * !Q)	0.02195	0.02713	0.11868
	(D * DE * !SCE * !Q)	0.01720	0.02233	0.11390
	(D * DE * !SCE * !Q)	0.02181	0.02697	0.11851
	(D * !SCE * Q)	0.00898	0.01410	0.10349
	(D * !SCE * Q)	0.01360	0.01873	0.10810
	(D * !DE * !SCE * !Q)	0.00894	0.01401	0.10319
	(D * !DE * !SCE * !Q)	0.01356	0.01865	0.10782
	(!SCD * SCE * Q)	0.01977	0.02507	0.11554
	(!SCD * SCE * Q)	0.02440	0.02972	0.12018
	(!SCD * SCE * !Q)	0.00935	0.01442	0.10359
	(!SCD * SCE * !Q)	0.01397	0.01906	0.10822
	(!D * DE * !SCE * Q)	0.01995	0.02525	0.11567
	(!D * DE * !SCE * Q)	0.02457	0.02989	0.12029
	(!D * !SCE * !Q)	0.00904	0.01410	0.10328
	(!D * !SCE * !Q)	0.01365	0.01874	0.10790
	(!D * !DE * !SCE * Q)	0.00894	0.01406	0.10344
	(!D * !DE * !SCE * Q)	0.01356	0.01869	0.10805

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00919	0.01429	0.10368
	(SCD * SCE * Q)	0.01383	0.01895	0.10833
	(SCD * SCE * !Q)	0.01740	0.02255	0.11412
	(SCD * SCE * !Q)	0.02204	0.02721	0.11877
	(D * DE * !SCE * !Q)	0.01726	0.02239	0.11394
	(D * DE * !SCE * !Q)	0.02190	0.02704	0.11860
	(D * !SCE * Q)	0.00906	0.01415	0.10355
	(D * !SCE * Q)	0.01370	0.01881	0.10820
	(D * !DE * !SCE * !Q)	0.00908	0.01413	0.10331
	(D * !DE * !SCE * !Q)	0.01372	0.01879	0.10796
	(!SCD * SCE * Q)	0.01985	0.02513	0.11556
	(!SCD * SCE * Q)	0.02451	0.02980	0.12023
	(!SCD * SCE * !Q)	0.00949	0.01454	0.10372
	(!SCD * SCE * !Q)	0.01413	0.01920	0.10836
	(!D * DE * !SCE * Q)	0.02002	0.02530	0.11569
	(!D * DE * !SCE * Q)	0.02467	0.02994	0.12034
	(!D * !SCE * !Q)	0.00917	0.01422	0.10340
	(!D * !SCE * !Q)	0.01381	0.01888	0.10805
	(!D * !DE * !SCE * Q)	0.00902	0.01411	0.10351
	(!D * !DE * !SCE * Q)	0.01366	0.01877	0.10816

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00894	0.01405	0.10339
	(SCD * SCE * Q)	0.01373	0.01885	0.10817
	(SCD * SCE * !Q)	0.01722	0.02237	0.11387
	(SCD * SCE * !Q)	0.02201	0.02718	0.11866
	(D * DE * !SCE * !Q)	0.01709	0.02222	0.11371
	(D * DE * !SCE * !Q)	0.02188	0.02703	0.11850
	(D * !SCE * Q)	0.00882	0.01392	0.10327
	(D * !SCE * Q)	0.01361	0.01872	0.10805
	(D * !DE * !SCE * !Q)	0.00909	0.01415	0.10327
	(D * !DE * !SCE * !Q)	0.01388	0.01896	0.10806
	(!SCD * SCE * Q)	0.01947	0.02476	0.11521
	(!SCD * SCE * Q)	0.02428	0.02957	0.12003
	(!SCD * SCE * !Q)	0.00950	0.01456	0.10368
	(!SCD * SCE * !Q)	0.01429	0.01937	0.10848
	(!D * DE * !SCE * Q)	0.01963	0.02492	0.11532
	(!D * DE * !SCE * Q)	0.02442	0.02972	0.12013
	(!D * !SCE * !Q)	0.00919	0.01424	0.10337
	(!D * !SCE * !Q)	0.01398	0.01905	0.10817
	(!D * !DE * !SCE * Q)	0.00877	0.01388	0.10322
	(!D * !DE * !SCE * Q)	0.01356	0.01868	0.10801

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00520	0.00539	0.63830
sky130_fd_sc_hs__xnor2_2	0.00864	0.00856	1.16366
sky130_fd_sc_hs__xnor2_4	0.01545	0.01555	2.00570

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	15.61680	36.46050
sky130_fd_sc_hs__xnor2_2	0.00000	18.42880	28.09490
sky130_fd_sc_hs__xnor2_4	0.00000	37.03690	73.46980

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	0.07212	0.38831	3.14081
	A->Y (FR)	!B	0.08035	0.82529	9.42983
	B->Y (RR)	A	0.06579	0.39095	3.25716
	B->Y (FR)	!A	0.06756	0.84737	9.90786
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.07879	0.34334	2.98291
	A->Y (FR)	!B	0.07883	0.69324	9.09703
	B->Y (RR)	A	0.07557	0.35332	3.04123
	B->Y (FR)	!A	0.06334	0.71337	9.56046
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.09186	0.47173	6.03906
	A->Y (FR)	!B	0.08116	0.62282	9.24872
	B->Y (RR)	A	0.08738	0.47614	6.07313
	B->Y (FR)	!A	0.06328	0.65610	9.88451

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	0.08641	0.47769	4.10719
	A->Y (RF)	!B	0.04152	0.41222	4.60935
	B->Y (FF)	A	0.08465	0.47770	4.25264
	B->Y (RF)	!A	0.03205	0.39412	4.51994
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.10118	0.48799	4.38586
	A->Y (RF)	!B	0.03950	0.33630	4.33492
	B->Y (FF)	A	0.09474	0.44639	4.02101
	B->Y (RF)	!A	0.03332	0.32941	4.38319
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.09319	0.43932	4.43790
	A->Y (RF)	!B	0.04157	0.28367	4.16892
	B->Y (FF)	A	0.08841	0.40286	4.07337
	B->Y (RF)	!A	0.03385	0.27437	4.23982

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	0.01147	0.01553	0.09508
	A	B	0.00232	0.00639	0.08602
	A	!B	-0.00081	-0.00019	0.01789
	A	!B	0.00850	0.00915	0.02727
	B	A	0.01059	0.01506	0.09504
	B	A	0.00346	0.00795	0.08792
	B	!A	0.00024	0.00188	0.02545
	B	!A	0.00764	0.00931	0.03288
sky130_fd_sc_hs__xnor2_2	A	B	0.01771	0.02122	0.10012
	A	B	0.00432	0.00781	0.08720
	A	!B	0.00011	0.00148	0.03681
	A	!B	0.01649	0.01791	0.05317
	B	A	0.01694	0.02029	0.08774
	B	A	0.00650	0.00988	0.07784
	B	!A	0.00082	0.00410	0.04681
	B	!A	0.01419	0.01747	0.06017
sky130_fd_sc_hs__xnor2_4	A	B	0.02963	0.03638	0.18774
	A	B	0.00548	0.01216	0.16405
	A	!B	-0.00057	0.00238	0.06950
	A	!B	0.03065	0.03365	0.10115
	B	A	0.02862	0.03497	0.16801
	B	A	0.01023	0.01662	0.15020
	B	!A	0.00043	0.00679	0.08296
	B	!A	0.02603	0.03228	0.10849

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	0.00295	0.00809	0.08817
	A	B	0.01209	0.01722	0.09704
	A	!B	0.01065	0.01129	0.02676
	A	!B	0.00128	0.00189	0.01707
	B	A	0.00483	0.00899	0.08933
	B	A	0.01181	0.01592	0.09600
	B	!A	0.00724	0.00803	0.02252
	B	!A	0.00006	0.00081	0.01513
sky130_fd_sc_hs__xnor2_2	A	B	0.00618	0.01096	0.09092
	A	B	0.01960	0.02434	0.10396
	A	!B	0.02043	0.02169	0.05212
	A	!B	0.00396	0.00524	0.03556
	B	A	0.00991	0.01317	0.09199
	B	A	0.01996	0.02321	0.10193
	B	!A	0.01424	0.01604	0.04537
	B	!A	0.00112	0.00286	0.03136
sky130_fd_sc_hs__xnor2_4	A	B	0.00994	0.01898	0.17132
	A	B	0.03417	0.04313	0.19538
	A	!B	0.03775	0.04089	0.10446
	A	!B	0.00637	0.00941	0.07184
	B	A	0.01471	0.02152	0.16938
	B	A	0.03236	0.03910	0.18630
	B	!A	0.02649	0.03076	0.08929
	B	!A	0.00158	0.00568	0.06295

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00271	0.00700	0.00436	1.24267
sky130_fd_sc_hs__xnor3_2	0.00276	0.00704	0.00441	2.44103
sky130_fd_sc_hs__xnor3_4	0.00274	0.00702	0.00432	4.80138

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	71.84130	83.68590
sky130_fd_sc_hs__xnor3_2	0.00000	75.47120	90.67590
sky130_fd_sc_hs__xnor3_4	0.00000	82.75350	104.67300

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)	0.24688	0.88181	8.08332
	B->X (-R)	0.17392	0.76945	8.00936
	C->X (-R)	0.12647	0.72278	7.88581
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.26329	0.81361	8.04775
	B->X (-R)	0.18588	0.69385	7.93342
	C->X (-R)	0.13523	0.64700	7.81990
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.30510	0.80289	8.09881
	B->X (-R)	0.23219	0.68969	8.03264
	C->X (-R)	0.17650	0.63865	7.89063

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.19202	0.74047	5.37439
	B->X (-F)	0.18123	0.71426	5.72403
	C->X (-F)	0.10745	0.59382	5.42193
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.21486	0.73069	5.30018
	B->X (-F)	0.19943	0.69398	5.61467
	C->X (-F)	0.12613	0.58666	5.33311
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.26258	0.76116	5.45954
	B->X (-F)	0.25222	0.73298	5.81160
	C->X (-F)	0.18692	0.63325	5.55321

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02828	0.03190	0.12055
	A	0.02251	0.02614	0.11493
	B	0.02551	0.03338	0.21052
	B	0.02593	0.03600	0.21174
	C	0.01406	0.01891	0.11207
	C	0.00702	0.01188	0.10537
sky130_fd_sc_hs__xnor3_2	A	0.03174	0.03487	0.12087
	A	0.02588	0.02902	0.11534
	B	0.02895	0.03643	0.21150
	B	0.01674	0.02422	0.19986
	C	0.01760	0.02239	0.11533
	C	0.01049	0.01532	0.10893
sky130_fd_sc_hs__xnor3_4	A	0.04161	0.04315	0.13265
	A	0.03583	0.03743	0.12686
	B	0.03860	0.04432	0.21950
	B	0.02650	0.03224	0.20773
	C	0.02712	0.03044	0.12864
	C	0.02014	0.02357	0.12236

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02367	0.02709	0.11511
	A	0.02945	0.03297	0.12006
	B	0.01518	0.02401	0.19906
	B	0.02742	0.03626	0.21094
	C	0.00569	0.01143	0.10905
	C	0.01274	0.01845	0.11520
sky130_fd_sc_hs__xnor3_2	A	0.02987	0.03053	0.11691
	A	0.03574	0.03638	0.12090
	B	0.02104	0.02727	0.20236
	B	0.03329	0.03948	0.21182
	C	0.01139	0.01484	0.11403
	C	0.01851	0.02193	0.11987
sky130_fd_sc_hs__xnor3_4	A	0.04699	0.04014	0.12676
	A	0.05277	0.04609	0.13037
	B	0.03772	0.03645	0.21161
	B	0.04982	0.04852	0.21958
	C	0.03041	0.02408	0.12572
	C	0.03740	0.03141	0.12854

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00530	0.00549	0.57653
sky130_fd_sc_hs__xor2_2	0.00814	0.00807	1.08255
sky130_fd_sc_hs__xor2_4	0.01651	0.01607	1.85480

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	8.26551	11.53990
sky130_fd_sc_hs__xor2_2	0.00000	12.08630	15.18790
sky130_fd_sc_hs__xor2_4	0.00000	24.07560	30.37030

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	0.08350	0.66254	5.78020
	A->X (FR)	B	0.09560	0.85508	9.37841
	B->X (RR)	!A	0.09773	0.68134	6.06388
	B->X (FR)	A	0.07318	0.80807	9.08317
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.07277	0.55416	5.90457
	A->X (FR)	B	0.08367	0.72405	9.37563
	B->X (RR)	!A	0.08171	0.53425	5.74050
	B->X (FR)	A	0.06674	0.70728	9.35941
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.06791	0.44448	5.63723
	A->X (FR)	B	0.08423	0.60883	8.82433
	B->X (RR)	!A	0.07215	0.41175	5.25104
	B->X (FR)	A	0.06892	0.60007	8.96476

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	0.10789	0.41839	3.10726
	A->X (RF)	B	0.03889	0.38352	4.12388
	B->X (FF)	!A	0.09740	0.42712	3.21622
	B->X (RF)	A	0.03114	0.42250	4.69352
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.14191	0.53762	4.75590
	A->X (RF)	B	0.03594	0.32931	4.19263
	B->X (FF)	!A	0.12488	0.54771	4.88251
	B->X (RF)	A	0.03189	0.40849	5.32886
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.14421	0.49252	4.66691
	A->X (RF)	B	0.03746	0.27279	3.91208
	B->X (FF)	!A	0.12273	0.49993	4.71099
	B->X (RF)	A	0.03340	0.32950	4.81585

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	0.00083	0.00142	0.02088
	A	B	0.01026	0.01090	0.03041
	A	!B	0.01316	0.01602	0.07355
	A	!B	0.00354	0.00642	0.06406
	B	A	0.00080	0.00138	0.02060
	B	A	0.00791	0.00853	0.02785
	B	!A	0.01173	0.01410	0.07854
	B	!A	0.00443	0.00679	0.07135
sky130_fd_sc_hs__xor2_2	A	B	0.00221	0.00352	0.03888
	A	B	0.01763	0.01899	0.05449
	A	!B	0.01757	0.02069	0.08383
	A	!B	0.00429	0.00739	0.07060
	B	A	0.00086	0.00225	0.03632
	B	A	0.01303	0.01444	0.04865
	B	!A	0.01726	0.01919	0.08904
	B	!A	0.00728	0.00920	0.07921
sky130_fd_sc_hs__xor2_4	A	B	0.00343	0.00626	0.07457
	A	B	0.03599	0.03888	0.10740
	A	!B	0.03536	0.04103	0.16539
	A	!B	0.00926	0.01489	0.13963
	B	A	0.00219	0.00544	0.07153
	B	A	0.02767	0.03099	0.09730
	B	!A	0.03117	0.03575	0.17033
	B	!A	0.01205	0.01667	0.15125

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	0.00992	0.01038	0.02626
	A	B	0.00048	0.00079	0.01666
	A	!B	0.00250	0.00508	0.06155
	A	!B	0.01204	0.01462	0.07113
	B	A	0.00829	0.00919	0.02594
	B	A	0.00108	0.00191	0.01841
	B	!A	0.00381	0.00772	0.07134
	B	!A	0.01143	0.01530	0.07893
sky130_fd_sc_hs__xor2_2	A	B	0.01700	0.01805	0.04909
	A	B	0.00153	0.00250	0.03322
	A	!B	0.00270	0.00524	0.06678
	A	!B	0.01583	0.01833	0.07966
	B	A	0.01430	0.01604	0.04419
	B	A	0.00205	0.00372	0.03195
	B	!A	0.00460	0.00841	0.07689
	B	!A	0.01534	0.01914	0.08759
sky130_fd_sc_hs__xor2_4	A	B	0.03490	0.03721	0.10095
	A	B	0.00237	0.00457	0.06767
	A	!B	0.00565	0.01053	0.13300
	A	!B	0.03149	0.03639	0.15769
	B	A	0.02900	0.03278	0.09377
	B	A	0.00319	0.00691	0.06584
	B	!A	0.01001	0.01765	0.14500
	B	!A	0.03048	0.03801	0.16512

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.80v_100C.ccs
Cell Library: Process , Voltage
1.80, Temp 100.00

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	0.00270	0.00721	0.00436	1.25776
sky130_fd_sc_hs__xor3_2	0.00271	0.00732	0.00435	2.43098
sky130_fd_sc_hs__xor3_4	0.00269	0.00742	0.00431	4.74163

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	71.84300	83.75390
sky130_fd_sc_hs__xor3_2	0.00000	75.47730	90.73960
sky130_fd_sc_hs__xor3_4	0.00000	82.75360	104.71900

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)	0.24093	0.86888	8.00702
	B->X (-R)	0.16705	0.75291	7.88726
	C->X (-R)	0.12327	0.71847	7.82053
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.25227	0.79547	7.93648
	B->X (-R)	0.18102	0.68434	7.81571
	C->X (-R)	0.13322	0.64849	7.75292
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.30113	0.79902	8.04554
	B->X (-R)	0.22357	0.67529	7.93048
	C->X (-R)	0.16489	0.63235	7.86374

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.19025	0.73125	5.25372
	B->X (-F)	0.17940	0.69952	5.58309
	C->X (-F)	0.10264	0.58049	5.33196
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.21084	0.72332	5.26181
	B->X (-F)	0.20019	0.69171	5.59186
	C->X (-F)	0.12552	0.59401	5.37544
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.26476	0.76535	5.45067
	B->X (-F)	0.25715	0.73463	5.78770
	C->X (-F)	0.18160	0.64308	5.57645

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02988	0.03345	0.12130
	A	0.02410	0.02767	0.11566
	B	0.02765	0.03543	0.21465
	B	0.02512	0.03513	0.21314
	C	0.01407	0.01900	0.11521
	C	0.00703	0.01197	0.10856
sky130_fd_sc_hs__xor3_2	A	0.03355	0.03695	0.12490
	A	0.02790	0.03133	0.11962
	B	0.03135	0.03886	0.21728
	B	0.01863	0.02615	0.20511
	C	0.01789	0.02242	0.12046
	C	0.01086	0.01541	0.11408
sky130_fd_sc_hs__xor3_4	A	0.04286	0.04485	0.13353
	A	0.03716	0.03924	0.12792
	B	0.04074	0.04655	0.22492
	B	0.02800	0.03383	0.21252
	C	0.02779	0.03029	0.12835
	C	0.02083	0.02343	0.12183

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02383	0.02707	0.11432
	A	0.02964	0.03289	0.11958
	B	0.02619	0.03291	0.21016
	B	0.02632	0.03521	0.21217
	C	0.00532	0.01121	0.11022
	C	0.01238	0.01824	0.11650
sky130_fd_sc_hs__xor3_2	A	0.03042	0.03089	0.11764
	A	0.03605	0.03659	0.12236
	B	0.01924	0.02563	0.20433
	B	0.03199	0.03839	0.21434
	C	0.01068	0.01463	0.11414
	C	0.01773	0.02163	0.12008
sky130_fd_sc_hs__xor3_4	A	0.04863	0.04116	0.13031
	A	0.05433	0.04702	0.13089
	B	0.03946	0.03682	0.20798
	B	0.04916	0.04820	0.22272
	C	0.03062	0.02457	0.12365
	C	0.03758	0.03152	0.12784