sky130_fd_sc_hs_tt_1.80v_150C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00294	0.00285	0.00294	0.00307	0.00306	0.32559
sky130_fd_sc_hs__a2111oi_2	0.00559	0.00546	0.00456	0.00458	0.00457	0.56846
sky130_fd_sc_hs__a2111oi_4	0.01111	0.01095	0.00894	0.00880	0.00897	1.03495

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111oi_1	0.00000	15.14140	53.33660
sky130_fd_sc_hs__a2111oi_2	0.00000	29.81140	106.63000
sky130_fd_sc_hs__a2111oi_4	0.00000	59.40090	212.85600

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)	0.17379	0.93953	7.91665
	A2->Y (FR)	0.20498	0.98642	8.12144
	B1->Y (FR)	0.18994	1.00413	8.68514
	C1->Y (FR)	0.16152	1.01983	9.15189
	D1->Y (FR)	0.11754	1.00727	9.39096
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.16105	0.78677	7.71178
	A2->Y (FR)	0.20056	0.83179	7.85931
	B1->Y (FR)	0.17780	0.82949	8.10701
	C1->Y (FR)	0.14689	0.85194	8.76170
	D1->Y (FR)	0.08615	0.82559	8.98881
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.15436	0.65327	7.43513
	A2->Y (FR)	0.19753	0.70459	7.66963
	B1->Y (FR)	0.17533	0.70925	8.00567
	C1->Y (FR)	0.14051	0.72890	8.67622
	D1->Y (FR)	0.08016	0.71199	8.97348

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.03936	0.38579	3.32175
	A2->Y (RF)	0.04336	0.34002	2.80722
	B1->Y (RF)	0.02769	0.29289	2.51357
	C1->Y (RF)	0.02772	0.28415	2.47855
	D1->Y (RF)	0.02318	0.27388	2.44381
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.03405	0.33653	3.26111
	A2->Y (RF)	0.04033	0.29412	2.71721
	B1->Y (RF)	0.04313	0.39277	4.00423
	C1->Y (RF)	0.04060	0.37757	3.95167
	D1->Y (RF)	0.02854	0.35695	3.90895
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.03545	0.30025	3.28175
	A2->Y (RF)	0.04098	0.24618	2.55977
	B1->Y (RF)	0.03784	0.32375	3.69673
	C1->Y (RF)	0.03630	0.30647	3.64008
	D1->Y (RF)	0.02530	0.28976	3.65979

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00077	0.00121	0.03739
	A1	0.01060	0.01105	0.04730
	A2	0.00126	0.00175	0.03853
	A2	0.01236	0.01275	0.04965
	B1	0.00060	0.00176	0.04026
	B1	0.00896	0.01014	0.04872
	C1	0.00059	0.00211	0.03726
	C1	0.00769	0.00922	0.04439
	D1	0.00047	0.00307	0.04342
	D1	0.00635	0.00896	0.04932
sky130_fd_sc_hs__a2111oi_2	A1	0.00051	0.00147	0.07009
	A1	0.01917	0.02013	0.08891
	A2	0.00234	0.00324	0.07424
	A2	0.02346	0.02438	0.09550
	B1	0.00127	0.00266	0.05453
	B1	0.01565	0.01707	0.06891
	C1	0.00138	0.00331	0.04955
	C1	0.01296	0.01489	0.06132
	D1	0.00120	0.00507	0.05909
	D1	0.01001	0.01392	0.06796

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00004	0.00230	0.13407
	A1	0.03744	0.03970	0.17159
	A2	0.00334	0.00545	0.14245
	A2	0.04575	0.04790	0.18461
	B1	0.00174	0.00491	0.10657
	B1	0.03040	0.03365	0.13521
	C1	0.00184	0.00642	0.09742
	C1	0.02493	0.02945	0.12088
	D1	0.00142	0.00985	0.11377
	D1	0.01900	0.02745	0.13143

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01516	0.01622	0.04764
	A1	0.00535	0.00640	0.03784
	A2	0.01636	0.01730	0.04903
	A2	0.00527	0.00616	0.03790
	B1	0.01123	0.01303	0.04916
	B1	0.00286	0.00466	0.04081
	C1	0.00869	0.01072	0.04429
	C1	0.00160	0.00360	0.03719
	D1	0.00640	0.00854	0.04125
	D1	0.00054	0.00267	0.03539

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02894	0.03123	0.09101
	A1	0.01032	0.01254	0.07235
	A2	0.03126	0.03306	0.09458
	A2	0.01014	0.01189	0.07340
	B1	0.01996	0.02231	0.07061
	B1	0.00560	0.00789	0.05620
	C1	0.01474	0.01737	0.06198
	C1	0.00321	0.00576	0.05042
	D1	0.00878	0.01200	0.05452
	D1	-0.00006	0.00319	0.04567
sky130_fd_sc_hs__a2111oi_4	**A1**	0.05661	0.06119	0.17774
	A1	0.01920	0.02384	0.14016
	A2	0.06131	0.06546	0.18898
	A2	0.01890	0.02299	0.14637
	B1	0.03905	0.04426	0.14208
	B1	0.01037	0.01553	0.11329
	C1	0.02836	0.03421	0.12450
	C1	0.00532	0.01114	0.10104
	D1	0.01732	0.02437	0.10855
	D1	-0.00020	0.00676	0.09071

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)**	0.00173	0.00170	0.00169
	(A2 * B1 * D1 * !Y)	-0.00219	-0.00226	-0.00225
	(A2 * B1 * C1 * !D1 * !Y)	0.00182	0.00172	0.00171
	(A2 * B1 * C1 * !D1 * !Y)	-0.00211	-0.00224	-0.00223
	(A2 * B1 * !C1 * !D1 * !Y)	0.00233	0.00197	0.00192
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00166	-0.00203	-0.00202
	(A2 * !B1 * C1 * D1 * !Y)	0.00182	0.00173	0.00171
	(A2 * !B1 * C1 * D1 * !Y)	-0.00202	-0.00221	-0.00222
	(A2 * !B1 * C1 * !D1 * !Y)	0.00233	0.00199	0.00194
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00161	-0.00201	-0.00200
	(A2 * !B1 * !C1 * D1 * !Y)	0.00248	0.00212	0.00210
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00148	-0.00191	-0.00185
	(!A2 * B1 * D1 * !Y)	0.00163	0.00165	0.00164
	(!A2 * B1 * D1 * !Y)	-0.00226	-0.00228	-0.00227
	(!A2 * B1 * C1 * !D1 * !Y)	0.00164	0.00165	0.00165
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00225	-0.00225	-0.00225
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00187	0.00188	0.00187
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00203	-0.00204	-0.00203
	(!A2 * !B1 * C1 * D1 * !Y)	0.00165	0.00166	0.00166
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00225	-0.00225	-0.00225
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00188	0.00189	0.00189
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00201	-0.00202	-0.00202
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00204	0.00206	0.00205
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00185	-0.00187	-0.00186
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00059	0.00059	0.00056
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00253	-0.00253	-0.00258

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00342	0.00340	0.00337
	(A2 * B1 * D1 * !Y)	-0.00436	-0.00451	-0.00450
	(A2 * B1 * C1 * !D1 * !Y)	0.00359	0.00346	0.00342
	(A2 * B1 * C1 * !D1 * !Y)	-0.00419	-0.00446	-0.00445
	(A2 * B1 * !C1 * !D1 * !Y)	0.00469	0.00397	0.00386
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00324	-0.00404	-0.00402
	(A2 * !B1 * C1 * D1 * !Y)	0.00362	0.00346	0.00341
	(A2 * !B1 * C1 * D1 * !Y)	-0.00405	-0.00441	-0.00442
	(A2 * !B1 * C1 * !D1 * !Y)	0.00471	0.00400	0.00387
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00317	-0.00401	-0.00399
	(A2 * !B1 * !C1 * D1 * !Y)	0.00499	0.00426	0.00419
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00292	-0.00380	-0.00368
	(!A2 * B1 * D1 * !Y)	0.00324	0.00329	0.00326
	(!A2 * B1 * D1 * !Y)	-0.00451	-0.00455	-0.00452
	(!A2 * B1 * C1 * !D1 * !Y)	0.00328	0.00332	0.00329
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00448	-0.00452	-0.00449
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00371	0.00375	0.00372
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00404	-0.00408	-0.00406
	(!A2 * !B1 * C1 * D1 * !Y)	0.00328	0.00332	0.00329
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00448	-0.00451	-0.00449
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00374	0.00378	0.00375
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00401	-0.00405	-0.00402
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00406	0.00408	0.00407
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00370	-0.00372	-0.00371
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00117	0.00118	0.00110
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00504	-0.00506	-0.00519

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00687	0.00682	0.00676
	(A2 * B1 * D1 * !Y)	-0.00874	-0.00905	-0.00901
	(A2 * B1 * C1 * !D1 * !Y)	0.00723	0.00693	0.00686
	(A2 * B1 * C1 * !D1 * !Y)	-0.00840	-0.00895	-0.00892
	(A2 * B1 * !C1 * !D1 * !Y)	0.00933	0.00794	0.00774
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00658	-0.00814	-0.00807
	(A2 * !B1 * C1 * D1 * !Y)	0.00729	0.00695	0.00685
	(A2 * !B1 * C1 * D1 * !Y)	-0.00813	-0.00884	-0.00886
	(A2 * !B1 * C1 * !D1 * !Y)	0.00937	0.00800	0.00777
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00645	-0.00806	-0.00800
	(A2 * !B1 * !C1 * D1 * !Y)	0.00992	0.00851	0.00841
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00598	-0.00766	-0.00740
	(!A2 * B1 * D1 * !Y)	0.00651	0.00660	0.00653
	(!A2 * B1 * D1 * !Y)	-0.00905	-0.00912	-0.00907
	(!A2 * B1 * C1 * !D1 * !Y)	0.00657	0.00666	0.00660
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00898	-0.00906	-0.00900
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00744	0.00752	0.00746
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00810	-0.00819	-0.00814
	(!A2 * !B1 * C1 * D1 * !Y)	0.00658	0.00666	0.00660
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00899	-0.00905	-0.00900
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00751	0.00758	0.00752
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00806	-0.00813	-0.00807
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00814	0.00814	0.00816
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00743	-0.00743	-0.00744
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00225	0.00225	0.00212
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01019	-0.01024	-0.01048

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)**	-0.00163	-0.00164	-0.00163
	(A2 * B1 * D1 * !Y)	0.00229	0.00231	0.00230
	(A2 * B1 * C1 * !D1 * !Y)	-0.00161	-0.00162	-0.00161
	(A2 * B1 * C1 * !D1 * !Y)	0.00231	0.00234	0.00232
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00139	-0.00140	-0.00141
	(A2 * B1 * !C1 * !D1 * !Y)	0.00256	0.00258	0.00254
	(A2 * !B1 * C1 * D1 * !Y)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * C1 * D1 * !Y)	0.00228	0.00231	0.00229
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00137	-0.00138	-0.00139
	(A2 * !B1 * C1 * !D1 * !Y)	0.00256	0.00257	0.00255
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00122	-0.00123	-0.00125
	(A2 * !B1 * !C1 * D1 * !Y)	0.00272	0.00273	0.00270
	(!A2 * B1 * D1 * !Y)	-0.00158	-0.00161	-0.00160
	(!A2 * B1 * D1 * !Y)	0.00230	0.00233	0.00232
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * C1 * !D1 * !Y)	0.00234	0.00234	0.00233
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00136	-0.00138	-0.00137
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00255	0.00256	0.00255
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00156	-0.00159	-0.00158
	(!A2 * !B1 * C1 * D1 * !Y)	0.00232	0.00234	0.00233
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00257	0.00257	0.00256
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00119	-0.00120	-0.00119
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00273	0.00273	0.00272
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00267	0.00271	0.00267

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00326	-0.00327	-0.00326
	(A2 * B1 * D1 * !Y)	0.00456	0.00460	0.00459
	(A2 * B1 * C1 * !D1 * !Y)	-0.00321	-0.00324	-0.00323
	(A2 * B1 * C1 * !D1 * !Y)	0.00460	0.00465	0.00463
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00277	-0.00279	-0.00281
	(A2 * B1 * !C1 * !D1 * !Y)	0.00512	0.00513	0.00508
	(A2 * !B1 * C1 * D1 * !Y)	-0.00321	-0.00322	-0.00321
	(A2 * !B1 * C1 * D1 * !Y)	0.00453	0.00456	0.00454
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00273	-0.00275	-0.00275
	(A2 * !B1 * C1 * !D1 * !Y)	0.00511	0.00515	0.00510
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00245	-0.00248	-0.00250
	(A2 * !B1 * !C1 * D1 * !Y)	0.00541	0.00544	0.00537
	(!A2 * B1 * D1 * !Y)	-0.00317	-0.00321	-0.00320
	(!A2 * B1 * D1 * !Y)	0.00463	0.00465	0.00462
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00312	-0.00316	-0.00317
	(!A2 * B1 * C1 * !D1 * !Y)	0.00464	0.00467	0.00465
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00269	-0.00273	-0.00273
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00507	0.00511	0.00508
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00312	-0.00316	-0.00316
	(!A2 * !B1 * C1 * D1 * !Y)	0.00465	0.00467	0.00466
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00266	-0.00271	-0.00270
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00510	0.00516	0.00511
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00234	-0.00239	-0.00239
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00542	0.00548	0.00543
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00098	-0.00099	-0.00097
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00533	0.00539	0.00531

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00654	-0.00659	-0.00656
	(A2 * B1 * D1 * !Y)	0.00916	0.00926	0.00920
	(A2 * B1 * C1 * !D1 * !Y)	-0.00647	-0.00651	-0.00648
	(A2 * B1 * C1 * !D1 * !Y)	0.00926	0.00936	0.00929
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00561	-0.00563	-0.00568
	(A2 * B1 * !C1 * !D1 * !Y)	0.01029	0.01029	0.01017
	(A2 * !B1 * C1 * D1 * !Y)	-0.00644	-0.00649	-0.00644
	(A2 * !B1 * C1 * D1 * !Y)	0.00910	0.00920	0.00912
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00552	-0.00552	-0.00555
	(A2 * !B1 * C1 * !D1 * !Y)	0.01028	0.01027	0.01021
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00495	-0.00499	-0.00503
	(A2 * !B1 * !C1 * D1 * !Y)	0.01090	0.01092	0.01078
	(!A2 * B1 * D1 * !Y)	-0.00637	-0.00644	-0.00642
	(!A2 * B1 * D1 * !Y)	0.00928	0.00933	0.00926
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00628	-0.00637	-0.00636
	(!A2 * B1 * C1 * !D1 * !Y)	0.00931	0.00940	0.00933
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00541	-0.00551	-0.00549
	(!A2 * B1 * !C1 * !D1 * !Y)	0.01017	0.01029	0.01019
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00627	-0.00635	-0.00635
	(!A2 * !B1 * C1 * D1 * !Y)	0.00931	0.00936	0.00933
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00535	-0.00545	-0.00543
	(!A2 * !B1 * C1 * !D1 * !Y)	0.01022	0.01035	0.01025
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00471	-0.00482	-0.00480
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01085	0.01099	0.01089
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00185	-0.00190	-0.00186
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01066	0.01087	0.01071

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)**	0.00181	0.00179	0.00178
	(A1 * B1 * D1 * !Y)	-0.00220	-0.00227	-0.00227
	(A1 * B1 * C1 * !D1 * !Y)	0.00191	0.00182	0.00180
	(A1 * B1 * C1 * !D1 * !Y)	-0.00211	-0.00225	-0.00224
	(A1 * B1 * !C1 * !D1 * !Y)	0.00242	0.00207	0.00202
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00166	-0.00204	-0.00203
	(A1 * !B1 * C1 * D1 * !Y)	0.00192	0.00182	0.00180
	(A1 * !B1 * C1 * D1 * !Y)	-0.00204	-0.00222	-0.00223
	(A1 * !B1 * C1 * !D1 * !Y)	0.00242	0.00208	0.00203
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00163	-0.00202	-0.00201
	(A1 * !B1 * !C1 * D1 * !Y)	0.00257	0.00222	0.00219
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00150	-0.00192	-0.00186
	(!A1 * B1 * !Y)	0.00172	0.00175	0.00173
	(!A1 * B1 * !Y)	-0.00227	-0.00229	-0.00228
	(!A1 * !B1 * C1 * !Y)	0.00174	0.00176	0.00175
	(!A1 * !B1 * C1 * !Y)	-0.00225	-0.00227	-0.00226
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00213	0.00215	0.00214
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00177	0.00178	0.00177
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00224	-0.00225	-0.00225

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00343	0.00342	0.00339
	(A1 * B1 * D1 * !Y)	-0.00435	-0.00450	-0.00448
	(A1 * B1 * C1 * !D1 * !Y)	0.00360	0.00347	0.00343
	(A1 * B1 * C1 * !D1 * !Y)	-0.00419	-0.00445	-0.00443
	(A1 * B1 * !C1 * !D1 * !Y)	0.00467	0.00398	0.00388
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00325	-0.00403	-0.00400
	(A1 * !B1 * C1 * D1 * !Y)	0.00363	0.00348	0.00343
	(A1 * !B1 * C1 * D1 * !Y)	-0.00406	-0.00439	-0.00440
	(A1 * !B1 * C1 * !D1 * !Y)	0.00468	0.00400	0.00389
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00320	-0.00400	-0.00397
	(A1 * !B1 * !C1 * D1 * !Y)	0.00496	0.00426	0.00421
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00296	-0.00380	-0.00367
	(!A1 * B1 * !Y)	0.00328	0.00331	0.00327
	(!A1 * B1 * !Y)	-0.00451	-0.00453	-0.00451
	(!A1 * !B1 * C1 * !Y)	0.00331	0.00335	0.00331
	(!A1 * !B1 * C1 * !Y)	-0.00447	-0.00449	-0.00447
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00409	0.00410	0.00409
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00369	-0.00370	-0.00369
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00333	0.00336	0.00333
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00448	-0.00450	-0.00447

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00691	0.00687	0.00680
	(A1 * B1 * D1 * !Y)	-0.00874	-0.00904	-0.00900
	(A1 * B1 * C1 * !D1 * !Y)	0.00727	0.00698	0.00690
	(A1 * B1 * C1 * !D1 * !Y)	-0.00840	-0.00893	-0.00891
	(A1 * B1 * !C1 * !D1 * !Y)	0.00936	0.00798	0.00778
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00660	-0.00812	-0.00806
	(A1 * !B1 * C1 * D1 * !Y)	0.00735	0.00699	0.00689
	(A1 * !B1 * C1 * D1 * !Y)	-0.00818	-0.00883	-0.00885
	(A1 * !B1 * C1 * !D1 * !Y)	0.00940	0.00805	0.00781
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00653	-0.00804	-0.00799
	(A1 * !B1 * !C1 * D1 * !Y)	0.00994	0.00856	0.00845
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00607	-0.00765	-0.00739
	(!A1 * B1 * !Y)	0.00655	0.00661	0.00657
	(!A1 * B1 * !Y)	-0.00904	-0.00909	-0.00906
	(!A1 * !B1 * C1 * !Y)	0.00662	0.00667	0.00664
	(!A1 * !B1 * C1 * !Y)	-0.00897	-0.00901	-0.00899
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00818	0.00823	0.00820
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00741	-0.00744	-0.00742
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00665	0.00677	0.00670
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00896	-0.00905	-0.00899

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)**	-0.00172	-0.00172	-0.00173
	(A1 * B1 * D1 * !Y)	0.00231	0.00230	0.00231
	(A1 * B1 * C1 * !D1 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * B1 * C1 * !D1 * !Y)	0.00234	0.00234	0.00234
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00148	-0.00149	-0.00150
	(A1 * B1 * !C1 * !D1 * !Y)	0.00258	0.00258	0.00256
	(A1 * !B1 * C1 * D1 * !Y)	-0.00170	-0.00171	-0.00169
	(A1 * !B1 * C1 * D1 * !Y)	0.00230	0.00232	0.00230
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00146	-0.00147	-0.00148
	(A1 * !B1 * C1 * !D1 * !Y)	0.00257	0.00258	0.00256
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00132	-0.00134	-0.00134
	(A1 * !B1 * !C1 * D1 * !Y)	0.00273	0.00276	0.00271
	(!A1 * B1 * !Y)	-0.00169	-0.00170	-0.00169
	(!A1 * B1 * !Y)	0.00234	0.00234	0.00233
	(!A1 * !B1 * C1 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * C1 * !Y)	0.00235	0.00235	0.00235
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00128	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00274	0.00274	0.00274
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00149	-0.00162	-0.00165
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00255	0.00243	0.00237

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00328	-0.00330	-0.00328
	(A1 * B1 * D1 * !Y)	0.00455	0.00461	0.00457
	(A1 * B1 * C1 * !D1 * !Y)	-0.00324	-0.00327	-0.00325
	(A1 * B1 * C1 * !D1 * !Y)	0.00459	0.00465	0.00461
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00280	-0.00282	-0.00283
	(A1 * B1 * !C1 * !D1 * !Y)	0.00511	0.00513	0.00506
	(A1 * !B1 * C1 * D1 * !Y)	-0.00322	-0.00324	-0.00323
	(A1 * !B1 * C1 * D1 * !Y)	0.00451	0.00454	0.00453
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00275	-0.00277	-0.00277
	(A1 * !B1 * C1 * !D1 * !Y)	0.00511	0.00512	0.00508
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00248	-0.00249	-0.00252
	(A1 * !B1 * !C1 * D1 * !Y)	0.00541	0.00541	0.00536
	(!A1 * B1 * !Y)	-0.00318	-0.00323	-0.00322
	(!A1 * B1 * !Y)	0.00459	0.00463	0.00460
	(!A1 * !B1 * C1 * !Y)	-0.00314	-0.00319	-0.00318
	(!A1 * !B1 * C1 * !Y)	0.00462	0.00466	0.00464
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00236	-0.00241	-0.00240
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00540	0.00544	0.00541
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00278	-0.00313	-0.00318
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00502	0.00474	0.00464

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00659	-0.00663	-0.00660
	(A1 * B1 * D1 * !Y)	0.00917	0.00925	0.00919
	(A1 * B1 * C1 * !D1 * !Y)	-0.00650	-0.00655	-0.00652
	(A1 * B1 * C1 * !D1 * !Y)	0.00924	0.00935	0.00928
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00560	-0.00568	-0.00571
	(A1 * B1 * !C1 * !D1 * !Y)	0.01020	0.01032	0.01016
	(A1 * !B1 * C1 * D1 * !Y)	-0.00648	-0.00651	-0.00648
	(A1 * !B1 * C1 * D1 * !Y)	0.00908	0.00915	0.00911
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00555	-0.00558	-0.00559
	(A1 * !B1 * C1 * !D1 * !Y)	0.01026	0.01029	0.01020
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00499	-0.00499	-0.00508
	(A1 * !B1 * !C1 * D1 * !Y)	0.01088	0.01083	0.01077
	(!A1 * B1 * !Y)	-0.00637	-0.00648	-0.00645
	(!A1 * B1 * !Y)	0.00921	0.00930	0.00925
	(!A1 * !B1 * C1 * !Y)	-0.00631	-0.00640	-0.00638
	(!A1 * !B1 * C1 * !Y)	0.00930	0.00937	0.00932
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00475	-0.00485	-0.00482
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01083	0.01092	0.01087
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00557	-0.00627	-0.00638
	(!A1 * !B1 * !C1 * !D1 * Y)	0.01012	0.00955	0.00932

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)**	0.00192	0.00189	0.00179
	(A1 * A2 * C1 * D1 * !Y)	-0.00155	-0.00159	-0.00160
	(A1 * A2 * C1 * !D1 * !Y)	0.00203	0.00199	0.00184
	(A1 * A2 * C1 * !D1 * !Y)	-0.00139	-0.00145	-0.00150
	(A1 * A2 * !C1 * D1 * !Y)	0.00206	0.00217	0.00201
	(A1 * A2 * !C1 * D1 * !Y)	-0.00135	-0.00128	-0.00132
	(A1 * A2 * !C1 * !D1 * !Y)	0.00206	0.00206	0.00202
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * C1 * D1 * !Y)	0.00206	0.00181	0.00177
	(A1 * !A2 * C1 * D1 * !Y)	-0.00191	-0.00218	-0.00219
	(A1 * !A2 * C1 * !D1 * !Y)	0.00246	0.00200	0.00199
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00156	-0.00203	-0.00197
	(A1 * !A2 * !C1 * D1 * !Y)	0.00269	0.00214	0.00215
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00135	-0.00191	-0.00181
	(!A1 * C1 * D1 * !Y)	0.00206	0.00181	0.00177
	(!A1 * C1 * D1 * !Y)	-0.00192	-0.00218	-0.00219
	(!A1 * C1 * !D1 * !Y)	0.00245	0.00200	0.00199
	(!A1 * C1 * !D1 * !Y)	-0.00157	-0.00202	-0.00197
	(!A1 * !C1 * D1 * !Y)	0.00268	0.00214	0.00215
	(!A1 * !C1 * D1 * !Y)	-0.00137	-0.00192	-0.00181

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00237	0.00232	0.00213
	(A1 * A2 * C1 * D1 * !Y)	-0.00302	-0.00310	-0.00310
	(A1 * A2 * C1 * !D1 * !Y)	0.00259	0.00250	0.00220
	(A1 * A2 * C1 * !D1 * !Y)	-0.00268	-0.00284	-0.00295
	(A1 * A2 * !C1 * D1 * !Y)	0.00263	0.00287	0.00254
	(A1 * A2 * !C1 * D1 * !Y)	-0.00277	-0.00253	-0.00265
	(A1 * A2 * !C1 * !D1 * !Y)	0.00272	0.00273	0.00262
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00151	-0.00154	-0.00157
	(A1 * !A2 * C1 * D1 * !Y)	0.00259	0.00209	0.00205
	(A1 * !A2 * C1 * D1 * !Y)	-0.00383	-0.00439	-0.00440
	(A1 * !A2 * C1 * !D1 * !Y)	0.00348	0.00251	0.00250
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00303	-0.00405	-0.00396
	(A1 * !A2 * !C1 * D1 * !Y)	0.00387	0.00283	0.00282
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00269	-0.00382	-0.00365
	(!A1 * C1 * D1 * !Y)	0.00258	0.00209	0.00205
	(!A1 * C1 * D1 * !Y)	-0.00384	-0.00438	-0.00440
	(!A1 * C1 * !D1 * !Y)	0.00347	0.00250	0.00250
	(!A1 * C1 * !D1 * !Y)	-0.00305	-0.00405	-0.00396
	(!A1 * !C1 * D1 * !Y)	0.00385	0.00282	0.00282
	(!A1 * !C1 * D1 * !Y)	-0.00271	-0.00382	-0.00365

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00447	0.00442	0.00406
	(A1 * A2 * C1 * D1 * !Y)	-0.00613	-0.00633	-0.00632
	(A1 * A2 * C1 * !D1 * !Y)	0.00492	0.00477	0.00418
	(A1 * A2 * C1 * !D1 * !Y)	-0.00564	-0.00579	-0.00601
	(A1 * A2 * !C1 * D1 * !Y)	0.00507	0.00556	0.00490
	(A1 * A2 * !C1 * D1 * !Y)	-0.00569	-0.00515	-0.00535
	(A1 * A2 * !C1 * !D1 * !Y)	0.00524	0.00522	0.00503
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00324	-0.00323	-0.00327
	(A1 * !A2 * C1 * D1 * !Y)	0.00517	0.00402	0.00395
	(A1 * !A2 * C1 * D1 * !Y)	-0.00782	-0.00892	-0.00898
	(A1 * !A2 * C1 * !D1 * !Y)	0.00693	0.00483	0.00486
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00626	-0.00826	-0.00810
	(A1 * !A2 * !C1 * D1 * !Y)	0.00770	0.00549	0.00550
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00556	-0.00784	-0.00748
	(!A1 * C1 * D1 * !Y)	0.00514	0.00401	0.00395
	(!A1 * C1 * D1 * !Y)	-0.00786	-0.00891	-0.00898
	(!A1 * C1 * !D1 * !Y)	0.00688	0.00489	0.00485
	(!A1 * C1 * !D1 * !Y)	-0.00632	-0.00833	-0.00810
	(!A1 * !C1 * D1 * !Y)	0.00764	0.00549	0.00549
	(!A1 * !C1 * D1 * !Y)	-0.00562	-0.00784	-0.00748

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)**	-0.00171	-0.00172	-0.00171
	(A1 * A2 * C1 * D1 * !Y)	0.00162	0.00164	0.00160
	(A1 * A2 * C1 * !D1 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * A2 * C1 * !D1 * !Y)	0.00162	0.00163	0.00161
	(A1 * A2 * !C1 * D1 * !Y)	-0.00171	-0.00173	-0.00170
	(A1 * A2 * !C1 * D1 * !Y)	0.00150	0.00152	0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00125	-0.00128	-0.00160
	(A1 * A2 * !C1 * !D1 * !Y)	0.00158	0.00157	0.00130
	(A1 * !A2 * C1 * D1 * !Y)	-0.00165	-0.00165	-0.00165
	(A1 * !A2 * C1 * D1 * !Y)	0.00230	0.00231	0.00230
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00145	-0.00147	-0.00149
	(A1 * !A2 * C1 * !D1 * !Y)	0.00252	0.00253	0.00249
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00128	-0.00130	-0.00133
	(A1 * !A2 * !C1 * D1 * !Y)	0.00269	0.00271	0.00266
	(!A1 * C1 * D1 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * C1 * D1 * !Y)	0.00230	0.00231	0.00230
	(!A1 * C1 * !D1 * !Y)	-0.00145	-0.00147	-0.00149
	(!A1 * C1 * !D1 * !Y)	0.00252	0.00253	0.00249
	(!A1 * !C1 * D1 * !Y)	-0.00128	-0.00130	-0.00133
	(!A1 * !C1 * D1 * !Y)	0.00270	0.00271	0.00266

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00191	-0.00193	-0.00190
	(A1 * A2 * C1 * D1 * !Y)	0.00320	0.00323	0.00317
	(A1 * A2 * C1 * !D1 * !Y)	-0.00188	-0.00188	-0.00185
	(A1 * A2 * C1 * !D1 * !Y)	0.00318	0.00319	0.00316
	(A1 * A2 * !C1 * D1 * !Y)	-0.00195	-0.00195	-0.00192
	(A1 * A2 * !C1 * D1 * !Y)	0.00303	0.00304	0.00303
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00113	-0.00118	-0.00169
	(A1 * A2 * !C1 * !D1 * !Y)	0.00310	0.00311	0.00264
	(A1 * !A2 * C1 * D1 * !Y)	-0.00182	-0.00183	-0.00182
	(A1 * !A2 * C1 * D1 * !Y)	0.00461	0.00466	0.00463
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00141	-0.00143	-0.00148
	(A1 * !A2 * C1 * !D1 * !Y)	0.00508	0.00510	0.00503
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00109	-0.00111	-0.00117
	(A1 * !A2 * !C1 * D1 * !Y)	0.00542	0.00544	0.00534
	(!A1 * C1 * D1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * C1 * D1 * !Y)	0.00462	0.00465	0.00462
	(!A1 * C1 * !D1 * !Y)	-0.00141	-0.00143	-0.00148
	(!A1 * C1 * !D1 * !Y)	0.00508	0.00510	0.00503
	(!A1 * !C1 * D1 * !Y)	-0.00108	-0.00111	-0.00117
	(!A1 * !C1 * D1 * !Y)	0.00542	0.00544	0.00534

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00367	-0.00369	-0.00366
	(A1 * A2 * C1 * D1 * !Y)	0.00649	0.00654	0.00644
	(A1 * A2 * C1 * !D1 * !Y)	-0.00359	-0.00362	-0.00355
	(A1 * A2 * C1 * !D1 * !Y)	0.00645	0.00652	0.00642
	(A1 * A2 * !C1 * D1 * !Y)	-0.00375	-0.00378	-0.00369
	(A1 * A2 * !C1 * D1 * !Y)	0.00609	0.00615	0.00608
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00210	-0.00218	-0.00324
	(A1 * A2 * !C1 * !D1 * !Y)	0.00626	0.00625	0.00533
	(A1 * !A2 * C1 * D1 * !Y)	-0.00349	-0.00350	-0.00349
	(A1 * !A2 * C1 * D1 * !Y)	0.00939	0.00944	0.00943
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00269	-0.00273	-0.00283
	(A1 * !A2 * C1 * !D1 * !Y)	0.01033	0.01035	0.01021
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00202	-0.00208	-0.00219
	(A1 * !A2 * !C1 * D1 * !Y)	0.01098	0.01104	0.01085
	(!A1 * C1 * D1 * !Y)	-0.00349	-0.00350	-0.00349
	(!A1 * C1 * D1 * !Y)	0.00941	0.00945	0.00943
	(!A1 * C1 * !D1 * !Y)	-0.00269	-0.00273	-0.00283
	(!A1 * C1 * !D1 * !Y)	0.01034	0.01035	0.01021
	(!A1 * !C1 * D1 * !Y)	-0.00202	-0.00208	-0.00219
	(!A1 * !C1 * D1 * !Y)	0.01099	0.01105	0.01085

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)**	0.00207	0.00208	0.00198
	(A1 * B1 * D1 * !Y)	-0.00126	-0.00127	-0.00131
	(A1 * B1 * !D1 * !Y)	0.00191	0.00194	0.00187
	(A1 * B1 * !D1 * !Y)	-0.00093	-0.00095	-0.00095
	(A1 * A2 * !B1 * D1 * !Y)	0.00234	0.00216	0.00216
	(A1 * A2 * !B1 * D1 * !Y)	-0.00111	-0.00129	-0.00123
	(A1 * A2 * !B1 * !D1 * !Y)	0.00206	0.00210	0.00205
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00071	-0.00073	-0.00072
	(A1 * !A2 * !B1 * D1 * !Y)	0.00260	0.00207	0.00224
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00144	-0.00195	-0.00175
	(!A1 * B1 * D1 * !Y)	0.00203	0.00204	0.00194
	(!A1 * B1 * D1 * !Y)	-0.00127	-0.00129	-0.00132
	(!A1 * B1 * !D1 * !Y)	0.00202	0.00201	0.00198
	(!A1 * B1 * !D1 * !Y)	-0.00087	-0.00086	-0.00087
	(!A1 * !B1 * D1 * !Y)	0.00259	0.00207	0.00224
	(!A1 * !B1 * D1 * !Y)	-0.00144	-0.00195	-0.00175

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00240	0.00247	0.00224
	(A1 * B1 * D1 * !Y)	-0.00275	-0.00271	-0.00283
	(A1 * B1 * !D1 * !Y)	0.00210	0.00213	0.00202
	(A1 * B1 * !D1 * !Y)	-0.00198	-0.00201	-0.00204
	(A1 * A2 * !B1 * D1 * !Y)	0.00307	0.00265	0.00255
	(A1 * A2 * !B1 * D1 * !Y)	-0.00234	-0.00267	-0.00265
	(A1 * A2 * !B1 * !D1 * !Y)	0.00249	0.00248	0.00243
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00150	-0.00148	-0.00151
	(A1 * !A2 * !B1 * D1 * !Y)	0.00375	0.00250	0.00273
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00281	-0.00403	-0.00374
	(!A1 * B1 * D1 * !Y)	0.00233	0.00241	0.00218
	(!A1 * B1 * D1 * !Y)	-0.00280	-0.00276	-0.00286
	(!A1 * B1 * !D1 * !Y)	0.00233	0.00235	0.00225
	(!A1 * B1 * !D1 * !Y)	-0.00179	-0.00183	-0.00183
	(!A1 * !B1 * D1 * !Y)	0.00375	0.00249	0.00272
	(!A1 * !B1 * D1 * !Y)	-0.00281	-0.00403	-0.00374

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00478	0.00483	0.00437
	(A1 * B1 * D1 * !Y)	-0.00533	-0.00531	-0.00553
	(A1 * B1 * !D1 * !Y)	0.00411	0.00417	0.00391
	(A1 * B1 * !D1 * !Y)	-0.00390	-0.00397	-0.00403
	(A1 * A2 * !B1 * D1 * !Y)	0.00603	0.00516	0.00498
	(A1 * A2 * !B1 * D1 * !Y)	-0.00446	-0.00521	-0.00512
	(A1 * A2 * !B1 * !D1 * !Y)	0.00495	0.00496	0.00478
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00288	-0.00288	-0.00292
	(A1 * !A2 * !B1 * D1 * !Y)	0.00735	0.00488	0.00534
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00555	-0.00796	-0.00736
	(!A1 * B1 * D1 * !Y)	0.00462	0.00468	0.00425
	(!A1 * B1 * D1 * !Y)	-0.00539	-0.00539	-0.00559
	(!A1 * B1 * !D1 * !Y)	0.00460	0.00465	0.00441
	(!A1 * B1 * !D1 * !Y)	-0.00353	-0.00360	-0.00363
	(!A1 * !B1 * D1 * !Y)	0.00734	0.00486	0.00534
	(!A1 * !B1 * D1 * !Y)	-0.00556	-0.00797	-0.00736

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)**	-0.00179	-0.00180	-0.00179
	(A1 * B1 * D1 * !Y)	0.00139	0.00140	0.00139
	(A1 * B1 * !D1 * !Y)	-0.00172	-0.00174	-0.00178
	(A1 * B1 * !D1 * !Y)	0.00110	0.00112	0.00107
	(A1 * A2 * !B1 * D1 * !Y)	-0.00180	-0.00180	-0.00177
	(A1 * A2 * !B1 * D1 * !Y)	0.00146	0.00146	0.00147
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00120	-0.00123	-0.00165
	(A1 * A2 * !B1 * !D1 * !Y)	0.00156	0.00157	0.00125
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00137	-0.00138	-0.00145
	(A1 * !A2 * !B1 * D1 * !Y)	0.00263	0.00261	0.00256
	(!A1 * B1 * D1 * !Y)	-0.00179	-0.00180	-0.00178
	(!A1 * B1 * D1 * !Y)	0.00142	0.00143	0.00141
	(!A1 * B1 * !D1 * !Y)	-0.00161	-0.00163	-0.00177
	(!A1 * B1 * !D1 * !Y)	0.00125	0.00126	0.00112
	(!A1 * !B1 * D1 * !Y)	-0.00137	-0.00138	-0.00145
	(!A1 * !B1 * D1 * !Y)	0.00262	0.00262	0.00256

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00188	-0.00189	-0.00186
	(A1 * B1 * D1 * !Y)	0.00298	0.00301	0.00297
	(A1 * B1 * !D1 * !Y)	-0.00173	-0.00174	-0.00177
	(A1 * B1 * !D1 * !Y)	0.00233	0.00234	0.00231
	(A1 * A2 * !B1 * D1 * !Y)	-0.00184	-0.00185	-0.00178
	(A1 * A2 * !B1 * D1 * !Y)	0.00308	0.00312	0.00311
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00076	-0.00078	-0.00162
	(A1 * A2 * !B1 * !D1 * !Y)	0.00319	0.00316	0.00256
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00099	-0.00103	-0.00113
	(A1 * !A2 * !B1 * D1 * !Y)	0.00550	0.00551	0.00537
	(!A1 * B1 * D1 * !Y)	-0.00187	-0.00187	-0.00186
	(!A1 * B1 * D1 * !Y)	0.00304	0.00303	0.00303
	(!A1 * B1 * !D1 * !Y)	-0.00152	-0.00155	-0.00175
	(!A1 * B1 * !D1 * !Y)	0.00258	0.00260	0.00239
	(!A1 * !B1 * D1 * !Y)	-0.00099	-0.00103	-0.00113
	(!A1 * !B1 * D1 * !Y)	0.00550	0.00551	0.00537

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00363	-0.00365	-0.00361
	(A1 * B1 * D1 * !Y)	0.00583	0.00588	0.00584
	(A1 * B1 * !D1 * !Y)	-0.00341	-0.00342	-0.00347
	(A1 * B1 * !D1 * !Y)	0.00461	0.00462	0.00454
	(A1 * A2 * !B1 * D1 * !Y)	-0.00356	-0.00355	-0.00345
	(A1 * A2 * !B1 * D1 * !Y)	0.00599	0.00597	0.00602
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00151	-0.00160	-0.00319
	(A1 * A2 * !B1 * !D1 * !Y)	0.00618	0.00623	0.00506
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00186	-0.00194	-0.00217
	(A1 * !A2 * !B1 * D1 * !Y)	0.01090	0.01092	0.01062
	(!A1 * B1 * D1 * !Y)	-0.00362	-0.00365	-0.00360
	(!A1 * B1 * D1 * !Y)	0.00594	0.00601	0.00593
	(!A1 * B1 * !D1 * !Y)	-0.00300	-0.00306	-0.00343
	(!A1 * B1 * !D1 * !Y)	0.00509	0.00514	0.00474
	(!A1 * !B1 * D1 * !Y)	-0.00185	-0.00193	-0.00216
	(!A1 * !B1 * D1 * !Y)	0.01090	0.01091	0.01062

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00200	0.00204	0.00201
	(A1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * !C1 * !Y)	0.00200	0.00202	0.00201
	(A1 * B1 * !C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * !C1 * !Y)	0.00202	0.00206	0.00205
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00076	-0.00077	-0.00073
	(!A1 * C1 * !Y)	0.00200	0.00204	0.00201
	(!A1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !C1 * !Y)	0.00201	0.00205	0.00203
	(!A1 * B1 * !C1 * !Y)	-0.00084	-0.00085	-0.00082

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00227	0.00230	0.00228
	(A1 * C1 * !Y)	-0.00187	-0.00189	-0.00187
	(A1 * B1 * !C1 * !Y)	0.00227	0.00231	0.00228
	(A1 * B1 * !C1 * !Y)	-0.00181	-0.00185	-0.00181
	(A1 * A2 * !B1 * !C1 * !Y)	0.00229	0.00232	0.00236
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00155	-0.00156	-0.00150
	(!A1 * C1 * !Y)	0.00228	0.00232	0.00228
	(!A1 * C1 * !Y)	-0.00187	-0.00190	-0.00186
	(!A1 * B1 * !C1 * !Y)	0.00229	0.00231	0.00232
	(!A1 * B1 * !C1 * !Y)	-0.00170	-0.00172	-0.00168
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00452	0.00459	0.00452
	(A1 * C1 * !Y)	-0.00368	-0.00372	-0.00366
	(A1 * B1 * !C1 * !Y)	0.00450	0.00452	0.00452
	(A1 * B1 * !C1 * !Y)	-0.00358	-0.00359	-0.00357
	(A1 * A2 * !B1 * !C1 * !Y)	0.00453	0.00461	0.00468
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00299	-0.00305	-0.00292
	(!A1 * C1 * !Y)	0.00453	0.00459	0.00453
	(!A1 * C1 * !Y)	-0.00367	-0.00372	-0.00365
	(!A1 * B1 * !C1 * !Y)	0.00453	0.00459	0.00460
	(!A1 * B1 * !C1 * !Y)	-0.00335	-0.00339	-0.00331

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00188	-0.00189	-0.00195
	(A1 * C1 * !Y)	0.00104	0.00104	0.00098
	(A1 * B1 * !C1 * !Y)	-0.00171	-0.00174	-0.00191
	(A1 * B1 * !C1 * !Y)	0.00113	0.00114	0.00101
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00111	-0.00114	-0.00156
	(A1 * A2 * !B1 * !C1 * !Y)	0.00164	0.00165	0.00135
	(!A1 * C1 * !Y)	-0.00185	-0.00188	-0.00194
	(!A1 * C1 * !Y)	0.00104	0.00105	0.00099
	(!A1 * B1 * !C1 * !Y)	-0.00156	-0.00158	-0.00178
	(!A1 * B1 * !C1 * !Y)	0.00129	0.00129	0.00114
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00200	-0.00202	-0.00221
	(A1 * C1 * !Y)	0.00214	0.00214	0.00197
	(A1 * B1 * !C1 * !Y)	-0.00167	-0.00171	-0.00211
	(A1 * B1 * !C1 * !Y)	0.00230	0.00231	0.00202
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00044	-0.00048	-0.00139
	(A1 * A2 * !B1 * !C1 * !Y)	0.00335	0.00336	0.00272
	(!A1 * C1 * !Y)	-0.00197	-0.00200	-0.00220
	(!A1 * C1 * !Y)	0.00214	0.00216	0.00198
	(!A1 * B1 * !C1 * !Y)	-0.00131	-0.00135	-0.00184
	(!A1 * B1 * !C1 * !Y)	0.00266	0.00268	0.00231
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00396	-0.00400	-0.00436
	(A1 * C1 * !Y)	0.00417	0.00417	0.00388
	(A1 * B1 * !C1 * !Y)	-0.00329	-0.00337	-0.00416
	(A1 * B1 * !C1 * !Y)	0.00453	0.00457	0.00401
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00091	-0.00100	-0.00273
	(A1 * A2 * !B1 * !C1 * !Y)	0.00656	0.00658	0.00538
	(!A1 * C1 * !Y)	-0.00389	-0.00396	-0.00433
	(!A1 * C1 * !Y)	0.00418	0.00422	0.00391
	(!A1 * B1 * !C1 * !Y)	-0.00262	-0.00270	-0.00364
	(!A1 * B1 * !C1 * !Y)	0.00523	0.00526	0.00455

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00268	0.00283	0.00269	0.00274	0.00270	1.31655
sky130_fd_sc_hs__a2111o_2	0.00299	0.00312	0.00294	0.00302	0.00314	2.49307
sky130_fd_sc_hs__a2111o_4	0.00507	0.00503	0.00519	0.00520	0.00513	4.76994

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111o_1	0.00000	25.47300	68.94590
sky130_fd_sc_hs__a2111o_2	0.00000	27.25070	105.40500
sky130_fd_sc_hs__a2111o_4	0.00000	62.86490	214.21500

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)	0.09076	0.60188	6.45276
	A2->X (RR)	0.09541	0.58352	6.29231
	B1->X (RR)	0.07012	0.54368	6.00080
	C1->X (RR)	0.06751	0.52786	5.86238
	D1->X (RR)	0.05990	0.50542	5.76795
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.09441	0.53234	6.35170
	A2->X (RR)	0.09898	0.50886	6.17633
	B1->X (RR)	0.07013	0.46838	5.90437
	C1->X (RR)	0.06663	0.45132	5.75986
	D1->X (RR)	0.06054	0.43321	5.67073
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.10159	0.47892	6.45061
	A2->X (RR)	0.10774	0.45785	6.25493
	B1->X (RR)	0.06950	0.39830	5.86405
	C1->X (RR)	0.06696	0.38380	5.70634
	D1->X (RR)	0.05879	0.36194	5.61428

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.24325	0.63898	5.48613
	A2->X (FF)	0.26181	0.66830	5.58320
	B1->X (FF)	0.24301	0.68110	5.81194
	C1->X (FF)	0.21697	0.69284	5.93239
	D1->X (FF)	0.17638	0.68623	5.98663
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.28671	0.64869	5.46509
	A2->X (FF)	0.30253	0.67696	5.57202
	B1->X (FF)	0.28400	0.68937	5.79363
	C1->X (FF)	0.25570	0.70394	5.93804
	D1->X (FF)	0.21615	0.70273	5.99931
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.30696	0.62314	5.58027
	A2->X (FF)	0.34531	0.67409	5.73593
	B1->X (FF)	0.32844	0.69084	6.01154
	C1->X (FF)	0.29819	0.71208	6.17971
	D1->X (FF)	0.23602	0.69749	6.18542

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01870	0.02162	0.09507
	A1	0.00974	0.01268	0.08634
	A2	0.01962	0.02204	0.09390
	A2	0.00973	0.01217	0.08440
	B1	0.01445	0.01836	0.09352
	B1	0.00692	0.01085	0.08652
	C1	0.01229	0.01642	0.08470
	C1	0.00593	0.01005	0.07830
	D1	0.01072	0.01520	0.08895
	D1	0.00548	0.00998	0.08380
sky130_fd_sc_hs__a2111o_2	A1	0.02364	0.02638	0.10459
	A1	0.01355	0.01634	0.09510
	A2	0.02487	0.02713	0.10388
	A2	0.01360	0.01588	0.09329
	B1	0.01861	0.02271	0.10212
	B1	0.01017	0.01432	0.09478
	C1	0.01591	0.02014	0.09189
	C1	0.00873	0.01304	0.08490
	D1	0.01400	0.01865	0.09457
	D1	0.00799	0.01269	0.08886

sky130_fd_sc_hs__a2111o_4	**A1**	0.04588	0.05072	0.19256
	A1	0.02828	0.03330	0.17590
	A2	0.04808	0.05159	0.18892
	A2	0.02823	0.03185	0.17072
	B1	0.03631	0.04412	0.19271
	B1	0.02110	0.02897	0.17730
	C1	0.03158	0.03927	0.16790
	C1	0.01885	0.02661	0.15572
	D1	0.02684	0.03576	0.17258
	D1	0.01669	0.02574	0.16333

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00710	0.00748	0.08005
	A1	0.01606	0.01644	0.08829
	A2	0.00799	0.00816	0.08033
	A2	0.01787	0.01805	0.08960
	B1	0.00671	0.00866	0.08259
	B1	0.01422	0.01618	0.08948
	C1	0.00670	0.00907	0.07514
	C1	0.01308	0.01544	0.08151
	D1	0.00674	0.01038	0.08231
	D1	0.01198	0.01563	0.08755

sky130_fd_sc_hs__a2111o_2	**A1**	0.01550	0.01231	0.08776
	A1	0.02559	0.02240	0.09694
	A2	0.01638	0.01296	0.08885
	A2	0.02764	0.02421	0.09927
	B1	0.01417	0.01335	0.08998
	B1	0.02258	0.02175	0.09753
	C1	0.01419	0.01393	0.08159
	C1	0.02135	0.02110	0.08875
	D1	0.01405	0.01496	0.08757
	D1	0.02005	0.02097	0.09357
sky130_fd_sc_hs__a2111o_4	**A1**	0.03225	0.02457	0.15936
	A1	0.04983	0.04215	0.17694
	A2	0.03604	0.02656	0.16478
	A2	0.05588	0.04645	0.17983
	B1	0.02963	0.02587	0.17186
	B1	0.04483	0.04098	0.18115
	C1	0.02970	0.02665	0.15093
	C1	0.04241	0.03935	0.15988
	D1	0.02955	0.02921	0.16090
	D1	0.03972	0.03933	0.16709

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)**	0.00179	0.00176	0.00175
	(A2 * B1 * D1 * X)	-0.00193	-0.00201	-0.00200
	(A2 * B1 * C1 * !D1 * X)	0.00189	0.00180	0.00177
	(A2 * B1 * C1 * !D1 * X)	-0.00184	-0.00198	-0.00197
	(A2 * B1 * !C1 * !D1 * X)	0.00239	0.00207	0.00205
	(A2 * B1 * !C1 * !D1 * X)	-0.00141	-0.00175	-0.00171
	(A2 * !B1 * C1 * D1 * X)	0.00189	0.00180	0.00177
	(A2 * !B1 * C1 * D1 * X)	-0.00180	-0.00196	-0.00196
	(A2 * !B1 * C1 * !D1 * X)	0.00242	0.00210	0.00207
	(A2 * !B1 * C1 * !D1 * X)	-0.00138	-0.00173	-0.00168
	(A2 * !B1 * !C1 * D1 * X)	0.00259	0.00226	0.00230
	(A2 * !B1 * !C1 * D1 * X)	-0.00124	-0.00162	-0.00147
	(!A2 * B1 * D1 * X)	0.00170	0.00172	0.00170
	(!A2 * B1 * D1 * X)	-0.00201	-0.00202	-0.00201
	(!A2 * B1 * C1 * !D1 * X)	0.00172	0.00174	0.00172
	(!A2 * B1 * C1 * !D1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * B1 * !C1 * !D1 * X)	0.00200	0.00201	0.00200
	(!A2 * B1 * !C1 * !D1 * X)	-0.00170	-0.00172	-0.00171
	(!A2 * !B1 * C1 * D1 * X)	0.00172	0.00174	0.00172
	(!A2 * !B1 * C1 * D1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * !B1 * C1 * !D1 * X)	0.00202	0.00204	0.00202
	(!A2 * !B1 * C1 * !D1 * X)	-0.00168	-0.00170	-0.00169
	(!A2 * !B1 * !C1 * D1 * X)	0.00226	0.00228	0.00226
	(!A2 * !B1 * !C1 * D1 * X)	-0.00144	-0.00146	-0.00145
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00118	0.00118	0.00116
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00184	-0.00185	-0.00189

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00183	0.00181	0.00180
	(A2 * B1 * D1 * X)	-0.00218	-0.00226	-0.00226
	(A2 * B1 * C1 * !D1 * X)	0.00192	0.00184	0.00182
	(A2 * B1 * C1 * !D1 * X)	-0.00210	-0.00224	-0.00223
	(A2 * B1 * !C1 * !D1 * X)	0.00243	0.00209	0.00204
	(A2 * B1 * !C1 * !D1 * X)	-0.00166	-0.00204	-0.00202
	(A2 * !B1 * C1 * D1 * X)	0.00194	0.00184	0.00182
	(A2 * !B1 * C1 * D1 * X)	-0.00203	-0.00221	-0.00222
	(A2 * !B1 * C1 * !D1 * X)	0.00244	0.00210	0.00205
	(A2 * !B1 * C1 * !D1 * X)	-0.00163	-0.00202	-0.00200
	(A2 * !B1 * !C1 * D1 * X)	0.00258	0.00223	0.00221
	(A2 * !B1 * !C1 * D1 * X)	-0.00150	-0.00192	-0.00185
	(!A2 * B1 * D1 * X)	0.00174	0.00176	0.00175
	(!A2 * B1 * D1 * X)	-0.00227	-0.00228	-0.00227
	(!A2 * B1 * C1 * !D1 * X)	0.00176	0.00178	0.00177
	(!A2 * B1 * C1 * !D1 * X)	-0.00225	-0.00227	-0.00225
	(!A2 * B1 * !C1 * !D1 * X)	0.00198	0.00200	0.00198
	(!A2 * B1 * !C1 * !D1 * X)	-0.00203	-0.00205	-0.00204
	(!A2 * !B1 * C1 * D1 * X)	0.00176	0.00178	0.00177
	(!A2 * !B1 * C1 * D1 * X)	-0.00225	-0.00226	-0.00225
	(!A2 * !B1 * C1 * !D1 * X)	0.00199	0.00201	0.00200
	(!A2 * !B1 * C1 * !D1 * X)	-0.00202	-0.00204	-0.00202
	(!A2 * !B1 * !C1 * D1 * X)	0.00215	0.00217	0.00216
	(!A2 * !B1 * !C1 * D1 * X)	-0.00186	-0.00188	-0.00186
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00148	0.00149	0.00146
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00172	-0.00174	-0.00178

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00309	0.00306	0.00303
	(A2 * B1 * D1 * X)	-0.00392	-0.00405	-0.00404
	(A2 * B1 * C1 * !D1 * X)	0.00327	0.00312	0.00309
	(A2 * B1 * C1 * !D1 * X)	-0.00374	-0.00400	-0.00399
	(A2 * B1 * !C1 * !D1 * X)	0.00440	0.00371	0.00364
	(A2 * B1 * !C1 * !D1 * X)	-0.00276	-0.00352	-0.00344
	(A2 * !B1 * C1 * D1 * X)	0.00329	0.00313	0.00308
	(A2 * !B1 * C1 * D1 * X)	-0.00363	-0.00395	-0.00396
	(A2 * !B1 * C1 * !D1 * X)	0.00444	0.00375	0.00368
	(A2 * !B1 * C1 * !D1 * X)	-0.00269	-0.00348	-0.00340
	(A2 * !B1 * !C1 * D1 * X)	0.00480	0.00408	0.00415
	(A2 * !B1 * !C1 * D1 * X)	-0.00241	-0.00323	-0.00296
	(!A2 * B1 * D1 * X)	0.00292	0.00296	0.00293
	(!A2 * B1 * D1 * X)	-0.00405	-0.00409	-0.00406
	(!A2 * B1 * C1 * !D1 * X)	0.00296	0.00300	0.00297
	(!A2 * B1 * C1 * !D1 * X)	-0.00401	-0.00405	-0.00402
	(!A2 * B1 * !C1 * !D1 * X)	0.00352	0.00355	0.00353
	(!A2 * B1 * !C1 * !D1 * X)	-0.00345	-0.00349	-0.00346
	(!A2 * !B1 * C1 * D1 * X)	0.00297	0.00300	0.00298
	(!A2 * !B1 * C1 * D1 * X)	-0.00401	-0.00404	-0.00402
	(!A2 * !B1 * C1 * !D1 * X)	0.00357	0.00360	0.00358
	(!A2 * !B1 * C1 * !D1 * X)	-0.00341	-0.00344	-0.00342
	(!A2 * !B1 * !C1 * D1 * X)	0.00404	0.00408	0.00405
	(!A2 * !B1 * !C1 * D1 * X)	-0.00293	-0.00297	-0.00294
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00285	0.00286	0.00278
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00280	-0.00285	-0.00295

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)**	-0.00166	-0.00167	-0.00166
	(A2 * B1 * D1 * X)	0.00208	0.00210	0.00208
	(A2 * B1 * C1 * !D1 * X)	-0.00163	-0.00164	-0.00163
	(A2 * B1 * C1 * !D1 * X)	0.00210	0.00213	0.00211
	(A2 * B1 * !C1 * !D1 * X)	-0.00137	-0.00138	-0.00140
	(A2 * B1 * !C1 * !D1 * X)	0.00241	0.00241	0.00237
	(A2 * !B1 * C1 * D1 * X)	-0.00162	-0.00163	-0.00162
	(A2 * !B1 * C1 * D1 * X)	0.00207	0.00210	0.00208
	(A2 * !B1 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00136
	(A2 * !B1 * C1 * !D1 * X)	0.00242	0.00244	0.00240
	(A2 * !B1 * !C1 * D1 * X)	-0.00110	-0.00112	-0.00116
	(A2 * !B1 * !C1 * D1 * X)	0.00268	0.00269	0.00263
	(!A2 * B1 * D1 * X)	-0.00162	-0.00164	-0.00163
	(!A2 * B1 * D1 * X)	0.00208	0.00210	0.00209
	(!A2 * B1 * C1 * !D1 * X)	-0.00160	-0.00162	-0.00161
	(!A2 * B1 * C1 * !D1 * X)	0.00210	0.00212	0.00211
	(!A2 * B1 * !C1 * !D1 * X)	-0.00132	-0.00134	-0.00133
	(!A2 * B1 * !C1 * !D1 * X)	0.00238	0.00240	0.00239
	(!A2 * !B1 * C1 * D1 * X)	-0.00160	-0.00162	-0.00161
	(!A2 * !B1 * C1 * D1 * X)	0.00211	0.00212	0.00211
	(!A2 * !B1 * C1 * !D1 * X)	-0.00130	-0.00132	-0.00131
	(!A2 * !B1 * C1 * !D1 * X)	0.00240	0.00242	0.00241
	(!A2 * !B1 * !C1 * D1 * X)	-0.00106	-0.00108	-0.00107
	(!A2 * !B1 * !C1 * D1 * X)	0.00264	0.00266	0.00265
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00017	-0.00018	-0.00016
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00286	0.00291	0.00287

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00169	-0.00170	-0.00169
	(A2 * B1 * D1 * X)	0.00235	0.00236	0.00236
	(A2 * B1 * C1 * !D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * B1 * C1 * !D1 * X)	0.00237	0.00239	0.00238
	(A2 * B1 * !C1 * !D1 * X)	-0.00145	-0.00146	-0.00147
	(A2 * B1 * !C1 * !D1 * X)	0.00262	0.00263	0.00260
	(A2 * !B1 * C1 * D1 * X)	-0.00166	-0.00167	-0.00166
	(A2 * !B1 * C1 * D1 * X)	0.00233	0.00235	0.00234
	(A2 * !B1 * C1 * !D1 * X)	-0.00143	-0.00144	-0.00145
	(A2 * !B1 * C1 * !D1 * X)	0.00261	0.00263	0.00261
	(A2 * !B1 * !C1 * D1 * X)	-0.00129	-0.00129	-0.00131
	(A2 * !B1 * !C1 * D1 * X)	0.00277	0.00277	0.00276
	(!A2 * B1 * D1 * X)	-0.00165	-0.00167	-0.00166
	(!A2 * B1 * D1 * X)	0.00237	0.00240	0.00237
	(!A2 * B1 * C1 * !D1 * X)	-0.00163	-0.00165	-0.00164
	(!A2 * B1 * C1 * !D1 * X)	0.00238	0.00242	0.00239
	(!A2 * B1 * !C1 * !D1 * X)	-0.00141	-0.00144	-0.00143
	(!A2 * B1 * !C1 * !D1 * X)	0.00259	0.00262	0.00261
	(!A2 * !B1 * C1 * D1 * X)	-0.00163	-0.00165	-0.00164
	(!A2 * !B1 * C1 * D1 * X)	0.00238	0.00242	0.00239
	(!A2 * !B1 * C1 * !D1 * X)	-0.00140	-0.00142	-0.00141
	(!A2 * !B1 * C1 * !D1 * X)	0.00260	0.00263	0.00262
	(!A2 * !B1 * !C1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * D1 * X)	0.00279	0.00279	0.00278
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00037	0.00036	0.00037
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00360	0.00364	0.00360

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00280	-0.00282	-0.00281
	(A2 * B1 * D1 * X)	0.00424	0.00429	0.00425
	(A2 * B1 * C1 * !D1 * X)	-0.00276	-0.00278	-0.00276
	(A2 * B1 * C1 * !D1 * X)	0.00429	0.00434	0.00430
	(A2 * B1 * !C1 * !D1 * X)	-0.00220	-0.00224	-0.00228
	(A2 * B1 * !C1 * !D1 * X)	0.00489	0.00494	0.00484
	(A2 * !B1 * C1 * D1 * X)	-0.00274	-0.00275	-0.00274
	(A2 * !B1 * C1 * D1 * X)	0.00422	0.00425	0.00424
	(A2 * !B1 * C1 * !D1 * X)	-0.00215	-0.00217	-0.00219
	(A2 * !B1 * C1 * !D1 * X)	0.00494	0.00496	0.00490
	(A2 * !B1 * !C1 * D1 * X)	-0.00170	-0.00172	-0.00180
	(A2 * !B1 * !C1 * D1 * X)	0.00545	0.00546	0.00535
	(!A2 * B1 * D1 * X)	-0.00271	-0.00276	-0.00275
	(!A2 * B1 * D1 * X)	0.00426	0.00429	0.00428
	(!A2 * B1 * C1 * !D1 * X)	-0.00267	-0.00272	-0.00271
	(!A2 * B1 * C1 * !D1 * X)	0.00430	0.00434	0.00432
	(!A2 * B1 * !C1 * !D1 * X)	-0.00213	-0.00216	-0.00216
	(!A2 * B1 * !C1 * !D1 * X)	0.00489	0.00489	0.00488
	(!A2 * !B1 * C1 * D1 * X)	-0.00267	-0.00272	-0.00271
	(!A2 * !B1 * C1 * D1 * X)	0.00430	0.00435	0.00432
	(!A2 * !B1 * C1 * !D1 * X)	-0.00208	-0.00212	-0.00211
	(!A2 * !B1 * C1 * !D1 * X)	0.00493	0.00494	0.00492
	(!A2 * !B1 * !C1 * D1 * X)	-0.00161	-0.00164	-0.00164
	(!A2 * !B1 * !C1 * D1 * X)	0.00541	0.00542	0.00540
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00093	0.00092	0.00094
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00665	0.00671	0.00665

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)**	0.00164	0.00161	0.00160
	(A1 * B1 * D1 * X)	-0.00199	-0.00208	-0.00207
	(A1 * B1 * C1 * !D1 * X)	0.00175	0.00165	0.00163
	(A1 * B1 * C1 * !D1 * X)	-0.00190	-0.00205	-0.00205
	(A1 * B1 * !C1 * !D1 * X)	0.00228	0.00192	0.00190
	(A1 * B1 * !C1 * !D1 * X)	-0.00146	-0.00182	-0.00178
	(A1 * !B1 * C1 * D1 * X)	0.00176	0.00165	0.00162
	(A1 * !B1 * C1 * D1 * X)	-0.00185	-0.00203	-0.00204
	(A1 * !B1 * C1 * !D1 * X)	0.00230	0.00196	0.00192
	(A1 * !B1 * C1 * !D1 * X)	-0.00141	-0.00180	-0.00175
	(A1 * !B1 * !C1 * D1 * X)	0.00249	0.00212	0.00216
	(A1 * !B1 * !C1 * D1 * X)	-0.00126	-0.00168	-0.00153
	(!A1 * B1 * X)	0.00155	0.00158	0.00156
	(!A1 * B1 * X)	-0.00208	-0.00210	-0.00209
	(!A1 * !B1 * C1 * X)	0.00157	0.00160	0.00158
	(!A1 * !B1 * C1 * X)	-0.00206	-0.00208	-0.00207
	(!A1 * !B1 * !C1 * D1 * X)	0.00212	0.00214	0.00212
	(!A1 * !B1 * !C1 * D1 * X)	-0.00152	-0.00154	-0.00152
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00180	-0.00182	-0.00180

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00184	0.00182	0.00181
	(A1 * B1 * D1 * X)	-0.00218	-0.00227	-0.00226
	(A1 * B1 * C1 * !D1 * X)	0.00195	0.00185	0.00183
	(A1 * B1 * C1 * !D1 * X)	-0.00211	-0.00225	-0.00224
	(A1 * B1 * !C1 * !D1 * X)	0.00247	0.00210	0.00205
	(A1 * B1 * !C1 * !D1 * X)	-0.00166	-0.00204	-0.00203
	(A1 * !B1 * C1 * D1 * X)	0.00195	0.00186	0.00183
	(A1 * !B1 * C1 * D1 * X)	-0.00202	-0.00222	-0.00223
	(A1 * !B1 * C1 * !D1 * X)	0.00247	0.00212	0.00206
	(A1 * !B1 * C1 * !D1 * X)	-0.00160	-0.00202	-0.00201
	(A1 * !B1 * !C1 * D1 * X)	0.00263	0.00225	0.00222
	(A1 * !B1 * !C1 * D1 * X)	-0.00147	-0.00192	-0.00186
	(!A1 * B1 * X)	0.00175	0.00178	0.00176
	(!A1 * B1 * X)	-0.00227	-0.00229	-0.00228
	(!A1 * !B1 * C1 * X)	0.00177	0.00180	0.00178
	(!A1 * !B1 * C1 * X)	-0.00225	-0.00228	-0.00226
	(!A1 * !B1 * !C1 * D1 * X)	0.00216	0.00219	0.00217
	(!A1 * !B1 * !C1 * D1 * X)	-0.00186	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00251	0.00253	0.00252
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00153	-0.00155	-0.00153

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00316	0.00314	0.00311
	(A1 * B1 * D1 * X)	-0.00393	-0.00408	-0.00406
	(A1 * B1 * C1 * !D1 * X)	0.00335	0.00320	0.00316
	(A1 * B1 * C1 * !D1 * X)	-0.00376	-0.00402	-0.00401
	(A1 * B1 * !C1 * !D1 * X)	0.00448	0.00379	0.00372
	(A1 * B1 * !C1 * !D1 * X)	-0.00278	-0.00354	-0.00347
	(A1 * !B1 * C1 * D1 * X)	0.00337	0.00321	0.00316
	(A1 * !B1 * C1 * D1 * X)	-0.00365	-0.00397	-0.00398
	(A1 * !B1 * C1 * !D1 * X)	0.00452	0.00384	0.00375
	(A1 * !B1 * C1 * !D1 * X)	-0.00273	-0.00350	-0.00342
	(A1 * !B1 * !C1 * D1 * X)	0.00487	0.00417	0.00422
	(A1 * !B1 * !C1 * D1 * X)	-0.00244	-0.00325	-0.00299
	(!A1 * B1 * X)	0.00301	0.00304	0.00300
	(!A1 * B1 * X)	-0.00409	-0.00411	-0.00409
	(!A1 * !B1 * C1 * X)	0.00305	0.00306	0.00305
	(!A1 * !B1 * C1 * X)	-0.00405	-0.00406	-0.00404
	(!A1 * !B1 * !C1 * D1 * X)	0.00413	0.00414	0.00413
	(!A1 * !B1 * !C1 * D1 * X)	-0.00297	-0.00297	-0.00297
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00478	0.00483	0.00480
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00232	-0.00235	-0.00232

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)**	-0.00151	-0.00152	-0.00151
	(A1 * B1 * D1 * X)	0.00215	0.00218	0.00216
	(A1 * B1 * C1 * !D1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * B1 * C1 * !D1 * X)	0.00218	0.00221	0.00219
	(A1 * B1 * !C1 * !D1 * X)	-0.00122	-0.00123	-0.00126
	(A1 * B1 * !C1 * !D1 * X)	0.00248	0.00248	0.00244
	(A1 * !B1 * C1 * D1 * X)	-0.00148	-0.00148	-0.00147
	(A1 * !B1 * C1 * D1 * X)	0.00216	0.00216	0.00216
	(A1 * !B1 * C1 * !D1 * X)	-0.00119	-0.00121	-0.00122
	(A1 * !B1 * C1 * !D1 * X)	0.00249	0.00252	0.00248
	(A1 * !B1 * !C1 * D1 * X)	-0.00095	-0.00097	-0.00101
	(A1 * !B1 * !C1 * D1 * X)	0.00276	0.00277	0.00271
	(!A1 * B1 * X)	-0.00147	-0.00150	-0.00148
	(!A1 * B1 * X)	0.00216	0.00220	0.00217
	(!A1 * !B1 * C1 * X)	-0.00145	-0.00147	-0.00146
	(!A1 * !B1 * C1 * X)	0.00218	0.00220	0.00219
	(!A1 * !B1 * !C1 * D1 * X)	-0.00091	-0.00094	-0.00092
	(!A1 * !B1 * !C1 * D1 * X)	0.00272	0.00275	0.00273
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00068	-0.00080	-0.00083
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00298	0.00288	0.00282

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00170	-0.00171	-0.00170
	(A1 * B1 * D1 * X)	0.00236	0.00238	0.00237
	(A1 * B1 * C1 * !D1 * X)	-0.00167	-0.00169	-0.00168
	(A1 * B1 * C1 * !D1 * X)	0.00238	0.00240	0.00239
	(A1 * B1 * !C1 * !D1 * X)	-0.00146	-0.00147	-0.00148
	(A1 * B1 * !C1 * !D1 * X)	0.00263	0.00264	0.00261
	(A1 * !B1 * C1 * D1 * X)	-0.00167	-0.00167	-0.00167
	(A1 * !B1 * C1 * D1 * X)	0.00234	0.00235	0.00235
	(A1 * !B1 * C1 * !D1 * X)	-0.00144	-0.00145	-0.00146
	(A1 * !B1 * C1 * !D1 * X)	0.00262	0.00264	0.00262
	(A1 * !B1 * !C1 * D1 * X)	-0.00129	-0.00131	-0.00132
	(A1 * !B1 * !C1 * D1 * X)	0.00278	0.00281	0.00276
	(!A1 * B1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * B1 * X)	0.00237	0.00241	0.00238
	(!A1 * !B1 * C1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * !B1 * C1 * X)	0.00239	0.00243	0.00240
	(!A1 * !B1 * !C1 * D1 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * D1 * X)	0.00278	0.00280	0.00279
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00050	-0.00064	-0.00067
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00356	0.00344	0.00338

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00288	-0.00290	-0.00288
	(A1 * B1 * D1 * X)	0.00426	0.00431	0.00428
	(A1 * B1 * C1 * !D1 * X)	-0.00283	-0.00285	-0.00284
	(A1 * B1 * C1 * !D1 * X)	0.00431	0.00436	0.00433
	(A1 * B1 * !C1 * !D1 * X)	-0.00229	-0.00231	-0.00235
	(A1 * B1 * !C1 * !D1 * X)	0.00493	0.00496	0.00487
	(A1 * !B1 * C1 * D1 * X)	-0.00282	-0.00283	-0.00281
	(A1 * !B1 * C1 * D1 * X)	0.00425	0.00427	0.00426
	(A1 * !B1 * C1 * !D1 * X)	-0.00222	-0.00224	-0.00227
	(A1 * !B1 * C1 * !D1 * X)	0.00496	0.00499	0.00493
	(A1 * !B1 * !C1 * D1 * X)	-0.00177	-0.00180	-0.00188
	(A1 * !B1 * !C1 * D1 * X)	0.00547	0.00548	0.00537
	(!A1 * B1 * X)	-0.00279	-0.00283	-0.00282
	(!A1 * B1 * X)	0.00429	0.00432	0.00430
	(!A1 * !B1 * C1 * X)	-0.00275	-0.00279	-0.00278
	(!A1 * !B1 * C1 * X)	0.00433	0.00437	0.00435
	(!A1 * !B1 * !C1 * D1 * X)	-0.00167	-0.00171	-0.00170
	(!A1 * !B1 * !C1 * D1 * X)	0.00541	0.00544	0.00542
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00065	-0.00098	-0.00104
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00647	0.00620	0.00608

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)**	0.00179	0.00175	0.00166
	(A1 * A2 * C1 * D1 * X)	-0.00135	-0.00139	-0.00139
	(A1 * A2 * C1 * !D1 * X)	0.00188	0.00184	0.00172
	(A1 * A2 * C1 * !D1 * X)	-0.00118	-0.00125	-0.00129
	(A1 * A2 * !C1 * D1 * X)	0.00193	0.00201	0.00189
	(A1 * A2 * !C1 * D1 * X)	-0.00118	-0.00110	-0.00112
	(A1 * A2 * !C1 * !D1 * X)	0.00194	0.00194	0.00193
	(A1 * A2 * !C1 * !D1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * C1 * D1 * X)	0.00191	0.00168	0.00166
	(A1 * !A2 * C1 * D1 * X)	-0.00168	-0.00192	-0.00193
	(A1 * !A2 * C1 * !D1 * X)	0.00229	0.00189	0.00195
	(A1 * !A2 * C1 * !D1 * X)	-0.00134	-0.00176	-0.00164
	(A1 * !A2 * !C1 * D1 * X)	0.00255	0.00205	0.00219
	(A1 * !A2 * !C1 * D1 * X)	-0.00113	-0.00164	-0.00142
	(!A1 * C1 * D1 * X)	0.00193	0.00169	0.00166
	(!A1 * C1 * D1 * X)	-0.00168	-0.00192	-0.00193
	(!A1 * C1 * !D1 * X)	0.00230	0.00189	0.00195
	(!A1 * C1 * !D1 * X)	-0.00133	-0.00176	-0.00164
	(!A1 * !C1 * D1 * X)	0.00256	0.00205	0.00219
	(!A1 * !C1 * D1 * X)	-0.00111	-0.00164	-0.00142

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00191	0.00188	0.00178
	(A1 * A2 * C1 * D1 * X)	-0.00153	-0.00156	-0.00157
	(A1 * A2 * C1 * !D1 * X)	0.00203	0.00198	0.00183
	(A1 * A2 * C1 * !D1 * X)	-0.00137	-0.00142	-0.00147
	(A1 * A2 * !C1 * D1 * X)	0.00206	0.00217	0.00200
	(A1 * A2 * !C1 * D1 * X)	-0.00132	-0.00125	-0.00129
	(A1 * A2 * !C1 * !D1 * X)	0.00205	0.00206	0.00202
	(A1 * A2 * !C1 * !D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * C1 * D1 * X)	0.00207	0.00182	0.00178
	(A1 * !A2 * C1 * D1 * X)	-0.00190	-0.00216	-0.00216
	(A1 * !A2 * C1 * !D1 * X)	0.00246	0.00201	0.00200
	(A1 * !A2 * C1 * !D1 * X)	-0.00154	-0.00200	-0.00194
	(A1 * !A2 * !C1 * D1 * X)	0.00269	0.00215	0.00216
	(A1 * !A2 * !C1 * D1 * X)	-0.00134	-0.00189	-0.00179
	(!A1 * C1 * D1 * X)	0.00207	0.00182	0.00178
	(!A1 * C1 * D1 * X)	-0.00189	-0.00216	-0.00216
	(!A1 * C1 * !D1 * X)	0.00247	0.00201	0.00200
	(!A1 * C1 * !D1 * X)	-0.00153	-0.00200	-0.00194
	(!A1 * !C1 * D1 * X)	0.00270	0.00216	0.00216
	(!A1 * !C1 * D1 * X)	-0.00133	-0.00189	-0.00179

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00357	0.00355	0.00336
	(A1 * A2 * C1 * D1 * X)	-0.00268	-0.00279	-0.00279
	(A1 * A2 * C1 * !D1 * X)	0.00384	0.00374	0.00345
	(A1 * A2 * C1 * !D1 * X)	-0.00241	-0.00252	-0.00262
	(A1 * A2 * !C1 * D1 * X)	0.00384	0.00407	0.00378
	(A1 * A2 * !C1 * D1 * X)	-0.00244	-0.00223	-0.00233
	(A1 * A2 * !C1 * !D1 * X)	0.00402	0.00405	0.00395
	(A1 * A2 * !C1 * !D1 * X)	-0.00126	-0.00130	-0.00131
	(A1 * !A2 * C1 * D1 * X)	0.00384	0.00332	0.00329
	(A1 * !A2 * C1 * D1 * X)	-0.00345	-0.00393	-0.00396
	(A1 * !A2 * C1 * !D1 * X)	0.00475	0.00384	0.00388
	(A1 * !A2 * C1 * !D1 * X)	-0.00266	-0.00358	-0.00339
	(A1 * !A2 * !C1 * D1 * X)	0.00516	0.00420	0.00435
	(A1 * !A2 * !C1 * D1 * X)	-0.00224	-0.00329	-0.00295
	(!A1 * C1 * D1 * X)	0.00383	0.00332	0.00329
	(!A1 * C1 * D1 * X)	-0.00346	-0.00392	-0.00396
	(!A1 * C1 * !D1 * X)	0.00474	0.00384	0.00388
	(!A1 * C1 * !D1 * X)	-0.00267	-0.00358	-0.00339
	(!A1 * !C1 * D1 * X)	0.00514	0.00420	0.00435
	(!A1 * !C1 * D1 * X)	-0.00226	-0.00330	-0.00295

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)**	-0.00155	-0.00156	-0.00155
	(A1 * A2 * C1 * D1 * X)	0.00147	0.00148	0.00145
	(A1 * A2 * C1 * !D1 * X)	-0.00152	-0.00153	-0.00151
	(A1 * A2 * C1 * !D1 * X)	0.00148	0.00148	0.00146
	(A1 * A2 * !C1 * D1 * X)	-0.00156	-0.00158	-0.00154
	(A1 * A2 * !C1 * D1 * X)	0.00137	0.00139	0.00137
	(A1 * A2 * !C1 * !D1 * X)	-0.00100	-0.00102	-0.00138
	(A1 * A2 * !C1 * !D1 * X)	0.00162	0.00161	0.00130
	(A1 * !A2 * C1 * D1 * X)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * C1 * D1 * X)	0.00207	0.00209	0.00208
	(A1 * !A2 * C1 * !D1 * X)	-0.00125	-0.00127	-0.00131
	(A1 * !A2 * C1 * !D1 * X)	0.00236	0.00237	0.00231
	(A1 * !A2 * !C1 * D1 * X)	-0.00099	-0.00101	-0.00108
	(A1 * !A2 * !C1 * D1 * X)	0.00265	0.00265	0.00257
	(!A1 * C1 * D1 * X)	-0.00150	-0.00151	-0.00150
	(!A1 * C1 * D1 * X)	0.00207	0.00210	0.00208
	(!A1 * C1 * !D1 * X)	-0.00125	-0.00127	-0.00131
	(!A1 * C1 * !D1 * X)	0.00236	0.00237	0.00231
	(!A1 * !C1 * D1 * X)	-0.00099	-0.00101	-0.00108
	(!A1 * !C1 * D1 * X)	0.00265	0.00265	0.00257

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00164	-0.00166	-0.00164
	(A1 * A2 * C1 * D1 * X)	0.00164	0.00166	0.00163
	(A1 * A2 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * C1 * !D1 * X)	0.00164	0.00165	0.00163
	(A1 * A2 * !C1 * D1 * X)	-0.00165	-0.00167	-0.00164
	(A1 * A2 * !C1 * D1 * X)	0.00152	0.00154	0.00153
	(A1 * A2 * !C1 * !D1 * X)	-0.00120	-0.00122	-0.00155
	(A1 * A2 * !C1 * !D1 * X)	0.00160	0.00160	0.00133
	(A1 * !A2 * C1 * D1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * C1 * D1 * X)	0.00233	0.00234	0.00233
	(A1 * !A2 * C1 * !D1 * X)	-0.00141	-0.00142	-0.00145
	(A1 * !A2 * C1 * !D1 * X)	0.00255	0.00256	0.00252
	(A1 * !A2 * !C1 * D1 * X)	-0.00124	-0.00126	-0.00128
	(A1 * !A2 * !C1 * D1 * X)	0.00273	0.00274	0.00268
	(!A1 * C1 * D1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * C1 * D1 * X)	0.00233	0.00233	0.00233
	(!A1 * C1 * !D1 * X)	-0.00141	-0.00142	-0.00145
	(!A1 * C1 * !D1 * X)	0.00255	0.00255	0.00252
	(!A1 * !C1 * D1 * X)	-0.00124	-0.00126	-0.00128
	(!A1 * !C1 * D1 * X)	0.00273	0.00274	0.00268

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00303	-0.00303	-0.00302
	(A1 * A2 * C1 * D1 * X)	0.00304	0.00304	0.00301
	(A1 * A2 * C1 * !D1 * X)	-0.00298	-0.00298	-0.00295
	(A1 * A2 * C1 * !D1 * X)	0.00304	0.00304	0.00301
	(A1 * A2 * !C1 * D1 * X)	-0.00305	-0.00305	-0.00302
	(A1 * A2 * !C1 * D1 * X)	0.00288	0.00289	0.00289
	(A1 * A2 * !C1 * !D1 * X)	-0.00205	-0.00210	-0.00276
	(A1 * A2 * !C1 * !D1 * X)	0.00327	0.00326	0.00266
	(A1 * !A2 * C1 * D1 * X)	-0.00292	-0.00294	-0.00293
	(A1 * !A2 * C1 * D1 * X)	0.00430	0.00435	0.00432
	(A1 * !A2 * C1 * !D1 * X)	-0.00241	-0.00244	-0.00251
	(A1 * !A2 * C1 * !D1 * X)	0.00491	0.00492	0.00481
	(A1 * !A2 * !C1 * D1 * X)	-0.00189	-0.00193	-0.00205
	(A1 * !A2 * !C1 * D1 * X)	0.00543	0.00544	0.00530
	(!A1 * C1 * D1 * X)	-0.00292	-0.00295	-0.00293
	(!A1 * C1 * D1 * X)	0.00430	0.00435	0.00432
	(!A1 * C1 * !D1 * X)	-0.00239	-0.00244	-0.00251
	(!A1 * C1 * !D1 * X)	0.00489	0.00492	0.00481
	(!A1 * !C1 * D1 * X)	-0.00189	-0.00193	-0.00205
	(!A1 * !C1 * D1 * X)	0.00543	0.00544	0.00530

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)**	0.00183	0.00185	0.00177
	(A1 * B1 * D1 * X)	-0.00111	-0.00112	-0.00115
	(A1 * B1 * !D1 * X)	0.00172	0.00172	0.00169
	(A1 * B1 * !D1 * X)	-0.00084	-0.00085	-0.00086
	(A1 * A2 * !B1 * D1 * X)	0.00212	0.00196	0.00198
	(A1 * A2 * !B1 * D1 * X)	-0.00097	-0.00113	-0.00106
	(A1 * A2 * !B1 * !D1 * X)	0.00187	0.00188	0.00186
	(A1 * A2 * !B1 * !D1 * X)	-0.00061	-0.00061	-0.00060
	(A1 * !A2 * !B1 * D1 * X)	0.00238	0.00192	0.00219
	(A1 * !A2 * !B1 * D1 * X)	-0.00123	-0.00171	-0.00140
	(!A1 * B1 * D1 * X)	0.00180	0.00182	0.00175
	(!A1 * B1 * D1 * X)	-0.00113	-0.00113	-0.00116
	(!A1 * B1 * !D1 * X)	0.00182	0.00183	0.00181
	(!A1 * B1 * !D1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * !B1 * D1 * X)	0.00238	0.00193	0.00219
	(!A1 * !B1 * D1 * X)	-0.00123	-0.00170	-0.00140

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00197	0.00198	0.00188
	(A1 * B1 * D1 * X)	-0.00134	-0.00135	-0.00139
	(A1 * B1 * !D1 * X)	0.00182	0.00185	0.00179
	(A1 * B1 * !D1 * X)	-0.00100	-0.00102	-0.00102
	(A1 * A2 * !B1 * D1 * X)	0.00224	0.00207	0.00206
	(A1 * A2 * !B1 * D1 * X)	-0.00117	-0.00135	-0.00129
	(A1 * A2 * !B1 * !D1 * X)	0.00196	0.00200	0.00195
	(A1 * A2 * !B1 * !D1 * X)	-0.00077	-0.00080	-0.00078
	(A1 * !A2 * !B1 * D1 * X)	0.00251	0.00198	0.00215
	(A1 * !A2 * !B1 * D1 * X)	-0.00153	-0.00205	-0.00185
	(!A1 * B1 * D1 * X)	0.00193	0.00194	0.00184
	(!A1 * B1 * D1 * X)	-0.00136	-0.00138	-0.00141
	(!A1 * B1 * !D1 * X)	0.00192	0.00192	0.00189
	(!A1 * B1 * !D1 * X)	-0.00095	-0.00095	-0.00096
	(!A1 * !B1 * D1 * X)	0.00251	0.00199	0.00215
	(!A1 * !B1 * D1 * X)	-0.00153	-0.00204	-0.00185

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00362	0.00370	0.00348
	(A1 * B1 * D1 * X)	-0.00246	-0.00242	-0.00253
	(A1 * B1 * !D1 * X)	0.00337	0.00341	0.00328
	(A1 * B1 * !D1 * X)	-0.00179	-0.00182	-0.00185
	(A1 * A2 * !B1 * D1 * X)	0.00426	0.00388	0.00382
	(A1 * A2 * !B1 * D1 * X)	-0.00203	-0.00235	-0.00231
	(A1 * A2 * !B1 * !D1 * X)	0.00378	0.00378	0.00374
	(A1 * A2 * !B1 * !D1 * X)	-0.00123	-0.00121	-0.00123
	(A1 * !A2 * !B1 * D1 * X)	0.00499	0.00382	0.00426
	(A1 * !A2 * !B1 * D1 * X)	-0.00240	-0.00352	-0.00302
	(!A1 * B1 * D1 * X)	0.00357	0.00365	0.00344
	(!A1 * B1 * D1 * X)	-0.00250	-0.00246	-0.00255
	(!A1 * B1 * !D1 * X)	0.00364	0.00369	0.00357
	(!A1 * B1 * !D1 * X)	-0.00157	-0.00160	-0.00159
	(!A1 * !B1 * D1 * X)	0.00499	0.00381	0.00426
	(!A1 * !B1 * D1 * X)	-0.00240	-0.00352	-0.00302

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)**	-0.00157	-0.00157	-0.00156
	(A1 * B1 * D1 * X)	0.00127	0.00128	0.00127
	(A1 * B1 * !D1 * X)	-0.00150	-0.00151	-0.00156
	(A1 * B1 * !D1 * X)	0.00106	0.00106	0.00101
	(A1 * A2 * !B1 * D1 * X)	-0.00157	-0.00158	-0.00154
	(A1 * A2 * !B1 * D1 * X)	0.00134	0.00136	0.00136
	(A1 * A2 * !B1 * !D1 * X)	-0.00087	-0.00089	-0.00131
	(A1 * A2 * !B1 * !D1 * X)	0.00162	0.00162	0.00130
	(A1 * !A2 * !B1 * D1 * X)	-0.00100	-0.00103	-0.00112
	(A1 * !A2 * !B1 * D1 * X)	0.00259	0.00258	0.00249
	(!A1 * B1 * D1 * X)	-0.00157	-0.00157	-0.00156
	(!A1 * B1 * D1 * X)	0.00131	0.00132	0.00130
	(!A1 * B1 * !D1 * X)	-0.00133	-0.00135	-0.00152
	(!A1 * B1 * !D1 * X)	0.00127	0.00126	0.00110
	(!A1 * !B1 * D1 * X)	-0.00100	-0.00103	-0.00112
	(!A1 * !B1 * D1 * X)	0.00259	0.00258	0.00249

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00164	-0.00165	-0.00164
	(A1 * B1 * D1 * X)	0.00151	0.00153	0.00152
	(A1 * B1 * !D1 * X)	-0.00159	-0.00160	-0.00163
	(A1 * B1 * !D1 * X)	0.00123	0.00124	0.00119
	(A1 * A2 * !B1 * D1 * X)	-0.00164	-0.00165	-0.00161
	(A1 * A2 * !B1 * D1 * X)	0.00157	0.00158	0.00158
	(A1 * A2 * !B1 * !D1 * X)	-0.00106	-0.00108	-0.00151
	(A1 * A2 * !B1 * !D1 * X)	0.00168	0.00168	0.00136
	(A1 * !A2 * !B1 * D1 * X)	-0.00123	-0.00124	-0.00131
	(A1 * !A2 * !B1 * D1 * X)	0.00278	0.00276	0.00271
	(!A1 * B1 * D1 * X)	-0.00164	-0.00165	-0.00163
	(!A1 * B1 * D1 * X)	0.00155	0.00158	0.00155
	(!A1 * B1 * !D1 * X)	-0.00147	-0.00149	-0.00162
	(!A1 * B1 * !D1 * X)	0.00140	0.00140	0.00126
	(!A1 * !B1 * D1 * X)	-0.00123	-0.00124	-0.00131
	(!A1 * !B1 * D1 * X)	0.00278	0.00276	0.00270

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00300	-0.00302	-0.00299
	(A1 * B1 * D1 * X)	0.00282	0.00284	0.00281
	(A1 * B1 * !D1 * X)	-0.00286	-0.00288	-0.00291
	(A1 * B1 * !D1 * X)	0.00228	0.00228	0.00225
	(A1 * A2 * !B1 * D1 * X)	-0.00296	-0.00299	-0.00290
	(A1 * A2 * !B1 * D1 * X)	0.00292	0.00296	0.00295
	(A1 * A2 * !B1 * !D1 * X)	-0.00169	-0.00171	-0.00262
	(A1 * A2 * !B1 * !D1 * X)	0.00335	0.00332	0.00265
	(A1 * !A2 * !B1 * D1 * X)	-0.00181	-0.00185	-0.00204
	(A1 * !A2 * !B1 * D1 * X)	0.00548	0.00544	0.00528
	(!A1 * B1 * D1 * X)	-0.00300	-0.00302	-0.00298
	(!A1 * B1 * D1 * X)	0.00289	0.00292	0.00287
	(!A1 * B1 * !D1 * X)	-0.00258	-0.00261	-0.00287
	(!A1 * B1 * !D1 * X)	0.00265	0.00264	0.00236
	(!A1 * !B1 * D1 * X)	-0.00182	-0.00185	-0.00204
	(!A1 * !B1 * D1 * X)	0.00548	0.00544	0.00528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00172	0.00176	0.00173
	(A1 * C1 * X)	-0.00086	-0.00088	-0.00086
	(A1 * B1 * !C1 * X)	0.00173	0.00176	0.00174
	(A1 * B1 * !C1 * X)	-0.00083	-0.00085	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00174	0.00178	0.00179
	(A1 * A2 * !B1 * !C1 * X)	-0.00067	-0.00068	-0.00064
	(!A1 * C1 * X)	0.00173	0.00176	0.00173
	(!A1 * C1 * X)	-0.00086	-0.00088	-0.00086
	(!A1 * B1 * !C1 * X)	0.00173	0.00175	0.00176
	(!A1 * B1 * !C1 * X)	-0.00076	-0.00077	-0.00074

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00208	0.00212	0.00209
	(A1 * C1 * X)	-0.00092	-0.00094	-0.00092
	(A1 * B1 * !C1 * X)	0.00208	0.00210	0.00209
	(A1 * B1 * !C1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * !C1 * X)	0.00209	0.00213	0.00213
	(A1 * A2 * !B1 * !C1 * X)	-0.00076	-0.00077	-0.00073
	(!A1 * C1 * X)	0.00208	0.00212	0.00209
	(!A1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !C1 * X)	0.00209	0.00212	0.00211
	(!A1 * B1 * !C1 * X)	-0.00084	-0.00085	-0.00082
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00340	0.00343	0.00340
	(A1 * C1 * X)	-0.00174	-0.00175	-0.00173
	(A1 * B1 * !C1 * X)	0.00339	0.00345	0.00341
	(A1 * B1 * !C1 * X)	-0.00167	-0.00171	-0.00167
	(A1 * A2 * !B1 * !C1 * X)	0.00342	0.00345	0.00351
	(A1 * A2 * !B1 * !C1 * X)	-0.00134	-0.00135	-0.00128
	(!A1 * C1 * X)	0.00340	0.00343	0.00341
	(!A1 * C1 * X)	-0.00174	-0.00175	-0.00173
	(!A1 * B1 * !C1 * X)	0.00341	0.00344	0.00346
	(!A1 * B1 * !C1 * X)	-0.00154	-0.00154	-0.00150

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00157	-0.00158	-0.00165
	(A1 * C1 * X)	0.00101	0.00101	0.00096
	(A1 * B1 * !C1 * X)	-0.00142	-0.00144	-0.00159
	(A1 * B1 * !C1 * X)	0.00110	0.00111	0.00099
	(A1 * A2 * !B1 * !C1 * X)	-0.00072	-0.00074	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00173	0.00172	0.00144
	(!A1 * C1 * X)	-0.00156	-0.00157	-0.00164
	(!A1 * C1 * X)	0.00103	0.00103	0.00097
	(!A1 * B1 * !C1 * X)	-0.00120	-0.00122	-0.00140
	(!A1 * B1 * !C1 * X)	0.00133	0.00133	0.00118
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00190	-0.00191	-0.00198
	(A1 * C1 * X)	0.00109	0.00109	0.00103
	(A1 * B1 * !C1 * X)	-0.00174	-0.00176	-0.00193
	(A1 * B1 * !C1 * X)	0.00119	0.00119	0.00106
	(A1 * A2 * !B1 * !C1 * X)	-0.00114	-0.00116	-0.00158
	(A1 * A2 * !B1 * !C1 * X)	0.00170	0.00170	0.00140
	(!A1 * C1 * X)	-0.00189	-0.00190	-0.00197
	(!A1 * C1 * X)	0.00110	0.00111	0.00104
	(!A1 * B1 * !C1 * X)	-0.00159	-0.00161	-0.00180
	(!A1 * B1 * !C1 * X)	0.00135	0.00135	0.00119
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00300	-0.00303	-0.00321
	(A1 * C1 * X)	0.00212	0.00212	0.00195
	(A1 * B1 * !C1 * X)	-0.00269	-0.00272	-0.00310
	(A1 * B1 * !C1 * X)	0.00230	0.00230	0.00202
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00127	-0.00214
	(A1 * A2 * !B1 * !C1 * X)	0.00358	0.00357	0.00292
	(!A1 * C1 * X)	-0.00297	-0.00300	-0.00320
	(!A1 * C1 * X)	0.00215	0.00215	0.00197
	(!A1 * B1 * !C1 * X)	-0.00220	-0.00219	-0.00271
	(!A1 * B1 * !C1 * X)	0.00279	0.00276	0.00240

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00298	0.00285	0.00297	0.00303	0.42918
sky130_fd_sc_hs__a211oi_2	0.00549	0.00577	0.00463	0.00442	0.78398
sky130_fd_sc_hs__a211oi_4	0.01104	0.01113	0.00885	0.00898	1.38978

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211oi_1	0.00000	21.45170	55.22140
sky130_fd_sc_hs__a211oi_2	0.00000	42.22110	110.23800
sky130_fd_sc_hs__a211oi_4	0.00000	84.29320	220.44200

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)	0.11457	0.83652	8.12771
	A2->Y (FR)	0.13618	0.87556	8.33794
	B1->Y (FR)	0.12037	0.91286	9.06383
	C1->Y (FR)	0.09064	0.91365	9.41899
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.10201	0.69806	8.02498
	A2->Y (FR)	0.13028	0.72485	8.06631
	B1->Y (FR)	0.08317	0.73176	8.70715
	C1->Y (FR)	0.07027	0.75369	9.07102
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.09839	0.57786	7.66846
	A2->Y (FR)	0.13029	0.61879	7.89014
	B1->Y (FR)	0.10799	0.65162	8.57571
	C1->Y (FR)	0.06794	0.65763	9.02510

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.03824	0.41278	4.03808
	A2->Y (RF)	0.04188	0.36620	3.47060
	B1->Y (RF)	0.02593	0.31349	3.10849
	C1->Y (RF)	0.02179	0.30455	3.08798
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.03385	0.36474	4.10438
	A2->Y (RF)	0.04073	0.32268	3.51120
	B1->Y (RF)	0.03923	0.41889	4.91482
	C1->Y (RF)	0.02634	0.39159	4.78489
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.03436	0.32005	4.04872
	A2->Y (RF)	0.04000	0.26496	3.24371
	B1->Y (RF)	0.03740	0.35956	4.76560
	C1->Y (RF)	0.02538	0.33708	4.71764

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00067	0.00158	0.03628
	A1	0.00882	0.00974	0.04446
	A2	0.00111	0.00206	0.03782
	A2	0.01046	0.01143	0.04720
	B1	0.00049	0.00232	0.03971
	B1	0.00720	0.00898	0.04659
	C1	0.00026	0.00317	0.04568
	C1	0.00580	0.00871	0.05119
sky130_fd_sc_hs__a211oi_2	A1	0.00005	0.00225	0.06893
	A1	0.01573	0.01795	0.08469
	A2	0.00208	0.00407	0.07282
	A2	0.02039	0.02244	0.09121
	B1	0.00096	0.00326	0.05056
	B1	0.01231	0.01460	0.06206
	C1	0.00075	0.00503	0.06041
	C1	0.00925	0.01355	0.06903
sky130_fd_sc_hs__a211oi_4	A1	-0.00043	0.00424	0.13067
	A1	0.03074	0.03543	0.16222
	A2	0.00283	0.00715	0.13841
	A2	0.03926	0.04356	0.17509
	B1	0.00140	0.00671	0.09986
	B1	0.02359	0.02889	0.12191
	C1	0.00106	0.01030	0.11639
	C1	0.01771	0.02695	0.13347

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01207	0.01347	0.04320
	A1	0.00393	0.00524	0.03486
	A2	0.01318	0.01433	0.04441
	A2	0.00384	0.00498	0.03498
	B1	0.00810	0.01014	0.04495
	B1	0.00140	0.00344	0.03827
	C1	0.00589	0.00811	0.04083
	C1	0.00037	0.00257	0.03525
sky130_fd_sc_hs__a211oi_2	A1	0.02282	0.02576	0.08194
	A1	0.00715	0.01008	0.06630
	A2	0.02539	0.02780	0.08610
	A2	0.00704	0.00941	0.06736
	B1	0.01465	0.01736	0.06171
	B1	0.00332	0.00596	0.04985
	C1	0.00867	0.01199	0.05414
	C1	0.00017	0.00346	0.04522
sky130_fd_sc_hs__a211oi_4	A1	0.04532	0.05142	0.16136
	A1	0.01417	0.02021	0.12981
	A2	0.05028	0.05571	0.17300
	A2	0.01386	0.01923	0.13636
	B1	0.02754	0.03359	0.12135
	B1	0.00540	0.01144	0.09775
	C1	0.01646	0.02354	0.10464
	C1	-0.00015	0.00680	0.08720

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)**	0.00188	0.00174	0.00172
	(A2 * B1 * C1 * !Y)	-0.00204	-0.00222	-0.00222
	(A2 * B1 * !C1 * !Y)	0.00233	0.00198	0.00195
	(A2 * B1 * !C1 * !Y)	-0.00163	-0.00203	-0.00200
	(A2 * !B1 * C1 * !Y)	0.00253	0.00210	0.00211
	(A2 * !B1 * C1 * !Y)	-0.00146	-0.00193	-0.00184
	(!A2 * B1 * C1 * !Y)	0.00166	0.00168	0.00166
	(!A2 * B1 * C1 * !Y)	-0.00224	-0.00226	-0.00224
	(!A2 * B1 * !C1 * !Y)	0.00189	0.00191	0.00189
	(!A2 * B1 * !C1 * !Y)	-0.00201	-0.00202	-0.00201
	(!A2 * !B1 * C1 * !Y)	0.00205	0.00207	0.00206
	(!A2 * !B1 * C1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * !C1 * Y)	0.00055	0.00054	0.00052
	(!A2 * !B1 * !C1 * Y)	-0.00256	-0.00256	-0.00260
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00376	0.00355	0.00350
	(A2 * B1 * C1 * !Y)	-0.00410	-0.00439	-0.00438
	(A2 * B1 * !C1 * !Y)	0.00467	0.00402	0.00396
	(A2 * B1 * !C1 * !Y)	-0.00329	-0.00400	-0.00394
	(A2 * !B1 * C1 * !Y)	0.00498	0.00425	0.00428
	(A2 * !B1 * C1 * !Y)	-0.00301	-0.00382	-0.00363
	(!A2 * B1 * C1 * !Y)	0.00337	0.00341	0.00338
	(!A2 * B1 * C1 * !Y)	-0.00441	-0.00445	-0.00442
	(!A2 * B1 * !C1 * !Y)	0.00383	0.00387	0.00384
	(!A2 * B1 * !C1 * !Y)	-0.00395	-0.00398	-0.00396
	(!A2 * !B1 * C1 * !Y)	0.00414	0.00419	0.00416
	(!A2 * !B1 * C1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A2 * !B1 * !C1 * Y)	0.00127	0.00128	0.00119
	(!A2 * !B1 * !C1 * Y)	-0.00497	-0.00500	-0.00512

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00745	0.00695	0.00683
	(A2 * B1 * C1 * !Y)	-0.00823	-0.00890	-0.00890
	(A2 * B1 * !C1 * !Y)	0.00936	0.00789	0.00774
	(A2 * B1 * !C1 * !Y)	-0.00653	-0.00812	-0.00801
	(A2 * !B1 * C1 * !Y)	0.01003	0.00839	0.00839
	(A2 * !B1 * C1 * !Y)	-0.00591	-0.00773	-0.00739
	(!A2 * B1 * C1 * !Y)	0.00654	0.00663	0.00657
	(!A2 * B1 * C1 * !Y)	-0.00897	-0.00904	-0.00898
	(!A2 * B1 * !C1 * !Y)	0.00751	0.00756	0.00750
	(!A2 * B1 * !C1 * !Y)	-0.00808	-0.00811	-0.00806
	(!A2 * !B1 * C1 * !Y)	0.00811	0.00818	0.00813
	(!A2 * !B1 * C1 * !Y)	-0.00740	-0.00747	-0.00742
	(!A2 * !B1 * !C1 * Y)	0.00221	0.00222	0.00208
	(!A2 * !B1 * !C1 * Y)	-0.01018	-0.01025	-0.01047

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)**	-0.00161	-0.00162	-0.00161
	(A2 * B1 * C1 * !Y)	0.00233	0.00234	0.00233
	(A2 * B1 * !C1 * !Y)	-0.00140	-0.00141	-0.00143
	(A2 * B1 * !C1 * !Y)	0.00257	0.00259	0.00254
	(A2 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00128
	(A2 * !B1 * C1 * !Y)	0.00273	0.00275	0.00270
	(!A2 * B1 * C1 * !Y)	-0.00158	-0.00160	-0.00159
	(!A2 * B1 * C1 * !Y)	0.00232	0.00234	0.00233
	(!A2 * B1 * !C1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A2 * B1 * !C1 * !Y)	0.00256	0.00257	0.00256
	(!A2 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00120
	(!A2 * !B1 * C1 * !Y)	0.00272	0.00272	0.00272
	(!A2 * !B1 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * Y)	0.00267	0.00272	0.00267
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00329	-0.00330	-0.00329
	(A2 * B1 * C1 * !Y)	0.00457	0.00460	0.00459
	(A2 * B1 * !C1 * !Y)	-0.00284	-0.00288	-0.00291
	(A2 * B1 * !C1 * !Y)	0.00506	0.00510	0.00503
	(A2 * !B1 * C1 * !Y)	-0.00254	-0.00257	-0.00261
	(A2 * !B1 * C1 * !Y)	0.00540	0.00543	0.00533
	(!A2 * B1 * C1 * !Y)	-0.00321	-0.00325	-0.00325
	(!A2 * B1 * C1 * !Y)	0.00458	0.00460	0.00459
	(!A2 * B1 * !C1 * !Y)	-0.00274	-0.00280	-0.00279
	(!A2 * B1 * !C1 * !Y)	0.00504	0.00510	0.00505
	(!A2 * !B1 * C1 * !Y)	-0.00243	-0.00247	-0.00247
	(!A2 * !B1 * C1 * !Y)	0.00535	0.00539	0.00537
	(!A2 * !B1 * !C1 * Y)	-0.00108	-0.00108	-0.00108
	(!A2 * !B1 * !C1 * Y)	0.00519	0.00521	0.00521

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00638	-0.00643	-0.00640
	(A2 * B1 * C1 * !Y)	0.00928	0.00939	0.00932
	(A2 * B1 * !C1 * !Y)	-0.00555	-0.00557	-0.00564
	(A2 * B1 * !C1 * !Y)	0.01033	0.01032	0.01019
	(A2 * !B1 * C1 * !Y)	-0.00492	-0.00497	-0.00506
	(A2 * !B1 * C1 * !Y)	0.01097	0.01100	0.01079
	(!A2 * B1 * C1 * !Y)	-0.00624	-0.00634	-0.00632
	(!A2 * B1 * C1 * !Y)	0.00930	0.00939	0.00932
	(!A2 * B1 * !C1 * !Y)	-0.00531	-0.00542	-0.00540
	(!A2 * B1 * !C1 * !Y)	0.01021	0.01034	0.01024
	(!A2 * !B1 * C1 * !Y)	-0.00467	-0.00478	-0.00476
	(!A2 * !B1 * C1 * !Y)	0.01084	0.01098	0.01088
	(!A2 * !B1 * !C1 * Y)	-0.00186	-0.00186	-0.00187
	(!A2 * !B1 * !C1 * Y)	0.01061	0.01060	0.01066

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)**	0.00190	0.00176	0.00174
	(A1 * B1 * C1 * !Y)	-0.00206	-0.00224	-0.00224
	(A1 * B1 * !C1 * !Y)	0.00235	0.00200	0.00197
	(A1 * B1 * !C1 * !Y)	-0.00165	-0.00204	-0.00202
	(A1 * !B1 * C1 * !Y)	0.00254	0.00212	0.00213
	(A1 * !B1 * C1 * !Y)	-0.00149	-0.00195	-0.00186
	(!A1 * B1 * !Y)	0.00167	0.00170	0.00168
	(!A1 * B1 * !Y)	-0.00225	-0.00227	-0.00226
	(!A1 * !B1 * C1 * !Y)	0.00206	0.00209	0.00207
	(!A1 * !B1 * C1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * Y)	0.00169	0.00171	0.00170
	(!A1 * !B1 * !C1 * Y)	-0.00225	-0.00227	-0.00226

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00387	0.00364	0.00359
	(A1 * B1 * C1 * !Y)	-0.00421	-0.00452	-0.00452
	(A1 * B1 * !C1 * !Y)	0.00482	0.00411	0.00404
	(A1 * B1 * !C1 * !Y)	-0.00336	-0.00413	-0.00407
	(A1 * !B1 * C1 * !Y)	0.00516	0.00436	0.00436
	(A1 * !B1 * C1 * !Y)	-0.00305	-0.00393	-0.00376
	(!A1 * B1 * !Y)	0.00347	0.00352	0.00348
	(!A1 * B1 * !Y)	-0.00456	-0.00459	-0.00456
	(!A1 * !B1 * C1 * !Y)	0.00425	0.00426	0.00426
	(!A1 * !B1 * C1 * !Y)	-0.00377	-0.00378	-0.00378
	(!A1 * !B1 * !C1 * Y)	0.00321	0.00326	0.00323
	(!A1 * !B1 * !C1 * Y)	-0.00483	-0.00486	-0.00483
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00764	0.00713	0.00700
	(A1 * B1 * C1 * !Y)	-0.00830	-0.00898	-0.00898
	(A1 * B1 * !C1 * !Y)	0.00959	0.00809	0.00791
	(A1 * B1 * !C1 * !Y)	-0.00662	-0.00819	-0.00810
	(A1 * !B1 * C1 * !Y)	0.01025	0.00860	0.00856
	(A1 * !B1 * C1 * !Y)	-0.00603	-0.00780	-0.00747
	(!A1 * B1 * !Y)	0.00675	0.00680	0.00675
	(!A1 * B1 * !Y)	-0.00908	-0.00911	-0.00907
	(!A1 * !B1 * C1 * !Y)	0.00830	0.00832	0.00830
	(!A1 * !B1 * C1 * !Y)	-0.00751	-0.00753	-0.00751
	(!A1 * !B1 * !C1 * Y)	0.00673	0.00673	0.00677
	(!A1 * !B1 * !C1 * Y)	-0.00909	-0.00908	-0.00910

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)**	-0.00162	-0.00163	-0.00163
	(A1 * B1 * C1 * !Y)	0.00233	0.00236	0.00235
	(A1 * B1 * !C1 * !Y)	-0.00142	-0.00143	-0.00144
	(A1 * B1 * !C1 * !Y)	0.00258	0.00259	0.00256
	(A1 * !B1 * C1 * !Y)	-0.00125	-0.00127	-0.00130
	(A1 * !B1 * C1 * !Y)	0.00275	0.00277	0.00271
	(!A1 * B1 * !Y)	-0.00160	-0.00162	-0.00161
	(!A1 * B1 * !Y)	0.00233	0.00237	0.00234
	(!A1 * !B1 * C1 * !Y)	-0.00121	-0.00123	-0.00122
	(!A1 * !B1 * C1 * !Y)	0.00272	0.00276	0.00273
	(!A1 * !B1 * !C1 * Y)	-0.00143	-0.00157	-0.00160
	(!A1 * !B1 * !C1 * Y)	0.00252	0.00241	0.00235
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00336	-0.00338	-0.00337
	(A1 * B1 * C1 * !Y)	0.00472	0.00476	0.00473
	(A1 * B1 * !C1 * !Y)	-0.00292	-0.00295	-0.00299
	(A1 * B1 * !C1 * !Y)	0.00520	0.00523	0.00517
	(A1 * !B1 * C1 * !Y)	-0.00262	-0.00265	-0.00270
	(A1 * !B1 * C1 * !Y)	0.00554	0.00557	0.00547
	(!A1 * B1 * !Y)	-0.00329	-0.00334	-0.00334
	(!A1 * B1 * !Y)	0.00472	0.00475	0.00473
	(!A1 * !B1 * C1 * !Y)	-0.00251	-0.00256	-0.00256
	(!A1 * !B1 * C1 * !Y)	0.00549	0.00553	0.00551
	(!A1 * !B1 * !C1 * Y)	-0.00271	-0.00306	-0.00310
	(!A1 * !B1 * !C1 * Y)	0.00533	0.00506	0.00497

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00655	-0.00660	-0.00656
	(A1 * B1 * C1 * !Y)	0.00937	0.00948	0.00941
	(A1 * B1 * !C1 * !Y)	-0.00567	-0.00576	-0.00581
	(A1 * B1 * !C1 * !Y)	0.01034	0.01046	0.01028
	(A1 * !B1 * C1 * !Y)	-0.00509	-0.00513	-0.00523
	(A1 * !B1 * C1 * !Y)	0.01105	0.01106	0.01088
	(!A1 * B1 * !Y)	-0.00640	-0.00650	-0.00647
	(!A1 * B1 * !Y)	0.00937	0.00946	0.00941
	(!A1 * !B1 * C1 * !Y)	-0.00484	-0.00494	-0.00491
	(!A1 * !B1 * C1 * !Y)	0.01093	0.01102	0.01096
	(!A1 * !B1 * !C1 * Y)	-0.00567	-0.00639	-0.00649
	(!A1 * !B1 * !C1 * Y)	0.01019	0.00961	0.00938

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)	0.00209	0.00206	0.00198
	(A1 * A2 * C1 * !Y)	-0.00133	-0.00139	-0.00140
	(A1 * A2 * !C1 * !Y)	0.00204	0.00204	0.00201
	(A1 * A2 * !C1 * !Y)	-0.00083	-0.00083	-0.00082
	(A1 * !A2 * C1 * !Y)	0.00255	0.00206	0.00220
	(A1 * !A2 * C1 * !Y)	-0.00150	-0.00200	-0.00180
	(!A1 * C1 * !Y)	0.00254	0.00207	0.00220
	(!A1 * C1 * !Y)	-0.00152	-0.00199	-0.00180
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00273	0.00270	0.00251
	(A1 * A2 * C1 * !Y)	-0.00266	-0.00269	-0.00276
	(A1 * A2 * !C1 * !Y)	0.00270	0.00269	0.00263
	(A1 * A2 * !C1 * !Y)	-0.00150	-0.00148	-0.00151
	(A1 * !A2 * C1 * !Y)	0.00385	0.00265	0.00291
	(A1 * !A2 * C1 * !Y)	-0.00271	-0.00387	-0.00357
	(!A1 * C1 * !Y)	0.00386	0.00266	0.00291
	(!A1 * C1 * !Y)	-0.00271	-0.00387	-0.00357
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00504	0.00492	0.00456
	(A1 * A2 * C1 * !Y)	-0.00544	-0.00556	-0.00566
	(A1 * A2 * !C1 * !Y)	0.00495	0.00496	0.00484
	(A1 * A2 * !C1 * !Y)	-0.00321	-0.00321	-0.00323
	(A1 * !A2 * C1 * !Y)	0.00729	0.00487	0.00543
	(A1 * !A2 * C1 * !Y)	-0.00574	-0.00803	-0.00741
	(!A1 * C1 * !Y)	0.00724	0.00493	0.00543
	(!A1 * C1 * !Y)	-0.00579	-0.00812	-0.00741

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)	-0.00175	-0.00176	-0.00174
	(A1 * A2 * C1 * !Y)	0.00157	0.00159	0.00157
	(A1 * A2 * !C1 * !Y)	-0.00127	-0.00130	-0.00161
	(A1 * A2 * !C1 * !Y)	0.00158	0.00158	0.00131
	(A1 * !A2 * C1 * !Y)	-0.00134	-0.00136	-0.00141
	(A1 * !A2 * C1 * !Y)	0.00268	0.00269	0.00261
	(!A1 * C1 * !Y)	-0.00133	-0.00136	-0.00141
	(!A1 * C1 * !Y)	0.00267	0.00269	0.00261
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00207	-0.00208	-0.00204
	(A1 * A2 * C1 * !Y)	0.00307	0.00311	0.00307
	(A1 * A2 * !C1 * !Y)	-0.00117	-0.00122	-0.00179
	(A1 * A2 * !C1 * !Y)	0.00299	0.00301	0.00250
	(A1 * !A2 * C1 * !Y)	-0.00117	-0.00121	-0.00132
	(A1 * !A2 * C1 * !Y)	0.00532	0.00534	0.00520
	(!A1 * C1 * !Y)	-0.00118	-0.00121	-0.00132
	(!A1 * C1 * !Y)	0.00533	0.00534	0.00520
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00368	-0.00371	-0.00362
	(A1 * A2 * C1 * !Y)	0.00630	0.00637	0.00628
	(A1 * A2 * !C1 * !Y)	-0.00196	-0.00204	-0.00322
	(A1 * A2 * !C1 * !Y)	0.00621	0.00622	0.00519
	(A1 * !A2 * C1 * !Y)	-0.00197	-0.00204	-0.00226
	(A1 * !A2 * C1 * !Y)	0.01093	0.01095	0.01066
	(!A1 * C1 * !Y)	-0.00197	-0.00204	-0.00226
	(!A1 * C1 * !Y)	0.01094	0.01096	0.01066

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00208	0.00211	0.00208
	(A1 * B1 * !Y)	-0.00091	-0.00093	-0.00091
	(A1 * A2 * !B1 * !Y)	0.00210	0.00211	0.00212
	(A1 * A2 * !B1 * !Y)	-0.00079	-0.00079	-0.00075
	(!A1 * B1 * !Y)	0.00209	0.00212	0.00210
	(!A1 * B1 * !Y)	-0.00091	-0.00091	-0.00088
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00221	0.00224	0.00222
	(A1 * B1 * !Y)	-0.00186	-0.00189	-0.00186
	(A1 * A2 * !B1 * !Y)	0.00223	0.00225	0.00229
	(A1 * A2 * !B1 * !Y)	-0.00159	-0.00160	-0.00155
	(!A1 * B1 * !Y)	0.00224	0.00227	0.00227
	(!A1 * B1 * !Y)	-0.00183	-0.00186	-0.00179
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00446	0.00453	0.00447
	(A1 * B1 * !Y)	-0.00376	-0.00381	-0.00373
	(A1 * A2 * !B1 * !Y)	0.00450	0.00453	0.00461
	(A1 * A2 * !B1 * !Y)	-0.00324	-0.00323	-0.00310
	(!A1 * B1 * !Y)	0.00452	0.00458	0.00456
	(!A1 * B1 * !Y)	-0.00371	-0.00374	-0.00361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00187	-0.00190	-0.00198
	(A1 * B1 * !Y)	0.00109	0.00110	0.00102
	(A1 * A2 * !B1 * !Y)	-0.00129	-0.00132	-0.00162
	(A1 * A2 * !B1 * !Y)	0.00160	0.00160	0.00136
	(!A1 * B1 * !Y)	-0.00170	-0.00172	-0.00185
	(!A1 * B1 * !Y)	0.00128	0.00129	0.00116
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00181	-0.00182	-0.00206
	(A1 * B1 * !Y)	0.00225	0.00225	0.00206
	(A1 * A2 * !B1 * !Y)	-0.00061	-0.00066	-0.00130
	(A1 * A2 * !B1 * !Y)	0.00324	0.00325	0.00275
	(!A1 * B1 * !Y)	-0.00140	-0.00144	-0.00176
	(!A1 * B1 * !Y)	0.00265	0.00267	0.00237
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00368	-0.00374	-0.00416
	(A1 * B1 * !Y)	0.00444	0.00448	0.00413
	(A1 * A2 * !B1 * !Y)	-0.00127	-0.00135	-0.00263
	(A1 * A2 * !B1 * !Y)	0.00650	0.00651	0.00551
	(!A1 * B1 * !Y)	-0.00289	-0.00296	-0.00356
	(!A1 * B1 * !Y)	0.00530	0.00532	0.00475

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00274	0.00261	0.00278	0.00275	1.30943
sky130_fd_sc_hs__a211o_2	0.00299	0.00299	0.00295	0.00286	2.49524
sky130_fd_sc_hs__a211o_4	0.00512	0.00527	0.00552	0.00503	4.81173

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	38.51760	71.37520
sky130_fd_sc_hs__a211o_2	0.00000	48.77400	103.79600
sky130_fd_sc_hs__a211o_4	0.00000	97.81550	210.15900

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)	0.08464	0.57750	6.43874
	A2->X (RR)	0.08856	0.55864	6.25337
	B1->X (RR)	0.06562	0.52219	5.95037
	C1->X (RR)	0.05916	0.50136	5.84968
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.08535	0.50107	6.26772
	A2->X (RR)	0.08969	0.47959	6.07948
	B1->X (RR)	0.06478	0.44604	5.81000
	C1->X (RR)	0.05909	0.42951	5.72290
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.08927	0.44585	6.47166
	A2->X (RR)	0.09473	0.42804	6.31027
	B1->X (RR)	0.06348	0.37749	5.92471
	C1->X (RR)	0.05918	0.36704	5.89154

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.16715	0.55598	5.15055
	A2->X (FF)	0.19051	0.59156	5.30202
	B1->X (FF)	0.17262	0.61573	5.66863
	C1->X (FF)	0.14380	0.61619	5.74699
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.21463	0.58611	5.29323
	A2->X (FF)	0.24437	0.62721	5.45607
	B1->X (FF)	0.22620	0.65859	5.82086
	C1->X (FF)	0.19486	0.66263	5.90088
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.20177	0.51455	5.26801
	A2->X (FF)	0.21562	0.54059	5.36499
	B1->X (FF)	0.19989	0.57005	5.62151
	C1->X (FF)	0.16766	0.57073	5.72196

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01612	0.01951	0.09689
	A1	0.00876	0.01215	0.08978
	A2	0.01709	0.01997	0.09551
	A2	0.00873	0.01161	0.08758
	B1	0.01221	0.01711	0.09792
	B1	0.00603	0.01093	0.09227
	C1	0.01077	0.01605	0.10175
	C1	0.00570	0.01100	0.09663
sky130_fd_sc_hs__a211o_2	A1	0.01996	0.02316	0.10058
	A1	0.01202	0.01523	0.09346
	A2	0.02123	0.02390	0.09923
	A2	0.01198	0.01466	0.09100
	B1	0.01578	0.02047	0.10053
	B1	0.00907	0.01385	0.09376
	C1	0.01421	0.01935	0.10409
	C1	0.00861	0.01383	0.09865
sky130_fd_sc_hs__a211o_4	A1	0.03835	0.04524	0.20263
	A1	0.02381	0.03086	0.18893
	A2	0.04086	0.04683	0.20031
	A2	0.02385	0.02983	0.18475
	B1	0.02945	0.03874	0.19699
	B1	0.01723	0.02669	0.18687
	C1	0.02545	0.03610	0.20304
	C1	0.01606	0.02678	0.19569

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00607	0.00819	0.08065
	A1	0.01345	0.01555	0.08678
	A2	0.00683	0.00895	0.08039
	A2	0.01520	0.01711	0.08816
	B1	0.00545	0.00917	0.08854
	B1	0.01163	0.01535	0.09429
	C1	0.00534	0.01041	0.09482
	C1	0.01041	0.01548	0.09956
sky130_fd_sc_hs__a211o_2	A1	0.01298	0.01251	0.08366
	A1	0.02093	0.02040	0.08971
	A2	0.01433	0.01304	0.08409
	A2	0.02357	0.02227	0.09216
	B1	0.01195	0.01342	0.08996
	B1	0.01863	0.02010	0.09659
	C1	0.01185	0.01465	0.09649
	C1	0.01744	0.02022	0.10207
sky130_fd_sc_hs__a211o_4	A1	0.02542	0.02461	0.17885
	A1	0.03997	0.03887	0.18971
	A2	0.02644	0.02532	0.17862
	A2	0.04343	0.04197	0.19245
	B1	0.02295	0.02643	0.17676
	B1	0.03515	0.03828	0.18495
	C1	0.02301	0.02920	0.19189
	C1	0.03239	0.03816	0.19928

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)**	0.00171	0.00157	0.00154
	(A2 * B1 * C1 * X)	-0.00185	-0.00203	-0.00204
	(A2 * B1 * !C1 * X)	0.00221	0.00184	0.00184
	(A2 * B1 * !C1 * X)	-0.00143	-0.00181	-0.00175
	(A2 * !B1 * C1 * X)	0.00242	0.00200	0.00208
	(A2 * !B1 * C1 * X)	-0.00123	-0.00170	-0.00152
	(!A2 * B1 * C1 * X)	0.00149	0.00151	0.00150
	(!A2 * B1 * C1 * X)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * !C1 * X)	0.00179	0.00181	0.00180
	(!A2 * B1 * !C1 * X)	-0.00175	-0.00177	-0.00176
	(!A2 * !B1 * C1 * X)	0.00204	0.00205	0.00204
	(!A2 * !B1 * C1 * X)	-0.00151	-0.00153	-0.00151
	(!A2 * !B1 * !C1 * !X)	0.00090	0.00090	0.00088
	(!A2 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00203
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00204	0.00191	0.00188
	(A2 * B1 * C1 * X)	-0.00177	-0.00194	-0.00194
	(A2 * B1 * !C1 * X)	0.00251	0.00216	0.00217
	(A2 * B1 * !C1 * X)	-0.00135	-0.00172	-0.00165
	(A2 * !B1 * C1 * X)	0.00272	0.00231	0.00241
	(A2 * !B1 * C1 * X)	-0.00117	-0.00162	-0.00143
	(!A2 * B1 * C1 * X)	0.00181	0.00183	0.00182
	(!A2 * B1 * C1 * X)	-0.00195	-0.00197	-0.00196
	(!A2 * B1 * !C1 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * !C1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00236	0.00237	0.00236
	(!A2 * !B1 * C1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00141	0.00139
	(!A2 * !B1 * !C1 * !X)	-0.00154	-0.00156	-0.00161

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00335	0.00310	0.00305
	(A2 * B1 * C1 * X)	-0.00370	-0.00402	-0.00402
	(A2 * B1 * !C1 * X)	0.00431	0.00364	0.00364
	(A2 * B1 * !C1 * X)	-0.00284	-0.00358	-0.00345
	(A2 * !B1 * C1 * X)	0.00471	0.00394	0.00411
	(A2 * !B1 * C1 * X)	-0.00251	-0.00335	-0.00300
	(!A2 * B1 * C1 * X)	0.00294	0.00294	0.00294
	(!A2 * B1 * C1 * X)	-0.00407	-0.00407	-0.00406
	(!A2 * B1 * !C1 * X)	0.00354	0.00354	0.00354
	(!A2 * B1 * !C1 * X)	-0.00345	-0.00346	-0.00346
	(!A2 * !B1 * C1 * X)	0.00402	0.00403	0.00402
	(!A2 * !B1 * C1 * X)	-0.00297	-0.00299	-0.00298
	(!A2 * !B1 * !C1 * !X)	0.00265	0.00266	0.00261
	(!A2 * !B1 * !C1 * !X)	-0.00297	-0.00300	-0.00309

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)**	-0.00139	-0.00140	-0.00139
	(A2 * B1 * C1 * X)	0.00218	0.00220	0.00219
	(A2 * B1 * !C1 * X)	-0.00112	-0.00113	-0.00116
	(A2 * B1 * !C1 * X)	0.00249	0.00250	0.00245
	(A2 * !B1 * C1 * X)	-0.00087	-0.00089	-0.00095
	(A2 * !B1 * C1 * X)	0.00276	0.00276	0.00269
	(!A2 * B1 * C1 * X)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * C1 * X)	0.00219	0.00221	0.00218
	(!A2 * B1 * !C1 * X)	-0.00108	-0.00109	-0.00108
	(!A2 * B1 * !C1 * X)	0.00249	0.00249	0.00248
	(!A2 * !B1 * C1 * X)	-0.00083	-0.00085	-0.00084
	(!A2 * !B1 * C1 * X)	0.00272	0.00273	0.00272
	(!A2 * !B1 * !C1 * !X)	0.00008	0.00007	0.00008
	(!A2 * !B1 * !C1 * !X)	0.00297	0.00302	0.00298
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00170	-0.00171	-0.00170
	(A2 * B1 * C1 * X)	0.00211	0.00212	0.00211
	(A2 * B1 * !C1 * X)	-0.00143	-0.00144	-0.00147
	(A2 * B1 * !C1 * X)	0.00241	0.00242	0.00238
	(A2 * !B1 * C1 * X)	-0.00118	-0.00119	-0.00125
	(A2 * !B1 * C1 * X)	0.00268	0.00268	0.00262
	(!A2 * B1 * C1 * X)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * C1 * X)	0.00211	0.00211	0.00211
	(!A2 * B1 * !C1 * X)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * !C1 * X)	0.00241	0.00242	0.00241
	(!A2 * !B1 * C1 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * C1 * X)	0.00265	0.00266	0.00264
	(!A2 * !B1 * !C1 * !X)	0.00041	0.00040	0.00041
	(!A2 * !B1 * !C1 * !X)	0.00340	0.00343	0.00340

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00268	-0.00270	-0.00269
	(A2 * B1 * C1 * X)	0.00435	0.00439	0.00437
	(A2 * B1 * !C1 * X)	-0.00214	-0.00216	-0.00223
	(A2 * B1 * !C1 * X)	0.00497	0.00498	0.00490
	(A2 * !B1 * C1 * X)	-0.00165	-0.00168	-0.00180
	(A2 * !B1 * C1 * X)	0.00552	0.00551	0.00538
	(!A2 * B1 * C1 * X)	-0.00264	-0.00268	-0.00267
	(!A2 * B1 * C1 * X)	0.00434	0.00439	0.00436
	(!A2 * B1 * !C1 * X)	-0.00204	-0.00208	-0.00207
	(!A2 * B1 * !C1 * X)	0.00495	0.00498	0.00496
	(!A2 * !B1 * C1 * X)	-0.00156	-0.00160	-0.00159
	(!A2 * !B1 * C1 * X)	0.00542	0.00546	0.00544
	(!A2 * !B1 * !C1 * !X)	0.00102	0.00101	0.00103
	(!A2 * !B1 * !C1 * !X)	0.00671	0.00678	0.00672

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)**	0.00173	0.00160	0.00157
	(A1 * B1 * C1 * X)	-0.00184	-0.00201	-0.00202
	(A1 * B1 * !C1 * X)	0.00222	0.00186	0.00187
	(A1 * B1 * !C1 * X)	-0.00143	-0.00179	-0.00173
	(A1 * !B1 * C1 * X)	0.00242	0.00202	0.00211
	(A1 * !B1 * C1 * X)	-0.00125	-0.00168	-0.00150
	(!A1 * B1 * X)	0.00153	0.00154	0.00153
	(!A1 * B1 * X)	-0.00204	-0.00204	-0.00203
	(!A1 * !B1 * C1 * X)	0.00208	0.00208	0.00207
	(!A1 * !B1 * C1 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * !X)	0.00183	0.00184	0.00183
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00175	-0.00174

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00216	0.00203	0.00200
	(A1 * B1 * C1 * X)	-0.00179	-0.00195	-0.00195
	(A1 * B1 * !C1 * X)	0.00263	0.00229	0.00230
	(A1 * B1 * !C1 * X)	-0.00137	-0.00174	-0.00166
	(A1 * !B1 * C1 * X)	0.00283	0.00244	0.00253
	(A1 * !B1 * C1 * X)	-0.00120	-0.00163	-0.00144
	(!A1 * B1 * X)	0.00194	0.00196	0.00195
	(!A1 * B1 * X)	-0.00196	-0.00198	-0.00197
	(!A1 * !B1 * C1 * X)	0.00248	0.00251	0.00249
	(!A1 * !B1 * C1 * X)	-0.00142	-0.00144	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00252	0.00254	0.00252
	(!A1 * !B1 * !C1 * !X)	-0.00140	-0.00142	-0.00141
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00388	0.00367	0.00360
	(A1 * B1 * C1 * X)	-0.00360	-0.00390	-0.00390
	(A1 * B1 * !C1 * X)	0.00482	0.00420	0.00419
	(A1 * B1 * !C1 * X)	-0.00276	-0.00346	-0.00333
	(A1 * !B1 * C1 * X)	0.00521	0.00450	0.00466
	(A1 * !B1 * C1 * X)	-0.00243	-0.00324	-0.00289
	(!A1 * B1 * X)	0.00350	0.00351	0.00350
	(!A1 * B1 * X)	-0.00393	-0.00394	-0.00394
	(!A1 * !B1 * C1 * X)	0.00458	0.00460	0.00459
	(!A1 * !B1 * C1 * X)	-0.00284	-0.00286	-0.00285
	(!A1 * !B1 * !C1 * !X)	0.00514	0.00519	0.00515
	(!A1 * !B1 * !C1 * !X)	-0.00231	-0.00234	-0.00231

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)**	-0.00142	-0.00143	-0.00142
	(A1 * B1 * C1 * X)	0.00215	0.00218	0.00216
	(A1 * B1 * !C1 * X)	-0.00115	-0.00117	-0.00119
	(A1 * B1 * !C1 * X)	0.00247	0.00248	0.00243
	(A1 * !B1 * C1 * X)	-0.00090	-0.00092	-0.00098
	(A1 * !B1 * C1 * X)	0.00273	0.00274	0.00267
	(!A1 * B1 * X)	-0.00141	-0.00141	-0.00141
	(!A1 * B1 * X)	0.00216	0.00216	0.00216
	(!A1 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * !B1 * C1 * X)	0.00270	0.00270	0.00270
	(!A1 * !B1 * !C1 * !X)	-0.00070	-0.00081	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00290	0.00278	0.00272
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00182	-0.00184	-0.00183
	(A1 * B1 * C1 * X)	0.00211	0.00214	0.00212
	(A1 * B1 * !C1 * X)	-0.00155	-0.00156	-0.00159
	(A1 * B1 * !C1 * X)	0.00243	0.00243	0.00239
	(A1 * !B1 * C1 * X)	-0.00130	-0.00132	-0.00138
	(A1 * !B1 * C1 * X)	0.00269	0.00270	0.00263
	(!A1 * B1 * X)	-0.00179	-0.00182	-0.00181
	(!A1 * B1 * X)	0.00211	0.00214	0.00212
	(!A1 * !B1 * C1 * X)	-0.00125	-0.00128	-0.00127
	(!A1 * !B1 * C1 * X)	0.00265	0.00268	0.00266
	(!A1 * !B1 * !C1 * !X)	-0.00053	-0.00067	-0.00070
	(!A1 * !B1 * !C1 * !X)	0.00339	0.00329	0.00323

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00326	-0.00327	-0.00326
	(A1 * B1 * C1 * X)	0.00423	0.00425	0.00424
	(A1 * B1 * !C1 * X)	-0.00271	-0.00273	-0.00279
	(A1 * B1 * !C1 * X)	0.00485	0.00486	0.00478
	(A1 * !B1 * C1 * X)	-0.00221	-0.00224	-0.00236
	(A1 * !B1 * C1 * X)	0.00538	0.00539	0.00525
	(!A1 * B1 * X)	-0.00321	-0.00323	-0.00323
	(!A1 * B1 * X)	0.00423	0.00425	0.00423
	(!A1 * !B1 * C1 * X)	-0.00213	-0.00216	-0.00215
	(!A1 * !B1 * C1 * X)	0.00531	0.00534	0.00531
	(!A1 * !B1 * !C1 * !X)	-0.00115	-0.00141	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00634	0.00612	0.00600

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)	0.00211	0.00205	0.00202
	(A1 * A2 * C1 * X)	-0.00114	-0.00120	-0.00119
	(A1 * A2 * !C1 * X)	0.00203	0.00206	0.00203
	(A1 * A2 * !C1 * X)	-0.00070	-0.00072	-0.00069
	(A1 * !A2 * C1 * X)	0.00249	0.00206	0.00234
	(A1 * !A2 * C1 * X)	-0.00129	-0.00174	-0.00142
	(!A1 * C1 * X)	0.00248	0.00205	0.00234
	(!A1 * C1 * X)	-0.00131	-0.00174	-0.00142
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00221	0.00216	0.00212
	(A1 * A2 * C1 * X)	-0.00114	-0.00120	-0.00118
	(A1 * A2 * !C1 * X)	0.00213	0.00215	0.00213
	(A1 * A2 * !C1 * X)	-0.00070	-0.00070	-0.00068
	(A1 * !A2 * C1 * X)	0.00260	0.00216	0.00242
	(A1 * !A2 * C1 * X)	-0.00127	-0.00172	-0.00141
	(!A1 * C1 * X)	0.00259	0.00216	0.00242
	(!A1 * C1 * X)	-0.00129	-0.00172	-0.00141
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00397	0.00389	0.00378
	(A1 * A2 * C1 * X)	-0.00240	-0.00249	-0.00249
	(A1 * A2 * !C1 * X)	0.00390	0.00390	0.00387
	(A1 * A2 * !C1 * X)	-0.00147	-0.00145	-0.00142
	(A1 * !A2 * C1 * X)	0.00486	0.00393	0.00442
	(A1 * !A2 * C1 * X)	-0.00262	-0.00355	-0.00295
	(!A1 * C1 * X)	0.00488	0.00393	0.00442
	(!A1 * C1 * X)	-0.00259	-0.00356	-0.00295

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	-0.00171
	(A1 * A2 * C1 * X)	0.00143	0.00144	0.00142
	(A1 * A2 * !C1 * X)	-0.00109	-0.00111	-0.00146
	(A1 * A2 * !C1 * X)	0.00165	0.00165	0.00134
	(A1 * !A2 * C1 * X)	-0.00115	-0.00117	-0.00126
	(A1 * !A2 * C1 * X)	0.00262	0.00261	0.00252
	(!A1 * C1 * X)	-0.00116	-0.00117	-0.00126
	(!A1 * C1 * X)	0.00263	0.00261	0.00252
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00181	-0.00181	-0.00179
	(A1 * A2 * C1 * X)	0.00145	0.00145	0.00144
	(A1 * A2 * !C1 * X)	-0.00117	-0.00120	-0.00153
	(A1 * A2 * !C1 * X)	0.00167	0.00167	0.00135
	(A1 * !A2 * C1 * X)	-0.00121	-0.00123	-0.00132
	(A1 * !A2 * C1 * X)	0.00264	0.00263	0.00253
	(!A1 * C1 * X)	-0.00120	-0.00123	-0.00132
	(!A1 * C1 * X)	0.00262	0.00263	0.00253
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00316	-0.00318	-0.00312
	(A1 * A2 * C1 * X)	0.00301	0.00304	0.00300
	(A1 * A2 * !C1 * X)	-0.00196	-0.00202	-0.00269
	(A1 * A2 * !C1 * X)	0.00340	0.00340	0.00276
	(A1 * !A2 * C1 * X)	-0.00200	-0.00205	-0.00221
	(A1 * !A2 * C1 * X)	0.00541	0.00542	0.00520
	(!A1 * C1 * X)	-0.00200	-0.00205	-0.00222
	(!A1 * C1 * X)	0.00541	0.00541	0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00192	0.00193	0.00193
	(A1 * B1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !B1 * X)	0.00194	0.00198	0.00199
	(A1 * A2 * !B1 * X)	-0.00068	-0.00070	-0.00065
	(!A1 * B1 * X)	0.00193	0.00194	0.00196
	(!A1 * B1 * X)	-0.00083	-0.00083	-0.00080
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00196	0.00200	0.00197
	(A1 * B1 * X)	-0.00087	-0.00088	-0.00086
	(A1 * A2 * !B1 * X)	0.00200	0.00202	0.00204
	(A1 * A2 * !B1 * X)	-0.00071	-0.00071	-0.00067
	(!A1 * B1 * X)	0.00197	0.00200	0.00200
	(!A1 * B1 * X)	-0.00086	-0.00087	-0.00083
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00320	0.00325	0.00321
	(A1 * B1 * X)	-0.00168	-0.00171	-0.00167
	(A1 * A2 * !B1 * X)	0.00323	0.00326	0.00332
	(A1 * A2 * !B1 * X)	-0.00134	-0.00135	-0.00128
	(!A1 * B1 * X)	0.00321	0.00326	0.00326
	(!A1 * B1 * X)	-0.00167	-0.00169	-0.00161

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00169	-0.00170	-0.00178
	(A1 * B1 * X)	0.00107	0.00107	0.00101
	(A1 * A2 * !B1 * X)	-0.00097	-0.00099	-0.00130
	(A1 * A2 * !B1 * X)	0.00170	0.00170	0.00144
	(!A1 * B1 * X)	-0.00144	-0.00146	-0.00162
	(!A1 * B1 * X)	0.00133	0.00133	0.00117
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00171	-0.00172	-0.00179
	(A1 * B1 * X)	0.00112	0.00112	0.00105
	(A1 * A2 * !B1 * X)	-0.00100	-0.00102	-0.00131
	(A1 * A2 * !B1 * X)	0.00176	0.00175	0.00149
	(!A1 * B1 * X)	-0.00145	-0.00147	-0.00163
	(!A1 * B1 * X)	0.00139	0.00138	0.00122
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00271	-0.00274	-0.00290
	(A1 * B1 * X)	0.00215	0.00216	0.00201
	(A1 * A2 * !B1 * X)	-0.00124	-0.00128	-0.00190
	(A1 * A2 * !B1 * X)	0.00344	0.00344	0.00290
	(!A1 * B1 * X)	-0.00215	-0.00219	-0.00251
	(!A1 * B1 * X)	0.00275	0.00274	0.00241

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00293	0.00286	0.00266	0.63022
sky130_fd_sc_hs__a21boi_2	0.00557	0.00544	0.00264	1.21364
sky130_fd_sc_hs__a21boi_4	0.01105	0.01107	0.00390	2.16447

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21boi_1	0.00000	78.96290	159.84100
sky130_fd_sc_hs__a21boi_2	0.00000	90.76370	185.28300
sky130_fd_sc_hs__a21boi_4	0.00000	213.33400	436.65500

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)	0.06399	0.74825	8.58724
	A2->Y (FR)	0.07995	0.78445	8.84449
	B1_N->Y (RR)	0.08702	0.66625	6.44031
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.05887	0.64460	8.75912
	A2->Y (FR)	0.07535	0.65646	8.72928
	B1_N->Y (RR)	0.08416	0.54805	6.31697
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.05963	0.53953	8.49157
	A2->Y (FR)	0.07523	0.54958	8.35496
	B1_N->Y (RR)	0.08194	0.50992	6.81743

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.03387	0.46225	5.27495
	A2->Y (RF)	0.03763	0.41215	4.59489
	B1_N->Y (FF)	0.06424	0.35792	2.91104
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.03138	0.41254	5.52357
	A2->Y (RF)	0.03688	0.36452	4.79479
	B1_N->Y (FF)	0.06869	0.35392	2.99712
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.03208	0.35913	5.47730
	A2->Y (RF)	0.03756	0.29980	4.53356
	B1_N->Y (FF)	0.07191	0.31202	2.51339

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00407	0.00558	0.03629
	A1	0.00882	0.01031	0.04101
	A2	0.00483	0.00631	0.03788
	A2	0.01074	0.01221	0.04380
	B1_N	0.01011	0.01652	0.11824
	B1_N	0.00867	0.01502	0.11702
sky130_fd_sc_hs__a21boi_2	A1	0.00476	0.00802	0.06416
	A1	0.01398	0.01728	0.07359
	A2	0.00678	0.00994	0.06857
	A2	0.01836	0.02151	0.07998
	B1_N	0.01287	0.02010	0.13736
	B1_N	0.01428	0.02136	0.13921
sky130_fd_sc_hs__a21boi_4	A1	0.01142	0.01869	0.12873
	A1	0.03013	0.03737	0.14732
	A2	0.01447	0.02159	0.13585
	A2	0.03799	0.04510	0.16029
	B1_N	0.02460	0.03568	0.21607
	B1_N	0.02931	0.04011	0.22088

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00928	0.01088	0.03720
	A1	0.00456	0.00611	0.03202
	A2	0.01027	0.01170	0.03767
	A2	0.00438	0.00572	0.03178
	B1_N	0.00450	0.01139	0.10666
	B1_N	0.00849	0.01538	0.11066
sky130_fd_sc_hs__a21boi_2	A1	0.01530	0.01869	0.06686
	A1	0.00611	0.00935	0.05716
	A2	0.01745	0.02039	0.07093
	A2	0.00587	0.00870	0.05831
	B1_N	0.00865	0.01612	0.12356
	B1_N	0.01222	0.01968	0.12700
sky130_fd_sc_hs__a21boi_4	A1	0.03122	0.03858	0.13155
	A1	0.01257	0.01992	0.11288
	A2	0.03577	0.04266	0.14678
	A2	0.01224	0.01904	0.12144
	B1_N	0.01816	0.02963	0.19718
	B1_N	0.02276	0.03421	0.20167

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)	0.00247	0.00207	0.00216
	(A2 * !B1_N * !Y)	-0.00159	-0.00203	-0.00191
	(!A2 * B1_N * Y)	0.00155	0.00155	0.00152
	(!A2 * B1_N * Y)	-0.00169	-0.00169	-0.00173
	(!A2 * !B1_N * !Y)	0.00210	0.00212	0.00211
	(!A2 * !B1_N * !Y)	-0.00191	-0.00193	-0.00191
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00501	0.00414	0.00427
	(A2 * !B1_N * !Y)	-0.00296	-0.00389	-0.00367
	(!A2 * B1_N * Y)	0.00180	0.00181	0.00173
	(!A2 * B1_N * Y)	-0.00448	-0.00452	-0.00463
	(!A2 * !B1_N * !Y)	0.00414	0.00419	0.00415
	(!A2 * !B1_N * !Y)	-0.00368	-0.00371	-0.00369
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00981	0.00815	0.00843
	(A2 * !B1_N * !Y)	-0.00609	-0.00789	-0.00743
	(!A2 * B1_N * Y)	0.00401	0.00402	0.00388
	(!A2 * B1_N * Y)	-0.00850	-0.00856	-0.00877
	(!A2 * !B1_N * !Y)	0.00817	0.00826	0.00819
	(!A2 * !B1_N * !Y)	-0.00743	-0.00751	-0.00745

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)	-0.00126	-0.00129	-0.00133
	(A2 * !B1_N * !Y)	0.00280	0.00282	0.00275
	(!A2 * B1_N * Y)	0.00029	0.00029	0.00029
	(!A2 * B1_N * Y)	0.00353	0.00354	0.00354
	(!A2 * !B1_N * !Y)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1_N * !Y)	0.00281	0.00281	0.00280
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00248	-0.00253	-0.00261
	(A2 * !B1_N * !Y)	0.00545	0.00549	0.00536
	(!A2 * B1_N * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * B1_N * Y)	0.00587	0.00591	0.00590
	(!A2 * !B1_N * !Y)	-0.00238	-0.00243	-0.00242
	(!A2 * !B1_N * !Y)	0.00545	0.00549	0.00545
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00491	-0.00500	-0.00518
	(A2 * !B1_N * !Y)	0.01096	0.01104	0.01074
	(!A2 * B1_N * Y)	-0.00016	-0.00018	-0.00016
	(!A2 * B1_N * Y)	0.01241	0.01249	0.01246
	(!A2 * !B1_N * !Y)	-0.00471	-0.00478	-0.00478
	(!A2 * !B1_N * !Y)	0.01093	0.01100	0.01094

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)	0.00257	0.00215	0.00223
	(A1 * !B1_N * !Y)	-0.00151	-0.00195	-0.00184
	(!A1 * B1_N * Y)	0.00263	0.00265	0.00264
	(!A1 * B1_N * Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1_N * !Y)	0.00216	0.00219	0.00217
	(!A1 * !B1_N * !Y)	-0.00183	-0.00185	-0.00184
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00493	0.00408	0.00422
	(A1 * !B1_N * !Y)	-0.00298	-0.00388	-0.00366
	(!A1 * B1_N * Y)	0.00389	0.00392	0.00389
	(!A1 * B1_N * Y)	-0.00391	-0.00393	-0.00390
	(!A1 * !B1_N * !Y)	0.00410	0.00413	0.00410
	(!A1 * !B1_N * !Y)	-0.00368	-0.00370	-0.00367
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00994	0.00822	0.00850
	(A1 * !B1_N * !Y)	-0.00602	-0.00785	-0.00739
	(!A1 * B1_N * Y)	0.00813	0.00822	0.00817
	(!A1 * B1_N * Y)	-0.00755	-0.00761	-0.00756
	(!A1 * !B1_N * !Y)	0.00828	0.00830	0.00829
	(!A1 * !B1_N * !Y)	-0.00739	-0.00742	-0.00741

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)	-0.00134	-0.00135	-0.00140
	(A1 * !B1_N * !Y)	0.00274	0.00274	0.00268
	(!A1 * B1_N * Y)	-0.00066	-0.00078	-0.00082
	(!A1 * B1_N * Y)	0.00339	0.00327	0.00321
	(!A1 * !B1_N * !Y)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1_N * !Y)	0.00273	0.00274	0.00273
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00244	-0.00246	-0.00256
	(A1 * !B1_N * !Y)	0.00546	0.00545	0.00535
	(!A1 * B1_N * Y)	-0.00220	-0.00254	-0.00259
	(!A1 * B1_N * Y)	0.00559	0.00532	0.00522
	(!A1 * !B1_N * !Y)	-0.00232	-0.00237	-0.00237
	(!A1 * !B1_N * !Y)	0.00542	0.00547	0.00544
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00497	-0.00505	-0.00525
	(A1 * !B1_N * !Y)	0.01090	0.01094	0.01070
	(!A1 * B1_N * Y)	-0.00365	-0.00432	-0.00441
	(!A1 * B1_N * Y)	0.01205	0.01154	0.01134
	(!A1 * !B1_N * !Y)	-0.00477	-0.00487	-0.00485
	(!A1 * !B1_N * !Y)	0.01087	0.01095	0.01090

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)	0.00669	0.01303	0.11399
	(A1 * A2 * !Y)	0.00222	0.00856	0.10952
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00788	0.01463	0.13006
	(A1 * A2 * !Y)	0.00346	0.01020	0.12562
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.01352	0.02303	0.19901
	(A1 * A2 * !Y)	0.00691	0.01639	0.19241

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)	0.00116	0.00820	0.11052
	(A1 * A2 * !Y)	0.00563	0.01270	0.11498
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00325	0.01090	0.12752
	(A1 * A2 * !Y)	0.00771	0.01537	0.13196
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00691	0.01868	0.19818
	(A1 * A2 * !Y)	0.01358	0.02538	0.20479

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00271	0.00262	0.00227	1.19228
sky130_fd_sc_hs__a21bo_2	0.00288	0.00275	0.00237	2.15580
sky130_fd_sc_hs__a21bo_4	0.00502	0.00534	0.00275	4.14209

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	107.76700	177.67800
sky130_fd_sc_hs__a21bo_2	0.00000	126.94200	202.97600
sky130_fd_sc_hs__a21bo_4	0.00000	187.29700	273.66600

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)	0.08219	0.58483	6.59353
	A2->X (RR)	0.08577	0.56975	6.42083
	B1_N->X (FR)	0.10152	0.65042	7.46505
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.07908	0.48828	6.11077
	A2->X (RR)	0.08297	0.46891	5.92240
	B1_N->X (FR)	0.10975	0.56601	7.14583
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.08199	0.43480	6.40049
	A2->X (RR)	0.08848	0.42089	6.24254
	B1_N->X (FR)	0.12334	0.53533	7.42487

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.11085	0.49088	4.83730
	A2->X (FF)	0.12635	0.51854	4.98135
	B1_N->X (RF)	0.13253	0.42190	3.32721
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.13758	0.48941	4.69689
	A2->X (FF)	0.15659	0.52210	4.85317
	B1_N->X (RF)	0.16878	0.42322	3.02568
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.13265	0.43449	4.61461
	A2->X (FF)	0.14439	0.45958	4.72652
	B1_N->X (RF)	0.15570	0.37543	2.96220

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.01484	0.01938	0.10269
	A1	0.01033	0.01488	0.09826
	A2	0.01589	0.01997	0.10144
	A2	0.01033	0.01441	0.09611
	B1_N	0.01005	0.01748	0.12824
	B1_N	0.01326	0.02070	0.13173
sky130_fd_sc_hs__a21bo_2	A1	0.01824	0.02283	0.10693
	A1	0.01354	0.01816	0.10315
	A2	0.01927	0.02323	0.10576
	A2	0.01349	0.01746	0.09993
	B1_N	0.01357	0.02085	0.13112
	B1_N	0.01700	0.02426	0.13476
sky130_fd_sc_hs__a21bo_4	A1	0.03143	0.04079	0.20893
	A1	0.02321	0.03265	0.20169
	A2	0.03421	0.04217	0.20712
	A2	0.02326	0.03136	0.19765
	B1_N	0.02510	0.03385	0.17216
	B1_N	0.02880	0.03763	0.17654

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00825	0.01213	0.09526
	A1	0.01276	0.01661	0.09909
	A2	0.00857	0.01241	0.09512
	A2	0.01413	0.01793	0.09947
	B1_N	0.01374	0.02000	0.12649
	B1_N	0.01051	0.01678	0.12213
sky130_fd_sc_hs__a21bo_2	A1	0.01306	0.01566	0.09741
	A1	0.01775	0.02025	0.10214
	A2	0.01424	0.01635	0.10029
	A2	0.02001	0.02211	0.10371
	B1_N	0.02096	0.02495	0.12444
	B1_N	0.01869	0.02256	0.12207
sky130_fd_sc_hs__a21bo_4	A1	0.02422	0.02922	0.19341
	A1	0.03245	0.03735	0.20005
	A2	0.02504	0.02980	0.19691
	A2	0.03597	0.04071	0.20269
	B1_N	0.03478	0.03895	0.15971
	B1_N	0.03314	0.03725	0.15803

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)	0.00234	0.00192	0.00209
	(A2 * !B1_N * X)	-0.00140	-0.00182	-0.00161
	(!A2 * B1_N * !X)	0.00186	0.00187	0.00185
	(!A2 * B1_N * !X)	-0.00109	-0.00111	-0.00114
	(!A2 * !B1_N * X)	0.00205	0.00206	0.00205
	(!A2 * !B1_N * X)	-0.00160	-0.00162	-0.00161
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00259	0.00219	0.00237
	(A2 * !B1_N * X)	-0.00135	-0.00178	-0.00156
	(!A2 * B1_N * !X)	0.00242	0.00243	0.00240
	(!A2 * B1_N * !X)	-0.00065	-0.00067	-0.00071
	(!A2 * !B1_N * X)	0.00233	0.00233	0.00232
	(!A2 * !B1_N * X)	-0.00155	-0.00156	-0.00155
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00449	0.00371	0.00406
	(A2 * !B1_N * X)	-0.00252	-0.00336	-0.00294
	(!A2 * B1_N * !X)	0.00322	0.00323	0.00317
	(!A2 * B1_N * !X)	-0.00232	-0.00235	-0.00245
	(!A2 * !B1_N * X)	0.00396	0.00399	0.00397
	(!A2 * !B1_N * X)	-0.00291	-0.00295	-0.00292

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)	-0.00087	-0.00089	-0.00097
	(A2 * !B1_N * X)	0.00285	0.00284	0.00275
	(!A2 * B1_N * !X)	0.00083	0.00082	0.00083
	(!A2 * B1_N * !X)	0.00381	0.00385	0.00381
	(!A2 * !B1_N * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1_N * X)	0.00284	0.00285	0.00283
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00112	-0.00115	-0.00122
	(A2 * !B1_N * X)	0.00281	0.00282	0.00272
	(!A2 * B1_N * !X)	0.00113	0.00112	0.00113
	(!A2 * B1_N * !X)	0.00423	0.00427	0.00423
	(!A2 * !B1_N * X)	-0.00108	-0.00109	-0.00109
	(!A2 * !B1_N * X)	0.00281	0.00281	0.00280
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00157	-0.00161	-0.00176
	(A2 * !B1_N * X)	0.00545	0.00545	0.00526
	(!A2 * B1_N * !X)	0.00158	0.00156	0.00158
	(!A2 * B1_N * !X)	0.00718	0.00725	0.00718
	(!A2 * !B1_N * X)	-0.00148	-0.00151	-0.00150
	(!A2 * !B1_N * X)	0.00544	0.00544	0.00542

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)	0.00254	0.00214	0.00232
	(A1 * !B1_N * X)	-0.00127	-0.00167	-0.00145
	(!A1 * B1_N * !X)	0.00303	0.00305	0.00303
	(!A1 * B1_N * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1_N * X)	0.00228	0.00230	0.00228
	(!A1 * !B1_N * X)	-0.00143	-0.00145	-0.00144
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00256	0.00215	0.00233
	(A1 * !B1_N * X)	-0.00128	-0.00173	-0.00151
	(!A1 * B1_N * !X)	0.00343	0.00344	0.00344
	(!A1 * B1_N * !X)	-0.00035	-0.00037	-0.00036
	(!A1 * !B1_N * X)	0.00229	0.00229	0.00229
	(!A1 * !B1_N * X)	-0.00150	-0.00151	-0.00150
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00507	0.00435	0.00469
	(A1 * !B1_N * X)	-0.00254	-0.00334	-0.00292
	(!A1 * B1_N * !X)	0.00576	0.00581	0.00578
	(!A1 * B1_N * !X)	-0.00174	-0.00177	-0.00175
	(!A1 * !B1_N * X)	0.00460	0.00461	0.00461
	(!A1 * !B1_N * X)	-0.00288	-0.00289	-0.00289

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)	-0.00109	-0.00113	-0.00120
	(A1 * !B1_N * X)	0.00267	0.00269	0.00259
	(!A1 * B1_N * !X)	-0.00017	-0.00031	-0.00033
	(!A1 * B1_N * !X)	0.00357	0.00346	0.00341
	(!A1 * !B1_N * X)	-0.00106	-0.00108	-0.00107
	(!A1 * !B1_N * X)	0.00266	0.00268	0.00267
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00108	-0.00111	-0.00118
	(A1 * !B1_N * X)	0.00277	0.00278	0.00267
	(!A1 * B1_N * !X)	0.00028	0.00015	0.00011
	(!A1 * B1_N * !X)	0.00407	0.00396	0.00391
	(!A1 * !B1_N * X)	-0.00103	-0.00105	-0.00104
	(!A1 * !B1_N * X)	0.00274	0.00276	0.00275
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00221	-0.00225	-0.00240
	(A1 * !B1_N * X)	0.00542	0.00543	0.00523
	(!A1 * B1_N * !X)	-0.00063	-0.00093	-0.00098
	(!A1 * B1_N * !X)	0.00692	0.00667	0.00655
	(!A1 * !B1_N * X)	-0.00211	-0.00214	-0.00213
	(!A1 * !B1_N * X)	0.00539	0.00541	0.00539

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)	0.00605	0.01240	0.11092
	(A1 * A2 * X)	0.00222	0.00855	0.10709
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00661	0.01280	0.11150
	(A1 * A2 * X)	0.00263	0.00878	0.10750
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00880	0.01545	0.12784
	(A1 * A2 * X)	0.00415	0.01080	0.12321

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)	0.00139	0.00838	0.10836
	(A1 * A2 * X)	0.00523	0.01224	0.11219
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00169	0.00855	0.10876
	(A1 * A2 * X)	0.00570	0.01258	0.11277
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00271	0.01021	0.12394
	(A1 * A2 * X)	0.00738	0.01489	0.12858

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00302	0.00286	0.00296	0.61549
sky130_fd_sc_hs__a21oi_2	0.00553	0.00576	0.00446	1.08618
sky130_fd_sc_hs__a21oi_4	0.01124	0.01105	0.00881	2.04578

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21oi_1	0.00000	28.00730	58.90620
sky130_fd_sc_hs__a21oi_2	0.00000	55.31980	117.58100
sky130_fd_sc_hs__a21oi_4	0.00000	110.54400	234.97900

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)	0.06372	0.74255	8.46106
	A2->Y (FR)	0.07827	0.77662	8.70362
	B1->Y (FR)	0.06000	0.81563	9.44234
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.06123	0.66114	8.72900
	A2->Y (FR)	0.07973	0.66922	8.58474
	B1->Y (FR)	0.03322	0.67881	9.26923
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.05716	0.54830	8.48327
	A2->Y (FR)	0.07380	0.55174	8.28657
	B1->Y (FR)	0.03050	0.57256	9.07546

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.03429	0.45770	5.18098
	A2->Y (RF)	0.03741	0.40784	4.51838
	B1->Y (RF)	0.01903	0.34239	3.97775
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.03235	0.39942	5.17920
	A2->Y (RF)	0.03937	0.35319	4.45782
	B1->Y (RF)	0.02386	0.43901	5.93200
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.03124	0.34966	5.26020
	A2->Y (RF)	0.03605	0.28973	4.31375
	B1->Y (RF)	0.02348	0.38843	6.10104

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00014	0.00136	0.03253
	A1	0.00638	0.00786	0.03903
	A2	0.00031	0.00180	0.03380
	A2	0.00799	0.00948	0.04149
	B1	-0.00050	0.00293	0.04703
	B1	0.00457	0.00805	0.05241
sky130_fd_sc_hs__a21oi_2	A1	-0.00047	0.00267	0.05936
	A1	0.01178	0.01493	0.07163
	A2	0.00130	0.00431	0.06217
	A2	0.01640	0.01937	0.07725
	B1	0.00007	0.00499	0.06078
	B1	0.00801	0.01294	0.06864
sky130_fd_sc_hs__a21oi_4	A1	-0.00177	0.00578	0.11983
	A1	0.02327	0.03079	0.14481
	A2	0.00177	0.00945	0.13217
	A2	0.03185	0.03946	0.16203
	B1	-0.00015	0.01024	0.11406
	B1	0.01572	0.02616	0.13053

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00921	0.01077	0.03764
	A1	0.00273	0.00425	0.03042
	A2	0.01033	0.01169	0.03803
	A2	0.00266	0.00399	0.03033
	B1	0.00542	0.00781	0.03962
	B1	0.00035	0.00271	0.03451
sky130_fd_sc_hs__a21oi_2	A1	0.01702	0.02042	0.06884
	A1	0.00481	0.00814	0.05661
	A2	0.01989	0.02262	0.07392
	A2	0.00477	0.00751	0.05872
	B1	0.00781	0.01148	0.05216
	B1	-0.00012	0.00345	0.04413
sky130_fd_sc_hs__a21oi_4	A1	0.03403	0.04135	0.13599
	A1	0.00903	0.01626	0.10860
	A2	0.03855	0.04521	0.14751
	A2	0.00848	0.01502	0.11745
	B1	0.01609	0.02341	0.09907
	B1	0.00021	0.00751	0.08288

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00253	0.00210	0.00218
	(A2 * B1 * !Y)	-0.00154	-0.00197	-0.00184
	(!A2 * B1 * !Y)	0.00212	0.00214	0.00212
	(!A2 * B1 * !Y)	-0.00184	-0.00186	-0.00185
	(!A2 * !B1 * Y)	0.00054	0.00054	0.00052
	(!A2 * !B1 * Y)	-0.00262	-0.00263	-0.00267
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00509	0.00418	0.00432
	(A2 * B1 * !Y)	-0.00288	-0.00385	-0.00360
	(!A2 * B1 * !Y)	0.00414	0.00415	0.00416
	(!A2 * B1 * !Y)	-0.00359	-0.00361	-0.00362
	(!A2 * !B1 * Y)	0.00116	0.00116	0.00109
	(!A2 * !B1 * Y)	-0.00499	-0.00503	-0.00516
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.01016	0.00840	0.00869
	(A2 * B1 * !Y)	-0.00583	-0.00773	-0.00720
	(!A2 * B1 * !Y)	0.00844	0.00851	0.00845
	(!A2 * B1 * !Y)	-0.00720	-0.00725	-0.00720
	(!A2 * !B1 * Y)	0.00219	0.00220	0.00205
	(!A2 * !B1 * Y)	-0.01032	-0.01039	-0.01060

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00130	-0.00132	-0.00137
	(A2 * B1 * !Y)	0.00272	0.00274	0.00267
	(!A2 * B1 * !Y)	-0.00125	-0.00127	-0.00127
	(!A2 * B1 * !Y)	0.00270	0.00272	0.00271
	(!A2 * !B1 * Y)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * Y)	0.00271	0.00272	0.00271
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00259	-0.00262	-0.00271
	(A2 * B1 * !Y)	0.00538	0.00538	0.00525
	(!A2 * B1 * !Y)	-0.00242	-0.00249	-0.00249
	(!A2 * B1 * !Y)	0.00534	0.00539	0.00534
	(!A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A2 * !B1 * Y)	0.00521	0.00524	0.00523
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00520	-0.00529	-0.00547
	(A2 * B1 * !Y)	0.01071	0.01077	0.01051
	(!A2 * B1 * !Y)	-0.00499	-0.00509	-0.00507
	(!A2 * B1 * !Y)	0.01064	0.01076	0.01066
	(!A2 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * Y)	0.01069	0.01075	0.01073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00252	0.00211	0.00218
	(A1 * B1 * !Y)	-0.00153	-0.00197	-0.00184
	(!A1 * B1 * !Y)	0.00213	0.00215	0.00213
	(!A1 * B1 * !Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !B1 * Y)	0.00173	0.00173	0.00174
	(!A1 * !B1 * Y)	-0.00225	-0.00225	-0.00225
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00523	0.00431	0.00444
	(A1 * B1 * !Y)	-0.00291	-0.00386	-0.00361
	(!A1 * B1 * !Y)	0.00429	0.00430	0.00429
	(!A1 * B1 * !Y)	-0.00363	-0.00364	-0.00363
	(!A1 * !B1 * Y)	0.00337	0.00339	0.00338
	(!A1 * !B1 * Y)	-0.00457	-0.00458	-0.00456
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00994	0.00824	0.00853
	(A1 * B1 * !Y)	-0.00612	-0.00794	-0.00742
	(!A1 * B1 * !Y)	0.00826	0.00835	0.00827
	(!A1 * B1 * !Y)	-0.00741	-0.00749	-0.00744
	(!A1 * !B1 * Y)	0.00662	0.00670	0.00666
	(!A1 * !B1 * Y)	-0.00909	-0.00915	-0.00911

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00131	-0.00133	-0.00137
	(A1 * B1 * !Y)	0.00273	0.00274	0.00268
	(!A1 * B1 * !Y)	-0.00127	-0.00129	-0.00127
	(!A1 * B1 * !Y)	0.00272	0.00274	0.00271
	(!A1 * !B1 * Y)	-0.00151	-0.00164	-0.00167
	(!A1 * !B1 * Y)	0.00250	0.00238	0.00232
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00271	-0.00272	-0.00283
	(A1 * B1 * !Y)	0.00539	0.00536	0.00526
	(!A1 * B1 * !Y)	-0.00254	-0.00261	-0.00261
	(!A1 * B1 * !Y)	0.00534	0.00538	0.00535
	(!A1 * !B1 * Y)	-0.00285	-0.00324	-0.00328
	(!A1 * !B1 * Y)	0.00508	0.00477	0.00467
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00502	-0.00511	-0.00530
	(A1 * B1 * !Y)	0.01094	0.01100	0.01074
	(!A1 * B1 * !Y)	-0.00480	-0.00491	-0.00488
	(!A1 * B1 * !Y)	0.01086	0.01095	0.01090
	(!A1 * !B1 * Y)	-0.00563	-0.00635	-0.00645
	(!A1 * !B1 * Y)	0.01012	0.00956	0.00933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00207	0.00210	0.00209
	(A1 * A2 * !Y)	-0.00086	-0.00087	-0.00083
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00231	0.00233	0.00238
	(A1 * A2 * !Y)	-0.00179	-0.00179	-0.00174
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00451	0.00457	0.00461
	(A1 * A2 * !Y)	-0.00345	-0.00347	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00130	-0.00133	-0.00157
	(A1 * A2 * !Y)	0.00163	0.00163	0.00140
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00081	-0.00084	-0.00134
	(A1 * A2 * !Y)	0.00333	0.00332	0.00287
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00149	-0.00157	-0.00254
	(A1 * A2 * !Y)	0.00648	0.00648	0.00557

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00254	0.00261	0.00260	1.31476
sky130_fd_sc_hs__a21o_2	0.00282	0.00274	0.00286	2.49695
sky130_fd_sc_hs__a21o_4	0.00513	0.00494	0.00523	4.83997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	56.84070	76.77800
sky130_fd_sc_hs__a21o_2	0.00000	76.03380	102.13800
sky130_fd_sc_hs__a21o_4	0.00000	152.47700	206.07400

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)	0.07783	0.56261	6.57424
	A2->X (RR)	0.08243	0.54882	6.40016
	B1->X (RR)	0.05430	0.49659	6.06271
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.07691	0.47768	6.28772
	A2->X (RR)	0.08093	0.45807	6.10761
	B1->X (RR)	0.05363	0.41368	5.80450
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.08749	0.44190	6.65231
	A2->X (RR)	0.09313	0.42293	6.46264
	B1->X (RR)	0.05540	0.36252	6.06395

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.10548	0.49864	5.17306
	A2->X (FF)	0.12292	0.52863	5.32624
	B1->X (FF)	0.10366	0.54272	5.41334
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.12795	0.48693	5.04776
	A2->X (FF)	0.14649	0.51894	5.20391
	B1->X (FF)	0.12907	0.54419	5.37755
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.13225	0.45277	5.14178
	A2->X (FF)	0.15086	0.48457	5.29805
	B1->X (FF)	0.13014	0.50802	5.52187

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01327	0.01784	0.10155
	A1	0.00769	0.01226	0.09607
	A2	0.01457	0.01859	0.10054
	A2	0.00767	0.01170	0.09393
	B1	0.00974	0.01605	0.11653
	B1	0.00539	0.01171	0.11265
sky130_fd_sc_hs__a21o_2	A1	0.01709	0.02179	0.10831
	A1	0.01101	0.01571	0.10309
	A2	0.01831	0.02239	0.10765
	A2	0.01098	0.01509	0.10136
	B1	0.01330	0.01994	0.12443
	B1	0.00849	0.01522	0.11955
sky130_fd_sc_hs__a21o_4	A1	0.03356	0.04203	0.20417
	A1	0.02193	0.03066	0.19263
	A2	0.03559	0.04268	0.20153
	A2	0.02189	0.02897	0.18862
	B1	0.02522	0.03801	0.23805
	B1	0.01612	0.02898	0.23073

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00511	0.00916	0.09193
	A1	0.01069	0.01464	0.09705
	A2	0.00542	0.00925	0.09131
	A2	0.01231	0.01612	0.09757
	B1	0.00473	0.01140	0.10072
	B1	0.00910	0.01565	0.10423
sky130_fd_sc_hs__a21o_2	A1	0.01004	0.01276	0.09843
	A1	0.01613	0.01884	0.10290
	A2	0.01103	0.01338	0.09746
	A2	0.01836	0.02066	0.10458
	B1	0.00908	0.01532	0.11351
	B1	0.01391	0.01996	0.11678
sky130_fd_sc_hs__a21o_4	A1	0.02084	0.02538	0.18536
	A1	0.03247	0.03700	0.19406
	A2	0.02344	0.02733	0.18601
	A2	0.03712	0.04079	0.19708
	B1	0.01871	0.03032	0.21725
	B1	0.02784	0.03924	0.22528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00223	0.00181	0.00200
	(A2 * B1 * X)	-0.00131	-0.00172	-0.00149
	(!A2 * B1 * X)	0.00196	0.00197	0.00196
	(!A2 * B1 * X)	-0.00147	-0.00149	-0.00148
	(!A2 * !B1 * !X)	0.00092	0.00092	0.00090
	(!A2 * !B1 * !X)	-0.00185	-0.00185	-0.00189
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00252	0.00210	0.00228
	(A2 * B1 * X)	-0.00129	-0.00173	-0.00150
	(!A2 * B1 * X)	0.00223	0.00224	0.00223
	(!A2 * B1 * X)	-0.00149	-0.00150	-0.00149
	(!A2 * !B1 * !X)	0.00144	0.00144	0.00141
	(!A2 * !B1 * !X)	-0.00149	-0.00150	-0.00155
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00473	0.00389	0.00422
	(A2 * B1 * X)	-0.00249	-0.00340	-0.00295
	(!A2 * B1 * X)	0.00413	0.00416	0.00414
	(!A2 * B1 * X)	-0.00292	-0.00296	-0.00293
	(!A2 * !B1 * !X)	0.00279	0.00280	0.00272
	(!A2 * !B1 * !X)	-0.00294	-0.00297	-0.00309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00079	-0.00082	-0.00089
	(A2 * B1 * X)	0.00271	0.00272	0.00262
	(!A2 * B1 * X)	-0.00076	-0.00077	-0.00076
	(!A2 * B1 * X)	0.00269	0.00270	0.00269
	(!A2 * !B1 * !X)	0.00003	0.00002	0.00003
	(!A2 * !B1 * !X)	0.00280	0.00285	0.00281
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00105	-0.00107	-0.00114
	(A2 * B1 * X)	0.00275	0.00276	0.00266
	(!A2 * B1 * X)	-0.00100	-0.00101	-0.00101
	(!A2 * B1 * X)	0.00273	0.00274	0.00273
	(!A2 * !B1 * !X)	0.00036	0.00035	0.00036
	(!A2 * !B1 * !X)	0.00331	0.00335	0.00331
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00176	-0.00182	-0.00197
	(A2 * B1 * X)	0.00543	0.00546	0.00526
	(!A2 * B1 * X)	-0.00168	-0.00172	-0.00171
	(!A2 * B1 * X)	0.00541	0.00542	0.00539
	(!A2 * !B1 * !X)	0.00085	0.00083	0.00085
	(!A2 * !B1 * !X)	0.00664	0.00672	0.00665

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00255	0.00216	0.00233
	(A1 * B1 * X)	-0.00129	-0.00170	-0.00147
	(!A1 * B1 * X)	0.00230	0.00232	0.00230
	(!A1 * B1 * X)	-0.00144	-0.00146	-0.00145
	(!A1 * !B1 * !X)	0.00217	0.00219	0.00218
	(!A1 * !B1 * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00259	0.00219	0.00236
	(A1 * B1 * X)	-0.00130	-0.00173	-0.00150
	(!A1 * B1 * X)	0.00233	0.00233	0.00232
	(!A1 * B1 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * !B1 * !X)	0.00260	0.00261	0.00261
	(!A1 * !B1 * !X)	-0.00121	-0.00122	-0.00121
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00465	0.00383	0.00417
	(A1 * B1 * X)	-0.00251	-0.00340	-0.00295
	(!A1 * B1 * X)	0.00409	0.00412	0.00409
	(!A1 * B1 * X)	-0.00292	-0.00294	-0.00292
	(!A1 * !B1 * !X)	0.00466	0.00470	0.00468
	(!A1 * !B1 * !X)	-0.00235	-0.00238	-0.00235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00114	-0.00116	-0.00123
	(A1 * B1 * X)	0.00268	0.00269	0.00259
	(!A1 * B1 * X)	-0.00109	-0.00111	-0.00110
	(!A1 * B1 * X)	0.00265	0.00267	0.00266
	(!A1 * !B1 * !X)	-0.00107	-0.00121	-0.00123
	(!A1 * !B1 * !X)	0.00269	0.00258	0.00253
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00113	-0.00116	-0.00123
	(A1 * B1 * X)	0.00275	0.00275	0.00266
	(!A1 * B1 * X)	-0.00109	-0.00110	-0.00110
	(!A1 * B1 * X)	0.00273	0.00273	0.00272
	(!A1 * !B1 * !X)	-0.00065	-0.00078	-0.00081
	(!A1 * !B1 * !X)	0.00319	0.00306	0.00300
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00172	-0.00176	-0.00191
	(A1 * B1 * X)	0.00544	0.00543	0.00525
	(!A1 * B1 * X)	-0.00162	-0.00166	-0.00165
	(!A1 * B1 * X)	0.00537	0.00540	0.00539
	(!A1 * !B1 * !X)	-0.00068	-0.00101	-0.00106
	(!A1 * !B1 * !X)	0.00635	0.00608	0.00597

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00172	0.00176	0.00177
	(A1 * A2 * X)	-0.00079	-0.00080	-0.00075
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00205	0.00208	0.00209
	(A1 * A2 * X)	-0.00076	-0.00077	-0.00072
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00359	0.00364	0.00366
	(A1 * A2 * X)	-0.00163	-0.00164	-0.00153

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00077	-0.00079	-0.00108
	(A1 * A2 * X)	0.00179	0.00177	0.00148
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00106	-0.00108	-0.00137
	(A1 * A2 * X)	0.00179	0.00177	0.00148
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00159	-0.00166	-0.00225
	(A1 * A2 * X)	0.00361	0.00362	0.00304

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00292	0.00289	0.00297	0.00307	0.00306	0.40520
sky130_fd_sc_hs__a221oi_2	0.00616	0.00561	0.00606	0.00557	0.00565	0.68019
sky130_fd_sc_hs__a221oi_4	0.01139	0.01140	0.01129	0.01106	0.01119	1.19106

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221oi_1	0.00000	27.83500	58.85200
sky130_fd_sc_hs__a221oi_2	0.00000	55.35260	117.42700
sky130_fd_sc_hs__a221oi_4	0.00000	110.62300	234.62600

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)	0.16522	0.90207	8.16247
	A2->Y (FR)	0.18455	0.92571	8.23437
	B1->Y (FR)	0.14139	0.92069	8.79738
	B2->Y (FR)	0.16340	0.95190	8.91437
	C1->Y (FR)	0.12093	0.95022	9.40533
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.15319	0.73291	7.58714
	A2->Y (FR)	0.19364	0.80759	8.09493
	B1->Y (FR)	0.13695	0.78673	8.55898
	B2->Y (FR)	0.16760	0.83358	8.79307
	C1->Y (FR)	0.11746	0.84350	9.37671
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.17108	0.66211	7.65410
	A2->Y (FR)	0.20449	0.70370	7.83471
	B1->Y (FR)	0.14099	0.67929	8.28576
	B2->Y (FR)	0.17700	0.73187	8.58521
	C1->Y (FR)	0.12583	0.75869	9.40690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.04208	0.42059	3.91097
	A2->Y (RF)	0.04572	0.37295	3.35299
	B1->Y (RF)	0.04071	0.40550	3.93758
	B2->Y (RF)	0.04539	0.36159	3.38879
	C1->Y (RF)	0.02300	0.30042	2.97043
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.03700	0.35294	3.63430
	A2->Y (RF)	0.04316	0.31625	3.13520
	B1->Y (RF)	0.03544	0.32865	3.57400
	B2->Y (RF)	0.04041	0.29397	3.08631
	C1->Y (RF)	0.01992	0.23977	2.71123
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03901	0.31977	3.63868
	A2->Y (RF)	0.04432	0.26382	2.87830
	B1->Y (RF)	0.03958	0.29631	3.61962
	B2->Y (RF)	0.04492	0.24538	2.85423
	C1->Y (RF)	0.01834	0.18342	2.40695

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00145	0.00206	0.03759
	A1	0.01105	0.01165	0.04721
	A2	0.00180	0.00246	0.03909
	A2	0.01271	0.01337	0.04995
	B1	0.00146	0.00276	0.03662
	B1	0.00832	0.00951	0.04358
	B2	0.00193	0.00322	0.03752
	B2	0.01008	0.01136	0.04579
	C1	0.00112	0.00423	0.05020
	C1	0.00672	0.00985	0.05579
sky130_fd_sc_hs__a221oi_2	A1	0.00095	0.00261	0.07561
	A1	0.02059	0.02224	0.09565
	A2	0.00278	0.00419	0.07578
	A2	0.02431	0.02576	0.09721
	B1	0.00104	0.00412	0.07183
	B1	0.01499	0.01809	0.08579
	B2	0.00242	0.00543	0.07470
	B2	0.01837	0.02140	0.09081
	C1	0.00046	0.00734	0.09750
	C1	0.01138	0.01828	0.10859

sky130_fd_sc_hs__a221oi_4	**A1**	0.00109	0.00411	0.13602
	A1	0.03980	0.04290	0.17508
	A2	0.00402	0.00697	0.14479
	A2	0.04772	0.05072	0.18831
	B1	0.00096	0.00720	0.12979
	B1	0.02910	0.03528	0.15802
	B2	0.00411	0.01005	0.13315
	B2	0.03719	0.04314	0.16598
	C1	-0.00019	0.01361	0.18178
	C1	0.02130	0.03512	0.20333

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01564	0.01690	0.04825
	A1	0.00605	0.00725	0.03837
	A2	0.01686	0.01793	0.04958
	A2	0.00596	0.00699	0.03858
	B1	0.00965	0.01123	0.04124
	B1	0.00280	0.00433	0.03422
	B2	0.01087	0.01220	0.04207
	B2	0.00274	0.00404	0.03383
	C1	0.00583	0.00818	0.04349
	C1	0.00025	0.00256	0.03788

sky130_fd_sc_hs__a221oi_2	**A1**	0.02939	0.03226	0.09585
	A1	0.00977	0.01257	0.07628
	A2	0.03152	0.03369	0.09544
	A2	0.01000	0.01215	0.07372
	B1	0.01843	0.02206	0.08237
	B1	0.00454	0.00813	0.06843
	B2	0.02048	0.02349	0.08309
	B2	0.00454	0.00747	0.06700
	C1	0.01053	0.01584	0.08636
	C1	-0.00035	0.00491	0.07543
sky130_fd_sc_hs__a221oi_4	**A1**	0.05902	0.06448	0.18176
	A1	0.02031	0.02571	0.14286
	A2	0.06361	0.06816	0.19273
	A2	0.01995	0.02446	0.14915
	B1	0.03675	0.04421	0.15770
	B1	0.00868	0.01611	0.12966
	B2	0.04163	0.04791	0.16590
	B2	0.00849	0.01476	0.13251
	C1	0.02182	0.03287	0.16880
	C1	0.00036	0.01130	0.14720

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)**	0.00196	0.00177	0.00174
	(A2 * B1 * B2 * C1 * !Y)	-0.00194	-0.00216	-0.00217
	(A2 * B1 * B2 * !C1 * !Y)	0.00260	0.00215	0.00217
	(A2 * B1 * B2 * !C1 * !Y)	-0.00139	-0.00186	-0.00175
	(A2 * B1 * !B2 * C1 * !Y)	0.00248	0.00210	0.00209
	(A2 * B1 * !B2 * C1 * !Y)	-0.00145	-0.00189	-0.00182
	(A2 * !B1 * C1 * !Y)	0.00250	0.00210	0.00209
	(A2 * !B1 * C1 * !Y)	-0.00145	-0.00188	-0.00182
	(!A2 * B1 * B2 * C1 * !Y)	0.00167	0.00169	0.00168
	(!A2 * B1 * B2 * C1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * B2 * !C1 * !Y)	0.00211	0.00213	0.00212
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * !B2 * C1 * !Y)	0.00203	0.00203	0.00204
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00183	-0.00183	-0.00183
	(!A2 * B1 * !B2 * !C1 * Y)	0.00056	0.00056	0.00053
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00251	-0.00251	-0.00255
	(!A2 * !B1 * C1 * !Y)	0.00203	0.00206	0.00204
	(!A2 * !B1 * C1 * !Y)	-0.00183	-0.00185	-0.00183
	(!A2 * !B1 * !C1 * Y)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !C1 * Y)	-0.00251	-0.00251	-0.00255

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00417	0.00377	0.00369
	(A2 * B1 * B2 * C1 * !Y)	-0.00405	-0.00455	-0.00457
	(A2 * B1 * B2 * !C1 * !Y)	0.00540	0.00450	0.00454
	(A2 * B1 * B2 * !C1 * !Y)	-0.00299	-0.00397	-0.00375
	(A2 * B1 * !B2 * C1 * !Y)	0.00521	0.00443	0.00438
	(A2 * B1 * !B2 * C1 * !Y)	-0.00313	-0.00401	-0.00389
	(A2 * !B1 * C1 * !Y)	0.00522	0.00443	0.00438
	(A2 * !B1 * C1 * !Y)	-0.00312	-0.00401	-0.00389
	(!A2 * B1 * B2 * C1 * !Y)	0.00354	0.00359	0.00355
	(!A2 * B1 * B2 * C1 * !Y)	-0.00462	-0.00466	-0.00463
	(!A2 * B1 * B2 * !C1 * !Y)	0.00442	0.00446	0.00443
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00373	-0.00378	-0.00375
	(!A2 * B1 * !B2 * C1 * !Y)	0.00426	0.00428	0.00427
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00390	-0.00393	-0.00391
	(!A2 * B1 * !B2 * !C1 * Y)	0.00126	0.00127	0.00119
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00538	-0.00541	-0.00553
	(!A2 * !B1 * C1 * !Y)	0.00426	0.00428	0.00427
	(!A2 * !B1 * C1 * !Y)	-0.00390	-0.00393	-0.00391
	(!A2 * !B1 * !C1 * Y)	0.00127	0.00127	0.00120
	(!A2 * !B1 * !C1 * Y)	-0.00538	-0.00541	-0.00553

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00831	0.00742	0.00718
	(A2 * B1 * B2 * C1 * !Y)	-0.00754	-0.00864	-0.00874
	(A2 * B1 * B2 * !C1 * !Y)	0.01085	0.00895	0.00904
	(A2 * B1 * B2 * !C1 * !Y)	-0.00540	-0.00745	-0.00698
	(A2 * B1 * !B2 * C1 * !Y)	0.01038	0.00866	0.00852
	(A2 * B1 * !B2 * C1 * !Y)	-0.00574	-0.00770	-0.00747
	(A2 * !B1 * C1 * !Y)	0.01043	0.00866	0.00852
	(A2 * !B1 * C1 * !Y)	-0.00571	-0.00770	-0.00747
	(!A2 * B1 * B2 * C1 * !Y)	0.00698	0.00696	0.00691
	(!A2 * B1 * B2 * C1 * !Y)	-0.00880	-0.00878	-0.00883
	(!A2 * B1 * B2 * !C1 * !Y)	0.00884	0.00890	0.00881
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00691	-0.00700	-0.00696
	(!A2 * B1 * !B2 * C1 * !Y)	0.00826	0.00834	0.00828
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00750	-0.00757	-0.00752
	(!A2 * B1 * !B2 * !C1 * Y)	0.00227	0.00228	0.00214
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01041	-0.01047	-0.01068
	(!A2 * !B1 * C1 * !Y)	0.00826	0.00834	0.00828
	(!A2 * !B1 * C1 * !Y)	-0.00750	-0.00757	-0.00752
	(!A2 * !B1 * !C1 * Y)	0.00228	0.00229	0.00216
	(!A2 * !B1 * !C1 * Y)	-0.01040	-0.01047	-0.01067

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)**	-0.00156	-0.00158	-0.00156
	(A2 * B1 * B2 * C1 * !Y)	0.00234	0.00236	0.00234
	(A2 * B1 * B2 * !C1 * !Y)	-0.00115	-0.00117	-0.00122
	(A2 * B1 * B2 * !C1 * !Y)	0.00279	0.00280	0.00273
	(A2 * B1 * !B2 * C1 * !Y)	-0.00122	-0.00122	-0.00125
	(A2 * B1 * !B2 * C1 * !Y)	0.00270	0.00270	0.00268
	(A2 * !B1 * C1 * !Y)	-0.00122	-0.00123	-0.00125
	(A2 * !B1 * C1 * !Y)	0.00270	0.00271	0.00268
	(!A2 * B1 * B2 * C1 * !Y)	-0.00154	-0.00155	-0.00154
	(!A2 * B1 * B2 * C1 * !Y)	0.00235	0.00235	0.00234
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A2 * B1 * B2 * !C1 * !Y)	0.00278	0.00278	0.00278
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A2 * B1 * !B2 * C1 * !Y)	0.00270	0.00271	0.00270
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * B1 * !B2 * !C1 * Y)	0.00262	0.00266	0.00262
	(!A2 * !B1 * C1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A2 * !B1 * C1 * !Y)	0.00270	0.00270	0.00270
	(!A2 * !B1 * !C1 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * Y)	0.00262	0.00266	0.00262

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00330	-0.00333	-0.00331
	(A2 * B1 * B2 * C1 * !Y)	0.00492	0.00496	0.00493
	(A2 * B1 * B2 * !C1 * !Y)	-0.00252	-0.00256	-0.00267
	(A2 * B1 * B2 * !C1 * !Y)	0.00583	0.00585	0.00569
	(A2 * B1 * !B2 * C1 * !Y)	-0.00264	-0.00266	-0.00270
	(A2 * B1 * !B2 * C1 * !Y)	0.00565	0.00567	0.00559
	(A2 * !B1 * C1 * !Y)	-0.00264	-0.00266	-0.00270
	(A2 * !B1 * C1 * !Y)	0.00565	0.00566	0.00559
	(!A2 * B1 * B2 * C1 * !Y)	-0.00326	-0.00330	-0.00329
	(!A2 * B1 * B2 * C1 * !Y)	0.00494	0.00494	0.00493
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00237	-0.00241	-0.00242
	(!A2 * B1 * B2 * !C1 * !Y)	0.00580	0.00582	0.00580
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00255	-0.00259	-0.00258
	(!A2 * B1 * !B2 * C1 * !Y)	0.00566	0.00567	0.00564
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00103	-0.00106	-0.00103
	(!A2 * B1 * !B2 * !C1 * Y)	0.00564	0.00576	0.00567
	(!A2 * !B1 * C1 * !Y)	-0.00254	-0.00259	-0.00258
	(!A2 * !B1 * C1 * !Y)	0.00563	0.00567	0.00564
	(!A2 * !B1 * !C1 * Y)	-0.00102	-0.00105	-0.00103
	(!A2 * !B1 * !C1 * Y)	0.00564	0.00576	0.00567

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00653	-0.00653	-0.00645
	(A2 * B1 * B2 * C1 * !Y)	0.00942	0.00944	0.00943
	(A2 * B1 * B2 * !C1 * !Y)	-0.00504	-0.00513	-0.00529
	(A2 * B1 * B2 * !C1 * !Y)	0.01111	0.01115	0.01085
	(A2 * B1 * !B2 * C1 * !Y)	-0.00504	-0.00509	-0.00516
	(A2 * B1 * !B2 * C1 * !Y)	0.01099	0.01104	0.01087
	(A2 * !B1 * C1 * !Y)	-0.00503	-0.00509	-0.00516
	(A2 * !B1 * C1 * !Y)	0.01099	0.01104	0.01087
	(!A2 * B1 * B2 * C1 * !Y)	-0.00638	-0.00645	-0.00638
	(!A2 * B1 * B2 * C1 * !Y)	0.00942	0.00944	0.00943
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00474	-0.00482	-0.00479
	(!A2 * B1 * B2 * !C1 * !Y)	0.01103	0.01109	0.01107
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00485	-0.00490	-0.00490
	(!A2 * B1 * !B2 * C1 * !Y)	0.01100	0.01100	0.01097
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00182	-0.00187	-0.00183
	(!A2 * B1 * !B2 * !C1 * Y)	0.01089	0.01112	0.01096
	(!A2 * !B1 * C1 * !Y)	-0.00482	-0.00490	-0.00490
	(!A2 * !B1 * C1 * !Y)	0.01096	0.01101	0.01097
	(!A2 * !B1 * !C1 * Y)	-0.00182	-0.00188	-0.00183
	(!A2 * !B1 * !C1 * Y)	0.01090	0.01112	0.01096

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)**	0.00206	0.00188	0.00184
	(A1 * B1 * B2 * C1 * !Y)	-0.00196	-0.00220	-0.00221
	(A1 * B1 * B2 * !C1 * !Y)	0.00272	0.00226	0.00228
	(A1 * B1 * B2 * !C1 * !Y)	-0.00140	-0.00189	-0.00179
	(A1 * B1 * !B2 * C1 * !Y)	0.00261	0.00221	0.00220
	(A1 * B1 * !B2 * C1 * !Y)	-0.00148	-0.00192	-0.00186
	(A1 * !B1 * C1 * !Y)	0.00261	0.00221	0.00220
	(A1 * !B1 * C1 * !Y)	-0.00147	-0.00192	-0.00186
	(!A1 * B1 * B2 * !Y)	0.00178	0.00180	0.00178
	(!A1 * B1 * B2 * !Y)	-0.00222	-0.00224	-0.00223
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00214	0.00216	0.00214
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00187	-0.00189	-0.00187
	(!A1 * B1 * !B2 * !C1 * Y)	0.00177	0.00178	0.00177
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00225	-0.00227	-0.00226
	(!A1 * !B1 * !C1 * Y)	0.00177	0.00179	0.00177
	(!A1 * !B1 * !C1 * Y)	-0.00225	-0.00227	-0.00226

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00401	0.00360	0.00352
	(A1 * B1 * B2 * C1 * !Y)	-0.00373	-0.00425	-0.00427
	(A1 * B1 * B2 * !C1 * !Y)	0.00528	0.00432	0.00437
	(A1 * B1 * B2 * !C1 * !Y)	-0.00266	-0.00368	-0.00345
	(A1 * B1 * !B2 * C1 * !Y)	0.00507	0.00426	0.00422
	(A1 * B1 * !B2 * C1 * !Y)	-0.00280	-0.00372	-0.00359
	(A1 * !B1 * C1 * !Y)	0.00508	0.00426	0.00422
	(A1 * !B1 * C1 * !Y)	-0.00279	-0.00372	-0.00359
	(!A1 * B1 * B2 * !Y)	0.00340	0.00341	0.00339
	(!A1 * B1 * B2 * !Y)	-0.00432	-0.00433	-0.00432
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00411	0.00414	0.00411
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00361	-0.00362	-0.00360
	(!A1 * B1 * !B2 * !C1 * Y)	0.00320	0.00324	0.00322
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00451	-0.00454	-0.00451
	(!A1 * !B1 * !C1 * Y)	0.00320	0.00324	0.00322
	(!A1 * !B1 * !C1 * Y)	-0.00451	-0.00453	-0.00451

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00844	0.00754	0.00727
	(A1 * B1 * B2 * C1 * !Y)	-0.00762	-0.00865	-0.00876
	(A1 * B1 * B2 * !C1 * !Y)	0.01096	0.00910	0.00916
	(A1 * B1 * B2 * !C1 * !Y)	-0.00550	-0.00743	-0.00698
	(A1 * B1 * !B2 * C1 * !Y)	0.01045	0.00875	0.00859
	(A1 * B1 * !B2 * C1 * !Y)	-0.00583	-0.00774	-0.00752
	(A1 * !B1 * C1 * !Y)	0.01050	0.00875	0.00859
	(A1 * !B1 * C1 * !Y)	-0.00583	-0.00774	-0.00752
	(!A1 * B1 * B2 * !Y)	0.00711	0.00718	0.00702
	(!A1 * B1 * B2 * !Y)	-0.00881	-0.00886	-0.00885
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00839	0.00841	0.00837
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00758	-0.00760	-0.00757
	(!A1 * B1 * !B2 * !C1 * Y)	0.00645	0.00654	0.00647
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00951	-0.00957	-0.00951
	(!A1 * !B1 * !C1 * Y)	0.00645	0.00654	0.00648
	(!A1 * !B1 * !C1 * Y)	-0.00951	-0.00957	-0.00951

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)**	-0.00166	-0.00168	-0.00167
	(A1 * B1 * B2 * C1 * !Y)	0.00237	0.00240	0.00238
	(A1 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00128	-0.00133
	(A1 * B1 * B2 * !C1 * !Y)	0.00283	0.00285	0.00277
	(A1 * B1 * !B2 * C1 * !Y)	-0.00132	-0.00133	-0.00135
	(A1 * B1 * !B2 * C1 * !Y)	0.00273	0.00274	0.00271
	(A1 * !B1 * C1 * !Y)	-0.00131	-0.00133	-0.00135
	(A1 * !B1 * C1 * !Y)	0.00273	0.00274	0.00272
	(!A1 * B1 * B2 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * B2 * !Y)	0.00239	0.00241	0.00238
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00274	0.00277	0.00274
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00151	-0.00164	-0.00167
	(!A1 * B1 * !B2 * !C1 * Y)	0.00254	0.00241	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00151	-0.00164	-0.00167
	(!A1 * !B1 * !C1 * Y)	0.00254	0.00242	0.00235

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00315	-0.00317	-0.00315
	(A1 * B1 * B2 * C1 * !Y)	0.00460	0.00466	0.00462
	(A1 * B1 * B2 * !C1 * !Y)	-0.00237	-0.00239	-0.00251
	(A1 * B1 * B2 * !C1 * !Y)	0.00553	0.00552	0.00538
	(A1 * B1 * !B2 * C1 * !Y)	-0.00248	-0.00250	-0.00254
	(A1 * B1 * !B2 * C1 * !Y)	0.00533	0.00535	0.00528
	(A1 * !B1 * C1 * !Y)	-0.00247	-0.00250	-0.00254
	(A1 * !B1 * C1 * !Y)	0.00533	0.00535	0.00528
	(!A1 * B1 * B2 * !Y)	-0.00308	-0.00314	-0.00313
	(!A1 * B1 * B2 * !Y)	0.00460	0.00464	0.00462
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00237	-0.00242	-0.00242
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00531	0.00535	0.00533
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00266	-0.00300	-0.00304
	(!A1 * B1 * !B2 * !C1 * Y)	0.00506	0.00479	0.00470
	(!A1 * !B1 * !C1 * Y)	-0.00266	-0.00299	-0.00304
	(!A1 * !B1 * !C1 * Y)	0.00507	0.00479	0.00470

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00659	-0.00665	-0.00653
	(A1 * B1 * B2 * C1 * !Y)	0.00936	0.00951	0.00945
	(A1 * B1 * B2 * !C1 * !Y)	-0.00518	-0.00525	-0.00541
	(A1 * B1 * B2 * !C1 * !Y)	0.01114	0.01114	0.01085
	(A1 * B1 * !B2 * C1 * !Y)	-0.00512	-0.00514	-0.00523
	(A1 * B1 * !B2 * C1 * !Y)	0.01106	0.01104	0.01092
	(A1 * !B1 * C1 * !Y)	-0.00512	-0.00513	-0.00523
	(A1 * !B1 * C1 * !Y)	0.01106	0.01104	0.01092
	(!A1 * B1 * B2 * !Y)	-0.00644	-0.00654	-0.00647
	(!A1 * B1 * B2 * !Y)	0.00938	0.00947	0.00946
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00489	-0.00500	-0.00498
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01099	0.01107	0.01103
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00535	-0.00602	-0.00611
	(!A1 * B1 * !B2 * !C1 * Y)	0.01060	0.01008	0.00989
	(!A1 * !B1 * !C1 * Y)	-0.00535	-0.00601	-0.00611
	(!A1 * !B1 * !C1 * Y)	0.01061	0.01009	0.00989

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)**	0.00213	0.00212	0.00198
	(A1 * A2 * B2 * C1 * !Y)	-0.00137	-0.00140	-0.00146
	(A1 * A2 * B2 * !C1 * !Y)	0.00203	0.00206	0.00200
	(A1 * A2 * B2 * !C1 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * A2 * !B2 * C1 * !Y)	0.00220	0.00220	0.00196
	(A1 * A2 * !B2 * C1 * !Y)	-0.00118	-0.00120	-0.00134
	(A1 * A2 * !B2 * !C1 * !Y)	0.00235	0.00238	0.00228
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00044	-0.00046	-0.00049
	(A1 * !A2 * B2 * C1 * !Y)	0.00256	0.00207	0.00213
	(A1 * !A2 * B2 * C1 * !Y)	-0.00144	-0.00196	-0.00184
	(A1 * !A2 * !B2 * C1 * !Y)	0.00208	0.00208	0.00208
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !B2 * !C1 * Y)	0.00055	0.00055	0.00053
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00256	-0.00257	-0.00261
	(!A1 * B2 * C1 * !Y)	0.00254	0.00207	0.00213
	(!A1 * B2 * C1 * !Y)	-0.00146	-0.00196	-0.00184
	(!A1 * !B2 * C1 * !Y)	0.00208	0.00208	0.00208
	(!A1 * !B2 * C1 * !Y)	-0.00183	-0.00185	-0.00184
	(!A1 * !B2 * !C1 * Y)	0.00055	0.00055	0.00053
	(!A1 * !B2 * !C1 * Y)	-0.00256	-0.00257	-0.00261

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00421	0.00424	0.00393
	(A1 * A2 * B2 * C1 * !Y)	-0.00283	-0.00285	-0.00297
	(A1 * A2 * B2 * !C1 * !Y)	0.00413	0.00418	0.00404
	(A1 * A2 * B2 * !C1 * !Y)	-0.00161	-0.00164	-0.00164
	(A1 * A2 * !B2 * C1 * !Y)	0.00440	0.00441	0.00391
	(A1 * A2 * !B2 * C1 * !Y)	-0.00240	-0.00244	-0.00270
	(A1 * A2 * !B2 * !C1 * !Y)	0.00483	0.00485	0.00467
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00090	-0.00092	-0.00102
	(A1 * !A2 * B2 * C1 * !Y)	0.00526	0.00413	0.00429
	(A1 * !A2 * B2 * C1 * !Y)	-0.00297	-0.00407	-0.00383
	(A1 * !A2 * !B2 * C1 * !Y)	0.00422	0.00421	0.00418
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00377	-0.00386	-0.00383
	(A1 * !A2 * !B2 * !C1 * Y)	0.00114	0.00114	0.00107
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00533	-0.00535	-0.00544
	(!A1 * B2 * C1 * !Y)	0.00525	0.00412	0.00429
	(!A1 * B2 * C1 * !Y)	-0.00298	-0.00407	-0.00383
	(!A1 * !B2 * C1 * !Y)	0.00421	0.00421	0.00417
	(!A1 * !B2 * C1 * !Y)	-0.00378	-0.00386	-0.00384
	(!A1 * !B2 * !C1 * Y)	0.00114	0.00114	0.00108
	(!A1 * !B2 * !C1 * Y)	-0.00533	-0.00535	-0.00544

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00843	0.00834	0.00776
	(A1 * A2 * B2 * C1 * !Y)	-0.00533	-0.00545	-0.00565
	(A1 * A2 * B2 * !C1 * !Y)	0.00832	0.00830	0.00810
	(A1 * A2 * B2 * !C1 * !Y)	-0.00314	-0.00310	-0.00317
	(A1 * A2 * !B2 * C1 * !Y)	0.00864	0.00864	0.00768
	(A1 * A2 * !B2 * C1 * !Y)	-0.00457	-0.00463	-0.00514
	(A1 * A2 * !B2 * !C1 * !Y)	0.00949	0.00953	0.00920
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00171	-0.00173	-0.00186
	(A1 * !A2 * B2 * C1 * !Y)	0.01034	0.00813	0.00850
	(A1 * !A2 * B2 * C1 * !Y)	-0.00581	-0.00792	-0.00741
	(A1 * !A2 * !B2 * C1 * !Y)	0.00832	0.00828	0.00824
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00729	-0.00746	-0.00743
	(A1 * !A2 * !B2 * !C1 * Y)	0.00226	0.00226	0.00212
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01030	-0.01034	-0.01055
	(!A1 * B2 * C1 * !Y)	0.01029	0.00822	0.00850
	(!A1 * B2 * C1 * !Y)	-0.00586	-0.00799	-0.00741
	(!A1 * !B2 * C1 * !Y)	0.00834	0.00828	0.00824
	(!A1 * !B2 * C1 * !Y)	-0.00736	-0.00746	-0.00743
	(!A1 * !B2 * !C1 * Y)	0.00228	0.00228	0.00214
	(!A1 * !B2 * !C1 * Y)	-0.01029	-0.01033	-0.01054

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)**	-0.00169	-0.00169	-0.00166
	(A1 * A2 * B2 * C1 * !Y)	0.00166	0.00167	0.00167
	(A1 * A2 * B2 * !C1 * !Y)	-0.00120	-0.00122	-0.00156
	(A1 * A2 * B2 * !C1 * !Y)	0.00161	0.00161	0.00132
	(A1 * A2 * !B2 * C1 * !Y)	-0.00165	-0.00166	-0.00163
	(A1 * A2 * !B2 * C1 * !Y)	0.00154	0.00154	0.00154
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00138	-0.00139	-0.00132
	(A1 * A2 * !B2 * !C1 * !Y)	0.00142	0.00142	0.00146
	(A1 * !A2 * B2 * C1 * !Y)	-0.00125	-0.00127	-0.00132
	(A1 * !A2 * B2 * C1 * !Y)	0.00272	0.00273	0.00267
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(A1 * !A2 * !B2 * C1 * !Y)	0.00271	0.00271	0.00271
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !B2 * !C1 * Y)	0.00267	0.00271	0.00268
	(!A1 * B2 * C1 * !Y)	-0.00125	-0.00127	-0.00132
	(!A1 * B2 * C1 * !Y)	0.00272	0.00273	0.00267
	(!A1 * !B2 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A1 * !B2 * C1 * !Y)	0.00271	0.00271	0.00271
	(!A1 * !B2 * !C1 * Y)	-0.00045	-0.00046	-0.00045
	(!A1 * !B2 * !C1 * Y)	0.00267	0.00271	0.00268

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00341	-0.00343	-0.00338
	(A1 * A2 * B2 * C1 * !Y)	0.00333	0.00336	0.00333
	(A1 * A2 * B2 * !C1 * !Y)	-0.00255	-0.00261	-0.00319
	(A1 * A2 * B2 * !C1 * !Y)	0.00317	0.00318	0.00266
	(A1 * A2 * !B2 * C1 * !Y)	-0.00330	-0.00335	-0.00330
	(A1 * A2 * !B2 * C1 * !Y)	0.00305	0.00308	0.00306
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00292	-0.00294	-0.00277
	(A1 * A2 * !B2 * !C1 * !Y)	0.00285	0.00286	0.00295
	(A1 * !A2 * B2 * C1 * !Y)	-0.00255	-0.00258	-0.00267
	(A1 * !A2 * B2 * C1 * !Y)	0.00560	0.00560	0.00548
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00246	-0.00249	-0.00248
	(A1 * !A2 * !B2 * C1 * !Y)	0.00558	0.00558	0.00556
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * !B2 * !C1 * Y)	0.00554	0.00556	0.00557
	(!A1 * B2 * C1 * !Y)	-0.00255	-0.00257	-0.00267
	(!A1 * B2 * C1 * !Y)	0.00560	0.00559	0.00548
	(!A1 * !B2 * C1 * !Y)	-0.00246	-0.00249	-0.00248
	(!A1 * !B2 * C1 * !Y)	0.00558	0.00558	0.00556
	(!A1 * !B2 * !C1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * !B2 * !C1 * Y)	0.00555	0.00557	0.00558

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00671	-0.00675	-0.00663
	(A1 * A2 * B2 * C1 * !Y)	0.00638	0.00644	0.00638
	(A1 * A2 * B2 * !C1 * !Y)	-0.00511	-0.00519	-0.00637
	(A1 * A2 * B2 * !C1 * !Y)	0.00627	0.00626	0.00526
	(A1 * A2 * !B2 * C1 * !Y)	-0.00651	-0.00658	-0.00648
	(A1 * A2 * !B2 * C1 * !Y)	0.00589	0.00590	0.00586
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00564	-0.00571	-0.00544
	(A1 * A2 * !B2 * !C1 * !Y)	0.00556	0.00559	0.00569
	(A1 * !A2 * B2 * C1 * !Y)	-0.00503	-0.00508	-0.00528
	(A1 * !A2 * B2 * C1 * !Y)	0.01102	0.01099	0.01073
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00478	-0.00486	-0.00487
	(A1 * !A2 * !B2 * C1 * !Y)	0.01087	0.01090	0.01087
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00181	-0.00181	-0.00181
	(A1 * !A2 * !B2 * !C1 * Y)	0.01078	0.01079	0.01082
	(!A1 * B2 * C1 * !Y)	-0.00500	-0.00507	-0.00527
	(!A1 * B2 * C1 * !Y)	0.01099	0.01097	0.01073
	(!A1 * !B2 * C1 * !Y)	-0.00477	-0.00486	-0.00487
	(!A1 * !B2 * C1 * !Y)	0.01087	0.01091	0.01088
	(!A1 * !B2 * !C1 * Y)	-0.00181	-0.00181	-0.00181
	(!A1 * !B2 * !C1 * Y)	0.01079	0.01080	0.01082

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)**	0.00220	0.00218	0.00203
	(A1 * A2 * B1 * C1 * !Y)	-0.00142	-0.00145	-0.00151
	(A1 * A2 * B1 * !C1 * !Y)	0.00212	0.00214	0.00207
	(A1 * A2 * B1 * !C1 * !Y)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00226	0.00226	0.00201
	(A1 * A2 * !B1 * C1 * !Y)	-0.00122	-0.00124	-0.00138
	(A1 * A2 * !B1 * !C1 * !Y)	0.00244	0.00245	0.00236
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00046	-0.00047	-0.00052
	(A1 * !A2 * B1 * C1 * !Y)	0.00264	0.00213	0.00218
	(A1 * !A2 * B1 * C1 * !Y)	-0.00149	-0.00202	-0.00190
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00213	0.00213	0.00213
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00188	-0.00191	-0.00191
	(A1 * !A2 * !B1 * !C1 * Y)	0.00163	0.00164	0.00163
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00241	-0.00243	-0.00241
	(!A1 * B1 * C1 * !Y)	0.00264	0.00213	0.00218
	(!A1 * B1 * C1 * !Y)	-0.00149	-0.00202	-0.00190
	(!A1 * !B1 * !C1 * Y)	0.00163	0.00165	0.00163
	(!A1 * !B1 * !C1 * Y)	-0.00241	-0.00243	-0.00241

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00412	0.00414	0.00385
	(A1 * A2 * B1 * C1 * !Y)	-0.00265	-0.00267	-0.00278
	(A1 * A2 * B1 * !C1 * !Y)	0.00396	0.00399	0.00392
	(A1 * A2 * B1 * !C1 * !Y)	-0.00141	-0.00143	-0.00146
	(A1 * A2 * !B1 * C1 * !Y)	0.00429	0.00429	0.00381
	(A1 * A2 * !B1 * C1 * !Y)	-0.00225	-0.00228	-0.00253
	(A1 * A2 * !B1 * !C1 * !Y)	0.00461	0.00464	0.00449
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00080	-0.00082	-0.00089
	(A1 * !A2 * B1 * C1 * !Y)	0.00507	0.00401	0.00420
	(A1 * !A2 * B1 * C1 * !Y)	-0.00279	-0.00380	-0.00357
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00412	0.00412	0.00408
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00353	-0.00359	-0.00357
	(A1 * !A2 * !B1 * !C1 * Y)	0.00321	0.00322	0.00323
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00445	-0.00445	-0.00445
	(!A1 * B1 * C1 * !Y)	0.00502	0.00401	0.00419
	(!A1 * B1 * C1 * !Y)	-0.00276	-0.00381	-0.00357
	(!A1 * !B1 * !C1 * Y)	0.00322	0.00325	0.00323
	(!A1 * !B1 * !C1 * Y)	-0.00445	-0.00447	-0.00445

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00841	0.00836	0.00778
	(A1 * A2 * B1 * C1 * !Y)	-0.00529	-0.00546	-0.00566
	(A1 * A2 * B1 * !C1 * !Y)	0.00827	0.00831	0.00810
	(A1 * A2 * B1 * !C1 * !Y)	-0.00310	-0.00313	-0.00319
	(A1 * A2 * !B1 * C1 * !Y)	0.00867	0.00868	0.00768
	(A1 * A2 * !B1 * C1 * !Y)	-0.00460	-0.00466	-0.00514
	(A1 * A2 * !B1 * !C1 * !Y)	0.00949	0.00955	0.00922
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00169	-0.00173	-0.00187
	(A1 * !A2 * B1 * C1 * !Y)	0.01033	0.00817	0.00851
	(A1 * !A2 * B1 * C1 * !Y)	-0.00572	-0.00794	-0.00740
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00835	0.00835	0.00827
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00730	-0.00747	-0.00742
	(A1 * !A2 * !B1 * !C1 * Y)	0.00675	0.00682	0.00675
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00901	-0.00904	-0.00898
	(!A1 * B1 * C1 * !Y)	0.01031	0.00816	0.00851
	(!A1 * B1 * C1 * !Y)	-0.00575	-0.00795	-0.00740
	(!A1 * !B1 * !C1 * Y)	0.00675	0.00682	0.00676
	(!A1 * !B1 * !C1 * Y)	-0.00900	-0.00904	-0.00898

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)**	-0.00174	-0.00174	-0.00172
	(A1 * A2 * B1 * C1 * !Y)	0.00171	0.00172	0.00172
	(A1 * A2 * B1 * !C1 * !Y)	-0.00128	-0.00130	-0.00163
	(A1 * A2 * B1 * !C1 * !Y)	0.00164	0.00164	0.00135
	(A1 * A2 * !B1 * C1 * !Y)	-0.00169	-0.00171	-0.00168
	(A1 * A2 * !B1 * C1 * !Y)	0.00157	0.00159	0.00158
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00147	-0.00149	-0.00140
	(A1 * A2 * !B1 * !C1 * !Y)	0.00144	0.00146	0.00149
	(A1 * !A2 * B1 * C1 * !Y)	-0.00130	-0.00132	-0.00137
	(A1 * !A2 * B1 * C1 * !Y)	0.00279	0.00278	0.00273
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00276	0.00278	0.00277
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00136	-0.00151	-0.00153
	(A1 * !A2 * !B1 * !C1 * Y)	0.00268	0.00256	0.00251
	(!A1 * B1 * C1 * !Y)	-0.00130	-0.00132	-0.00137
	(!A1 * B1 * C1 * !Y)	0.00279	0.00278	0.00273
	(!A1 * !B1 * !C1 * Y)	-0.00136	-0.00151	-0.00153
	(!A1 * !B1 * !C1 * Y)	0.00268	0.00256	0.00251

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00332	-0.00334	-0.00328
	(A1 * A2 * B1 * C1 * !Y)	0.00315	0.00318	0.00315
	(A1 * A2 * B1 * !C1 * !Y)	-0.00238	-0.00243	-0.00305
	(A1 * A2 * B1 * !C1 * !Y)	0.00303	0.00304	0.00250
	(A1 * A2 * !B1 * C1 * !Y)	-0.00321	-0.00326	-0.00320
	(A1 * A2 * !B1 * C1 * !Y)	0.00288	0.00291	0.00290
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00268	-0.00272	-0.00259
	(A1 * A2 * !B1 * !C1 * !Y)	0.00275	0.00276	0.00282
	(A1 * !A2 * B1 * C1 * !Y)	-0.00246	-0.00248	-0.00258
	(A1 * !A2 * B1 * C1 * !Y)	0.00533	0.00532	0.00522
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00235	-0.00241	-0.00239
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00528	0.00531	0.00529
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00266	-0.00300	-0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	0.00501	0.00473	0.00464
	(!A1 * B1 * C1 * !Y)	-0.00245	-0.00249	-0.00258
	(!A1 * B1 * C1 * !Y)	0.00533	0.00533	0.00522
	(!A1 * !B1 * !C1 * Y)	-0.00266	-0.00300	-0.00304
	(!A1 * !B1 * !C1 * Y)	0.00501	0.00473	0.00464

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00672	-0.00676	-0.00664
	(A1 * A2 * B1 * C1 * !Y)	0.00638	0.00644	0.00638
	(A1 * A2 * B1 * !C1 * !Y)	-0.00511	-0.00519	-0.00637
	(A1 * A2 * B1 * !C1 * !Y)	0.00629	0.00630	0.00528
	(A1 * A2 * !B1 * C1 * !Y)	-0.00649	-0.00659	-0.00648
	(A1 * A2 * !B1 * C1 * !Y)	0.00584	0.00590	0.00587
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00564	-0.00573	-0.00543
	(A1 * A2 * !B1 * !C1 * !Y)	0.00556	0.00560	0.00570
	(A1 * !A2 * B1 * C1 * !Y)	-0.00504	-0.00509	-0.00529
	(A1 * !A2 * B1 * C1 * !Y)	0.01100	0.01098	0.01073
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00478	-0.00489	-0.00487
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01085	0.01089	0.01087
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00556	-0.00628	-0.00638
	(A1 * !A2 * !B1 * !C1 * Y)	0.01015	0.00957	0.00936
	(!A1 * B1 * C1 * !Y)	-0.00504	-0.00510	-0.00529
	(!A1 * B1 * C1 * !Y)	0.01101	0.01098	0.01073
	(!A1 * !B1 * !C1 * Y)	-0.00556	-0.00629	-0.00637
	(!A1 * !B1 * !C1 * Y)	0.01016	0.00956	0.00936

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)	0.00202	0.00204	0.00203
	(A1 * B1 * B2 * !Y)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * B1 * !B2 * !Y)	0.00205	0.00204	0.00206
	(A1 * A2 * B1 * !B2 * !Y)	-0.00091	-0.00090	-0.00087
	(A1 * A2 * !B1 * !Y)	0.00204	0.00204	0.00206
	(A1 * A2 * !B1 * !Y)	-0.00091	-0.00090	-0.00087
	(!A1 * B1 * B2 * !Y)	0.00204	0.00208	0.00208
	(!A1 * B1 * B2 * !Y)	-0.00097	-0.00098	-0.00093
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00380	0.00386	0.00381
	(A1 * B1 * B2 * !Y)	-0.00185	-0.00187	-0.00184
	(A1 * A2 * B1 * !B2 * !Y)	0.00381	0.00385	0.00388
	(A1 * A2 * B1 * !B2 * !Y)	-0.00158	-0.00160	-0.00154
	(A1 * A2 * !B1 * !Y)	0.00381	0.00384	0.00388
	(A1 * A2 * !B1 * !Y)	-0.00158	-0.00159	-0.00154
	(!A1 * B1 * B2 * !Y)	0.00386	0.00391	0.00390
	(!A1 * B1 * B2 * !Y)	-0.00176	-0.00178	-0.00169
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00754	0.00764	0.00753
	(A1 * B1 * B2 * !Y)	-0.00370	-0.00372	-0.00365
	(A1 * A2 * B1 * !B2 * !Y)	0.00758	0.00761	0.00767
	(A1 * A2 * B1 * !B2 * !Y)	-0.00323	-0.00321	-0.00309
	(A1 * A2 * !B1 * !Y)	0.00757	0.00761	0.00767
	(A1 * A2 * !B1 * !Y)	-0.00322	-0.00321	-0.00309
	(!A1 * B1 * B2 * !Y)	0.00755	0.00761	0.00770
	(!A1 * B1 * B2 * !Y)	-0.00335	-0.00336	-0.00322

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)	-0.00176	-0.00178	-0.00194
	(A1 * B1 * B2 * !Y)	0.00124	0.00125	0.00112
	(A1 * A2 * B1 * !B2 * !Y)	-0.00112	-0.00115	-0.00158
	(A1 * A2 * B1 * !B2 * !Y)	0.00178	0.00179	0.00146
	(A1 * A2 * !B1 * !Y)	-0.00112	-0.00115	-0.00158
	(A1 * A2 * !B1 * !Y)	0.00179	0.00179	0.00146
	(!A1 * B1 * B2 * !Y)	-0.00128	-0.00132	-0.00157
	(!A1 * B1 * B2 * !Y)	0.00173	0.00174	0.00149
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00326	-0.00331	-0.00361
	(A1 * B1 * B2 * !Y)	0.00232	0.00234	0.00208
	(A1 * A2 * B1 * !B2 * !Y)	-0.00208	-0.00214	-0.00291
	(A1 * A2 * B1 * !B2 * !Y)	0.00332	0.00333	0.00274
	(A1 * A2 * !B1 * !Y)	-0.00209	-0.00214	-0.00291
	(A1 * A2 * !B1 * !Y)	0.00332	0.00333	0.00274
	(!A1 * B1 * B2 * !Y)	-0.00233	-0.00239	-0.00287
	(!A1 * B1 * B2 * !Y)	0.00328	0.00329	0.00281
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00657	-0.00664	-0.00718
	(A1 * B1 * B2 * !Y)	0.00448	0.00450	0.00412
	(A1 * A2 * B1 * !B2 * !Y)	-0.00415	-0.00423	-0.00574
	(A1 * A2 * B1 * !B2 * !Y)	0.00665	0.00664	0.00551
	(A1 * A2 * !B1 * !Y)	-0.00415	-0.00423	-0.00574
	(A1 * A2 * !B1 * !Y)	0.00665	0.00664	0.00551
	(!A1 * B1 * B2 * !Y)	-0.00465	-0.00474	-0.00569
	(!A1 * B1 * B2 * !Y)	0.00643	0.00640	0.00551

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00273	0.00284	0.00271	0.00273	0.00268	1.33622
sky130_fd_sc_hs__a221o_2	0.00286	0.00294	0.00293	0.00296	0.00284	2.49030
sky130_fd_sc_hs__a221o_4	0.00506	0.00509	0.00521	0.00535	0.00516	3.77470

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	51.41730	76.68190
sky130_fd_sc_hs__a221o_2	0.00000	66.13740	103.90500
sky130_fd_sc_hs__a221o_4	0.00000	132.58700	210.10100

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)	0.09373	0.60578	6.55942
	A2->X (RR)	0.09833	0.58304	6.31257
	B1->X (RR)	0.08841	0.57906	6.25617
	B2->X (RR)	0.09280	0.56193	6.10972
	C1->X (RR)	0.06208	0.51445	5.88468
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.09666	0.53339	6.37949
	A2->X (RR)	0.10138	0.50871	6.13725
	B1->X (RR)	0.09205	0.51168	6.09933
	B2->X (RR)	0.09632	0.49111	5.95225
	C1->X (RR)	0.06369	0.44717	5.74768
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.11165	0.50888	6.32475
	A2->X (RR)	0.12130	0.47169	5.89763
	B1->X (RR)	0.10649	0.48002	5.86641
	B2->X (RR)	0.10744	0.43323	5.65242
	C1->X (RR)	0.06047	0.36851	5.33732

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.20706	0.60638	5.29160
	A2->X (FF)	0.22429	0.63098	5.39992
	B1->X (FF)	0.18991	0.62915	5.59553
	B2->X (FF)	0.20357	0.65692	5.69664
	C1->X (FF)	0.16099	0.65292	5.84352
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.25930	0.63993	5.37143
	A2->X (FF)	0.27786	0.66768	5.49891
	B1->X (FF)	0.24937	0.67449	5.76585
	B2->X (FF)	0.25856	0.69821	5.86212
	C1->X (FF)	0.20373	0.68656	6.01700
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.26710	0.56412	4.51509
	A2->X (FF)	0.29113	0.60282	4.74255
	B1->X (FF)	0.25128	0.60594	4.95285
	B2->X (FF)	0.27138	0.64084	5.10400
	C1->X (FF)	0.21715	0.63852	5.23015

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01910	0.02227	0.10083
	A1	0.01019	0.01336	0.09203
	A2	0.02028	0.02256	0.08903
	A2	0.01021	0.01249	0.07925
	B1	0.01422	0.01797	0.08803
	B1	0.00778	0.01153	0.08189
	B2	0.01531	0.01848	0.08668
	B2	0.00786	0.01103	0.07971
	C1	0.01082	0.01618	0.10196
	C1	0.00550	0.01087	0.09718
sky130_fd_sc_hs__a221o_2	A1	0.02320	0.02604	0.10439
	A1	0.01386	0.01676	0.09560
	A2	0.02450	0.02644	0.09296
	A2	0.01386	0.01583	0.08328
	B1	0.01836	0.02198	0.09272
	B1	0.01132	0.01497	0.08663
	B2	0.01960	0.02268	0.09176
	B2	0.01148	0.01456	0.08468
	C1	0.01450	0.01976	0.10551
	C1	0.00881	0.01411	0.09983

sky130_fd_sc_hs__a221o_4	**A1**	0.04708	0.05237	0.20237
	A1	0.02990	0.03521	0.18619
	A2	0.04920	0.05270	0.18281
	A2	0.02991	0.03341	0.16462
	B1	0.03611	0.04266	0.17195
	B1	0.02378	0.03044	0.16139
	B2	0.03858	0.04399	0.17162
	B2	0.02387	0.02934	0.15732
	C1	0.02673	0.03714	0.19624
	C1	0.01710	0.02753	0.18754

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00626	0.00798	0.08242
	A1	0.01516	0.01688	0.09033
	A2	0.00658	0.00805	0.07990
	A2	0.01664	0.01795	0.08931
	B1	0.00620	0.00895	0.08195
	B1	0.01264	0.01537	0.08791
	B2	0.00666	0.00935	0.08166
	B2	0.01411	0.01679	0.08852
	C1	0.00550	0.01102	0.10039
	C1	0.01081	0.01633	0.10516

sky130_fd_sc_hs__a221o_2	**A1**	0.01355	0.01285	0.08326
	A1	0.02289	0.02218	0.09125
	A2	0.01418	0.01296	0.08156
	A2	0.02482	0.02358	0.09205
	B1	0.01354	0.01370	0.08537
	B1	0.02058	0.02073	0.09227
	B2	0.01407	0.01429	0.08599
	B2	0.02220	0.02239	0.09403
	C1	0.01204	0.01577	0.10346
	C1	0.01776	0.02146	0.10901
sky130_fd_sc_hs__a221o_4	**A1**	0.02529	0.02340	0.16180
	A1	0.04249	0.04038	0.17746
	A2	0.02763	0.02441	0.16248
	A2	0.04692	0.04357	0.18090
	B1	0.02541	0.02514	0.15604
	B1	0.03773	0.03722	0.16762
	B2	0.02700	0.02637	0.15918
	B2	0.04168	0.04087	0.17343
	C1	0.02272	0.02935	0.18815
	C1	0.03237	0.03879	0.19759

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)**	0.00184	0.00164	0.00161
	(A2 * B1 * B2 * C1 * X)	-0.00178	-0.00200	-0.00200
	(A2 * B1 * B2 * !C1 * X)	0.00247	0.00204	0.00216
	(A2 * B1 * B2 * !C1 * X)	-0.00124	-0.00168	-0.00148
	(A2 * B1 * !B2 * C1 * X)	0.00242	0.00203	0.00209
	(A2 * B1 * !B2 * C1 * X)	-0.00128	-0.00168	-0.00154
	(A2 * !B1 * C1 * X)	0.00242	0.00203	0.00209
	(A2 * !B1 * C1 * X)	-0.00128	-0.00168	-0.00154
	(!A2 * B1 * B2 * C1 * X)	0.00155	0.00156	0.00155
	(!A2 * B1 * B2 * C1 * X)	-0.00203	-0.00204	-0.00203
	(!A2 * B1 * B2 * !C1 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * B2 * !C1 * X)	-0.00146	-0.00148	-0.00146
	(!A2 * B1 * !B2 * C1 * X)	0.00205	0.00206	0.00205
	(!A2 * B1 * !B2 * C1 * X)	-0.00152	-0.00154	-0.00153
	(!A2 * B1 * !B2 * !C1 * !X)	0.00095	0.00094	0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00195	-0.00194	-0.00199
	(!A2 * !B1 * C1 * X)	0.00205	0.00207	0.00205
	(!A2 * !B1 * C1 * X)	-0.00153	-0.00154	-0.00153
	(!A2 * !B1 * !C1 * !X)	0.00095	0.00094	0.00093
	(!A2 * !B1 * !C1 * !X)	-0.00195	-0.00193	-0.00199

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00206	0.00186	0.00182
	(A2 * B1 * B2 * C1 * X)	-0.00175	-0.00197	-0.00198
	(A2 * B1 * B2 * !C1 * X)	0.00269	0.00226	0.00238
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00165	-0.00145
	(A2 * B1 * !B2 * C1 * X)	0.00264	0.00225	0.00231
	(A2 * B1 * !B2 * C1 * X)	-0.00125	-0.00166	-0.00151
	(A2 * !B1 * C1 * X)	0.00264	0.00225	0.00231
	(A2 * !B1 * C1 * X)	-0.00125	-0.00166	-0.00151
	(!A2 * B1 * B2 * C1 * X)	0.00176	0.00177	0.00176
	(!A2 * B1 * B2 * C1 * X)	-0.00200	-0.00201	-0.00200
	(!A2 * B1 * B2 * !C1 * X)	0.00233	0.00234	0.00233
	(!A2 * B1 * B2 * !C1 * X)	-0.00143	-0.00145	-0.00143
	(!A2 * B1 * !B2 * C1 * X)	0.00226	0.00227	0.00226
	(!A2 * B1 * !B2 * C1 * X)	-0.00149	-0.00151	-0.00150
	(!A2 * B1 * !B2 * !C1 * !X)	0.00142	0.00142	0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00154	-0.00155	-0.00159
	(!A2 * !B1 * C1 * X)	0.00226	0.00227	0.00226
	(!A2 * !B1 * C1 * X)	-0.00150	-0.00151	-0.00150
	(!A2 * !B1 * !C1 * !X)	0.00142	0.00142	0.00140
	(!A2 * !B1 * !C1 * !X)	-0.00154	-0.00155	-0.00159

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00394	0.00364	0.00357
	(A2 * B1 * B2 * C1 * X)	-0.00349	-0.00386	-0.00387
	(A2 * B1 * B2 * !C1 * X)	0.00518	0.00446	0.00467
	(A2 * B1 * B2 * !C1 * X)	-0.00244	-0.00320	-0.00282
	(A2 * B1 * !B2 * C1 * X)	0.00505	0.00443	0.00454
	(A2 * B1 * !B2 * C1 * X)	-0.00254	-0.00323	-0.00294
	(A2 * !B1 * C1 * X)	0.00505	0.00443	0.00453
	(A2 * !B1 * C1 * X)	-0.00255	-0.00323	-0.00294
	(!A2 * B1 * B2 * C1 * X)	0.00343	0.00345	0.00344
	(!A2 * B1 * B2 * C1 * X)	-0.00392	-0.00394	-0.00392
	(!A2 * B1 * B2 * !C1 * X)	0.00457	0.00457	0.00457
	(!A2 * B1 * B2 * !C1 * X)	-0.00278	-0.00280	-0.00279
	(!A2 * B1 * !B2 * C1 * X)	0.00444	0.00446	0.00444
	(!A2 * B1 * !B2 * C1 * X)	-0.00292	-0.00294	-0.00292
	(!A2 * B1 * !B2 * !C1 * !X)	0.00329	0.00329	0.00321
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00273	-0.00274	-0.00286
	(!A2 * !B1 * C1 * X)	0.00443	0.00446	0.00444
	(!A2 * !B1 * C1 * X)	-0.00292	-0.00294	-0.00292
	(!A2 * !B1 * !C1 * !X)	0.00330	0.00329	0.00322
	(!A2 * !B1 * !C1 * !X)	-0.00273	-0.00274	-0.00285

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)**	-0.00137	-0.00138	-0.00138
	(A2 * B1 * B2 * C1 * X)	0.00224	0.00225	0.00224
	(A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00089	-0.00097
	(A2 * B1 * B2 * !C1 * X)	0.00281	0.00281	0.00270
	(A2 * B1 * !B2 * C1 * X)	-0.00089	-0.00091	-0.00095
	(A2 * B1 * !B2 * C1 * X)	0.00276	0.00278	0.00271
	(A2 * !B1 * C1 * X)	-0.00089	-0.00091	-0.00095
	(A2 * !B1 * C1 * X)	0.00276	0.00278	0.00270
	(!A2 * B1 * B2 * C1 * X)	-0.00136	-0.00136	-0.00136
	(!A2 * B1 * B2 * C1 * X)	0.00224	0.00224	0.00223
	(!A2 * B1 * B2 * !C1 * X)	-0.00079	-0.00080	-0.00079
	(!A2 * B1 * B2 * !C1 * X)	0.00281	0.00281	0.00280
	(!A2 * B1 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00086
	(!A2 * B1 * !B2 * C1 * X)	0.00274	0.00275	0.00273
	(!A2 * B1 * !B2 * !C1 * !X)	0.00003	0.00002	0.00003
	(!A2 * B1 * !B2 * !C1 * !X)	0.00293	0.00297	0.00293
	(!A2 * !B1 * C1 * X)	-0.00086	-0.00087	-0.00086
	(!A2 * !B1 * C1 * X)	0.00274	0.00275	0.00273
	(!A2 * !B1 * !C1 * !X)	0.00003	0.00002	0.00003
	(!A2 * !B1 * !C1 * !X)	0.00293	0.00297	0.00294

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00156	-0.00157	-0.00157
	(A2 * B1 * B2 * C1 * X)	0.00223	0.00225	0.00223
	(A2 * B1 * B2 * !C1 * X)	-0.00106	-0.00108	-0.00116
	(A2 * B1 * B2 * !C1 * X)	0.00280	0.00280	0.00270
	(A2 * B1 * !B2 * C1 * X)	-0.00108	-0.00110	-0.00114
	(A2 * B1 * !B2 * C1 * X)	0.00276	0.00277	0.00270
	(A2 * !B1 * C1 * X)	-0.00108	-0.00110	-0.00114
	(A2 * !B1 * C1 * X)	0.00276	0.00277	0.00270
	(!A2 * B1 * B2 * C1 * X)	-0.00154	-0.00155	-0.00154
	(!A2 * B1 * B2 * C1 * X)	0.00224	0.00226	0.00223
	(!A2 * B1 * B2 * !C1 * X)	-0.00097	-0.00099	-0.00098
	(!A2 * B1 * B2 * !C1 * X)	0.00280	0.00280	0.00280
	(!A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00105	-0.00104
	(!A2 * B1 * !B2 * C1 * X)	0.00274	0.00274	0.00273
	(!A2 * B1 * !B2 * !C1 * !X)	0.00041	0.00040	0.00041
	(!A2 * B1 * !B2 * !C1 * !X)	0.00338	0.00342	0.00338
	(!A2 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00104
	(!A2 * !B1 * C1 * X)	0.00274	0.00274	0.00273
	(!A2 * !B1 * !C1 * !X)	0.00041	0.00040	0.00041
	(!A2 * !B1 * !C1 * !X)	0.00338	0.00340	0.00338

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00305	-0.00308	-0.00306
	(A2 * B1 * B2 * C1 * X)	0.00435	0.00440	0.00437
	(A2 * B1 * B2 * !C1 * X)	-0.00202	-0.00206	-0.00223
	(A2 * B1 * B2 * !C1 * X)	0.00550	0.00550	0.00532
	(A2 * B1 * !B2 * C1 * X)	-0.00208	-0.00212	-0.00220
	(A2 * B1 * !B2 * C1 * X)	0.00541	0.00546	0.00531
	(A2 * !B1 * C1 * X)	-0.00208	-0.00212	-0.00221
	(A2 * !B1 * C1 * X)	0.00541	0.00546	0.00531
	(!A2 * B1 * B2 * C1 * X)	-0.00297	-0.00302	-0.00301
	(!A2 * B1 * B2 * C1 * X)	0.00436	0.00440	0.00438
	(!A2 * B1 * B2 * !C1 * X)	-0.00184	-0.00188	-0.00188
	(!A2 * B1 * B2 * !C1 * X)	0.00549	0.00552	0.00551
	(!A2 * B1 * !B2 * C1 * X)	-0.00197	-0.00201	-0.00201
	(!A2 * B1 * !B2 * C1 * X)	0.00536	0.00539	0.00537
	(!A2 * B1 * !B2 * !C1 * !X)	0.00042	0.00041	0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	0.00646	0.00649	0.00647
	(!A2 * !B1 * C1 * X)	-0.00197	-0.00202	-0.00202
	(!A2 * !B1 * C1 * X)	0.00536	0.00541	0.00537
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00042	0.00043
	(!A2 * !B1 * !C1 * !X)	0.00646	0.00649	0.00648

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)**	0.00205	0.00187	0.00183
	(A1 * B1 * B2 * C1 * X)	-0.00174	-0.00194	-0.00195
	(A1 * B1 * B2 * !C1 * X)	0.00268	0.00227	0.00239
	(A1 * B1 * B2 * !C1 * X)	-0.00121	-0.00163	-0.00142
	(A1 * B1 * !B2 * C1 * X)	0.00263	0.00226	0.00232
	(A1 * B1 * !B2 * C1 * X)	-0.00124	-0.00163	-0.00148
	(A1 * !B1 * C1 * X)	0.00263	0.00226	0.00232
	(A1 * !B1 * C1 * X)	-0.00125	-0.00163	-0.00148
	(!A1 * B1 * B2 * X)	0.00177	0.00179	0.00178
	(!A1 * B1 * B2 * X)	-0.00196	-0.00197	-0.00197
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00228	0.00229	0.00229
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00146	-0.00147	-0.00147
	(!A1 * B1 * !B2 * !C1 * !X)	0.00193	0.00194	0.00193
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00184	-0.00183
	(!A1 * !B1 * !C1 * !X)	0.00193	0.00194	0.00194
	(!A1 * !B1 * !C1 * !X)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00223	0.00204	0.00201
	(A1 * B1 * B2 * C1 * X)	-0.00171	-0.00192	-0.00192
	(A1 * B1 * B2 * !C1 * X)	0.00284	0.00244	0.00257
	(A1 * B1 * B2 * !C1 * X)	-0.00119	-0.00160	-0.00139
	(A1 * B1 * !B2 * C1 * X)	0.00278	0.00243	0.00250
	(A1 * B1 * !B2 * C1 * X)	-0.00121	-0.00161	-0.00145
	(A1 * !B1 * C1 * X)	0.00278	0.00243	0.00250
	(A1 * !B1 * C1 * X)	-0.00121	-0.00161	-0.00145
	(!A1 * B1 * B2 * X)	0.00194	0.00197	0.00195
	(!A1 * B1 * B2 * X)	-0.00193	-0.00195	-0.00194
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00245	0.00246	0.00246
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00144
	(!A1 * B1 * !B2 * !C1 * !X)	0.00250	0.00252	0.00251
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * !B1 * !C1 * !X)	0.00250	0.00252	0.00251
	(!A1 * !B1 * !C1 * !X)	-0.00138	-0.00140	-0.00139

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00392	0.00360	0.00353
	(A1 * B1 * B2 * C1 * X)	-0.00344	-0.00383	-0.00384
	(A1 * B1 * B2 * !C1 * X)	0.00518	0.00443	0.00463
	(A1 * B1 * B2 * !C1 * X)	-0.00237	-0.00316	-0.00279
	(A1 * B1 * !B2 * C1 * X)	0.00505	0.00440	0.00450
	(A1 * B1 * !B2 * C1 * X)	-0.00247	-0.00319	-0.00291
	(A1 * !B1 * C1 * X)	0.00505	0.00440	0.00449
	(A1 * !B1 * C1 * X)	-0.00248	-0.00319	-0.00291
	(!A1 * B1 * B2 * X)	0.00340	0.00341	0.00339
	(!A1 * B1 * B2 * X)	-0.00389	-0.00391	-0.00390
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00440	0.00440	0.00440
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00289	-0.00290	-0.00289
	(!A1 * B1 * !B2 * !C1 * !X)	0.00495	0.00498	0.00495
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00237	-0.00240	-0.00237
	(!A1 * !B1 * !C1 * !X)	0.00495	0.00499	0.00495
	(!A1 * !B1 * !C1 * !X)	-0.00237	-0.00240	-0.00237

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)**	-0.00160	-0.00161	-0.00161
	(A1 * B1 * B2 * C1 * X)	0.00217	0.00218	0.00217
	(A1 * B1 * B2 * !C1 * X)	-0.00110	-0.00112	-0.00120
	(A1 * B1 * B2 * !C1 * X)	0.00274	0.00274	0.00264
	(A1 * B1 * !B2 * C1 * X)	-0.00112	-0.00114	-0.00118
	(A1 * B1 * !B2 * C1 * X)	0.00270	0.00272	0.00265
	(A1 * !B1 * C1 * X)	-0.00112	-0.00114	-0.00118
	(A1 * !B1 * C1 * X)	0.00270	0.00272	0.00265
	(!A1 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * B2 * X)	0.00218	0.00220	0.00217
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00268	0.00270	0.00267
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00081	-0.00092	-0.00095
	(!A1 * B1 * !B2 * !C1 * !X)	0.00298	0.00287	0.00281
	(!A1 * !B1 * !C1 * !X)	-0.00080	-0.00092	-0.00095
	(!A1 * !B1 * !C1 * !X)	0.00299	0.00287	0.00282

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00176	-0.00177	-0.00176
	(A1 * B1 * B2 * C1 * X)	0.00217	0.00219	0.00217
	(A1 * B1 * B2 * !C1 * X)	-0.00125	-0.00127	-0.00135
	(A1 * B1 * B2 * !C1 * X)	0.00274	0.00274	0.00264
	(A1 * B1 * !B2 * C1 * X)	-0.00127	-0.00129	-0.00133
	(A1 * B1 * !B2 * C1 * X)	0.00270	0.00271	0.00264
	(A1 * !B1 * C1 * X)	-0.00127	-0.00129	-0.00133
	(A1 * !B1 * C1 * X)	0.00270	0.00271	0.00264
	(!A1 * B1 * B2 * X)	-0.00172	-0.00174	-0.00173
	(!A1 * B1 * B2 * X)	0.00216	0.00218	0.00217
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00122	-0.00124	-0.00123
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00266	0.00268	0.00267
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00052	-0.00066	-0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	0.00338	0.00327	0.00321
	(!A1 * !B1 * !C1 * !X)	-0.00052	-0.00066	-0.00069
	(!A1 * !B1 * !C1 * !X)	0.00338	0.00327	0.00321

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00300	-0.00303	-0.00301
	(A1 * B1 * B2 * C1 * X)	0.00433	0.00438	0.00435
	(A1 * B1 * B2 * !C1 * X)	-0.00198	-0.00202	-0.00218
	(A1 * B1 * B2 * !C1 * X)	0.00548	0.00548	0.00530
	(A1 * B1 * !B2 * C1 * X)	-0.00203	-0.00206	-0.00216
	(A1 * B1 * !B2 * C1 * X)	0.00538	0.00538	0.00529
	(A1 * !B1 * C1 * X)	-0.00203	-0.00206	-0.00216
	(A1 * !B1 * C1 * X)	0.00538	0.00538	0.00529
	(!A1 * B1 * B2 * X)	-0.00293	-0.00298	-0.00297
	(!A1 * B1 * B2 * X)	0.00433	0.00437	0.00435
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00193	-0.00198	-0.00198
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00533	0.00537	0.00535
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00123	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00639	0.00615	0.00605
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00123	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00639	0.00615	0.00605

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)**	0.00189	0.00191	0.00179
	(A1 * A2 * B2 * C1 * X)	-0.00123	-0.00124	-0.00129
	(A1 * A2 * B2 * !C1 * X)	0.00187	0.00190	0.00185
	(A1 * A2 * B2 * !C1 * X)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * !B2 * C1 * X)	0.00201	0.00200	0.00178
	(A1 * A2 * !B2 * C1 * X)	-0.00103	-0.00105	-0.00118
	(A1 * A2 * !B2 * !C1 * X)	0.00235	0.00236	0.00229
	(A1 * A2 * !B2 * !C1 * X)	-0.00023	-0.00024	-0.00028
	(A1 * !A2 * B2 * C1 * X)	0.00240	0.00193	0.00210
	(A1 * !A2 * B2 * C1 * X)	-0.00124	-0.00174	-0.00152
	(A1 * !A2 * !B2 * C1 * X)	0.00208	0.00207	0.00206
	(A1 * !A2 * !B2 * C1 * X)	-0.00148	-0.00151	-0.00150
	(A1 * !A2 * !B2 * !C1 * !X)	0.00092	0.00092	0.00090
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00195	-0.00197	-0.00200
	(!A1 * B2 * C1 * X)	0.00240	0.00193	0.00210
	(!A1 * B2 * C1 * X)	-0.00124	-0.00174	-0.00152
	(!A1 * !B2 * C1 * X)	0.00208	0.00207	0.00206
	(!A1 * !B2 * C1 * X)	-0.00149	-0.00151	-0.00150
	(!A1 * !B2 * !C1 * !X)	0.00092	0.00092	0.00090
	(!A1 * !B2 * !C1 * !X)	-0.00195	-0.00197	-0.00200

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00222	0.00224	0.00211
	(A1 * A2 * B2 * C1 * X)	-0.00124	-0.00125	-0.00130
	(A1 * A2 * B2 * !C1 * X)	0.00220	0.00223	0.00218
	(A1 * A2 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00068
	(A1 * A2 * !B2 * C1 * X)	0.00231	0.00231	0.00209
	(A1 * A2 * !B2 * C1 * X)	-0.00104	-0.00105	-0.00118
	(A1 * A2 * !B2 * !C1 * X)	0.00265	0.00268	0.00260
	(A1 * A2 * !B2 * !C1 * X)	-0.00024	-0.00026	-0.00028
	(A1 * !A2 * B2 * C1 * X)	0.00272	0.00225	0.00241
	(A1 * !A2 * B2 * C1 * X)	-0.00127	-0.00175	-0.00153
	(A1 * !A2 * !B2 * C1 * X)	0.00238	0.00237	0.00237
	(A1 * !A2 * !B2 * C1 * X)	-0.00149	-0.00152	-0.00151
	(A1 * !A2 * !B2 * !C1 * !X)	0.00143	0.00143	0.00140
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00170
	(!A1 * B2 * C1 * X)	0.00272	0.00225	0.00241
	(!A1 * B2 * C1 * X)	-0.00127	-0.00175	-0.00153
	(!A1 * !B2 * C1 * X)	0.00238	0.00237	0.00237
	(!A1 * !B2 * C1 * X)	-0.00149	-0.00152	-0.00151
	(!A1 * !B2 * !C1 * !X)	0.00143	0.00143	0.00140
	(!A1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00170

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00415	0.00412	0.00387
	(A1 * A2 * B2 * C1 * X)	-0.00248	-0.00253	-0.00264
	(A1 * A2 * B2 * !C1 * X)	0.00412	0.00412	0.00405
	(A1 * A2 * B2 * !C1 * X)	-0.00130	-0.00130	-0.00132
	(A1 * A2 * !B2 * C1 * X)	0.00425	0.00427	0.00380
	(A1 * A2 * !B2 * C1 * X)	-0.00212	-0.00217	-0.00242
	(A1 * A2 * !B2 * !C1 * X)	0.00485	0.00488	0.00475
	(A1 * A2 * !B2 * !C1 * X)	-0.00051	-0.00054	-0.00060
	(A1 * !A2 * B2 * C1 * X)	0.00516	0.00408	0.00442
	(A1 * !A2 * B2 * C1 * X)	-0.00239	-0.00343	-0.00302
	(A1 * !A2 * !B2 * C1 * X)	0.00437	0.00436	0.00434
	(A1 * !A2 * !B2 * C1 * X)	-0.00295	-0.00302	-0.00300
	(A1 * !A2 * !B2 * !C1 * !X)	0.00297	0.00297	0.00289
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00304	-0.00308	-0.00319
	(!A1 * B2 * C1 * X)	0.00516	0.00408	0.00442
	(!A1 * B2 * C1 * X)	-0.00239	-0.00343	-0.00302
	(!A1 * !B2 * C1 * X)	0.00437	0.00436	0.00434
	(!A1 * !B2 * C1 * X)	-0.00295	-0.00302	-0.00300
	(!A1 * !B2 * !C1 * !X)	0.00297	0.00298	0.00289
	(!A1 * !B2 * !C1 * !X)	-0.00304	-0.00308	-0.00319

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)**	-0.00148	-0.00149	-0.00146
	(A1 * A2 * B2 * C1 * X)	0.00153	0.00155	0.00154
	(A1 * A2 * B2 * !C1 * X)	-0.00091	-0.00093	-0.00129
	(A1 * A2 * B2 * !C1 * X)	0.00167	0.00166	0.00133
	(A1 * A2 * !B2 * C1 * X)	-0.00145	-0.00146	-0.00143
	(A1 * A2 * !B2 * C1 * X)	0.00143	0.00144	0.00143
	(A1 * A2 * !B2 * !C1 * X)	-0.00111	-0.00112	-0.00105
	(A1 * A2 * !B2 * !C1 * X)	0.00150	0.00150	0.00152
	(A1 * !A2 * B2 * C1 * X)	-0.00089	-0.00092	-0.00099
	(A1 * !A2 * B2 * C1 * X)	0.00273	0.00273	0.00264
	(A1 * !A2 * !B2 * C1 * X)	-0.00086	-0.00088	-0.00087
	(A1 * !A2 * !B2 * C1 * X)	0.00272	0.00272	0.00271
	(A1 * !A2 * !B2 * !C1 * !X)	0.00006	0.00004	0.00005
	(A1 * !A2 * !B2 * !C1 * !X)	0.00294	0.00297	0.00295
	(!A1 * B2 * C1 * X)	-0.00089	-0.00092	-0.00099
	(!A1 * B2 * C1 * X)	0.00273	0.00273	0.00264
	(!A1 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00087
	(!A1 * !B2 * C1 * X)	0.00272	0.00271	0.00271
	(!A1 * !B2 * !C1 * !X)	0.00006	0.00004	0.00006
	(!A1 * !B2 * !C1 * !X)	0.00294	0.00298	0.00295

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00178	-0.00179	-0.00176
	(A1 * A2 * B2 * C1 * X)	0.00157	0.00158	0.00157
	(A1 * A2 * B2 * !C1 * X)	-0.00121	-0.00123	-0.00159
	(A1 * A2 * B2 * !C1 * X)	0.00169	0.00169	0.00136
	(A1 * A2 * !B2 * C1 * X)	-0.00173	-0.00175	-0.00172
	(A1 * A2 * !B2 * C1 * X)	0.00145	0.00147	0.00146
	(A1 * A2 * !B2 * !C1 * X)	-0.00139	-0.00140	-0.00133
	(A1 * A2 * !B2 * !C1 * X)	0.00153	0.00153	0.00156
	(A1 * !A2 * B2 * C1 * X)	-0.00118	-0.00121	-0.00128
	(A1 * !A2 * B2 * C1 * X)	0.00277	0.00277	0.00268
	(A1 * !A2 * !B2 * C1 * X)	-0.00114	-0.00116	-0.00115
	(A1 * !A2 * !B2 * C1 * X)	0.00275	0.00275	0.00274
	(A1 * !A2 * !B2 * !C1 * !X)	0.00040	0.00039	0.00040
	(A1 * !A2 * !B2 * !C1 * !X)	0.00350	0.00352	0.00349
	(!A1 * B2 * C1 * X)	-0.00118	-0.00121	-0.00128
	(!A1 * B2 * C1 * X)	0.00277	0.00277	0.00268
	(!A1 * !B2 * C1 * X)	-0.00114	-0.00116	-0.00115
	(!A1 * !B2 * C1 * X)	0.00275	0.00275	0.00274
	(!A1 * !B2 * !C1 * !X)	0.00040	0.00039	0.00040
	(!A1 * !B2 * !C1 * !X)	0.00350	0.00352	0.00349

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00317	-0.00319	-0.00312
	(A1 * A2 * B2 * C1 * X)	0.00320	0.00323	0.00321
	(A1 * A2 * B2 * !C1 * X)	-0.00204	-0.00209	-0.00284
	(A1 * A2 * B2 * !C1 * X)	0.00337	0.00338	0.00270
	(A1 * A2 * !B2 * C1 * X)	-0.00307	-0.00310	-0.00305
	(A1 * A2 * !B2 * C1 * X)	0.00299	0.00298	0.00298
	(A1 * A2 * !B2 * !C1 * X)	-0.00230	-0.00235	-0.00225
	(A1 * A2 * !B2 * !C1 * X)	0.00309	0.00311	0.00314
	(A1 * !A2 * B2 * C1 * X)	-0.00198	-0.00202	-0.00217
	(A1 * !A2 * B2 * C1 * X)	0.00550	0.00548	0.00531
	(A1 * !A2 * !B2 * C1 * X)	-0.00188	-0.00192	-0.00192
	(A1 * !A2 * !B2 * C1 * X)	0.00547	0.00547	0.00545
	(A1 * !A2 * !B2 * !C1 * !X)	0.00075	0.00072	0.00075
	(A1 * !A2 * !B2 * !C1 * !X)	0.00681	0.00686	0.00681
	(!A1 * B2 * C1 * X)	-0.00198	-0.00202	-0.00217
	(!A1 * B2 * C1 * X)	0.00550	0.00548	0.00531
	(!A1 * !B2 * C1 * X)	-0.00188	-0.00192	-0.00192
	(!A1 * !B2 * C1 * X)	0.00547	0.00547	0.00545
	(!A1 * !B2 * !C1 * !X)	0.00076	0.00072	0.00075
	(!A1 * !B2 * !C1 * !X)	0.00682	0.00687	0.00681

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)**	0.00197	0.00197	0.00185
	(A1 * A2 * B1 * C1 * X)	-0.00119	-0.00121	-0.00126
	(A1 * A2 * B1 * !C1 * X)	0.00196	0.00198	0.00192
	(A1 * A2 * B1 * !C1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B1 * C1 * X)	0.00205	0.00205	0.00182
	(A1 * A2 * !B1 * C1 * X)	-0.00101	-0.00102	-0.00115
	(A1 * A2 * !B1 * !C1 * X)	0.00238	0.00241	0.00233
	(A1 * A2 * !B1 * !C1 * X)	-0.00021	-0.00024	-0.00025
	(A1 * !A2 * B1 * C1 * X)	0.00248	0.00199	0.00215
	(A1 * !A2 * B1 * C1 * X)	-0.00120	-0.00169	-0.00148
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00213	0.00212	0.00211
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00144	-0.00147	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00174
	(!A1 * B1 * C1 * X)	0.00248	0.00199	0.00215
	(!A1 * B1 * C1 * X)	-0.00120	-0.00169	-0.00148
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00187	0.00186
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00228	0.00229	0.00217
	(A1 * A2 * B1 * C1 * X)	-0.00113	-0.00115	-0.00120
	(A1 * A2 * B1 * !C1 * X)	0.00226	0.00224	0.00223
	(A1 * A2 * B1 * !C1 * X)	-0.00058	-0.00057	-0.00058
	(A1 * A2 * !B1 * C1 * X)	0.00235	0.00236	0.00214
	(A1 * A2 * !B1 * C1 * X)	-0.00095	-0.00096	-0.00109
	(A1 * A2 * !B1 * !C1 * X)	0.00265	0.00266	0.00261
	(A1 * A2 * !B1 * !C1 * X)	-0.00017	-0.00018	-0.00021
	(A1 * !A2 * B1 * C1 * X)	0.00277	0.00230	0.00246
	(A1 * !A2 * B1 * C1 * X)	-0.00114	-0.00162	-0.00141
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00243	0.00243	0.00242
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00136	-0.00139	-0.00139
	(A1 * !A2 * !B1 * !C1 * !X)	0.00248	0.00251	0.00249
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00135	-0.00133
	(!A1 * B1 * C1 * X)	0.00278	0.00230	0.00246
	(!A1 * B1 * C1 * X)	-0.00114	-0.00162	-0.00141
	(!A1 * !B1 * !C1 * !X)	0.00248	0.00251	0.00249
	(!A1 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00445	0.00445	0.00420
	(A1 * A2 * B1 * C1 * X)	-0.00235	-0.00241	-0.00252
	(A1 * A2 * B1 * !C1 * X)	0.00440	0.00447	0.00436
	(A1 * A2 * B1 * !C1 * X)	-0.00120	-0.00124	-0.00123
	(A1 * A2 * !B1 * C1 * X)	0.00461	0.00461	0.00414
	(A1 * A2 * !B1 * C1 * X)	-0.00201	-0.00204	-0.00231
	(A1 * A2 * !B1 * !C1 * X)	0.00519	0.00523	0.00509
	(A1 * A2 * !B1 * !C1 * X)	-0.00041	-0.00043	-0.00050
	(A1 * !A2 * B1 * C1 * X)	0.00542	0.00447	0.00475
	(A1 * !A2 * B1 * C1 * X)	-0.00228	-0.00331	-0.00291
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00473	0.00470	0.00468
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00283	-0.00288	-0.00288
	(A1 * !A2 * !B1 * !C1 * !X)	0.00520	0.00520	0.00520
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00238	-0.00238	-0.00238
	(!A1 * B1 * C1 * X)	0.00542	0.00447	0.00475
	(!A1 * B1 * C1 * X)	-0.00227	-0.00331	-0.00291
	(!A1 * !B1 * !C1 * !X)	0.00520	0.00520	0.00520
	(!A1 * !B1 * !C1 * !X)	-0.00238	-0.00238	-0.00238

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)**	-0.00153	-0.00154	-0.00151
	(A1 * A2 * B1 * C1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * B1 * !C1 * X)	-0.00098	-0.00100	-0.00135
	(A1 * A2 * B1 * !C1 * X)	0.00162	0.00161	0.00129
	(A1 * A2 * !B1 * C1 * X)	-0.00149	-0.00151	-0.00148
	(A1 * A2 * !B1 * C1 * X)	0.00139	0.00141	0.00140
	(A1 * A2 * !B1 * !C1 * X)	-0.00113	-0.00115	-0.00109
	(A1 * A2 * !B1 * !C1 * X)	0.00147	0.00149	0.00150
	(A1 * !A2 * B1 * C1 * X)	-0.00094	-0.00097	-0.00104
	(A1 * !A2 * B1 * C1 * X)	0.00269	0.00269	0.00260
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00090	-0.00093	-0.00092
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00266	0.00268	0.00267
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00072	-0.00085	-0.00087
	(A1 * !A2 * !B1 * !C1 * !X)	0.00287	0.00277	0.00271
	(!A1 * B1 * C1 * X)	-0.00094	-0.00097	-0.00104
	(!A1 * B1 * C1 * X)	0.00269	0.00269	0.00260
	(!A1 * !B1 * !C1 * !X)	-0.00072	-0.00085	-0.00087
	(!A1 * !B1 * !C1 * !X)	0.00287	0.00277	0.00272

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00183	-0.00184	-0.00180
	(A1 * A2 * B1 * C1 * X)	0.00148	0.00149	0.00148
	(A1 * A2 * B1 * !C1 * X)	-0.00124	-0.00126	-0.00162
	(A1 * A2 * B1 * !C1 * X)	0.00160	0.00160	0.00127
	(A1 * A2 * !B1 * C1 * X)	-0.00178	-0.00179	-0.00176
	(A1 * A2 * !B1 * C1 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * !B1 * !C1 * X)	-0.00138	-0.00139	-0.00134
	(A1 * A2 * !B1 * !C1 * X)	0.00146	0.00147	0.00148
	(A1 * !A2 * B1 * C1 * X)	-0.00123	-0.00125	-0.00133
	(A1 * !A2 * B1 * C1 * X)	0.00264	0.00263	0.00255
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00118	-0.00121	-0.00119
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00261	0.00263	0.00262
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00049	-0.00064	-0.00066
	(A1 * !A2 * !B1 * !C1 * !X)	0.00332	0.00321	0.00315
	(!A1 * B1 * C1 * X)	-0.00123	-0.00125	-0.00133
	(!A1 * B1 * C1 * X)	0.00264	0.00263	0.00255
	(!A1 * !B1 * !C1 * !X)	-0.00049	-0.00063	-0.00066
	(!A1 * !B1 * !C1 * !X)	0.00333	0.00321	0.00315

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00350	-0.00352	-0.00345
	(A1 * A2 * B1 * C1 * X)	0.00307	0.00310	0.00310
	(A1 * A2 * B1 * !C1 * X)	-0.00234	-0.00239	-0.00315
	(A1 * A2 * B1 * !C1 * X)	0.00328	0.00328	0.00261
	(A1 * A2 * !B1 * C1 * X)	-0.00339	-0.00343	-0.00338
	(A1 * A2 * !B1 * C1 * X)	0.00285	0.00287	0.00287
	(A1 * A2 * !B1 * !C1 * X)	-0.00262	-0.00266	-0.00256
	(A1 * A2 * !B1 * !C1 * X)	0.00298	0.00299	0.00304
	(A1 * !A2 * B1 * C1 * X)	-0.00231	-0.00235	-0.00250
	(A1 * !A2 * B1 * C1 * X)	0.00537	0.00536	0.00520
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00220	-0.00226	-0.00225
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00532	0.00537	0.00534
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00146	-0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	0.00640	0.00618	0.00606
	(!A1 * B1 * C1 * X)	-0.00231	-0.00235	-0.00250
	(!A1 * B1 * C1 * X)	0.00537	0.00536	0.00520
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00146	-0.00152
	(!A1 * !B1 * !C1 * !X)	0.00641	0.00619	0.00606

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)	0.00191	0.00193	0.00190
	(A1 * B1 * B2 * X)	-0.00086	-0.00087	-0.00085
	(A1 * A2 * B1 * !B2 * X)	0.00191	0.00192	0.00195
	(A1 * A2 * B1 * !B2 * X)	-0.00069	-0.00070	-0.00067
	(A1 * A2 * !B1 * X)	0.00191	0.00192	0.00195
	(A1 * A2 * !B1 * X)	-0.00069	-0.00070	-0.00067
	(!A1 * B1 * B2 * X)	0.00192	0.00194	0.00196
	(!A1 * B1 * B2 * X)	-0.00079	-0.00079	-0.00075
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00200	0.00204	0.00201
	(A1 * B1 * B2 * X)	-0.00083	-0.00085	-0.00083
	(A1 * A2 * B1 * !B2 * X)	0.00203	0.00206	0.00206
	(A1 * A2 * B1 * !B2 * X)	-0.00068	-0.00069	-0.00065
	(A1 * A2 * !B1 * X)	0.00203	0.00206	0.00206
	(A1 * A2 * !B1 * X)	-0.00068	-0.00069	-0.00065
	(!A1 * B1 * B2 * X)	0.00204	0.00207	0.00208
	(!A1 * B1 * B2 * X)	-0.00078	-0.00079	-0.00074
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00340	0.00345	0.00341
	(A1 * B1 * B2 * X)	-0.00181	-0.00183	-0.00179
	(A1 * A2 * B1 * !B2 * X)	0.00344	0.00347	0.00353
	(A1 * A2 * B1 * !B2 * X)	-0.00149	-0.00150	-0.00143
	(A1 * A2 * !B1 * X)	0.00344	0.00347	0.00352
	(A1 * A2 * !B1 * X)	-0.00149	-0.00150	-0.00143
	(!A1 * B1 * B2 * X)	0.00340	0.00342	0.00349
	(!A1 * B1 * B2 * X)	-0.00173	-0.00173	-0.00166

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)	-0.00160	-0.00161	-0.00177
	(A1 * B1 * B2 * X)	0.00112	0.00113	0.00101
	(A1 * A2 * B1 * !B2 * X)	-0.00087	-0.00089	-0.00128
	(A1 * A2 * B1 * !B2 * X)	0.00176	0.00176	0.00146
	(A1 * A2 * !B1 * X)	-0.00087	-0.00089	-0.00128
	(A1 * A2 * !B1 * X)	0.00176	0.00176	0.00146
	(!A1 * B1 * B2 * X)	-0.00095	-0.00098	-0.00128
	(!A1 * B1 * B2 * X)	0.00178	0.00177	0.00148
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00170	-0.00171	-0.00186
	(A1 * B1 * B2 * X)	0.00113	0.00113	0.00101
	(A1 * A2 * B1 * !B2 * X)	-0.00097	-0.00099	-0.00136
	(A1 * A2 * B1 * !B2 * X)	0.00177	0.00177	0.00147
	(A1 * A2 * !B1 * X)	-0.00097	-0.00099	-0.00136
	(A1 * A2 * !B1 * X)	0.00178	0.00177	0.00147
	(!A1 * B1 * B2 * X)	-0.00104	-0.00107	-0.00136
	(!A1 * B1 * B2 * X)	0.00179	0.00178	0.00150
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00278	-0.00281	-0.00312
	(A1 * B1 * B2 * X)	0.00239	0.00240	0.00213
	(A1 * A2 * B1 * !B2 * X)	-0.00131	-0.00134	-0.00215
	(A1 * A2 * B1 * !B2 * X)	0.00372	0.00370	0.00303
	(A1 * A2 * !B1 * X)	-0.00131	-0.00134	-0.00215
	(A1 * A2 * !B1 * X)	0.00372	0.00370	0.00303
	(!A1 * B1 * B2 * X)	-0.00145	-0.00150	-0.00209
	(!A1 * B1 * B2 * X)	0.00377	0.00375	0.00315

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00276	0.00263	0.00270	0.00274	0.00273	0.00282	0.36439
sky130_fd_sc_hs__a222oi_2	0.00554	0.00496	0.00548	0.00508	0.00499	0.00563	0.63462

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	43.05400	134.62000
sky130_fd_sc_hs__a222oi_2	0.00000	85.80670	268.65500

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)	0.20195	0.95816	8.14072
	A2->Y (FR)	0.22031	0.98145	8.21545
	B1->Y (FR)	0.17712	0.96894	8.77052
	B2->Y (FR)	0.19875	1.00389	8.87566
	C1->Y (FR)	0.13185	0.97221	9.24032
	C2->Y (FR)	0.15148	0.99652	9.27629
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.19678	0.80371	7.82098
	A2->Y (FR)	0.22314	0.84133	7.99727
	B1->Y (FR)	0.16899	0.81412	8.38513
	B2->Y (FR)	0.20122	0.87984	8.82675
	C1->Y (FR)	0.12119	0.84549	9.19288
	C2->Y (FR)	0.14816	0.87107	9.22625

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.06421	0.45492	3.99051
	A2->Y (RF)	0.06806	0.40954	3.47048
	B1->Y (RF)	0.05368	0.42722	3.90957
	B2->Y (RF)	0.05825	0.38393	3.38744
	C1->Y (RF)	0.03594	0.40052	3.86156
	C2->Y (RF)	0.04001	0.35864	3.34617
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.06104	0.39245	3.79848
	A2->Y (RF)	0.06525	0.35418	3.32340
	B1->Y (RF)	0.05168	0.36739	3.75266
	B2->Y (RF)	0.05687	0.33184	3.27997
	C1->Y (RF)	0.02972	0.31931	3.53160
	C2->Y (RF)	0.03508	0.28679	3.06269

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00112	0.00169	0.03598
	A1	0.01130	0.01188	0.04629
	A2	0.00145	0.00211	0.03762
	A2	0.01267	0.01328	0.04890
	B1	0.00116	0.00236	0.03597
	B1	0.00875	0.00996	0.04368
	B2	0.00153	0.00277	0.03664
	B2	0.01025	0.01149	0.04532
	C1	0.00102	0.00354	0.04351
	C1	0.00637	0.00888	0.04877
	C2	0.00144	0.00402	0.04523
	C2	0.00788	0.01044	0.05157
sky130_fd_sc_hs__a222oi_2	A1	0.00106	0.00256	0.07153
	A1	0.02135	0.02286	0.09173
	A2	0.00224	0.00382	0.07489
	A2	0.02411	0.02568	0.09689
	B1	0.00111	0.00397	0.07034
	B1	0.01643	0.01929	0.08585
	B2	0.00215	0.00477	0.06958
	B2	0.01915	0.02180	0.08649
	C1	0.00093	0.00654	0.08400
	C1	0.01108	0.01668	0.09414
	C2	0.00190	0.00744	0.08718
	C2	0.01469	0.02021	0.09993

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01790	0.01913	0.05059
	A1	0.00773	0.00896	0.04030
	A2	0.01885	0.01994	0.05097
	A2	0.00763	0.00866	0.03977
	B1	0.01229	0.01388	0.04445
	B1	0.00473	0.00626	0.03675
	B2	0.01338	0.01473	0.04467
	B2	0.00466	0.00594	0.03586
	C1	0.00806	0.00978	0.03866
	C1	0.00275	0.00446	0.03316
	C2	0.00899	0.01049	0.03951
	C2	0.00257	0.00408	0.03294
sky130_fd_sc_hs__a222oi_2	A1	0.03380	0.03662	0.10066
	A1	0.01350	0.01626	0.08011
	A2	0.03528	0.03762	0.10033
	A2	0.01341	0.01574	0.07847
	B1	0.02350	0.02680	0.08828
	B1	0.00820	0.01150	0.07286
	B2	0.02542	0.02817	0.08602
	B2	0.00842	0.01114	0.06879
	C1	0.01451	0.01858	0.07621
	C1	0.00440	0.00844	0.06598
	C2	0.01681	0.02033	0.07872
	C2	0.00402	0.00752	0.06574

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)**	0.00182	0.00162	0.00158
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00177	-0.00200	-0.00200
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00249	0.00205	0.00213
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00119	-0.00165	-0.00148
	(A2 * B1 * B2 * !C1 * !Y)	0.00249	0.00205	0.00213
	(A2 * B1 * B2 * !C1 * !Y)	-0.00119	-0.00165	-0.00148
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00273	0.00229	0.00261
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00102	-0.00146	-0.00103
	(A2 * !B1 * C1 * C2 * !Y)	0.00274	0.00230	0.00261
	(A2 * !B1 * C1 * C2 * !Y)	-0.00100	-0.00146	-0.00103
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00153	0.00154	0.00153
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00203	-0.00204	-0.00203
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00209	0.00210	0.00209
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00146	-0.00147	-0.00146
	(!A2 * B1 * B2 * !C1 * !Y)	0.00209	0.00211	0.00209
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00146	-0.00148	-0.00146
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00261	0.00262	0.00261
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00095	-0.00097	-0.00095
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00054	0.00054	0.00052
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00233	-0.00233	-0.00237
	(!A2 * B1 * !B2 * !C1 * Y)	0.00055	0.00054	0.00052
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00233	-0.00233	-0.00237
	(!A2 * !B1 * C1 * C2 * !Y)	0.00261	0.00261	0.00261
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00095	-0.00095	-0.00095
	(!A2 * !B1 * C1 * !C2 * Y)	0.00055	0.00054	0.00052
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00233	-0.00233	-0.00237
	(!A2 * !B1 * !C1 * Y)	0.00055	0.00054	0.00053
	(!A2 * !B1 * !C1 * Y)	-0.00233	-0.00233	-0.00237

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00377	0.00335	0.00327
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00352	-0.00404	-0.00406
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00508	0.00418	0.00436
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00243	-0.00338	-0.00301
	(A2 * B1 * B2 * !C1 * !Y)	0.00508	0.00419	0.00436
	(A2 * B1 * B2 * !C1 * !Y)	-0.00243	-0.00338	-0.00301
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00554	0.00468	0.00531
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00209	-0.00301	-0.00213
	(A2 * !B1 * C1 * C2 * !Y)	0.00557	0.00468	0.00532
	(A2 * !B1 * C1 * C2 * !Y)	-0.00205	-0.00301	-0.00213
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00314	0.00318	0.00315
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00410	-0.00414	-0.00411
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00428	0.00430	0.00428
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00298	-0.00301	-0.00299
	(!A2 * B1 * B2 * !C1 * !Y)	0.00428	0.00430	0.00428
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00297	-0.00302	-0.00299
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00530	0.00532	0.00530
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00195	-0.00198	-0.00196
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00107	0.00108	0.00102
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00485	-0.00488	-0.00497
	(!A2 * B1 * !B2 * !C1 * Y)	0.00108	0.00108	0.00103
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00485	-0.00487	-0.00496
	(!A2 * !B1 * C1 * C2 * !Y)	0.00530	0.00532	0.00531
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00195	-0.00198	-0.00196
	(!A2 * !B1 * C1 * !C2 * Y)	0.00107	0.00108	0.00103
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00483	-0.00487	-0.00497
	(!A2 * !B1 * !C1 * Y)	0.00108	0.00109	0.00103
	(!A2 * !B1 * !C1 * Y)	-0.00483	-0.00487	-0.00496

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)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00221	0.00221	0.00222
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00085	-0.00088	-0.00095
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00278	0.00279	0.00269
	(A2 * B1 * B2 * !C1 * !Y)	-0.00085	-0.00088	-0.00095
	(A2 * B1 * B2 * !C1 * !Y)	0.00278	0.00279	0.00269
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00032	-0.00035	-0.00051
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00338	0.00336	0.00318
	(A2 * !B1 * C1 * C2 * !Y)	-0.00032	-0.00033	-0.00051
	(A2 * !B1 * C1 * C2 * !Y)	0.00338	0.00334	0.00318
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00221	0.00223	0.00222
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00078	-0.00080	-0.00079
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00277	0.00279	0.00278
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00080	-0.00079
	(!A2 * B1 * B2 * !C1 * !Y)	0.00277	0.00279	0.00278
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00027	-0.00028	-0.00028
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00329	0.00330	0.00329
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00044	-0.00043
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00245	0.00249	0.00245
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * B1 * !B2 * !C1 * Y)	0.00245	0.00249	0.00246
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00027	-0.00028	-0.00028
	(!A2 * !B1 * C1 * C2 * !Y)	0.00329	0.00330	0.00329
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * C1 * !C2 * Y)	0.00245	0.00249	0.00246
	(!A2 * !B1 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * Y)	0.00245	0.00249	0.00246

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00282	-0.00283	-0.00283
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00449	0.00451	0.00449
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00183	-0.00187	-0.00203
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00563	0.00563	0.00542
	(A2 * B1 * B2 * !C1 * !Y)	-0.00182	-0.00187	-0.00203
	(A2 * B1 * B2 * !C1 * !Y)	0.00563	0.00563	0.00542
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00074	-0.00081	-0.00114
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00679	0.00678	0.00641
	(A2 * !B1 * C1 * C2 * !Y)	-0.00074	-0.00081	-0.00113
	(A2 * !B1 * C1 * C2 * !Y)	0.00679	0.00678	0.00641
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00279	-0.00282	-0.00281
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00450	0.00450	0.00449
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00167	-0.00170	-0.00169
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00562	0.00564	0.00561
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00170	-0.00169
	(!A2 * B1 * B2 * !C1 * !Y)	0.00560	0.00564	0.00561
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00064	-0.00067	-0.00067
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00663	0.00664	0.00663
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00085	-0.00087	-0.00085
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00513	0.00520	0.00513
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00085	-0.00086	-0.00084
	(!A2 * B1 * !B2 * !C1 * Y)	0.00513	0.00521	0.00513
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00064	-0.00066	-0.00067
	(!A2 * !B1 * C1 * C2 * !Y)	0.00663	0.00665	0.00663
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00085	-0.00086	-0.00084
	(!A2 * !B1 * C1 * !C2 * Y)	0.00513	0.00521	0.00513
	(!A2 * !B1 * !C1 * Y)	-0.00085	-0.00086	-0.00084
	(!A2 * !B1 * !C1 * Y)	0.00513	0.00521	0.00514

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)	0.00187	0.00167	0.00164
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00177	-0.00199	-0.00200
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00252	0.00210	0.00219
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00119	-0.00165	-0.00148
	(A1 * B1 * B2 * !C1 * !Y)	0.00252	0.00210	0.00219
	(A1 * B1 * B2 * !C1 * !Y)	-0.00119	-0.00165	-0.00148
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00276	0.00235	0.00266
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00102	-0.00146	-0.00103
	(A1 * !B1 * C1 * C2 * !Y)	0.00276	0.00235	0.00266
	(A1 * !B1 * C1 * C2 * !Y)	-0.00101	-0.00146	-0.00103
	(!A1 * B1 * B2 * !Y)	0.00158	0.00160	0.00158
	(!A1 * B1 * B2 * !Y)	-0.00202	-0.00204	-0.00202
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00266	0.00268	0.00266
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00094	-0.00096	-0.00095
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00155	0.00157	0.00156
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00206	-0.00208	-0.00207
	(!A1 * B1 * !B2 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !B1 * C1 * !C2 * Y)	0.00156	0.00157	0.00156
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !B1 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !B1 * !C1 * Y)	-0.00206	-0.00207	-0.00206

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00350	0.00315	0.00309
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00334	-0.00378	-0.00379
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00474	0.00396	0.00418
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00231	-0.00314	-0.00275
	(A1 * B1 * B2 * !C1 * !Y)	0.00474	0.00396	0.00418
	(A1 * B1 * B2 * !C1 * !Y)	-0.00231	-0.00314	-0.00275
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00517	0.00443	0.00512
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00200	-0.00279	-0.00188
	(A1 * !B1 * C1 * C2 * !Y)	0.00520	0.00443	0.00512
	(A1 * !B1 * C1 * C2 * !Y)	-0.00198	-0.00279	-0.00187
	(!A1 * B1 * B2 * !Y)	0.00297	0.00300	0.00298
	(!A1 * B1 * B2 * !Y)	-0.00382	-0.00385	-0.00383
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00512	0.00515	0.00513
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00167	-0.00169	-0.00168
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00283	0.00285	0.00284
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00399	-0.00401	-0.00400
	(!A1 * B1 * !B2 * !C1 * Y)	0.00283	0.00286	0.00285
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00399	-0.00401	-0.00399
	(!A1 * !B1 * C1 * !C2 * Y)	0.00283	0.00286	0.00285
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00398	-0.00401	-0.00399
	(!A1 * !B1 * !C1 * Y)	0.00283	0.00286	0.00285
	(!A1 * !B1 * !C1 * Y)	-0.00398	-0.00400	-0.00399

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)**	-0.00142	-0.00143	-0.00142
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00221	0.00223	0.00221
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00091	-0.00092	-0.00101
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00278	0.00277	0.00269
	(A1 * B1 * B2 * !C1 * !Y)	-0.00091	-0.00092	-0.00101
	(A1 * B1 * B2 * !C1 * !Y)	0.00278	0.00277	0.00269
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00037	-0.00040	-0.00056
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00336	0.00336	0.00318
	(A1 * !B1 * C1 * C2 * !Y)	-0.00037	-0.00040	-0.00056
	(A1 * !B1 * C1 * C2 * !Y)	0.00336	0.00336	0.00318
	(!A1 * B1 * B2 * !Y)	-0.00141	-0.00141	-0.00140
	(!A1 * B1 * B2 * !Y)	0.00222	0.00222	0.00221
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00033	-0.00033	-0.00033
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00329	0.00329	0.00329
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00130	-0.00140	-0.00144
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00235	0.00223	0.00218
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00129	-0.00140	-0.00144
	(!A1 * B1 * !B2 * !C1 * Y)	0.00235	0.00224	0.00218
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00129	-0.00140	-0.00144
	(!A1 * !B1 * C1 * !C2 * Y)	0.00235	0.00224	0.00218
	(!A1 * !B1 * !C1 * Y)	-0.00129	-0.00140	-0.00144
	(!A1 * !B1 * !C1 * Y)	0.00235	0.00224	0.00218

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00266	-0.00268	-0.00267
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00420	0.00425	0.00421
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00165	-0.00170	-0.00186
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00534	0.00535	0.00515
	(A1 * B1 * B2 * !C1 * !Y)	-0.00165	-0.00170	-0.00186
	(A1 * B1 * B2 * !C1 * !Y)	0.00534	0.00535	0.00515
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00057	-0.00062	-0.00096
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00652	0.00648	0.00613
	(A1 * !B1 * C1 * C2 * !Y)	-0.00056	-0.00062	-0.00095
	(A1 * !B1 * C1 * C2 * !Y)	0.00652	0.00648	0.00614
	(!A1 * B1 * B2 * !Y)	-0.00260	-0.00264	-0.00263
	(!A1 * B1 * B2 * !Y)	0.00419	0.00422	0.00421
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00046	-0.00049	-0.00049
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00633	0.00636	0.00634
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00227	-0.00256	-0.00262
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00456	0.00432	0.00422
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00227	-0.00255	-0.00261
	(!A1 * B1 * !B2 * !C1 * Y)	0.00457	0.00433	0.00422
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00227	-0.00255	-0.00261
	(!A1 * !B1 * C1 * !C2 * Y)	0.00457	0.00433	0.00422
	(!A1 * !B1 * !C1 * Y)	-0.00226	-0.00255	-0.00261
	(!A1 * !B1 * !C1 * Y)	0.00457	0.00433	0.00423

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)**	0.00194	0.00195	0.00186
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00119	-0.00120	-0.00123
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00184	0.00186	0.00182
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * B2 * !C1 * !Y)	0.00184	0.00186	0.00182
	(A1 * A2 * B2 * !C1 * !Y)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00205	0.00205	0.00180
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00099	-0.00101	-0.00115
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00227	0.00229	0.00221
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00026	-0.00027	-0.00030
	(A1 * A2 * !B2 * !C1 * !Y)	0.00227	0.00227	0.00221
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00025	-0.00026	-0.00030
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00256	0.00207	0.00258
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00106	-0.00157	-0.00100
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00262	0.00262	0.00261
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00088	-0.00091	-0.00090
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00050	0.00051	0.00049
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00231	-0.00233	-0.00236
	(A1 * !A2 * !B2 * !C1 * Y)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00231	-0.00232	-0.00236
	(!A1 * B2 * C1 * C2 * !Y)	0.00254	0.00207	0.00258
	(!A1 * B2 * C1 * C2 * !Y)	-0.00107	-0.00157	-0.00100
	(!A1 * !B2 * C1 * C2 * !Y)	0.00262	0.00261	0.00260
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00088	-0.00091	-0.00090
	(!A1 * !B2 * C1 * !C2 * Y)	0.00051	0.00051	0.00049
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00231	-0.00232	-0.00236
	(!A1 * !B2 * !C1 * Y)	0.00051	0.00051	0.00049
	(!A1 * !B2 * !C1 * Y)	-0.00231	-0.00232	-0.00236

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00389	0.00396	0.00376
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00247	-0.00248	-0.00253
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00378	0.00384	0.00375
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00147	-0.00149	-0.00146
	(A1 * A2 * B2 * !C1 * !Y)	0.00379	0.00383	0.00375
	(A1 * A2 * B2 * !C1 * !Y)	-0.00147	-0.00149	-0.00146
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00416	0.00418	0.00366
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00202	-0.00206	-0.00236
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00472	0.00473	0.00459
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00053	-0.00055	-0.00064
	(A1 * A2 * !B2 * !C1 * !Y)	0.00472	0.00473	0.00459
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00053	-0.00055	-0.00064
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00527	0.00424	0.00526
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00224	-0.00328	-0.00212
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00536	0.00533	0.00531
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00186	-0.00195	-0.00192
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00104	0.00104	0.00099
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00488	-0.00490	-0.00498
	(A1 * !A2 * !B2 * !C1 * Y)	0.00105	0.00105	0.00099
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00488	-0.00489	-0.00497
	(!A1 * B2 * C1 * C2 * !Y)	0.00524	0.00424	0.00526
	(!A1 * B2 * C1 * C2 * !Y)	-0.00227	-0.00328	-0.00213
	(!A1 * !B2 * C1 * C2 * !Y)	0.00535	0.00533	0.00531
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00195	-0.00192
	(!A1 * !B2 * C1 * !C2 * Y)	0.00105	0.00105	0.00099
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00487	-0.00490	-0.00497
	(!A1 * !B2 * !C1 * Y)	0.00106	0.00105	0.00100
	(!A1 * !B2 * !C1 * Y)	-0.00489	-0.00489	-0.00497

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	-0.00148	-0.00144
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00154	0.00154	0.00155
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00084	-0.00086	-0.00128
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00169	0.00168	0.00132
	(A1 * A2 * B2 * !C1 * !Y)	-0.00084	-0.00086	-0.00128
	(A1 * A2 * B2 * !C1 * !Y)	0.00169	0.00168	0.00132
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00144	-0.00145	-0.00141
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00143	0.00143	0.00143
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00104	-0.00106	-0.00100
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00149	0.00150	0.00152
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00104	-0.00106	-0.00100
	(A1 * A2 * !B2 * !C1 * !Y)	0.00149	0.00150	0.00152
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00032	-0.00036	-0.00055
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00329	0.00327	0.00305
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00026	-0.00028	-0.00028
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00324	0.00325	0.00324
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00243	0.00247	0.00244
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * !C1 * Y)	0.00243	0.00247	0.00244
	(!A1 * B2 * C1 * C2 * !Y)	-0.00032	-0.00035	-0.00055
	(!A1 * B2 * C1 * C2 * !Y)	0.00329	0.00327	0.00305
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00026	-0.00028	-0.00027
	(!A1 * !B2 * C1 * C2 * !Y)	0.00324	0.00325	0.00324
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * C1 * !C2 * Y)	0.00243	0.00247	0.00244
	(!A1 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00039
	(!A1 * !B2 * !C1 * Y)	0.00244	0.00247	0.00244

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00305	-0.00307	-0.00299
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00309	0.00313	0.00312
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00187	-0.00191	-0.00268
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00337	0.00335	0.00270
	(A1 * A2 * B2 * !C1 * !Y)	-0.00187	-0.00193	-0.00268
	(A1 * A2 * B2 * !C1 * !Y)	0.00337	0.00338	0.00270
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00298	-0.00300	-0.00293
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00289	0.00289	0.00288
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00229	-0.00231	-0.00217
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00303	0.00303	0.00308
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00228	-0.00231	-0.00217
	(A1 * A2 * !B2 * !C1 * !Y)	0.00301	0.00303	0.00308
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00074	-0.00083	-0.00122
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00669	0.00665	0.00622
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00064	-0.00067	-0.00068
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00660	0.00660	0.00659
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00083	-0.00084	-0.00082
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00515	0.00519	0.00513
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00082	-0.00083	-0.00081
	(A1 * !A2 * !B2 * !C1 * Y)	0.00513	0.00519	0.00513
	(!A1 * B2 * C1 * C2 * !Y)	-0.00074	-0.00082	-0.00122
	(!A1 * B2 * C1 * C2 * !Y)	0.00669	0.00665	0.00622
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00063	-0.00067	-0.00067
	(!A1 * !B2 * C1 * C2 * !Y)	0.00660	0.00661	0.00659
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00082	-0.00083	-0.00081
	(!A1 * !B2 * C1 * !C2 * Y)	0.00513	0.00520	0.00513
	(!A1 * !B2 * !C1 * Y)	-0.00081	-0.00083	-0.00081
	(!A1 * !B2 * !C1 * Y)	0.00514	0.00520	0.00514

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)	0.00208	0.00208	0.00199
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00119	-0.00121	-0.00123
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00198	0.00200	0.00195
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * B1 * !C1 * !Y)	0.00199	0.00200	0.00195
	(A1 * A2 * B1 * !C1 * !Y)	-0.00069	-0.00070	-0.00068
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00218	0.00217	0.00192
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00098	-0.00100	-0.00116
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00241	0.00242	0.00235
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00025	-0.00026	-0.00030
	(A1 * A2 * !B1 * !C1 * !Y)	0.00241	0.00242	0.00235
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00025	-0.00026	-0.00030
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00271	0.00221	0.00271
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00107	-0.00158	-0.00101
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00275	0.00275	0.00274
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00088	-0.00092	-0.00091
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * B1 * C1 * C2 * !Y)	0.00271	0.00221	0.00271
	(!A1 * B1 * C1 * C2 * !Y)	-0.00107	-0.00158	-0.00101
	(!A1 * !B1 * C1 * !C2 * Y)	0.00145	0.00147	0.00145
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * !B1 * !C1 * Y)	0.00145	0.00147	0.00145
	(!A1 * !B1 * !C1 * Y)	-0.00220	-0.00222	-0.00220

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	0.00387	0.00387	0.00369
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00223	-0.00226	-0.00233
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00372	0.00371	0.00367
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00124	-0.00123	-0.00124
	(A1 * A2 * B1 * !C1 * !Y)	0.00369	0.00371	0.00367
	(A1 * A2 * B1 * !C1 * !Y)	-0.00122	-0.00123	-0.00124
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00405	0.00406	0.00358
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00184	-0.00188	-0.00216
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00451	0.00455	0.00443
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00041	-0.00044	-0.00049
	(A1 * A2 * !B1 * !C1 * !Y)	0.00451	0.00455	0.00443
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00041	-0.00044	-0.00049
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00523	0.00413	0.00519
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00188	-0.00299	-0.00186
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00530	0.00527	0.00524
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00160	-0.00168	-0.00166
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00288	0.00293	0.00290
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00402	-0.00406	-0.00403
	(A1 * !A2 * !B1 * !C1 * Y)	0.00289	0.00293	0.00290
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00402	-0.00405	-0.00403
	(!A1 * B1 * C1 * C2 * !Y)	0.00522	0.00412	0.00519
	(!A1 * B1 * C1 * C2 * !Y)	-0.00189	-0.00300	-0.00186
	(!A1 * !B1 * C1 * !C2 * Y)	0.00289	0.00293	0.00290
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00402	-0.00405	-0.00403
	(!A1 * !B1 * !C1 * Y)	0.00289	0.00294	0.00291
	(!A1 * !B1 * !C1 * Y)	-0.00402	-0.00405	-0.00402

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	-0.00161	-0.00157
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00154	0.00155	0.00155
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00097	-0.00100	-0.00141
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00169	0.00168	0.00132
	(A1 * A2 * B1 * !C1 * !Y)	-0.00097	-0.00100	-0.00141
	(A1 * A2 * B1 * !C1 * !Y)	0.00169	0.00168	0.00132
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00157	-0.00157	-0.00154
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00143	0.00143	0.00143
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00119	-0.00118	-0.00113
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00150	0.00149	0.00152
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00119	-0.00118	-0.00113
	(A1 * A2 * !B1 * !C1 * !Y)	0.00150	0.00149	0.00152
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00045	-0.00048	-0.00068
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00331	0.00327	0.00306
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00326	0.00326	0.00325
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00119	-0.00131	-0.00133
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00249	0.00237	0.00232
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00119	-0.00131	-0.00133
	(A1 * !A2 * !B1 * !C1 * Y)	0.00249	0.00238	0.00232
	(!A1 * B1 * C1 * C2 * !Y)	-0.00045	-0.00048	-0.00068
	(!A1 * B1 * C1 * C2 * !Y)	0.00331	0.00327	0.00306
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00119	-0.00131	-0.00133
	(!A1 * !B1 * C1 * !C2 * Y)	0.00249	0.00238	0.00232
	(!A1 * !B1 * !C1 * Y)	-0.00119	-0.00130	-0.00133
	(!A1 * !B1 * !C1 * Y)	0.00249	0.00238	0.00232

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00297	-0.00299	-0.00291
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00289	0.00293	0.00292
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00175	-0.00180	-0.00257
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00319	0.00319	0.00252
	(A1 * A2 * B1 * !C1 * !Y)	-0.00175	-0.00180	-0.00257
	(A1 * A2 * B1 * !C1 * !Y)	0.00319	0.00319	0.00252
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00289	-0.00292	-0.00285
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00267	0.00269	0.00270
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00207	-0.00210	-0.00201
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00289	0.00290	0.00293
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00207	-0.00210	-0.00201
	(A1 * A2 * !B1 * !C1 * !Y)	0.00289	0.00290	0.00293
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00068	-0.00076	-0.00116
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00642	0.00637	0.00595
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00056	-0.00061	-0.00060
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00632	0.00634	0.00632
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00232	-0.00261	-0.00267
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00460	0.00436	0.00425
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00232	-0.00261	-0.00267
	(A1 * !A2 * !B1 * !C1 * Y)	0.00460	0.00436	0.00426
	(!A1 * B1 * C1 * C2 * !Y)	-0.00067	-0.00075	-0.00115
	(!A1 * B1 * C1 * C2 * !Y)	0.00642	0.00637	0.00595
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00232	-0.00261	-0.00267
	(!A1 * !B1 * C1 * !C2 * Y)	0.00460	0.00436	0.00426
	(!A1 * !B1 * !C1 * Y)	-0.00232	-0.00261	-0.00266
	(!A1 * !B1 * !C1 * Y)	0.00461	0.00437	0.00426

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)	0.00177	0.00179	0.00178
	(A1 * B1 * B2 * C2 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * B1 * B2 * !C2 * !Y)	0.00184	0.00185	0.00182
	(A1 * B1 * B2 * !C2 * !Y)	-0.00078	-0.00078	-0.00080
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00180	0.00183	0.00183
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00073	-0.00074	-0.00070
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00237	0.00238	0.00236
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00026	-0.00026	-0.00027
	(A1 * A2 * !B1 * C2 * !Y)	0.00180	0.00183	0.00183
	(A1 * A2 * !B1 * C2 * !Y)	-0.00073	-0.00074	-0.00070
	(A1 * A2 * !B1 * !C2 * !Y)	0.00237	0.00238	0.00236
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00026	-0.00026	-0.00027
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00057	0.00057	0.00054
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00237	-0.00238	-0.00241
	(A1 * !A2 * !B1 * !C2 * Y)	0.00057	0.00057	0.00055
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00237	-0.00238	-0.00241
	(!A1 * B1 * B2 * C2 * !Y)	0.00180	0.00183	0.00184
	(!A1 * B1 * B2 * C2 * !Y)	-0.00081	-0.00082	-0.00077
	(!A1 * B1 * B2 * !C2 * !Y)	0.00244	0.00244	0.00243
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00020	-0.00020	-0.00021
	(!A1 * B1 * !B2 * !C2 * Y)	0.00057	0.00057	0.00055
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00237	-0.00238	-0.00241
	(!A1 * !B1 * !C2 * Y)	0.00057	0.00057	0.00055
	(!A1 * !B1 * !C2 * Y)	-0.00237	-0.00238	-0.00241

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00315	0.00317	0.00315
	(A1 * B1 * B2 * C2 * !Y)	-0.00172	-0.00172	-0.00170
	(A1 * B1 * B2 * !C2 * !Y)	0.00330	0.00333	0.00325
	(A1 * B1 * B2 * !C2 * !Y)	-0.00148	-0.00151	-0.00154
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00317	0.00317	0.00325
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00139	-0.00138	-0.00134
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00438	0.00441	0.00435
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00042	-0.00044	-0.00046
	(A1 * A2 * !B1 * C2 * !Y)	0.00317	0.00318	0.00325
	(A1 * A2 * !B1 * C2 * !Y)	-0.00139	-0.00139	-0.00134
	(A1 * A2 * !B1 * !C2 * !Y)	0.00438	0.00440	0.00435
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00042	-0.00044	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00102	0.00102	0.00096
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00444	-0.00446	-0.00453
	(A1 * !A2 * !B1 * !C2 * Y)	0.00102	0.00102	0.00097
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00443	-0.00445	-0.00453
	(!A1 * B1 * B2 * C2 * !Y)	0.00320	0.00325	0.00327
	(!A1 * B1 * B2 * C2 * !Y)	-0.00158	-0.00159	-0.00148
	(!A1 * B1 * B2 * !C2 * !Y)	0.00451	0.00454	0.00450
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00031	-0.00033	-0.00034
	(!A1 * B1 * !B2 * !C2 * Y)	0.00102	0.00102	0.00097
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00443	-0.00445	-0.00453
	(!A1 * !B1 * !C2 * Y)	0.00103	0.00103	0.00097
	(!A1 * !B1 * !C2 * Y)	-0.00443	-0.00445	-0.00452

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)**	-0.00145	-0.00146	-0.00164
	(A1 * B1 * B2 * C2 * !Y)	0.00118	0.00118	0.00103
	(A1 * B1 * B2 * !C2 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * B1 * B2 * !C2 * !Y)	0.00097	0.00097	0.00096
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00073	-0.00075	-0.00119
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00182	0.00182	0.00146
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00115	-0.00116	-0.00119
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00149	0.00149	0.00146
	(A1 * A2 * !B1 * C2 * !Y)	-0.00073	-0.00075	-0.00119
	(A1 * A2 * !B1 * C2 * !Y)	0.00182	0.00182	0.00146
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00115	-0.00116	-0.00119
	(A1 * A2 * !B1 * !C2 * !Y)	0.00149	0.00149	0.00146
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00248	0.00252	0.00249
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00046	-0.00047	-0.00045
	(A1 * !A2 * !B1 * !C2 * Y)	0.00249	0.00252	0.00249
	(!A1 * B1 * B2 * C2 * !Y)	-0.00085	-0.00087	-0.00117
	(!A1 * B1 * B2 * C2 * !Y)	0.00179	0.00178	0.00149
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00110	-0.00112	-0.00115
	(!A1 * B1 * B2 * !C2 * !Y)	0.00155	0.00155	0.00150
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00046	-0.00047	-0.00045
	(!A1 * B1 * !B2 * !C2 * Y)	0.00249	0.00252	0.00249
	(!A1 * !B1 * !C2 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !B1 * !C2 * Y)	0.00249	0.00249	0.00250

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00252	-0.00256	-0.00290
	(A1 * B1 * B2 * C2 * !Y)	0.00225	0.00226	0.00199
	(A1 * B1 * B2 * !C2 * !Y)	-0.00295	-0.00296	-0.00294
	(A1 * B1 * B2 * !C2 * !Y)	0.00186	0.00186	0.00187
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00111	-0.00116	-0.00197
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00350	0.00351	0.00286
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00194	-0.00197	-0.00202
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00288	0.00288	0.00284
	(A1 * A2 * !B1 * C2 * !Y)	-0.00111	-0.00116	-0.00197
	(A1 * A2 * !B1 * C2 * !Y)	0.00351	0.00351	0.00286
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00194	-0.00197	-0.00202
	(A1 * A2 * !B1 * !C2 * !Y)	0.00288	0.00289	0.00284
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00468	0.00473	0.00469
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !C2 * Y)	0.00468	0.00468	0.00469
	(!A1 * B1 * B2 * C2 * !Y)	-0.00130	-0.00136	-0.00196
	(!A1 * B1 * B2 * C2 * !Y)	0.00349	0.00349	0.00290
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00184	-0.00187	-0.00195
	(!A1 * B1 * B2 * !C2 * !Y)	0.00301	0.00301	0.00293
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * B1 * !B2 * !C2 * Y)	0.00468	0.00467	0.00469
	(!A1 * !B1 * !C2 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * !B1 * !C2 * Y)	0.00469	0.00469	0.00470

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)**	0.00184	0.00187	0.00185
	(A1 * B1 * B2 * C1 * !Y)	-0.00089	-0.00091	-0.00089
	(A1 * B1 * B2 * !C1 * !Y)	0.00193	0.00195	0.00190
	(A1 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00079	-0.00081
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00188	0.00190	0.00190
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00076	-0.00076	-0.00072
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00248	0.00249	0.00245
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00025	-0.00025	-0.00027
	(A1 * A2 * !B1 * C1 * !Y)	0.00188	0.00187	0.00190
	(A1 * A2 * !B1 * C1 * !Y)	-0.00076	-0.00075	-0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	0.00247	0.00249	0.00245
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00025	-0.00025	-0.00027
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00147	0.00149	0.00148
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00224	-0.00227	-0.00225
	(A1 * !A2 * !B1 * !C1 * Y)	0.00148	0.00150	0.00148
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00225	-0.00227	-0.00225
	(!A1 * B1 * B2 * C1 * !Y)	0.00188	0.00190	0.00191
	(!A1 * B1 * B2 * C1 * !Y)	-0.00083	-0.00084	-0.00079
	(!A1 * B1 * B2 * !C1 * !Y)	0.00254	0.00256	0.00253
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00019	-0.00020	-0.00020
	(!A1 * B1 * !B2 * !C1 * Y)	0.00147	0.00150	0.00148
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00224	-0.00226	-0.00225
	(!A1 * !B1 * !C1 * Y)	0.00147	0.00150	0.00148
	(!A1 * !B1 * !C1 * Y)	-0.00224	-0.00226	-0.00225

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00370	0.00375	0.00370
	(A1 * B1 * B2 * C1 * !Y)	-0.00179	-0.00180	-0.00177
	(A1 * B1 * B2 * !C1 * !Y)	0.00386	0.00389	0.00380
	(A1 * B1 * B2 * !C1 * !Y)	-0.00156	-0.00158	-0.00161
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00375	0.00374	0.00380
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00148	-0.00147	-0.00141
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00494	0.00498	0.00490
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00049	-0.00051	-0.00053
	(A1 * A2 * !B1 * C1 * !Y)	0.00375	0.00375	0.00380
	(A1 * A2 * !B1 * C1 * !Y)	-0.00148	-0.00147	-0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	0.00495	0.00501	0.00491
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00050	-0.00053	-0.00053
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00294	0.00296	0.00294
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00451	-0.00452	-0.00451
	(A1 * !A2 * !B1 * !C1 * Y)	0.00294	0.00296	0.00295
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00450	-0.00452	-0.00450
	(!A1 * B1 * B2 * C1 * !Y)	0.00376	0.00376	0.00382
	(!A1 * B1 * B2 * C1 * !Y)	-0.00165	-0.00163	-0.00155
	(!A1 * B1 * B2 * !C1 * !Y)	0.00507	0.00511	0.00505
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00039	-0.00041	-0.00041
	(!A1 * B1 * !B2 * !C1 * Y)	0.00294	0.00296	0.00295
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00450	-0.00452	-0.00450
	(!A1 * !B1 * !C1 * Y)	0.00296	0.00297	0.00295
	(!A1 * !B1 * !C1 * Y)	-0.00451	-0.00451	-0.00450

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)**	-0.00152	-0.00153	-0.00171
	(A1 * B1 * B2 * C1 * !Y)	0.00119	0.00119	0.00105
	(A1 * B1 * B2 * !C1 * !Y)	-0.00175	-0.00177	-0.00174
	(A1 * B1 * B2 * !C1 * !Y)	0.00097	0.00098	0.00097
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00080	-0.00082	-0.00127
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00184	0.00183	0.00147
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00125	-0.00127	-0.00128
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00149	0.00149	0.00146
	(A1 * A2 * !B1 * C1 * !Y)	-0.00080	-0.00082	-0.00127
	(A1 * A2 * !B1 * C1 * !Y)	0.00183	0.00183	0.00147
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00127	-0.00128
	(A1 * A2 * !B1 * !C1 * !Y)	0.00149	0.00149	0.00146
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00122	-0.00134	-0.00136
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00253	0.00241	0.00236
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00122	-0.00134	-0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	0.00253	0.00242	0.00236
	(!A1 * B1 * B2 * C1 * !Y)	-0.00093	-0.00095	-0.00125
	(!A1 * B1 * B2 * C1 * !Y)	0.00180	0.00179	0.00150
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00120	-0.00122	-0.00125
	(!A1 * B1 * B2 * !C1 * !Y)	0.00155	0.00155	0.00150
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00122	-0.00134	-0.00136
	(!A1 * B1 * !B2 * !C1 * Y)	0.00253	0.00242	0.00236
	(!A1 * !B1 * !C1 * Y)	-0.00122	-0.00134	-0.00135
	(!A1 * !B1 * !C1 * Y)	0.00253	0.00242	0.00237

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00306	-0.00311	-0.00345
	(A1 * B1 * B2 * C1 * !Y)	0.00231	0.00233	0.00206
	(A1 * B1 * B2 * !C1 * !Y)	-0.00351	-0.00354	-0.00349
	(A1 * B1 * B2 * !C1 * !Y)	0.00194	0.00194	0.00194
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00165	-0.00171	-0.00252
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00357	0.00358	0.00293
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00250	-0.00252	-0.00257
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00296	0.00296	0.00291
	(A1 * A2 * !B1 * C1 * !Y)	-0.00165	-0.00171	-0.00252
	(A1 * A2 * !B1 * C1 * !Y)	0.00357	0.00358	0.00293
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00250	-0.00252	-0.00257
	(A1 * A2 * !B1 * !C1 * !Y)	0.00296	0.00296	0.00291
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00268	-0.00272
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00506	0.00481	0.00472
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00268	-0.00271
	(A1 * !A2 * !B1 * !C1 * Y)	0.00507	0.00482	0.00473
	(!A1 * B1 * B2 * C1 * !Y)	-0.00184	-0.00191	-0.00250
	(!A1 * B1 * B2 * C1 * !Y)	0.00355	0.00355	0.00298
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00240	-0.00242	-0.00250
	(!A1 * B1 * B2 * !C1 * !Y)	0.00309	0.00308	0.00300
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00268	-0.00271
	(!A1 * B1 * !B2 * !C1 * Y)	0.00507	0.00482	0.00473
	(!A1 * !B1 * !C1 * Y)	-0.00241	-0.00268	-0.00271
	(!A1 * !B1 * !C1 * Y)	0.00507	0.00482	0.00473

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00267	0.00274	0.00276	0.00268	0.00274	0.00281	1.30057
sky130_fd_sc_hs__a222o_2	0.00271	0.00258	0.00269	0.00267	0.00272	0.00286	2.17590

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	64.88540	136.11400
sky130_fd_sc_hs__a222o_2	0.00000	86.60880	137.74900

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)	0.11263	0.64433	6.62680
	A2->X (RR)	0.11733	0.61973	6.37907
	B1->X (RR)	0.10364	0.61480	6.27273
	B2->X (RR)	0.10749	0.59373	6.11866
	C1->X (RR)	0.08363	0.57227	6.09081
	C2->X (RR)	0.08761	0.55616	5.97280
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.13181	0.60929	6.42393
	A2->X (RR)	0.13785	0.57450	6.32824
	B1->X (RR)	0.11490	0.56932	6.19949
	B2->X (RR)	0.11885	0.54607	6.07352
	C1->X (RR)	0.09383	0.53274	6.05012
	C2->X (RR)	0.09856	0.51173	5.89460

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.25236	0.67302	5.37506
	A2->X (FF)	0.26843	0.69654	5.48791
	B1->X (FF)	0.23430	0.69854	5.77424
	B2->X (FF)	0.24469	0.72256	5.86933
	C1->X (FF)	0.17651	0.68531	5.85754
	C2->X (FF)	0.18910	0.70872	5.93500
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.30123	0.67394	5.08413
	A2->X (FF)	0.30107	0.68120	5.20132
	B1->X (FF)	0.28295	0.70880	5.39419
	B2->X (FF)	0.26925	0.69907	5.45304
	C1->X (FF)	0.21156	0.67808	5.33906
	C2->X (FF)	0.23320	0.71289	5.48249

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.02255	0.02505	0.10235
	A1	0.01219	0.01472	0.09207
	A2	0.02366	0.02536	0.09125
	A2	0.01220	0.01390	0.08009
	B1	0.01761	0.02105	0.09251
	B1	0.00961	0.01306	0.08481
	B2	0.01857	0.02148	0.09082
	B2	0.00972	0.01264	0.08245
	C1	0.01298	0.01756	0.09682
	C1	0.00739	0.01199	0.09171
	C2	0.01397	0.01805	0.09663
	C2	0.00744	0.01153	0.09062
sky130_fd_sc_hs__a222o_2	A1	0.02634	0.02824	0.08554
	A1	0.01628	0.01821	0.07603
	A2	0.02795	0.02977	0.10784
	A2	0.01672	0.01854	0.09731
	B1	0.02092	0.02416	0.09013
	B1	0.01330	0.01656	0.08340
	B2	0.02189	0.02463	0.08994
	B2	0.01328	0.01607	0.08230
	C1	0.01680	0.02069	0.09185
	C1	0.01153	0.01545	0.08756
	C2	0.01787	0.02100	0.09004
	C2	0.01149	0.01461	0.08368

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00688	0.00816	0.07823
	A1	0.01725	0.01852	0.08823
	A2	0.00720	0.00819	0.07758
	A2	0.01866	0.01964	0.08832
	B1	0.00671	0.00906	0.08330
	B1	0.01471	0.01706	0.09127
	B2	0.00723	0.00959	0.08328
	B2	0.01608	0.01843	0.09207
	C1	0.00641	0.01113	0.09407
	C1	0.01201	0.01670	0.09954
	C2	0.00693	0.01171	0.09507
	C2	0.01346	0.01822	0.10152
sky130_fd_sc_hs__a222o_2	A1	0.01237	0.01119	0.08375
	A1	0.02244	0.02121	0.09217
	A2	0.01409	0.01354	0.09300
	A2	0.02531	0.02461	0.10228
	B1	0.01215	0.01280	0.08697
	B1	0.01978	0.02042	0.09262
	B2	0.01285	0.01347	0.08612
	B2	0.02147	0.02200	0.09422
	C1	0.01159	0.01452	0.08773
	C1	0.01686	0.01976	0.09145
	C2	0.01239	0.01505	0.08807
	C2	0.01878	0.02142	0.09384

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)**	0.00181	0.00164	0.00161
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00175	-0.00196	-0.00197
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00248	0.00207	0.00216
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00117	-0.00162	-0.00144
	(A2 * B1 * B2 * !C1 * X)	0.00248	0.00207	0.00216
	(A2 * B1 * B2 * !C1 * X)	-0.00117	-0.00162	-0.00144
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00271	0.00232	0.00263
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00100	-0.00143	-0.00100
	(A2 * !B1 * C1 * C2 * X)	0.00271	0.00232	0.00263
	(A2 * !B1 * C1 * C2 * X)	-0.00100	-0.00143	-0.00100
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00142	-0.00144	-0.00143
	(!A2 * B1 * B2 * !C1 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * B2 * !C1 * X)	-0.00142	-0.00144	-0.00143
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00263	0.00264	0.00263
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00091	-0.00093	-0.00091
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00096	0.00096	0.00094
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00190	-0.00192	-0.00195
	(!A2 * B1 * !B2 * !C1 * !X)	0.00096	0.00096	0.00094
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00190	-0.00192	-0.00195
	(!A2 * !B1 * C1 * C2 * X)	0.00263	0.00264	0.00263
	(!A2 * !B1 * C1 * C2 * X)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * C1 * !C2 * !X)	0.00096	0.00096	0.00094
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00190	-0.00192	-0.00195
	(!A2 * !B1 * !C1 * !X)	0.00096	0.00097	0.00094
	(!A2 * !B1 * !C1 * !X)	-0.00189	-0.00191	-0.00194

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00198	0.00178	0.00174
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00168	-0.00190	-0.00192
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00263	0.00221	0.00232
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00113	-0.00156	-0.00137
	(A2 * B1 * B2 * !C1 * X)	0.00263	0.00221	0.00232
	(A2 * B1 * B2 * !C1 * X)	-0.00113	-0.00156	-0.00137
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00284	0.00242	0.00275
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00098	-0.00141	-0.00097
	(A2 * !B1 * C1 * C2 * X)	0.00286	0.00242	0.00275
	(A2 * !B1 * C1 * C2 * X)	-0.00096	-0.00141	-0.00097
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00169	0.00171	0.00168
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00193	-0.00194	-0.00194
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00228	0.00229	0.00228
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * B2 * !C1 * X)	0.00228	0.00229	0.00228
	(!A2 * B1 * B2 * !C1 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00274	0.00275	0.00275
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00090	-0.00088
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00148	0.00148	0.00142
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00151	-0.00152	-0.00160
	(!A2 * B1 * !B2 * !C1 * !X)	0.00148	0.00149	0.00143
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00151	-0.00152	-0.00159
	(!A2 * !B1 * C1 * C2 * X)	0.00274	0.00275	0.00274
	(!A2 * !B1 * C1 * C2 * X)	-0.00088	-0.00090	-0.00088
	(!A2 * !B1 * C1 * !C2 * !X)	0.00148	0.00148	0.00143
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00151	-0.00152	-0.00159
	(!A2 * !B1 * !C1 * !X)	0.00149	0.00149	0.00143
	(!A2 * !B1 * !C1 * !X)	-0.00150	-0.00152	-0.00159

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)	-0.00137	-0.00138	-0.00138
	(A2 * B1 * B2 * C1 * C2 * X)	0.00220	0.00222	0.00220
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00087	-0.00089	-0.00097
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00276	0.00277	0.00267
	(A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00089	-0.00097
	(A2 * B1 * B2 * !C1 * X)	0.00276	0.00277	0.00267
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00032	-0.00035	-0.00051
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00335	0.00336	0.00317
	(A2 * !B1 * C1 * C2 * X)	-0.00032	-0.00035	-0.00051
	(A2 * !B1 * C1 * C2 * X)	0.00335	0.00336	0.00317
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00221	0.00222	0.00221
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00079	-0.00080	-0.00079
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00277	0.00278	0.00277
	(!A2 * B1 * B2 * !C1 * X)	-0.00078	-0.00080	-0.00079
	(!A2 * B1 * B2 * !C1 * X)	0.00276	0.00277	0.00277
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00027	-0.00028	-0.00028
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00328	0.00329	0.00328
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00001	0.00000	0.00001
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00289	0.00293	0.00289
	(!A2 * B1 * !B2 * !C1 * !X)	0.00001	0.00001	0.00002
	(!A2 * B1 * !B2 * !C1 * !X)	0.00289	0.00293	0.00290
	(!A2 * !B1 * C1 * C2 * X)	-0.00027	-0.00028	-0.00028
	(!A2 * !B1 * C1 * C2 * X)	0.00328	0.00329	0.00328
	(!A2 * !B1 * C1 * !C2 * !X)	0.00001	0.00001	0.00002
	(!A2 * !B1 * C1 * !C2 * !X)	0.00289	0.00293	0.00290
	(!A2 * !B1 * !C1 * !X)	0.00002	0.00001	0.00002
	(!A2 * !B1 * !C1 * !X)	0.00289	0.00293	0.00290

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00149	-0.00150	-0.00148
	(A2 * B1 * B2 * C1 * C2 * X)	0.00217	0.00219	0.00218
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00100	-0.00102	-0.00110
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00272	0.00271	0.00262
	(A2 * B1 * B2 * !C1 * X)	-0.00100	-0.00102	-0.00110
	(A2 * B1 * B2 * !C1 * X)	0.00272	0.00271	0.00262
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00041	-0.00044	-0.00060
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00335	0.00335	0.00317
	(A2 * !B1 * C1 * C2 * X)	-0.00040	-0.00043	-0.00060
	(A2 * !B1 * C1 * C2 * X)	0.00335	0.00334	0.00317
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00144	-0.00147	-0.00146
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00217	0.00218	0.00218
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00090	-0.00094	-0.00093
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00271	0.00273	0.00272
	(!A2 * B1 * B2 * !C1 * X)	-0.00090	-0.00093	-0.00093
	(!A2 * B1 * B2 * !C1 * X)	0.00271	0.00272	0.00272
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00033	-0.00037	-0.00037
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00328	0.00328	0.00328
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00039	0.00038	0.00040
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00340	0.00344	0.00340
	(!A2 * B1 * !B2 * !C1 * !X)	0.00040	0.00039	0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	0.00340	0.00344	0.00341
	(!A2 * !B1 * C1 * C2 * X)	-0.00033	-0.00037	-0.00037
	(!A2 * !B1 * C1 * C2 * X)	0.00327	0.00329	0.00328
	(!A2 * !B1 * C1 * !C2 * !X)	0.00040	0.00039	0.00040
	(!A2 * !B1 * C1 * !C2 * !X)	0.00340	0.00344	0.00341
	(!A2 * !B1 * !C1 * !X)	0.00040	0.00039	0.00040
	(!A2 * !B1 * !C1 * !X)	0.00340	0.00344	0.00341

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)	0.00195	0.00181	0.00178
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00170	-0.00190	-0.00190
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00263	0.00223	0.00233
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00116	-0.00156	-0.00138
	(A1 * B1 * B2 * !C1 * X)	0.00263	0.00223	0.00233
	(A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00156	-0.00138
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00284	0.00248	0.00280
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00098	-0.00137	-0.00094
	(A1 * !B1 * C1 * C2 * X)	0.00285	0.00248	0.00280
	(A1 * !B1 * C1 * C2 * X)	-0.00098	-0.00137	-0.00094
	(!A1 * B1 * B2 * X)	0.00172	0.00175	0.00173
	(!A1 * B1 * B2 * X)	-0.00192	-0.00194	-0.00192
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00279	0.00281	0.00281
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00188	0.00189	0.00189
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * B1 * !B2 * !C1 * !X)	0.00188	0.00189	0.00189
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !B1 * C1 * !C2 * !X)	0.00188	0.00189	0.00189
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !B1 * !C1 * !X)	0.00189	0.00190	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00189	0.00172	0.00169
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00172	-0.00193	-0.00193
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00253	0.00213	0.00224
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00119	-0.00160	-0.00141
	(A1 * B1 * B2 * !C1 * X)	0.00253	0.00213	0.00224
	(A1 * B1 * B2 * !C1 * X)	-0.00119	-0.00160	-0.00141
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00276	0.00237	0.00271
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00101	-0.00142	-0.00097
	(A1 * !B1 * C1 * C2 * X)	0.00274	0.00236	0.00271
	(A1 * !B1 * C1 * C2 * X)	-0.00103	-0.00142	-0.00097
	(!A1 * B1 * B2 * X)	0.00164	0.00165	0.00163
	(!A1 * B1 * B2 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00271	0.00272	0.00271
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00243	0.00243	0.00243
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00243	0.00244	0.00243
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * C1 * !C2 * !X)	0.00243	0.00244	0.00243
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * !X)	0.00244	0.00244	0.00244
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115

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)**	-0.00155	-0.00155	-0.00155
	(A1 * B1 * B2 * C1 * C2 * X)	0.00213	0.00215	0.00213
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00104	-0.00106	-0.00114
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00270	0.00270	0.00260
	(A1 * B1 * B2 * !C1 * X)	-0.00104	-0.00106	-0.00114
	(A1 * B1 * B2 * !C1 * X)	0.00270	0.00270	0.00260
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00048	-0.00052	-0.00068
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00329	0.00329	0.00311
	(A1 * !B1 * C1 * C2 * X)	-0.00048	-0.00052	-0.00068
	(A1 * !B1 * C1 * C2 * X)	0.00329	0.00329	0.00311
	(!A1 * B1 * B2 * X)	-0.00151	-0.00153	-0.00152
	(!A1 * B1 * B2 * X)	0.00213	0.00215	0.00214
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00044	-0.00045	-0.00045
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00321	0.00322	0.00321
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00075	-0.00088	-0.00090
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00291	0.00282	0.00276
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00074	-0.00087	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00292	0.00282	0.00276
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00074	-0.00087	-0.00090
	(!A1 * !B1 * C1 * !C2 * !X)	0.00292	0.00282	0.00276
	(!A1 * !B1 * !C1 * !X)	-0.00074	-0.00087	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00292	0.00282	0.00276

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00143	-0.00144	-0.00143
	(A1 * B1 * B2 * C1 * C2 * X)	0.00219	0.00221	0.00219
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00092	-0.00093	-0.00102
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00276	0.00274	0.00266
	(A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00093	-0.00102
	(A1 * B1 * B2 * !C1 * X)	0.00276	0.00274	0.00266
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00037	-0.00040	-0.00056
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00335	0.00335	0.00316
	(A1 * !B1 * C1 * C2 * X)	-0.00037	-0.00041	-0.00056
	(A1 * !B1 * C1 * C2 * X)	0.00335	0.00335	0.00316
	(!A1 * B1 * B2 * X)	-0.00138	-0.00140	-0.00140
	(!A1 * B1 * B2 * X)	0.00220	0.00220	0.00219
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00031	-0.00033	-0.00033
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00328	0.00327	0.00327
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00056	-0.00060
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00321	0.00305	0.00300
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00040	-0.00056	-0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00321	0.00305	0.00300
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00040	-0.00056	-0.00060
	(!A1 * !B1 * C1 * !C2 * !X)	0.00321	0.00305	0.00300
	(!A1 * !B1 * !C1 * !X)	-0.00040	-0.00055	-0.00060
	(!A1 * !B1 * !C1 * !X)	0.00321	0.00305	0.00300

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)**	0.00198	0.00204	0.00191
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00127	-0.00124	-0.00129
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00196	0.00198	0.00193
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * B2 * !C1 * X)	0.00196	0.00198	0.00193
	(A1 * A2 * B2 * !C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00214	0.00214	0.00188
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00102	-0.00104	-0.00120
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00240	0.00242	0.00232
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00026	-0.00029	-0.00032
	(A1 * A2 * !B2 * !C1 * X)	0.00240	0.00242	0.00232
	(A1 * A2 * !B2 * !C1 * X)	-0.00026	-0.00029	-0.00032
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00275	0.00222	0.00267
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00105	-0.00158	-0.00105
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00271	0.00269	0.00269
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00094	-0.00096	-0.00096
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00098	0.00098	0.00095
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00200	-0.00201	-0.00204
	(A1 * !A2 * !B2 * !C1 * !X)	0.00098	0.00098	0.00096
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00200	-0.00200	-0.00204
	(!A1 * B2 * C1 * C2 * X)	0.00275	0.00222	0.00267
	(!A1 * B2 * C1 * C2 * X)	-0.00105	-0.00158	-0.00105
	(!A1 * !B2 * C1 * C2 * X)	0.00271	0.00269	0.00269
	(!A1 * !B2 * C1 * C2 * X)	-0.00093	-0.00097	-0.00096
	(!A1 * !B2 * C1 * !C2 * !X)	0.00098	0.00098	0.00096
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00200	-0.00200	-0.00204
	(!A1 * !B2 * !C1 * !X)	0.00098	0.00098	0.00096
	(!A1 * !B2 * !C1 * !X)	-0.00199	-0.00200	-0.00204

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00197	0.00198	0.00189
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00114	-0.00115	-0.00118
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00190	0.00192	0.00187
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * B2 * !C1 * X)	0.00190	0.00192	0.00187
	(A1 * A2 * B2 * !C1 * X)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00208	0.00207	0.00183
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00093	-0.00094	-0.00110
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00232	0.00234	0.00226
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00019	-0.00022	-0.00024
	(A1 * A2 * !B2 * !C1 * X)	0.00232	0.00232	0.00226
	(A1 * A2 * !B2 * !C1 * X)	-0.00019	-0.00020	-0.00024
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00264	0.00213	0.00263
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00096	-0.00151	-0.00094
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00267	0.00266	0.00265
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00082	-0.00086	-0.00084
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00138	0.00138	0.00136
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00142	-0.00143	-0.00146
	(A1 * !A2 * !B2 * !C1 * !X)	0.00138	0.00138	0.00136
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00142	-0.00143	-0.00146
	(!A1 * B2 * C1 * C2 * X)	0.00262	0.00213	0.00262
	(!A1 * B2 * C1 * C2 * X)	-0.00098	-0.00151	-0.00094
	(!A1 * !B2 * C1 * C2 * X)	0.00267	0.00266	0.00265
	(!A1 * !B2 * C1 * C2 * X)	-0.00082	-0.00085	-0.00084
	(!A1 * !B2 * C1 * !C2 * !X)	0.00139	0.00139	0.00137
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00141	-0.00142	-0.00146
	(!A1 * !B2 * !C1 * !X)	0.00139	0.00139	0.00137
	(!A1 * !B2 * !C1 * !X)	-0.00141	-0.00142	-0.00146

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)	-0.00153	-0.00153	-0.00149
	(A1 * A2 * B2 * C1 * C2 * X)	0.00161	0.00162	0.00162
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00096	-0.00098	-0.00133
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00170	0.00170	0.00137
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00098	-0.00133
	(A1 * A2 * B2 * !C1 * X)	0.00170	0.00170	0.00137
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00150	-0.00150	-0.00147
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00150	0.00150	0.00150
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00115	-0.00116	-0.00108
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00154	0.00154	0.00158
	(A1 * A2 * !B2 * !C1 * X)	-0.00115	-0.00116	-0.00108
	(A1 * A2 * !B2 * !C1 * X)	0.00153	0.00154	0.00158
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00038	-0.00041	-0.00060
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00338	0.00335	0.00315
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00033	-0.00034	-0.00034
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00333	0.00333	0.00333
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00000	-0.00002	-0.00000
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00298	0.00301	0.00298
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00000	-0.00001	0.00000
	(A1 * !A2 * !B2 * !C1 * !X)	0.00298	0.00301	0.00298
	(!A1 * B2 * C1 * C2 * X)	-0.00038	-0.00041	-0.00061
	(!A1 * B2 * C1 * C2 * X)	0.00338	0.00335	0.00315
	(!A1 * !B2 * C1 * C2 * X)	-0.00033	-0.00034	-0.00034
	(!A1 * !B2 * C1 * C2 * X)	0.00333	0.00333	0.00333
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00000	-0.00001	0.00000
	(!A1 * !B2 * C1 * !C2 * !X)	0.00298	0.00301	0.00299
	(!A1 * !B2 * !C1 * !X)	0.00000	-0.00001	0.00000
	(!A1 * !B2 * !C1 * !X)	0.00299	0.00302	0.00299

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00146	-0.00147	-0.00143
	(A1 * A2 * B2 * C1 * C2 * X)	0.00152	0.00154	0.00154
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00087	-0.00089	-0.00127
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00169	0.00168	0.00134
	(A1 * A2 * B2 * !C1 * X)	-0.00087	-0.00089	-0.00127
	(A1 * A2 * B2 * !C1 * X)	0.00169	0.00168	0.00134
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00143	-0.00144	-0.00141
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00142	0.00142	0.00142
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00105	-0.00105	-0.00100
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00149	0.00149	0.00151
	(A1 * A2 * !B2 * !C1 * X)	-0.00105	-0.00105	-0.00100
	(A1 * A2 * !B2 * !C1 * X)	0.00149	0.00149	0.00151
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00030	-0.00034	-0.00054
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00328	0.00327	0.00305
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00026	-0.00027	-0.00027
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00325	0.00324	0.00323
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00046	0.00045	0.00046
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00327	0.00330	0.00327
	(A1 * !A2 * !B2 * !C1 * !X)	0.00046	0.00045	0.00046
	(A1 * !A2 * !B2 * !C1 * !X)	0.00327	0.00330	0.00327
	(!A1 * B2 * C1 * C2 * X)	-0.00030	-0.00034	-0.00054
	(!A1 * B2 * C1 * C2 * X)	0.00329	0.00327	0.00305
	(!A1 * !B2 * C1 * C2 * X)	-0.00026	-0.00027	-0.00027
	(!A1 * !B2 * C1 * C2 * X)	0.00325	0.00324	0.00323
	(!A1 * !B2 * C1 * !C2 * !X)	0.00045	0.00044	0.00045
	(!A1 * !B2 * C1 * !C2 * !X)	0.00326	0.00328	0.00327
	(!A1 * !B2 * !C1 * !X)	0.00045	0.00044	0.00045
	(!A1 * !B2 * !C1 * !X)	0.00326	0.00328	0.00327

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)	0.00194	0.00198	0.00186
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00119	-0.00117	-0.00122
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00191	0.00193	0.00187
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * B1 * !C1 * X)	0.00191	0.00193	0.00187
	(A1 * A2 * B1 * !C1 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00207	0.00207	0.00182
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00096	-0.00098	-0.00114
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00229	0.00231	0.00224
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00022	-0.00023	-0.00028
	(A1 * A2 * !B1 * !C1 * X)	0.00229	0.00231	0.00224
	(A1 * A2 * !B1 * !C1 * X)	-0.00022	-0.00023	-0.00028
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00270	0.00216	0.00262
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00095	-0.00149	-0.00096
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00266	0.00265	0.00264
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00084	-0.00088	-0.00087
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00187	0.00189	0.00188
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
	(!A1 * B1 * C1 * C2 * X)	0.00270	0.00217	0.00262
	(!A1 * B1 * C1 * C2 * X)	-0.00095	-0.00148	-0.00096
	(!A1 * !B1 * C1 * !C2 * !X)	0.00188	0.00189	0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00164	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * !X)	0.00188	0.00190	0.00188
	(!A1 * !B1 * !C1 * !X)	-0.00164	-0.00166	-0.00164

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00198	0.00200	0.00190
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00114	-0.00115	-0.00118
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00190	0.00193	0.00188
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00066	-0.00068	-0.00067
	(A1 * A2 * B1 * !C1 * X)	0.00190	0.00193	0.00188
	(A1 * A2 * B1 * !C1 * X)	-0.00066	-0.00068	-0.00067
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00210	0.00210	0.00185
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00092	-0.00094	-0.00109
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00234	0.00235	0.00228
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00019	-0.00020	-0.00024
	(A1 * A2 * !B1 * !C1 * X)	0.00234	0.00235	0.00228
	(A1 * A2 * !B1 * !C1 * X)	-0.00019	-0.00020	-0.00024
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00263	0.00214	0.00264
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00100	-0.00151	-0.00094
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00268	0.00269	0.00267
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00081	-0.00085	-0.00084
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00234	0.00235	0.00234
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00234	0.00236	0.00234
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00116	-0.00114
	(!A1 * B1 * C1 * C2 * X)	0.00266	0.00214	0.00264
	(!A1 * B1 * C1 * C2 * X)	-0.00098	-0.00151	-0.00094
	(!A1 * !B1 * C1 * !C2 * !X)	0.00239	0.00240	0.00239
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00239	0.00241	0.00239
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113

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)	-0.00148	-0.00148	-0.00143
	(A1 * A2 * B1 * C1 * C2 * X)	0.00155	0.00155	0.00155
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00089	-0.00091	-0.00127
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00165	0.00164	0.00131
	(A1 * A2 * B1 * !C1 * X)	-0.00089	-0.00091	-0.00127
	(A1 * A2 * B1 * !C1 * X)	0.00165	0.00164	0.00131
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00144	-0.00144	-0.00141
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00144	0.00144	0.00144
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00105	-0.00105	-0.00099
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00150	0.00150	0.00153
	(A1 * A2 * !B1 * !C1 * X)	-0.00105	-0.00105	-0.00099
	(A1 * A2 * !B1 * !C1 * X)	0.00150	0.00150	0.00153
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00032	-0.00036	-0.00055
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00330	0.00327	0.00306
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00027	-0.00029	-0.00028
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00325	0.00325	0.00324
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00075	-0.00086	-0.00090
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00279	0.00268	0.00262
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00075	-0.00086	-0.00089
	(A1 * !A2 * !B1 * !C1 * !X)	0.00280	0.00268	0.00263
	(!A1 * B1 * C1 * C2 * X)	-0.00032	-0.00036	-0.00055
	(!A1 * B1 * C1 * C2 * X)	0.00330	0.00327	0.00306
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00075	-0.00086	-0.00089
	(!A1 * !B1 * C1 * !C2 * !X)	0.00280	0.00268	0.00263
	(!A1 * !B1 * !C1 * !X)	-0.00075	-0.00086	-0.00089
	(!A1 * !B1 * !C1 * !X)	0.00280	0.00268	0.00263

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00148	-0.00149	-0.00145
	(A1 * A2 * B1 * C1 * C2 * X)	0.00152	0.00154	0.00154
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00087	-0.00089	-0.00128
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00170	0.00169	0.00135
	(A1 * A2 * B1 * !C1 * X)	-0.00087	-0.00089	-0.00128
	(A1 * A2 * B1 * !C1 * X)	0.00170	0.00169	0.00135
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00144	-0.00146	-0.00142
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00140	0.00142	0.00142
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00106	-0.00108	-0.00101
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00148	0.00150	0.00151
	(A1 * A2 * !B1 * !C1 * X)	-0.00106	-0.00108	-0.00101
	(A1 * A2 * !B1 * !C1 * X)	0.00148	0.00150	0.00151
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00032	-0.00036	-0.00056
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00329	0.00326	0.00306
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00027	-0.00029	-0.00028
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00323	0.00324	0.00323
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00033	-0.00046	-0.00050
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00317	0.00306	0.00299
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00033	-0.00045	-0.00049
	(A1 * !A2 * !B1 * !C1 * !X)	0.00317	0.00306	0.00299
	(!A1 * B1 * C1 * C2 * X)	-0.00032	-0.00036	-0.00056
	(!A1 * B1 * C1 * C2 * X)	0.00328	0.00326	0.00305
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00039	-0.00051	-0.00055
	(!A1 * !B1 * C1 * !C2 * !X)	0.00313	0.00303	0.00297
	(!A1 * !B1 * !C1 * !X)	-0.00038	-0.00051	-0.00054
	(!A1 * !B1 * !C1 * !X)	0.00314	0.00303	0.00298

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)	0.00181	0.00183	0.00182
	(A1 * B1 * B2 * C2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * B2 * !C2 * X)	0.00191	0.00191	0.00187
	(A1 * B1 * B2 * !C2 * X)	-0.00080	-0.00080	-0.00083
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00183	0.00186	0.00186
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00078	-0.00079	-0.00075
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00246	0.00246	0.00243
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00025	-0.00026	-0.00028
	(A1 * A2 * !B1 * C2 * X)	0.00183	0.00186	0.00186
	(A1 * A2 * !B1 * C2 * X)	-0.00078	-0.00079	-0.00075
	(A1 * A2 * !B1 * !C2 * X)	0.00246	0.00246	0.00243
	(A1 * A2 * !B1 * !C2 * X)	-0.00026	-0.00026	-0.00028
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00101	0.00101	0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00203	-0.00204	-0.00207
	(A1 * !A2 * !B1 * !C2 * !X)	0.00101	0.00101	0.00098
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00202	-0.00203	-0.00207
	(!A1 * B1 * B2 * C2 * X)	0.00184	0.00187	0.00188
	(!A1 * B1 * B2 * C2 * X)	-0.00085	-0.00086	-0.00081
	(!A1 * B1 * B2 * !C2 * X)	0.00253	0.00255	0.00250
	(!A1 * B1 * B2 * !C2 * X)	-0.00020	-0.00022	-0.00022
	(!A1 * B1 * !B2 * !C2 * !X)	0.00101	0.00101	0.00098
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00202	-0.00203	-0.00207
	(!A1 * !B1 * !C2 * !X)	0.00101	0.00101	0.00099
	(!A1 * !B1 * !C2 * !X)	-0.00202	-0.00203	-0.00207

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00178	0.00180	0.00179
	(A1 * B1 * B2 * C2 * X)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * B2 * !C2 * X)	0.00185	0.00185	0.00183
	(A1 * B1 * B2 * !C2 * X)	-0.00075	-0.00075	-0.00077
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00180	0.00183	0.00184
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00070	-0.00072	-0.00067
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00238	0.00240	0.00236
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00022	-0.00025	-0.00024
	(A1 * A2 * !B1 * C2 * X)	0.00180	0.00183	0.00184
	(A1 * A2 * !B1 * C2 * X)	-0.00070	-0.00072	-0.00067
	(A1 * A2 * !B1 * !C2 * X)	0.00238	0.00240	0.00236
	(A1 * A2 * !B1 * !C2 * X)	-0.00022	-0.00025	-0.00024
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00143	0.00142	0.00140
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00149	-0.00150	-0.00154
	(A1 * !A2 * !B1 * !C2 * !X)	0.00143	0.00142	0.00140
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00149	-0.00150	-0.00154
	(!A1 * B1 * B2 * C2 * X)	0.00182	0.00185	0.00186
	(!A1 * B1 * B2 * C2 * X)	-0.00074	-0.00075	-0.00070
	(!A1 * B1 * B2 * !C2 * X)	0.00244	0.00245	0.00244
	(!A1 * B1 * B2 * !C2 * X)	-0.00017	-0.00017	-0.00018
	(!A1 * B1 * !B2 * !C2 * !X)	0.00143	0.00142	0.00140
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00149	-0.00150	-0.00154
	(!A1 * !B1 * !C2 * !X)	0.00143	0.00142	0.00140
	(!A1 * !B1 * !C2 * !X)	-0.00149	-0.00149	-0.00153

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)**	-0.00144	-0.00146	-0.00168
	(A1 * B1 * B2 * C2 * X)	0.00126	0.00126	0.00108
	(A1 * B1 * B2 * !C2 * X)	-0.00170	-0.00171	-0.00169
	(A1 * B1 * B2 * !C2 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00073	-0.00075	-0.00122
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00189	0.00189	0.00152
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00122	-0.00123	-0.00124
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00152	0.00152	0.00149
	(A1 * A2 * !B1 * C2 * X)	-0.00073	-0.00075	-0.00122
	(A1 * A2 * !B1 * C2 * X)	0.00189	0.00189	0.00152
	(A1 * A2 * !B1 * !C2 * X)	-0.00121	-0.00123	-0.00124
	(A1 * A2 * !B1 * !C2 * X)	0.00151	0.00152	0.00149
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00003	-0.00005	-0.00003
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00301	0.00304	0.00301
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00002	-0.00004	-0.00003
	(A1 * !A2 * !B1 * !C2 * !X)	0.00301	0.00304	0.00301
	(!A1 * B1 * B2 * C2 * X)	-0.00083	-0.00086	-0.00119
	(!A1 * B1 * B2 * C2 * X)	0.00188	0.00187	0.00156
	(!A1 * B1 * B2 * !C2 * X)	-0.00116	-0.00117	-0.00121
	(!A1 * B1 * B2 * !C2 * X)	0.00158	0.00158	0.00153
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00002	-0.00004	-0.00003
	(!A1 * B1 * !B2 * !C2 * !X)	0.00301	0.00304	0.00301
	(!A1 * !B1 * !C2 * !X)	-0.00002	-0.00004	-0.00003
	(!A1 * !B1 * !C2 * !X)	0.00302	0.00304	0.00302

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00142	-0.00143	-0.00161
	(A1 * B1 * B2 * C2 * X)	0.00118	0.00117	0.00104
	(A1 * B1 * B2 * !C2 * X)	-0.00162	-0.00163	-0.00162
	(A1 * B1 * B2 * !C2 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00070	-0.00072	-0.00114
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00183	0.00183	0.00148
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00111	-0.00112	-0.00114
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00151	0.00151	0.00148
	(A1 * A2 * !B1 * C2 * X)	-0.00070	-0.00072	-0.00114
	(A1 * A2 * !B1 * C2 * X)	0.00183	0.00183	0.00148
	(A1 * A2 * !B1 * !C2 * X)	-0.00111	-0.00112	-0.00114
	(A1 * A2 * !B1 * !C2 * X)	0.00151	0.00151	0.00148
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00042	0.00040	0.00042
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00334	0.00336	0.00334
	(A1 * !A2 * !B1 * !C2 * !X)	0.00043	0.00040	0.00042
	(A1 * !A2 * !B1 * !C2 * !X)	0.00335	0.00337	0.00334
	(!A1 * B1 * B2 * C2 * X)	-0.00081	-0.00083	-0.00113
	(!A1 * B1 * B2 * C2 * X)	0.00179	0.00178	0.00149
	(!A1 * B1 * B2 * !C2 * X)	-0.00106	-0.00107	-0.00111
	(!A1 * B1 * B2 * !C2 * X)	0.00157	0.00157	0.00152
	(!A1 * B1 * !B2 * !C2 * !X)	0.00042	0.00040	0.00042
	(!A1 * B1 * !B2 * !C2 * !X)	0.00335	0.00336	0.00334
	(!A1 * !B1 * !C2 * !X)	0.00042	0.00040	0.00042
	(!A1 * !B1 * !C2 * !X)	0.00335	0.00337	0.00334

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)**	0.00182	0.00183	0.00181
	(A1 * B1 * B2 * C1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * B1 * B2 * !C1 * X)	0.00189	0.00191	0.00186
	(A1 * B1 * B2 * !C1 * X)	-0.00076	-0.00077	-0.00079
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00184	0.00186	0.00186
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00074	-0.00075	-0.00070
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00244	0.00245	0.00241
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00023	-0.00024	-0.00026
	(A1 * A2 * !B1 * C1 * X)	0.00184	0.00186	0.00186
	(A1 * A2 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00070
	(A1 * A2 * !B1 * !C1 * X)	0.00244	0.00245	0.00241
	(A1 * A2 * !B1 * !C1 * X)	-0.00023	-0.00024	-0.00026
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00190	0.00192	0.00190
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00177	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00192	0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00179	-0.00178
	(!A1 * B1 * B2 * C1 * X)	0.00185	0.00187	0.00187
	(!A1 * B1 * B2 * C1 * X)	-0.00081	-0.00082	-0.00077
	(!A1 * B1 * B2 * !C1 * X)	0.00250	0.00252	0.00249
	(!A1 * B1 * B2 * !C1 * X)	-0.00018	-0.00018	-0.00019
	(!A1 * B1 * !B2 * !C1 * !X)	0.00190	0.00192	0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00177	-0.00179	-0.00178
	(!A1 * !B1 * !C1 * !X)	0.00191	0.00192	0.00191
	(!A1 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00188	0.00191	0.00189
	(A1 * B1 * B2 * C1 * X)	-0.00086	-0.00087	-0.00085
	(A1 * B1 * B2 * !C1 * X)	0.00196	0.00197	0.00193
	(A1 * B1 * B2 * !C1 * X)	-0.00075	-0.00076	-0.00078
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00191	0.00193	0.00194
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00073	-0.00074	-0.00069
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00251	0.00252	0.00249
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00022	-0.00023	-0.00024
	(A1 * A2 * !B1 * C1 * X)	0.00191	0.00193	0.00194
	(A1 * A2 * !B1 * C1 * X)	-0.00073	-0.00074	-0.00069
	(A1 * A2 * !B1 * !C1 * X)	0.00251	0.00252	0.00249
	(A1 * A2 * !B1 * !C1 * X)	-0.00022	-0.00023	-0.00024
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00230	0.00231	0.00230
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00143	-0.00144	-0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00231	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00143	-0.00144	-0.00144
	(!A1 * B1 * B2 * C1 * X)	0.00193	0.00196	0.00196
	(!A1 * B1 * B2 * C1 * X)	-0.00077	-0.00078	-0.00072
	(!A1 * B1 * B2 * !C1 * X)	0.00257	0.00259	0.00257
	(!A1 * B1 * B2 * !C1 * X)	-0.00016	-0.00017	-0.00018
	(!A1 * B1 * !B2 * !C1 * !X)	0.00230	0.00232	0.00230
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !B1 * !C1 * !X)	0.00231	0.00232	0.00231
	(!A1 * !B1 * !C1 * !X)	-0.00143	-0.00145	-0.00144

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)**	-0.00144	-0.00146	-0.00167
	(A1 * B1 * B2 * C1 * X)	0.00122	0.00122	0.00104
	(A1 * B1 * B2 * !C1 * X)	-0.00169	-0.00170	-0.00168
	(A1 * B1 * B2 * !C1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00073	-0.00075	-0.00121
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00185	0.00185	0.00148
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00119	-0.00120	-0.00123
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00149	0.00149	0.00146
	(A1 * A2 * !B1 * C1 * X)	-0.00073	-0.00075	-0.00121
	(A1 * A2 * !B1 * C1 * X)	0.00185	0.00185	0.00148
	(A1 * A2 * !B1 * !C1 * X)	-0.00119	-0.00120	-0.00123
	(A1 * A2 * !B1 * !C1 * X)	0.00149	0.00149	0.00146
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00090	-0.00092
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00292	0.00280	0.00275
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00077	-0.00089	-0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	0.00293	0.00281	0.00275
	(!A1 * B1 * B2 * C1 * X)	-0.00083	-0.00085	-0.00119
	(!A1 * B1 * B2 * C1 * X)	0.00184	0.00183	0.00152
	(!A1 * B1 * B2 * !C1 * X)	-0.00114	-0.00115	-0.00119
	(!A1 * B1 * B2 * !C1 * X)	0.00156	0.00156	0.00151
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00089	-0.00092
	(!A1 * B1 * !B2 * !C1 * !X)	0.00293	0.00281	0.00275
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00089	-0.00092
	(!A1 * !B1 * !C1 * !X)	0.00293	0.00281	0.00276

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00152	-0.00153	-0.00171
	(A1 * B1 * B2 * C1 * X)	0.00120	0.00120	0.00106
	(A1 * B1 * B2 * !C1 * X)	-0.00172	-0.00175	-0.00172
	(A1 * B1 * B2 * !C1 * X)	0.00099	0.00100	0.00100
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00080	-0.00082	-0.00125
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00185	0.00184	0.00150
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00122	-0.00125	-0.00127
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00150	0.00151	0.00149
	(A1 * A2 * !B1 * C1 * X)	-0.00080	-0.00082	-0.00125
	(A1 * A2 * !B1 * C1 * X)	0.00185	0.00184	0.00150
	(A1 * A2 * !B1 * !C1 * X)	-0.00122	-0.00125	-0.00127
	(A1 * A2 * !B1 * !C1 * X)	0.00150	0.00151	0.00149
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00031	-0.00043	-0.00046
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00345	0.00333	0.00327
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00030	-0.00043	-0.00046
	(A1 * !A2 * !B1 * !C1 * !X)	0.00346	0.00333	0.00328
	(!A1 * B1 * B2 * C1 * X)	-0.00092	-0.00094	-0.00124
	(!A1 * B1 * B2 * C1 * X)	0.00181	0.00180	0.00151
	(!A1 * B1 * B2 * !C1 * X)	-0.00117	-0.00120	-0.00123
	(!A1 * B1 * B2 * !C1 * X)	0.00156	0.00157	0.00153
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00031	-0.00043	-0.00046
	(!A1 * B1 * !B2 * !C1 * !X)	0.00346	0.00333	0.00328
	(!A1 * !B1 * !C1 * !X)	-0.00031	-0.00043	-0.00046
	(!A1 * !B1 * !C1 * !X)	0.00346	0.00333	0.00328

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00290	0.00290	0.00300	0.00302	0.60577
sky130_fd_sc_hs__a22oi_2	0.00632	0.00561	0.00605	0.00554	1.06570
sky130_fd_sc_hs__a22oi_4	0.01115	0.01108	0.01125	0.01110	1.92931

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22oi_1	0.00000	31.60160	98.83420
sky130_fd_sc_hs__a22oi_2	0.00000	63.20600	197.55000
sky130_fd_sc_hs__a22oi_4	0.00000	126.16800	394.94800

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)	0.08692	0.78100	8.61761
	A2->Y (FR)	0.10161	0.79974	8.68017
	B1->Y (FR)	0.06255	0.80505	9.24762
	B2->Y (FR)	0.07728	0.83001	9.38929
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.09188	0.66060	8.28110
	A2->Y (FR)	0.10952	0.68963	8.48233
	B1->Y (FR)	0.06410	0.69669	9.07760
	B2->Y (FR)	0.08362	0.73116	9.35058
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.08537	0.54986	7.95006
	A2->Y (FR)	0.10666	0.58063	8.15717
	B1->Y (FR)	0.05964	0.59705	8.81445
	B2->Y (FR)	0.08161	0.63616	9.12978

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.04461	0.47084	5.17226
	A2->Y (RF)	0.04910	0.42056	4.49822
	B1->Y (RF)	0.02702	0.44867	5.19627
	B2->Y (RF)	0.03146	0.40203	4.54846
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.04536	0.40213	4.94596
	A2->Y (RF)	0.04953	0.36040	4.35410
	B1->Y (RF)	0.02633	0.37108	4.91362
	B2->Y (RF)	0.03205	0.33312	4.31538
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.04542	0.36278	5.07836
	A2->Y (RF)	0.05057	0.30334	4.17489
	B1->Y (RF)	0.02478	0.32844	5.06364
	B2->Y (RF)	0.03031	0.26974	4.11833

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00010	0.00126	0.03369
	A1	0.00780	0.00913	0.04152
	A2	0.00051	0.00187	0.03514
	A2	0.00974	0.01111	0.04452
	B1	-0.00018	0.00280	0.04133
	B1	0.00497	0.00796	0.04663
	B2	0.00021	0.00310	0.04188
	B2	0.00670	0.00960	0.04849
sky130_fd_sc_hs__a22oi_2	A1	0.00034	0.00355	0.06898
	A1	0.01686	0.02005	0.08544
	A2	0.00180	0.00498	0.07222
	A2	0.02008	0.02331	0.09037
	B1	-0.00001	0.00665	0.08453
	B1	0.01072	0.01732	0.09546
	B2	0.00184	0.00799	0.08599
	B2	0.01458	0.02075	0.09898
sky130_fd_sc_hs__a22oi_4	A1	-0.00144	0.00589	0.13148
	A1	0.02990	0.03730	0.16346
	A2	0.00181	0.00902	0.14018
	A2	0.03826	0.04547	0.17638
	B1	-0.00181	0.01162	0.15604
	B1	0.01837	0.03183	0.17594
	B2	0.00154	0.01448	0.16038
	B2	0.02671	0.03963	0.18593

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01226	0.01385	0.04206
	A1	0.00437	0.00595	0.03366
	A2	0.01348	0.01488	0.04330
	A2	0.00426	0.00560	0.03372
	B1	0.00654	0.00843	0.03534
	B1	0.00140	0.00325	0.02950
	B2	0.00781	0.00946	0.03574
	B2	0.00133	0.00294	0.02902
sky130_fd_sc_hs__a22oi_2	A1	0.02445	0.02786	0.08432
	A1	0.00793	0.01128	0.06725
	A2	0.02618	0.02921	0.08564
	A2	0.00788	0.01085	0.06640
	B1	0.01359	0.01794	0.07205
	B1	0.00292	0.00724	0.06137
	B2	0.01560	0.01920	0.07261
	B2	0.00284	0.00646	0.05955
sky130_fd_sc_hs__a22oi_4	A1	0.04674	0.05443	0.16277
	A1	0.01539	0.02297	0.12936
	A2	0.05147	0.05824	0.17093
	A2	0.01500	0.02176	0.13429
	B1	0.02556	0.03448	0.13671
	B1	0.00544	0.01431	0.11452
	B2	0.03031	0.03829	0.14240
	B2	0.00511	0.01306	0.11665

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)	0.00271	0.00221	0.00249
	(A2 * B1 * B2 * !Y)	-0.00128	-0.00179	-0.00144
	(!A2 * B1 * B2 * !Y)	0.00246	0.00248	0.00247
	(!A2 * B1 * B2 * !Y)	-0.00139	-0.00141	-0.00140
	(!A2 * B1 * !B2 * Y)	0.00058	0.00058	0.00055
	(!A2 * B1 * !B2 * Y)	-0.00251	-0.00251	-0.00256
	(!A2 * !B1 * Y)	0.00058	0.00058	0.00055
	(!A2 * !B1 * Y)	-0.00251	-0.00251	-0.00256
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00581	0.00474	0.00529
	(A2 * B1 * B2 * !Y)	-0.00271	-0.00386	-0.00315
	(!A2 * B1 * B2 * !Y)	0.00521	0.00522	0.00521
	(!A2 * B1 * B2 * !Y)	-0.00307	-0.00310	-0.00308
	(!A2 * B1 * !B2 * Y)	0.00116	0.00116	0.00110
	(!A2 * B1 * !B2 * Y)	-0.00557	-0.00561	-0.00569
	(!A2 * !B1 * Y)	0.00116	0.00116	0.00111
	(!A2 * !B1 * Y)	-0.00556	-0.00561	-0.00569
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.01085	0.00886	0.01005
	(A2 * B1 * B2 * !Y)	-0.00526	-0.00735	-0.00588
	(!A2 * B1 * B2 * !Y)	0.00991	0.00995	0.00990
	(!A2 * B1 * B2 * !Y)	-0.00572	-0.00577	-0.00571
	(!A2 * B1 * !B2 * Y)	0.00222	0.00223	0.00209
	(!A2 * B1 * !B2 * Y)	-0.01026	-0.01033	-0.01054
	(!A2 * !B1 * Y)	0.00223	0.00224	0.00210
	(!A2 * !B1 * Y)	-0.01025	-0.01032	-0.01053

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)	-0.00080	-0.00083	-0.00095
	(A2 * B1 * B2 * !Y)	0.00316	0.00316	0.00301
	(!A2 * B1 * B2 * !Y)	-0.00074	-0.00076	-0.00076
	(!A2 * B1 * B2 * !Y)	0.00312	0.00314	0.00312
	(!A2 * B1 * !B2 * Y)	-0.00050	-0.00050	-0.00050
	(!A2 * B1 * !B2 * Y)	0.00260	0.00259	0.00260
	(!A2 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(!A2 * !B1 * Y)	0.00260	0.00259	0.00261
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00188	-0.00195	-0.00220
	(A2 * B1 * B2 * !Y)	0.00661	0.00661	0.00630
	(!A2 * B1 * B2 * !Y)	-0.00177	-0.00180	-0.00181
	(!A2 * B1 * B2 * !Y)	0.00653	0.00655	0.00653
	(!A2 * B1 * !B2 * Y)	-0.00100	-0.00101	-0.00100
	(!A2 * B1 * !B2 * Y)	0.00575	0.00580	0.00578
	(!A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A2 * !B1 * Y)	0.00576	0.00580	0.00578
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00329	-0.00340	-0.00391
	(A2 * B1 * B2 * !Y)	0.01280	0.01276	0.01215
	(!A2 * B1 * B2 * !Y)	-0.00301	-0.00312	-0.00311
	(!A2 * B1 * B2 * !Y)	0.01259	0.01270	0.01260
	(!A2 * B1 * !B2 * Y)	-0.00188	-0.00189	-0.00188
	(!A2 * B1 * !B2 * Y)	0.01066	0.01072	0.01070
	(!A2 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * Y)	0.01066	0.01072	0.01071

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)	0.00281	0.00231	0.00259
	(A1 * B1 * B2 * !Y)	-0.00133	-0.00186	-0.00152
	(!A1 * B1 * B2 * !Y)	0.00256	0.00257	0.00256
	(!A1 * B1 * B2 * !Y)	-0.00147	-0.00149	-0.00148
	(!A1 * B1 * !B2 * Y)	0.00173	0.00175	0.00174
	(!A1 * B1 * !B2 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !B1 * Y)	0.00173	0.00175	0.00174
	(!A1 * !B1 * Y)	-0.00231	-0.00232	-0.00231
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00533	0.00439	0.00498
	(A1 * B1 * B2 * !Y)	-0.00259	-0.00358	-0.00284
	(!A1 * B1 * B2 * !Y)	0.00494	0.00494	0.00493
	(!A1 * B1 * B2 * !Y)	-0.00275	-0.00276	-0.00275
	(!A1 * B1 * !B2 * Y)	0.00318	0.00323	0.00320
	(!A1 * B1 * !B2 * Y)	-0.00451	-0.00454	-0.00451
	(!A1 * !B1 * Y)	0.00318	0.00323	0.00320
	(!A1 * !B1 * Y)	-0.00451	-0.00454	-0.00451
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.01087	0.00889	0.01009
	(A1 * B1 * B2 * !Y)	-0.00536	-0.00739	-0.00591
	(!A1 * B1 * B2 * !Y)	0.00998	0.01002	0.00996
	(!A1 * B1 * B2 * !Y)	-0.00574	-0.00579	-0.00574
	(!A1 * B1 * !B2 * Y)	0.00664	0.00667	0.00669
	(!A1 * B1 * !B2 * Y)	-0.00904	-0.00906	-0.00906
	(!A1 * !B1 * Y)	0.00665	0.00668	0.00670
	(!A1 * !B1 * Y)	-0.00903	-0.00906	-0.00906

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)	-0.00089	-0.00092	-0.00104
	(A1 * B1 * B2 * !Y)	0.00324	0.00323	0.00309
	(!A1 * B1 * B2 * !Y)	-0.00084	-0.00086	-0.00085
	(!A1 * B1 * B2 * !Y)	0.00321	0.00323	0.00320
	(!A1 * B1 * !B2 * Y)	-0.00151	-0.00164	-0.00167
	(!A1 * B1 * !B2 * Y)	0.00256	0.00244	0.00238
	(!A1 * !B1 * Y)	-0.00151	-0.00164	-0.00167
	(!A1 * !B1 * Y)	0.00256	0.00244	0.00238
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00161	-0.00165	-0.00191
	(A1 * B1 * B2 * !Y)	0.00630	0.00626	0.00598
	(!A1 * B1 * B2 * !Y)	-0.00148	-0.00153	-0.00152
	(!A1 * B1 * B2 * !Y)	0.00618	0.00622	0.00620
	(!A1 * B1 * !B2 * Y)	-0.00269	-0.00301	-0.00306
	(!A1 * B1 * !B2 * Y)	0.00502	0.00476	0.00465
	(!A1 * !B1 * Y)	-0.00269	-0.00301	-0.00306
	(!A1 * !B1 * Y)	0.00502	0.00476	0.00465
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00334	-0.00343	-0.00396
	(A1 * B1 * B2 * !Y)	0.01283	0.01275	0.01218
	(!A1 * B1 * B2 * !Y)	-0.00306	-0.00316	-0.00313
	(!A1 * B1 * B2 * !Y)	0.01262	0.01269	0.01263
	(!A1 * B1 * !B2 * Y)	-0.00561	-0.00632	-0.00643
	(!A1 * B1 * !B2 * Y)	0.01016	0.00957	0.00933
	(!A1 * !B1 * Y)	-0.00560	-0.00632	-0.00642
	(!A1 * !B1 * Y)	0.01016	0.00957	0.00933

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)	0.00192	0.00196	0.00195
	(A1 * A2 * B2 * !Y)	-0.00088	-0.00089	-0.00085
	(A1 * A2 * !B2 * !Y)	0.00245	0.00246	0.00243
	(A1 * A2 * !B2 * !Y)	-0.00038	-0.00039	-0.00040
	(A1 * !A2 * !B2 * Y)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B2 * Y)	-0.00262	-0.00263	-0.00266
	(!A1 * !B2 * Y)	0.00053	0.00053	0.00051
	(!A1 * !B2 * Y)	-0.00262	-0.00263	-0.00266
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00413	0.00419	0.00418
	(A1 * A2 * B2 * !Y)	-0.00168	-0.00169	-0.00161
	(A1 * A2 * !B2 * !Y)	0.00513	0.00514	0.00509
	(A1 * A2 * !B2 * !Y)	-0.00073	-0.00072	-0.00074
	(A1 * !A2 * !B2 * Y)	0.00125	0.00125	0.00118
	(A1 * !A2 * !B2 * Y)	-0.00521	-0.00523	-0.00532
	(!A1 * !B2 * Y)	0.00125	0.00125	0.00119
	(!A1 * !B2 * Y)	-0.00520	-0.00523	-0.00532
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00762	0.00768	0.00777
	(A1 * A2 * B2 * !Y)	-0.00335	-0.00338	-0.00326
	(A1 * A2 * !B2 * !Y)	0.00969	0.00974	0.00963
	(A1 * A2 * !B2 * !Y)	-0.00145	-0.00148	-0.00151
	(A1 * !A2 * !B2 * Y)	0.00222	0.00222	0.00207
	(A1 * !A2 * !B2 * Y)	-0.01033	-0.01038	-0.01057
	(!A1 * !B2 * Y)	0.00220	0.00223	0.00208
	(!A1 * !B2 * Y)	-0.01025	-0.01037	-0.01057

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)	-0.00112	-0.00115	-0.00144
	(A1 * A2 * B2 * !Y)	0.00169	0.00169	0.00143
	(A1 * A2 * !B2 * !Y)	-0.00140	-0.00142	-0.00144
	(A1 * A2 * !B2 * !Y)	0.00143	0.00144	0.00140
	(A1 * !A2 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B2 * Y)	0.00269	0.00270	0.00270
	(!A1 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !B2 * Y)	0.00269	0.00271	0.00270
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00253	-0.00259	-0.00314
	(A1 * A2 * B2 * !Y)	0.00327	0.00328	0.00278
	(A1 * A2 * !B2 * !Y)	-0.00303	-0.00306	-0.00312
	(A1 * A2 * !B2 * !Y)	0.00282	0.00282	0.00276
	(A1 * !A2 * !B2 * Y)	-0.00109	-0.00109	-0.00108
	(A1 * !A2 * !B2 * Y)	0.00540	0.00541	0.00541
	(!A1 * !B2 * Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !B2 * Y)	0.00540	0.00542	0.00541
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00452	-0.00460	-0.00570
	(A1 * A2 * B2 * !Y)	0.00658	0.00656	0.00560
	(A1 * A2 * !B2 * !Y)	-0.00549	-0.00561	-0.00571
	(A1 * A2 * !B2 * !Y)	0.00566	0.00569	0.00554
	(A1 * !A2 * !B2 * Y)	-0.00189	-0.00188	-0.00186
	(A1 * !A2 * !B2 * Y)	0.01075	0.01076	0.01074
	(!A1 * !B2 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !B2 * Y)	0.01072	0.01076	0.01074

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)	0.00210	0.00213	0.00212
	(A1 * A2 * B1 * !Y)	-0.00089	-0.00090	-0.00086
	(A1 * A2 * !B1 * !Y)	0.00261	0.00262	0.00259
	(A1 * A2 * !B1 * !Y)	-0.00039	-0.00040	-0.00041
	(A1 * !A2 * !B1 * Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A1 * !B1 * Y)	-0.00238	-0.00239	-0.00238
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00368	0.00366	0.00372
	(A1 * A2 * B1 * !Y)	-0.00168	-0.00166	-0.00162
	(A1 * A2 * !B1 * !Y)	0.00467	0.00470	0.00464
	(A1 * A2 * !B1 * !Y)	-0.00072	-0.00074	-0.00076
	(A1 * !A2 * !B1 * Y)	0.00316	0.00318	0.00318
	(A1 * !A2 * !B1 * Y)	-0.00448	-0.00449	-0.00448
	(!A1 * !B1 * Y)	0.00316	0.00319	0.00318
	(!A1 * !B1 * Y)	-0.00448	-0.00450	-0.00448
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00761	0.00769	0.00776
	(A1 * A2 * B1 * !Y)	-0.00335	-0.00339	-0.00327
	(A1 * A2 * !B1 * !Y)	0.00969	0.00975	0.00962
	(A1 * A2 * !B1 * !Y)	-0.00146	-0.00149	-0.00152
	(A1 * !A2 * !B1 * Y)	0.00667	0.00673	0.00667
	(A1 * !A2 * !B1 * Y)	-0.00904	-0.00908	-0.00902
	(!A1 * !B1 * Y)	0.00667	0.00674	0.00667
	(!A1 * !B1 * Y)	-0.00904	-0.00907	-0.00901

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)	-0.00128	-0.00131	-0.00161
	(A1 * A2 * B1 * !Y)	0.00170	0.00170	0.00144
	(A1 * A2 * !B1 * !Y)	-0.00156	-0.00158	-0.00160
	(A1 * A2 * !B1 * !Y)	0.00145	0.00145	0.00142
	(A1 * !A2 * !B1 * Y)	-0.00152	-0.00166	-0.00168
	(A1 * !A2 * !B1 * Y)	0.00262	0.00249	0.00245
	(!A1 * !B1 * Y)	-0.00152	-0.00166	-0.00168
	(!A1 * !B1 * Y)	0.00262	0.00249	0.00245
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00207	-0.00213	-0.00268
	(A1 * A2 * B1 * !Y)	0.00329	0.00329	0.00279
	(A1 * A2 * !B1 * !Y)	-0.00256	-0.00262	-0.00267
	(A1 * A2 * !B1 * !Y)	0.00283	0.00284	0.00277
	(A1 * !A2 * !B1 * Y)	-0.00267	-0.00301	-0.00305
	(A1 * !A2 * !B1 * Y)	0.00498	0.00469	0.00461
	(!A1 * !B1 * Y)	-0.00267	-0.00302	-0.00305
	(!A1 * !B1 * Y)	0.00498	0.00471	0.00462
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00451	-0.00462	-0.00569
	(A1 * A2 * B1 * !Y)	0.00658	0.00658	0.00561
	(A1 * A2 * !B1 * !Y)	-0.00549	-0.00559	-0.00569
	(A1 * A2 * !B1 * !Y)	0.00567	0.00569	0.00555
	(A1 * !A2 * !B1 * Y)	-0.00561	-0.00631	-0.00640
	(A1 * !A2 * !B1 * Y)	0.01007	0.00947	0.00928
	(!A1 * !B1 * Y)	-0.00560	-0.00631	-0.00640
	(!A1 * !B1 * Y)	0.01008	0.00947	0.00928

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00281	0.00261	0.00274	0.00282	1.30678
sky130_fd_sc_hs__a22o_2	0.00293	0.00273	0.00288	0.00282	2.45875
sky130_fd_sc_hs__a22o_4	0.00501	0.00529	0.00502	0.00549	5.04230

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	70.44720	136.48700
sky130_fd_sc_hs__a22o_2	0.00000	98.61220	137.98100
sky130_fd_sc_hs__a22o_4	0.00000	197.70500	275.66300

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)	0.09571	0.61032	6.75744
	A2->X (RR)	0.10153	0.58835	6.64749
	B1->X (RR)	0.07432	0.56409	6.54706
	B2->X (RR)	0.07871	0.55182	6.43354
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.09569	0.52545	6.47039
	A2->X (RR)	0.10179	0.49842	6.33246
	B1->X (RR)	0.07585	0.48456	6.25188
	B2->X (RR)	0.07984	0.46752	6.13306
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.09547	0.45655	6.70804
	A2->X (RR)	0.10118	0.43785	6.53121
	B1->X (RR)	0.07623	0.41489	6.38228
	B2->X (RR)	0.07660	0.38988	6.41534

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.12959	0.52573	5.12286
	A2->X (FF)	0.14061	0.55471	5.29719
	B1->X (FF)	0.11277	0.54895	5.39268
	B2->X (FF)	0.12016	0.56515	5.45779
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.15728	0.52355	5.05194
	A2->X (FF)	0.17004	0.55539	5.23908
	B1->X (FF)	0.14236	0.55817	5.33780
	B2->X (FF)	0.14867	0.57317	5.40587
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.15387	0.48734	5.36175
	A2->X (FF)	0.16323	0.50874	5.46759
	B1->X (FF)	0.13793	0.52141	5.55260
	B2->X (FF)	0.13017	0.51172	5.58773

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01608	0.01985	0.08990
	A1	0.00885	0.01263	0.08262
	A2	0.01733	0.02099	0.10560
	A2	0.00886	0.01252	0.09717
	B1	0.01216	0.01749	0.10509
	B1	0.00748	0.01283	0.10051
	B2	0.01320	0.01807	0.10538
	B2	0.00742	0.01230	0.09983
sky130_fd_sc_hs__a22o_2	A1	0.01984	0.02356	0.09492
	A1	0.01236	0.01613	0.08790
	A2	0.02108	0.02453	0.11046
	A2	0.01228	0.01576	0.10227
	B1	0.01554	0.02083	0.10963
	B1	0.01063	0.01593	0.10551
	B2	0.01667	0.02148	0.11048
	B2	0.01060	0.01544	0.10539
sky130_fd_sc_hs__a22o_4	A1	0.03934	0.04776	0.21967
	A1	0.02530	0.03382	0.20564
	A2	0.04194	0.04913	0.21813
	A2	0.02533	0.03264	0.20215
	B1	0.03082	0.04069	0.21626
	B1	0.02194	0.03186	0.20825
	B2	0.03298	0.04224	0.22507
	B2	0.02160	0.03090	0.21477

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00474	0.00823	0.08922
	A1	0.01199	0.01543	0.09575
	A2	0.00575	0.00959	0.09562
	A2	0.01419	0.01803	0.10305
	B1	0.00471	0.01082	0.10604
	B1	0.00936	0.01547	0.10947
	B2	0.00511	0.01132	0.10592
	B2	0.01089	0.01704	0.11102
sky130_fd_sc_hs__a22o_2	A1	0.00962	0.01237	0.09407
	A1	0.01708	0.01967	0.10039
	A2	0.01144	0.01425	0.10043
	A2	0.02020	0.02287	0.10840
	B1	0.00932	0.01490	0.11220
	B1	0.01426	0.01971	0.11453
	B2	0.01004	0.01549	0.11295
	B2	0.01611	0.02145	0.11698
sky130_fd_sc_hs__a22o_4	A1	0.02040	0.02545	0.19423
	A1	0.03443	0.03948	0.20704
	A2	0.02103	0.02613	0.19479
	A2	0.03762	0.04258	0.20991
	B1	0.02010	0.02848	0.19173
	B1	0.02899	0.03733	0.20058
	B2	0.02088	0.03030	0.20650
	B2	0.03226	0.04166	0.21640

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)	0.00272	0.00231	0.00285
	(A2 * B1 * B2 * X)	-0.00111	-0.00153	-0.00093
	(!A2 * B1 * B2 * X)	0.00288	0.00288	0.00287
	(!A2 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * B1 * !B2 * !X)	0.00102	0.00102	0.00097
	(!A2 * B1 * !B2 * !X)	-0.00202	-0.00202	-0.00210
	(!A2 * !B1 * !X)	0.00103	0.00102	0.00098
	(!A2 * !B1 * !X)	-0.00202	-0.00202	-0.00210
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00292	0.00250	0.00304
	(A2 * B1 * B2 * X)	-0.00107	-0.00150	-0.00090
	(!A2 * B1 * B2 * X)	0.00305	0.00307	0.00306
	(!A2 * B1 * B2 * X)	-0.00079	-0.00081	-0.00079
	(!A2 * B1 * !B2 * !X)	0.00150	0.00150	0.00144
	(!A2 * B1 * !B2 * !X)	-0.00159	-0.00160	-0.00169
	(!A2 * !B1 * !X)	0.00151	0.00150	0.00144
	(!A2 * !B1 * !X)	-0.00159	-0.00160	-0.00169
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00491	0.00407	0.00510
	(A2 * B1 * B2 * X)	-0.00222	-0.00313	-0.00197
	(!A2 * B1 * B2 * X)	0.00513	0.00513	0.00513
	(!A2 * B1 * B2 * X)	-0.00176	-0.00179	-0.00178
	(!A2 * B1 * !B2 * !X)	0.00262	0.00262	0.00257
	(!A2 * B1 * !B2 * !X)	-0.00292	-0.00294	-0.00304
	(!A2 * !B1 * !X)	0.00262	0.00263	0.00257
	(!A2 * !B1 * !X)	-0.00291	-0.00295	-0.00303

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)	-0.00055	-0.00059	-0.00079
	(A2 * B1 * B2 * X)	0.00325	0.00323	0.00302
	(!A2 * B1 * B2 * X)	-0.00047	-0.00051	-0.00051
	(!A2 * B1 * B2 * X)	0.00320	0.00322	0.00321
	(!A2 * B1 * !B2 * !X)	-0.00005	-0.00005	-0.00005
	(!A2 * B1 * !B2 * !X)	0.00301	0.00302	0.00302
	(!A2 * !B1 * !X)	-0.00005	-0.00005	-0.00005
	(!A2 * !B1 * !X)	0.00301	0.00302	0.00302
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00072	-0.00076	-0.00096
	(A2 * B1 * B2 * X)	0.00324	0.00322	0.00301
	(!A2 * B1 * B2 * X)	-0.00063	-0.00068	-0.00068
	(!A2 * B1 * B2 * X)	0.00320	0.00321	0.00320
	(!A2 * B1 * !B2 * !X)	0.00034	0.00033	0.00034
	(!A2 * B1 * !B2 * !X)	0.00346	0.00350	0.00346
	(!A2 * !B1 * !X)	0.00034	0.00033	0.00034
	(!A2 * !B1 * !X)	0.00346	0.00350	0.00346
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00044	-0.00052	-0.00092
	(A2 * B1 * B2 * X)	0.00668	0.00665	0.00621
	(!A2 * B1 * B2 * X)	-0.00032	-0.00037	-0.00036
	(!A2 * B1 * B2 * X)	0.00656	0.00661	0.00658
	(!A2 * B1 * !B2 * !X)	0.00098	0.00097	0.00099
	(!A2 * B1 * !B2 * !X)	0.00658	0.00665	0.00658
	(!A2 * !B1 * !X)	0.00100	0.00097	0.00099
	(!A2 * !B1 * !X)	0.00655	0.00665	0.00658

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)	0.00270	0.00229	0.00282
	(A1 * B1 * B2 * X)	-0.00111	-0.00153	-0.00093
	(!A1 * B1 * B2 * X)	0.00284	0.00285	0.00284
	(!A1 * B1 * B2 * X)	-0.00082	-0.00084	-0.00083
	(!A1 * B1 * !B2 * !X)	0.00213	0.00214	0.00213
	(!A1 * B1 * !B2 * !X)	-0.00156	-0.00156	-0.00155
	(!A1 * !B1 * !X)	0.00213	0.00214	0.00213
	(!A1 * !B1 * !X)	-0.00155	-0.00156	-0.00155
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00277	0.00235	0.00289
	(A1 * B1 * B2 * X)	-0.00115	-0.00158	-0.00098
	(!A1 * B1 * B2 * X)	0.00291	0.00292	0.00290
	(!A1 * B1 * B2 * X)	-0.00088	-0.00089	-0.00088
	(!A1 * B1 * !B2 * !X)	0.00259	0.00261	0.00260
	(!A1 * B1 * !B2 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !B1 * !X)	0.00260	0.00260	0.00260
	(!A1 * !B1 * !X)	-0.00119	-0.00119	-0.00119
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00548	0.00468	0.00569
	(A1 * B1 * B2 * X)	-0.00219	-0.00306	-0.00190
	(!A1 * B1 * B2 * X)	0.00575	0.00575	0.00574
	(!A1 * B1 * B2 * X)	-0.00169	-0.00171	-0.00170
	(!A1 * B1 * !B2 * !X)	0.00507	0.00512	0.00509
	(!A1 * B1 * !B2 * !X)	-0.00237	-0.00240	-0.00238
	(!A1 * !B1 * !X)	0.00508	0.00513	0.00509
	(!A1 * !B1 * !X)	-0.00237	-0.00240	-0.00238

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)	-0.00053	-0.00056	-0.00076
	(A1 * B1 * B2 * X)	0.00325	0.00323	0.00302
	(!A1 * B1 * B2 * X)	-0.00045	-0.00048	-0.00048
	(!A1 * B1 * B2 * X)	0.00320	0.00322	0.00321
	(!A1 * B1 * !B2 * !X)	-0.00100	-0.00117	-0.00119
	(!A1 * B1 * !B2 * !X)	0.00267	0.00254	0.00250
	(!A1 * !B1 * !X)	-0.00100	-0.00117	-0.00119
	(!A1 * !B1 * !X)	0.00267	0.00254	0.00250
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00057	-0.00061	-0.00081
	(A1 * B1 * B2 * X)	0.00333	0.00331	0.00309
	(!A1 * B1 * B2 * X)	-0.00049	-0.00051	-0.00052
	(!A1 * B1 * B2 * X)	0.00329	0.00328	0.00328
	(!A1 * B1 * !B2 * !X)	-0.00062	-0.00078	-0.00082
	(!A1 * B1 * !B2 * !X)	0.00318	0.00303	0.00298
	(!A1 * !B1 * !X)	-0.00062	-0.00078	-0.00082
	(!A1 * !B1 * !X)	0.00318	0.00303	0.00298
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00104	-0.00111	-0.00151
	(A1 * B1 * B2 * X)	0.00660	0.00656	0.00614
	(!A1 * B1 * B2 * X)	-0.00094	-0.00096	-0.00096
	(!A1 * B1 * B2 * X)	0.00650	0.00652	0.00650
	(!A1 * B1 * !B2 * !X)	-0.00117	-0.00143	-0.00148
	(!A1 * B1 * !B2 * !X)	0.00632	0.00610	0.00599
	(!A1 * !B1 * !X)	-0.00116	-0.00143	-0.00147
	(!A1 * !B1 * !X)	0.00632	0.00611	0.00599

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)	0.00172	0.00175	0.00176
	(A1 * A2 * B2 * X)	-0.00076	-0.00077	-0.00072
	(A1 * A2 * !B2 * X)	0.00237	0.00238	0.00236
	(A1 * A2 * !B2 * X)	-0.00015	-0.00016	-0.00016
	(A1 * !A2 * !B2 * !X)	0.00093	0.00093	0.00091
	(A1 * !A2 * !B2 * !X)	-0.00187	-0.00189	-0.00192
	(!A1 * !B2 * !X)	0.00096	0.00095	0.00093
	(!A1 * !B2 * !X)	-0.00187	-0.00188	-0.00191
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00192	0.00196	0.00197
	(A1 * A2 * B2 * X)	-0.00074	-0.00075	-0.00070
	(A1 * A2 * !B2 * X)	0.00259	0.00261	0.00258
	(A1 * A2 * !B2 * X)	-0.00013	-0.00014	-0.00013
	(A1 * !A2 * !B2 * !X)	0.00139	0.00139	0.00137
	(A1 * !A2 * !B2 * !X)	-0.00149	-0.00150	-0.00154
	(!A1 * !B2 * !X)	0.00141	0.00141	0.00138
	(!A1 * !B2 * !X)	-0.00148	-0.00149	-0.00154
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00324	0.00330	0.00332
	(A1 * A2 * B2 * X)	-0.00143	-0.00145	-0.00135
	(A1 * A2 * !B2 * X)	0.00450	0.00453	0.00450
	(A1 * A2 * !B2 * X)	-0.00026	-0.00029	-0.00028
	(A1 * !A2 * !B2 * !X)	0.00266	0.00265	0.00260
	(A1 * !A2 * !B2 * !X)	-0.00276	-0.00278	-0.00286
	(!A1 * !B2 * !X)	0.00266	0.00266	0.00260
	(!A1 * !B2 * !X)	-0.00275	-0.00277	-0.00285

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)	-0.00075	-0.00077	-0.00107
	(A1 * A2 * B2 * X)	0.00177	0.00176	0.00147
	(A1 * A2 * !B2 * X)	-0.00100	-0.00101	-0.00105
	(A1 * A2 * !B2 * X)	0.00153	0.00153	0.00149
	(A1 * !A2 * !B2 * !X)	0.00002	0.00001	0.00001
	(A1 * !A2 * !B2 * !X)	0.00283	0.00283	0.00283
	(!A1 * !B2 * !X)	-0.00001	-0.00001	-0.00001
	(!A1 * !B2 * !X)	0.00281	0.00282	0.00282
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00093	-0.00096	-0.00125
	(A1 * A2 * B2 * X)	0.00177	0.00176	0.00147
	(A1 * A2 * !B2 * X)	-0.00119	-0.00120	-0.00124
	(A1 * A2 * !B2 * X)	0.00153	0.00152	0.00148
	(A1 * !A2 * !B2 * !X)	0.00041	0.00039	0.00041
	(A1 * !A2 * !B2 * !X)	0.00331	0.00333	0.00330
	(!A1 * !B2 * !X)	0.00040	0.00038	0.00040
	(!A1 * !B2 * !X)	0.00330	0.00333	0.00330
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00121	-0.00127	-0.00187
	(A1 * A2 * B2 * X)	0.00351	0.00351	0.00292
	(A1 * A2 * !B2 * X)	-0.00172	-0.00174	-0.00184
	(A1 * A2 * !B2 * X)	0.00309	0.00308	0.00298
	(A1 * !A2 * !B2 * !X)	0.00097	0.00093	0.00096
	(A1 * !A2 * !B2 * !X)	0.00640	0.00645	0.00640
	(!A1 * !B2 * !X)	0.00097	0.00094	0.00097
	(!A1 * !B2 * !X)	0.00641	0.00646	0.00640

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)	0.00181	0.00183	0.00184
	(A1 * A2 * B1 * X)	-0.00085	-0.00086	-0.00080
	(A1 * A2 * !B1 * X)	0.00247	0.00248	0.00246
	(A1 * A2 * !B1 * X)	-0.00021	-0.00022	-0.00023
	(A1 * !A2 * !B1 * !X)	0.00193	0.00194	0.00194
	(A1 * !A2 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * !X)	0.00203	0.00204	0.00203
	(!A1 * !B1 * !X)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00190	0.00192	0.00193
	(A1 * A2 * B1 * X)	-0.00080	-0.00080	-0.00075
	(A1 * A2 * !B1 * X)	0.00259	0.00263	0.00258
	(A1 * A2 * !B1 * X)	-0.00013	-0.00015	-0.00015
	(A1 * !A2 * !B1 * !X)	0.00251	0.00253	0.00252
	(A1 * !A2 * !B1 * !X)	-0.00116	-0.00118	-0.00116
	(!A1 * !B1 * !X)	0.00256	0.00258	0.00256
	(!A1 * !B1 * !X)	-0.00115	-0.00117	-0.00116
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00352	0.00357	0.00359
	(A1 * A2 * B1 * X)	-0.00164	-0.00165	-0.00153
	(A1 * A2 * !B1 * X)	0.00495	0.00499	0.00492
	(A1 * A2 * !B1 * X)	-0.00032	-0.00034	-0.00036
	(A1 * !A2 * !B1 * !X)	0.00448	0.00450	0.00448
	(A1 * !A2 * !B1 * !X)	-0.00279	-0.00281	-0.00279
	(!A1 * !B1 * !X)	0.00448	0.00450	0.00449
	(!A1 * !B1 * !X)	-0.00278	-0.00281	-0.00279

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)	-0.00083	-0.00085	-0.00115
	(A1 * A2 * B1 * X)	0.00185	0.00183	0.00154
	(A1 * A2 * !B1 * X)	-0.00110	-0.00112	-0.00115
	(A1 * A2 * !B1 * X)	0.00159	0.00159	0.00155
	(A1 * !A2 * !B1 * !X)	-0.00080	-0.00094	-0.00098
	(A1 * !A2 * !B1 * !X)	0.00282	0.00271	0.00262
	(!A1 * !B1 * !X)	-0.00092	-0.00106	-0.00108
	(!A1 * !B1 * !X)	0.00276	0.00265	0.00260
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00090	-0.00093	-0.00123
	(A1 * A2 * B1 * X)	0.00181	0.00180	0.00150
	(A1 * A2 * !B1 * X)	-0.00119	-0.00121	-0.00124
	(A1 * A2 * !B1 * X)	0.00153	0.00154	0.00150
	(A1 * !A2 * !B1 * !X)	-0.00054	-0.00068	-0.00072
	(A1 * !A2 * !B1 * !X)	0.00315	0.00303	0.00296
	(!A1 * !B1 * !X)	-0.00059	-0.00074	-0.00077
	(!A1 * !B1 * !X)	0.00312	0.00300	0.00295
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00153	-0.00157	-0.00219
	(A1 * A2 * B1 * X)	0.00368	0.00365	0.00306
	(A1 * A2 * !B1 * X)	-0.00216	-0.00218	-0.00225
	(A1 * A2 * !B1 * X)	0.00315	0.00314	0.00306
	(A1 * !A2 * !B1 * !X)	-0.00056	-0.00083	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00675	0.00650	0.00640
	(!A1 * !B1 * !X)	-0.00056	-0.00082	-0.00087
	(!A1 * !B1 * !X)	0.00676	0.00650	0.00640

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00244	0.00263	0.00286	0.00302	0.58663
sky130_fd_sc_hs__a2bb2oi_2	0.00267	0.00276	0.00558	0.00558	1.17452
sky130_fd_sc_hs__a2bb2oi_4	0.00424	0.00444	0.01109	0.01121	2.13268

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	50.99540	126.43700
sky130_fd_sc_hs__a2bb2oi_2	0.00000	73.84200	185.13900
sky130_fd_sc_hs__a2bb2oi_4	0.00000	146.27700	369.80400

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)	0.10098	0.71067	6.39834
	A2_N->Y (RR)	0.09388	0.68191	6.21444
	B1->Y (FR)	0.08417	0.79875	8.79381
	B2->Y (FR)	0.06619	0.75032	8.43639
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.09420	0.56788	6.12403
	A2_N->Y (RR)	0.08841	0.54751	5.97787
	B1->Y (FR)	0.07724	0.66328	8.72306
	B2->Y (FR)	0.05803	0.63625	8.56571
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.12038	0.56222	6.72499
	A2_N->Y (RR)	0.10567	0.52614	6.52316
	B1->Y (FR)	0.07731	0.56026	8.50391
	B2->Y (FR)	0.05677	0.52792	8.24718

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)	0.10096	0.39514	2.99913
	A2_N->Y (FF)	0.08993	0.40423	3.06314
	B1->Y (RF)	0.03752	0.40049	4.36386
	B2->Y (RF)	0.03396	0.45040	5.02537
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.12622	0.42335	3.34545
	A2_N->Y (FF)	0.11414	0.43944	3.33500
	B1->Y (RF)	0.03786	0.36258	4.71381
	B2->Y (RF)	0.03158	0.41005	5.43831
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.12689	0.36797	2.61410
	A2_N->Y (FF)	0.10854	0.38135	2.94254
	B1->Y (RF)	0.03658	0.29702	4.46971
	B2->Y (RF)	0.03124	0.35551	5.40006

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	0.01105	0.01597	0.09823
	A1_N	0.00822	0.01305	0.09541
	A2_N	0.00950	0.01469	0.10059
	A2_N	0.00794	0.01303	0.09927
	B1	0.00233	0.00379	0.03587
	B1	0.00818	0.00963	0.04176
	B2	0.00160	0.00307	0.03440
	B2	0.00642	0.00789	0.03920
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01513	0.02094	0.11322
	A1_N	0.01001	0.01585	0.10822
	A2_N	0.01332	0.01909	0.11242
	A2_N	0.01446	0.02010	0.11359
	B1	0.00507	0.00818	0.06682
	B1	0.01680	0.01988	0.07856
	B2	0.00305	0.00635	0.06348
	B2	0.01226	0.01555	0.07254
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02868	0.03656	0.17551
	A1_N	0.02045	0.02837	0.16781
	A2_N	0.02447	0.03357	0.18511
	A2_N	0.01836	0.02750	0.17991
	B1	0.00944	0.01681	0.13603
	B1	0.03313	0.04042	0.15937
	B2	0.00598	0.01360	0.12870
	B2	0.02469	0.03225	0.14738

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00523	0.00966	0.09050
	A1_N	0.01030	0.01472	0.09553
	A2_N	0.00520	0.01078	0.09112
	A2_N	0.00916	0.01474	0.09507
	B1	0.00851	0.00990	0.03686
	B1	0.00266	0.00397	0.03057
	B2	0.00754	0.00909	0.03594
	B2	0.00274	0.00428	0.03088
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00956	0.01353	0.10240
	A1_N	0.01467	0.01860	0.10736
	A2_N	0.00980	0.01488	0.09732
	A2_N	0.01365	0.01872	0.10100
	B1	0.01652	0.01933	0.06949
	B1	0.00477	0.00750	0.05695
	B2	0.01412	0.01743	0.06590
	B2	0.00493	0.00816	0.05659
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02020	0.02527	0.14360
	A1_N	0.02845	0.03348	0.15174
	A2_N	0.01975	0.02760	0.17511
	A2_N	0.02583	0.03367	0.18102
	B1	0.03248	0.03909	0.14270
	B1	0.00881	0.01541	0.11596
	B2	0.02776	0.03518	0.12976
	B2	0.00911	0.01643	0.11095

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)	0.00247	0.00214	0.00242
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00099	-0.00133	-0.00101
	(!A2_N * B1 * B2 * !Y)	0.00813	0.01258	0.09295
	(!A2_N * B1 * B2 * !Y)	0.00260	0.00704	0.08744
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00341	0.00310	0.00336
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00042	-0.00075	-0.00044
	(!A2_N * B1 * B2 * !Y)	0.01039	0.01541	0.10403
	(!A2_N * B1 * B2 * !Y)	0.00439	0.00939	0.09805
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00547	0.00462	0.00506
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00061	-0.00150	-0.00097
	(!A2_N * B1 * B2 * !Y)	0.01889	0.02550	0.16142
	(!A2_N * B1 * B2 * !Y)	0.00880	0.01542	0.15141

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)	-0.00024	-0.00025	-0.00035
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00321	0.00320	0.00310
	(!A2_N * B1 * B2 * !Y)	0.00186	0.00631	0.08742
	(!A2_N * B1 * B2 * !Y)	0.00740	0.01187	0.09295
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00015	-0.00018	-0.00027
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00365	0.00365	0.00356
	(!A2_N * B1 * B2 * !Y)	0.00324	0.00780	0.09729
	(!A2_N * B1 * B2 * !Y)	0.00926	0.01384	0.10327
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00137	0.00132	0.00115
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00742	0.00745	0.00723
	(!A2_N * B1 * B2 * !Y)	0.00732	0.01372	0.15223
	(!A2_N * B1 * B2 * !Y)	0.01745	0.02385	0.16231

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)	0.00209	0.00212	0.00212
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00036	-0.00037	-0.00033
	(!A1_N * B1 * B2 * !Y)	0.00630	0.01130	0.09641
	(!A1_N * B1 * B2 * !Y)	0.00189	0.00687	0.09198
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00281	0.00284	0.00284
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00015	0.00015	0.00019
	(!A1_N * B1 * B2 * !Y)	0.00839	0.01367	0.10581
	(!A1_N * B1 * B2 * !Y)	0.00368	0.00893	0.10108
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00464	0.00468	0.00468
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00032	0.00029	0.00036
	(!A1_N * B1 * B2 * !Y)	0.01425	0.02175	0.16714
	(!A1_N * B1 * B2 * !Y)	0.00632	0.01378	0.15922

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)	-0.00060	-0.00063	-0.00078
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00185	0.00186	0.00169
	(!A1_N * B1 * B2 * !Y)	0.00182	0.00751	0.09344
	(!A1_N * B1 * B2 * !Y)	0.00625	0.01197	0.09788
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00029	-0.00032	-0.00048
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00235	0.00236	0.00220
	(!A1_N * B1 * B2 * !Y)	0.00347	0.00922	0.10236
	(!A1_N * B1 * B2 * !Y)	0.00821	0.01397	0.10709
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00045	0.00042	0.00007
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00481	0.00480	0.00446
	(!A1_N * B1 * B2 * !Y)	0.00679	0.01602	0.16412
	(!A1_N * B1 * B2 * !Y)	0.01477	0.02403	0.17204

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)	0.00178	0.00180	0.00179
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00219	-0.00220	-0.00219
	(!A1_N * !A2_N * B2 * !Y)	0.00257	0.00214	0.00221
	(!A1_N * !A2_N * B2 * !Y)	-0.00148	-0.00193	-0.00181
	(!A1_N * !A2_N * !B2 * !Y)	0.00217	0.00216	0.00216
	(!A1_N * !A2_N * !B2 * !Y)	-0.00182	-0.00182	-0.00182
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00338	0.00343	0.00341
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00446	-0.00451	-0.00448
	(!A1_N * !A2_N * B2 * !Y)	0.00504	0.00417	0.00430
	(!A1_N * !A2_N * B2 * !Y)	-0.00296	-0.00389	-0.00368
	(!A1_N * !A2_N * !B2 * !Y)	0.00418	0.00421	0.00417
	(!A1_N * !A2_N * !B2 * !Y)	-0.00369	-0.00372	-0.00369
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00679	0.00688	0.00683
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00897	-0.00903	-0.00898
	(!A1_N * !A2_N * B2 * !Y)	0.00998	0.00829	0.00856
	(!A1_N * !A2_N * B2 * !Y)	-0.00605	-0.00787	-0.00742
	(!A1_N * !A2_N * !B2 * !Y)	0.00830	0.00835	0.00831
	(!A1_N * !A2_N * !B2 * !Y)	-0.00743	-0.00748	-0.00745

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)	-0.00148	-0.00160	-0.00163
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00253	0.00241	0.00235
	(!A1_N * !A2_N * B2 * !Y)	-0.00130	-0.00132	-0.00137
	(!A1_N * !A2_N * B2 * !Y)	0.00273	0.00273	0.00267
	(!A1_N * !A2_N * !B2 * !Y)	-0.00126	-0.00127	-0.00127
	(!A1_N * !A2_N * !B2 * !Y)	0.00273	0.00273	0.00272
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00277	-0.00314	-0.00319
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00511	0.00482	0.00471
	(!A1_N * !A2_N * B2 * !Y)	-0.00247	-0.00252	-0.00261
	(!A1_N * !A2_N * B2 * !Y)	0.00549	0.00553	0.00540
	(!A1_N * !A2_N * !B2 * !Y)	-0.00236	-0.00242	-0.00241
	(!A1_N * !A2_N * !B2 * !Y)	0.00548	0.00552	0.00550
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00554	-0.00627	-0.00637
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.01025	0.00967	0.00944
	(!A1_N * !A2_N * B2 * !Y)	-0.00499	-0.00508	-0.00527
	(!A1_N * !A2_N * B2 * !Y)	0.01096	0.01102	0.01077
	(!A1_N * !A2_N * !B2 * !Y)	-0.00478	-0.00488	-0.00485
	(!A1_N * !A2_N * !B2 * !Y)	0.01093	0.01102	0.01096

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)	0.00076	0.00076	0.00074
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00256	-0.00256	-0.00260
	(!A1_N * !A2_N * B1 * !Y)	0.00256	0.00213	0.00220
	(!A1_N * !A2_N * B1 * !Y)	-0.00161	-0.00207	-0.00195
	(!A1_N * !A2_N * !B1 * !Y)	0.00215	0.00216	0.00215
	(!A1_N * !A2_N * !B1 * !Y)	-0.00195	-0.00197	-0.00196
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00125	0.00126	0.00118
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00500	-0.00504	-0.00516
	(!A1_N * !A2_N * B1 * !Y)	0.00501	0.00415	0.00428
	(!A1_N * !A2_N * B1 * !Y)	-0.00295	-0.00387	-0.00365
	(!A1_N * !A2_N * !B1 * !Y)	0.00415	0.00420	0.00416
	(!A1_N * !A2_N * !B1 * !Y)	-0.00365	-0.00368	-0.00366
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00235	0.00237	0.00223
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01022	-0.01030	-0.01051
	(!A1_N * !A2_N * B1 * !Y)	0.00993	0.00823	0.00851
	(!A1_N * !A2_N * B1 * !Y)	-0.00607	-0.00791	-0.00745
	(!A1_N * !A2_N * !B1 * !Y)	0.00824	0.00833	0.00826
	(!A1_N * !A2_N * !B1 * !Y)	-0.00746	-0.00754	-0.00748

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)	-0.00060	-0.00060	-0.00059
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00273	0.00274	0.00274
	(!A1_N * !A2_N * B1 * !Y)	-0.00130	-0.00131	-0.00136
	(!A1_N * !A2_N * B1 * !Y)	0.00287	0.00288	0.00281
	(!A1_N * !A2_N * !B1 * !Y)	-0.00125	-0.00127	-0.00126
	(!A1_N * !A2_N * !B1 * !Y)	0.00286	0.00286	0.00286
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00097	-0.00098	-0.00098
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00532	0.00535	0.00535
	(!A1_N * !A2_N * B1 * !Y)	-0.00246	-0.00251	-0.00259
	(!A1_N * !A2_N * B1 * !Y)	0.00546	0.00549	0.00536
	(!A1_N * !A2_N * !B1 * !Y)	-0.00236	-0.00241	-0.00240
	(!A1_N * !A2_N * !B1 * !Y)	0.00545	0.00549	0.00546
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00182	-0.00185	-0.00183
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01082	0.01092	0.01088
	(!A1_N * !A2_N * B1 * !Y)	-0.00495	-0.00505	-0.00523
	(!A1_N * !A2_N * B1 * !Y)	0.01100	0.01109	0.01080
	(!A1_N * !A2_N * !B1 * !Y)	-0.00474	-0.00484	-0.00482
	(!A1_N * !A2_N * !B1 * !Y)	0.01098	0.01107	0.01100

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00242	0.00249	0.00265	0.00256	1.29982
sky130_fd_sc_hs__a2bb2o_2	0.00254	0.00259	0.00278	0.00295	2.20753
sky130_fd_sc_hs__a2bb2o_4	0.00279	0.00293	0.00504	0.00504	4.76674

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	86.52480	144.30700
sky130_fd_sc_hs__a2bb2o_2	0.00000	114.55100	169.63800
sky130_fd_sc_hs__a2bb2o_4	0.00000	193.55200	253.20600

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)	0.14462	0.67430	7.53895
	A2_N->X (FR)	0.13214	0.68569	7.71530
	B1->X (RR)	0.08552	0.55994	6.47346
	B2->X (RR)	0.08063	0.57436	6.65017
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.15019	0.59756	7.32093
	A2_N->X (FR)	0.13766	0.60891	7.51767
	B1->X (RR)	0.08484	0.47623	6.06642
	B2->X (RR)	0.08160	0.49670	6.24505
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.18983	0.58066	7.60068
	A2_N->X (FR)	0.17872	0.59609	7.78219
	B1->X (RR)	0.09576	0.42625	6.40877
	B2->X (RR)	0.08973	0.44614	6.61048

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)	0.14518	0.45740	3.47918
	A2_N->X (RF)	0.13702	0.42904	3.25296
	B1->X (FF)	0.12829	0.52603	5.15179
	B2->X (FF)	0.11001	0.49502	4.99780
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.17102	0.43772	3.06548
	A2_N->X (RF)	0.16260	0.40573	2.80334
	B1->X (FF)	0.15333	0.51954	4.87016
	B2->X (FF)	0.13619	0.48957	4.71857
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.16839	0.40819	3.44868
	A2_N->X (RF)	0.15948	0.37979	3.20368
	B1->X (FF)	0.15619	0.48818	5.23383
	B2->X (FF)	0.13586	0.45480	5.06780

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	0.01087	0.01580	0.10387
	A1_N	0.01549	0.02043	0.10873
	A2_N	0.01080	0.01697	0.11080
	A2_N	0.01427	0.02048	0.11467
	B1	0.01361	0.01755	0.09934
	B1	0.00788	0.01181	0.09381
	B2	0.01241	0.01690	0.10053
	B2	0.00789	0.01240	0.09606
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01419	0.01929	0.10724
	A1_N	0.01920	0.02435	0.11272
	A2_N	0.01426	0.02067	0.11660
	A2_N	0.01799	0.02447	0.12055
	B1	0.01739	0.02148	0.10614
	B1	0.01155	0.01565	0.10127
	B2	0.01633	0.02097	0.10703
	B2	0.01157	0.01626	0.10310
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02801	0.03248	0.13092
	A1_N	0.03104	0.03549	0.13506
	A2_N	0.02789	0.03354	0.13681
	A2_N	0.02963	0.03528	0.14018
	B1	0.03298	0.04013	0.19894
	B1	0.02212	0.02931	0.18914
	B2	0.03077	0.03935	0.20223
	B2	0.02216	0.03083	0.19396

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01538	0.02036	0.10732
	A1_N	0.01280	0.01725	0.10198
	A2_N	0.01354	0.01895	0.10962
	A2_N	0.01209	0.01702	0.10582
	B1	0.00718	0.01090	0.09373
	B1	0.01291	0.01659	0.09806
	B2	0.00668	0.01069	0.09345
	B2	0.01119	0.01502	0.09736
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.02199	0.02494	0.10681
	A1_N	0.01813	0.02107	0.10261
	A2_N	0.02005	0.02341	0.11114
	A2_N	0.01745	0.02075	0.10765
	B1	0.01263	0.01486	0.09906
	B1	0.01846	0.02065	0.10386
	B2	0.01169	0.01440	0.09762
	B2	0.01644	0.01901	0.10236
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03869	0.04070	0.14342
	A1_N	0.03563	0.03764	0.13991
	A2_N	0.03624	0.03889	0.14498
	A2_N	0.03444	0.03698	0.14030
	B1	0.02702	0.03070	0.18767
	B1	0.03788	0.04136	0.19731
	B2	0.02459	0.02898	0.18945
	B2	0.03322	0.03757	0.19485

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)	0.00272	0.00239	0.00267
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00073	-0.00107	-0.00075
	(!A2_N * B1 * B2 * X)	0.00810	0.01254	0.09251
	(!A2_N * B1 * B2 * X)	0.00275	0.00718	0.08718
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00280	0.00246	0.00273
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00080	-0.00116	-0.00084
	(!A2_N * B1 * B2 * X)	0.00827	0.01263	0.09140
	(!A2_N * B1 * B2 * X)	0.00268	0.00702	0.08581
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00366	0.00330	0.00346
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00030	-0.00067	-0.00047
	(!A2_N * B1 * B2 * X)	0.01097	0.01610	0.10796
	(!A2_N * B1 * B2 * X)	0.00466	0.00978	0.10166

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)	-0.00017	-0.00019	-0.00028
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00326	0.00325	0.00316
	(!A2_N * B1 * B2 * X)	0.00183	0.00627	0.08709
	(!A2_N * B1 * B2 * X)	0.00718	0.01165	0.09243
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00021	-0.00024	-0.00032
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00337	0.00339	0.00327
	(!A2_N * B1 * B2 * X)	0.00176	0.00613	0.08573
	(!A2_N * B1 * B2 * X)	0.00738	0.01177	0.09131
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00013	0.00010	0.00005
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00406	0.00408	0.00400
	(!A2_N * B1 * B2 * X)	0.00168	0.00654	0.09936
	(!A2_N * B1 * B2 * X)	0.00803	0.01292	0.10568

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)	0.00225	0.00227	0.00227
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00016	-0.00017	-0.00013
	(!A1_N * B1 * B2 * X)	0.00618	0.01120	0.09532
	(!A1_N * B1 * B2 * X)	0.00197	0.00699	0.09112
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00227	0.00230	0.00230
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00014	-0.00015	-0.00011
	(!A1_N * B1 * B2 * X)	0.00630	0.01128	0.09516
	(!A1_N * B1 * B2 * X)	0.00198	0.00695	0.09084
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00324	0.00328	0.00326
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00044	0.00043	0.00046
	(!A1_N * B1 * B2 * X)	0.00880	0.01437	0.10885
	(!A1_N * B1 * B2 * X)	0.00376	0.00930	0.10380

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)	-0.00044	-0.00046	-0.00062
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00197	0.00197	0.00180
	(!A1_N * B1 * B2 * X)	0.00179	0.00747	0.09248
	(!A1_N * B1 * B2 * X)	0.00601	0.01170	0.09669
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00044	-0.00047	-0.00062
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00197	0.00198	0.00181
	(!A1_N * B1 * B2 * X)	0.00179	0.00746	0.09221
	(!A1_N * B1 * B2 * X)	0.00615	0.01180	0.09654
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00015	-0.00016	-0.00029
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00267	0.00267	0.00254
	(!A1_N * B1 * B2 * X)	0.00165	0.00775	0.10317
	(!A1_N * B1 * B2 * X)	0.00671	0.01286	0.10822

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)	0.00229	0.00231	0.00229
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00154	-0.00155	-0.00154
	(!A1_N * !A2_N * B2 * X)	0.00262	0.00224	0.00242
	(!A1_N * !A2_N * B2 * X)	-0.00127	-0.00167	-0.00145
	(!A1_N * !A2_N * !B2 * X)	0.00238	0.00240	0.00239
	(!A1_N * !A2_N * !B2 * X)	-0.00143	-0.00144	-0.00144
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00266	0.00268	0.00267
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00115	-0.00117	-0.00116
	(!A1_N * !A2_N * B2 * X)	0.00261	0.00222	0.00239
	(!A1_N * !A2_N * B2 * X)	-0.00126	-0.00169	-0.00147
	(!A1_N * !A2_N * !B2 * X)	0.00235	0.00237	0.00235
	(!A1_N * !A2_N * !B2 * X)	-0.00145	-0.00147	-0.00146
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00472	0.00477	0.00474
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00237	-0.00240	-0.00237
	(!A1_N * !A2_N * B2 * X)	0.00476	0.00393	0.00425
	(!A1_N * !A2_N * B2 * X)	-0.00245	-0.00335	-0.00294
	(!A1_N * !A2_N * !B2 * X)	0.00416	0.00419	0.00416
	(!A1_N * !A2_N * !B2 * X)	-0.00292	-0.00295	-0.00292

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)	-0.00109	-0.00124	-0.00125
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00274	0.00263	0.00258
	(!A1_N * !A2_N * B2 * X)	-0.00118	-0.00121	-0.00128
	(!A1_N * !A2_N * B2 * X)	0.00268	0.00270	0.00260
	(!A1_N * !A2_N * !B2 * X)	-0.00114	-0.00116	-0.00116
	(!A1_N * !A2_N * !B2 * X)	0.00267	0.00269	0.00268
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00061	-0.00075	-0.00078
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00321	0.00310	0.00304
	(!A1_N * !A2_N * B2 * X)	-0.00113	-0.00115	-0.00123
	(!A1_N * !A2_N * B2 * X)	0.00274	0.00275	0.00265
	(!A1_N * !A2_N * !B2 * X)	-0.00108	-0.00111	-0.00109
	(!A1_N * !A2_N * !B2 * X)	0.00272	0.00275	0.00273
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00070	-0.00103	-0.00108
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00642	0.00614	0.00603
	(!A1_N * !A2_N * B2 * X)	-0.00173	-0.00177	-0.00193
	(!A1_N * !A2_N * B2 * X)	0.00548	0.00548	0.00529
	(!A1_N * !A2_N * !B2 * X)	-0.00162	-0.00166	-0.00165
	(!A1_N * !A2_N * !B2 * X)	0.00545	0.00548	0.00546

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)	0.00115	0.00114	0.00112
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00179	-0.00179	-0.00184
	(!A1_N * !A2_N * B1 * X)	0.00225	0.00184	0.00203
	(!A1_N * !A2_N * B1 * X)	-0.00142	-0.00183	-0.00161
	(!A1_N * !A2_N * !B1 * X)	0.00199	0.00200	0.00199
	(!A1_N * !A2_N * !B1 * X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00154	0.00155	0.00152
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00154	-0.00155	-0.00160
	(!A1_N * !A2_N * B1 * X)	0.00261	0.00220	0.00237
	(!A1_N * !A2_N * B1 * X)	-0.00135	-0.00180	-0.00159
	(!A1_N * !A2_N * !B1 * X)	0.00232	0.00233	0.00232
	(!A1_N * !A2_N * !B1 * X)	-0.00157	-0.00160	-0.00158
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00286	0.00286	0.00279
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00282	-0.00284	-0.00296
	(!A1_N * !A2_N * B1 * X)	0.00474	0.00392	0.00425
	(!A1_N * !A2_N * B1 * X)	-0.00246	-0.00335	-0.00294
	(!A1_N * !A2_N * !B1 * X)	0.00415	0.00418	0.00415
	(!A1_N * !A2_N * !B1 * X)	-0.00291	-0.00295	-0.00292

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)	-0.00010	-0.00011	-0.00010
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00284	0.00288	0.00284
	(!A1_N * !A2_N * B1 * X)	-0.00079	-0.00082	-0.00089
	(!A1_N * !A2_N * B1 * X)	0.00286	0.00286	0.00276
	(!A1_N * !A2_N * !B1 * X)	-0.00076	-0.00077	-0.00076
	(!A1_N * !A2_N * !B1 * X)	0.00285	0.00285	0.00284
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00034	0.00033	0.00034
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00345	0.00349	0.00346
	(!A1_N * !A2_N * B1 * X)	-0.00110	-0.00112	-0.00120
	(!A1_N * !A2_N * B1 * X)	0.00286	0.00287	0.00277
	(!A1_N * !A2_N * !B1 * X)	-0.00106	-0.00107	-0.00106
	(!A1_N * !A2_N * !B1 * X)	0.00286	0.00286	0.00285
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00081	0.00079	0.00082
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00655	0.00662	0.00656
	(!A1_N * !A2_N * B1 * X)	-0.00173	-0.00177	-0.00193
	(!A1_N * !A2_N * B1 * X)	0.00548	0.00547	0.00529
	(!A1_N * !A2_N * !B1 * X)	-0.00163	-0.00166	-0.00166
	(!A1_N * !A2_N * !B1 * X)	0.00547	0.00548	0.00545

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00302	0.00309	0.00300	0.00316	0.00301	0.41660
sky130_fd_sc_hs__a311oi_2	0.00576	0.00560	0.00541	0.00463	0.00452	0.76242
sky130_fd_sc_hs__a311oi_4	0.01116	0.01093	0.01094	0.00873	0.00885	1.34874

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	22.82160	79.79090
sky130_fd_sc_hs__a311oi_2	0.00000	44.87850	159.57300
sky130_fd_sc_hs__a311oi_4	0.00000	89.58540	318.92800

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)	0.12661	0.85407	8.09083
	A2->Y (FR)	0.15659	0.90685	8.36082
	A3->Y (FR)	0.16861	0.90474	8.21055
	B1->Y (FR)	0.13558	0.94319	9.18713
	C1->Y (FR)	0.10197	0.94116	9.50616
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.10701	0.69603	7.79553
	A2->Y (FR)	0.13246	0.72392	7.89740
	A3->Y (FR)	0.15557	0.74979	7.94417
	B1->Y (FR)	0.13292	0.78218	8.68023
	C1->Y (FR)	0.09262	0.77981	9.04894
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.10134	0.56891	7.36185
	A2->Y (FR)	0.13094	0.60495	7.54888
	A3->Y (FR)	0.15848	0.64244	7.72237
	B1->Y (FR)	0.13383	0.68144	8.56591
	C1->Y (FR)	0.09254	0.68445	8.98663

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.05704	0.50499	4.89132
	A2->Y (RF)	0.06578	0.47081	4.41187
	A3->Y (RF)	0.06900	0.42377	3.77686
	B1->Y (RF)	0.02748	0.31324	3.05579
	C1->Y (RF)	0.02322	0.30440	3.03624
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.05231	0.46977	5.22491
	A2->Y (RF)	0.06091	0.41402	4.44471
	A3->Y (RF)	0.06639	0.37216	3.80851
	B1->Y (RF)	0.04000	0.41361	4.73105
	C1->Y (RF)	0.02755	0.39406	4.69002
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.05256	0.41231	5.12960
	A2->Y (RF)	0.06183	0.35871	4.33134
	A3->Y (RF)	0.06695	0.30949	3.57314
	B1->Y (RF)	0.03375	0.33394	4.39415
	C1->Y (RF)	0.02508	0.33320	4.62799

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00084	0.00162	0.03247
	A1	0.00951	0.01030	0.04107
	A2	0.00160	0.00232	0.03358
	A2	0.01151	0.01221	0.04348
	A3	0.00192	0.00273	0.03581
	A3	0.01307	0.01387	0.04690
	B1	0.00056	0.00241	0.04123
	B1	0.00784	0.00969	0.04848
	C1	0.00044	0.00337	0.04712
	C1	0.00642	0.00922	0.05326
sky130_fd_sc_hs__a311oi_2	A1	0.00032	0.00200	0.06056
	A1	0.01641	0.01815	0.07683
	A2	0.00184	0.00341	0.06461
	A2	0.02027	0.02182	0.08310
	A3	0.00353	0.00509	0.06813
	A3	0.02420	0.02575	0.08882
	B1	0.00104	0.00347	0.05315
	B1	0.01233	0.01478	0.06462
	C1	0.00086	0.00532	0.06302
	C1	0.00925	0.01374	0.07165

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00014	0.00384	0.11735
	A1	0.03143	0.03534	0.14920
	A2	0.00300	0.00654	0.12514
	A2	0.03932	0.04290	0.16148
	A3	0.00596	0.00950	0.13287
	A3	0.04718	0.05080	0.17420
	B1	0.00137	0.00725	0.10837
	B1	0.02329	0.02922	0.13066
	C1	0.00104	0.01050	0.12057
	C1	0.01745	0.02696	0.13731

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01322	0.01419	0.03994
	A1	0.00455	0.00553	0.03094
	A2	0.01437	0.01516	0.04023
	A2	0.00447	0.00520	0.03008
	A3	0.01553	0.01635	0.04482
	A3	0.00435	0.00518	0.03355
	B1	0.00880	0.01084	0.04682
	B1	0.00153	0.00357	0.03954
	C1	0.00645	0.00864	0.04234
	C1	0.00049	0.00267	0.03633

sky130_fd_sc_hs__a311oi_2	**A1**	0.02533	0.02747	0.07475
	A1	0.00923	0.01128	0.05782
	A2	0.02753	0.02930	0.07828
	A2	0.00912	0.01087	0.05977
	A3	0.02974	0.03155	0.08754
	A3	0.00900	0.01074	0.06631
	B1	0.01432	0.01712	0.06379
	B1	0.00306	0.00587	0.05227
	C1	0.00841	0.01183	0.05525
	C1	0.00002	0.00337	0.04686
sky130_fd_sc_hs__a311oi_4	**A1**	0.04915	0.05401	0.14627
	A1	0.01761	0.02237	0.11370
	A2	0.05355	0.05749	0.15410
	A2	0.01723	0.02107	0.11779
	A3	0.05832	0.06233	0.17527
	A3	0.01693	0.02092	0.13344
	B1	0.02714	0.03379	0.12858
	B1	0.00528	0.01186	0.10598
	C1	0.01633	0.02361	0.10717
	C1	-0.00007	0.00708	0.09039

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)**	0.00192	0.00182	0.00180
	(A2 * A3 * B1 * C1 * !Y)	-0.00205	-0.00219	-0.00218
	(A2 * A3 * B1 * !C1 * !Y)	0.00238	0.00205	0.00202
	(A2 * A3 * B1 * !C1 * !Y)	-0.00163	-0.00199	-0.00196
	(A2 * A3 * !B1 * C1 * !Y)	0.00257	0.00217	0.00219
	(A2 * A3 * !B1 * C1 * !Y)	-0.00146	-0.00190	-0.00181
	(A2 * !A3 * B1 * C1 * !Y)	0.00170	0.00171	0.00170
	(A2 * !A3 * B1 * C1 * !Y)	-0.00220	-0.00221	-0.00220
	(A2 * !A3 * B1 * !C1 * !Y)	0.00193	0.00193	0.00193
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00197	-0.00197	-0.00197
	(A2 * !A3 * !B1 * C1 * !Y)	0.00209	0.00210	0.00209
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00180	-0.00182	-0.00181
	(A2 * !A3 * !B1 * !C1 * Y)	0.00057	0.00056	0.00052
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00252	-0.00253	-0.00264
	(!A2 * B1 * C1 * !Y)	0.00173	0.00175	0.00174
	(!A2 * B1 * C1 * !Y)	-0.00219	-0.00221	-0.00220
	(!A2 * B1 * !C1 * !Y)	0.00197	0.00199	0.00197
	(!A2 * B1 * !C1 * !Y)	-0.00196	-0.00198	-0.00197
	(!A2 * !B1 * C1 * !Y)	0.00213	0.00214	0.00214
	(!A2 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * !C1 * Y)	0.00058	0.00057	0.00054
	(!A2 * !B1 * !C1 * Y)	-0.00259	-0.00260	-0.00264

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00374	0.00357	0.00352
	(A2 * A3 * B1 * C1 * !Y)	-0.00432	-0.00454	-0.00453
	(A2 * A3 * B1 * !C1 * !Y)	0.00472	0.00407	0.00398
	(A2 * A3 * B1 * !C1 * !Y)	-0.00344	-0.00413	-0.00409
	(A2 * A3 * !B1 * C1 * !Y)	0.00505	0.00431	0.00431
	(A2 * A3 * !B1 * C1 * !Y)	-0.00310	-0.00392	-0.00377
	(A2 * !A3 * B1 * C1 * !Y)	0.00333	0.00337	0.00334
	(A2 * !A3 * B1 * C1 * !Y)	-0.00457	-0.00460	-0.00457
	(A2 * !A3 * B1 * !C1 * !Y)	0.00378	0.00380	0.00379
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00410	-0.00412	-0.00411
	(A2 * !A3 * !B1 * C1 * !Y)	0.00410	0.00411	0.00410
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00379	-0.00381	-0.00379
	(A2 * !A3 * !B1 * !C1 * Y)	0.00121	0.00122	0.00109
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00504	-0.00508	-0.00533
	(!A2 * B1 * C1 * !Y)	0.00339	0.00343	0.00340
	(!A2 * B1 * C1 * !Y)	-0.00456	-0.00459	-0.00457
	(!A2 * B1 * !C1 * !Y)	0.00385	0.00389	0.00387
	(!A2 * B1 * !C1 * !Y)	-0.00409	-0.00413	-0.00411
	(!A2 * !B1 * C1 * !Y)	0.00417	0.00420	0.00418
	(!A2 * !B1 * C1 * !Y)	-0.00378	-0.00381	-0.00379
	(!A2 * !B1 * !C1 * Y)	0.00117	0.00118	0.00112
	(!A2 * !B1 * !C1 * Y)	-0.00522	-0.00526	-0.00536

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00736	0.00701	0.00690
	(A2 * A3 * B1 * C1 * !Y)	-0.00852	-0.00900	-0.00898
	(A2 * A3 * B1 * !C1 * !Y)	0.00928	0.00799	0.00782
	(A2 * A3 * B1 * !C1 * !Y)	-0.00678	-0.00818	-0.00809
	(A2 * A3 * !B1 * C1 * !Y)	0.00997	0.00851	0.00846
	(A2 * A3 * !B1 * C1 * !Y)	-0.00615	-0.00777	-0.00746
	(A2 * !A3 * B1 * C1 * !Y)	0.00645	0.00653	0.00647
	(A2 * !A3 * B1 * C1 * !Y)	-0.00905	-0.00912	-0.00906
	(A2 * !A3 * B1 * !C1 * !Y)	0.00735	0.00744	0.00738
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00809	-0.00819	-0.00814
	(A2 * !A3 * !B1 * C1 * !Y)	0.00796	0.00804	0.00799
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00747	-0.00755	-0.00750
	(A2 * !A3 * !B1 * !C1 * Y)	0.00230	0.00230	0.00206
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00998	-0.01005	-0.01052
	(!A2 * B1 * C1 * !Y)	0.00664	0.00667	0.00666
	(!A2 * B1 * C1 * !Y)	-0.00904	-0.00908	-0.00906
	(!A2 * B1 * !C1 * !Y)	0.00757	0.00760	0.00758
	(!A2 * B1 * !C1 * !Y)	-0.00812	-0.00815	-0.00814
	(!A2 * !B1 * C1 * !Y)	0.00818	0.00822	0.00822
	(!A2 * !B1 * C1 * !Y)	-0.00745	-0.00750	-0.00750
	(!A2 * !B1 * !C1 * Y)	0.00226	0.00227	0.00213
	(!A2 * !B1 * !C1 * Y)	-0.01034	-0.01040	-0.01059

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)**	-0.00169	-0.00169	-0.00169
	(A2 * A3 * B1 * C1 * !Y)	0.00228	0.00229	0.00228
	(A2 * A3 * B1 * !C1 * !Y)	-0.00147	-0.00149	-0.00150
	(A2 * A3 * B1 * !C1 * !Y)	0.00252	0.00254	0.00250
	(A2 * A3 * !B1 * C1 * !Y)	-0.00131	-0.00133	-0.00135
	(A2 * A3 * !B1 * C1 * !Y)	0.00269	0.00270	0.00266
	(A2 * !A3 * B1 * C1 * !Y)	-0.00154	-0.00164	-0.00165
	(A2 * !A3 * B1 * C1 * !Y)	0.00227	0.00229	0.00228
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00130	-0.00141	-0.00142
	(A2 * !A3 * B1 * !C1 * !Y)	0.00250	0.00252	0.00251
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00115	-0.00125	-0.00126
	(A2 * !A3 * !B1 * C1 * !Y)	0.00269	0.00268	0.00267
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00044	-0.00044	-0.00044
	(A2 * !A3 * !B1 * !C1 * Y)	0.00270	0.00273	0.00271
	(!A2 * B1 * C1 * !Y)	-0.00166	-0.00168	-0.00167
	(!A2 * B1 * C1 * !Y)	0.00229	0.00230	0.00228
	(!A2 * B1 * !C1 * !Y)	-0.00143	-0.00145	-0.00144
	(!A2 * B1 * !C1 * !Y)	0.00252	0.00253	0.00251
	(!A2 * !B1 * C1 * !Y)	-0.00127	-0.00129	-0.00128
	(!A2 * !B1 * C1 * !Y)	0.00267	0.00268	0.00267
	(!A2 * !B1 * !C1 * Y)	-0.00047	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * Y)	0.00271	0.00276	0.00272

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00331	-0.00334	-0.00332
	(A2 * A3 * B1 * C1 * !Y)	0.00471	0.00477	0.00473
	(A2 * A3 * B1 * !C1 * !Y)	-0.00286	-0.00289	-0.00291
	(A2 * A3 * B1 * !C1 * !Y)	0.00523	0.00527	0.00519
	(A2 * A3 * !B1 * C1 * !Y)	-0.00256	-0.00259	-0.00263
	(A2 * A3 * !B1 * C1 * !Y)	0.00554	0.00557	0.00548
	(A2 * !A3 * B1 * C1 * !Y)	-0.00299	-0.00322	-0.00324
	(A2 * !A3 * B1 * C1 * !Y)	0.00473	0.00476	0.00474
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00251	-0.00276	-0.00278
	(A2 * !A3 * B1 * !C1 * !Y)	0.00519	0.00524	0.00520
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00218	-0.00244	-0.00246
	(A2 * !A3 * !B1 * C1 * !Y)	0.00551	0.00556	0.00552
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00098	-0.00097	-0.00098
	(A2 * !A3 * !B1 * !C1 * Y)	0.00544	0.00541	0.00544
	(!A2 * B1 * C1 * !Y)	-0.00325	-0.00328	-0.00327
	(!A2 * B1 * C1 * !Y)	0.00475	0.00476	0.00474
	(!A2 * B1 * !C1 * !Y)	-0.00278	-0.00282	-0.00281
	(!A2 * B1 * !C1 * !Y)	0.00519	0.00523	0.00520
	(!A2 * !B1 * C1 * !Y)	-0.00246	-0.00249	-0.00249
	(!A2 * !B1 * C1 * !Y)	0.00551	0.00554	0.00552
	(!A2 * !B1 * !C1 * Y)	-0.00102	-0.00104	-0.00101
	(!A2 * !B1 * !C1 * Y)	0.00545	0.00554	0.00545

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00648	-0.00651	-0.00649
	(A2 * A3 * B1 * C1 * !Y)	0.00936	0.00944	0.00939
	(A2 * A3 * B1 * !C1 * !Y)	-0.00557	-0.00564	-0.00569
	(A2 * A3 * B1 * !C1 * !Y)	0.01033	0.01043	0.01028
	(A2 * A3 * !B1 * C1 * !Y)	-0.00498	-0.00500	-0.00512
	(A2 * A3 * !B1 * C1 * !Y)	0.01101	0.01099	0.01088
	(A2 * !A3 * B1 * C1 * !Y)	-0.00581	-0.00629	-0.00632
	(A2 * !A3 * B1 * C1 * !Y)	0.00942	0.00947	0.00940
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00487	-0.00533	-0.00540
	(A2 * !A3 * B1 * !C1 * !Y)	0.01034	0.01041	0.01032
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00420	-0.00468	-0.00477
	(A2 * !A3 * !B1 * C1 * !Y)	0.01094	0.01106	0.01095
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00184
	(A2 * !A3 * !B1 * !C1 * Y)	0.01072	0.01077	0.01074
	(!A2 * B1 * C1 * !Y)	-0.00632	-0.00641	-0.00640
	(!A2 * B1 * C1 * !Y)	0.00935	0.00944	0.00940
	(!A2 * B1 * !C1 * !Y)	-0.00542	-0.00550	-0.00548
	(!A2 * B1 * !C1 * !Y)	0.01030	0.01041	0.01032
	(!A2 * !B1 * C1 * !Y)	-0.00478	-0.00487	-0.00484
	(!A2 * !B1 * C1 * !Y)	0.01093	0.01106	0.01095
	(!A2 * !B1 * !C1 * Y)	-0.00193	-0.00194	-0.00193
	(!A2 * !B1 * !C1 * Y)	0.01073	0.01080	0.01077

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)**	0.00199	0.00189	0.00187
	(A1 * A3 * B1 * C1 * !Y)	-0.00205	-0.00219	-0.00218
	(A1 * A3 * B1 * !C1 * !Y)	0.00245	0.00212	0.00210
	(A1 * A3 * B1 * !C1 * !Y)	-0.00164	-0.00199	-0.00196
	(A1 * A3 * !B1 * C1 * !Y)	0.00263	0.00225	0.00226
	(A1 * A3 * !B1 * C1 * !Y)	-0.00147	-0.00190	-0.00181
	(A1 * !A3 * B1 * C1 * !Y)	0.00181	0.00183	0.00181
	(A1 * !A3 * B1 * C1 * !Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A3 * B1 * !C1 * !Y)	0.00204	0.00206	0.00204
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00196	-0.00198	-0.00197
	(A1 * !A3 * !B1 * C1 * !Y)	0.00220	0.00222	0.00220
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00065	0.00065	0.00066
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00243	-0.00243	-0.00242
	(!A1 * A3 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * A3 * B1 * !Y)	-0.00219	-0.00221	-0.00220
	(!A1 * A3 * !B1 * C1 * !Y)	0.00221	0.00222	0.00221
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * A3 * !B1 * !C1 * Y)	0.00161	0.00161	0.00161
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00241	-0.00241	-0.00241
	(!A1 * !A3 * B1 * !Y)	0.00109	0.00110	0.00109
	(!A1 * !A3 * B1 * !Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00149	0.00149	0.00148
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00243	-0.00244	-0.00243

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00367	0.00352	0.00347
	(A1 * A3 * B1 * C1 * !Y)	-0.00424	-0.00450	-0.00449
	(A1 * A3 * B1 * !C1 * !Y)	0.00466	0.00402	0.00393
	(A1 * A3 * B1 * !C1 * !Y)	-0.00336	-0.00408	-0.00404
	(A1 * A3 * !B1 * C1 * !Y)	0.00501	0.00427	0.00425
	(A1 * A3 * !B1 * C1 * !Y)	-0.00305	-0.00388	-0.00373
	(A1 * !A3 * B1 * C1 * !Y)	0.00334	0.00336	0.00334
	(A1 * !A3 * B1 * C1 * !Y)	-0.00454	-0.00455	-0.00453
	(A1 * !A3 * B1 * !C1 * !Y)	0.00381	0.00382	0.00380
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00408	-0.00409	-0.00407
	(A1 * !A3 * !B1 * C1 * !Y)	0.00412	0.00414	0.00412
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00376	-0.00377	-0.00375
	(A1 * !A3 * !B1 * !C1 * Y)	0.00143	0.00144	0.00144
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00458	-0.00459	-0.00458
	(!A1 * A3 * B1 * !Y)	0.00335	0.00335	0.00336
	(!A1 * A3 * B1 * !Y)	-0.00452	-0.00452	-0.00453
	(!A1 * A3 * !B1 * C1 * !Y)	0.00414	0.00416	0.00414
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00374	-0.00377	-0.00375
	(!A1 * A3 * !B1 * !C1 * Y)	0.00335	0.00339	0.00336
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00455	-0.00458	-0.00455
	(!A1 * !A3 * B1 * !Y)	0.00195	0.00196	0.00195
	(!A1 * !A3 * B1 * !Y)	-0.00452	-0.00454	-0.00453
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00273	0.00275	0.00273
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00374	-0.00376	-0.00375
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00185	0.00183
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00460	-0.00464	-0.00461

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00735	0.00701	0.00692
	(A1 * A3 * B1 * C1 * !Y)	-0.00844	-0.00894	-0.00892
	(A1 * A3 * B1 * !C1 * !Y)	0.00926	0.00799	0.00783
	(A1 * A3 * B1 * !C1 * !Y)	-0.00671	-0.00813	-0.00803
	(A1 * A3 * !B1 * C1 * !Y)	0.00993	0.00850	0.00848
	(A1 * A3 * !B1 * C1 * !Y)	-0.00612	-0.00773	-0.00741
	(A1 * !A3 * B1 * C1 * !Y)	0.00660	0.00670	0.00664
	(A1 * !A3 * B1 * C1 * !Y)	-0.00895	-0.00905	-0.00900
	(A1 * !A3 * B1 * !C1 * !Y)	0.00757	0.00761	0.00755
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00810	-0.00813	-0.00808
	(A1 * !A3 * !B1 * C1 * !Y)	0.00821	0.00824	0.00820
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00746	-0.00748	-0.00744
	(A1 * !A3 * !B1 * !C1 * Y)	0.00273	0.00275	0.00276
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00908	-0.00911	-0.00908
	(!A1 * A3 * B1 * !Y)	0.00666	0.00673	0.00668
	(!A1 * A3 * B1 * !Y)	-0.00899	-0.00905	-0.00900
	(!A1 * A3 * !B1 * C1 * !Y)	0.00823	0.00831	0.00824
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00742	-0.00748	-0.00743
	(!A1 * A3 * !B1 * !C1 * Y)	0.00667	0.00677	0.00670
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00903	-0.00909	-0.00903
	(!A1 * !A3 * B1 * !Y)	0.00372	0.00374	0.00372
	(!A1 * !A3 * B1 * !Y)	-0.00899	-0.00903	-0.00900
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00529	0.00531	0.00529
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00742	-0.00747	-0.00744
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00349	0.00354	0.00350
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00912	-0.00920	-0.00914

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)**	-0.00177	-0.00177	-0.00177
	(A1 * A3 * B1 * C1 * !Y)	0.00229	0.00229	0.00228
	(A1 * A3 * B1 * !C1 * !Y)	-0.00155	-0.00156	-0.00157
	(A1 * A3 * B1 * !C1 * !Y)	0.00253	0.00254	0.00250
	(A1 * A3 * !B1 * C1 * !Y)	-0.00139	-0.00140	-0.00142
	(A1 * A3 * !B1 * C1 * !Y)	0.00269	0.00270	0.00266
	(A1 * !A3 * B1 * C1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * !A3 * B1 * C1 * !Y)	0.00229	0.00230	0.00228
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * B1 * !C1 * !Y)	0.00252	0.00253	0.00251
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00135
	(A1 * !A3 * !B1 * C1 * !Y)	0.00267	0.00268	0.00267
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00055	-0.00056	-0.00057
	(A1 * !A3 * !B1 * !C1 * Y)	0.00257	0.00260	0.00251
	(!A1 * A3 * B1 * !Y)	-0.00173	-0.00175	-0.00175
	(!A1 * A3 * B1 * !Y)	0.00227	0.00229	0.00228
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00134	-0.00136	-0.00136
	(!A1 * A3 * !B1 * C1 * !Y)	0.00266	0.00268	0.00267
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00130	-0.00150	-0.00152
	(!A1 * A3 * !B1 * !C1 * Y)	0.00272	0.00256	0.00251
	(!A1 * !A3 * B1 * !Y)	-0.00109	-0.00110	-0.00108
	(!A1 * !A3 * B1 * !Y)	0.00228	0.00231	0.00229
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00076	-0.00076	-0.00069
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00267	0.00270	0.00268
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00081	-0.00081	-0.00082
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00260	0.00263	0.00252

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00327	-0.00328	-0.00326
	(A1 * A3 * B1 * C1 * !Y)	0.00471	0.00473	0.00469
	(A1 * A3 * B1 * !C1 * !Y)	-0.00282	-0.00282	-0.00286
	(A1 * A3 * B1 * !C1 * !Y)	0.00521	0.00518	0.00515
	(A1 * A3 * !B1 * C1 * !Y)	-0.00251	-0.00253	-0.00258
	(A1 * A3 * !B1 * C1 * !Y)	0.00550	0.00551	0.00544
	(A1 * !A3 * B1 * C1 * !Y)	-0.00317	-0.00321	-0.00321
	(A1 * !A3 * B1 * C1 * !Y)	0.00469	0.00472	0.00470
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00271	-0.00276	-0.00275
	(A1 * !A3 * B1 * !C1 * !Y)	0.00515	0.00521	0.00516
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00239	-0.00244	-0.00243
	(A1 * !A3 * !B1 * C1 * !Y)	0.00546	0.00553	0.00548
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00125	-0.00127	-0.00130
	(A1 * !A3 * !B1 * !C1 * Y)	0.00480	0.00485	0.00472
	(!A1 * A3 * B1 * !Y)	-0.00320	-0.00323	-0.00322
	(!A1 * A3 * B1 * !Y)	0.00471	0.00472	0.00470
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00242	-0.00245	-0.00244
	(!A1 * A3 * !B1 * C1 * !Y)	0.00549	0.00550	0.00548
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00277	-0.00318	-0.00323
	(!A1 * A3 * !B1 * !C1 * Y)	0.00518	0.00479	0.00469
	(!A1 * !A3 * B1 * !Y)	-0.00195	-0.00196	-0.00193
	(!A1 * !A3 * B1 * !Y)	0.00470	0.00475	0.00470
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00129	-0.00130	-0.00115
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00548	0.00553	0.00548
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00180	-0.00181	-0.00183
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00494	0.00498	0.00476

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00647	-0.00654	-0.00650
	(A1 * A3 * B1 * C1 * !Y)	0.00926	0.00941	0.00932
	(A1 * A3 * B1 * !C1 * !Y)	-0.00563	-0.00567	-0.00571
	(A1 * A3 * B1 * !C1 * !Y)	0.01035	0.01038	0.01022
	(A1 * A3 * !B1 * C1 * !Y)	-0.00501	-0.00506	-0.00514
	(A1 * A3 * !B1 * C1 * !Y)	0.01098	0.01101	0.01082
	(A1 * !A3 * B1 * C1 * !Y)	-0.00631	-0.00641	-0.00638
	(A1 * !A3 * B1 * C1 * !Y)	0.00931	0.00943	0.00933
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00539	-0.00549	-0.00546
	(A1 * !A3 * B1 * !C1 * !Y)	0.01023	0.01036	0.01026
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00475	-0.00486	-0.00483
	(A1 * !A3 * !B1 * C1 * !Y)	0.01086	0.01100	0.01089
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00240	-0.00241	-0.00249
	(A1 * !A3 * !B1 * !C1 * Y)	0.00954	0.00958	0.00935
	(!A1 * A3 * B1 * !Y)	-0.00638	-0.00644	-0.00642
	(!A1 * A3 * B1 * !Y)	0.00935	0.00940	0.00933
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00482	-0.00486	-0.00486
	(!A1 * A3 * !B1 * C1 * !Y)	0.01091	0.01092	0.01089
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00546	-0.00633	-0.00644
	(!A1 * A3 * !B1 * !C1 * Y)	0.01035	0.00955	0.00930
	(!A1 * !A3 * B1 * !Y)	-0.00372	-0.00374	-0.00368
	(!A1 * !A3 * B1 * !Y)	0.00935	0.00943	0.00934
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00243	-0.00243	-0.00212
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01091	0.01099	0.01090
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00345	-0.00347	-0.00350
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00979	0.00987	0.00943

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)**	0.00209	0.00200	0.00198
	(A1 * A2 * B1 * C1 * !Y)	-0.00207	-0.00220	-0.00219
	(A1 * A2 * B1 * !C1 * !Y)	0.00253	0.00223	0.00220
	(A1 * A2 * B1 * !C1 * !Y)	-0.00167	-0.00201	-0.00197
	(A1 * A2 * !B1 * C1 * !Y)	0.00271	0.00235	0.00236
	(A1 * A2 * !B1 * C1 * !Y)	-0.00151	-0.00191	-0.00182
	(A1 * !A2 * !B1 * !C1 * Y)	0.00176	0.00178	0.00177
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00236	-0.00238	-0.00237
	(!A2 * B1 * !Y)	0.00191	0.00194	0.00192
	(!A2 * B1 * !Y)	-0.00220	-0.00222	-0.00221
	(!A2 * !B1 * C1 * !Y)	0.00230	0.00233	0.00231
	(!A2 * !B1 * C1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * A2 * B1 * !Y)	0.00188	0.00189	0.00188
	(!A1 * A2 * B1 * !Y)	-0.00221	-0.00221	-0.00221
	(!A1 * A2 * !B1 * C1 * !Y)	0.00228	0.00228	0.00227
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * !C1 * Y)	0.00173	0.00174	0.00173
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00237	-0.00238	-0.00237
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00173	0.00174	0.00174
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00238	-0.00239	-0.00239

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00360	0.00345	0.00340
	(A1 * A2 * B1 * C1 * !Y)	-0.00418	-0.00441	-0.00440
	(A1 * A2 * B1 * !C1 * !Y)	0.00456	0.00394	0.00386
	(A1 * A2 * B1 * !C1 * !Y)	-0.00333	-0.00400	-0.00395
	(A1 * A2 * !B1 * C1 * !Y)	0.00489	0.00418	0.00418
	(A1 * A2 * !B1 * C1 * !Y)	-0.00304	-0.00381	-0.00364
	(A1 * !A2 * !B1 * !C1 * Y)	0.00327	0.00331	0.00328
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00445	-0.00448	-0.00445
	(!A2 * B1 * !Y)	0.00328	0.00332	0.00328
	(!A2 * B1 * !Y)	-0.00444	-0.00446	-0.00444
	(!A2 * !B1 * C1 * !Y)	0.00407	0.00409	0.00406
	(!A2 * !B1 * C1 * !Y)	-0.00366	-0.00368	-0.00365
	(!A1 * A2 * B1 * !Y)	0.00322	0.00323	0.00322
	(!A1 * A2 * B1 * !Y)	-0.00443	-0.00445	-0.00444
	(!A1 * A2 * !B1 * C1 * !Y)	0.00400	0.00402	0.00400
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00365	-0.00367	-0.00365
	(!A1 * A2 * !B1 * !C1 * Y)	0.00321	0.00324	0.00322
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00446	-0.00448	-0.00445
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00323	0.00325	0.00323
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00448	-0.00450	-0.00448

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00735	0.00699	0.00690
	(A1 * A2 * B1 * C1 * !Y)	-0.00845	-0.00890	-0.00889
	(A1 * A2 * B1 * !C1 * !Y)	0.00923	0.00796	0.00781
	(A1 * A2 * B1 * !C1 * !Y)	-0.00677	-0.00810	-0.00799
	(A1 * A2 * !B1 * C1 * !Y)	0.00986	0.00847	0.00846
	(A1 * A2 * !B1 * C1 * !Y)	-0.00620	-0.00770	-0.00737
	(A1 * !A2 * !B1 * !C1 * Y)	0.00661	0.00667	0.00665
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00898	-0.00902	-0.00900
	(!A2 * B1 * !Y)	0.00661	0.00667	0.00662
	(!A2 * B1 * !Y)	-0.00895	-0.00900	-0.00896
	(!A2 * !B1 * C1 * !Y)	0.00818	0.00822	0.00819
	(!A2 * !B1 * C1 * !Y)	-0.00738	-0.00742	-0.00740
	(!A1 * A2 * B1 * !Y)	0.00648	0.00653	0.00648
	(!A1 * A2 * B1 * !Y)	-0.00896	-0.00900	-0.00896
	(!A1 * A2 * !B1 * C1 * !Y)	0.00805	0.00810	0.00805
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00740	-0.00744	-0.00739
	(!A1 * A2 * !B1 * !C1 * Y)	0.00647	0.00654	0.00649
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00900	-0.00905	-0.00899
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00655	0.00661	0.00655
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00906	-0.00910	-0.00905

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)**	-0.00187	-0.00188	-0.00187
	(A1 * A2 * B1 * C1 * !Y)	0.00229	0.00232	0.00229
	(A1 * A2 * B1 * !C1 * !Y)	-0.00165	-0.00167	-0.00167
	(A1 * A2 * B1 * !C1 * !Y)	0.00253	0.00255	0.00251
	(A1 * A2 * !B1 * C1 * !Y)	-0.00149	-0.00151	-0.00153
	(A1 * A2 * !B1 * C1 * !Y)	0.00270	0.00272	0.00267
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00153	-0.00166	-0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	0.00258	0.00250	0.00248
	(!A2 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * !Y)	0.00229	0.00230	0.00229
	(!A2 * !B1 * C1 * !Y)	-0.00145	-0.00146	-0.00146
	(!A2 * !B1 * C1 * !Y)	0.00268	0.00269	0.00268
	(!A1 * A2 * B1 * !Y)	-0.00173	-0.00182	-0.00183
	(!A1 * A2 * B1 * !Y)	0.00229	0.00232	0.00229
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00143	-0.00144
	(!A1 * A2 * !B1 * C1 * !Y)	0.00268	0.00271	0.00268
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00146	-0.00163	-0.00166
	(!A1 * A2 * !B1 * !C1 * Y)	0.00259	0.00252	0.00247
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00163	-0.00168	-0.00168
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00246	0.00247	0.00246

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00319	-0.00321	-0.00320
	(A1 * A2 * B1 * C1 * !Y)	0.00458	0.00461	0.00460
	(A1 * A2 * B1 * !C1 * !Y)	-0.00275	-0.00277	-0.00279
	(A1 * A2 * B1 * !C1 * !Y)	0.00511	0.00512	0.00506
	(A1 * A2 * !B1 * C1 * !Y)	-0.00245	-0.00247	-0.00251
	(A1 * A2 * !B1 * C1 * !Y)	0.00542	0.00542	0.00535
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00286	-0.00314	-0.00316
	(A1 * !A2 * !B1 * !C1 * Y)	0.00481	0.00464	0.00460
	(!A2 * B1 * !Y)	-0.00311	-0.00316	-0.00315
	(!A2 * B1 * !Y)	0.00459	0.00463	0.00461
	(!A2 * !B1 * C1 * !Y)	-0.00233	-0.00238	-0.00237
	(!A2 * !B1 * C1 * !Y)	0.00537	0.00540	0.00538
	(!A1 * A2 * B1 * !Y)	-0.00289	-0.00306	-0.00311
	(!A1 * A2 * B1 * !Y)	0.00460	0.00458	0.00461
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00211	-0.00229	-0.00234
	(!A1 * A2 * !B1 * C1 * !Y)	0.00537	0.00536	0.00538
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00269	-0.00306	-0.00313
	(!A1 * A2 * !B1 * !C1 * Y)	0.00486	0.00461	0.00459
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00306	-0.00318	-0.00319
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00457	0.00458	0.00456

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00647	-0.00651	-0.00648
	(A1 * A2 * B1 * C1 * !Y)	0.00925	0.00933	0.00929
	(A1 * A2 * B1 * !C1 * !Y)	-0.00561	-0.00560	-0.00569
	(A1 * A2 * B1 * !C1 * !Y)	0.01030	0.01023	0.01018
	(A1 * A2 * !B1 * C1 * !Y)	-0.00500	-0.00503	-0.00512
	(A1 * A2 * !B1 * C1 * !Y)	0.01094	0.01096	0.01078
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00574	-0.00635	-0.00639
	(A1 * !A2 * !B1 * !C1 * Y)	0.00975	0.00937	0.00928
	(!A2 * B1 * !Y)	-0.00629	-0.00639	-0.00637
	(!A2 * B1 * !Y)	0.00926	0.00935	0.00930
	(!A2 * !B1 * C1 * !Y)	-0.00473	-0.00484	-0.00481
	(!A2 * !B1 * C1 * !Y)	0.01081	0.01090	0.01085
	(!A1 * A2 * B1 * !Y)	-0.00586	-0.00620	-0.00630
	(!A1 * A2 * B1 * !Y)	0.00932	0.00928	0.00930
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00430	-0.00465	-0.00474
	(!A1 * A2 * !B1 * C1 * !Y)	0.01087	0.01084	0.01085
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00544	-0.00618	-0.00633
	(!A1 * A2 * !B1 * !C1 * Y)	0.00990	0.00934	0.00926
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00617	-0.00644	-0.00644
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00922	0.00926	0.00921

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)**	0.00225	0.00220	0.00214
	(A1 * A2 * A3 * C1 * !Y)	-0.00130	-0.00137	-0.00136
	(A1 * A2 * A3 * !C1 * !Y)	0.00219	0.00220	0.00218
	(A1 * A2 * A3 * !C1 * !Y)	-0.00075	-0.00075	-0.00073
	(A1 * A2 * !A3 * C1 * !Y)	0.00264	0.00215	0.00229
	(A1 * A2 * !A3 * C1 * !Y)	-0.00148	-0.00198	-0.00179
	(A1 * !A2 * C1 * !Y)	0.00265	0.00215	0.00229
	(A1 * !A2 * C1 * !Y)	-0.00148	-0.00198	-0.00179
	(!A1 * C1 * !Y)	0.00263	0.00216	0.00229
	(!A1 * C1 * !Y)	-0.00150	-0.00198	-0.00179
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00268	0.00257	0.00240
	(A1 * A2 * A3 * C1 * !Y)	-0.00271	-0.00284	-0.00286
	(A1 * A2 * A3 * !C1 * !Y)	0.00264	0.00265	0.00260
	(A1 * A2 * A3 * !C1 * !Y)	-0.00145	-0.00144	-0.00145
	(A1 * A2 * !A3 * C1 * !Y)	0.00370	0.00254	0.00275
	(A1 * A2 * !A3 * C1 * !Y)	-0.00286	-0.00404	-0.00372
	(A1 * !A2 * C1 * !Y)	0.00370	0.00254	0.00275
	(A1 * !A2 * C1 * !Y)	-0.00286	-0.00404	-0.00372
	(!A1 * C1 * !Y)	0.00369	0.00254	0.00275
	(!A1 * C1 * !Y)	-0.00287	-0.00404	-0.00372
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00516	0.00492	0.00463
	(A1 * A2 * A3 * C1 * !Y)	-0.00530	-0.00558	-0.00558
	(A1 * A2 * A3 * !C1 * !Y)	0.00501	0.00500	0.00493
	(A1 * A2 * A3 * !C1 * !Y)	-0.00296	-0.00293	-0.00290
	(A1 * A2 * !A3 * C1 * !Y)	0.00721	0.00481	0.00535
	(A1 * A2 * !A3 * C1 * !Y)	-0.00567	-0.00798	-0.00734
	(A1 * !A2 * C1 * !Y)	0.00718	0.00480	0.00535
	(A1 * !A2 * C1 * !Y)	-0.00570	-0.00798	-0.00734
	(!A1 * C1 * !Y)	0.00713	0.00478	0.00534
	(!A1 * C1 * !Y)	-0.00575	-0.00797	-0.00734

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)	-0.00188	-0.00189	-0.00186
	(A1 * A2 * A3 * C1 * !Y)	0.00158	0.00159	0.00157
	(A1 * A2 * A3 * !C1 * !Y)	-0.00113	-0.00116	-0.00154
	(A1 * A2 * A3 * !C1 * !Y)	0.00181	0.00181	0.00146
	(A1 * A2 * !A3 * C1 * !Y)	-0.00143	-0.00145	-0.00150
	(A1 * A2 * !A3 * C1 * !Y)	0.00267	0.00267	0.00259
	(A1 * !A2 * C1 * !Y)	-0.00143	-0.00145	-0.00150
	(A1 * !A2 * C1 * !Y)	0.00267	0.00267	0.00259
	(!A1 * C1 * !Y)	-0.00142	-0.00145	-0.00150
	(!A1 * C1 * !Y)	0.00266	0.00267	0.00259
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00187	-0.00189	-0.00183
	(A1 * A2 * A3 * C1 * !Y)	0.00329	0.00332	0.00329
	(A1 * A2 * A3 * !C1 * !Y)	-0.00051	-0.00055	-0.00137
	(A1 * A2 * A3 * !C1 * !Y)	0.00363	0.00361	0.00289
	(A1 * A2 * !A3 * C1 * !Y)	-0.00101	-0.00104	-0.00116
	(A1 * A2 * !A3 * C1 * !Y)	0.00548	0.00549	0.00536
	(A1 * !A2 * C1 * !Y)	-0.00101	-0.00104	-0.00116
	(A1 * !A2 * C1 * !Y)	0.00548	0.00549	0.00536
	(!A1 * C1 * !Y)	-0.00101	-0.00104	-0.00115
	(!A1 * C1 * !Y)	0.00549	0.00549	0.00536

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00360	-0.00363	-0.00352
	(A1 * A2 * A3 * C1 * !Y)	0.00643	0.00650	0.00641
	(A1 * A2 * A3 * !C1 * !Y)	-0.00077	-0.00087	-0.00249
	(A1 * A2 * A3 * !C1 * !Y)	0.00718	0.00719	0.00577
	(A1 * A2 * !A3 * C1 * !Y)	-0.00188	-0.00192	-0.00217
	(A1 * A2 * !A3 * C1 * !Y)	0.01087	0.01079	0.01060
	(A1 * !A2 * C1 * !Y)	-0.00188	-0.00195	-0.00217
	(A1 * !A2 * C1 * !Y)	0.01087	0.01091	0.01060
	(!A1 * C1 * !Y)	-0.00188	-0.00195	-0.00217
	(!A1 * C1 * !Y)	0.01088	0.01091	0.01060

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)	0.00198	0.00201	0.00198
	(A1 * A2 * B1 * !Y)	-0.00096	-0.00097	-0.00095
	(A1 * A2 * A3 * !B1 * !Y)	0.00202	0.00203	0.00206
	(A1 * A2 * A3 * !B1 * !Y)	-0.00077	-0.00076	-0.00072
	(A1 * !A2 * B1 * !Y)	0.00199	0.00202	0.00200
	(A1 * !A2 * B1 * !Y)	-0.00096	-0.00096	-0.00093
	(!A1 * B1 * !Y)	0.00199	0.00202	0.00200
	(!A1 * B1 * !Y)	-0.00096	-0.00096	-0.00093
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00223	0.00226	0.00224
	(A1 * A2 * B1 * !Y)	-0.00186	-0.00189	-0.00185
	(A1 * A2 * A3 * !B1 * !Y)	0.00225	0.00227	0.00234
	(A1 * A2 * A3 * !B1 * !Y)	-0.00148	-0.00149	-0.00141
	(A1 * !A2 * B1 * !Y)	0.00225	0.00229	0.00228
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00185	-0.00179
	(!A1 * B1 * !Y)	0.00226	0.00229	0.00228
	(!A1 * B1 * !Y)	-0.00184	-0.00185	-0.00179
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00446	0.00451	0.00446
	(A1 * A2 * B1 * !Y)	-0.00372	-0.00374	-0.00366
	(A1 * A2 * A3 * !B1 * !Y)	0.00450	0.00453	0.00465
	(A1 * A2 * A3 * !B1 * !Y)	-0.00295	-0.00294	-0.00277
	(A1 * !A2 * B1 * !Y)	0.00451	0.00456	0.00454
	(A1 * !A2 * B1 * !Y)	-0.00366	-0.00367	-0.00354
	(!A1 * B1 * !Y)	0.00450	0.00456	0.00454
	(!A1 * B1 * !Y)	-0.00365	-0.00367	-0.00354

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)	-0.00175	-0.00177	-0.00186
	(A1 * A2 * B1 * !Y)	0.00116	0.00117	0.00109
	(A1 * A2 * A3 * !B1 * !Y)	-0.00091	-0.00094	-0.00128
	(A1 * A2 * A3 * !B1 * !Y)	0.00190	0.00190	0.00161
	(A1 * !A2 * B1 * !Y)	-0.00159	-0.00162	-0.00174
	(A1 * !A2 * B1 * !Y)	0.00133	0.00134	0.00121
	(!A1 * B1 * !Y)	-0.00160	-0.00162	-0.00174
	(!A1 * B1 * !Y)	0.00133	0.00134	0.00121
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00175	-0.00178	-0.00203
	(A1 * A2 * B1 * !Y)	0.00229	0.00231	0.00210
	(A1 * A2 * A3 * !B1 * !Y)	0.00000	-0.00005	-0.00084
	(A1 * A2 * A3 * !B1 * !Y)	0.00381	0.00382	0.00318
	(A1 * !A2 * B1 * !Y)	-0.00142	-0.00145	-0.00177
	(A1 * !A2 * B1 * !Y)	0.00267	0.00267	0.00237
	(!A1 * B1 * !Y)	-0.00142	-0.00145	-0.00177
	(!A1 * B1 * !Y)	0.00266	0.00267	0.00237
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00350	-0.00355	-0.00402
	(A1 * A2 * B1 * !Y)	0.00454	0.00457	0.00419
	(A1 * A2 * A3 * !B1 * !Y)	-0.00004	-0.00013	-0.00165
	(A1 * A2 * A3 * !B1 * !Y)	0.00754	0.00754	0.00631
	(A1 * !A2 * B1 * !Y)	-0.00286	-0.00293	-0.00353
	(A1 * !A2 * B1 * !Y)	0.00522	0.00525	0.00469
	(!A1 * B1 * !Y)	-0.00287	-0.00293	-0.00353
	(!A1 * B1 * !Y)	0.00524	0.00525	0.00469

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00275	0.00263	0.00264	0.00271	0.00279	1.31498
sky130_fd_sc_hs__a311o_2	0.00284	0.00284	0.00301	0.00304	0.00289	2.21657
sky130_fd_sc_hs__a311o_4	0.00521	0.00489	0.00517	0.00503	0.00502	3.69624

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	41.94540	102.19600
sky130_fd_sc_hs__a311o_2	0.00000	53.68810	103.77900
sky130_fd_sc_hs__a311o_4	0.00000	107.72300	210.10000

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)	0.10714	0.62967	6.80925
	A2->X (RR)	0.11471	0.61737	6.66022
	A3->X (RR)	0.11941	0.59164	6.38486
	B1->X (RR)	0.06590	0.53438	5.99353
	C1->X (RR)	0.05956	0.51502	5.89860
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.11607	0.57261	6.52080
	A2->X (RR)	0.12406	0.55802	6.35426
	A3->X (RR)	0.12933	0.52877	5.98848
	B1->X (RR)	0.06919	0.47076	5.67902
	C1->X (RR)	0.06316	0.45480	5.59588
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.14087	0.54931	6.50361
	A2->X (RR)	0.15323	0.54080	6.37404
	A3->X (RR)	0.15824	0.48850	5.88140
	B1->X (RR)	0.06833	0.39102	5.37909
	C1->X (RR)	0.06105	0.37015	5.26603

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.16702	0.55803	5.02814
	A2->X (FF)	0.19084	0.59283	5.17128
	A3->X (FF)	0.20757	0.61715	5.33615
	B1->X (FF)	0.18910	0.64720	5.83101
	C1->X (FF)	0.16131	0.64945	5.91310
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.22104	0.57739	4.70758
	A2->X (FF)	0.25326	0.62039	4.87072
	A3->X (FF)	0.27401	0.64753	5.02394
	B1->X (FF)	0.25538	0.68353	5.46887
	C1->X (FF)	0.22303	0.68863	5.55116
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.23376	0.51622	4.22307
	A2->X (FF)	0.26396	0.55606	4.34463
	A3->X (FF)	0.28890	0.59388	4.64684
	B1->X (FF)	0.26925	0.64260	5.06436
	C1->X (FF)	0.22460	0.64258	5.21598

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01718	0.01988	0.09070
	A1	0.00961	0.01231	0.08639
	A2	0.01799	0.02007	0.08911
	A2	0.00958	0.01166	0.08080
	A3	0.01903	0.02061	0.08343
	A3	0.00954	0.01112	0.07421
	B1	0.01194	0.01689	0.09703
	B1	0.00581	0.01075	0.09139
	C1	0.01070	0.01595	0.10067
	C1	0.00551	0.01076	0.09599
sky130_fd_sc_hs__a311o_2	A1	0.02199	0.02437	0.09620
	A1	0.01392	0.01630	0.08842
	A2	0.02313	0.02480	0.09490
	A2	0.01391	0.01557	0.08622
	A3	0.02449	0.02536	0.07620
	A3	0.01388	0.01477	0.06657
	B1	0.01636	0.02090	0.09567
	B1	0.00944	0.01399	0.08891
	C1	0.01476	0.01970	0.09869
	C1	0.00901	0.01399	0.09324

sky130_fd_sc_hs__a311o_4	**A1**	0.04510	0.04881	0.18778
	A1	0.03067	0.03441	0.17395
	A2	0.04694	0.04926	0.18417
	A2	0.03050	0.03285	0.16871
	A3	0.04941	0.05078	0.17461
	A3	0.03062	0.03200	0.15576
	B1	0.03126	0.03972	0.18369
	B1	0.01955	0.02802	0.17259
	C1	0.02915	0.03887	0.18415
	C1	0.01739	0.02746	0.18019

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00563	0.00752	0.07023
	A1	0.01320	0.01506	0.07760
	A2	0.00667	0.00825	0.07173
	A2	0.01509	0.01665	0.07923
	A3	0.00722	0.00843	0.07284
	A3	0.01666	0.01788	0.08183
	B1	0.00515	0.00909	0.09052
	B1	0.01130	0.01522	0.09645
	C1	0.00491	0.01019	0.09613
	C1	0.01012	0.01538	0.10133

sky130_fd_sc_hs__a311o_2	**A1**	0.01321	0.01227	0.07583
	A1	0.02130	0.02032	0.08347
	A2	0.01484	0.01309	0.07754
	A2	0.02406	0.02230	0.08608
	A3	0.01545	0.01267	0.07565
	A3	0.02599	0.02321	0.08476
	B1	0.01153	0.01340	0.09282
	B1	0.01843	0.02014	0.09820
	C1	0.01144	0.01449	0.09932
	C1	0.01720	0.02024	0.10317
sky130_fd_sc_hs__a311o_4	**A1**	0.02765	0.02412	0.15268
	A1	0.04211	0.03853	0.16525
	A2	0.03165	0.02676	0.15548
	A2	0.04807	0.04314	0.17026
	A3	0.03327	0.02701	0.16023
	A3	0.05195	0.04562	0.17678
	B1	0.02441	0.02682	0.16206
	B1	0.03612	0.03780	0.17368
	C1	0.02429	0.02888	0.18189
	C1	0.04015	0.04206	0.18735

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)**	0.00183	0.00173	0.00171
	(A2 * A3 * B1 * C1 * X)	-0.00184	-0.00196	-0.00196
	(A2 * A3 * B1 * !C1 * X)	0.00231	0.00200	0.00200
	(A2 * A3 * B1 * !C1 * X)	-0.00141	-0.00174	-0.00167
	(A2 * A3 * !B1 * C1 * X)	0.00252	0.00216	0.00224
	(A2 * A3 * !B1 * C1 * X)	-0.00123	-0.00162	-0.00145
	(A2 * !A3 * B1 * C1 * X)	0.00161	0.00163	0.00162
	(A2 * !A3 * B1 * C1 * X)	-0.00197	-0.00198	-0.00197
	(A2 * !A3 * B1 * !C1 * X)	0.00191	0.00193	0.00192
	(A2 * !A3 * B1 * !C1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * !B1 * C1 * X)	0.00215	0.00217	0.00216
	(A2 * !A3 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * !B1 * !C1 * !X)	0.00112	0.00112	0.00107
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00178	-0.00179	-0.00188
	(!A2 * B1 * C1 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * C1 * X)	-0.00197	-0.00199	-0.00197
	(!A2 * B1 * !C1 * X)	0.00196	0.00197	0.00196
	(!A2 * B1 * !C1 * X)	-0.00167	-0.00168	-0.00167
	(!A2 * !B1 * C1 * X)	0.00220	0.00221	0.00220
	(!A2 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(!A2 * !B1 * !C1 * !X)	0.00111	0.00111	0.00109
	(!A2 * !B1 * !C1 * !X)	-0.00184	-0.00185	-0.00189

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00193	0.00184	0.00181
	(A2 * A3 * B1 * C1 * X)	-0.00181	-0.00194	-0.00193
	(A2 * A3 * B1 * !C1 * X)	0.00241	0.00210	0.00211
	(A2 * A3 * B1 * !C1 * X)	-0.00138	-0.00172	-0.00164
	(A2 * A3 * !B1 * C1 * X)	0.00263	0.00225	0.00234
	(A2 * A3 * !B1 * C1 * X)	-0.00119	-0.00160	-0.00142
	(A2 * !A3 * B1 * C1 * X)	0.00172	0.00172	0.00172
	(A2 * !A3 * B1 * C1 * X)	-0.00194	-0.00195	-0.00195
	(A2 * !A3 * B1 * !C1 * X)	0.00202	0.00203	0.00202
	(A2 * !A3 * B1 * !C1 * X)	-0.00164	-0.00165	-0.00165
	(A2 * !A3 * !B1 * C1 * X)	0.00226	0.00227	0.00226
	(A2 * !A3 * !B1 * C1 * X)	-0.00140	-0.00141	-0.00140
	(A2 * !A3 * !B1 * !C1 * !X)	0.00143	0.00143	0.00138
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00142	-0.00143	-0.00154
	(!A2 * B1 * C1 * X)	0.00176	0.00178	0.00176
	(!A2 * B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A2 * B1 * !C1 * X)	0.00206	0.00208	0.00206
	(!A2 * B1 * !C1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00230	0.00232	0.00230
	(!A2 * !B1 * C1 * X)	-0.00140	-0.00142	-0.00140
	(!A2 * !B1 * !C1 * !X)	0.00144	0.00144	0.00141
	(!A2 * !B1 * !C1 * !X)	-0.00149	-0.00149	-0.00155

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00337	0.00320	0.00315
	(A2 * A3 * B1 * C1 * X)	-0.00379	-0.00403	-0.00402
	(A2 * A3 * B1 * !C1 * X)	0.00441	0.00377	0.00374
	(A2 * A3 * B1 * !C1 * X)	-0.00285	-0.00355	-0.00345
	(A2 * A3 * !B1 * C1 * X)	0.00481	0.00409	0.00422
	(A2 * A3 * !B1 * C1 * X)	-0.00252	-0.00330	-0.00300
	(A2 * !A3 * B1 * C1 * X)	0.00297	0.00299	0.00298
	(A2 * !A3 * B1 * C1 * X)	-0.00406	-0.00408	-0.00406
	(A2 * !A3 * B1 * !C1 * X)	0.00357	0.00358	0.00357
	(A2 * !A3 * B1 * !C1 * X)	-0.00345	-0.00348	-0.00346
	(A2 * !A3 * !B1 * C1 * X)	0.00404	0.00406	0.00405
	(A2 * !A3 * !B1 * C1 * X)	-0.00298	-0.00300	-0.00298
	(A2 * !A3 * !B1 * !C1 * !X)	0.00285	0.00286	0.00272
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00274	-0.00278	-0.00303
	(!A2 * B1 * C1 * X)	0.00303	0.00306	0.00304
	(!A2 * B1 * C1 * X)	-0.00405	-0.00408	-0.00406
	(!A2 * B1 * !C1 * X)	0.00365	0.00367	0.00365
	(!A2 * B1 * !C1 * X)	-0.00345	-0.00348	-0.00346
	(!A2 * !B1 * C1 * X)	0.00412	0.00414	0.00413
	(!A2 * !B1 * C1 * X)	-0.00297	-0.00300	-0.00298
	(!A2 * !B1 * !C1 * !X)	0.00292	0.00292	0.00282
	(!A2 * !B1 * !C1 * !X)	-0.00287	-0.00289	-0.00304

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)**	-0.00156	-0.00157	-0.00156
	(A2 * A3 * B1 * C1 * X)	0.00209	0.00211	0.00210
	(A2 * A3 * B1 * !C1 * X)	-0.00129	-0.00130	-0.00132
	(A2 * A3 * B1 * !C1 * X)	0.00242	0.00242	0.00238
	(A2 * A3 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00111
	(A2 * A3 * !B1 * C1 * X)	0.00268	0.00267	0.00261
	(A2 * !A3 * B1 * C1 * X)	-0.00144	-0.00152	-0.00153
	(A2 * !A3 * B1 * C1 * X)	0.00209	0.00211	0.00210
	(A2 * !A3 * B1 * !C1 * X)	-0.00114	-0.00123	-0.00123
	(A2 * !A3 * B1 * !C1 * X)	0.00239	0.00241	0.00240
	(A2 * !A3 * !B1 * C1 * X)	-0.00089	-0.00098	-0.00099
	(A2 * !A3 * !B1 * C1 * X)	0.00263	0.00265	0.00264
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00012	-0.00011	-0.00011
	(A2 * !A3 * !B1 * !C1 * !X)	0.00285	0.00285	0.00284
	(!A2 * B1 * C1 * X)	-0.00154	-0.00155	-0.00155
	(!A2 * B1 * C1 * X)	0.00209	0.00211	0.00210
	(!A2 * B1 * !C1 * X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * !C1 * X)	0.00239	0.00240	0.00240
	(!A2 * !B1 * C1 * X)	-0.00099	-0.00101	-0.00101
	(!A2 * !B1 * C1 * X)	0.00263	0.00265	0.00264
	(!A2 * !B1 * !C1 * !X)	-0.00013	-0.00013	-0.00013
	(!A2 * !B1 * !C1 * !X)	0.00283	0.00285	0.00284

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00164	-0.00165	-0.00164
	(A2 * A3 * B1 * C1 * X)	0.00210	0.00212	0.00210
	(A2 * A3 * B1 * !C1 * X)	-0.00136	-0.00137	-0.00140
	(A2 * A3 * B1 * !C1 * X)	0.00241	0.00241	0.00238
	(A2 * A3 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00119
	(A2 * A3 * !B1 * C1 * X)	0.00268	0.00267	0.00261
	(A2 * !A3 * B1 * C1 * X)	-0.00149	-0.00159	-0.00160
	(A2 * !A3 * B1 * C1 * X)	0.00209	0.00212	0.00210
	(A2 * !A3 * B1 * !C1 * X)	-0.00119	-0.00129	-0.00130
	(A2 * !A3 * B1 * !C1 * X)	0.00239	0.00240	0.00240
	(A2 * !A3 * !B1 * C1 * X)	-0.00095	-0.00105	-0.00106
	(A2 * !A3 * !B1 * C1 * X)	0.00263	0.00265	0.00264
	(A2 * !A3 * !B1 * !C1 * !X)	0.00042	0.00042	0.00042
	(A2 * !A3 * !B1 * !C1 * !X)	0.00333	0.00335	0.00334
	(!A2 * B1 * C1 * X)	-0.00160	-0.00163	-0.00162
	(!A2 * B1 * C1 * X)	0.00208	0.00212	0.00210
	(!A2 * B1 * !C1 * X)	-0.00131	-0.00133	-0.00132
	(!A2 * B1 * !C1 * X)	0.00240	0.00241	0.00240
	(!A2 * !B1 * C1 * X)	-0.00107	-0.00109	-0.00108
	(!A2 * !B1 * C1 * X)	0.00264	0.00265	0.00264
	(!A2 * !B1 * !C1 * !X)	0.00039	0.00038	0.00040
	(!A2 * !B1 * !C1 * !X)	0.00334	0.00338	0.00334

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00280	-0.00282	-0.00281
	(A2 * A3 * B1 * C1 * X)	0.00436	0.00439	0.00437
	(A2 * A3 * B1 * !C1 * X)	-0.00224	-0.00227	-0.00232
	(A2 * A3 * B1 * !C1 * X)	0.00499	0.00502	0.00492
	(A2 * A3 * !B1 * C1 * X)	-0.00176	-0.00180	-0.00189
	(A2 * A3 * !B1 * C1 * X)	0.00551	0.00553	0.00538
	(A2 * !A3 * B1 * C1 * X)	-0.00252	-0.00272	-0.00274
	(A2 * !A3 * B1 * C1 * X)	0.00436	0.00439	0.00436
	(A2 * !A3 * B1 * !C1 * X)	-0.00192	-0.00212	-0.00214
	(A2 * !A3 * B1 * !C1 * X)	0.00495	0.00499	0.00496
	(A2 * !A3 * !B1 * C1 * X)	-0.00144	-0.00165	-0.00166
	(A2 * !A3 * !B1 * C1 * X)	0.00543	0.00547	0.00544
	(A2 * !A3 * !B1 * !C1 * !X)	0.00093	0.00090	0.00092
	(A2 * !A3 * !B1 * !C1 * !X)	0.00665	0.00674	0.00667
	(!A2 * B1 * C1 * X)	-0.00274	-0.00278	-0.00278
	(!A2 * B1 * C1 * X)	0.00437	0.00437	0.00436
	(!A2 * B1 * !C1 * X)	-0.00213	-0.00219	-0.00218
	(!A2 * B1 * !C1 * X)	0.00496	0.00499	0.00496
	(!A2 * !B1 * C1 * X)	-0.00166	-0.00171	-0.00170
	(!A2 * !B1 * C1 * X)	0.00544	0.00547	0.00544
	(!A2 * !B1 * !C1 * !X)	0.00083	0.00081	0.00083
	(!A2 * !B1 * !C1 * !X)	0.00665	0.00674	0.00667

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)**	0.00163	0.00152	0.00150
	(A1 * A3 * B1 * C1 * X)	-0.00189	-0.00201	-0.00201
	(A1 * A3 * B1 * !C1 * X)	0.00212	0.00179	0.00179
	(A1 * A3 * B1 * !C1 * X)	-0.00145	-0.00178	-0.00172
	(A1 * A3 * !B1 * C1 * X)	0.00232	0.00195	0.00203
	(A1 * A3 * !B1 * C1 * X)	-0.00125	-0.00167	-0.00150
	(A1 * !A3 * B1 * C1 * X)	0.00144	0.00146	0.00145
	(A1 * !A3 * B1 * C1 * X)	-0.00202	-0.00204	-0.00203
	(A1 * !A3 * B1 * !C1 * X)	0.00175	0.00176	0.00175
	(A1 * !A3 * B1 * !C1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !A3 * !B1 * C1 * X)	0.00199	0.00200	0.00199
	(A1 * !A3 * !B1 * C1 * X)	-0.00148	-0.00150	-0.00148
	(A1 * !A3 * !B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00169
	(!A1 * A3 * B1 * X)	0.00145	0.00146	0.00145
	(!A1 * A3 * B1 * X)	-0.00202	-0.00204	-0.00203
	(!A1 * A3 * !B1 * C1 * X)	0.00199	0.00200	0.00199
	(!A1 * A3 * !B1 * C1 * X)	-0.00148	-0.00149	-0.00148
	(!A1 * A3 * !B1 * !C1 * !X)	0.00180	0.00181	0.00181
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A3 * B1 * X)	0.00086	0.00085	0.00085
	(!A1 * !A3 * B1 * X)	-0.00203	-0.00203	-0.00203
	(!A1 * !A3 * !B1 * C1 * X)	0.00140	0.00140	0.00139
	(!A1 * !A3 * !B1 * C1 * X)	-0.00149	-0.00149	-0.00148
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00116	0.00116	0.00115
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00170

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00192	0.00183	0.00180
	(A1 * A3 * B1 * C1 * X)	-0.00181	-0.00193	-0.00193
	(A1 * A3 * B1 * !C1 * X)	0.00239	0.00209	0.00210
	(A1 * A3 * B1 * !C1 * X)	-0.00137	-0.00172	-0.00164
	(A1 * A3 * !B1 * C1 * X)	0.00260	0.00224	0.00233
	(A1 * A3 * !B1 * C1 * X)	-0.00120	-0.00160	-0.00143
	(A1 * !A3 * B1 * C1 * X)	0.00174	0.00176	0.00175
	(A1 * !A3 * B1 * C1 * X)	-0.00194	-0.00196	-0.00195
	(A1 * !A3 * B1 * !C1 * X)	0.00204	0.00206	0.00205
	(A1 * !A3 * B1 * !C1 * X)	-0.00164	-0.00166	-0.00165
	(A1 * !A3 * !B1 * C1 * X)	0.00228	0.00230	0.00229
	(A1 * !A3 * !B1 * C1 * X)	-0.00140	-0.00142	-0.00141
	(A1 * !A3 * !B1 * !C1 * !X)	0.00152	0.00152	0.00152
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00124
	(!A1 * A3 * B1 * X)	0.00175	0.00176	0.00175
	(!A1 * A3 * B1 * X)	-0.00195	-0.00195	-0.00195
	(!A1 * A3 * !B1 * C1 * X)	0.00229	0.00231	0.00229
	(!A1 * A3 * !B1 * C1 * X)	-0.00140	-0.00142	-0.00140
	(!A1 * A3 * !B1 * !C1 * !X)	0.00247	0.00250	0.00248
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * B1 * X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * B1 * X)	-0.00194	-0.00195	-0.00195
	(!A1 * !A3 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A1 * !A3 * !B1 * C1 * X)	-0.00140	-0.00141	-0.00141
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00124	-0.00127	-0.00125

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00321	0.00306	0.00303
	(A1 * A3 * B1 * C1 * X)	-0.00376	-0.00398	-0.00397
	(A1 * A3 * B1 * !C1 * X)	0.00418	0.00361	0.00362
	(A1 * A3 * B1 * !C1 * X)	-0.00289	-0.00352	-0.00339
	(A1 * A3 * !B1 * C1 * X)	0.00455	0.00392	0.00408
	(A1 * A3 * !B1 * C1 * X)	-0.00258	-0.00328	-0.00296
	(A1 * !A3 * B1 * C1 * X)	0.00292	0.00295	0.00292
	(A1 * !A3 * B1 * C1 * X)	-0.00401	-0.00403	-0.00400
	(A1 * !A3 * B1 * !C1 * X)	0.00352	0.00355	0.00352
	(A1 * !A3 * B1 * !C1 * X)	-0.00340	-0.00343	-0.00340
	(A1 * !A3 * !B1 * C1 * X)	0.00400	0.00402	0.00400
	(A1 * !A3 * !B1 * C1 * X)	-0.00291	-0.00294	-0.00292
	(A1 * !A3 * !B1 * !C1 * !X)	0.00300	0.00302	0.00303
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00235	-0.00238	-0.00233
	(!A1 * A3 * B1 * X)	0.00290	0.00294	0.00292
	(!A1 * A3 * B1 * X)	-0.00398	-0.00402	-0.00400
	(!A1 * A3 * !B1 * C1 * X)	0.00399	0.00402	0.00400
	(!A1 * A3 * !B1 * C1 * X)	-0.00290	-0.00294	-0.00292
	(!A1 * A3 * !B1 * !C1 * !X)	0.00461	0.00464	0.00464
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00230	-0.00233	-0.00231
	(!A1 * !A3 * B1 * X)	0.00183	0.00184	0.00183
	(!A1 * !A3 * B1 * X)	-0.00400	-0.00401	-0.00400
	(!A1 * !A3 * !B1 * C1 * X)	0.00292	0.00292	0.00291
	(!A1 * !A3 * !B1 * C1 * X)	-0.00292	-0.00293	-0.00292
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00342	0.00342	0.00341
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00237	-0.00238	-0.00237

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)**	-0.00135	-0.00135	-0.00135
	(A1 * A3 * B1 * C1 * X)	0.00216	0.00216	0.00215
	(A1 * A3 * B1 * !C1 * X)	-0.00107	-0.00108	-0.00111
	(A1 * A3 * B1 * !C1 * X)	0.00247	0.00247	0.00243
	(A1 * A3 * !B1 * C1 * X)	-0.00082	-0.00084	-0.00090
	(A1 * A3 * !B1 * C1 * X)	0.00273	0.00273	0.00266
	(A1 * !A3 * B1 * C1 * X)	-0.00133	-0.00134	-0.00134
	(A1 * !A3 * B1 * C1 * X)	0.00216	0.00216	0.00215
	(A1 * !A3 * B1 * !C1 * X)	-0.00103	-0.00104	-0.00104
	(A1 * !A3 * B1 * !C1 * X)	0.00245	0.00246	0.00245
	(A1 * !A3 * !B1 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !A3 * !B1 * C1 * X)	0.00269	0.00270	0.00269
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00001	-0.00001	-0.00002
	(A1 * !A3 * !B1 * !C1 * !X)	0.00270	0.00271	0.00266
	(!A1 * A3 * B1 * X)	-0.00133	-0.00134	-0.00134
	(!A1 * A3 * B1 * X)	0.00216	0.00216	0.00215
	(!A1 * A3 * !B1 * C1 * X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * !B1 * C1 * X)	0.00270	0.00270	0.00269
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00063	-0.00080	-0.00082
	(!A1 * A3 * !B1 * !C1 * !X)	0.00288	0.00271	0.00266
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00078
	(!A1 * !A3 * B1 * X)	0.00214	0.00217	0.00215
	(!A1 * !A3 * !B1 * C1 * X)	-0.00030	-0.00030	-0.00024
	(!A1 * !A3 * !B1 * C1 * X)	0.00268	0.00271	0.00269
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00022	-0.00023	-0.00024
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00275	0.00277	0.00268

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00163	-0.00163	-0.00163
	(A1 * A3 * B1 * C1 * X)	0.00210	0.00210	0.00210
	(A1 * A3 * B1 * !C1 * X)	-0.00135	-0.00136	-0.00139
	(A1 * A3 * B1 * !C1 * X)	0.00241	0.00241	0.00238
	(A1 * A3 * !B1 * C1 * X)	-0.00110	-0.00111	-0.00117
	(A1 * A3 * !B1 * C1 * X)	0.00268	0.00267	0.00261
	(A1 * !A3 * B1 * C1 * X)	-0.00159	-0.00161	-0.00161
	(A1 * !A3 * B1 * C1 * X)	0.00209	0.00210	0.00210
	(A1 * !A3 * B1 * !C1 * X)	-0.00129	-0.00131	-0.00131
	(A1 * !A3 * B1 * !C1 * X)	0.00238	0.00241	0.00240
	(A1 * !A3 * !B1 * C1 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A3 * !B1 * C1 * X)	0.00265	0.00264	0.00264
	(A1 * !A3 * !B1 * !C1 * !X)	0.00032	0.00031	0.00030
	(A1 * !A3 * !B1 * !C1 * !X)	0.00310	0.00312	0.00306
	(!A1 * A3 * B1 * X)	-0.00159	-0.00162	-0.00161
	(!A1 * A3 * B1 * X)	0.00209	0.00211	0.00210
	(!A1 * A3 * !B1 * C1 * X)	-0.00105	-0.00108	-0.00107
	(!A1 * A3 * !B1 * C1 * X)	0.00263	0.00264	0.00264
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00044	-0.00064	-0.00066
	(!A1 * A3 * !B1 * !C1 * !X)	0.00326	0.00309	0.00305
	(!A1 * !A3 * B1 * X)	-0.00102	-0.00102	-0.00095
	(!A1 * !A3 * B1 * X)	0.00210	0.00212	0.00210
	(!A1 * !A3 * !B1 * C1 * X)	-0.00048	-0.00048	-0.00041
	(!A1 * !A3 * !B1 * C1 * X)	0.00264	0.00266	0.00264
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00005	0.00005	0.00004
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00315	0.00317	0.00307

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00268	-0.00269	-0.00269
	(A1 * A3 * B1 * C1 * X)	0.00429	0.00432	0.00431
	(A1 * A3 * B1 * !C1 * X)	-0.00213	-0.00214	-0.00219
	(A1 * A3 * B1 * !C1 * X)	0.00494	0.00495	0.00486
	(A1 * A3 * !B1 * C1 * X)	-0.00164	-0.00167	-0.00177
	(A1 * A3 * !B1 * C1 * X)	0.00545	0.00547	0.00533
	(A1 * !A3 * B1 * C1 * X)	-0.00262	-0.00265	-0.00265
	(A1 * !A3 * B1 * C1 * X)	0.00429	0.00432	0.00430
	(A1 * !A3 * B1 * !C1 * X)	-0.00202	-0.00205	-0.00205
	(A1 * !A3 * B1 * !C1 * X)	0.00489	0.00492	0.00490
	(A1 * !A3 * !B1 * C1 * X)	-0.00155	-0.00158	-0.00158
	(A1 * !A3 * !B1 * C1 * X)	0.00537	0.00539	0.00538
	(A1 * !A3 * !B1 * !C1 * !X)	0.00072	0.00070	0.00065
	(A1 * !A3 * !B1 * !C1 * !X)	0.00613	0.00621	0.00603
	(!A1 * A3 * B1 * X)	-0.00261	-0.00266	-0.00266
	(!A1 * A3 * B1 * X)	0.00429	0.00433	0.00430
	(!A1 * A3 * !B1 * C1 * X)	-0.00153	-0.00159	-0.00158
	(!A1 * A3 * !B1 * C1 * X)	0.00537	0.00541	0.00538
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00042	-0.00090	-0.00096
	(!A1 * A3 * !B1 * !C1 * !X)	0.00653	0.00612	0.00600
	(!A1 * !A3 * B1 * X)	-0.00177	-0.00178	-0.00165
	(!A1 * !A3 * B1 * X)	0.00428	0.00435	0.00430
	(!A1 * !A3 * !B1 * C1 * X)	-0.00069	-0.00071	-0.00058
	(!A1 * !A3 * !B1 * C1 * X)	0.00537	0.00543	0.00538
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00019	0.00018	0.00013
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00621	0.00627	0.00605

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)**	0.00176	0.00165	0.00163
	(A1 * A2 * B1 * C1 * X)	-0.00186	-0.00197	-0.00197
	(A1 * A2 * B1 * !C1 * X)	0.00222	0.00192	0.00193
	(A1 * A2 * B1 * !C1 * X)	-0.00144	-0.00176	-0.00168
	(A1 * A2 * !B1 * C1 * X)	0.00242	0.00207	0.00217
	(A1 * A2 * !B1 * C1 * X)	-0.00126	-0.00164	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00184	0.00183
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00175	-0.00177	-0.00175
	(!A2 * B1 * X)	0.00159	0.00161	0.00159
	(!A2 * B1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * !B1 * C1 * X)	0.00213	0.00215	0.00213
	(!A2 * !B1 * C1 * X)	-0.00144	-0.00146	-0.00145
	(!A1 * A2 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * B1 * X)	-0.00199	-0.00199	-0.00199
	(!A1 * A2 * !B1 * C1 * X)	0.00209	0.00210	0.00209
	(!A1 * A2 * !B1 * C1 * X)	-0.00145	-0.00145	-0.00145
	(!A1 * A2 * !B1 * !C1 * !X)	0.00179	0.00180	0.00180
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00176	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00180	0.00182	0.00180
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00179	-0.00177

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00215	0.00206	0.00204
	(A1 * A2 * B1 * C1 * X)	-0.00180	-0.00192	-0.00192
	(A1 * A2 * B1 * !C1 * X)	0.00262	0.00232	0.00233
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00170	-0.00163
	(A1 * A2 * !B1 * C1 * X)	0.00283	0.00247	0.00257
	(A1 * A2 * !B1 * C1 * X)	-0.00119	-0.00159	-0.00141
	(A1 * !A2 * !B1 * !C1 * !X)	0.00249	0.00251	0.00250
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00142	-0.00144	-0.00143
	(!A2 * B1 * X)	0.00197	0.00200	0.00198
	(!A2 * B1 * X)	-0.00193	-0.00195	-0.00193
	(!A2 * !B1 * C1 * X)	0.00252	0.00255	0.00253
	(!A2 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00139
	(!A1 * A2 * B1 * X)	0.00195	0.00196	0.00195
	(!A1 * A2 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * A2 * !B1 * C1 * X)	0.00249	0.00250	0.00249
	(!A1 * A2 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00139
	(!A1 * A2 * !B1 * !C1 * !X)	0.00246	0.00247	0.00246
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00246	0.00249	0.00247
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00143	-0.00146	-0.00145

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00364	0.00347	0.00343
	(A1 * A2 * B1 * C1 * X)	-0.00366	-0.00387	-0.00386
	(A1 * A2 * B1 * !C1 * X)	0.00464	0.00403	0.00402
	(A1 * A2 * B1 * !C1 * X)	-0.00276	-0.00340	-0.00329
	(A1 * A2 * !B1 * C1 * X)	0.00500	0.00434	0.00449
	(A1 * A2 * !B1 * C1 * X)	-0.00243	-0.00317	-0.00285
	(A1 * !A2 * !B1 * !C1 * !X)	0.00466	0.00472	0.00468
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00253	-0.00258	-0.00255
	(!A2 * B1 * X)	0.00332	0.00335	0.00332
	(!A2 * B1 * X)	-0.00390	-0.00391	-0.00389
	(!A2 * !B1 * C1 * X)	0.00441	0.00442	0.00440
	(!A2 * !B1 * C1 * X)	-0.00281	-0.00282	-0.00281
	(!A1 * A2 * B1 * X)	0.00326	0.00329	0.00327
	(!A1 * A2 * B1 * X)	-0.00389	-0.00391	-0.00389
	(!A1 * A2 * !B1 * C1 * X)	0.00435	0.00438	0.00435
	(!A1 * A2 * !B1 * C1 * X)	-0.00281	-0.00283	-0.00281
	(!A1 * A2 * !B1 * !C1 * !X)	0.00463	0.00466	0.00464
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00255	-0.00257	-0.00254
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00462	0.00465	0.00463
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00257	-0.00260	-0.00258

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)**	-0.00149	-0.00149	-0.00149
	(A1 * A2 * B1 * C1 * X)	0.00212	0.00213	0.00212
	(A1 * A2 * B1 * !C1 * X)	-0.00121	-0.00123	-0.00125
	(A1 * A2 * B1 * !C1 * X)	0.00243	0.00244	0.00239
	(A1 * A2 * !B1 * C1 * X)	-0.00096	-0.00097	-0.00104
	(A1 * A2 * !B1 * C1 * X)	0.00269	0.00268	0.00263
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00072	-0.00083	-0.00085
	(A1 * !A2 * !B1 * !C1 * !X)	0.00287	0.00277	0.00274
	(!A2 * B1 * X)	-0.00147	-0.00148	-0.00147
	(!A2 * B1 * X)	0.00212	0.00212	0.00211
	(!A2 * !B1 * C1 * X)	-0.00093	-0.00094	-0.00093
	(!A2 * !B1 * C1 * X)	0.00266	0.00268	0.00265
	(!A1 * A2 * B1 * X)	-0.00137	-0.00145	-0.00146
	(!A1 * A2 * B1 * X)	0.00211	0.00214	0.00211
	(!A1 * A2 * !B1 * C1 * X)	-0.00083	-0.00091	-0.00092
	(!A1 * A2 * !B1 * C1 * X)	0.00265	0.00268	0.00265
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00065	-0.00081	-0.00084
	(!A1 * A2 * !B1 * !C1 * !X)	0.00287	0.00279	0.00274
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00082	-0.00086	-0.00086
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00274	0.00273	0.00272

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00186	-0.00188	-0.00187
	(A1 * A2 * B1 * C1 * X)	0.00207	0.00211	0.00209
	(A1 * A2 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00163
	(A1 * A2 * B1 * !C1 * X)	0.00240	0.00241	0.00236
	(A1 * A2 * !B1 * C1 * X)	-0.00134	-0.00136	-0.00141
	(A1 * A2 * !B1 * C1 * X)	0.00266	0.00268	0.00260
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00054	-0.00065	-0.00067
	(A1 * !A2 * !B1 * !C1 * !X)	0.00336	0.00328	0.00326
	(!A2 * B1 * X)	-0.00183	-0.00186	-0.00184
	(!A2 * B1 * X)	0.00208	0.00211	0.00209
	(!A2 * !B1 * C1 * X)	-0.00129	-0.00132	-0.00130
	(!A2 * !B1 * C1 * X)	0.00262	0.00265	0.00262
	(!A1 * A2 * B1 * X)	-0.00172	-0.00182	-0.00183
	(!A1 * A2 * B1 * X)	0.00208	0.00211	0.00209
	(!A1 * A2 * !B1 * C1 * X)	-0.00118	-0.00128	-0.00129
	(!A1 * A2 * !B1 * C1 * X)	0.00262	0.00265	0.00262
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00046	-0.00064	-0.00066
	(!A1 * A2 * !B1 * !C1 * !X)	0.00337	0.00330	0.00325
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00063	-0.00068	-0.00069
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00324	0.00325	0.00324

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00308	-0.00310	-0.00309
	(A1 * A2 * B1 * C1 * X)	0.00418	0.00422	0.00420
	(A1 * A2 * B1 * !C1 * X)	-0.00253	-0.00255	-0.00259
	(A1 * A2 * B1 * !C1 * X)	0.00483	0.00484	0.00475
	(A1 * A2 * !B1 * C1 * X)	-0.00204	-0.00207	-0.00217
	(A1 * A2 * !B1 * C1 * X)	0.00535	0.00536	0.00522
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00098	-0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00643	0.00628	0.00624
	(!A2 * B1 * X)	-0.00302	-0.00305	-0.00305
	(!A2 * B1 * X)	0.00418	0.00420	0.00419
	(!A2 * !B1 * C1 * X)	-0.00194	-0.00199	-0.00198
	(!A2 * !B1 * C1 * X)	0.00526	0.00532	0.00527
	(!A1 * A2 * B1 * X)	-0.00286	-0.00301	-0.00303
	(!A1 * A2 * B1 * X)	0.00420	0.00424	0.00419
	(!A1 * A2 * !B1 * C1 * X)	-0.00178	-0.00193	-0.00195
	(!A1 * A2 * !B1 * C1 * X)	0.00526	0.00532	0.00527
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00066	-0.00095	-0.00100
	(!A1 * A2 * !B1 * !C1 * !X)	0.00645	0.00632	0.00622
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00103	-0.00104
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00620	0.00621	0.00619

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)**	0.00199	0.00192	0.00191
	(A1 * A2 * A3 * C1 * X)	-0.00113	-0.00121	-0.00116
	(A1 * A2 * A3 * !C1 * X)	0.00192	0.00193	0.00194
	(A1 * A2 * A3 * !C1 * X)	-0.00065	-0.00065	-0.00061
	(A1 * A2 * !A3 * C1 * X)	0.00234	0.00191	0.00219
	(A1 * A2 * !A3 * C1 * X)	-0.00130	-0.00174	-0.00143
	(A1 * !A2 * C1 * X)	0.00234	0.00191	0.00219
	(A1 * !A2 * C1 * X)	-0.00130	-0.00174	-0.00143
	(!A1 * C1 * X)	0.00233	0.00191	0.00219
	(!A1 * C1 * X)	-0.00131	-0.00174	-0.00143
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00228	0.00223	0.00221
	(A1 * A2 * A3 * C1 * X)	-0.00111	-0.00120	-0.00115
	(A1 * A2 * A3 * !C1 * X)	0.00223	0.00225	0.00225
	(A1 * A2 * A3 * !C1 * X)	-0.00064	-0.00065	-0.00060
	(A1 * A2 * !A3 * C1 * X)	0.00265	0.00221	0.00247
	(A1 * A2 * !A3 * C1 * X)	-0.00128	-0.00173	-0.00141
	(A1 * !A2 * C1 * X)	0.00265	0.00221	0.00247
	(A1 * !A2 * C1 * X)	-0.00128	-0.00173	-0.00141
	(!A1 * C1 * X)	0.00263	0.00222	0.00247
	(!A1 * C1 * X)	-0.00130	-0.00172	-0.00141
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00385	0.00375	0.00364
	(A1 * A2 * A3 * C1 * X)	-0.00241	-0.00257	-0.00254
	(A1 * A2 * A3 * !C1 * X)	0.00379	0.00382	0.00381
	(A1 * A2 * A3 * !C1 * X)	-0.00128	-0.00130	-0.00125
	(A1 * A2 * !A3 * C1 * X)	0.00482	0.00373	0.00420
	(A1 * A2 * !A3 * C1 * X)	-0.00243	-0.00349	-0.00296
	(A1 * !A2 * C1 * X)	0.00482	0.00373	0.00420
	(A1 * !A2 * C1 * X)	-0.00243	-0.00349	-0.00296
	(!A1 * C1 * X)	0.00482	0.00373	0.00420
	(!A1 * C1 * X)	-0.00243	-0.00349	-0.00296

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)	-0.00159	-0.00160	-0.00157
	(A1 * A2 * A3 * C1 * X)	0.00146	0.00147	0.00145
	(A1 * A2 * A3 * !C1 * X)	-0.00062	-0.00064	-0.00110
	(A1 * A2 * A3 * !C1 * X)	0.00197	0.00195	0.00155
	(A1 * A2 * !A3 * C1 * X)	-0.00101	-0.00103	-0.00112
	(A1 * A2 * !A3 * C1 * X)	0.00262	0.00261	0.00252
	(A1 * !A2 * C1 * X)	-0.00101	-0.00103	-0.00112
	(A1 * !A2 * C1 * X)	0.00263	0.00261	0.00252
	(!A1 * C1 * X)	-0.00101	-0.00103	-0.00112
	(!A1 * C1 * X)	0.00263	0.00261	0.00252
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00186	-0.00188	-0.00184
	(A1 * A2 * A3 * C1 * X)	0.00148	0.00149	0.00147
	(A1 * A2 * A3 * !C1 * X)	-0.00090	-0.00093	-0.00137
	(A1 * A2 * A3 * !C1 * X)	0.00199	0.00197	0.00156
	(A1 * A2 * !A3 * C1 * X)	-0.00126	-0.00128	-0.00137
	(A1 * A2 * !A3 * C1 * X)	0.00264	0.00263	0.00253
	(A1 * !A2 * C1 * X)	-0.00126	-0.00128	-0.00137
	(A1 * !A2 * C1 * X)	0.00264	0.00263	0.00253
	(!A1 * C1 * X)	-0.00125	-0.00128	-0.00137
	(!A1 * C1 * X)	0.00263	0.00263	0.00253

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00293	-0.00294	-0.00288
	(A1 * A2 * A3 * C1 * X)	0.00318	0.00319	0.00318
	(A1 * A2 * A3 * !C1 * X)	-0.00110	-0.00115	-0.00209
	(A1 * A2 * A3 * !C1 * X)	0.00406	0.00402	0.00315
	(A1 * A2 * !A3 * C1 * X)	-0.00177	-0.00181	-0.00199
	(A1 * A2 * !A3 * C1 * X)	0.00541	0.00540	0.00521
	(A1 * !A2 * C1 * X)	-0.00176	-0.00181	-0.00199
	(A1 * !A2 * C1 * X)	0.00541	0.00540	0.00521
	(!A1 * C1 * X)	-0.00176	-0.00181	-0.00199
	(!A1 * C1 * X)	0.00541	0.00540	0.00521

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)	0.00196	0.00197	0.00197
	(A1 * A2 * B1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * A2 * A3 * !B1 * X)	0.00199	0.00200	0.00205
	(A1 * A2 * A3 * !B1 * X)	-0.00060	-0.00060	-0.00055
	(A1 * !A2 * B1 * X)	0.00197	0.00198	0.00199
	(A1 * !A2 * B1 * X)	-0.00083	-0.00083	-0.00080
	(!A1 * B1 * X)	0.00197	0.00198	0.00199
	(!A1 * B1 * X)	-0.00083	-0.00083	-0.00080
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00196	0.00199	0.00197
	(A1 * A2 * B1 * X)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * A3 * !B1 * X)	0.00200	0.00202	0.00207
	(A1 * A2 * A3 * !B1 * X)	-0.00064	-0.00065	-0.00059
	(A1 * !A2 * B1 * X)	0.00197	0.00200	0.00199
	(A1 * !A2 * B1 * X)	-0.00088	-0.00088	-0.00084
	(!A1 * B1 * X)	0.00197	0.00200	0.00199
	(!A1 * B1 * X)	-0.00088	-0.00088	-0.00084
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00324	0.00329	0.00325
	(A1 * A2 * B1 * X)	-0.00191	-0.00194	-0.00189
	(A1 * A2 * A3 * !B1 * X)	0.00329	0.00332	0.00341
	(A1 * A2 * A3 * !B1 * X)	-0.00148	-0.00148	-0.00138
	(A1 * !A2 * B1 * X)	0.00327	0.00330	0.00329
	(A1 * !A2 * B1 * X)	-0.00190	-0.00191	-0.00184
	(!A1 * B1 * X)	0.00327	0.00330	0.00329
	(!A1 * B1 * X)	-0.00190	-0.00191	-0.00184

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)	-0.00170	-0.00171	-0.00179
	(A1 * A2 * B1 * X)	0.00109	0.00109	0.00103
	(A1 * A2 * A3 * !B1 * X)	-0.00065	-0.00067	-0.00104
	(A1 * A2 * A3 * !B1 * X)	0.00203	0.00201	0.00169
	(A1 * !A2 * B1 * X)	-0.00147	-0.00149	-0.00165
	(A1 * !A2 * B1 * X)	0.00133	0.00132	0.00117
	(!A1 * B1 * X)	-0.00148	-0.00150	-0.00165
	(!A1 * B1 * X)	0.00133	0.00133	0.00117
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00167	-0.00169	-0.00176
	(A1 * A2 * B1 * X)	0.00117	0.00117	0.00110
	(A1 * A2 * A3 * !B1 * X)	-0.00064	-0.00067	-0.00102
	(A1 * A2 * A3 * !B1 * X)	0.00210	0.00210	0.00176
	(A1 * !A2 * B1 * X)	-0.00145	-0.00147	-0.00162
	(A1 * !A2 * B1 * X)	0.00141	0.00140	0.00124
	(!A1 * B1 * X)	-0.00144	-0.00147	-0.00162
	(!A1 * B1 * X)	0.00140	0.00140	0.00124
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00260	-0.00264	-0.00288
	(A1 * A2 * B1 * X)	0.00250	0.00253	0.00231
	(A1 * A2 * A3 * !B1 * X)	-0.00050	-0.00052	-0.00136
	(A1 * A2 * A3 * !B1 * X)	0.00439	0.00437	0.00367
	(A1 * !A2 * B1 * X)	-0.00216	-0.00219	-0.00253
	(A1 * !A2 * B1 * X)	0.00302	0.00300	0.00266
	(!A1 * B1 * X)	-0.00214	-0.00219	-0.00253
	(!A1 * B1 * X)	0.00299	0.00300	0.00266

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00298	0.00307	0.00297	0.00302	0.63155
sky130_fd_sc_hs__a31oi_2	0.00570	0.00559	0.00594	0.00456	1.20009
sky130_fd_sc_hs__a31oi_4	0.01153	0.01104	0.01102	0.00920	1.92935

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31oi_1	0.00000	28.83150	85.38180
sky130_fd_sc_hs__a31oi_2	0.00000	56.91740	170.73900
sky130_fd_sc_hs__a31oi_4	0.00000	113.71500	341.30000

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)	0.06955	0.75337	8.57333
	A2->Y (FR)	0.08828	0.78844	8.79015
	A3->Y (FR)	0.09668	0.79188	8.71679
	B1->Y (FR)	0.06499	0.82400	9.54883
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.06290	0.64546	8.65841
	A2->Y (FR)	0.07643	0.65255	8.60856
	A3->Y (FR)	0.08642	0.65360	8.44009
	B1->Y (FR)	0.04989	0.68022	9.28949
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.06327	0.53734	8.02989
	A2->Y (FR)	0.08060	0.54261	7.89181
	A3->Y (FR)	0.09773	0.56945	8.05323
	B1->Y (FR)	0.07010	0.61625	8.95107

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.04897	0.56564	6.42498
	A2->Y (RF)	0.05791	0.53045	5.86083
	A3->Y (RF)	0.06095	0.48230	5.17053
	B1->Y (RF)	0.02035	0.34852	4.06344
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.04728	0.51967	6.87426
	A2->Y (RF)	0.05378	0.45183	5.88287
	A3->Y (RF)	0.05899	0.41416	5.28118
	B1->Y (RF)	0.02494	0.46709	6.46890
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.04958	0.45503	6.60360
	A2->Y (RF)	0.05879	0.39433	5.64902
	A3->Y (RF)	0.06368	0.34296	4.84071
	B1->Y (RF)	0.02288	0.35887	5.54289

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00018	0.00144	0.02842
	A1	0.00697	0.00815	0.03516
	A2	0.00099	0.00215	0.02976
	A2	0.00906	0.01019	0.03780
	A3	0.00134	0.00255	0.03110
	A3	0.01066	0.01184	0.04036
	B1	-0.00033	0.00316	0.04804
	B1	0.00511	0.00862	0.05346
sky130_fd_sc_hs__a31oi_2	A1	0.00033	0.00306	0.05321
	A1	0.01315	0.01596	0.06591
	A2	0.00176	0.00445	0.05781
	A2	0.01693	0.01959	0.07278
	A3	0.00302	0.00561	0.05989
	A3	0.02076	0.02335	0.07740
	B1	0.00084	0.00584	0.06145
	B1	0.00873	0.01380	0.06955
sky130_fd_sc_hs__a31oi_4	A1	-0.00115	0.00490	0.10274
	A1	0.02509	0.03119	0.12899
	A2	0.00285	0.00862	0.11415
	A2	0.03380	0.03953	0.14533
	A3	0.00575	0.01155	0.12164
	A3	0.04164	0.04740	0.15737
	B1	0.00004	0.01126	0.12579
	B1	0.01664	0.02791	0.14360

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.01061	0.01185	0.03400
	A1	0.00384	0.00507	0.02721
	A2	0.01183	0.01280	0.03496
	A2	0.00377	0.00471	0.02632
	A3	0.01297	0.01395	0.03872
	A3	0.00363	0.00462	0.02938
	B1	0.00603	0.00844	0.04140
	B1	0.00059	0.00298	0.03572
sky130_fd_sc_hs__a31oi_2	A1	0.02018	0.02276	0.06301
	A1	0.00736	0.00989	0.04922
	A2	0.02225	0.02458	0.06814
	A2	0.00710	0.00930	0.05196
	A3	0.02492	0.02717	0.07650
	A3	0.00709	0.00929	0.05818
	B1	0.00798	0.01148	0.05168
	B1	0.00009	0.00347	0.04316
sky130_fd_sc_hs__a31oi_4	A1	0.04055	0.04593	0.12534
	A1	0.01428	0.01958	0.09661
	A2	0.04462	0.04918	0.13428
	A2	0.01366	0.01810	0.10188
	A3	0.04941	0.05413	0.15253
	A3	0.01335	0.01800	0.11651
	B1	0.01637	0.02439	0.11086
	B1	-0.00020	0.00762	0.09230

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)**	0.00247	0.00209	0.00216
	(A2 * A3 * B1 * !Y)	-0.00151	-0.00193	-0.00181
	(A2 * !A3 * B1 * !Y)	0.00207	0.00207	0.00207
	(A2 * !A3 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(A2 * !A3 * !B1 * Y)	0.00057	0.00057	0.00052
	(A2 * !A3 * !B1 * Y)	-0.00248	-0.00250	-0.00261
	(!A2 * B1 * !Y)	0.00210	0.00211	0.00211
	(!A2 * B1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * Y)	0.00058	0.00058	0.00055
	(!A2 * !B1 * Y)	-0.00256	-0.00257	-0.00262
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00507	0.00425	0.00435
	(A2 * A3 * B1 * !Y)	-0.00301	-0.00390	-0.00369
	(A2 * !A3 * B1 * !Y)	0.00413	0.00416	0.00414
	(A2 * !A3 * B1 * !Y)	-0.00369	-0.00372	-0.00370
	(A2 * !A3 * !B1 * Y)	0.00111	0.00112	0.00100
	(A2 * !A3 * !B1 * Y)	-0.00509	-0.00514	-0.00536
	(!A2 * B1 * !Y)	0.00421	0.00425	0.00422
	(!A2 * B1 * !Y)	-0.00369	-0.00373	-0.00370
	(!A2 * !B1 * Y)	0.00106	0.00106	0.00100
	(!A2 * !B1 * Y)	-0.00527	-0.00531	-0.00541
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.01046	0.00875	0.00892
	(A2 * A3 * B1 * !Y)	-0.00587	-0.00770	-0.00727
	(A2 * !A3 * B1 * !Y)	0.00848	0.00853	0.00848
	(A2 * !A3 * B1 * !Y)	-0.00728	-0.00733	-0.00728
	(A2 * !A3 * !B1 * Y)	0.00236	0.00237	0.00210
	(A2 * !A3 * !B1 * Y)	-0.01017	-0.01025	-0.01074
	(!A2 * B1 * !Y)	0.00869	0.00871	0.00869
	(!A2 * B1 * !Y)	-0.00729	-0.00730	-0.00728
	(!A2 * !B1 * Y)	0.00237	0.00237	0.00221
	(!A2 * !B1 * Y)	-0.01053	-0.01060	-0.01081

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)	-0.00128	-0.00130	-0.00134
	(A2 * A3 * B1 * !Y)	0.00269	0.00271	0.00264
	(A2 * !A3 * B1 * !Y)	-0.00111	-0.00123	-0.00123
	(A2 * !A3 * B1 * !Y)	0.00266	0.00269	0.00267
	(A2 * !A3 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(A2 * !A3 * !B1 * Y)	0.00265	0.00270	0.00266
	(!A2 * B1 * !Y)	-0.00124	-0.00126	-0.00125
	(!A2 * B1 * !Y)	0.00268	0.00269	0.00267
	(!A2 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * Y)	0.00266	0.00266	0.00266
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00260	-0.00263	-0.00272
	(A2 * A3 * B1 * !Y)	0.00547	0.00546	0.00537
	(A2 * !A3 * B1 * !Y)	-0.00222	-0.00247	-0.00250
	(A2 * !A3 * B1 * !Y)	0.00542	0.00547	0.00543
	(A2 * !A3 * !B1 * Y)	-0.00090	-0.00091	-0.00090
	(A2 * !A3 * !B1 * Y)	0.00543	0.00547	0.00545
	(!A2 * B1 * !Y)	-0.00249	-0.00253	-0.00253
	(!A2 * B1 * !Y)	0.00542	0.00545	0.00543
	(!A2 * !B1 * Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * Y)	0.00545	0.00550	0.00547

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00546	-0.00551	-0.00566
	(A2 * A3 * B1 * !Y)	0.01086	0.01085	0.01062
	(A2 * !A3 * B1 * !Y)	-0.00468	-0.00516	-0.00523
	(A2 * !A3 * B1 * !Y)	0.01077	0.01084	0.01074
	(A2 * !A3 * !B1 * Y)	-0.00194	-0.00196	-0.00194
	(A2 * !A3 * !B1 * Y)	0.01089	0.01098	0.01092
	(!A2 * B1 * !Y)	-0.00523	-0.00533	-0.00531
	(!A2 * B1 * !Y)	0.01073	0.01084	0.01074
	(!A2 * !B1 * Y)	-0.00206	-0.00207	-0.00205
	(!A2 * !B1 * Y)	0.01090	0.01098	0.01094

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)**	0.00258	0.00220	0.00227
	(A1 * A3 * B1 * !Y)	-0.00151	-0.00193	-0.00180
	(A1 * !A3 * B1 * !Y)	0.00221	0.00223	0.00222
	(A1 * !A3 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * Y)	0.00065	0.00065	0.00066
	(A1 * !A3 * !B1 * Y)	-0.00244	-0.00245	-0.00243
	(!A1 * A3 * B1 * !Y)	0.00221	0.00224	0.00222
	(!A1 * A3 * B1 * !Y)	-0.00180	-0.00182	-0.00180
	(!A1 * A3 * !B1 * Y)	0.00161	0.00163	0.00161
	(!A1 * A3 * !B1 * Y)	-0.00242	-0.00244	-0.00242
	(!A1 * !A3 * B1 * !Y)	0.00151	0.00152	0.00151
	(!A1 * !A3 * B1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * !A3 * !B1 * Y)	0.00085	0.00085	0.00084
	(!A1 * !A3 * !B1 * Y)	-0.00244	-0.00246	-0.00245

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00479	0.00400	0.00410
	(A1 * A3 * B1 * !Y)	-0.00308	-0.00393	-0.00371
	(A1 * !A3 * B1 * !Y)	0.00398	0.00400	0.00398
	(A1 * !A3 * B1 * !Y)	-0.00373	-0.00375	-0.00372
	(A1 * !A3 * !B1 * Y)	0.00130	0.00130	0.00128
	(A1 * !A3 * !B1 * Y)	-0.00459	-0.00459	-0.00457
	(!A1 * A3 * B1 * !Y)	0.00397	0.00399	0.00397
	(!A1 * A3 * B1 * !Y)	-0.00371	-0.00374	-0.00372
	(!A1 * A3 * !B1 * Y)	0.00317	0.00321	0.00319
	(!A1 * A3 * !B1 * Y)	-0.00454	-0.00457	-0.00454
	(!A1 * !A3 * B1 * !Y)	0.00258	0.00260	0.00258
	(!A1 * !A3 * B1 * !Y)	-0.00371	-0.00375	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00163	0.00164	0.00164
	(!A1 * !A3 * !B1 * Y)	-0.00460	-0.00461	-0.00461
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.01004	0.00839	0.00858
	(A1 * A3 * B1 * !Y)	-0.00608	-0.00787	-0.00745
	(A1 * !A3 * B1 * !Y)	0.00829	0.00834	0.00828
	(A1 * !A3 * B1 * !Y)	-0.00749	-0.00753	-0.00747
	(A1 * !A3 * !B1 * Y)	0.00275	0.00277	0.00281
	(A1 * !A3 * !B1 * Y)	-0.00921	-0.00925	-0.00920
	(!A1 * A3 * B1 * !Y)	0.00833	0.00841	0.00834
	(!A1 * A3 * B1 * !Y)	-0.00745	-0.00753	-0.00747
	(!A1 * A3 * !B1 * Y)	0.00667	0.00673	0.00671
	(!A1 * A3 * !B1 * Y)	-0.00914	-0.00919	-0.00915
	(!A1 * !A3 * B1 * !Y)	0.00551	0.00553	0.00551
	(!A1 * !A3 * B1 * !Y)	-0.00746	-0.00751	-0.00748
	(!A1 * !A3 * !B1 * Y)	0.00361	0.00363	0.00361
	(!A1 * !A3 * !B1 * Y)	-0.00927	-0.00929	-0.00928

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)	-0.00140	-0.00141	-0.00145
	(A1 * A3 * B1 * !Y)	0.00270	0.00270	0.00264
	(A1 * !A3 * B1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A3 * B1 * !Y)	0.00267	0.00268	0.00267
	(A1 * !A3 * !B1 * Y)	-0.00057	-0.00058	-0.00059
	(A1 * !A3 * !B1 * Y)	0.00255	0.00256	0.00250
	(!A1 * A3 * B1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * A3 * B1 * !Y)	0.00268	0.00268	0.00267
	(!A1 * A3 * !B1 * Y)	-0.00133	-0.00152	-0.00154
	(!A1 * A3 * !B1 * Y)	0.00272	0.00254	0.00249
	(!A1 * !A3 * B1 * !Y)	-0.00078	-0.00079	-0.00071
	(!A1 * !A3 * B1 * !Y)	0.00267	0.00270	0.00267
	(!A1 * !A3 * !B1 * Y)	-0.00084	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * Y)	0.00259	0.00262	0.00251
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00236	-0.00239	-0.00247
	(A1 * A3 * B1 * !Y)	0.00551	0.00551	0.00539
	(A1 * !A3 * B1 * !Y)	-0.00225	-0.00229	-0.00228
	(A1 * !A3 * B1 * !Y)	0.00545	0.00550	0.00545
	(A1 * !A3 * !B1 * Y)	-0.00113	-0.00115	-0.00117
	(A1 * !A3 * !B1 * Y)	0.00479	0.00487	0.00469
	(!A1 * A3 * B1 * !Y)	-0.00225	-0.00229	-0.00228
	(!A1 * A3 * B1 * !Y)	0.00547	0.00547	0.00546
	(!A1 * A3 * !B1 * Y)	-0.00265	-0.00305	-0.00308
	(!A1 * A3 * !B1 * Y)	0.00511	0.00474	0.00465
	(!A1 * !A3 * B1 * !Y)	-0.00112	-0.00114	-0.00099
	(!A1 * !A3 * B1 * !Y)	0.00543	0.00550	0.00546
	(!A1 * !A3 * !B1 * Y)	-0.00163	-0.00164	-0.00164
	(!A1 * !A3 * !B1 * Y)	0.00493	0.00495	0.00473

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00511	-0.00517	-0.00531
	(A1 * A3 * B1 * !Y)	0.01105	0.01108	0.01081
	(A1 * !A3 * B1 * !Y)	-0.00484	-0.00494	-0.00491
	(A1 * !A3 * B1 * !Y)	0.01091	0.01104	0.01094
	(A1 * !A3 * !B1 * Y)	-0.00247	-0.00252	-0.00257
	(A1 * !A3 * !B1 * Y)	0.00966	0.00980	0.00945
	(!A1 * A3 * B1 * !Y)	-0.00489	-0.00498	-0.00496
	(!A1 * A3 * B1 * !Y)	0.01096	0.01100	0.01093
	(!A1 * A3 * !B1 * Y)	-0.00547	-0.00641	-0.00652
	(!A1 * A3 * !B1 * Y)	0.01040	0.00961	0.00937
	(!A1 * !A3 * B1 * !Y)	-0.00265	-0.00266	-0.00235
	(!A1 * !A3 * B1 * !Y)	0.01095	0.01104	0.01095
	(!A1 * !A3 * !B1 * Y)	-0.00361	-0.00363	-0.00361
	(!A1 * !A3 * !B1 * Y)	0.00987	0.00997	0.00952

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)**	0.00263	0.00226	0.00233
	(A1 * A2 * B1 * !Y)	-0.00159	-0.00199	-0.00187
	(A1 * !A2 * !B1 * Y)	0.00175	0.00178	0.00176
	(A1 * !A2 * !B1 * Y)	-0.00239	-0.00241	-0.00240
	(!A2 * B1 * !Y)	0.00227	0.00229	0.00228
	(!A2 * B1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * A2 * B1 * !Y)	0.00225	0.00226	0.00225
	(!A1 * A2 * B1 * !Y)	-0.00186	-0.00187	-0.00187
	(!A1 * A2 * !B1 * Y)	0.00172	0.00174	0.00172
	(!A1 * A2 * !B1 * Y)	-0.00240	-0.00241	-0.00239
	(!A1 * !A2 * !B1 * Y)	0.00173	0.00175	0.00173
	(!A1 * !A2 * !B1 * Y)	-0.00241	-0.00242	-0.00241

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00513	0.00433	0.00442
	(A1 * A2 * B1 * !Y)	-0.00303	-0.00389	-0.00367
	(A1 * !A2 * !B1 * Y)	0.00341	0.00346	0.00343
	(A1 * !A2 * !B1 * Y)	-0.00451	-0.00454	-0.00451
	(!A2 * B1 * !Y)	0.00429	0.00434	0.00431
	(!A2 * B1 * !Y)	-0.00365	-0.00370	-0.00368
	(!A1 * A2 * B1 * !Y)	0.00422	0.00423	0.00421
	(!A1 * A2 * B1 * !Y)	-0.00368	-0.00369	-0.00368
	(!A1 * A2 * !B1 * Y)	0.00341	0.00342	0.00341
	(!A1 * A2 * !B1 * Y)	-0.00450	-0.00451	-0.00450
	(!A1 * !A2 * !B1 * Y)	0.00341	0.00343	0.00341
	(!A1 * !A2 * !B1 * Y)	-0.00453	-0.00455	-0.00453
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00997	0.00833	0.00853
	(A1 * A2 * B1 * !Y)	-0.00616	-0.00786	-0.00742
	(A1 * !A2 * !B1 * Y)	0.00665	0.00675	0.00667
	(A1 * !A2 * !B1 * Y)	-0.00907	-0.00914	-0.00908
	(!A2 * B1 * !Y)	0.00823	0.00830	0.00825
	(!A2 * B1 * !Y)	-0.00742	-0.00748	-0.00744
	(!A1 * A2 * B1 * !Y)	0.00812	0.00817	0.00812
	(!A1 * A2 * B1 * !Y)	-0.00743	-0.00748	-0.00744
	(!A1 * A2 * !B1 * Y)	0.00651	0.00656	0.00652
	(!A1 * A2 * !B1 * Y)	-0.00908	-0.00911	-0.00906
	(!A1 * !A2 * !B1 * Y)	0.00657	0.00662	0.00657
	(!A1 * !A2 * !B1 * Y)	-0.00913	-0.00916	-0.00912

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

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

sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * B1 * !Y)**	-0.00146	-0.00148	-0.00152
	(A1 * A2 * B1 * !Y)	0.00275	0.00277	0.00270
	(A1 * !A2 * !B1 * Y)	-0.00156	-0.00168	-0.00169
	(A1 * !A2 * !B1 * Y)	0.00256	0.00249	0.00247
	(!A2 * B1 * !Y)	-0.00141	-0.00144	-0.00142
	(!A2 * B1 * !Y)	0.00272	0.00276	0.00273
	(!A1 * A2 * B1 * !Y)	-0.00131	-0.00140	-0.00141
	(!A1 * A2 * B1 * !Y)	0.00273	0.00276	0.00273
	(!A1 * A2 * !B1 * Y)	-0.00149	-0.00166	-0.00168
	(!A1 * A2 * !B1 * Y)	0.00258	0.00251	0.00246
	(!A1 * !A2 * !B1 * Y)	-0.00165	-0.00170	-0.00170
	(!A1 * !A2 * !B1 * Y)	0.00245	0.00246	0.00245
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00268	-0.00270	-0.00279
	(A1 * A2 * B1 * !Y)	0.00545	0.00544	0.00535
	(A1 * !A2 * !B1 * Y)	-0.00300	-0.00327	-0.00332
	(A1 * !A2 * !B1 * Y)	0.00492	0.00473	0.00464
	(!A2 * B1 * !Y)	-0.00257	-0.00261	-0.00261
	(!A2 * B1 * !Y)	0.00540	0.00543	0.00541
	(!A1 * A2 * B1 * !Y)	-0.00233	-0.00252	-0.00256
	(!A1 * A2 * B1 * !Y)	0.00540	0.00547	0.00541
	(!A1 * A2 * !B1 * Y)	-0.00290	-0.00330	-0.00336
	(!A1 * A2 * !B1 * Y)	0.00491	0.00472	0.00460
	(!A1 * !A2 * !B1 * Y)	-0.00323	-0.00336	-0.00337
	(!A1 * !A2 * !B1 * Y)	0.00462	0.00461	0.00459

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00506	-0.00508	-0.00526
	(A1 * A2 * B1 * !Y)	0.01101	0.01097	0.01078
	(A1 * !A2 * !B1 * Y)	-0.00585	-0.00644	-0.00647
	(A1 * !A2 * !B1 * Y)	0.00975	0.00939	0.00930
	(!A2 * B1 * !Y)	-0.00479	-0.00489	-0.00487
	(!A2 * B1 * !Y)	0.01088	0.01095	0.01090
	(!A1 * A2 * B1 * !Y)	-0.00436	-0.00470	-0.00480
	(!A1 * A2 * B1 * !Y)	0.01092	0.01087	0.01090
	(!A1 * A2 * !B1 * Y)	-0.00555	-0.00626	-0.00643
	(!A1 * A2 * !B1 * Y)	0.00989	0.00933	0.00928
	(!A1 * !A2 * !B1 * Y)	-0.00628	-0.00653	-0.00652
	(!A1 * !A2 * !B1 * Y)	0.00925	0.00928	0.00923

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)**	0.00215	0.00214	0.00218
	(A1 * A2 * A3 * !Y)	-0.00082	-0.00081	-0.00077
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00228	0.00227	0.00236
	(A1 * A2 * A3 * !Y)	-0.00163	-0.00161	-0.00154
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00473	0.00478	0.00492
	(A1 * A2 * A3 * !Y)	-0.00330	-0.00332	-0.00315

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)	-0.00105	-0.00108	-0.00140
	(A1 * A2 * A3 * !Y)	0.00192	0.00192	0.00160
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00010	-0.00014	-0.00083
	(A1 * A2 * A3 * !Y)	0.00388	0.00386	0.00321
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00041	-0.00052	-0.00187
	(A1 * A2 * A3 * !Y)	0.00778	0.00776	0.00648

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00265	0.00264	0.00264	0.00284	1.32012
sky130_fd_sc_hs__a31o_2	0.00293	0.00285	0.00287	0.00277	2.50021
sky130_fd_sc_hs__a31o_4	0.00521	0.00511	0.00509	0.00520	4.97834

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31o_1	0.00000	61.17690	110.34200
sky130_fd_sc_hs__a31o_2	0.00000	83.36440	111.83100
sky130_fd_sc_hs__a31o_4	0.00000	167.21300	223.70500

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)	0.09606	0.60719	6.89367
	A2->X (RR)	0.10373	0.59693	6.74736
	A3->X (RR)	0.10781	0.57192	6.47230
	B1->X (RR)	0.05771	0.51694	6.12620
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.10014	0.52879	6.57688
	A2->X (RR)	0.10762	0.51563	6.42159
	A3->X (RR)	0.11165	0.48913	6.17365
	B1->X (RR)	0.05587	0.43038	5.81957
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.11593	0.50387	6.99616
	A2->X (RR)	0.12428	0.48108	6.78107
	A3->X (RR)	0.12959	0.45330	6.54923
	B1->X (RR)	0.05588	0.37409	6.07910

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.10828	0.48848	4.80702
	A2->X (FF)	0.12596	0.51906	4.95438
	A3->X (FF)	0.13532	0.53693	5.11552
	B1->X (FF)	0.11633	0.55912	5.50897
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.14070	0.50251	4.89365
	A2->X (FF)	0.16343	0.53715	5.05086
	A3->X (FF)	0.16956	0.54775	5.16332
	B1->X (FF)	0.13973	0.56801	5.54520
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.13862	0.45477	4.96534
	A2->X (FF)	0.15610	0.48542	5.14315
	A3->X (FF)	0.17211	0.51196	5.34110
	B1->X (FF)	0.14694	0.53811	5.66717

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01458	0.01834	0.09553
	A1	0.00857	0.01233	0.08959
	A2	0.01554	0.01867	0.09416
	A2	0.00856	0.01169	0.08713
	A3	0.01659	0.01920	0.08828
	A3	0.00851	0.01112	0.08040
	B1	0.01036	0.01690	0.11979
	B1	0.00535	0.01191	0.11515
sky130_fd_sc_hs__a31o_2	A1	0.01892	0.02242	0.10047
	A1	0.01242	0.01596	0.09422
	A2	0.02001	0.02278	0.09922
	A2	0.01241	0.01520	0.09218
	A3	0.02121	0.02353	0.09455
	A3	0.01236	0.01468	0.08668
	B1	0.01377	0.02019	0.12328
	B1	0.00861	0.01509	0.11921
sky130_fd_sc_hs__a31o_4	A1	0.03825	0.04436	0.19386
	A1	0.02613	0.03231	0.18188
	A2	0.04031	0.04515	0.19346
	A2	0.02612	0.03113	0.17908
	A3	0.04249	0.04680	0.20260
	A3	0.02604	0.03047	0.18668
	B1	0.02521	0.03846	0.24929
	B1	0.01607	0.02946	0.24191

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00509	0.00854	0.08120
	A1	0.01112	0.01452	0.08630
	A2	0.00587	0.00917	0.08125
	A2	0.01287	0.01612	0.08716
	A3	0.00620	0.00922	0.08295
	A3	0.01424	0.01726	0.09002
	B1	0.00421	0.01127	0.11716
	B1	0.00923	0.01625	0.12123
sky130_fd_sc_hs__a31o_2	A1	0.01050	0.01250	0.08533
	A1	0.01701	0.01900	0.09091
	A2	0.01192	0.01351	0.08791
	A2	0.01953	0.02092	0.09282
	A3	0.01238	0.01368	0.09012
	A3	0.02117	0.02237	0.09707
	B1	0.00903	0.01542	0.12174
	B1	0.01421	0.02041	0.12509
sky130_fd_sc_hs__a31o_4	A1	0.02172	0.02501	0.17373
	A1	0.03384	0.03693	0.18311
	A2	0.02399	0.02655	0.17318
	A2	0.03815	0.04052	0.18721
	A3	0.02625	0.02799	0.18488
	A3	0.04258	0.04428	0.19851
	B1	0.01890	0.03132	0.23907
	B1	0.02801	0.04029	0.24607

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)**	0.00227	0.00188	0.00204
	(A2 * A3 * B1 * X)	-0.00132	-0.00171	-0.00150
	(A2 * !A3 * B1 * X)	0.00196	0.00197	0.00197
	(A2 * !A3 * B1 * X)	-0.00148	-0.00148	-0.00148
	(A2 * !A3 * !B1 * !X)	0.00090	0.00089	0.00085
	(A2 * !A3 * !B1 * !X)	-0.00186	-0.00187	-0.00196
	(!A2 * B1 * X)	0.00201	0.00201	0.00201
	(!A2 * B1 * X)	-0.00148	-0.00149	-0.00148
	(!A2 * !B1 * !X)	0.00090	0.00090	0.00087
	(!A2 * !B1 * !X)	-0.00192	-0.00193	-0.00197
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00264	0.00226	0.00242
	(A2 * A3 * B1 * X)	-0.00122	-0.00164	-0.00142
	(A2 * !A3 * B1 * X)	0.00234	0.00235	0.00234
	(A2 * !A3 * B1 * X)	-0.00140	-0.00141	-0.00140
	(A2 * !A3 * !B1 * !X)	0.00144	0.00144	0.00139
	(A2 * !A3 * !B1 * !X)	-0.00149	-0.00150	-0.00161
	(!A2 * B1 * X)	0.00238	0.00239	0.00238
	(!A2 * B1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * !X)	0.00145	0.00144	0.00141
	(!A2 * !B1 * !X)	-0.00157	-0.00157	-0.00162
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00488	0.00404	0.00430
	(A2 * A3 * B1 * X)	-0.00250	-0.00336	-0.00298
	(A2 * !A3 * B1 * X)	0.00413	0.00414	0.00413
	(A2 * !A3 * B1 * X)	-0.00295	-0.00297	-0.00296
	(A2 * !A3 * !B1 * !X)	0.00282	0.00283	0.00270
	(A2 * !A3 * !B1 * !X)	-0.00285	-0.00290	-0.00314
	(!A2 * B1 * X)	0.00422	0.00423	0.00423
	(!A2 * B1 * X)	-0.00295	-0.00297	-0.00295
	(!A2 * !B1 * !X)	0.00281	0.00280	0.00274
	(!A2 * !B1 * !X)	-0.00306	-0.00306	-0.00317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A2 * A3 * B1 * X)	-0.00084	-0.00086	-0.00093
	(A2 * A3 * B1 * X)	0.00272	0.00273	0.00263
	(A2 * !A3 * B1 * X)	-0.00070	-0.00078	-0.00079
	(A2 * !A3 * B1 * X)	0.00271	0.00270	0.00269
	(A2 * !A3 * !B1 * !X)	0.00007	0.00007	0.00007
	(A2 * !A3 * !B1 * !X)	0.00288	0.00290	0.00288
	(!A2 * B1 * X)	-0.00080	-0.00081	-0.00081
	(!A2 * B1 * X)	0.00270	0.00270	0.00269
	(!A2 * !B1 * !X)	0.00005	0.00004	0.00005
	(!A2 * !B1 * !X)	0.00288	0.00292	0.00289
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00119	-0.00121	-0.00128
	(A2 * A3 * B1 * X)	0.00266	0.00266	0.00258
	(A2 * !A3 * B1 * X)	-0.00103	-0.00113	-0.00114
	(A2 * !A3 * B1 * X)	0.00265	0.00264	0.00263
	(A2 * !A3 * !B1 * !X)	0.00039	0.00038	0.00039
	(A2 * !A3 * !B1 * !X)	0.00338	0.00340	0.00338
	(!A2 * B1 * X)	-0.00115	-0.00117	-0.00116
	(!A2 * B1 * X)	0.00264	0.00264	0.00263
	(!A2 * !B1 * !X)	0.00036	0.00035	0.00037
	(!A2 * !B1 * !X)	0.00338	0.00342	0.00339

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00184	-0.00188	-0.00202
	(A2 * A3 * B1 * X)	0.00548	0.00549	0.00531
	(A2 * !A3 * B1 * X)	-0.00153	-0.00173	-0.00175
	(A2 * !A3 * B1 * X)	0.00541	0.00544	0.00542
	(A2 * !A3 * !B1 * !X)	0.00087	0.00087	0.00088
	(A2 * !A3 * !B1 * !X)	0.00672	0.00672	0.00671
	(!A2 * B1 * X)	-0.00176	-0.00179	-0.00178
	(!A2 * B1 * X)	0.00544	0.00544	0.00542
	(!A2 * !B1 * !X)	0.00083	0.00081	0.00084
	(!A2 * !B1 * !X)	0.00672	0.00679	0.00672

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)**	0.00224	0.00185	0.00202
	(A1 * A3 * B1 * X)	-0.00131	-0.00171	-0.00149
	(A1 * !A3 * B1 * X)	0.00198	0.00199	0.00198
	(A1 * !A3 * B1 * X)	-0.00147	-0.00148	-0.00148
	(A1 * !A3 * !B1 * !X)	0.00097	0.00096	0.00097
	(A1 * !A3 * !B1 * !X)	-0.00170	-0.00169	-0.00169
	(!A1 * A3 * B1 * X)	0.00198	0.00199	0.00198
	(!A1 * A3 * B1 * X)	-0.00147	-0.00148	-0.00148
	(!A1 * A3 * !B1 * !X)	0.00179	0.00180	0.00180
	(!A1 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * !A3 * B1 * X)	0.00137	0.00138	0.00137
	(!A1 * !A3 * B1 * X)	-0.00147	-0.00148	-0.00148
	(!A1 * !A3 * !B1 * !X)	0.00113	0.00113	0.00113
	(!A1 * !A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00257	0.00219	0.00236
	(A1 * A3 * B1 * X)	-0.00122	-0.00163	-0.00142
	(A1 * !A3 * B1 * X)	0.00231	0.00233	0.00232
	(A1 * !A3 * B1 * X)	-0.00139	-0.00141	-0.00140
	(A1 * !A3 * !B1 * !X)	0.00152	0.00151	0.00152
	(A1 * !A3 * !B1 * !X)	-0.00128	-0.00127	-0.00127
	(!A1 * A3 * B1 * X)	0.00232	0.00234	0.00232
	(!A1 * A3 * B1 * X)	-0.00139	-0.00141	-0.00140
	(!A1 * A3 * !B1 * !X)	0.00246	0.00247	0.00247
	(!A1 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(!A1 * !A3 * B1 * X)	0.00162	0.00162	0.00162
	(!A1 * !A3 * B1 * X)	-0.00139	-0.00140	-0.00140
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00171	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00128
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00487	0.00401	0.00427
	(A1 * A3 * B1 * X)	-0.00251	-0.00339	-0.00301
	(A1 * !A3 * B1 * X)	0.00416	0.00418	0.00416
	(A1 * !A3 * B1 * X)	-0.00298	-0.00302	-0.00299
	(A1 * !A3 * !B1 * !X)	0.00306	0.00306	0.00307
	(A1 * !A3 * !B1 * !X)	-0.00248	-0.00248	-0.00248
	(!A1 * A3 * B1 * X)	0.00418	0.00421	0.00418
	(!A1 * A3 * B1 * X)	-0.00298	-0.00301	-0.00299
	(!A1 * A3 * !B1 * !X)	0.00477	0.00481	0.00478
	(!A1 * A3 * !B1 * !X)	-0.00242	-0.00245	-0.00242
	(!A1 * !A3 * B1 * X)	0.00297	0.00298	0.00297
	(!A1 * !A3 * B1 * X)	-0.00298	-0.00300	-0.00299
	(!A1 * !A3 * !B1 * !X)	0.00343	0.00344	0.00342
	(!A1 * !A3 * !B1 * !X)	-0.00252	-0.00253	-0.00251

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)	-0.00081	-0.00083	-0.00091
	(A1 * A3 * B1 * X)	0.00272	0.00272	0.00263
	(A1 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * B1 * X)	0.00269	0.00269	0.00268
	(A1 * !A3 * !B1 * !X)	-0.00002	-0.00002	-0.00004
	(A1 * !A3 * !B1 * !X)	0.00267	0.00268	0.00262
	(!A1 * A3 * B1 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * A3 * B1 * X)	0.00269	0.00269	0.00268
	(!A1 * A3 * !B1 * !X)	-0.00066	-0.00083	-0.00085
	(!A1 * A3 * !B1 * !X)	0.00284	0.00267	0.00262
	(!A1 * !A3 * B1 * X)	-0.00027	-0.00028	-0.00022
	(!A1 * !A3 * B1 * X)	0.00268	0.00271	0.00269
	(!A1 * !A3 * !B1 * !X)	-0.00024	-0.00024	-0.00025
	(!A1 * !A3 * !B1 * !X)	0.00269	0.00273	0.00263
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00113	-0.00115	-0.00122
	(A1 * A3 * B1 * X)	0.00267	0.00266	0.00258
	(A1 * !A3 * B1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * !A3 * B1 * X)	0.00264	0.00264	0.00263
	(A1 * !A3 * !B1 * !X)	0.00029	0.00028	0.00027
	(A1 * !A3 * !B1 * !X)	0.00311	0.00312	0.00306
	(!A1 * A3 * B1 * X)	-0.00109	-0.00110	-0.00110
	(!A1 * A3 * B1 * X)	0.00264	0.00264	0.00263
	(!A1 * A3 * !B1 * !X)	-0.00047	-0.00066	-0.00068
	(!A1 * A3 * !B1 * !X)	0.00327	0.00309	0.00305
	(!A1 * !A3 * B1 * X)	-0.00052	-0.00052	-0.00045
	(!A1 * !A3 * B1 * X)	0.00263	0.00265	0.00263
	(!A1 * !A3 * !B1 * !X)	0.00002	0.00002	0.00000
	(!A1 * !A3 * !B1 * !X)	0.00314	0.00317	0.00307

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00181	-0.00186	-0.00199
	(A1 * A3 * B1 * X)	0.00552	0.00553	0.00535
	(A1 * !A3 * B1 * X)	-0.00170	-0.00174	-0.00173
	(A1 * !A3 * B1 * X)	0.00545	0.00549	0.00546
	(A1 * !A3 * !B1 * !X)	0.00058	0.00057	0.00053
	(A1 * !A3 * !B1 * !X)	0.00618	0.00619	0.00608
	(!A1 * A3 * B1 * X)	-0.00173	-0.00176	-0.00175
	(!A1 * A3 * B1 * X)	0.00547	0.00547	0.00546
	(!A1 * A3 * !B1 * !X)	-0.00072	-0.00112	-0.00116
	(!A1 * A3 * !B1 * !X)	0.00652	0.00614	0.00604
	(!A1 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00063
	(!A1 * !A3 * B1 * X)	0.00547	0.00551	0.00547
	(!A1 * !A3 * !B1 * !X)	0.00011	0.00010	0.00006
	(!A1 * !A3 * !B1 * !X)	0.00630	0.00633	0.00613

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)**	0.00235	0.00198	0.00215
	(A1 * A2 * B1 * X)	-0.00132	-0.00169	-0.00147
	(A1 * !A2 * !B1 * !X)	0.00182	0.00184	0.00183
	(A1 * !A2 * !B1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * X)	-0.00144	-0.00145	-0.00145
	(!A1 * A2 * B1 * X)	0.00208	0.00209	0.00208
	(!A1 * A2 * B1 * X)	-0.00144	-0.00145	-0.00145
	(!A1 * A2 * !B1 * !X)	0.00178	0.00179	0.00179
	(!A1 * A2 * !B1 * !X)	-0.00175	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * !X)	0.00179	0.00181	0.00180
	(!A1 * !A2 * !B1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00267	0.00230	0.00248
	(A1 * A2 * B1 * X)	-0.00125	-0.00162	-0.00139
	(A1 * !A2 * !B1 * !X)	0.00247	0.00249	0.00248
	(A1 * !A2 * !B1 * !X)	-0.00134	-0.00135	-0.00134
	(!A2 * B1 * X)	0.00243	0.00246	0.00244
	(!A2 * B1 * X)	-0.00136	-0.00139	-0.00137
	(!A1 * A2 * B1 * X)	0.00239	0.00240	0.00239
	(!A1 * A2 * B1 * X)	-0.00137	-0.00138	-0.00137
	(!A1 * A2 * !B1 * !X)	0.00243	0.00244	0.00243
	(!A1 * A2 * !B1 * !X)	-0.00134	-0.00135	-0.00134
	(!A1 * !A2 * !B1 * !X)	0.00245	0.00246	0.00246
	(!A1 * !A2 * !B1 * !X)	-0.00135	-0.00136	-0.00136
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00481	0.00398	0.00424
	(A1 * A2 * B1 * X)	-0.00252	-0.00341	-0.00302
	(A1 * !A2 * !B1 * !X)	0.00472	0.00471	0.00473
	(A1 * !A2 * !B1 * !X)	-0.00244	-0.00243	-0.00244
	(!A2 * B1 * X)	0.00414	0.00416	0.00414
	(!A2 * B1 * X)	-0.00299	-0.00301	-0.00300
	(!A1 * A2 * B1 * X)	0.00407	0.00410	0.00407
	(!A1 * A2 * B1 * X)	-0.00300	-0.00303	-0.00300
	(!A1 * A2 * !B1 * !X)	0.00465	0.00467	0.00466
	(!A1 * A2 * !B1 * !X)	-0.00244	-0.00246	-0.00243
	(!A1 * !A2 * !B1 * !X)	0.00467	0.00469	0.00467
	(!A1 * !A2 * !B1 * !X)	-0.00248	-0.00249	-0.00247

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)**	-0.00095	-0.00097	-0.00104
	(A1 * A2 * B1 * X)	0.00269	0.00269	0.00260
	(A1 * !A2 * !B1 * !X)	-0.00074	-0.00086	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00281	0.00274	0.00271
	(!A2 * B1 * X)	-0.00092	-0.00093	-0.00092
	(!A2 * B1 * X)	0.00266	0.00268	0.00265
	(!A1 * A2 * B1 * X)	-0.00082	-0.00090	-0.00091
	(!A1 * A2 * B1 * X)	0.00265	0.00268	0.00265
	(!A1 * A2 * !B1 * !X)	-0.00069	-0.00084	-0.00086
	(!A1 * A2 * !B1 * !X)	0.00283	0.00275	0.00270
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00089	-0.00089
	(!A1 * !A2 * !B1 * !X)	0.00268	0.00269	0.00268
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00125	-0.00127	-0.00134
	(A1 * A2 * B1 * X)	0.00264	0.00264	0.00255
	(A1 * !A2 * !B1 * !X)	-0.00056	-0.00067	-0.00069
	(A1 * !A2 * !B1 * !X)	0.00325	0.00316	0.00314
	(!A2 * B1 * X)	-0.00121	-0.00123	-0.00121
	(!A2 * B1 * X)	0.00262	0.00263	0.00261
	(!A1 * A2 * B1 * X)	-0.00110	-0.00119	-0.00120
	(!A1 * A2 * B1 * X)	0.00260	0.00263	0.00261
	(!A1 * A2 * !B1 * !X)	-0.00048	-0.00065	-0.00068
	(!A1 * A2 * !B1 * !X)	0.00325	0.00318	0.00313
	(!A1 * !A2 * !B1 * !X)	-0.00066	-0.00070	-0.00070
	(!A1 * !A2 * !B1 * !X)	0.00314	0.00313	0.00312

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00178	-0.00181	-0.00196
	(A1 * A2 * B1 * X)	0.00553	0.00552	0.00536
	(A1 * !A2 * !B1 * !X)	-0.00081	-0.00106	-0.00112
	(A1 * !A2 * !B1 * !X)	0.00631	0.00610	0.00606
	(!A2 * B1 * X)	-0.00166	-0.00172	-0.00171
	(!A2 * B1 * X)	0.00546	0.00552	0.00547
	(!A1 * A2 * B1 * X)	-0.00148	-0.00165	-0.00167
	(!A1 * A2 * B1 * X)	0.00546	0.00552	0.00547
	(!A1 * A2 * !B1 * !X)	-0.00068	-0.00104	-0.00109
	(!A1 * A2 * !B1 * !X)	0.00635	0.00616	0.00605
	(!A1 * !A2 * !B1 * !X)	-0.00103	-0.00113	-0.00115
	(!A1 * !A2 * !B1 * !X)	0.00602	0.00602	0.00602

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)**	0.00213	0.00214	0.00219
	(A1 * A2 * A3 * X)	-0.00071	-0.00071	-0.00065
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00205	0.00209	0.00212
	(A1 * A2 * A3 * X)	-0.00069	-0.00070	-0.00063
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00353	0.00360	0.00365
	(A1 * A2 * A3 * X)	-0.00152	-0.00154	-0.00140

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)**	-0.00077	-0.00080	-0.00122
	(A1 * A2 * A3 * X)	0.00211	0.00209	0.00169
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	-0.00066	-0.00070	-0.00111
	(A1 * A2 * A3 * X)	0.00212	0.00210	0.00169
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	-0.00074	-0.00080	-0.00165
	(A1 * A2 * A3 * X)	0.00442	0.00438	0.00356

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00303	0.00305	0.00277	0.00309	0.00287	0.61930
sky130_fd_sc_hs__a32oi_2	0.00573	0.00563	0.00553	0.00578	0.00564	1.13432
sky130_fd_sc_hs__a32oi_4	0.01134	0.01110	0.01105	0.01154	0.01119	1.80035

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32oi_1	0.00000	31.54130	98.90200
sky130_fd_sc_hs__a32oi_2	0.00000	63.01180	197.73000
sky130_fd_sc_hs__a32oi_4	0.00000	125.76600	395.08800

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)	0.09717	0.79559	8.70645
	A2->Y (FR)	0.11044	0.80797	8.71863
	A3->Y (FR)	0.12045	0.81535	8.67527
	B1->Y (FR)	0.06863	0.82264	9.45031
	B2->Y (FR)	0.06525	0.82117	9.46036
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.08711	0.64835	8.22298
	A2->Y (FR)	0.11155	0.69200	8.59714
	A3->Y (FR)	0.12173	0.69773	8.49901
	B1->Y (FR)	0.05884	0.69485	9.23877
	B2->Y (FR)	0.07841	0.72129	9.37360
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.10021	0.57570	7.99131
	A2->Y (FR)	0.11937	0.58964	7.94116
	A3->Y (FR)	0.13460	0.60478	7.94229
	B1->Y (FR)	0.08051	0.62199	8.73691
	B2->Y (FR)	0.10573	0.66309	9.04517

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.06540	0.57882	6.35054
	A2->Y (RF)	0.07251	0.54266	5.80434
	A3->Y (RF)	0.07589	0.49337	5.09519
	B1->Y (RF)	0.02926	0.44982	5.21051
	B2->Y (RF)	0.03271	0.40077	4.54491
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.06625	0.53265	6.69058
	A2->Y (RF)	0.07805	0.49938	6.10867
	A3->Y (RF)	0.08166	0.42883	5.11391
	B1->Y (RF)	0.02496	0.39180	5.31875
	B2->Y (RF)	0.03159	0.34482	4.58205
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.06643	0.45428	6.14462
	A2->Y (RF)	0.07674	0.41385	5.47271
	A3->Y (RF)	0.08033	0.34363	4.45823
	B1->Y (RF)	0.02551	0.32125	4.85150
	B2->Y (RF)	0.03126	0.26393	3.92007

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00056	0.00171	0.03064
	A1	0.00881	0.00998	0.03902
	A2	0.00109	0.00222	0.03195
	A2	0.01059	0.01173	0.04155
	A3	0.00181	0.00299	0.03384
	A3	0.01232	0.01352	0.04446
	B1	0.00040	0.00344	0.04405
	B1	0.00584	0.00889	0.04949
	B2	0.00091	0.00390	0.04533
	B2	0.00748	0.01031	0.05182
sky130_fd_sc_hs__a32oi_2	A1	-0.00064	0.00206	0.05567
	A1	0.01553	0.01821	0.07160
	A2	0.00178	0.00402	0.05771
	A2	0.02041	0.02270	0.07648
	A3	0.00275	0.00526	0.06215
	A3	0.02377	0.02634	0.08349
	B1	-0.00092	0.00550	0.08098
	B1	0.00935	0.01583	0.09141
	B2	0.00114	0.00730	0.08401
	B2	0.01397	0.02016	0.09675

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00109	0.00474	0.11265
	A1	0.03134	0.03719	0.14491
	A2	0.00261	0.00782	0.12229
	A2	0.03986	0.04510	0.15953
	A3	0.00473	0.01065	0.13247
	A3	0.04688	0.05294	0.17464
	B1	-0.00181	0.01182	0.16177
	B1	0.01919	0.03288	0.18291
	B2	0.00182	0.01487	0.16606
	B2	0.02771	0.04073	0.19147

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01391	0.01516	0.03938
	A1	0.00566	0.00692	0.03096
	A2	0.01507	0.01609	0.04014
	A2	0.00558	0.00659	0.03012
	A3	0.01604	0.01714	0.04405
	A3	0.00548	0.00656	0.03351
	B1	0.00702	0.00899	0.03728
	B1	0.00160	0.00351	0.03113
	B2	0.00808	0.00979	0.03781
	B2	0.00149	0.00318	0.03098

sky130_fd_sc_hs__a32oi_2	**A1**	0.02736	0.03011	0.07509
	A1	0.01121	0.01386	0.05842
	A2	0.02977	0.03172	0.07484
	A2	0.01109	0.01299	0.05574
	A3	0.03205	0.03433	0.08700
	A3	0.01092	0.01314	0.06587
	B1	0.01319	0.01753	0.07033
	B1	0.00292	0.00719	0.05936
	B2	0.01562	0.01922	0.07305
	B2	0.00276	0.00635	0.05921
sky130_fd_sc_hs__a32oi_4	**A1**	0.05324	0.05851	0.14647
	A1	0.02085	0.02604	0.11235
	A2	0.05763	0.06182	0.15048
	A2	0.02037	0.02454	0.11276
	A3	0.06215	0.06722	0.17676
	A3	0.01980	0.02471	0.13387
	B1	0.02633	0.03552	0.14084
	B1	0.00544	0.01456	0.11821
	B2	0.03106	0.03915	0.14711
	B2	0.00514	0.01312	0.12095

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)**	0.00284	0.00237	0.00263
	(A2 * A3 * B1 * B2 * !Y)	-0.00126	-0.00174	-0.00142
	(A2 * !A3 * B1 * B2 * !Y)	0.00256	0.00257	0.00256
	(A2 * !A3 * B1 * B2 * !Y)	-0.00137	-0.00138	-0.00138
	(A2 * !A3 * B1 * !B2 * Y)	0.00060	0.00060	0.00055
	(A2 * !A3 * B1 * !B2 * Y)	-0.00253	-0.00254	-0.00264
	(A2 * !A3 * !B1 * Y)	0.00060	0.00060	0.00055
	(A2 * !A3 * !B1 * Y)	-0.00253	-0.00254	-0.00264
	(!A2 * B1 * B2 * !Y)	0.00261	0.00262	0.00260
	(!A2 * B1 * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * !B2 * Y)	0.00057	0.00057	0.00055
	(!A2 * B1 * !B2 * Y)	-0.00261	-0.00261	-0.00265
	(!A2 * !B1 * Y)	0.00058	0.00057	0.00055
	(!A2 * !B1 * Y)	-0.00260	-0.00261	-0.00265
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00561	0.00471	0.00523
	(A2 * A3 * B1 * B2 * !Y)	-0.00252	-0.00349	-0.00283
	(A2 * !A3 * B1 * B2 * !Y)	0.00504	0.00507	0.00505
	(A2 * !A3 * B1 * B2 * !Y)	-0.00274	-0.00277	-0.00275
	(A2 * !A3 * B1 * !B2 * Y)	0.00125	0.00126	0.00112
	(A2 * !A3 * B1 * !B2 * Y)	-0.00493	-0.00498	-0.00524
	(A2 * !A3 * !B1 * Y)	0.00126	0.00127	0.00112
	(A2 * !A3 * !B1 * Y)	-0.00493	-0.00498	-0.00523
	(!A2 * B1 * B2 * !Y)	0.00515	0.00518	0.00516
	(!A2 * B1 * B2 * !Y)	-0.00273	-0.00277	-0.00275
	(!A2 * B1 * !B2 * Y)	0.00126	0.00127	0.00118
	(!A2 * B1 * !B2 * Y)	-0.00510	-0.00514	-0.00527
	(!A2 * !B1 * Y)	0.00127	0.00128	0.00119
	(!A2 * !B1 * Y)	-0.00509	-0.00513	-0.00526

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.01132	0.00932	0.01036
	(A2 * A3 * B1 * B2 * !Y)	-0.00491	-0.00702	-0.00569
	(A2 * !A3 * B1 * B2 * !Y)	0.01000	0.01004	0.01000
	(A2 * !A3 * B1 * B2 * !Y)	-0.00550	-0.00557	-0.00551
	(A2 * !A3 * B1 * !B2 * Y)	0.00224	0.00225	0.00201
	(A2 * !A3 * B1 * !B2 * Y)	-0.01005	-0.01013	-0.01060
	(A2 * !A3 * !B1 * Y)	0.00225	0.00227	0.00202
	(A2 * !A3 * !B1 * Y)	-0.01003	-0.01012	-0.01059
	(!A2 * B1 * B2 * !Y)	0.01024	0.01029	0.01023
	(!A2 * B1 * B2 * !Y)	-0.00552	-0.00557	-0.00551
	(!A2 * B1 * !B2 * Y)	0.00226	0.00227	0.00213
	(!A2 * B1 * !B2 * Y)	-0.01039	-0.01046	-0.01066
	(!A2 * !B1 * Y)	0.00227	0.00229	0.00214
	(!A2 * !B1 * Y)	-0.01037	-0.01045	-0.01065

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)**	-0.00092	-0.00096	-0.00108
	(A2 * A3 * B1 * B2 * !Y)	0.00313	0.00314	0.00300
	(A2 * !A3 * B1 * B2 * !Y)	-0.00075	-0.00087	-0.00088
	(A2 * !A3 * B1 * B2 * !Y)	0.00310	0.00311	0.00310
	(A2 * !A3 * B1 * !B2 * Y)	-0.00049	-0.00049	-0.00049
	(A2 * !A3 * B1 * !B2 * Y)	0.00268	0.00268	0.00269
	(A2 * !A3 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(A2 * !A3 * !B1 * Y)	0.00268	0.00268	0.00269
	(!A2 * B1 * B2 * !Y)	-0.00088	-0.00089	-0.00089
	(!A2 * B1 * B2 * !Y)	0.00310	0.00311	0.00310
	(!A2 * B1 * !B2 * Y)	-0.00050	-0.00050	-0.00050
	(!A2 * B1 * !B2 * Y)	0.00269	0.00269	0.00270
	(!A2 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(!A2 * !B1 * Y)	0.00269	0.00269	0.00270
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00183	-0.00189	-0.00212
	(A2 * A3 * B1 * B2 * !Y)	0.00627	0.00627	0.00600
	(A2 * !A3 * B1 * B2 * !Y)	-0.00142	-0.00168	-0.00172
	(A2 * !A3 * B1 * B2 * !Y)	0.00618	0.00625	0.00620
	(A2 * !A3 * B1 * !B2 * Y)	-0.00101	-0.00102	-0.00102
	(A2 * !A3 * B1 * !B2 * Y)	0.00532	0.00537	0.00535
	(A2 * !A3 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(A2 * !A3 * !B1 * Y)	0.00532	0.00537	0.00535
	(!A2 * B1 * B2 * !Y)	-0.00170	-0.00175	-0.00176
	(!A2 * B1 * B2 * !Y)	0.00618	0.00622	0.00619
	(!A2 * B1 * !B2 * Y)	-0.00107	-0.00108	-0.00107
	(!A2 * B1 * !B2 * Y)	0.00533	0.00538	0.00535
	(!A2 * !B1 * Y)	-0.00107	-0.00109	-0.00108
	(!A2 * !B1 * Y)	0.00532	0.00537	0.00535

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00358	-0.00369	-0.00417
	(A2 * A3 * B1 * B2 * !Y)	0.01256	0.01253	0.01200
	(A2 * !A3 * B1 * B2 * !Y)	-0.00276	-0.00327	-0.00335
	(A2 * !A3 * B1 * B2 * !Y)	0.01238	0.01250	0.01240
	(A2 * !A3 * B1 * !B2 * Y)	-0.00182	-0.00183	-0.00182
	(A2 * !A3 * B1 * !B2 * Y)	0.01077	0.01083	0.01081
	(A2 * !A3 * !B1 * Y)	-0.00182	-0.00183	-0.00182
	(A2 * !A3 * !B1 * Y)	0.01077	0.01083	0.01081
	(!A2 * B1 * B2 * !Y)	-0.00334	-0.00345	-0.00343
	(!A2 * B1 * B2 * !Y)	0.01239	0.01250	0.01240
	(!A2 * B1 * !B2 * Y)	-0.00192	-0.00193	-0.00192
	(!A2 * B1 * !B2 * Y)	0.01079	0.01085	0.01083
	(!A2 * !B1 * Y)	-0.00192	-0.00194	-0.00193
	(!A2 * !B1 * Y)	0.01078	0.01085	0.01083

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)**	0.00288	0.00242	0.00268
	(A1 * A3 * B1 * B2 * !Y)	-0.00125	-0.00175	-0.00142
	(A1 * !A3 * B1 * B2 * !Y)	0.00265	0.00266	0.00265
	(A1 * !A3 * B1 * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * !A3 * B1 * !B2 * Y)	0.00078	0.00078	0.00077
	(A1 * !A3 * B1 * !B2 * Y)	-0.00234	-0.00234	-0.00233
	(A1 * !A3 * !B1 * Y)	0.00078	0.00078	0.00077
	(A1 * !A3 * !B1 * Y)	-0.00234	-0.00233	-0.00232
	(!A1 * A3 * B1 * B2 * !Y)	0.00266	0.00267	0.00265
	(!A1 * A3 * B1 * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * A3 * B1 * !B2 * Y)	0.00172	0.00174	0.00173
	(!A1 * A3 * B1 * !B2 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * A3 * !B1 * Y)	0.00172	0.00174	0.00173
	(!A1 * A3 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !A3 * B1 * B2 * !Y)	0.00193	0.00194	0.00193
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !A3 * B1 * !B2 * Y)	0.00095	0.00095	0.00095
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00232	-0.00233	-0.00233
	(!A1 * !A3 * !B1 * Y)	0.00095	0.00097	0.00095
	(!A1 * !A3 * !B1 * Y)	-0.00232	-0.00234	-0.00233

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00562	0.00460	0.00510
	(A1 * A3 * B1 * B2 * !Y)	-0.00252	-0.00361	-0.00297
	(A1 * !A3 * B1 * B2 * !Y)	0.00500	0.00503	0.00501
	(A1 * !A3 * B1 * B2 * !Y)	-0.00289	-0.00293	-0.00290
	(A1 * !A3 * B1 * !B2 * Y)	0.00141	0.00142	0.00144
	(A1 * !A3 * B1 * !B2 * Y)	-0.00464	-0.00467	-0.00463
	(A1 * !A3 * !B1 * Y)	0.00141	0.00142	0.00144
	(A1 * !A3 * !B1 * Y)	-0.00464	-0.00466	-0.00463
	(!A1 * A3 * B1 * B2 * !Y)	0.00501	0.00505	0.00502
	(!A1 * A3 * B1 * B2 * !Y)	-0.00288	-0.00292	-0.00290
	(!A1 * A3 * B1 * !B2 * Y)	0.00332	0.00335	0.00334
	(!A1 * A3 * B1 * !B2 * Y)	-0.00460	-0.00462	-0.00460
	(!A1 * A3 * !B1 * Y)	0.00332	0.00334	0.00334
	(!A1 * A3 * !B1 * Y)	-0.00460	-0.00461	-0.00460
	(!A1 * !A3 * B1 * B2 * !Y)	0.00368	0.00369	0.00368
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00291	-0.00293	-0.00292
	(!A1 * !A3 * B1 * !B2 * Y)	0.00187	0.00187	0.00187
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00467	-0.00468	-0.00467
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00188	0.00187
	(!A1 * !A3 * !B1 * Y)	-0.00467	-0.00468	-0.00467

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.01119	0.00919	0.01020
	(A1 * A3 * B1 * B2 * !Y)	-0.00507	-0.00720	-0.00589
	(A1 * !A3 * B1 * B2 * !Y)	0.01000	0.01001	0.01001
	(A1 * !A3 * B1 * B2 * !Y)	-0.00572	-0.00576	-0.00574
	(A1 * !A3 * B1 * !B2 * Y)	0.00270	0.00271	0.00274
	(A1 * !A3 * B1 * !B2 * Y)	-0.00920	-0.00923	-0.00918
	(A1 * !A3 * !B1 * Y)	0.00270	0.00272	0.00275
	(A1 * !A3 * !B1 * Y)	-0.00920	-0.00923	-0.00917
	(!A1 * A3 * B1 * B2 * !Y)	0.01006	0.01013	0.01007
	(!A1 * A3 * B1 * B2 * !Y)	-0.00571	-0.00580	-0.00574
	(!A1 * A3 * B1 * !B2 * Y)	0.00671	0.00677	0.00673
	(!A1 * A3 * B1 * !B2 * Y)	-0.00915	-0.00918	-0.00912
	(!A1 * A3 * !B1 * Y)	0.00672	0.00677	0.00673
	(!A1 * A3 * !B1 * Y)	-0.00915	-0.00917	-0.00912
	(!A1 * !A3 * B1 * B2 * !Y)	0.00713	0.00714	0.00712
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00573	-0.00576	-0.00574
	(!A1 * !A3 * B1 * !B2 * Y)	0.00350	0.00351	0.00349
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00927	-0.00930	-0.00926
	(!A1 * !A3 * !B1 * Y)	0.00351	0.00353	0.00350
	(!A1 * !A3 * !B1 * Y)	-0.00926	-0.00929	-0.00925

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)**	-0.00098	-0.00101	-0.00113
	(A1 * A3 * B1 * B2 * !Y)	0.00314	0.00314	0.00301
	(A1 * !A3 * B1 * B2 * !Y)	-0.00093	-0.00094	-0.00095
	(A1 * !A3 * B1 * B2 * !Y)	0.00310	0.00311	0.00310
	(A1 * !A3 * B1 * !B2 * Y)	-0.00069	-0.00070	-0.00071
	(A1 * !A3 * B1 * !B2 * Y)	0.00243	0.00247	0.00239
	(A1 * !A3 * !B1 * Y)	-0.00069	-0.00070	-0.00070
	(A1 * !A3 * !B1 * Y)	0.00243	0.00247	0.00239
	(!A1 * A3 * B1 * B2 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * A3 * B1 * B2 * !Y)	0.00311	0.00311	0.00310
	(!A1 * A3 * B1 * !B2 * Y)	-0.00146	-0.00164	-0.00166
	(!A1 * A3 * B1 * !B2 * Y)	0.00261	0.00244	0.00239
	(!A1 * A3 * !B1 * Y)	-0.00146	-0.00164	-0.00166
	(!A1 * A3 * !B1 * Y)	0.00262	0.00244	0.00239
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00034	-0.00035	-0.00028
	(!A1 * !A3 * B1 * B2 * !Y)	0.00310	0.00313	0.00311
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00094	-0.00095	-0.00095
	(!A1 * !A3 * B1 * !B2 * Y)	0.00249	0.00251	0.00240
	(!A1 * !A3 * !B1 * Y)	-0.00093	-0.00095	-0.00095
	(!A1 * !A3 * !B1 * Y)	0.00249	0.00251	0.00240

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00169	-0.00174	-0.00199
	(A1 * A3 * B1 * B2 * !Y)	0.00643	0.00639	0.00614
	(A1 * !A3 * B1 * B2 * !Y)	-0.00156	-0.00161	-0.00160
	(A1 * !A3 * B1 * B2 * !Y)	0.00634	0.00640	0.00635
	(A1 * !A3 * B1 * !B2 * Y)	-0.00123	-0.00126	-0.00129
	(A1 * !A3 * B1 * !B2 * Y)	0.00490	0.00497	0.00479
	(A1 * !A3 * !B1 * Y)	-0.00124	-0.00126	-0.00130
	(A1 * !A3 * !B1 * Y)	0.00490	0.00497	0.00479
	(!A1 * A3 * B1 * B2 * !Y)	-0.00157	-0.00162	-0.00162
	(!A1 * A3 * B1 * B2 * !Y)	0.00634	0.00638	0.00634
	(!A1 * A3 * B1 * !B2 * Y)	-0.00268	-0.00317	-0.00322
	(!A1 * A3 * B1 * !B2 * Y)	0.00527	0.00484	0.00474
	(!A1 * A3 * !B1 * Y)	-0.00268	-0.00317	-0.00322
	(!A1 * A3 * !B1 * Y)	0.00527	0.00484	0.00474
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00052	-0.00053	-0.00038
	(!A1 * !A3 * B1 * B2 * !Y)	0.00637	0.00641	0.00637
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00185	-0.00185	-0.00187
	(!A1 * !A3 * B1 * !B2 * Y)	0.00500	0.00505	0.00482
	(!A1 * !A3 * !B1 * Y)	-0.00185	-0.00185	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00500	0.00505	0.00482

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00343	-0.00351	-0.00401
	(A1 * A3 * B1 * B2 * !Y)	0.01284	0.01273	0.01222
	(A1 * !A3 * B1 * B2 * !Y)	-0.00314	-0.00323	-0.00321
	(A1 * !A3 * B1 * B2 * !Y)	0.01261	0.01274	0.01263
	(A1 * !A3 * B1 * !B2 * Y)	-0.00238	-0.00239	-0.00248
	(A1 * !A3 * B1 * !B2 * Y)	0.00968	0.00969	0.00947
	(A1 * !A3 * !B1 * Y)	-0.00238	-0.00239	-0.00248
	(A1 * !A3 * !B1 * Y)	0.00968	0.00970	0.00947
	(!A1 * A3 * B1 * B2 * !Y)	-0.00320	-0.00327	-0.00326
	(!A1 * A3 * B1 * B2 * !Y)	0.01266	0.01270	0.01263
	(!A1 * A3 * B1 * !B2 * Y)	-0.00543	-0.00637	-0.00648
	(!A1 * A3 * B1 * !B2 * Y)	0.01050	0.00964	0.00939
	(!A1 * A3 * !B1 * Y)	-0.00543	-0.00637	-0.00648
	(!A1 * A3 * !B1 * Y)	0.01051	0.00964	0.00939
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00081	-0.00082	-0.00051
	(!A1 * !A3 * B1 * B2 * !Y)	0.01264	0.01273	0.01264
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00350	-0.00349	-0.00349
	(!A1 * !A3 * B1 * !B2 * Y)	0.00992	0.00997	0.00953
	(!A1 * !A3 * !B1 * Y)	-0.00351	-0.00349	-0.00350
	(!A1 * !A3 * !B1 * Y)	0.00992	0.00997	0.00953

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)**	0.00275	0.00230	0.00257
	(A1 * A2 * B1 * B2 * !Y)	-0.00129	-0.00177	-0.00144
	(A1 * !A2 * B1 * !B2 * Y)	0.00171	0.00173	0.00172
	(A1 * !A2 * B1 * !B2 * Y)	-0.00222	-0.00224	-0.00223
	(A1 * !A2 * !B1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * Y)	-0.00223	-0.00224	-0.00223
	(!A2 * B1 * B2 * !Y)	0.00254	0.00255	0.00255
	(!A2 * B1 * B2 * !Y)	-0.00139	-0.00140	-0.00140
	(!A1 * A2 * B1 * B2 * !Y)	0.00250	0.00251	0.00250
	(!A1 * A2 * B1 * B2 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * A2 * B1 * !B2 * Y)	0.00167	0.00168	0.00168
	(!A1 * A2 * B1 * !B2 * Y)	-0.00223	-0.00223	-0.00223
	(!A1 * A2 * !B1 * Y)	0.00167	0.00168	0.00168
	(!A1 * A2 * !B1 * Y)	-0.00223	-0.00223	-0.00222
	(!A1 * !A2 * B1 * !B2 * Y)	0.00170	0.00171	0.00170
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00224	-0.00225	-0.00224
	(!A1 * !A2 * !B1 * Y)	0.00170	0.00172	0.00170
	(!A1 * !A2 * !B1 * Y)	-0.00224	-0.00225	-0.00224

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00565	0.00469	0.00517
	(A1 * A2 * B1 * B2 * !Y)	-0.00256	-0.00356	-0.00292
	(A1 * !A2 * B1 * !B2 * Y)	0.00343	0.00348	0.00345
	(A1 * !A2 * B1 * !B2 * Y)	-0.00450	-0.00454	-0.00451
	(A1 * !A2 * !B1 * Y)	0.00344	0.00348	0.00345
	(A1 * !A2 * !B1 * Y)	-0.00450	-0.00454	-0.00451
	(!A2 * B1 * B2 * !Y)	0.00508	0.00511	0.00509
	(!A2 * B1 * B2 * !Y)	-0.00283	-0.00287	-0.00285
	(!A1 * A2 * B1 * B2 * !Y)	0.00503	0.00505	0.00503
	(!A1 * A2 * B1 * B2 * !Y)	-0.00284	-0.00287	-0.00285
	(!A1 * A2 * B1 * !B2 * Y)	0.00337	0.00340	0.00338
	(!A1 * A2 * B1 * !B2 * Y)	-0.00451	-0.00453	-0.00451
	(!A1 * A2 * !B1 * Y)	0.00338	0.00340	0.00338
	(!A1 * A2 * !B1 * Y)	-0.00451	-0.00453	-0.00451
	(!A1 * !A2 * B1 * !B2 * Y)	0.00338	0.00342	0.00340
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00452	-0.00456	-0.00454
	(!A1 * !A2 * !B1 * Y)	0.00338	0.00343	0.00340
	(!A1 * !A2 * !B1 * Y)	-0.00452	-0.00456	-0.00454

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.01103	0.00912	0.01013
	(A1 * A2 * B1 * B2 * !Y)	-0.00530	-0.00725	-0.00594
	(A1 * !A2 * B1 * !B2 * Y)	0.00669	0.00677	0.00669
	(A1 * !A2 * B1 * !B2 * Y)	-0.00911	-0.00916	-0.00910
	(A1 * !A2 * !B1 * Y)	0.00669	0.00665	0.00669
	(A1 * !A2 * !B1 * Y)	-0.00911	-0.00907	-0.00910
	(!A2 * B1 * B2 * !Y)	0.00994	0.01001	0.00996
	(!A2 * B1 * B2 * !Y)	-0.00574	-0.00583	-0.00578
	(!A1 * A2 * B1 * B2 * !Y)	0.00985	0.00988	0.00983
	(!A1 * A2 * B1 * B2 * !Y)	-0.00578	-0.00583	-0.00578
	(!A1 * A2 * B1 * !B2 * Y)	0.00648	0.00658	0.00654
	(!A1 * A2 * B1 * !B2 * Y)	-0.00907	-0.00916	-0.00910
	(!A1 * A2 * !B1 * Y)	0.00648	0.00658	0.00654
	(!A1 * A2 * !B1 * Y)	-0.00907	-0.00915	-0.00910
	(!A1 * !A2 * B1 * !B2 * Y)	0.00654	0.00663	0.00657
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00914	-0.00920	-0.00916
	(!A1 * !A2 * !B1 * Y)	0.00655	0.00663	0.00658
	(!A1 * !A2 * !B1 * Y)	-0.00913	-0.00920	-0.00916

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)**	-0.00087	-0.00090	-0.00101
	(A1 * A2 * B1 * B2 * !Y)	0.00316	0.00316	0.00303
	(A1 * !A2 * B1 * !B2 * Y)	-0.00153	-0.00164	-0.00166
	(A1 * !A2 * B1 * !B2 * Y)	0.00241	0.00232	0.00230
	(A1 * !A2 * !B1 * Y)	-0.00153	-0.00163	-0.00166
	(A1 * !A2 * !B1 * Y)	0.00242	0.00232	0.00230
	(!A2 * B1 * B2 * !Y)	-0.00082	-0.00084	-0.00083
	(!A2 * B1 * B2 * !Y)	0.00313	0.00315	0.00312
	(!A1 * A2 * B1 * B2 * !Y)	-0.00071	-0.00080	-0.00081
	(!A1 * A2 * B1 * B2 * !Y)	0.00312	0.00315	0.00312
	(!A1 * A2 * B1 * !B2 * Y)	-0.00145	-0.00162	-0.00164
	(!A1 * A2 * B1 * !B2 * Y)	0.00241	0.00234	0.00229
	(!A1 * A2 * !B1 * Y)	-0.00145	-0.00162	-0.00164
	(!A1 * A2 * !B1 * Y)	0.00241	0.00234	0.00229
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00162	-0.00166	-0.00167
	(!A1 * !A2 * B1 * !B2 * Y)	0.00230	0.00228	0.00228
	(!A1 * !A2 * !B1 * Y)	-0.00162	-0.00166	-0.00167
	(!A1 * !A2 * !B1 * Y)	0.00230	0.00228	0.00228

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00178	-0.00182	-0.00206
	(A1 * A2 * B1 * B2 * !Y)	0.00638	0.00636	0.00609
	(A1 * !A2 * B1 * !B2 * Y)	-0.00306	-0.00330	-0.00333
	(A1 * !A2 * B1 * !B2 * Y)	0.00482	0.00469	0.00465
	(A1 * !A2 * !B1 * Y)	-0.00306	-0.00330	-0.00333
	(A1 * !A2 * !B1 * Y)	0.00482	0.00469	0.00465
	(!A2 * B1 * B2 * !Y)	-0.00164	-0.00169	-0.00168
	(!A2 * B1 * B2 * !Y)	0.00628	0.00631	0.00629
	(!A1 * A2 * B1 * B2 * !Y)	-0.00144	-0.00163	-0.00165
	(!A1 * A2 * B1 * B2 * !Y)	0.00629	0.00635	0.00629
	(!A1 * A2 * B1 * !B2 * Y)	-0.00294	-0.00327	-0.00331
	(!A1 * A2 * B1 * !B2 * Y)	0.00485	0.00474	0.00464
	(!A1 * A2 * !B1 * Y)	-0.00294	-0.00327	-0.00331
	(!A1 * A2 * !B1 * Y)	0.00485	0.00474	0.00464
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00324	-0.00335	-0.00335
	(!A1 * !A2 * B1 * !B2 * Y)	0.00461	0.00463	0.00462
	(!A1 * !A2 * !B1 * Y)	-0.00324	-0.00335	-0.00335
	(!A1 * !A2 * !B1 * Y)	0.00461	0.00464	0.00462

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00336	-0.00346	-0.00394
	(A1 * A2 * B1 * B2 * !Y)	0.01287	0.01283	0.01226
	(A1 * !A2 * B1 * !B2 * Y)	-0.00583	-0.00638	-0.00643
	(A1 * !A2 * B1 * !B2 * Y)	0.00984	0.00950	0.00939
	(A1 * !A2 * !B1 * Y)	-0.00583	-0.00637	-0.00643
	(A1 * !A2 * !B1 * Y)	0.00984	0.00950	0.00940
	(!A2 * B1 * B2 * !Y)	-0.00308	-0.00316	-0.00315
	(!A2 * B1 * B2 * !Y)	0.01265	0.01272	0.01267
	(!A1 * A2 * B1 * B2 * !Y)	-0.00266	-0.00303	-0.00309
	(!A1 * A2 * B1 * B2 * !Y)	0.01270	0.01279	0.01267
	(!A1 * A2 * B1 * !B2 * Y)	-0.00559	-0.00629	-0.00639
	(!A1 * A2 * B1 * !B2 * Y)	0.00992	0.00958	0.00936
	(!A1 * A2 * !B1 * Y)	-0.00558	-0.00628	-0.00639
	(!A1 * A2 * !B1 * Y)	0.00992	0.00958	0.00936
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00624	-0.00648	-0.00649
	(!A1 * !A2 * B1 * !B2 * Y)	0.00933	0.00937	0.00932
	(!A1 * !A2 * !B1 * Y)	-0.00624	-0.00647	-0.00648
	(!A1 * !A2 * !B1 * Y)	0.00933	0.00937	0.00932

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)**	0.00206	0.00207	0.00210
	(A1 * A2 * A3 * B2 * !Y)	-0.00081	-0.00081	-0.00077
	(A1 * A2 * A3 * !B2 * !Y)	0.00277	0.00278	0.00276
	(A1 * A2 * A3 * !B2 * !Y)	-0.00015	-0.00015	-0.00016
	(A1 * A2 * !A3 * !B2 * Y)	0.00057	0.00057	0.00055
	(A1 * A2 * !A3 * !B2 * Y)	-0.00266	-0.00267	-0.00271
	(A1 * !A2 * !B2 * Y)	0.00057	0.00057	0.00054
	(A1 * !A2 * !B2 * Y)	-0.00266	-0.00267	-0.00271
	(!A1 * !B2 * Y)	0.00057	0.00057	0.00055
	(!A1 * !B2 * Y)	-0.00266	-0.00267	-0.00271
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00391	0.00393	0.00398
	(A1 * A2 * A3 * B2 * !Y)	-0.00163	-0.00162	-0.00153
	(A1 * A2 * A3 * !B2 * !Y)	0.00534	0.00536	0.00532
	(A1 * A2 * A3 * !B2 * !Y)	-0.00027	-0.00029	-0.00030
	(A1 * A2 * !A3 * !B2 * Y)	0.00121	0.00121	0.00112
	(A1 * A2 * !A3 * !B2 * Y)	-0.00514	-0.00516	-0.00528
	(A1 * !A2 * !B2 * Y)	0.00121	0.00120	0.00112
	(A1 * !A2 * !B2 * Y)	-0.00514	-0.00516	-0.00528
	(!A1 * !B2 * Y)	0.00122	0.00121	0.00113
	(!A1 * !B2 * Y)	-0.00513	-0.00515	-0.00527
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00786	0.00792	0.00805
	(A1 * A2 * A3 * B2 * !Y)	-0.00324	-0.00325	-0.00309
	(A1 * A2 * A3 * !B2 * !Y)	0.01076	0.01082	0.01071
	(A1 * A2 * A3 * !B2 * !Y)	-0.00059	-0.00064	-0.00065
	(A1 * A2 * !A3 * !B2 * Y)	0.00229	0.00229	0.00214
	(A1 * A2 * !A3 * !B2 * Y)	-0.01045	-0.01050	-0.01071
	(A1 * !A2 * !B2 * Y)	0.00229	0.00229	0.00214
	(A1 * !A2 * !B2 * Y)	-0.01046	-0.01051	-0.01071
	(!A1 * !B2 * Y)	0.00231	0.00230	0.00215
	(!A1 * !B2 * Y)	-0.01045	-0.01049	-0.01070

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)	-0.00092	-0.00095	-0.00132
	(A1 * A2 * A3 * B2 * !Y)	0.00197	0.00197	0.00162
	(A1 * A2 * A3 * !B2 * !Y)	-0.00124	-0.00126	-0.00132
	(A1 * A2 * A3 * !B2 * !Y)	0.00167	0.00167	0.00162
	(A1 * A2 * !A3 * !B2 * Y)	-0.00050	-0.00050	-0.00049
	(A1 * A2 * !A3 * !B2 * Y)	0.00274	0.00275	0.00275
	(A1 * !A2 * !B2 * Y)	-0.00050	-0.00050	-0.00049
	(A1 * !A2 * !B2 * Y)	0.00274	0.00275	0.00275
	(!A1 * !B2 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !B2 * Y)	0.00274	0.00275	0.00275
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00164	-0.00168	-0.00244
	(A1 * A2 * A3 * B2 * !Y)	0.00393	0.00391	0.00324
	(A1 * A2 * A3 * !B2 * !Y)	-0.00228	-0.00234	-0.00246
	(A1 * A2 * A3 * !B2 * !Y)	0.00333	0.00334	0.00323
	(A1 * A2 * !A3 * !B2 * Y)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * !A3 * !B2 * Y)	0.00535	0.00537	0.00536
	(A1 * !A2 * !B2 * Y)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * !B2 * Y)	0.00535	0.00537	0.00536
	(!A1 * !B2 * Y)	-0.00102	-0.00102	-0.00101
	(!A1 * !B2 * Y)	0.00535	0.00537	0.00536

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00341	-0.00350	-0.00497
	(A1 * A2 * A3 * B2 * !Y)	0.00785	0.00781	0.00651
	(A1 * A2 * A3 * !B2 * !Y)	-0.00465	-0.00476	-0.00499
	(A1 * A2 * A3 * !B2 * !Y)	0.00670	0.00672	0.00651
	(A1 * A2 * !A3 * !B2 * Y)	-0.00196	-0.00194	-0.00193
	(A1 * A2 * !A3 * !B2 * Y)	0.01090	0.01090	0.01088
	(A1 * !A2 * !B2 * Y)	-0.00196	-0.00194	-0.00193
	(A1 * !A2 * !B2 * Y)	0.01090	0.01089	0.01087
	(!A1 * !B2 * Y)	-0.00197	-0.00195	-0.00193
	(!A1 * !B2 * Y)	0.01090	0.01090	0.01088

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)**	0.00199	0.00202	0.00202
	(A1 * A2 * A3 * B1 * !Y)	-0.00087	-0.00088	-0.00083
	(A1 * A2 * A3 * !B1 * !Y)	0.00274	0.00275	0.00272
	(A1 * A2 * A3 * !B1 * !Y)	-0.00016	-0.00016	-0.00018
	(A1 * A2 * !A3 * !B1 * Y)	0.00172	0.00174	0.00173
	(A1 * A2 * !A3 * !B1 * Y)	-0.00230	-0.00231	-0.00230
	(A1 * !A2 * !B1 * Y)	0.00172	0.00174	0.00173
	(A1 * !A2 * !B1 * Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !B1 * Y)	0.00172	0.00174	0.00173
	(!A1 * !B1 * Y)	-0.00230	-0.00231	-0.00230

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00391	0.00392	0.00398
	(A1 * A2 * A3 * B1 * !Y)	-0.00168	-0.00167	-0.00159
	(A1 * A2 * A3 * !B1 * !Y)	0.00537	0.00540	0.00534
	(A1 * A2 * A3 * !B1 * !Y)	-0.00029	-0.00031	-0.00033
	(A1 * A2 * !A3 * !B1 * Y)	0.00339	0.00346	0.00342
	(A1 * A2 * !A3 * !B1 * Y)	-0.00450	-0.00454	-0.00451
	(A1 * !A2 * !B1 * Y)	0.00339	0.00345	0.00342
	(A1 * !A2 * !B1 * Y)	-0.00450	-0.00454	-0.00451
	(!A1 * !B1 * Y)	0.00339	0.00346	0.00342
	(!A1 * !B1 * Y)	-0.00450	-0.00455	-0.00451
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00774	0.00776	0.00790
	(A1 * A2 * A3 * B1 * !Y)	-0.00329	-0.00327	-0.00311
	(A1 * A2 * A3 * !B1 * !Y)	0.01068	0.01074	0.01060
	(A1 * A2 * A3 * !B1 * !Y)	-0.00062	-0.00063	-0.00065
	(A1 * A2 * !A3 * !B1 * Y)	0.00669	0.00680	0.00674
	(A1 * A2 * !A3 * !B1 * Y)	-0.00900	-0.00908	-0.00903
	(A1 * !A2 * !B1 * Y)	0.00668	0.00680	0.00674
	(A1 * !A2 * !B1 * Y)	-0.00900	-0.00909	-0.00903
	(!A1 * !B1 * Y)	0.00669	0.00680	0.00674
	(!A1 * !B1 * Y)	-0.00900	-0.00908	-0.00903

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)**	-0.00085	-0.00088	-0.00126
	(A1 * A2 * A3 * B1 * !Y)	0.00202	0.00201	0.00167
	(A1 * A2 * A3 * !B1 * !Y)	-0.00122	-0.00123	-0.00128
	(A1 * A2 * A3 * !B1 * !Y)	0.00169	0.00169	0.00164
	(A1 * A2 * !A3 * !B1 * Y)	-0.00150	-0.00164	-0.00166
	(A1 * A2 * !A3 * !B1 * Y)	0.00255	0.00242	0.00237
	(A1 * !A2 * !B1 * Y)	-0.00150	-0.00164	-0.00166
	(A1 * !A2 * !B1 * Y)	0.00255	0.00242	0.00237
	(!A1 * !B1 * Y)	-0.00150	-0.00164	-0.00166
	(!A1 * !B1 * Y)	0.00255	0.00242	0.00237
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00164	-0.00170	-0.00244
	(A1 * A2 * A3 * B1 * !Y)	0.00398	0.00397	0.00329
	(A1 * A2 * A3 * !B1 * !Y)	-0.00231	-0.00237	-0.00247
	(A1 * A2 * A3 * !B1 * !Y)	0.00336	0.00337	0.00326
	(A1 * A2 * !A3 * !B1 * Y)	-0.00288	-0.00324	-0.00329
	(A1 * A2 * !A3 * !B1 * Y)	0.00505	0.00473	0.00465
	(A1 * !A2 * !B1 * Y)	-0.00288	-0.00325	-0.00329
	(A1 * !A2 * !B1 * Y)	0.00505	0.00473	0.00465
	(!A1 * !B1 * Y)	-0.00288	-0.00324	-0.00329
	(!A1 * !B1 * Y)	0.00505	0.00473	0.00465
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00328	-0.00339	-0.00482
	(A1 * A2 * A3 * B1 * !Y)	0.00789	0.00785	0.00652
	(A1 * A2 * A3 * !B1 * !Y)	-0.00452	-0.00465	-0.00483
	(A1 * A2 * A3 * !B1 * !Y)	0.00670	0.00673	0.00651
	(A1 * A2 * !A3 * !B1 * Y)	-0.00565	-0.00638	-0.00648
	(A1 * A2 * !A3 * !B1 * Y)	0.01010	0.00949	0.00930
	(A1 * !A2 * !B1 * Y)	-0.00565	-0.00638	-0.00648
	(A1 * !A2 * !B1 * Y)	0.01010	0.00949	0.00929
	(!A1 * !B1 * Y)	-0.00565	-0.00638	-0.00647
	(!A1 * !B1 * Y)	0.01010	0.00949	0.00930

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00270	0.00268	0.00277	0.00270	0.00252	1.29645
sky130_fd_sc_hs__a32o_2	0.00288	0.00285	0.00294	0.00284	0.00271	2.19252
sky130_fd_sc_hs__a32o_4	0.00497	0.00559	0.00505	0.00516	0.00585	4.78049

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	75.07150	136.53100
sky130_fd_sc_hs__a32o_2	0.00000	107.70900	138.01300
sky130_fd_sc_hs__a32o_4	0.00000	215.91200	275.90300

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)	0.11996	0.65598	7.01015
	A2->X (RR)	0.12772	0.64265	6.86438
	A3->X (RR)	0.13242	0.61402	6.56882
	B1->X (RR)	0.07690	0.57221	6.40168
	B2->X (RR)	0.08024	0.55445	6.23959
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.12042	0.57873	6.63318
	A2->X (RR)	0.12856	0.56341	6.47432
	A3->X (RR)	0.13351	0.53293	6.09279
	B1->X (RR)	0.07874	0.49939	5.96677
	B2->X (RR)	0.08302	0.47896	5.79973
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.13417	0.53374	7.02314
	A2->X (RR)	0.14490	0.52325	6.90604
	A3->X (RR)	0.15025	0.49233	6.65436
	B1->X (RR)	0.07739	0.42430	6.50297
	B2->X (RR)	0.08192	0.40886	6.38794

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.14526	0.54879	4.92231
	A2->X (FF)	0.16075	0.57506	5.05804
	A3->X (FF)	0.16697	0.58557	5.17528
	B1->X (FF)	0.11679	0.56345	5.44207
	B2->X (FF)	0.12845	0.59194	5.56976
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.17493	0.53832	4.54968
	A2->X (FF)	0.19240	0.56691	4.69242
	A3->X (FF)	0.20502	0.58682	4.84572
	B1->X (FF)	0.15780	0.57912	5.06814
	B2->X (FF)	0.17405	0.61275	5.21460
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.16430	0.48799	4.94916
	A2->X (FF)	0.17315	0.50740	5.03236
	A3->X (FF)	0.19413	0.53908	5.24905
	B1->X (FF)	0.15532	0.54511	5.40176
	B2->X (FF)	0.16421	0.56266	5.48952

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01818	0.02118	0.09677
	A1	0.01069	0.01370	0.08932
	A2	0.01912	0.02144	0.09530
	A2	0.01068	0.01299	0.08687
	A3	0.02020	0.02203	0.08680
	A3	0.01062	0.01245	0.07733
	B1	0.01251	0.01799	0.11007
	B1	0.00759	0.01307	0.10526
	B2	0.01351	0.01839	0.10799
	B2	0.00758	0.01246	0.10233
sky130_fd_sc_hs__a32o_2	A1	0.02198	0.02469	0.10066
	A1	0.01469	0.01754	0.09555
	A2	0.02353	0.02564	0.10216
	A2	0.01468	0.01680	0.09373
	A3	0.02480	0.02610	0.08283
	A3	0.01464	0.01595	0.07359
	B1	0.01623	0.02151	0.11155
	B1	0.01107	0.01637	0.10730
	B2	0.01745	0.02203	0.10879
	B2	0.01105	0.01564	0.10338

sky130_fd_sc_hs__a32o_4	**A1**	0.04465	0.05022	0.20460
	A1	0.03029	0.03592	0.19003
	A2	0.04720	0.05113	0.20120
	A2	0.03029	0.03424	0.18408
	A3	0.04922	0.05275	0.21080
	A3	0.03028	0.03389	0.19204
	B1	0.03093	0.04155	0.22748
	B1	0.02160	0.03224	0.21890
	B2	0.03392	0.04357	0.23259
	B2	0.02148	0.03114	0.22123

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00553	0.00855	0.07731
	A1	0.01300	0.01600	0.08397
	A2	0.00626	0.00919	0.07751
	A2	0.01472	0.01762	0.08562
	A3	0.00647	0.00911	0.07987
	A3	0.01602	0.01863	0.08818
	B1	0.00519	0.01133	0.10913
	B1	0.01011	0.01625	0.11272
	B2	0.00559	0.01172	0.10831
	B2	0.01152	0.01762	0.11268

sky130_fd_sc_hs__a32o_2	**A1**	0.01012	0.01230	0.08232
	A1	0.01784	0.01998	0.08917
	A2	0.01133	0.01325	0.08314
	A2	0.02016	0.02192	0.09193
	A3	0.01156	0.01276	0.08184
	A3	0.02167	0.02268	0.09109
	B1	0.00924	0.01483	0.11157
	B1	0.01439	0.01981	0.11649
	B2	0.01018	0.01540	0.11078
	B2	0.01656	0.02169	0.11682
sky130_fd_sc_hs__a32o_4	**A1**	0.02064	0.02441	0.18087
	A1	0.03500	0.03872	0.19065
	A2	0.02200	0.02566	0.17823
	A2	0.03889	0.04235	0.19285
	A3	0.02458	0.02764	0.18720
	A3	0.04342	0.04616	0.20408
	B1	0.01894	0.02899	0.20788
	B1	0.02828	0.03819	0.21554
	B2	0.01916	0.02995	0.21344
	B2	0.03157	0.04219	0.22544

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)**	0.00264	0.00220	0.00267
	(A2 * A3 * B1 * B2 * X)	-0.00099	-0.00146	-0.00093
	(A2 * !A3 * B1 * B2 * X)	0.00265	0.00266	0.00266
	(A2 * !A3 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(A2 * !A3 * B1 * !B2 * !X)	0.00096	0.00095	0.00091
	(A2 * !A3 * B1 * !B2 * !X)	-0.00185	-0.00186	-0.00195
	(A2 * !A3 * !B1 * !X)	0.00096	0.00096	0.00091
	(A2 * !A3 * !B1 * !X)	-0.00185	-0.00185	-0.00195
	(!A2 * B1 * B2 * X)	0.00269	0.00270	0.00269
	(!A2 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * B1 * !B2 * !X)	0.00096	0.00096	0.00093
	(!A2 * B1 * !B2 * !X)	-0.00191	-0.00191	-0.00196
	(!A2 * !B1 * !X)	0.00096	0.00096	0.00093
	(!A2 * !B1 * !X)	-0.00191	-0.00191	-0.00196
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00287	0.00242	0.00290
	(A2 * A3 * B1 * B2 * X)	-0.00100	-0.00145	-0.00091
	(A2 * !A3 * B1 * B2 * X)	0.00287	0.00288	0.00287
	(A2 * !A3 * B1 * B2 * X)	-0.00081	-0.00083	-0.00082
	(A2 * !A3 * B1 * !B2 * !X)	0.00143	0.00143	0.00138
	(A2 * !A3 * B1 * !B2 * !X)	-0.00145	-0.00146	-0.00157
	(A2 * !A3 * !B1 * !X)	0.00143	0.00143	0.00138
	(A2 * !A3 * !B1 * !X)	-0.00145	-0.00146	-0.00157
	(!A2 * B1 * B2 * X)	0.00292	0.00292	0.00292
	(!A2 * B1 * B2 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * B1 * !B2 * !X)	0.00144	0.00143	0.00140
	(!A2 * B1 * !B2 * !X)	-0.00152	-0.00153	-0.00158
	(!A2 * !B1 * !X)	0.00144	0.00143	0.00140
	(!A2 * !B1 * !X)	-0.00152	-0.00152	-0.00158

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00499	0.00417	0.00510
	(A2 * A3 * B1 * B2 * X)	-0.00201	-0.00289	-0.00183
	(A2 * !A3 * B1 * B2 * X)	0.00505	0.00505	0.00505
	(A2 * !A3 * B1 * B2 * X)	-0.00163	-0.00165	-0.00163
	(A2 * !A3 * B1 * !B2 * !X)	0.00272	0.00273	0.00260
	(A2 * !A3 * B1 * !B2 * !X)	-0.00257	-0.00260	-0.00284
	(A2 * !A3 * !B1 * !X)	0.00273	0.00273	0.00260
	(A2 * !A3 * !B1 * !X)	-0.00257	-0.00260	-0.00284
	(!A2 * B1 * B2 * X)	0.00513	0.00515	0.00513
	(!A2 * B1 * B2 * X)	-0.00163	-0.00166	-0.00163
	(!A2 * B1 * !B2 * !X)	0.00265	0.00265	0.00260
	(!A2 * B1 * !B2 * !X)	-0.00275	-0.00278	-0.00288
	(!A2 * !B1 * !X)	0.00265	0.00266	0.00260
	(!A2 * !B1 * !X)	-0.00275	-0.00278	-0.00288

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)**	-0.00037	-0.00040	-0.00059
	(A2 * A3 * B1 * B2 * X)	0.00327	0.00323	0.00304
	(A2 * !A3 * B1 * B2 * X)	-0.00022	-0.00030	-0.00031
	(A2 * !A3 * B1 * B2 * X)	0.00321	0.00322	0.00321
	(A2 * !A3 * B1 * !B2 * !X)	0.00001	0.00001	0.00001
	(A2 * !A3 * B1 * !B2 * !X)	0.00286	0.00288	0.00287
	(A2 * !A3 * !B1 * !X)	0.00002	0.00001	0.00002
	(A2 * !A3 * !B1 * !X)	0.00286	0.00288	0.00287
	(!A2 * B1 * B2 * X)	-0.00032	-0.00034	-0.00033
	(!A2 * B1 * B2 * X)	0.00321	0.00322	0.00321
	(!A2 * B1 * !B2 * !X)	-0.00001	-0.00002	-0.00001
	(!A2 * B1 * !B2 * !X)	0.00286	0.00291	0.00287
	(!A2 * !B1 * !X)	-0.00001	-0.00002	-0.00001
	(!A2 * !B1 * !X)	0.00286	0.00291	0.00287
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00057	-0.00061	-0.00079
	(A2 * A3 * B1 * B2 * X)	0.00327	0.00326	0.00305
	(A2 * !A3 * B1 * B2 * X)	-0.00038	-0.00050	-0.00051
	(A2 * !A3 * B1 * B2 * X)	0.00321	0.00323	0.00322
	(A2 * !A3 * B1 * !B2 * !X)	0.00040	0.00039	0.00040
	(A2 * !A3 * B1 * !B2 * !X)	0.00333	0.00335	0.00334
	(A2 * !A3 * !B1 * !X)	0.00040	0.00039	0.00040
	(A2 * !A3 * !B1 * !X)	0.00333	0.00335	0.00334
	(!A2 * B1 * B2 * X)	-0.00052	-0.00053	-0.00053
	(!A2 * B1 * B2 * X)	0.00323	0.00323	0.00322
	(!A2 * B1 * !B2 * !X)	0.00037	0.00036	0.00037
	(!A2 * B1 * !B2 * !X)	0.00334	0.00338	0.00335
	(!A2 * !B1 * !X)	0.00037	0.00036	0.00037
	(!A2 * !B1 * !X)	0.00334	0.00338	0.00335

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00044	-0.00052	-0.00089
	(A2 * A3 * B1 * B2 * X)	0.00654	0.00652	0.00610
	(A2 * !A3 * B1 * B2 * X)	-0.00010	-0.00031	-0.00033
	(A2 * !A3 * B1 * B2 * X)	0.00643	0.00647	0.00644
	(A2 * !A3 * B1 * !B2 * !X)	0.00099	0.00097	0.00099
	(A2 * !A3 * B1 * !B2 * !X)	0.00639	0.00648	0.00641
	(A2 * !A3 * !B1 * !X)	0.00100	0.00098	0.00100
	(A2 * !A3 * !B1 * !X)	0.00640	0.00649	0.00642
	(!A2 * B1 * B2 * X)	-0.00034	-0.00036	-0.00036
	(!A2 * B1 * B2 * X)	0.00645	0.00647	0.00644
	(!A2 * B1 * !B2 * !X)	0.00096	0.00094	0.00096
	(!A2 * B1 * !B2 * !X)	0.00640	0.00649	0.00642
	(!A2 * !B1 * !X)	0.00097	0.00094	0.00097
	(!A2 * !B1 * !X)	0.00640	0.00649	0.00643

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)**	0.00261	0.00217	0.00264
	(A1 * A3 * B1 * B2 * X)	-0.00100	-0.00146	-0.00093
	(A1 * !A3 * B1 * B2 * X)	0.00266	0.00267	0.00266
	(A1 * !A3 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A3 * B1 * !B2 * !X)	0.00101	0.00101	0.00102
	(A1 * !A3 * B1 * !B2 * !X)	-0.00170	-0.00170	-0.00169
	(A1 * !A3 * !B1 * !X)	0.00101	0.00101	0.00102
	(A1 * !A3 * !B1 * !X)	-0.00170	-0.00169	-0.00169
	(!A1 * A3 * B1 * B2 * X)	0.00267	0.00267	0.00267
	(!A1 * A3 * B1 * B2 * X)	-0.00082	-0.00084	-0.00083
	(!A1 * A3 * B1 * !B2 * !X)	0.00183	0.00184	0.00184
	(!A1 * A3 * B1 * !B2 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * A3 * !B1 * !X)	0.00183	0.00184	0.00184
	(!A1 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A3 * B1 * B2 * X)	0.00207	0.00207	0.00206
	(!A1 * !A3 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A3 * B1 * !B2 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00169	-0.00171	-0.00170
	(!A1 * !A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00171	-0.00170

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00283	0.00239	0.00287
	(A1 * A3 * B1 * B2 * X)	-0.00101	-0.00145	-0.00091
	(A1 * !A3 * B1 * B2 * X)	0.00288	0.00289	0.00288
	(A1 * !A3 * B1 * B2 * X)	-0.00081	-0.00083	-0.00082
	(A1 * !A3 * B1 * !B2 * !X)	0.00151	0.00151	0.00152
	(A1 * !A3 * B1 * !B2 * !X)	-0.00127	-0.00128	-0.00126
	(A1 * !A3 * !B1 * !X)	0.00151	0.00151	0.00152
	(A1 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00126
	(!A1 * A3 * B1 * B2 * X)	0.00288	0.00291	0.00289
	(!A1 * A3 * B1 * B2 * X)	-0.00080	-0.00083	-0.00081
	(!A1 * A3 * B1 * !B2 * !X)	0.00245	0.00246	0.00246
	(!A1 * A3 * B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * !B1 * !X)	0.00246	0.00246	0.00246
	(!A1 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A3 * B1 * B2 * X)	0.00219	0.00219	0.00219
	(!A1 * !A3 * B1 * B2 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * B1 * !B2 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00128	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00540	0.00442	0.00529
	(A1 * A3 * B1 * B2 * X)	-0.00212	-0.00315	-0.00213
	(A1 * !A3 * B1 * B2 * X)	0.00528	0.00529	0.00529
	(A1 * !A3 * B1 * B2 * X)	-0.00195	-0.00199	-0.00197
	(A1 * !A3 * B1 * !B2 * !X)	0.00296	0.00296	0.00294
	(A1 * !A3 * B1 * !B2 * !X)	-0.00281	-0.00281	-0.00280
	(A1 * !A3 * !B1 * !X)	0.00296	0.00296	0.00294
	(A1 * !A3 * !B1 * !X)	-0.00280	-0.00281	-0.00279
	(!A1 * A3 * B1 * B2 * X)	0.00530	0.00532	0.00530
	(!A1 * A3 * B1 * B2 * X)	-0.00195	-0.00200	-0.00197
	(!A1 * A3 * B1 * !B2 * !X)	0.00454	0.00455	0.00454
	(!A1 * A3 * B1 * !B2 * !X)	-0.00277	-0.00277	-0.00276
	(!A1 * A3 * !B1 * !X)	0.00454	0.00455	0.00454
	(!A1 * A3 * !B1 * !X)	-0.00276	-0.00277	-0.00275
	(!A1 * !A3 * B1 * B2 * X)	0.00422	0.00422	0.00420
	(!A1 * !A3 * B1 * B2 * X)	-0.00197	-0.00199	-0.00197
	(!A1 * !A3 * B1 * !B2 * !X)	0.00331	0.00332	0.00331
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00282	-0.00284	-0.00282
	(!A1 * !A3 * !B1 * !X)	0.00332	0.00332	0.00331
	(!A1 * !A3 * !B1 * !X)	-0.00282	-0.00283	-0.00282

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)**	-0.00034	-0.00038	-0.00056
	(A1 * A3 * B1 * B2 * X)	0.00326	0.00325	0.00304
	(A1 * !A3 * B1 * B2 * X)	-0.00029	-0.00030	-0.00030
	(A1 * !A3 * B1 * B2 * X)	0.00322	0.00322	0.00321
	(A1 * !A3 * B1 * !B2 * !X)	-0.00007	-0.00007	-0.00008
	(A1 * !A3 * B1 * !B2 * !X)	0.00267	0.00268	0.00262
	(A1 * !A3 * !B1 * !X)	-0.00006	-0.00007	-0.00008
	(A1 * !A3 * !B1 * !X)	0.00267	0.00269	0.00263
	(!A1 * A3 * B1 * B2 * X)	-0.00029	-0.00031	-0.00030
	(!A1 * A3 * B1 * B2 * X)	0.00322	0.00322	0.00321
	(!A1 * A3 * B1 * !B2 * !X)	-0.00070	-0.00087	-0.00089
	(!A1 * A3 * B1 * !B2 * !X)	0.00283	0.00266	0.00262
	(!A1 * A3 * !B1 * !X)	-0.00069	-0.00087	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00284	0.00266	0.00262
	(!A1 * !A3 * B1 * B2 * X)	0.00020	0.00020	0.00026
	(!A1 * !A3 * B1 * B2 * X)	0.00321	0.00323	0.00321
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00028	-0.00029	-0.00030
	(!A1 * !A3 * B1 * !B2 * !X)	0.00270	0.00273	0.00264
	(!A1 * !A3 * !B1 * !X)	-0.00028	-0.00029	-0.00030
	(!A1 * !A3 * !B1 * !X)	0.00270	0.00273	0.00264

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00054	-0.00057	-0.00076
	(A1 * A3 * B1 * B2 * X)	0.00327	0.00325	0.00305
	(A1 * !A3 * B1 * B2 * X)	-0.00049	-0.00050	-0.00049
	(A1 * !A3 * B1 * B2 * X)	0.00323	0.00323	0.00322
	(A1 * !A3 * B1 * !B2 * !X)	0.00029	0.00029	0.00027
	(A1 * !A3 * B1 * !B2 * !X)	0.00310	0.00311	0.00305
	(A1 * !A3 * !B1 * !X)	0.00029	0.00029	0.00027
	(A1 * !A3 * !B1 * !X)	0.00310	0.00311	0.00305
	(!A1 * A3 * B1 * B2 * X)	-0.00049	-0.00050	-0.00050
	(!A1 * A3 * B1 * B2 * X)	0.00323	0.00323	0.00322
	(!A1 * A3 * B1 * !B2 * !X)	-0.00046	-0.00065	-0.00067
	(!A1 * A3 * B1 * !B2 * !X)	0.00327	0.00308	0.00304
	(!A1 * A3 * !B1 * !X)	-0.00046	-0.00065	-0.00067
	(!A1 * A3 * !B1 * !X)	0.00327	0.00308	0.00304
	(!A1 * !A3 * B1 * B2 * X)	0.00008	0.00008	0.00015
	(!A1 * !A3 * B1 * B2 * X)	0.00322	0.00324	0.00322
	(!A1 * !A3 * B1 * !B2 * !X)	0.00002	0.00002	0.00001
	(!A1 * !A3 * B1 * !B2 * !X)	0.00314	0.00316	0.00306
	(!A1 * !A3 * !B1 * !X)	0.00002	0.00002	0.00001
	(!A1 * !A3 * !B1 * !X)	0.00314	0.00316	0.00306

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00060	-0.00068	-0.00106
	(A1 * A3 * B1 * B2 * X)	0.00688	0.00684	0.00642
	(A1 * !A3 * B1 * B2 * X)	-0.00047	-0.00052	-0.00053
	(A1 * !A3 * B1 * B2 * X)	0.00677	0.00682	0.00678
	(A1 * !A3 * B1 * !B2 * !X)	0.00070	0.00067	0.00066
	(A1 * !A3 * B1 * !B2 * !X)	0.00647	0.00654	0.00638
	(A1 * !A3 * !B1 * !X)	0.00070	0.00068	0.00066
	(A1 * !A3 * !B1 * !X)	0.00647	0.00655	0.00639
	(!A1 * A3 * B1 * B2 * X)	-0.00050	-0.00053	-0.00052
	(!A1 * A3 * B1 * B2 * X)	0.00679	0.00679	0.00677
	(!A1 * A3 * B1 * !B2 * !X)	-0.00051	-0.00089	-0.00093
	(!A1 * A3 * B1 * !B2 * !X)	0.00683	0.00646	0.00637
	(!A1 * A3 * !B1 * !X)	-0.00050	-0.00088	-0.00092
	(!A1 * A3 * !B1 * !X)	0.00683	0.00646	0.00637
	(!A1 * !A3 * B1 * B2 * X)	0.00036	0.00035	0.00048
	(!A1 * !A3 * B1 * B2 * X)	0.00678	0.00682	0.00678
	(!A1 * !A3 * B1 * !B2 * !X)	0.00024	0.00020	0.00016
	(!A1 * !A3 * B1 * !B2 * !X)	0.00664	0.00665	0.00644
	(!A1 * !A3 * !B1 * !X)	0.00025	0.00021	0.00017
	(!A1 * !A3 * !B1 * !X)	0.00665	0.00665	0.00645

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)**	0.00276	0.00234	0.00282
	(A1 * A2 * B1 * B2 * X)	-0.00103	-0.00144	-0.00090
	(A1 * !A2 * B1 * !B2 * !X)	0.00185	0.00186	0.00185
	(A1 * !A2 * B1 * !B2 * !X)	-0.00180	-0.00182	-0.00181
	(A1 * !A2 * !B1 * !X)	0.00185	0.00187	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00180	-0.00182	-0.00181
	(!A2 * B1 * B2 * X)	0.00284	0.00286	0.00285
	(!A2 * B1 * B2 * X)	-0.00080	-0.00082	-0.00081
	(!A1 * A2 * B1 * B2 * X)	0.00280	0.00281	0.00280
	(!A1 * A2 * B1 * B2 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * A2 * B1 * !B2 * !X)	0.00181	0.00182	0.00181
	(!A1 * A2 * B1 * !B2 * !X)	-0.00181	-0.00182	-0.00181
	(!A1 * A2 * !B1 * !X)	0.00181	0.00182	0.00182
	(!A1 * A2 * !B1 * !X)	-0.00181	-0.00181	-0.00180
	(!A1 * !A2 * B1 * !B2 * !X)	0.00182	0.00183	0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00182	-0.00183	-0.00183
	(!A1 * !A2 * !B1 * !X)	0.00182	0.00184	0.00183
	(!A1 * !A2 * !B1 * !X)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00299	0.00257	0.00305
	(A1 * A2 * B1 * B2 * X)	-0.00099	-0.00144	-0.00090
	(A1 * !A2 * B1 * !B2 * !X)	0.00249	0.00250	0.00249
	(A1 * !A2 * B1 * !B2 * !X)	-0.00138	-0.00139	-0.00139
	(A1 * !A2 * !B1 * !X)	0.00249	0.00250	0.00249
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * B2 * X)	0.00306	0.00308	0.00307
	(!A2 * B1 * B2 * X)	-0.00079	-0.00081	-0.00080
	(!A1 * A2 * B1 * B2 * X)	0.00303	0.00304	0.00303
	(!A1 * A2 * B1 * B2 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * A2 * B1 * !B2 * !X)	0.00245	0.00246	0.00246
	(!A1 * A2 * B1 * !B2 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * A2 * !B1 * !X)	0.00245	0.00246	0.00246
	(!A1 * A2 * !B1 * !X)	-0.00139	-0.00139	-0.00139
	(!A1 * !A2 * B1 * !B2 * !X)	0.00246	0.00249	0.00247
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00140	-0.00142	-0.00140
	(!A1 * !A2 * !B1 * !X)	0.00246	0.00247	0.00247
	(!A1 * !A2 * !B1 * !X)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00529	0.00436	0.00526
	(A1 * A2 * B1 * B2 * X)	-0.00205	-0.00304	-0.00200
	(A1 * !A2 * B1 * !B2 * !X)	0.00466	0.00470	0.00467
	(A1 * !A2 * B1 * !B2 * !X)	-0.00244	-0.00247	-0.00244
	(A1 * !A2 * !B1 * !X)	0.00466	0.00470	0.00468
	(A1 * !A2 * !B1 * !X)	-0.00243	-0.00246	-0.00243
	(!A2 * B1 * B2 * X)	0.00527	0.00527	0.00527
	(!A2 * B1 * B2 * X)	-0.00182	-0.00183	-0.00183
	(!A1 * A2 * B1 * B2 * X)	0.00520	0.00520	0.00519
	(!A1 * A2 * B1 * B2 * X)	-0.00182	-0.00184	-0.00183
	(!A1 * A2 * B1 * !B2 * !X)	0.00460	0.00462	0.00461
	(!A1 * A2 * B1 * !B2 * !X)	-0.00244	-0.00245	-0.00244
	(!A1 * A2 * !B1 * !X)	0.00461	0.00462	0.00462
	(!A1 * A2 * !B1 * !X)	-0.00244	-0.00245	-0.00243
	(!A1 * !A2 * B1 * !B2 * !X)	0.00461	0.00463	0.00462
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00247	-0.00249	-0.00248
	(!A1 * !A2 * !B1 * !X)	0.00461	0.00464	0.00462
	(!A1 * !A2 * !B1 * !X)	-0.00247	-0.00249	-0.00247

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)**	-0.00052	-0.00055	-0.00074
	(A1 * A2 * B1 * B2 * X)	0.00323	0.00321	0.00301
	(A1 * !A2 * B1 * !B2 * !X)	-0.00079	-0.00089	-0.00091
	(A1 * !A2 * B1 * !B2 * !X)	0.00288	0.00279	0.00276
	(A1 * !A2 * !B1 * !X)	-0.00078	-0.00089	-0.00090
	(A1 * !A2 * !B1 * !X)	0.00289	0.00279	0.00276
	(!A2 * B1 * B2 * X)	-0.00048	-0.00048	-0.00048
	(!A2 * B1 * B2 * X)	0.00319	0.00319	0.00318
	(!A1 * A2 * B1 * B2 * X)	-0.00038	-0.00045	-0.00047
	(!A1 * A2 * B1 * B2 * X)	0.00318	0.00321	0.00318
	(!A1 * A2 * B1 * !B2 * !X)	-0.00071	-0.00087	-0.00090
	(!A1 * A2 * B1 * !B2 * !X)	0.00288	0.00280	0.00275
	(!A1 * A2 * !B1 * !X)	-0.00071	-0.00087	-0.00089
	(!A1 * A2 * !B1 * !X)	0.00288	0.00281	0.00275
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00089	-0.00093	-0.00092
	(!A1 * !A2 * B1 * !B2 * !X)	0.00275	0.00275	0.00274
	(!A1 * !A2 * !B1 * !X)	-0.00088	-0.00092	-0.00092
	(!A1 * !A2 * !B1 * !X)	0.00276	0.00275	0.00274

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00072	-0.00076	-0.00095
	(A1 * A2 * B1 * B2 * X)	0.00325	0.00324	0.00303
	(A1 * !A2 * B1 * !B2 * !X)	-0.00057	-0.00069	-0.00070
	(A1 * !A2 * B1 * !B2 * !X)	0.00328	0.00320	0.00318
	(A1 * !A2 * !B1 * !X)	-0.00056	-0.00069	-0.00070
	(A1 * !A2 * !B1 * !X)	0.00328	0.00321	0.00318
	(!A2 * B1 * B2 * X)	-0.00066	-0.00069	-0.00068
	(!A2 * B1 * B2 * X)	0.00320	0.00323	0.00320
	(!A1 * A2 * B1 * B2 * X)	-0.00056	-0.00065	-0.00066
	(!A1 * A2 * B1 * B2 * X)	0.00320	0.00323	0.00320
	(!A1 * A2 * B1 * !B2 * !X)	-0.00049	-0.00066	-0.00069
	(!A1 * A2 * B1 * !B2 * !X)	0.00330	0.00322	0.00317
	(!A1 * A2 * !B1 * !X)	-0.00049	-0.00066	-0.00069
	(!A1 * A2 * !B1 * !X)	0.00330	0.00322	0.00318
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00066	-0.00072	-0.00071
	(!A1 * !A2 * B1 * !B2 * !X)	0.00316	0.00317	0.00316
	(!A1 * !A2 * !B1 * !X)	-0.00066	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * !X)	0.00316	0.00317	0.00316

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00058	-0.00066	-0.00104
	(A1 * A2 * B1 * B2 * X)	0.00674	0.00672	0.00629
	(A1 * !A2 * B1 * !B2 * !X)	-0.00072	-0.00104	-0.00108
	(A1 * !A2 * B1 * !B2 * !X)	0.00631	0.00611	0.00605
	(A1 * !A2 * !B1 * !X)	-0.00071	-0.00103	-0.00107
	(A1 * !A2 * !B1 * !X)	0.00632	0.00611	0.00605
	(!A2 * B1 * B2 * X)	-0.00043	-0.00049	-0.00049
	(!A2 * B1 * B2 * X)	0.00661	0.00665	0.00663
	(!A1 * A2 * B1 * B2 * X)	-0.00026	-0.00043	-0.00046
	(!A1 * A2 * B1 * B2 * X)	0.00663	0.00668	0.00663
	(!A1 * A2 * B1 * !B2 * !X)	-0.00060	-0.00099	-0.00105
	(!A1 * A2 * B1 * !B2 * !X)	0.00637	0.00616	0.00604
	(!A1 * A2 * !B1 * !X)	-0.00060	-0.00098	-0.00104
	(!A1 * A2 * !B1 * !X)	0.00638	0.00616	0.00605
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00097	-0.00110	-0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	0.00601	0.00603	0.00601
	(!A1 * !A2 * !B1 * !X)	-0.00096	-0.00110	-0.00111
	(!A1 * !A2 * !B1 * !X)	0.00601	0.00603	0.00601

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)**	0.00174	0.00177	0.00180
	(A1 * A2 * A3 * B2 * X)	-0.00070	-0.00071	-0.00064
	(A1 * A2 * A3 * !B2 * X)	0.00267	0.00268	0.00266
	(A1 * A2 * A3 * !B2 * X)	0.00016	0.00015	0.00015
	(A1 * A2 * !A3 * !B2 * !X)	0.00093	0.00093	0.00091
	(A1 * A2 * !A3 * !B2 * !X)	-0.00188	-0.00190	-0.00193
	(A1 * !A2 * !B2 * !X)	0.00093	0.00093	0.00090
	(A1 * !A2 * !B2 * !X)	-0.00189	-0.00190	-0.00193
	(!A1 * !B2 * !X)	0.00093	0.00093	0.00091
	(!A1 * !B2 * !X)	-0.00188	-0.00189	-0.00193
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00195	0.00198	0.00200
	(A1 * A2 * A3 * B2 * X)	-0.00069	-0.00070	-0.00063
	(A1 * A2 * A3 * !B2 * X)	0.00287	0.00287	0.00286
	(A1 * A2 * A3 * !B2 * X)	0.00015	0.00014	0.00015
	(A1 * A2 * !A3 * !B2 * !X)	0.00146	0.00146	0.00143
	(A1 * A2 * !A3 * !B2 * !X)	-0.00145	-0.00146	-0.00151
	(A1 * !A2 * !B2 * !X)	0.00146	0.00146	0.00143
	(A1 * !A2 * !B2 * !X)	-0.00145	-0.00146	-0.00151
	(!A1 * !B2 * !X)	0.00146	0.00146	0.00143
	(!A1 * !B2 * !X)	-0.00145	-0.00146	-0.00151
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00348	0.00354	0.00359
	(A1 * A2 * A3 * B2 * X)	-0.00137	-0.00139	-0.00126
	(A1 * A2 * A3 * !B2 * X)	0.00532	0.00534	0.00531
	(A1 * A2 * A3 * !B2 * X)	0.00031	0.00028	0.00029
	(A1 * A2 * !A3 * !B2 * !X)	0.00264	0.00263	0.00258
	(A1 * A2 * !A3 * !B2 * !X)	-0.00297	-0.00298	-0.00306
	(A1 * !A2 * !B2 * !X)	0.00264	0.00263	0.00258
	(A1 * !A2 * !B2 * !X)	-0.00297	-0.00298	-0.00306
	(!A1 * !B2 * !X)	0.00265	0.00263	0.00258
	(!A1 * !B2 * !X)	-0.00297	-0.00298	-0.00306

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)	-0.00034	-0.00037	-0.00079
	(A1 * A2 * A3 * B2 * X)	0.00214	0.00213	0.00172
	(A1 * A2 * A3 * !B2 * X)	-0.00070	-0.00071	-0.00078
	(A1 * A2 * A3 * !B2 * X)	0.00182	0.00183	0.00176
	(A1 * A2 * !A3 * !B2 * !X)	0.00002	0.00001	0.00001
	(A1 * A2 * !A3 * !B2 * !X)	0.00283	0.00283	0.00284
	(A1 * !A2 * !B2 * !X)	0.00002	0.00001	0.00002
	(A1 * !A2 * !B2 * !X)	0.00284	0.00283	0.00284
	(!A1 * !B2 * !X)	0.00002	0.00002	0.00002
	(!A1 * !B2 * !X)	0.00284	0.00283	0.00284
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00052	-0.00055	-0.00097
	(A1 * A2 * A3 * B2 * X)	0.00217	0.00215	0.00174
	(A1 * A2 * A3 * !B2 * X)	-0.00086	-0.00088	-0.00095
	(A1 * A2 * A3 * !B2 * X)	0.00186	0.00186	0.00179
	(A1 * A2 * !A3 * !B2 * !X)	0.00035	0.00033	0.00035
	(A1 * A2 * !A3 * !B2 * !X)	0.00327	0.00330	0.00327
	(A1 * !A2 * !B2 * !X)	0.00035	0.00033	0.00035
	(A1 * !A2 * !B2 * !X)	0.00327	0.00330	0.00328
	(!A1 * !B2 * !X)	0.00035	0.00033	0.00035
	(!A1 * !B2 * !X)	0.00327	0.00330	0.00328

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00060	-0.00067	-0.00153
	(A1 * A2 * A3 * B2 * X)	0.00432	0.00430	0.00348
	(A1 * A2 * A3 * !B2 * X)	-0.00133	-0.00136	-0.00150
	(A1 * A2 * A3 * !B2 * X)	0.00373	0.00372	0.00358
	(A1 * A2 * !A3 * !B2 * !X)	0.00099	0.00095	0.00098
	(A1 * A2 * !A3 * !B2 * !X)	0.00661	0.00666	0.00660
	(A1 * !A2 * !B2 * !X)	0.00098	0.00095	0.00098
	(A1 * !A2 * !B2 * !X)	0.00660	0.00665	0.00660
	(!A1 * !B2 * !X)	0.00099	0.00096	0.00099
	(!A1 * !B2 * !X)	0.00661	0.00666	0.00661

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)**	0.00170	0.00174	0.00176
	(A1 * A2 * A3 * B1 * X)	-0.00074	-0.00075	-0.00069
	(A1 * A2 * A3 * !B1 * X)	0.00267	0.00269	0.00266
	(A1 * A2 * A3 * !B1 * X)	0.00014	0.00013	0.00013
	(A1 * A2 * !A3 * !B1 * !X)	0.00195	0.00195	0.00195
	(A1 * A2 * !A3 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A2 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00195	0.00196	0.00195
	(!A1 * !B1 * !X)	-0.00158	-0.00158	-0.00158

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00197	0.00200	0.00202
	(A1 * A2 * A3 * B1 * X)	-0.00075	-0.00076	-0.00069
	(A1 * A2 * A3 * !B1 * X)	0.00294	0.00295	0.00292
	(A1 * A2 * A3 * !B1 * X)	0.00014	0.00014	0.00013
	(A1 * A2 * !A3 * !B1 * !X)	0.00260	0.00262	0.00261
	(A1 * A2 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !X)	0.00260	0.00262	0.00261
	(A1 * !A2 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !B1 * !X)	0.00260	0.00262	0.00261
	(!A1 * !B1 * !X)	-0.00117	-0.00118	-0.00117
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00433	0.00438	0.00446
	(A1 * A2 * A3 * B1 * X)	-0.00143	-0.00145	-0.00134
	(A1 * A2 * A3 * !B1 * X)	0.00623	0.00630	0.00621
	(A1 * A2 * A3 * !B1 * X)	0.00025	0.00021	0.00023
	(A1 * A2 * !A3 * !B1 * !X)	0.00544	0.00549	0.00545
	(A1 * A2 * !A3 * !B1 * !X)	-0.00253	-0.00257	-0.00254
	(A1 * !A2 * !B1 * !X)	0.00544	0.00543	0.00545
	(A1 * !A2 * !B1 * !X)	-0.00253	-0.00253	-0.00254
	(!A1 * !B1 * !X)	0.00544	0.00550	0.00546
	(!A1 * !B1 * !X)	-0.00252	-0.00256	-0.00254

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)**	-0.00031	-0.00034	-0.00077
	(A1 * A2 * A3 * B1 * X)	0.00218	0.00216	0.00175
	(A1 * A2 * A3 * !B1 * X)	-0.00070	-0.00071	-0.00077
	(A1 * A2 * A3 * !B1 * X)	0.00185	0.00184	0.00178
	(A1 * A2 * !A3 * !B1 * !X)	-0.00086	-0.00098	-0.00100
	(A1 * A2 * !A3 * !B1 * !X)	0.00269	0.00258	0.00253
	(A1 * !A2 * !B1 * !X)	-0.00085	-0.00098	-0.00100
	(A1 * !A2 * !B1 * !X)	0.00270	0.00258	0.00253
	(!A1 * !B1 * !X)	-0.00085	-0.00097	-0.00100
	(!A1 * !B1 * !X)	0.00270	0.00258	0.00253
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00055	-0.00058	-0.00101
	(A1 * A2 * A3 * B1 * X)	0.00221	0.00219	0.00178
	(A1 * A2 * A3 * !B1 * X)	-0.00093	-0.00095	-0.00101
	(A1 * A2 * A3 * !B1 * X)	0.00187	0.00187	0.00180
	(A1 * A2 * !A3 * !B1 * !X)	-0.00066	-0.00079	-0.00082
	(A1 * A2 * !A3 * !B1 * !X)	0.00314	0.00301	0.00296
	(A1 * !A2 * !B1 * !X)	-0.00066	-0.00079	-0.00082
	(A1 * !A2 * !B1 * !X)	0.00314	0.00301	0.00296
	(!A1 * !B1 * !X)	-0.00066	-0.00079	-0.00082
	(!A1 * !B1 * !X)	0.00314	0.00301	0.00296
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00150	-0.00154	-0.00242
	(A1 * A2 * A3 * B1 * X)	0.00441	0.00437	0.00355
	(A1 * A2 * A3 * !B1 * X)	-0.00224	-0.00227	-0.00239
	(A1 * A2 * A3 * !B1 * X)	0.00378	0.00377	0.00364
	(A1 * A2 * !A3 * !B1 * !X)	-0.00148	-0.00178	-0.00182
	(A1 * A2 * !A3 * !B1 * !X)	0.00654	0.00626	0.00615
	(A1 * !A2 * !B1 * !X)	-0.00149	-0.00179	-0.00183
	(A1 * !A2 * !B1 * !X)	0.00654	0.00625	0.00615
	(!A1 * !B1 * !X)	-0.00148	-0.00178	-0.00182
	(!A1 * !B1 * !X)	0.00654	0.00626	0.00615

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00298	0.00304	0.00299	0.00302	0.00303	0.57722
sky130_fd_sc_hs__a41oi_2	0.00578	0.00569	0.00559	0.00558	0.00449	1.09777
sky130_fd_sc_hs__a41oi_4	0.01131	0.01105	0.01117	0.01106	0.00888	1.86654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41oi_1	0.00000	28.30310	111.29700
sky130_fd_sc_hs__a41oi_2	0.00000	55.69400	222.39700
sky130_fd_sc_hs__a41oi_4	0.00000	111.24700	444.52400

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)	0.08233	0.77843	8.48735
	A2->Y (FR)	0.10151	0.80889	8.64402
	A3->Y (FR)	0.11114	0.80136	8.43982
	A4->Y (FR)	0.11232	0.77492	8.11196
	B1->Y (FR)	0.07021	0.84575	9.52374
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.06780	0.65904	8.56190
	A2->Y (FR)	0.08441	0.65407	8.28817
	A3->Y (FR)	0.09800	0.67293	8.36701
	A4->Y (FR)	0.11099	0.69114	8.40756
	B1->Y (FR)	0.07711	0.71474	9.11423
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.06283	0.53175	7.84898
	A2->Y (FR)	0.08326	0.53624	7.64351
	A3->Y (FR)	0.10069	0.56344	7.81478
	A4->Y (FR)	0.11677	0.59375	8.01326
	B1->Y (FR)	0.08380	0.64077	9.00899

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.06467	0.63784	7.00215
	A2->Y (RF)	0.07676	0.61556	6.54709
	A3->Y (RF)	0.08399	0.57927	5.96321
	A4->Y (RF)	0.08862	0.54524	5.42744
	B1->Y (RF)	0.02118	0.33851	3.78635
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.06048	0.59745	7.68262
	A2->Y (RF)	0.07615	0.57765	7.23437
	A3->Y (RF)	0.08447	0.52455	6.41503
	A4->Y (RF)	0.09028	0.49591	5.89167
	B1->Y (RF)	0.02457	0.45016	6.00626
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.05850	0.51174	7.35900
	A2->Y (RF)	0.07653	0.48960	6.85447
	A3->Y (RF)	0.08597	0.44133	6.06015
	A4->Y (RF)	0.09052	0.40183	5.41090
	B1->Y (RF)	0.02315	0.36877	5.51988

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00049	0.00156	0.02694
	A1	0.00775	0.00879	0.03407
	A2	0.00140	0.00235	0.02817
	A2	0.00975	0.01068	0.03632
	A3	0.00216	0.00310	0.03008
	A3	0.01159	0.01251	0.03934
	A4	0.00260	0.00358	0.03131
	A4	0.01321	0.01417	0.04182
	B1	0.00008	0.00380	0.05216
	B1	0.00559	0.00935	0.05775
sky130_fd_sc_hs__a41oi_2	A1	-0.00064	0.00179	0.04657
	A1	0.01264	0.01503	0.05943
	A2	0.00163	0.00372	0.05104
	A2	0.01743	0.01946	0.06640
	A3	0.00301	0.00507	0.05405
	A3	0.02096	0.02298	0.07239
	A4	0.00470	0.00664	0.05678
	A4	0.02512	0.02706	0.07674
	B1	-0.00008	0.00517	0.06426
	B1	0.00800	0.01325	0.07290

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00202	0.00392	0.09875
	A1	0.02438	0.03035	0.12525
	A2	0.00315	0.00817	0.10933
	A2	0.03440	0.03949	0.14046
	A3	0.00580	0.01063	0.11481
	A3	0.04204	0.04679	0.15101
	A4	0.00852	0.01339	0.12076
	A4	0.04938	0.05431	0.16118
	B1	-0.00059	0.01136	0.13703
	B1	0.01538	0.02735	0.15380

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.01232	0.01319	0.03358
	A1	0.00510	0.00602	0.02603
	A2	0.01336	0.01407	0.03351
	A2	0.00502	0.00570	0.02491
	A3	0.01438	0.01508	0.03685
	A3	0.00493	0.00560	0.02721
	A4	0.01561	0.01633	0.04165
	A4	0.00492	0.00564	0.03087
	B1	0.00581	0.00835	0.04333
	B1	0.00029	0.00278	0.03764

sky130_fd_sc_hs__a41oi_2	**A1**	0.02353	0.02555	0.06090
	A1	0.01024	0.01223	0.04727
	A2	0.02581	0.02710	0.06176
	A2	0.01002	0.01134	0.04593
	A3	0.02793	0.02930	0.06977
	A3	0.00988	0.01120	0.05154
	A4	0.03038	0.03174	0.07725
	A4	0.00975	0.01104	0.05664
	B1	0.00804	0.01167	0.05489
	B1	-0.00004	0.00351	0.04595
sky130_fd_sc_hs__a41oi_4	**A1**	0.04550	0.05035	0.12435
	A1	0.01910	0.02385	0.09796
	A2	0.04996	0.05323	0.12885
	A2	0.01861	0.02191	0.09636
	A3	0.05465	0.05786	0.14300
	A3	0.01821	0.02125	0.10660
	A4	0.05926	0.06272	0.16314
	A4	0.01797	0.02136	0.12044
	B1	0.01576	0.02459	0.12348
	B1	-0.00021	0.00847	0.10455

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)**	0.00258	0.00218	0.00221
	(A2 * A3 * A4 * B1 * !Y)	-0.00154	-0.00197	-0.00188
	(A2 * A3 * !A4 * B1 * !Y)	0.00210	0.00212	0.00210
	(A2 * A3 * !A4 * B1 * !Y)	-0.00188	-0.00190	-0.00188
	(A2 * A3 * !A4 * !B1 * Y)	0.00068	0.00068	0.00059
	(A2 * A3 * !A4 * !B1 * Y)	-0.00247	-0.00248	-0.00265
	(A2 * !A3 * B1 * !Y)	0.00212	0.00213	0.00213
	(A2 * !A3 * B1 * !Y)	-0.00188	-0.00189	-0.00188
	(A2 * !A3 * !B1 * Y)	0.00065	0.00066	0.00060
	(A2 * !A3 * !B1 * Y)	-0.00254	-0.00256	-0.00267
	(!A2 * B1 * !Y)	0.00216	0.00218	0.00216
	(!A2 * B1 * !Y)	-0.00187	-0.00190	-0.00188
	(!A2 * !B1 * Y)	0.00065	0.00064	0.00061
	(!A2 * !B1 * Y)	-0.00263	-0.00263	-0.00268
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00518	0.00437	0.00441
	(A2 * A3 * A4 * B1 * !Y)	-0.00293	-0.00383	-0.00366
	(A2 * A3 * !A4 * B1 * !Y)	0.00413	0.00415	0.00414
	(A2 * A3 * !A4 * B1 * !Y)	-0.00366	-0.00368	-0.00366
	(A2 * A3 * !A4 * !B1 * Y)	0.00125	0.00126	0.00105
	(A2 * A3 * !A4 * !B1 * Y)	-0.00486	-0.00491	-0.00532
	(A2 * !A3 * B1 * !Y)	0.00418	0.00421	0.00419
	(A2 * !A3 * B1 * !Y)	-0.00366	-0.00369	-0.00366
	(A2 * !A3 * !B1 * Y)	0.00117	0.00118	0.00104
	(A2 * !A3 * !B1 * Y)	-0.00506	-0.00512	-0.00536
	(!A2 * B1 * !Y)	0.00428	0.00431	0.00429
	(!A2 * B1 * !Y)	-0.00365	-0.00369	-0.00366
	(!A2 * !B1 * Y)	0.00116	0.00117	0.00109
	(!A2 * !B1 * Y)	-0.00524	-0.00528	-0.00540

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.01027	0.00870	0.00882
	(A2 * A3 * A4 * B1 * !Y)	-0.00591	-0.00762	-0.00724
	(A2 * A3 * !A4 * B1 * !Y)	0.00824	0.00828	0.00825
	(A2 * A3 * !A4 * B1 * !Y)	-0.00723	-0.00729	-0.00724
	(A2 * A3 * !A4 * !B1 * Y)	0.00252	0.00253	0.00214
	(A2 * A3 * !A4 * !B1 * Y)	-0.00957	-0.00966	-0.01046
	(A2 * !A3 * B1 * !Y)	0.00834	0.00840	0.00835
	(A2 * !A3 * B1 * !Y)	-0.00723	-0.00730	-0.00724
	(A2 * !A3 * !B1 * Y)	0.00238	0.00240	0.00212
	(A2 * !A3 * !B1 * Y)	-0.00995	-0.01003	-0.01054
	(!A2 * B1 * !Y)	0.00860	0.00866	0.00860
	(!A2 * B1 * !Y)	-0.00726	-0.00730	-0.00725
	(!A2 * !B1 * Y)	0.00245	0.00245	0.00228
	(!A2 * !B1 * Y)	-0.01028	-0.01035	-0.01060

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)**	-0.00134	-0.00135	-0.00139
	(A2 * A3 * A4 * B1 * !Y)	0.00277	0.00277	0.00272
	(A2 * A3 * !A4 * B1 * !Y)	-0.00108	-0.00126	-0.00128
	(A2 * A3 * !A4 * B1 * !Y)	0.00274	0.00276	0.00275
	(A2 * A3 * !A4 * !B1 * Y)	-0.00054	-0.00054	-0.00054
	(A2 * A3 * !A4 * !B1 * Y)	0.00272	0.00273	0.00272
	(A2 * !A3 * B1 * !Y)	-0.00117	-0.00128	-0.00129
	(A2 * !A3 * B1 * !Y)	0.00274	0.00276	0.00275
	(A2 * !A3 * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(A2 * !A3 * !B1 * Y)	0.00272	0.00274	0.00273
	(!A2 * B1 * !Y)	-0.00130	-0.00131	-0.00131
	(!A2 * B1 * !Y)	0.00275	0.00276	0.00275
	(!A2 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(!A2 * !B1 * Y)	0.00272	0.00273	0.00273
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00266	-0.00271	-0.00276
	(A2 * A3 * A4 * B1 * !Y)	0.00543	0.00548	0.00535
	(A2 * A3 * !A4 * B1 * !Y)	-0.00209	-0.00250	-0.00254
	(A2 * A3 * !A4 * B1 * !Y)	0.00538	0.00544	0.00540
	(A2 * A3 * !A4 * !B1 * Y)	-0.00095	-0.00096	-0.00095
	(A2 * A3 * !A4 * !B1 * Y)	0.00542	0.00547	0.00545
	(A2 * !A3 * B1 * !Y)	-0.00228	-0.00253	-0.00256
	(A2 * !A3 * B1 * !Y)	0.00538	0.00544	0.00540
	(A2 * !A3 * !B1 * Y)	-0.00096	-0.00096	-0.00096
	(A2 * !A3 * !B1 * Y)	0.00543	0.00547	0.00545
	(!A2 * B1 * !Y)	-0.00255	-0.00260	-0.00260
	(!A2 * B1 * !Y)	0.00538	0.00542	0.00540
	(!A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A2 * !B1 * Y)	0.00543	0.00549	0.00547

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00534	-0.00539	-0.00554
	(A2 * A3 * A4 * B1 * !Y)	0.01079	0.01081	0.01061
	(A2 * A3 * !A4 * B1 * !Y)	-0.00413	-0.00497	-0.00508
	(A2 * A3 * !A4 * B1 * !Y)	0.01069	0.01080	0.01071
	(A2 * A3 * !A4 * !B1 * Y)	-0.00197	-0.00198	-0.00197
	(A2 * A3 * !A4 * !B1 * Y)	0.01066	0.01074	0.01071
	(A2 * !A3 * B1 * !Y)	-0.00453	-0.00504	-0.00512
	(A2 * !A3 * B1 * !Y)	0.01069	0.01080	0.01071
	(A2 * !A3 * !B1 * Y)	-0.00197	-0.00198	-0.00198
	(A2 * !A3 * !B1 * Y)	0.01067	0.01073	0.01072
	(!A2 * B1 * !Y)	-0.00510	-0.00522	-0.00521
	(!A2 * B1 * !Y)	0.01068	0.01080	0.01071
	(!A2 * !B1 * Y)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * Y)	0.01069	0.01077	0.01073

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)**	0.00251	0.00212	0.00215
	(A1 * A3 * A4 * B1 * !Y)	-0.00154	-0.00197	-0.00187
	(A1 * A3 * !A4 * B1 * !Y)	0.00205	0.00206	0.00205
	(A1 * A3 * !A4 * B1 * !Y)	-0.00188	-0.00189	-0.00188
	(A1 * A3 * !A4 * !B1 * Y)	0.00064	0.00064	0.00065
	(A1 * A3 * !A4 * !B1 * Y)	-0.00238	-0.00240	-0.00238
	(A1 * !A3 * B1 * !Y)	0.00210	0.00211	0.00210
	(A1 * !A3 * B1 * !Y)	-0.00189	-0.00189	-0.00188
	(A1 * !A3 * !B1 * Y)	0.00069	0.00069	0.00069
	(A1 * !A3 * !B1 * Y)	-0.00239	-0.00240	-0.00239
	(!A1 * A3 * A4 * B1 * !Y)	0.00209	0.00211	0.00209
	(!A1 * A3 * A4 * B1 * !Y)	-0.00187	-0.00189	-0.00188
	(!A1 * A3 * A4 * !B1 * Y)	0.00161	0.00162	0.00161
	(!A1 * A3 * A4 * !B1 * Y)	-0.00238	-0.00239	-0.00237
	(!A1 * A3 * !A4 * B1 * !Y)	0.00141	0.00141	0.00140
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00189	-0.00189	-0.00188
	(!A1 * A3 * !A4 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00239	-0.00240	-0.00239
	(!A1 * !A3 * B1 * !Y)	0.00145	0.00145	0.00144
	(!A1 * !A3 * B1 * !Y)	-0.00188	-0.00188	-0.00188
	(!A1 * !A3 * !B1 * Y)	0.00091	0.00090	0.00090
	(!A1 * !A3 * !B1 * Y)	-0.00241	-0.00240	-0.00240

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00511	0.00427	0.00433
	(A1 * A3 * A4 * B1 * !Y)	-0.00305	-0.00391	-0.00373
	(A1 * A3 * !A4 * B1 * !Y)	0.00409	0.00411	0.00409
	(A1 * A3 * !A4 * B1 * !Y)	-0.00374	-0.00376	-0.00374
	(A1 * A3 * !A4 * !B1 * Y)	0.00140	0.00141	0.00143
	(A1 * A3 * !A4 * !B1 * Y)	-0.00461	-0.00464	-0.00462
	(A1 * !A3 * B1 * !Y)	0.00420	0.00423	0.00420
	(A1 * !A3 * B1 * !Y)	-0.00374	-0.00377	-0.00374
	(A1 * !A3 * !B1 * Y)	0.00147	0.00149	0.00150
	(A1 * !A3 * !B1 * Y)	-0.00462	-0.00464	-0.00462
	(!A1 * A3 * A4 * B1 * !Y)	0.00419	0.00423	0.00420
	(!A1 * A3 * A4 * B1 * !Y)	-0.00373	-0.00377	-0.00374
	(!A1 * A3 * A4 * !B1 * Y)	0.00336	0.00338	0.00337
	(!A1 * A3 * A4 * !B1 * Y)	-0.00461	-0.00462	-0.00460
	(!A1 * A3 * !A4 * B1 * !Y)	0.00283	0.00284	0.00282
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00375	-0.00377	-0.00374
	(!A1 * A3 * !A4 * !B1 * Y)	0.00188	0.00189	0.00188
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00465	-0.00466	-0.00464
	(!A1 * !A3 * B1 * !Y)	0.00288	0.00289	0.00288
	(!A1 * !A3 * B1 * !Y)	-0.00374	-0.00375	-0.00374
	(!A1 * !A3 * !B1 * Y)	0.00191	0.00192	0.00191
	(!A1 * !A3 * !B1 * Y)	-0.00466	-0.00468	-0.00467

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00999	0.00843	0.00857
	(A1 * A3 * A4 * B1 * !Y)	-0.00607	-0.00779	-0.00740
	(A1 * A3 * !A4 * B1 * !Y)	0.00804	0.00801	0.00804
	(A1 * A3 * !A4 * B1 * !Y)	-0.00742	-0.00740	-0.00743
	(A1 * A3 * !A4 * !B1 * Y)	0.00264	0.00267	0.00275
	(A1 * A3 * !A4 * !B1 * Y)	-0.00911	-0.00916	-0.00910
	(A1 * !A3 * B1 * !Y)	0.00827	0.00834	0.00828
	(A1 * !A3 * B1 * !Y)	-0.00740	-0.00748	-0.00743
	(A1 * !A3 * !B1 * Y)	0.00275	0.00277	0.00282
	(A1 * !A3 * !B1 * Y)	-0.00913	-0.00916	-0.00911
	(!A1 * A3 * A4 * B1 * !Y)	0.00831	0.00837	0.00833
	(!A1 * A3 * A4 * B1 * !Y)	-0.00740	-0.00747	-0.00743
	(!A1 * A3 * A4 * !B1 * Y)	0.00670	0.00673	0.00671
	(!A1 * A3 * A4 * !B1 * Y)	-0.00913	-0.00914	-0.00909
	(!A1 * A3 * !A4 * B1 * !Y)	0.00547	0.00549	0.00545
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00743	-0.00748	-0.00743
	(!A1 * A3 * !A4 * !B1 * Y)	0.00364	0.00366	0.00363
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00917	-0.00922	-0.00916
	(!A1 * !A3 * B1 * !Y)	0.00553	0.00554	0.00551
	(!A1 * !A3 * B1 * !Y)	-0.00743	-0.00747	-0.00743
	(!A1 * !A3 * !B1 * Y)	0.00366	0.00367	0.00365
	(!A1 * !A3 * !B1 * Y)	-0.00919	-0.00922	-0.00919

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)**	-0.00127	-0.00129	-0.00132
	(A1 * A3 * A4 * B1 * !Y)	0.00276	0.00277	0.00272
	(A1 * A3 * !A4 * B1 * !Y)	-0.00109	-0.00121	-0.00122
	(A1 * A3 * !A4 * B1 * !Y)	0.00274	0.00276	0.00275
	(A1 * A3 * !A4 * !B1 * Y)	-0.00057	-0.00058	-0.00059
	(A1 * A3 * !A4 * !B1 * Y)	0.00249	0.00251	0.00245
	(A1 * !A3 * B1 * !Y)	-0.00123	-0.00124	-0.00124
	(A1 * !A3 * B1 * !Y)	0.00274	0.00276	0.00275
	(A1 * !A3 * !B1 * Y)	-0.00060	-0.00061	-0.00062
	(A1 * !A3 * !B1 * Y)	0.00251	0.00252	0.00246
	(!A1 * A3 * A4 * B1 * !Y)	-0.00123	-0.00125	-0.00124
	(!A1 * A3 * A4 * B1 * !Y)	0.00274	0.00276	0.00275
	(!A1 * A3 * A4 * !B1 * Y)	-0.00130	-0.00152	-0.00154
	(!A1 * A3 * A4 * !B1 * Y)	0.00269	0.00250	0.00244
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00074	-0.00074	-0.00064
	(!A1 * A3 * !A4 * B1 * !Y)	0.00274	0.00277	0.00275
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00081	-0.00085	-0.00086
	(!A1 * A3 * !A4 * !B1 * Y)	0.00265	0.00264	0.00252
	(!A1 * !A3 * B1 * !Y)	-0.00072	-0.00072	-0.00065
	(!A1 * !A3 * B1 * !Y)	0.00275	0.00277	0.00275
	(!A1 * !A3 * !B1 * Y)	-0.00088	-0.00089	-0.00090
	(!A1 * !A3 * !B1 * Y)	0.00256	0.00258	0.00247

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00257	-0.00261	-0.00268
	(A1 * A3 * A4 * B1 * !Y)	0.00551	0.00552	0.00543
	(A1 * A3 * !A4 * B1 * !Y)	-0.00219	-0.00244	-0.00247
	(A1 * A3 * !A4 * B1 * !Y)	0.00546	0.00552	0.00548
	(A1 * A3 * !A4 * !B1 * Y)	-0.00127	-0.00128	-0.00132
	(A1 * A3 * !A4 * !B1 * Y)	0.00484	0.00487	0.00474
	(A1 * !A3 * B1 * !Y)	-0.00247	-0.00252	-0.00251
	(A1 * !A3 * B1 * !Y)	0.00546	0.00552	0.00548
	(A1 * !A3 * !B1 * Y)	-0.00132	-0.00134	-0.00138
	(A1 * !A3 * !B1 * Y)	0.00487	0.00494	0.00475
	(!A1 * A3 * A4 * B1 * !Y)	-0.00247	-0.00251	-0.00251
	(!A1 * A3 * A4 * B1 * !Y)	0.00547	0.00550	0.00548
	(!A1 * A3 * A4 * !B1 * Y)	-0.00266	-0.00320	-0.00327
	(!A1 * A3 * A4 * !B1 * Y)	0.00530	0.00486	0.00471
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00151	-0.00151	-0.00130
	(!A1 * A3 * !A4 * B1 * !Y)	0.00547	0.00553	0.00548
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00176	-0.00187	-0.00188
	(!A1 * A3 * !A4 * !B1 * Y)	0.00518	0.00511	0.00486
	(!A1 * !A3 * B1 * !Y)	-0.00144	-0.00144	-0.00129
	(!A1 * !A3 * B1 * !Y)	0.00548	0.00553	0.00548
	(!A1 * !A3 * !B1 * Y)	-0.00191	-0.00191	-0.00191
	(!A1 * !A3 * !B1 * Y)	0.00497	0.00501	0.00479

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00507	-0.00515	-0.00528
	(A1 * A3 * A4 * B1 * !Y)	0.01096	0.01103	0.01079
	(A1 * A3 * !A4 * B1 * !Y)	-0.00426	-0.00475	-0.00484
	(A1 * A3 * !A4 * B1 * !Y)	0.01086	0.01098	0.01089
	(A1 * A3 * !A4 * !B1 * Y)	-0.00243	-0.00244	-0.00253
	(A1 * A3 * !A4 * !B1 * Y)	0.00957	0.00960	0.00936
	(A1 * !A3 * B1 * !Y)	-0.00484	-0.00493	-0.00491
	(A1 * !A3 * B1 * !Y)	0.01086	0.01099	0.01089
	(A1 * !A3 * !B1 * Y)	-0.00247	-0.00251	-0.00258
	(A1 * !A3 * !B1 * Y)	0.00960	0.00974	0.00937
	(!A1 * A3 * A4 * B1 * !Y)	-0.00484	-0.00496	-0.00495
	(!A1 * A3 * A4 * B1 * !Y)	0.01086	0.01098	0.01089
	(!A1 * A3 * A4 * !B1 * Y)	-0.00525	-0.00637	-0.00652
	(!A1 * A3 * A4 * !B1 * Y)	0.01052	0.00962	0.00931
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00283	-0.00282	-0.00240
	(!A1 * A3 * !A4 * B1 * !Y)	0.01087	0.01099	0.01089
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00340	-0.00361	-0.00363
	(!A1 * A3 * !A4 * !B1 * Y)	0.01022	0.01011	0.00960
	(!A1 * !A3 * B1 * !Y)	-0.00266	-0.00267	-0.00236
	(!A1 * !A3 * B1 * !Y)	0.01089	0.01099	0.01090
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00367	-0.00365
	(!A1 * !A3 * !B1 * Y)	0.00977	0.00988	0.00943

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)**	0.00246	0.00208	0.00212
	(A1 * A2 * A4 * B1 * !Y)	-0.00156	-0.00197	-0.00187
	(A1 * A2 * !A4 * B1 * !Y)	0.00206	0.00207	0.00206
	(A1 * A2 * !A4 * B1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * A2 * !A4 * !B1 * Y)	0.00068	0.00068	0.00069
	(A1 * A2 * !A4 * !B1 * Y)	-0.00232	-0.00233	-0.00230
	(A1 * !A2 * A4 * !B1 * Y)	0.00160	0.00162	0.00161
	(A1 * !A2 * A4 * !B1 * Y)	-0.00234	-0.00236	-0.00235
	(A1 * !A2 * !A4 * !B1 * Y)	0.00085	0.00085	0.00085
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00236	-0.00237	-0.00237
	(!A2 * A4 * B1 * !Y)	0.00207	0.00208	0.00207
	(!A2 * A4 * B1 * !Y)	-0.00187	-0.00188	-0.00188
	(!A2 * !A4 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * !A4 * B1 * !Y)	-0.00187	-0.00188	-0.00188
	(!A1 * A2 * A4 * B1 * !Y)	0.00203	0.00205	0.00203
	(!A1 * A2 * A4 * B1 * !Y)	-0.00187	-0.00189	-0.00188
	(!A1 * A2 * A4 * !B1 * Y)	0.00156	0.00158	0.00157
	(!A1 * A2 * A4 * !B1 * Y)	-0.00234	-0.00236	-0.00234
	(!A1 * A2 * !A4 * B1 * !Y)	0.00137	0.00137	0.00137
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00187	-0.00189	-0.00188
	(!A1 * A2 * !A4 * !B1 * Y)	0.00085	0.00086	0.00085
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00236	-0.00237	-0.00236
	(!A1 * !A2 * A4 * !B1 * Y)	0.00158	0.00160	0.00159
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00235	-0.00237	-0.00236
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00237	-0.00237	-0.00237

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00502	0.00422	0.00426
	(A1 * A2 * A4 * B1 * !Y)	-0.00303	-0.00388	-0.00371
	(A1 * A2 * !A4 * B1 * !Y)	0.00411	0.00414	0.00412
	(A1 * A2 * !A4 * B1 * !Y)	-0.00371	-0.00374	-0.00372
	(A1 * A2 * !A4 * !B1 * Y)	0.00149	0.00149	0.00151
	(A1 * A2 * !A4 * !B1 * Y)	-0.00445	-0.00444	-0.00442
	(A1 * !A2 * A4 * !B1 * Y)	0.00333	0.00338	0.00335
	(A1 * !A2 * A4 * !B1 * Y)	-0.00453	-0.00456	-0.00454
	(A1 * !A2 * !A4 * !B1 * Y)	0.00184	0.00185	0.00184
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00456	-0.00457	-0.00456
	(!A2 * A4 * B1 * !Y)	0.00412	0.00415	0.00414
	(!A2 * A4 * B1 * !Y)	-0.00370	-0.00373	-0.00372
	(!A2 * !A4 * B1 * !Y)	0.00275	0.00274	0.00274
	(!A2 * !A4 * B1 * !Y)	-0.00372	-0.00371	-0.00372
	(!A1 * A2 * A4 * B1 * !Y)	0.00407	0.00409	0.00407
	(!A1 * A2 * A4 * B1 * !Y)	-0.00372	-0.00374	-0.00372
	(!A1 * A2 * A4 * !B1 * Y)	0.00326	0.00329	0.00327
	(!A1 * A2 * A4 * !B1 * Y)	-0.00454	-0.00456	-0.00453
	(!A1 * A2 * !A4 * B1 * !Y)	0.00275	0.00276	0.00275
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00371	-0.00373	-0.00372
	(!A1 * A2 * !A4 * !B1 * Y)	0.00183	0.00185	0.00184
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00458	-0.00460	-0.00458
	(!A1 * !A2 * A4 * !B1 * Y)	0.00330	0.00333	0.00330
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00457	-0.00458	-0.00456
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00186	0.00188	0.00187
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00456	-0.00458	-0.00456

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00994	0.00837	0.00850
	(A1 * A2 * A4 * B1 * !Y)	-0.00617	-0.00787	-0.00749
	(A1 * A2 * !A4 * B1 * !Y)	0.00820	0.00826	0.00822
	(A1 * A2 * !A4 * B1 * !Y)	-0.00748	-0.00757	-0.00752
	(A1 * A2 * !A4 * !B1 * Y)	0.00284	0.00288	0.00286
	(A1 * A2 * !A4 * !B1 * Y)	-0.00896	-0.00904	-0.00892
	(A1 * !A2 * A4 * !B1 * Y)	0.00661	0.00668	0.00664
	(A1 * !A2 * A4 * !B1 * Y)	-0.00913	-0.00919	-0.00914
	(A1 * !A2 * !A4 * !B1 * Y)	0.00344	0.00345	0.00344
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00920	-0.00921	-0.00920
	(!A2 * A4 * B1 * !Y)	0.00822	0.00829	0.00822
	(!A2 * A4 * B1 * !Y)	-0.00753	-0.00757	-0.00752
	(!A2 * !A4 * B1 * !Y)	0.00525	0.00527	0.00525
	(!A2 * !A4 * B1 * !Y)	-0.00750	-0.00754	-0.00752
	(!A1 * A2 * A4 * B1 * !Y)	0.00807	0.00811	0.00807
	(!A1 * A2 * A4 * B1 * !Y)	-0.00752	-0.00756	-0.00752
	(!A1 * A2 * A4 * !B1 * Y)	0.00645	0.00651	0.00648
	(!A1 * A2 * A4 * !B1 * Y)	-0.00916	-0.00920	-0.00914
	(!A1 * A2 * !A4 * B1 * !Y)	0.00535	0.00538	0.00535
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00750	-0.00755	-0.00752
	(!A1 * A2 * !A4 * !B1 * Y)	0.00357	0.00357	0.00356
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00923	-0.00924	-0.00922
	(!A1 * !A2 * A4 * !B1 * Y)	0.00652	0.00654	0.00653
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00922	-0.00922	-0.00920
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00350	0.00350	0.00349
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00922	-0.00921	-0.00921

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)**	-0.00124	-0.00126	-0.00129
	(A1 * A2 * A4 * B1 * !Y)	0.00277	0.00277	0.00272
	(A1 * A2 * !A4 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * !A4 * B1 * !Y)	0.00274	0.00275	0.00274
	(A1 * A2 * !A4 * !B1 * Y)	-0.00057	-0.00058	-0.00059
	(A1 * A2 * !A4 * !B1 * Y)	0.00249	0.00252	0.00243
	(A1 * !A2 * A4 * !B1 * Y)	-0.00137	-0.00153	-0.00154
	(A1 * !A2 * A4 * !B1 * Y)	0.00254	0.00243	0.00242
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !A4 * !B1 * Y)	0.00250	0.00252	0.00244
	(!A2 * A4 * B1 * !Y)	-0.00119	-0.00122	-0.00121
	(!A2 * A4 * B1 * !Y)	0.00273	0.00275	0.00274
	(!A2 * !A4 * B1 * !Y)	-0.00063	-0.00064	-0.00057
	(!A2 * !A4 * B1 * !Y)	0.00274	0.00277	0.00275
	(!A1 * A2 * A4 * B1 * !Y)	-0.00108	-0.00119	-0.00120
	(!A1 * A2 * A4 * B1 * !Y)	0.00274	0.00276	0.00274
	(!A1 * A2 * A4 * !B1 * Y)	-0.00127	-0.00151	-0.00153
	(!A1 * A2 * A4 * !B1 * Y)	0.00259	0.00244	0.00241
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00071	-0.00071	-0.00061
	(!A1 * A2 * !A4 * B1 * !Y)	0.00274	0.00277	0.00275
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * A2 * !A4 * !B1 * Y)	0.00255	0.00260	0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00149	-0.00155	-0.00155
	(!A1 * !A2 * A4 * !B1 * Y)	0.00240	0.00241	0.00240
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00247	0.00249	0.00244

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00252	-0.00255	-0.00261
	(A1 * A2 * A4 * B1 * !Y)	0.00550	0.00552	0.00540
	(A1 * A2 * !A4 * B1 * !Y)	-0.00239	-0.00244	-0.00244
	(A1 * A2 * !A4 * B1 * !Y)	0.00544	0.00547	0.00545
	(A1 * A2 * !A4 * !B1 * Y)	-0.00126	-0.00129	-0.00132
	(A1 * A2 * !A4 * !B1 * Y)	0.00479	0.00487	0.00469
	(A1 * !A2 * A4 * !B1 * Y)	-0.00287	-0.00323	-0.00325
	(A1 * !A2 * A4 * !B1 * Y)	0.00492	0.00470	0.00465
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !A4 * !B1 * Y)	0.00489	0.00491	0.00472
	(!A2 * A4 * B1 * !Y)	-0.00241	-0.00246	-0.00245
	(!A2 * A4 * B1 * !Y)	0.00543	0.00548	0.00545
	(!A2 * !A4 * B1 * !Y)	-0.00130	-0.00131	-0.00116
	(!A2 * !A4 * B1 * !Y)	0.00544	0.00551	0.00545
	(!A1 * A2 * A4 * B1 * !Y)	-0.00217	-0.00240	-0.00242
	(!A1 * A2 * A4 * B1 * !Y)	0.00546	0.00548	0.00545
	(!A1 * A2 * A4 * !B1 * Y)	-0.00268	-0.00320	-0.00323
	(!A1 * A2 * A4 * !B1 * Y)	0.00503	0.00471	0.00464
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00144	-0.00144	-0.00123
	(!A1 * A2 * !A4 * B1 * !Y)	0.00544	0.00551	0.00545
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00183	-0.00185	-0.00184
	(!A1 * A2 * !A4 * !B1 * Y)	0.00491	0.00505	0.00477
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00313	-0.00328	-0.00328
	(!A1 * !A2 * A4 * !B1 * Y)	0.00462	0.00465	0.00462
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00186	-0.00188	-0.00187
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00477	0.00481	0.00469

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00502	-0.00507	-0.00521
	(A1 * A2 * A4 * B1 * !Y)	0.01110	0.01110	0.01088
	(A1 * A2 * !A4 * B1 * !Y)	-0.00478	-0.00486	-0.00487
	(A1 * A2 * !A4 * B1 * !Y)	0.01096	0.01103	0.01098
	(A1 * A2 * !A4 * !B1 * Y)	-0.00238	-0.00241	-0.00248
	(A1 * A2 * !A4 * !B1 * Y)	0.00972	0.00981	0.00946
	(A1 * !A2 * A4 * !B1 * Y)	-0.00562	-0.00639	-0.00643
	(A1 * !A2 * A4 * !B1 * Y)	0.01012	0.00951	0.00939
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00344	-0.00345	-0.00344
	(A1 * !A2 * !A4 * !B1 * Y)	0.00984	0.00989	0.00952
	(!A2 * A4 * B1 * !Y)	-0.00480	-0.00486	-0.00483
	(!A2 * A4 * B1 * !Y)	0.01101	0.01105	0.01098
	(!A2 * !A4 * B1 * !Y)	-0.00239	-0.00240	-0.00208
	(!A2 * !A4 * B1 * !Y)	0.01099	0.01108	0.01099
	(!A1 * A2 * A4 * B1 * !Y)	-0.00425	-0.00473	-0.00477
	(!A1 * A2 * A4 * B1 * !Y)	0.01100	0.01105	0.01098
	(!A1 * A2 * A4 * !B1 * Y)	-0.00514	-0.00632	-0.00640
	(!A1 * A2 * A4 * !B1 * Y)	0.01024	0.00950	0.00935
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00276	-0.00275	-0.00232
	(!A1 * A2 * !A4 * B1 * !Y)	0.01097	0.01109	0.01098
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00357	-0.00357	-0.00356
	(!A1 * A2 * !A4 * !B1 * Y)	0.00993	0.01019	0.00960
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00621	-0.00648	-0.00649
	(!A1 * !A2 * A4 * !B1 * Y)	0.00941	0.00938	0.00931
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00350	-0.00350	-0.00349
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00964	0.00970	0.00947

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)**	0.00257	0.00219	0.00223
	(A1 * A2 * A3 * B1 * !Y)	-0.00155	-0.00196	-0.00186
	(A1 * A2 * !A3 * !B1 * Y)	0.00163	0.00165	0.00163
	(A1 * A2 * !A3 * !B1 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * !A2 * A3 * !B1 * Y)	0.00158	0.00160	0.00159
	(A1 * !A2 * A3 * !B1 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * !A2 * !A3 * !B1 * Y)	0.00161	0.00162	0.00161
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00242	-0.00243	-0.00243
	(!A3 * B1 * !Y)	0.00217	0.00219	0.00217
	(!A3 * B1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A2 * A3 * B1 * !Y)	0.00213	0.00213	0.00213
	(!A2 * A3 * B1 * !Y)	-0.00186	-0.00187	-0.00187
	(!A1 * A2 * A3 * B1 * !Y)	0.00212	0.00214	0.00213
	(!A1 * A2 * A3 * B1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * A2 * A3 * !B1 * Y)	0.00158	0.00160	0.00159
	(!A1 * A2 * A3 * !B1 * Y)	-0.00241	-0.00243	-0.00241
	(!A1 * !A3 * !B1 * Y)	0.00161	0.00161	0.00161
	(!A1 * !A3 * !B1 * Y)	-0.00242	-0.00243	-0.00243
	(!A1 * !A2 * A3 * !B1 * Y)	0.00157	0.00157	0.00157
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00243	-0.00243	-0.00243

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00502	0.00423	0.00429
	(A1 * A2 * A3 * B1 * !Y)	-0.00305	-0.00390	-0.00372
	(A1 * A2 * !A3 * !B1 * Y)	0.00333	0.00336	0.00335
	(A1 * A2 * !A3 * !B1 * Y)	-0.00455	-0.00458	-0.00456
	(A1 * !A2 * A3 * !B1 * Y)	0.00326	0.00329	0.00327
	(A1 * !A2 * A3 * !B1 * Y)	-0.00456	-0.00458	-0.00456
	(A1 * !A2 * !A3 * !B1 * Y)	0.00330	0.00330	0.00331
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00457	-0.00457	-0.00457
	(!A3 * B1 * !Y)	0.00416	0.00419	0.00415
	(!A3 * B1 * !Y)	-0.00373	-0.00376	-0.00373
	(!A2 * A3 * B1 * !Y)	0.00408	0.00411	0.00409
	(!A2 * A3 * B1 * !Y)	-0.00373	-0.00375	-0.00373
	(!A1 * A2 * A3 * B1 * !Y)	0.00405	0.00410	0.00406
	(!A1 * A2 * A3 * B1 * !Y)	-0.00372	-0.00376	-0.00373
	(!A1 * A2 * A3 * !B1 * Y)	0.00323	0.00326	0.00325
	(!A1 * A2 * A3 * !B1 * Y)	-0.00454	-0.00456	-0.00455
	(!A1 * !A3 * !B1 * Y)	0.00330	0.00333	0.00331
	(!A1 * !A3 * !B1 * Y)	-0.00457	-0.00459	-0.00457
	(!A1 * !A2 * A3 * !B1 * Y)	0.00323	0.00325	0.00324
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00457	-0.00459	-0.00457

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00994	0.00839	0.00851
	(A1 * A2 * A3 * B1 * !Y)	-0.00623	-0.00783	-0.00744
	(A1 * A2 * !A3 * !B1 * Y)	0.00662	0.00673	0.00665
	(A1 * A2 * !A3 * !B1 * Y)	-0.00911	-0.00919	-0.00913
	(A1 * !A2 * A3 * !B1 * Y)	0.00646	0.00651	0.00646
	(A1 * !A2 * A3 * !B1 * Y)	-0.00913	-0.00917	-0.00913
	(A1 * !A2 * !A3 * !B1 * Y)	0.00657	0.00661	0.00657
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00916	-0.00918	-0.00915
	(!A3 * B1 * !Y)	0.00826	0.00833	0.00827
	(!A3 * B1 * !Y)	-0.00745	-0.00751	-0.00746
	(!A2 * A3 * B1 * !Y)	0.00809	0.00814	0.00809
	(!A2 * A3 * B1 * !Y)	-0.00746	-0.00751	-0.00746
	(!A1 * A2 * A3 * B1 * !Y)	0.00802	0.00798	0.00801
	(!A1 * A2 * A3 * B1 * !Y)	-0.00746	-0.00744	-0.00746
	(!A1 * A2 * A3 * !B1 * Y)	0.00640	0.00642	0.00641
	(!A1 * A2 * A3 * !B1 * Y)	-0.00911	-0.00912	-0.00909
	(!A1 * !A3 * !B1 * Y)	0.00657	0.00660	0.00657
	(!A1 * !A3 * !B1 * Y)	-0.00916	-0.00918	-0.00915
	(!A1 * !A2 * A3 * !B1 * Y)	0.00639	0.00643	0.00640
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00915	-0.00918	-0.00915

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)**	-0.00135	-0.00137	-0.00140
	(A1 * A2 * A3 * B1 * !Y)	0.00275	0.00277	0.00271
	(A1 * A2 * !A3 * !B1 * Y)	-0.00146	-0.00156	-0.00157
	(A1 * A2 * !A3 * !B1 * Y)	0.00251	0.00250	0.00248
	(A1 * !A2 * A3 * !B1 * Y)	-0.00141	-0.00154	-0.00155
	(A1 * !A2 * A3 * !B1 * Y)	0.00251	0.00251	0.00248
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00153	-0.00157	-0.00158
	(A1 * !A2 * !A3 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A3 * B1 * !Y)	-0.00130	-0.00133	-0.00132
	(!A3 * B1 * !Y)	0.00272	0.00276	0.00273
	(!A2 * A3 * B1 * !Y)	-0.00120	-0.00129	-0.00130
	(!A2 * A3 * B1 * !Y)	0.00273	0.00276	0.00273
	(!A1 * A2 * A3 * B1 * !Y)	-0.00115	-0.00128	-0.00129
	(!A1 * A2 * A3 * B1 * !Y)	0.00273	0.00276	0.00273
	(!A1 * A2 * A3 * !B1 * Y)	-0.00136	-0.00152	-0.00155
	(!A1 * A2 * A3 * !B1 * Y)	0.00254	0.00252	0.00248
	(!A1 * !A3 * !B1 * Y)	-0.00152	-0.00157	-0.00158
	(!A1 * !A3 * !B1 * Y)	0.00246	0.00247	0.00247
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00145	-0.00155	-0.00156
	(!A1 * !A2 * A3 * !B1 * Y)	0.00246	0.00250	0.00247

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00255	-0.00256	-0.00264
	(A1 * A2 * A3 * B1 * !Y)	0.00552	0.00550	0.00541
	(A1 * A2 * !A3 * !B1 * Y)	-0.00301	-0.00326	-0.00327
	(A1 * A2 * !A3 * !B1 * Y)	0.00472	0.00468	0.00465
	(A1 * !A2 * A3 * !B1 * Y)	-0.00288	-0.00320	-0.00324
	(A1 * !A2 * A3 * !B1 * Y)	0.00474	0.00466	0.00465
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00316	-0.00329	-0.00329
	(A1 * !A2 * !A3 * !B1 * Y)	0.00461	0.00465	0.00463
	(!A3 * B1 * !Y)	-0.00241	-0.00247	-0.00246
	(!A3 * B1 * !Y)	0.00544	0.00549	0.00546
	(!A2 * A3 * B1 * !Y)	-0.00219	-0.00239	-0.00242
	(!A2 * A3 * B1 * !Y)	0.00545	0.00547	0.00546
	(!A1 * A2 * A3 * B1 * !Y)	-0.00209	-0.00235	-0.00241
	(!A1 * A2 * A3 * B1 * !Y)	0.00547	0.00546	0.00546
	(!A1 * A2 * A3 * !B1 * Y)	-0.00278	-0.00315	-0.00322
	(!A1 * A2 * A3 * !B1 * Y)	0.00481	0.00468	0.00465
	(!A1 * !A3 * !B1 * Y)	-0.00315	-0.00329	-0.00329
	(!A1 * !A3 * !B1 * Y)	0.00461	0.00465	0.00463
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00298	-0.00322	-0.00324
	(!A1 * !A2 * A3 * !B1 * Y)	0.00462	0.00464	0.00463

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00504	-0.00507	-0.00523
	(A1 * A2 * A3 * B1 * !Y)	0.01104	0.01102	0.01083
	(A1 * A2 * !A3 * !B1 * Y)	-0.00598	-0.00645	-0.00648
	(A1 * A2 * !A3 * !B1 * Y)	0.00943	0.00936	0.00931
	(A1 * !A2 * A3 * !B1 * Y)	-0.00574	-0.00630	-0.00640
	(A1 * !A2 * A3 * !B1 * Y)	0.00950	0.00930	0.00930
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00626	-0.00652	-0.00652
	(A1 * !A2 * !A3 * !B1 * Y)	0.00922	0.00931	0.00926
	(!A3 * B1 * !Y)	-0.00479	-0.00489	-0.00486
	(!A3 * B1 * !Y)	0.01089	0.01098	0.01093
	(!A2 * A3 * B1 * !Y)	-0.00433	-0.00468	-0.00478
	(!A2 * A3 * B1 * !Y)	0.01095	0.01091	0.01093
	(!A1 * A2 * A3 * B1 * !Y)	-0.00413	-0.00466	-0.00475
	(!A1 * A2 * A3 * B1 * !Y)	0.01095	0.01104	0.01093
	(!A1 * A2 * A3 * !B1 * Y)	-0.00556	-0.00626	-0.00638
	(!A1 * A2 * A3 * !B1 * Y)	0.00964	0.00947	0.00930
	(!A1 * !A3 * !B1 * Y)	-0.00625	-0.00652	-0.00652
	(!A1 * !A3 * !B1 * Y)	0.00923	0.00931	0.00925
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00592	-0.00633	-0.00640
	(!A1 * !A2 * A3 * !B1 * Y)	0.00928	0.00924	0.00925

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)	0.00212	0.00213	0.00217
	(A1 * A2 * A3 * A4 * !Y)	-0.00079	-0.00078	-0.00073
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00230	0.00229	0.00240
	(A1 * A2 * A3 * A4 * !Y)	-0.00164	-0.00161	-0.00151
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00451	0.00456	0.00475
	(A1 * A2 * A3 * A4 * !Y)	-0.00312	-0.00314	-0.00293

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)	-0.00069	-0.00073	-0.00116
	(A1 * A2 * A3 * A4 * !Y)	0.00225	0.00224	0.00184
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00055	0.00049	-0.00040
	(A1 * A2 * A3 * A4 * !Y)	0.00454	0.00453	0.00371
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00111	0.00098	-0.00075
	(A1 * A2 * A3 * A4 * !Y)	0.00897	0.00894	0.00732

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00279	0.00278	0.00281	0.00274	0.00287	1.33955
sky130_fd_sc_hs__a41o_2	0.00275	0.00284	0.00291	0.00274	0.00289	2.52633
sky130_fd_sc_hs__a41o_4	0.00543	0.00531	0.00547	0.00527	0.00537	4.14047

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	61.92180	143.28000
sky130_fd_sc_hs__a41o_2	0.00000	85.82450	144.64000
sky130_fd_sc_hs__a41o_4	0.00000	171.43500	289.03200

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)	0.11576	0.64018	7.04470
	A2->X (RR)	0.12679	0.63589	6.93305
	A3->X (RR)	0.13490	0.62133	6.77907
	A4->X (RR)	0.13905	0.60081	6.57839
	B1->X (RR)	0.05850	0.51734	6.09458
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.12429	0.58477	6.99261
	A2->X (RR)	0.13687	0.57768	6.86815
	A3->X (RR)	0.14471	0.55893	6.69823
	A4->X (RR)	0.14827	0.53509	6.48688
	B1->X (RR)	0.05577	0.44392	6.01502
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.13861	0.55383	6.93629
	A2->X (RR)	0.15430	0.55202	6.94627
	A3->X (RR)	0.16218	0.51479	6.64524
	A4->X (RR)	0.16699	0.49486	6.43411
	B1->X (RR)	0.05261	0.37903	5.80870

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.11845	0.50152	4.89987
	A2->X (FF)	0.13923	0.53385	5.03670
	A3->X (FF)	0.15331	0.55765	5.19190
	A4->X (FF)	0.16673	0.58332	5.37615
	B1->X (FF)	0.14122	0.60703	5.59897
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.13781	0.49199	4.79965
	A2->X (FF)	0.16038	0.52516	4.94112
	A3->X (FF)	0.17327	0.54676	5.08693
	A4->X (FF)	0.18517	0.56794	5.25662
	B1->X (FF)	0.16094	0.59844	5.49833
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.14371	0.44274	4.33008
	A2->X (FF)	0.16437	0.47407	4.45108
	A3->X (FF)	0.18025	0.50188	4.70179
	A4->X (FF)	0.19581	0.52753	4.88635
	B1->X (FF)	0.16823	0.57024	5.23265

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01809	0.02161	0.09743
	A1	0.01175	0.01527	0.09116
	A2	0.01928	0.02218	0.09648
	A2	0.01175	0.01464	0.08891
	A3	0.02043	0.02308	0.10087
	A3	0.01173	0.01438	0.09213
	A4	0.02163	0.02416	0.10571
	A4	0.01170	0.01423	0.09587
	B1	0.01134	0.01845	0.12883
	B1	0.00653	0.01365	0.12447
sky130_fd_sc_hs__a41o_2	A1	0.02149	0.02436	0.10039
	A1	0.01513	0.01801	0.09410
	A2	0.02273	0.02486	0.09923
	A2	0.01515	0.01728	0.09156
	A3	0.02391	0.02578	0.10377
	A3	0.01511	0.01700	0.09502
	A4	0.02504	0.02677	0.10837
	A4	0.01509	0.01684	0.09882
	B1	0.01361	0.02038	0.13085
	B1	0.00877	0.01559	0.12700

sky130_fd_sc_hs__a41o_4	**A1**	0.04289	0.04680	0.17311
	A1	0.03016	0.03420	0.16021
	A2	0.04523	0.04813	0.18876
	A2	0.03018	0.03321	0.17353
	A3	0.04780	0.05034	0.20208
	A3	0.03012	0.03270	0.18455
	A4	0.05008	0.05223	0.21176
	A4	0.03004	0.03220	0.19259
	B1	0.02528	0.03845	0.24074
	B1	0.01594	0.02911	0.23157

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00517	0.00845	0.08521
	A1	0.01153	0.01473	0.09047
	A2	0.00599	0.00889	0.08427
	A2	0.01350	0.01640	0.09127
	A3	0.00687	0.00966	0.08875
	A3	0.01552	0.01828	0.09663
	A4	0.00756	0.01032	0.09287
	A4	0.01738	0.02012	0.10215
	B1	0.00465	0.01209	0.11513
	B1	0.00947	0.01688	0.11933

sky130_fd_sc_hs__a41o_2	**A1**	0.01039	0.01227	0.08856
	A1	0.01676	0.01857	0.09338
	A2	0.01183	0.01305	0.08911
	A2	0.01939	0.02055	0.09465
	A3	0.01284	0.01389	0.09215
	A3	0.02157	0.02248	0.10000
	A4	0.01363	0.01437	0.09627
	A4	0.02348	0.02420	0.10524
	B1	0.00895	0.01581	0.11858
	B1	0.01380	0.02058	0.12205
sky130_fd_sc_hs__a41o_4	**A1**	0.02069	0.02308	0.15944
	A1	0.03342	0.03567	0.17205
	A2	0.02401	0.02552	0.16581
	A2	0.03901	0.04051	0.18080
	A3	0.02595	0.02724	0.18088
	A3	0.04348	0.04451	0.19529
	A4	0.02866	0.02908	0.19085
	A4	0.04838	0.04861	0.20732
	B1	0.01790	0.03047	0.23328
	B1	0.02723	0.03979	0.23578

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)**	0.00252	0.00213	0.00225
	(A2 * A3 * A4 * B1 * X)	-0.00128	-0.00168	-0.00150
	(A2 * A3 * !A4 * B1 * X)	0.00214	0.00216	0.00215
	(A2 * A3 * !A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(A2 * A3 * !A4 * !B1 * !X)	0.00104	0.00104	0.00096
	(A2 * A3 * !A4 * !B1 * !X)	-0.00176	-0.00177	-0.00195
	(A2 * !A3 * B1 * X)	0.00217	0.00218	0.00217
	(A2 * !A3 * B1 * X)	-0.00149	-0.00150	-0.00149
	(A2 * !A3 * !B1 * !X)	0.00101	0.00100	0.00095
	(A2 * !A3 * !B1 * !X)	-0.00185	-0.00185	-0.00196
	(!A2 * B1 * X)	0.00220	0.00222	0.00221
	(!A2 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A2 * !B1 * !X)	0.00099	0.00098	0.00096
	(!A2 * !B1 * !X)	-0.00192	-0.00193	-0.00197
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00252	0.00213	0.00225
	(A2 * A3 * A4 * B1 * X)	-0.00128	-0.00168	-0.00150
	(A2 * A3 * !A4 * B1 * X)	0.00214	0.00215	0.00214
	(A2 * A3 * !A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(A2 * A3 * !A4 * !B1 * !X)	0.00148	0.00147	0.00139
	(A2 * A3 * !A4 * !B1 * !X)	-0.00132	-0.00132	-0.00151
	(A2 * !A3 * B1 * X)	0.00217	0.00218	0.00217
	(A2 * !A3 * B1 * X)	-0.00148	-0.00150	-0.00149
	(A2 * !A3 * !B1 * !X)	0.00146	0.00146	0.00139
	(A2 * !A3 * !B1 * !X)	-0.00139	-0.00140	-0.00152
	(!A2 * B1 * X)	0.00221	0.00221	0.00221
	(!A2 * B1 * X)	-0.00149	-0.00149	-0.00149
	(!A2 * !B1 * !X)	0.00145	0.00145	0.00141
	(!A2 * !B1 * !X)	-0.00147	-0.00148	-0.00153

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00521	0.00446	0.00468
	(A2 * A3 * A4 * B1 * X)	-0.00259	-0.00340	-0.00306
	(A2 * A3 * !A4 * B1 * X)	0.00441	0.00443	0.00442
	(A2 * A3 * !A4 * B1 * X)	-0.00302	-0.00304	-0.00303
	(A2 * A3 * !A4 * !B1 * !X)	0.00306	0.00307	0.00287
	(A2 * A3 * !A4 * !B1 * !X)	-0.00265	-0.00269	-0.00312
	(A2 * !A3 * B1 * X)	0.00446	0.00448	0.00446
	(A2 * !A3 * B1 * X)	-0.00303	-0.00306	-0.00303
	(A2 * !A3 * !B1 * !X)	0.00296	0.00298	0.00285
	(A2 * !A3 * !B1 * !X)	-0.00286	-0.00291	-0.00316
	(!A2 * B1 * X)	0.00456	0.00460	0.00457
	(!A2 * B1 * X)	-0.00302	-0.00306	-0.00303
	(!A2 * !B1 * !X)	0.00299	0.00300	0.00292
	(!A2 * !B1 * !X)	-0.00302	-0.00306	-0.00319

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)**	-0.00104	-0.00106	-0.00112
	(A2 * A3 * A4 * B1 * X)	0.00273	0.00273	0.00266
	(A2 * A3 * !A4 * B1 * X)	-0.00080	-0.00096	-0.00098
	(A2 * A3 * !A4 * B1 * X)	0.00269	0.00271	0.00270
	(A2 * A3 * !A4 * !B1 * !X)	-0.00003	-0.00003	-0.00003
	(A2 * A3 * !A4 * !B1 * !X)	0.00287	0.00288	0.00288
	(A2 * !A3 * B1 * X)	-0.00087	-0.00098	-0.00099
	(A2 * !A3 * B1 * X)	0.00269	0.00271	0.00270
	(A2 * !A3 * !B1 * !X)	-0.00003	-0.00004	-0.00003
	(A2 * !A3 * !B1 * !X)	0.00288	0.00289	0.00288
	(!A2 * B1 * X)	-0.00100	-0.00101	-0.00101
	(!A2 * B1 * X)	0.00271	0.00271	0.00270
	(!A2 * !B1 * !X)	-0.00004	-0.00005	-0.00004
	(!A2 * !B1 * !X)	0.00288	0.00292	0.00288
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00102	-0.00104	-0.00110
	(A2 * A3 * A4 * B1 * X)	0.00275	0.00276	0.00268
	(A2 * A3 * !A4 * B1 * X)	-0.00078	-0.00093	-0.00096
	(A2 * A3 * !A4 * B1 * X)	0.00271	0.00273	0.00272
	(A2 * A3 * !A4 * !B1 * !X)	0.00039	0.00038	0.00039
	(A2 * A3 * !A4 * !B1 * !X)	0.00329	0.00333	0.00330
	(A2 * !A3 * B1 * X)	-0.00085	-0.00095	-0.00097
	(A2 * !A3 * B1 * X)	0.00271	0.00273	0.00272
	(A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00038
	(A2 * !A3 * !B1 * !X)	0.00330	0.00331	0.00330
	(!A2 * B1 * X)	-0.00097	-0.00099	-0.00099
	(!A2 * B1 * X)	0.00273	0.00273	0.00272
	(!A2 * !B1 * !X)	0.00036	0.00035	0.00036
	(!A2 * !B1 * !X)	0.00330	0.00334	0.00330

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00221	-0.00224	-0.00237
	(A2 * A3 * A4 * B1 * X)	0.00556	0.00556	0.00541
	(A2 * A3 * !A4 * B1 * X)	-0.00166	-0.00205	-0.00208
	(A2 * A3 * !A4 * B1 * X)	0.00550	0.00553	0.00550
	(A2 * A3 * !A4 * !B1 * !X)	0.00071	0.00068	0.00071
	(A2 * A3 * !A4 * !B1 * !X)	0.00669	0.00679	0.00671
	(A2 * !A3 * B1 * X)	-0.00183	-0.00208	-0.00210
	(A2 * !A3 * B1 * X)	0.00549	0.00554	0.00550
	(A2 * !A3 * !B1 * !X)	0.00070	0.00069	0.00070
	(A2 * !A3 * !B1 * !X)	0.00670	0.00673	0.00672
	(!A2 * B1 * X)	-0.00211	-0.00215	-0.00214
	(!A2 * B1 * X)	0.00552	0.00553	0.00550
	(!A2 * !B1 * !X)	0.00064	0.00061	0.00064
	(!A2 * !B1 * !X)	0.00671	0.00680	0.00673

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)**	0.00255	0.00216	0.00228
	(A1 * A3 * A4 * B1 * X)	-0.00127	-0.00166	-0.00149
	(A1 * A3 * !A4 * B1 * X)	0.00219	0.00220	0.00220
	(A1 * A3 * !A4 * B1 * X)	-0.00147	-0.00148	-0.00148
	(A1 * A3 * !A4 * !B1 * !X)	0.00113	0.00113	0.00113
	(A1 * A3 * !A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * B1 * X)	0.00223	0.00224	0.00223
	(A1 * !A3 * B1 * X)	-0.00147	-0.00149	-0.00148
	(A1 * !A3 * !B1 * !X)	0.00115	0.00115	0.00116
	(A1 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00164
	(!A1 * A3 * A4 * B1 * X)	0.00223	0.00225	0.00224
	(!A1 * A3 * A4 * B1 * X)	-0.00147	-0.00149	-0.00148
	(!A1 * A3 * A4 * !B1 * !X)	0.00208	0.00210	0.00209
	(!A1 * A3 * A4 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * A3 * !A4 * B1 * X)	0.00155	0.00154	0.00154
	(!A1 * A3 * !A4 * B1 * X)	-0.00148	-0.00148	-0.00148
	(!A1 * A3 * !A4 * !B1 * !X)	0.00136	0.00136	0.00135
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A3 * B1 * X)	0.00154	0.00155	0.00154
	(!A1 * !A3 * B1 * X)	-0.00147	-0.00149	-0.00148
	(!A1 * !A3 * !B1 * !X)	0.00136	0.00136	0.00135
	(!A1 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00164

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00258	0.00219	0.00231
	(A1 * A3 * A4 * B1 * X)	-0.00127	-0.00166	-0.00148
	(A1 * A3 * !A4 * B1 * X)	0.00222	0.00223	0.00222
	(A1 * A3 * !A4 * B1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * A3 * !A4 * !B1 * !X)	0.00156	0.00157	0.00158
	(A1 * A3 * !A4 * !B1 * !X)	-0.00122	-0.00123	-0.00121
	(A1 * !A3 * B1 * X)	0.00226	0.00227	0.00226
	(A1 * !A3 * B1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A3 * !B1 * !X)	0.00161	0.00162	0.00162
	(A1 * !A3 * !B1 * !X)	-0.00121	-0.00123	-0.00121
	(!A1 * A3 * A4 * B1 * X)	0.00226	0.00227	0.00227
	(!A1 * A3 * A4 * B1 * X)	-0.00146	-0.00148	-0.00147
	(!A1 * A3 * A4 * !B1 * !X)	0.00253	0.00255	0.00254
	(!A1 * A3 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * A3 * !A4 * B1 * X)	0.00157	0.00157	0.00156
	(!A1 * A3 * !A4 * B1 * X)	-0.00147	-0.00148	-0.00147
	(!A1 * A3 * !A4 * !B1 * !X)	0.00180	0.00181	0.00180
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00121	-0.00123	-0.00122
	(!A1 * !A3 * B1 * X)	0.00161	0.00161	0.00161
	(!A1 * !A3 * B1 * X)	-0.00148	-0.00147	-0.00147
	(!A1 * !A3 * !B1 * !X)	0.00184	0.00185	0.00183
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00123	-0.00122

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00511	0.00438	0.00459
	(A1 * A3 * A4 * B1 * X)	-0.00257	-0.00333	-0.00299
	(A1 * A3 * !A4 * B1 * X)	0.00436	0.00438	0.00436
	(A1 * A3 * !A4 * B1 * X)	-0.00297	-0.00299	-0.00297
	(A1 * A3 * !A4 * !B1 * !X)	0.00306	0.00307	0.00309
	(A1 * A3 * !A4 * !B1 * !X)	-0.00244	-0.00246	-0.00243
	(A1 * !A3 * B1 * X)	0.00447	0.00449	0.00447
	(A1 * !A3 * B1 * X)	-0.00297	-0.00300	-0.00297
	(A1 * !A3 * !B1 * !X)	0.00308	0.00308	0.00311
	(A1 * !A3 * !B1 * !X)	-0.00244	-0.00245	-0.00244
	(!A1 * A3 * A4 * B1 * X)	0.00447	0.00451	0.00448
	(!A1 * A3 * A4 * B1 * X)	-0.00296	-0.00300	-0.00297
	(!A1 * A3 * A4 * !B1 * !X)	0.00506	0.00508	0.00506
	(!A1 * A3 * A4 * !B1 * !X)	-0.00243	-0.00244	-0.00242
	(!A1 * A3 * !A4 * B1 * X)	0.00305	0.00306	0.00305
	(!A1 * A3 * !A4 * B1 * X)	-0.00297	-0.00299	-0.00298
	(!A1 * A3 * !A4 * !B1 * !X)	0.00353	0.00354	0.00353
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00246	-0.00248	-0.00246
	(!A1 * !A3 * B1 * X)	0.00306	0.00306	0.00305
	(!A1 * !A3 * B1 * X)	-0.00297	-0.00299	-0.00298
	(!A1 * !A3 * !B1 * !X)	0.00351	0.00351	0.00350
	(!A1 * !A3 * !B1 * !X)	-0.00247	-0.00248	-0.00247

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)**	-0.00107	-0.00109	-0.00115
	(A1 * A3 * A4 * B1 * X)	0.00272	0.00272	0.00264
	(A1 * A3 * !A4 * B1 * X)	-0.00090	-0.00101	-0.00102
	(A1 * A3 * !A4 * B1 * X)	0.00270	0.00270	0.00269
	(A1 * A3 * !A4 * !B1 * !X)	-0.00019	-0.00019	-0.00021
	(A1 * A3 * !A4 * !B1 * !X)	0.00260	0.00262	0.00256
	(A1 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00104
	(A1 * !A3 * B1 * X)	0.00270	0.00270	0.00269
	(A1 * !A3 * !B1 * !X)	-0.00020	-0.00021	-0.00022
	(A1 * !A3 * !B1 * !X)	0.00260	0.00262	0.00256
	(!A1 * A3 * A4 * B1 * X)	-0.00102	-0.00104	-0.00104
	(!A1 * A3 * A4 * B1 * X)	0.00269	0.00270	0.00269
	(!A1 * A3 * A4 * !B1 * !X)	-0.00092	-0.00114	-0.00116
	(!A1 * A3 * A4 * !B1 * !X)	0.00281	0.00262	0.00256
	(!A1 * A3 * !A4 * B1 * X)	-0.00053	-0.00053	-0.00043
	(!A1 * A3 * !A4 * B1 * X)	0.00268	0.00271	0.00269
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00043	-0.00048	-0.00049
	(!A1 * A3 * !A4 * !B1 * !X)	0.00277	0.00274	0.00263
	(!A1 * !A3 * B1 * X)	-0.00047	-0.00047	-0.00040
	(!A1 * !A3 * B1 * X)	0.00269	0.00271	0.00269
	(!A1 * !A3 * !B1 * !X)	-0.00047	-0.00048	-0.00050
	(!A1 * !A3 * !B1 * !X)	0.00266	0.00268	0.00258

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00107	-0.00109	-0.00116
	(A1 * A3 * A4 * B1 * X)	0.00274	0.00274	0.00266
	(A1 * A3 * !A4 * B1 * X)	-0.00089	-0.00101	-0.00102
	(A1 * A3 * !A4 * B1 * X)	0.00270	0.00272	0.00271
	(A1 * A3 * !A4 * !B1 * !X)	0.00023	0.00022	0.00020
	(A1 * A3 * !A4 * !B1 * !X)	0.00305	0.00305	0.00300
	(A1 * !A3 * B1 * X)	-0.00103	-0.00105	-0.00104
	(A1 * !A3 * B1 * X)	0.00272	0.00272	0.00271
	(A1 * !A3 * !B1 * !X)	0.00020	0.00020	0.00018
	(A1 * !A3 * !B1 * !X)	0.00306	0.00307	0.00301
	(!A1 * A3 * A4 * B1 * X)	-0.00102	-0.00105	-0.00104
	(!A1 * A3 * A4 * B1 * X)	0.00270	0.00272	0.00271
	(!A1 * A3 * A4 * !B1 * !X)	-0.00049	-0.00072	-0.00075
	(!A1 * A3 * A4 * !B1 * !X)	0.00326	0.00306	0.00300
	(!A1 * A3 * !A4 * B1 * X)	-0.00053	-0.00053	-0.00043
	(!A1 * A3 * !A4 * B1 * X)	0.00270	0.00273	0.00271
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00001	-0.00006	-0.00007
	(!A1 * A3 * !A4 * !B1 * !X)	0.00320	0.00319	0.00306
	(!A1 * !A3 * B1 * X)	-0.00051	-0.00052	-0.00045
	(!A1 * !A3 * B1 * X)	0.00271	0.00273	0.00271
	(!A1 * !A3 * !B1 * !X)	-0.00009	-0.00010	-0.00012
	(!A1 * !A3 * !B1 * !X)	0.00311	0.00313	0.00302

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00213	-0.00216	-0.00229
	(A1 * A3 * A4 * B1 * X)	0.00550	0.00550	0.00535
	(A1 * A3 * !A4 * B1 * X)	-0.00173	-0.00197	-0.00201
	(A1 * A3 * !A4 * B1 * X)	0.00543	0.00548	0.00544
	(A1 * A3 * !A4 * !B1 * !X)	0.00054	0.00054	0.00050
	(A1 * A3 * !A4 * !B1 * !X)	0.00615	0.00615	0.00603
	(A1 * !A3 * B1 * X)	-0.00201	-0.00204	-0.00204
	(A1 * !A3 * B1 * X)	0.00543	0.00546	0.00544
	(A1 * !A3 * !B1 * !X)	0.00054	0.00051	0.00048
	(A1 * !A3 * !B1 * !X)	0.00613	0.00621	0.00604
	(!A1 * A3 * A4 * B1 * X)	-0.00201	-0.00207	-0.00206
	(!A1 * A3 * A4 * B1 * X)	0.00543	0.00548	0.00544
	(!A1 * A3 * A4 * !B1 * !X)	-0.00089	-0.00142	-0.00149
	(!A1 * A3 * A4 * !B1 * !X)	0.00659	0.00615	0.00600
	(!A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00101	-0.00080
	(!A1 * A3 * !A4 * B1 * X)	0.00544	0.00549	0.00544
	(!A1 * A3 * !A4 * !B1 * !X)	0.00005	-0.00006	-0.00007
	(!A1 * A3 * !A4 * !B1 * !X)	0.00648	0.00640	0.00615
	(!A1 * !A3 * B1 * X)	-0.00087	-0.00089	-0.00073
	(!A1 * !A3 * B1 * X)	0.00543	0.00549	0.00545
	(!A1 * !A3 * !B1 * !X)	-0.00004	-0.00005	-0.00008
	(!A1 * !A3 * !B1 * !X)	0.00621	0.00629	0.00606

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)**	0.00254	0.00214	0.00225
	(A1 * A2 * A4 * B1 * X)	-0.00129	-0.00169	-0.00152
	(A1 * A2 * !A4 * B1 * X)	0.00220	0.00221	0.00220
	(A1 * A2 * !A4 * B1 * X)	-0.00151	-0.00153	-0.00152
	(A1 * A2 * !A4 * !B1 * !X)	0.00117	0.00118	0.00118
	(A1 * A2 * !A4 * !B1 * !X)	-0.00161	-0.00163	-0.00161
	(A1 * !A2 * A4 * !B1 * !X)	0.00206	0.00207	0.00207
	(A1 * !A2 * A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !A4 * !B1 * !X)	0.00137	0.00138	0.00137
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00167
	(!A2 * A4 * B1 * X)	0.00220	0.00221	0.00220
	(!A2 * A4 * B1 * X)	-0.00151	-0.00152	-0.00152
	(!A2 * !A4 * B1 * X)	0.00155	0.00156	0.00154
	(!A2 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * A2 * A4 * B1 * X)	0.00217	0.00218	0.00217
	(!A1 * A2 * A4 * B1 * X)	-0.00151	-0.00153	-0.00152
	(!A1 * A2 * A4 * !B1 * !X)	0.00203	0.00205	0.00203
	(!A1 * A2 * A4 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * A2 * !A4 * B1 * X)	0.00153	0.00153	0.00152
	(!A1 * A2 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * A2 * !A4 * !B1 * !X)	0.00134	0.00135	0.00134
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * A4 * !B1 * !X)	0.00204	0.00206	0.00204
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00138	0.00138	0.00138
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00261	0.00222	0.00233
	(A1 * A2 * A4 * B1 * X)	-0.00128	-0.00167	-0.00150
	(A1 * A2 * !A4 * B1 * X)	0.00228	0.00229	0.00228
	(A1 * A2 * !A4 * B1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * A2 * !A4 * !B1 * !X)	0.00163	0.00163	0.00165
	(A1 * A2 * !A4 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * A4 * !B1 * !X)	0.00257	0.00258	0.00257
	(A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00122
	(A1 * !A2 * !A4 * !B1 * !X)	0.00181	0.00182	0.00181
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(!A2 * A4 * B1 * X)	0.00228	0.00229	0.00228
	(!A2 * A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A2 * !A4 * B1 * X)	0.00157	0.00157	0.00157
	(!A2 * !A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A1 * A2 * A4 * B1 * X)	0.00225	0.00227	0.00225
	(!A1 * A2 * A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A1 * A2 * A4 * !B1 * !X)	0.00253	0.00253	0.00254
	(!A1 * A2 * A4 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * A2 * !A4 * B1 * X)	0.00158	0.00159	0.00158
	(!A1 * A2 * !A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A1 * A2 * !A4 * !B1 * !X)	0.00182	0.00182	0.00182
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A2 * A4 * !B1 * !X)	0.00255	0.00256	0.00255
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00182	0.00183	0.00182
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00123	-0.00124	-0.00123

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00521	0.00444	0.00466
	(A1 * A2 * A4 * B1 * X)	-0.00259	-0.00337	-0.00304
	(A1 * A2 * !A4 * B1 * X)	0.00454	0.00455	0.00454
	(A1 * A2 * !A4 * B1 * X)	-0.00303	-0.00304	-0.00302
	(A1 * A2 * !A4 * !B1 * !X)	0.00323	0.00324	0.00322
	(A1 * A2 * !A4 * !B1 * !X)	-0.00242	-0.00242	-0.00237
	(A1 * !A2 * A4 * !B1 * !X)	0.00511	0.00512	0.00511
	(A1 * !A2 * A4 * !B1 * !X)	-0.00248	-0.00248	-0.00247
	(A1 * !A2 * !A4 * !B1 * !X)	0.00353	0.00356	0.00354
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00249	-0.00254	-0.00251
	(!A2 * A4 * B1 * X)	0.00452	0.00456	0.00453
	(!A2 * A4 * B1 * X)	-0.00301	-0.00304	-0.00302
	(!A2 * !A4 * B1 * X)	0.00309	0.00310	0.00308
	(!A2 * !A4 * B1 * X)	-0.00303	-0.00305	-0.00303
	(!A1 * A2 * A4 * B1 * X)	0.00446	0.00446	0.00447
	(!A1 * A2 * A4 * B1 * X)	-0.00301	-0.00302	-0.00302
	(!A1 * A2 * A4 * !B1 * !X)	0.00501	0.00503	0.00503
	(!A1 * A2 * A4 * !B1 * !X)	-0.00247	-0.00248	-0.00247
	(!A1 * A2 * !A4 * B1 * X)	0.00310	0.00310	0.00309
	(!A1 * A2 * !A4 * B1 * X)	-0.00303	-0.00305	-0.00303
	(!A1 * A2 * !A4 * !B1 * !X)	0.00356	0.00357	0.00355
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00252	-0.00254	-0.00252
	(!A1 * !A2 * A4 * !B1 * !X)	0.00505	0.00508	0.00506
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00250	-0.00252	-0.00250
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00355	0.00359	0.00357
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00249	-0.00253	-0.00251

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)**	-0.00104	-0.00106	-0.00112
	(A1 * A2 * A4 * B1 * X)	0.00276	0.00276	0.00268
	(A1 * A2 * !A4 * B1 * X)	-0.00099	-0.00101	-0.00101
	(A1 * A2 * !A4 * B1 * X)	0.00272	0.00274	0.00273
	(A1 * A2 * !A4 * !B1 * !X)	-0.00020	-0.00021	-0.00022
	(A1 * A2 * !A4 * !B1 * !X)	0.00266	0.00268	0.00260
	(A1 * !A2 * A4 * !B1 * !X)	-0.00097	-0.00114	-0.00114
	(A1 * !A2 * A4 * !B1 * !X)	0.00274	0.00261	0.00259
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00050	-0.00051	-0.00052
	(A1 * !A2 * !A4 * !B1 * !X)	0.00267	0.00269	0.00261
	(!A2 * A4 * B1 * X)	-0.00100	-0.00101	-0.00101
	(!A2 * A4 * B1 * X)	0.00273	0.00273	0.00273
	(!A2 * !A4 * B1 * X)	-0.00047	-0.00048	-0.00041
	(!A2 * !A4 * B1 * X)	0.00273	0.00275	0.00273
	(!A1 * A2 * A4 * B1 * X)	-0.00087	-0.00098	-0.00099
	(!A1 * A2 * A4 * B1 * X)	0.00272	0.00274	0.00273
	(!A1 * A2 * A4 * !B1 * !X)	-0.00086	-0.00111	-0.00113
	(!A1 * A2 * A4 * !B1 * !X)	0.00277	0.00262	0.00259
	(!A1 * A2 * !A4 * B1 * X)	-0.00051	-0.00051	-0.00041
	(!A1 * A2 * !A4 * B1 * X)	0.00272	0.00275	0.00273
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00049	-0.00047	-0.00049
	(!A1 * A2 * !A4 * !B1 * !X)	0.00272	0.00277	0.00264
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00110	-0.00116	-0.00116
	(!A1 * !A2 * A4 * !B1 * !X)	0.00259	0.00258	0.00258
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00057	-0.00058	-0.00054
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00264	0.00266	0.00261

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00110	-0.00112	-0.00118
	(A1 * A2 * A4 * B1 * X)	0.00276	0.00276	0.00268
	(A1 * A2 * !A4 * B1 * X)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !A4 * B1 * X)	0.00272	0.00273	0.00272
	(A1 * A2 * !A4 * !B1 * !X)	0.00020	0.00019	0.00017
	(A1 * A2 * !A4 * !B1 * !X)	0.00308	0.00309	0.00302
	(A1 * !A2 * A4 * !B1 * !X)	-0.00062	-0.00078	-0.00078
	(A1 * !A2 * A4 * !B1 * !X)	0.00315	0.00302	0.00301
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00009	-0.00009	-0.00009
	(A1 * !A2 * !A4 * !B1 * !X)	0.00308	0.00310	0.00303
	(!A2 * A4 * B1 * X)	-0.00106	-0.00107	-0.00106
	(!A2 * A4 * B1 * X)	0.00273	0.00273	0.00272
	(!A2 * !A4 * B1 * X)	-0.00047	-0.00047	-0.00040
	(!A2 * !A4 * B1 * X)	0.00272	0.00275	0.00272
	(!A1 * A2 * A4 * B1 * X)	-0.00093	-0.00104	-0.00105
	(!A1 * A2 * A4 * B1 * X)	0.00272	0.00274	0.00272
	(!A1 * A2 * A4 * !B1 * !X)	-0.00050	-0.00075	-0.00077
	(!A1 * A2 * A4 * !B1 * !X)	0.00318	0.00303	0.00300
	(!A1 * A2 * !A4 * B1 * X)	-0.00056	-0.00056	-0.00045
	(!A1 * A2 * !A4 * B1 * X)	0.00272	0.00275	0.00272
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00012	-0.00009	-0.00011
	(!A1 * A2 * !A4 * !B1 * !X)	0.00313	0.00319	0.00305
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00074	-0.00080	-0.00080
	(!A1 * !A2 * A4 * !B1 * !X)	0.00301	0.00300	0.00299
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00015	-0.00016	-0.00012
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00305	0.00307	0.00303

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00220	-0.00222	-0.00235
	(A1 * A2 * A4 * B1 * X)	0.00557	0.00555	0.00540
	(A1 * A2 * !A4 * B1 * X)	-0.00207	-0.00213	-0.00212
	(A1 * A2 * !A4 * B1 * X)	0.00548	0.00554	0.00549
	(A1 * A2 * !A4 * !B1 * !X)	0.00050	0.00048	0.00045
	(A1 * A2 * !A4 * !B1 * !X)	0.00624	0.00628	0.00611
	(A1 * !A2 * A4 * !B1 * !X)	-0.00116	-0.00152	-0.00153
	(A1 * !A2 * A4 * !B1 * !X)	0.00640	0.00611	0.00607
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00007	-0.00009	-0.00010
	(A1 * !A2 * !A4 * !B1 * !X)	0.00634	0.00633	0.00613
	(!A2 * A4 * B1 * X)	-0.00209	-0.00212	-0.00210
	(!A2 * A4 * B1 * X)	0.00551	0.00551	0.00549
	(!A2 * !A4 * B1 * X)	-0.00092	-0.00092	-0.00077
	(!A2 * !A4 * B1 * X)	0.00550	0.00554	0.00550
	(!A1 * A2 * A4 * B1 * X)	-0.00182	-0.00205	-0.00207
	(!A1 * A2 * A4 * B1 * X)	0.00549	0.00551	0.00549
	(!A1 * A2 * A4 * !B1 * !X)	-0.00095	-0.00148	-0.00151
	(!A1 * A2 * A4 * !B1 * !X)	0.00644	0.00611	0.00605
	(!A1 * A2 * !A4 * B1 * X)	-0.00105	-0.00104	-0.00083
	(!A1 * A2 * !A4 * B1 * X)	0.00549	0.00554	0.00550
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00017	-0.00009	-0.00012
	(!A1 * A2 * !A4 * !B1 * !X)	0.00633	0.00646	0.00617
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00143	-0.00156	-0.00156
	(!A1 * !A2 * A4 * !B1 * !X)	0.00608	0.00605	0.00603
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00023	-0.00025	-0.00017
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00620	0.00622	0.00611

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)**	0.00262	0.00224	0.00236
	(A1 * A2 * A3 * B1 * X)	-0.00129	-0.00169	-0.00152
	(A1 * A2 * !A3 * !B1 * !X)	0.00217	0.00219	0.00217
	(A1 * A2 * !A3 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * A3 * !B1 * !X)	0.00214	0.00214	0.00214
	(A1 * !A2 * A3 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	0.00214	0.00217	0.00215
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00165	-0.00167	-0.00166
	(!A3 * B1 * X)	0.00230	0.00232	0.00231
	(!A3 * B1 * X)	-0.00150	-0.00152	-0.00151
	(!A2 * A3 * B1 * X)	0.00228	0.00228	0.00228
	(!A2 * A3 * B1 * X)	-0.00151	-0.00151	-0.00151
	(!A1 * A2 * A3 * B1 * X)	0.00225	0.00227	0.00225
	(!A1 * A2 * A3 * B1 * X)	-0.00150	-0.00152	-0.00151
	(!A1 * A2 * A3 * !B1 * !X)	0.00211	0.00213	0.00211
	(!A1 * A2 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * !X)	0.00216	0.00217	0.00216
	(!A1 * !A3 * !B1 * !X)	-0.00167	-0.00167	-0.00166
	(!A1 * !A2 * A3 * !B1 * !X)	0.00213	0.00213	0.00213
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00166	-0.00167	-0.00167

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00262	0.00224	0.00236
	(A1 * A2 * A3 * B1 * X)	-0.00128	-0.00168	-0.00151
	(A1 * A2 * !A3 * !B1 * !X)	0.00258	0.00260	0.00259
	(A1 * A2 * !A3 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(A1 * !A2 * A3 * !B1 * !X)	0.00255	0.00256	0.00256
	(A1 * !A2 * A3 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * !A3 * !B1 * !X)	0.00257	0.00258	0.00257
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00123	-0.00124	-0.00124
	(!A3 * B1 * X)	0.00232	0.00232	0.00231
	(!A3 * B1 * X)	-0.00150	-0.00151	-0.00150
	(!A2 * A3 * B1 * X)	0.00228	0.00229	0.00228
	(!A2 * A3 * B1 * X)	-0.00149	-0.00150	-0.00150
	(!A1 * A2 * A3 * B1 * X)	0.00224	0.00227	0.00225
	(!A1 * A2 * A3 * B1 * X)	-0.00149	-0.00151	-0.00150
	(!A1 * A2 * A3 * !B1 * !X)	0.00253	0.00254	0.00253
	(!A1 * A2 * A3 * !B1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A3 * !B1 * !X)	0.00256	0.00258	0.00257
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * !A2 * A3 * !B1 * !X)	0.00254	0.00255	0.00254
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00124	-0.00124	-0.00124

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00508	0.00438	0.00461
	(A1 * A2 * A3 * B1 * X)	-0.00256	-0.00331	-0.00296
	(A1 * A2 * !A3 * !B1 * !X)	0.00505	0.00509	0.00506
	(A1 * A2 * !A3 * !B1 * !X)	-0.00239	-0.00242	-0.00240
	(A1 * !A2 * A3 * !B1 * !X)	0.00496	0.00498	0.00497
	(A1 * !A2 * A3 * !B1 * !X)	-0.00239	-0.00241	-0.00240
	(A1 * !A2 * !A3 * !B1 * !X)	0.00501	0.00505	0.00503
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00240	-0.00242	-0.00241
	(!A3 * B1 * X)	0.00451	0.00453	0.00451
	(!A3 * B1 * X)	-0.00293	-0.00295	-0.00293
	(!A2 * A3 * B1 * X)	0.00442	0.00443	0.00442
	(!A2 * A3 * B1 * X)	-0.00293	-0.00294	-0.00293
	(!A1 * A2 * A3 * B1 * X)	0.00439	0.00443	0.00440
	(!A1 * A2 * A3 * B1 * X)	-0.00292	-0.00295	-0.00293
	(!A1 * A2 * A3 * !B1 * !X)	0.00494	0.00498	0.00496
	(!A1 * A2 * A3 * !B1 * !X)	-0.00238	-0.00240	-0.00238
	(!A1 * !A3 * !B1 * !X)	0.00502	0.00505	0.00503
	(!A1 * !A3 * !B1 * !X)	-0.00241	-0.00242	-0.00241
	(!A1 * !A2 * A3 * !B1 * !X)	0.00494	0.00495	0.00495
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00240	-0.00241	-0.00241

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)**	-0.00114	-0.00117	-0.00123
	(A1 * A2 * A3 * B1 * X)	0.00275	0.00276	0.00267
	(A1 * A2 * !A3 * !B1 * !X)	-0.00115	-0.00123	-0.00125
	(A1 * A2 * !A3 * !B1 * !X)	0.00262	0.00258	0.00258
	(A1 * !A2 * A3 * !B1 * !X)	-0.00108	-0.00122	-0.00124
	(A1 * !A2 * A3 * !B1 * !X)	0.00261	0.00260	0.00258
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00122	-0.00125	-0.00126
	(A1 * !A2 * !A3 * !B1 * !X)	0.00257	0.00256	0.00257
	(!A3 * B1 * X)	-0.00110	-0.00112	-0.00111
	(!A3 * B1 * X)	0.00273	0.00275	0.00272
	(!A2 * A3 * B1 * X)	-0.00099	-0.00108	-0.00110
	(!A2 * A3 * B1 * X)	0.00271	0.00274	0.00272
	(!A1 * A2 * A3 * B1 * X)	-0.00094	-0.00107	-0.00109
	(!A1 * A2 * A3 * B1 * X)	0.00271	0.00274	0.00272
	(!A1 * A2 * A3 * !B1 * !X)	-0.00104	-0.00121	-0.00123
	(!A1 * A2 * A3 * !B1 * !X)	0.00264	0.00261	0.00258
	(!A1 * !A3 * !B1 * !X)	-0.00121	-0.00125	-0.00126
	(!A1 * !A3 * !B1 * !X)	0.00257	0.00256	0.00257
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00113	-0.00123	-0.00125
	(!A1 * !A2 * A3 * !B1 * !X)	0.00256	0.00259	0.00257

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00112	-0.00114	-0.00121
	(A1 * A2 * A3 * B1 * X)	0.00276	0.00277	0.00269
	(A1 * A2 * !A3 * !B1 * !X)	-0.00070	-0.00079	-0.00080
	(A1 * A2 * !A3 * !B1 * !X)	0.00304	0.00302	0.00301
	(A1 * !A2 * A3 * !B1 * !X)	-0.00064	-0.00078	-0.00079
	(A1 * !A2 * A3 * !B1 * !X)	0.00304	0.00304	0.00301
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00076	-0.00081	-0.00081
	(A1 * !A2 * !A3 * !B1 * !X)	0.00299	0.00301	0.00300
	(!A3 * B1 * X)	-0.00107	-0.00110	-0.00108
	(!A3 * B1 * X)	0.00272	0.00276	0.00273
	(!A2 * A3 * B1 * X)	-0.00097	-0.00106	-0.00107
	(!A2 * A3 * B1 * X)	0.00272	0.00276	0.00273
	(!A1 * A2 * A3 * B1 * X)	-0.00092	-0.00105	-0.00106
	(!A1 * A2 * A3 * B1 * X)	0.00273	0.00275	0.00273
	(!A1 * A2 * A3 * !B1 * !X)	-0.00060	-0.00077	-0.00079
	(!A1 * A2 * A3 * !B1 * !X)	0.00307	0.00304	0.00301
	(!A1 * !A3 * !B1 * !X)	-0.00076	-0.00081	-0.00082
	(!A1 * !A3 * !B1 * !X)	0.00299	0.00301	0.00300
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00068	-0.00079	-0.00080
	(!A1 * !A2 * A3 * !B1 * !X)	0.00299	0.00302	0.00300

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00216	-0.00218	-0.00231
	(A1 * A2 * A3 * B1 * X)	0.00548	0.00546	0.00531
	(A1 * A2 * !A3 * !B1 * !X)	-0.00126	-0.00149	-0.00151
	(A1 * A2 * !A3 * !B1 * !X)	0.00602	0.00598	0.00596
	(A1 * !A2 * A3 * !B1 * !X)	-0.00114	-0.00141	-0.00147
	(A1 * !A2 * A3 * !B1 * !X)	0.00603	0.00594	0.00596
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00140	-0.00152	-0.00154
	(A1 * !A2 * !A3 * !B1 * !X)	0.00592	0.00595	0.00593
	(!A3 * B1 * X)	-0.00203	-0.00208	-0.00208
	(!A3 * B1 * X)	0.00539	0.00541	0.00540
	(!A2 * A3 * B1 * X)	-0.00180	-0.00201	-0.00203
	(!A2 * A3 * B1 * X)	0.00539	0.00545	0.00540
	(!A1 * A2 * A3 * B1 * X)	-0.00171	-0.00197	-0.00202
	(!A1 * A2 * A3 * B1 * X)	0.00541	0.00545	0.00540
	(!A1 * A2 * A3 * !B1 * !X)	-0.00106	-0.00141	-0.00146
	(!A1 * A2 * A3 * !B1 * !X)	0.00612	0.00604	0.00595
	(!A1 * !A3 * !B1 * !X)	-0.00140	-0.00152	-0.00154
	(!A1 * !A3 * !B1 * !X)	0.00592	0.00595	0.00593
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00123	-0.00144	-0.00149
	(!A1 * !A2 * A3 * !B1 * !X)	0.00593	0.00591	0.00593

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)**	0.00202	0.00203	0.00210
	(A1 * A2 * A3 * A4 * X)	-0.00068	-0.00068	-0.00061
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	0.00205	0.00205	0.00213
	(A1 * A2 * A3 * A4 * X)	-0.00069	-0.00068	-0.00061
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	0.00393	0.00393	0.00406
	(A1 * A2 * A3 * A4 * X)	-0.00144	-0.00141	-0.00127

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)**	-0.00023	-0.00027	-0.00081
	(A1 * A2 * A3 * A4 * X)	0.00253	0.00252	0.00199
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	-0.00025	-0.00029	-0.00083
	(A1 * A2 * A3 * A4 * X)	0.00256	0.00254	0.00201
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	-0.00027	-0.00036	-0.00144
	(A1 * A2 * A3 * A4 * X)	0.00515	0.00512	0.00407

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00266	0.00253	1.32303
sky130_fd_sc_hs__and2b_2	0.00240	0.00294	2.21282
sky130_fd_sc_hs__and2b_4	0.00270	0.00529	4.83430

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	140.13600	204.27700
sky130_fd_sc_hs__and2b_2	0.00000	160.62000	201.48700
sky130_fd_sc_hs__and2b_4	0.00000	287.84100	411.53600

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)	0.10915	0.63935	7.39176
	B->X (RR)	0.06837	0.51492	6.40287
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.12020	0.58304	7.32946
	B->X (RR)	0.07323	0.44754	6.04752
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.12015	0.51665	7.49145
	B->X (RR)	0.07450	0.38434	6.45142

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)	0.09568	0.38806	3.51694
	B->X (FF)	0.06978	0.46739	4.97451
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.10605	0.33913	2.98120
	B->X (FF)	0.07933	0.43643	4.54660
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.10576	0.31456	3.35350
	B->X (FF)	0.08094	0.41438	5.03085

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	0.01253	0.01967	0.12851
	A_N	0.01661	0.02374	0.13287
	B	0.01418	0.01898	0.10705
	B	0.01010	0.01491	0.10325
sky130_fd_sc_hs__and2b_2	A_N	0.01506	0.02202	0.13157
	A_N	0.01874	0.02573	0.13571
	B	0.01639	0.02063	0.09701
	B	0.01160	0.01584	0.09314
sky130_fd_sc_hs__and2b_4	A_N	0.03250	0.04090	0.17069
	A_N	0.03647	0.04485	0.17582
	B	0.03525	0.04515	0.23184
	B	0.02686	0.03680	0.22427

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01468	0.02121	0.13005
	A_N	0.01063	0.01705	0.12559
	B	0.00501	0.01162	0.10219
	B	0.00909	0.01569	0.10578
sky130_fd_sc_hs__and2b_2	A_N	0.01850	0.02434	0.12801
	A_N	0.01483	0.02057	0.12412
	B	0.00883	0.01497	0.10970
	B	0.01361	0.01972	0.11449
sky130_fd_sc_hs__and2b_4	A_N	0.02934	0.03675	0.16975
	A_N	0.02539	0.03280	0.16453
	B	0.01848	0.03082	0.22447
	B	0.02688	0.03912	0.23161

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00822	0.01431	0.11477
	(!B * !X)	0.00372	0.00980	0.11027
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00840	0.01452	0.11321
	(!B * !X)	0.00421	0.01032	0.10901
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.01075	0.01769	0.13278
	(!B * !X)	0.00594	0.01285	0.12796

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00046	0.00729	0.10866
	(!B * !X)	0.00497	0.01182	0.11317
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00114	0.00781	0.10745
	(!B * !X)	0.00537	0.01204	0.11167
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00234	0.00978	0.12526
	(!B * !X)	0.00718	0.01464	0.13010

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00286	0.00288	0.00286
	(A_N * !X)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00361	0.00363	0.00362
	(A_N * !X)	-0.00049	-0.00051	-0.00049
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00560	0.00565	0.00562
	(A_N * !X)	-0.00164	-0.00166	-0.00164

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00002	-0.00016	-0.00019
	(A_N * !X)	0.00348	0.00338	0.00332
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00006	-0.00006	-0.00009
	(A_N * !X)	0.00419	0.00407	0.00401
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00057	-0.00083	-0.00089
	(A_N * !X)	0.00667	0.00646	0.00636

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00258	0.00253	1.28934
sky130_fd_sc_hs__and2_2	0.00282	0.00310	2.44363
sky130_fd_sc_hs__and2_4	0.00460	0.00508	4.87706

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	89.12490	203.26400
sky130_fd_sc_hs__and2_2	0.00000	109.71300	138.25900
sky130_fd_sc_hs__and2_4	0.00000	252.97000	409.48600

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)	0.06298	0.53544	6.68378
	B->X (RR)	0.06832	0.51972	6.37650
sky130_fd_sc_hs__and2_2	A->X (RR)	0.06645	0.46521	6.55691
	B->X (RR)	0.07209	0.44564	6.23732
sky130_fd_sc_hs__and2_4	A->X (RR)	0.06599	0.39679	6.65939
	B->X (RR)	0.07364	0.38572	6.46617

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.06366	0.44288	4.75250
	B->X (FF)	0.07164	0.46854	4.90963
sky130_fd_sc_hs__and2_2	A->X (FF)	0.06825	0.41620	4.65203
	B->X (FF)	0.07733	0.44166	4.82991
sky130_fd_sc_hs__and2_4	A->X (FF)	0.07435	0.39380	4.90395
	B->X (FF)	0.08210	0.41280	5.00824

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.01352	0.01968	0.11962
	A	0.00913	0.01529	0.11532
	B	0.01429	0.01869	0.10061
	B	0.00909	0.01349	0.09569
sky130_fd_sc_hs__and2_2	A	0.01527	0.02142	0.12853
	A	0.01044	0.01661	0.12397
	B	0.01665	0.02119	0.10844
	B	0.01050	0.01507	0.10316
sky130_fd_sc_hs__and2_4	A	0.03256	0.04474	0.24774
	A	0.02494	0.03714	0.24024
	B	0.03518	0.04544	0.23382
	B	0.02478	0.03510	0.22426

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00412	0.01086	0.10199
	A	0.00852	0.01522	0.10516
	B	0.00495	0.01127	0.09889
	B	0.01013	0.01645	0.10331
sky130_fd_sc_hs__and2_2	A	0.00856	0.01536	0.11333
	A	0.01338	0.02016	0.11584
	B	0.00900	0.01550	0.10943
	B	0.01515	0.02157	0.11475
sky130_fd_sc_hs__and2_4	A	0.01720	0.02982	0.23032
	A	0.02485	0.03742	0.23325
	B	0.01794	0.03079	0.23090
	B	0.02833	0.04115	0.23797

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00126	0.00127	0.00124
	(!B * !X)	-0.00161	-0.00162	-0.00167
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00146	0.00145	0.00143
	(!B * !X)	-0.00155	-0.00156	-0.00160
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00263	0.00263	0.00257
	(!B * !X)	-0.00226	-0.00227	-0.00238

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00036	-0.00035	-0.00035
	(!B * !X)	0.00255	0.00255	0.00255
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00032	0.00031	0.00032
	(!B * !X)	0.00333	0.00338	0.00334
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00093	0.00091	0.00093
	(!B * !X)	0.00585	0.00592	0.00586

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00183	0.00183	0.00182
	(!A * !X)	-0.00155	-0.00155	-0.00154
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00246	0.00249	0.00247
	(!A * !X)	-0.00152	-0.00154	-0.00152
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00495	0.00497	0.00496
	(!A * !X)	-0.00196	-0.00198	-0.00196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00075	-0.00088	-0.00091
	(!A * !X)	0.00263	0.00251	0.00245
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00053	-0.00068	-0.00070
	(!A * !X)	0.00346	0.00335	0.00329
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00107	-0.00134	-0.00141
	(!A * !X)	0.00586	0.00566	0.00551

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00235	0.00248	0.00248	1.28626
sky130_fd_sc_hs__and3b_2	0.00243	0.00297	0.00286	2.19616
sky130_fd_sc_hs__and3b_4	0.00272	0.00511	0.00526	4.75007

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	133.30100	304.81900
sky130_fd_sc_hs__and3b_2	0.00000	164.11900	206.82000
sky130_fd_sc_hs__and3b_4	0.00000	261.41700	413.52000

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)	0.12485	0.66372	7.44048
	B->X (RR)	0.09011	0.57716	6.82921
	C->X (RR)	0.09499	0.55392	6.52208
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.13879	0.60481	7.26532
	B->X (RR)	0.09809	0.51470	6.60108
	C->X (RR)	0.10326	0.48503	6.13903
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.15204	0.56455	7.49843
	B->X (RR)	0.11250	0.47563	7.06852
	C->X (RR)	0.11721	0.43714	6.72256

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)	0.09933	0.38163	3.33641
	B->X (FF)	0.07886	0.47424	4.74519
	C->X (FF)	0.08245	0.48781	4.88680
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.10508	0.33243	2.83860
	B->X (FF)	0.08149	0.43117	4.23806
	C->X (FF)	0.09083	0.45757	4.46129
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.10382	0.31001	3.22997
	B->X (FF)	0.07779	0.38948	4.51942
	C->X (FF)	0.08221	0.40823	4.79240

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	0.01680	0.02382	0.13191
	A_N	0.02021	0.02722	0.13562
	B	0.01803	0.02254	0.11470
	B	0.01389	0.01841	0.11054
	C	0.01900	0.02264	0.10337
	C	0.01395	0.01759	0.09849
sky130_fd_sc_hs__and3b_2	A_N	0.01854	0.02518	0.13170
	A_N	0.02209	0.02880	0.13584
	B	0.02006	0.02440	0.12340
	B	0.01519	0.01957	0.11871
	C	0.02120	0.02415	0.09730
	C	0.01534	0.01829	0.09234
sky130_fd_sc_hs__and3b_4	A_N	0.03565	0.04262	0.17138
	A_N	0.03921	0.04631	0.17609
	B	0.03875	0.04629	0.23167
	B	0.03008	0.03765	0.22280
	C	0.04096	0.04807	0.23957
	C	0.03009	0.03721	0.22873

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.01385	0.02079	0.13131
	A_N	0.01044	0.01738	0.12731
	B	0.00524	0.01137	0.10193
	B	0.00939	0.01550	0.10530
	C	0.00561	0.01153	0.10399
	C	0.01063	0.01653	0.10798
sky130_fd_sc_hs__and3b_2	A_N	0.01813	0.02454	0.13241
	A_N	0.01457	0.02089	0.12820
	B	0.00905	0.01511	0.10963
	B	0.01392	0.01994	0.11446
	C	0.00963	0.01489	0.10780
	C	0.01544	0.02070	0.11237
sky130_fd_sc_hs__and3b_4	A_N	0.03027	0.03758	0.16868
	A_N	0.02672	0.03401	0.16408
	B	0.01944	0.03071	0.21642
	B	0.02812	0.03934	0.22078
	C	0.02036	0.03198	0.22969
	C	0.03119	0.04274	0.23937

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)	0.00729	0.01381	0.11461
	(B * !C * !X)	0.00321	0.00971	0.11053
	(!B * !X)	0.00725	0.01376	0.11457
	(!B * !X)	0.00321	0.00972	0.11054
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00824	0.01443	0.11341
	(B * !C * !X)	0.00401	0.01018	0.10917
	(!B * !X)	0.00820	0.01439	0.11337
	(!B * !X)	0.00401	0.01018	0.10918
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.01140	0.01825	0.13320
	(B * !C * !X)	0.00667	0.01349	0.12847
	(!B * !X)	0.01130	0.01815	0.13313
	(!B * !X)	0.00668	0.01350	0.12849

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)	0.00052	0.00749	0.10923
	(B * !C * !X)	0.00466	0.01164	0.11335
	(!B * !X)	0.00050	0.00748	0.10924
	(!B * !X)	0.00455	0.01154	0.11328
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00108	0.00778	0.10768
	(B * !C * !X)	0.00540	0.01209	0.11196
	(!B * !X)	0.00106	0.00776	0.10768
	(!B * !X)	0.00526	0.01197	0.11188
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00225	0.00956	0.12484
	(B * !C * !X)	0.00711	0.01445	0.12968
	(!B * !X)	0.00226	0.00958	0.12490
	(!B * !X)	0.00690	0.01425	0.12955

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)	0.00286	0.00288	0.00287
	(A_N * C * !X)	-0.00051	-0.00052	-0.00051
	(A_N * !C * !X)	0.00229	0.00230	0.00229
	(A_N * !C * !X)	-0.00054	-0.00055	-0.00053
	(!A_N * !C * !X)	0.00101	0.00100	0.00100
	(!A_N * !C * !X)	-0.00163	-0.00162	-0.00164
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00364	0.00366	0.00365
	(A_N * C * !X)	-0.00043	-0.00044	-0.00043
	(A_N * !C * !X)	0.00298	0.00299	0.00297
	(A_N * !C * !X)	-0.00045	-0.00045	-0.00044
	(!A_N * !C * !X)	0.00163	0.00162	0.00162
	(!A_N * !C * !X)	-0.00157	-0.00155	-0.00158
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00534	0.00537	0.00535
	(A_N * C * !X)	-0.00183	-0.00186	-0.00184
	(A_N * !C * !X)	0.00419	0.00420	0.00420
	(A_N * !C * !X)	-0.00190	-0.00191	-0.00191
	(!A_N * !C * !X)	0.00295	0.00295	0.00297
	(!A_N * !C * !X)	-0.00270	-0.00270	-0.00271

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)	-0.00001	-0.00017	-0.00019
	(A_N * C * !X)	0.00338	0.00323	0.00318
	(A_N * !C * !X)	0.00035	0.00033	0.00030
	(A_N * !C * !X)	0.00327	0.00329	0.00320
	(!A_N * !C * !X)	-0.00007	-0.00008	-0.00008
	(!A_N * !C * !X)	0.00259	0.00262	0.00256
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00008	-0.00009	-0.00012
	(A_N * C * !X)	0.00417	0.00400	0.00395
	(A_N * !C * !X)	0.00051	0.00049	0.00046
	(A_N * !C * !X)	0.00405	0.00407	0.00396
	(!A_N * !C * !X)	0.00018	0.00016	0.00016
	(!A_N * !C * !X)	0.00339	0.00343	0.00336
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00012	-0.00057	-0.00063
	(A_N * C * !X)	0.00706	0.00667	0.00656
	(A_N * !C * !X)	0.00043	0.00043	0.00035
	(A_N * !C * !X)	0.00679	0.00684	0.00663
	(!A_N * !C * !X)	0.00066	0.00064	0.00061
	(!A_N * !C * !X)	0.00636	0.00643	0.00629

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)	0.00268	0.00269	0.00269
	(A_N * B * !X)	-0.00058	-0.00059	-0.00058
	(A_N * !B * !X)	0.00268	0.00270	0.00268
	(A_N * !B * !X)	-0.00060	-0.00061	-0.00060
	(!A_N * !B * !X)	0.00183	0.00185	0.00184
	(!A_N * !B * !X)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00344	0.00345	0.00344
	(A_N * B * !X)	-0.00043	-0.00043	-0.00042
	(A_N * !B * !X)	0.00343	0.00345	0.00344
	(A_N * !B * !X)	-0.00043	-0.00045	-0.00044
	(!A_N * !B * !X)	0.00259	0.00261	0.00259
	(!A_N * !B * !X)	-0.00129	-0.00131	-0.00130
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00521	0.00524	0.00522
	(A_N * B * !X)	-0.00197	-0.00200	-0.00197
	(A_N * !B * !X)	0.00517	0.00521	0.00519
	(A_N * !B * !X)	-0.00198	-0.00202	-0.00200
	(!A_N * !B * !X)	0.00468	0.00470	0.00468
	(!A_N * !B * !X)	-0.00255	-0.00256	-0.00254

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)	0.00013	-0.00002	-0.00004
	(A_N * B * !X)	0.00338	0.00330	0.00325
	(A_N * !B * !X)	-0.00003	-0.00006	-0.00006
	(A_N * !B * !X)	0.00325	0.00324	0.00323
	(!A_N * !B * !X)	-0.00079	-0.00089	-0.00091
	(!A_N * !B * !X)	0.00252	0.00242	0.00238
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00024	0.00008	0.00006
	(A_N * B * !X)	0.00406	0.00399	0.00394
	(A_N * !B * !X)	0.00007	0.00005	0.00004
	(A_N * !B * !X)	0.00395	0.00394	0.00393
	(!A_N * !B * !X)	-0.00069	-0.00079	-0.00082
	(!A_N * !B * !X)	0.00321	0.00310	0.00308
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00018	-0.00049	-0.00053
	(A_N * B * !X)	0.00695	0.00680	0.00669
	(A_N * !B * !X)	-0.00050	-0.00056	-0.00056
	(A_N * !B * !X)	0.00666	0.00667	0.00666
	(!A_N * !B * !X)	-0.00082	-0.00107	-0.00110
	(!A_N * !B * !X)	0.00639	0.00620	0.00613

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00265	0.00246	0.00243	1.32187
sky130_fd_sc_hs__and3_2	0.00263	0.00243	0.00246	2.50910
sky130_fd_sc_hs__and3_4	0.00481	0.00468	0.00484	4.72668

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	82.35310	303.83200
sky130_fd_sc_hs__and3_2	0.00000	125.75900	305.32100
sky130_fd_sc_hs__and3_4	0.00000	251.44800	610.53900

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)	0.07860	0.57083	6.87757
	B->X (RR)	0.08643	0.56437	6.74175
	C->X (RR)	0.09060	0.54443	6.53155
sky130_fd_sc_hs__and3_2	A->X (RR)	0.09081	0.52258	6.88318
	B->X (RR)	0.09858	0.51224	6.74379
	C->X (RR)	0.10275	0.48505	6.41864
sky130_fd_sc_hs__and3_4	A->X (RR)	0.09641	0.47690	7.07763
	B->X (RR)	0.10771	0.47029	6.95333
	C->X (RR)	0.11268	0.43145	6.59203

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.06937	0.44960	4.69855
	B->X (FF)	0.07801	0.47568	4.83345
	C->X (FF)	0.07925	0.48561	4.95844
sky130_fd_sc_hs__and3_2	A->X (FF)	0.08277	0.43907	4.62131
	B->X (FF)	0.09093	0.46131	4.75649
	C->X (FF)	0.09435	0.47469	4.90785
sky130_fd_sc_hs__and3_4	A->X (FF)	0.07702	0.38425	4.47123
	B->X (FF)	0.08581	0.40777	4.59972
	C->X (FF)	0.09152	0.42873	4.87564

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.01721	0.02249	0.11521
	A	0.01262	0.01790	0.11064
	B	0.01777	0.02229	0.11434
	B	0.01263	0.01714	0.10915
	C	0.01876	0.02284	0.11324
	C	0.01253	0.01662	0.10719
sky130_fd_sc_hs__and3_2	A	0.02096	0.02570	0.11859
	A	0.01638	0.02113	0.11404
	B	0.02150	0.02545	0.11736
	B	0.01639	0.02038	0.11221
	C	0.02251	0.02576	0.10660
	C	0.01630	0.01955	0.10097
sky130_fd_sc_hs__and3_4	A	0.04112	0.05014	0.23154
	A	0.03264	0.04169	0.22288
	B	0.04321	0.05058	0.23185
	B	0.03270	0.04017	0.22116
	C	0.04542	0.05220	0.23331
	C	0.03258	0.03939	0.22098

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00401	0.01021	0.09954
	A	0.00862	0.01473	0.10306
	B	0.00517	0.01124	0.10052
	B	0.01031	0.01636	0.10498
	C	0.00558	0.01177	0.10629
	C	0.01177	0.01793	0.11146
sky130_fd_sc_hs__and3_2	A	0.00840	0.01393	0.10396
	A	0.01300	0.01850	0.10729
	B	0.00972	0.01527	0.10587
	B	0.01483	0.02027	0.10940
	C	0.00994	0.01525	0.10775
	C	0.01613	0.02139	0.11185
sky130_fd_sc_hs__and3_4	A	0.01761	0.02846	0.20791
	A	0.02609	0.03687	0.21507
	B	0.01983	0.03042	0.21204
	B	0.03034	0.04079	0.22009
	C	0.02090	0.03156	0.22540
	C	0.03363	0.04422	0.23517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00133	0.00134	0.00129
	(B * !C * !X)	-0.00154	-0.00156	-0.00165
	(!B * !X)	0.00133	0.00133	0.00130
	(!B * !X)	-0.00160	-0.00162	-0.00166
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00177	0.00178	0.00173
	(B * !C * !X)	-0.00108	-0.00110	-0.00120
	(!B * !X)	0.00178	0.00178	0.00175
	(!B * !X)	-0.00114	-0.00116	-0.00120
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00280	0.00279	0.00266
	(B * !C * !X)	-0.00229	-0.00230	-0.00254
	(!B * !X)	0.00281	0.00281	0.00272
	(!B * !X)	-0.00243	-0.00244	-0.00257

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00041	-0.00039	-0.00039
	(B * !C * !X)	0.00254	0.00253	0.00254
	(!B * !X)	-0.00043	-0.00042	-0.00041
	(!B * !X)	0.00255	0.00255	0.00254
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00003	0.00001	0.00002
	(B * !C * !X)	0.00293	0.00296	0.00294
	(!B * !X)	-0.00001	-0.00000	-0.00000
	(!B * !X)	0.00294	0.00294	0.00295
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00085	0.00083	0.00084
	(B * !C * !X)	0.00602	0.00606	0.00604
	(!B * !X)	0.00078	0.00076	0.00078
	(!B * !X)	0.00605	0.00612	0.00605

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00098	0.00098	0.00098
	(A * !C * !X)	-0.00141	-0.00141	-0.00140
	(!A * C * !X)	0.00178	0.00179	0.00179
	(!A * C * !X)	-0.00139	-0.00140	-0.00139
	(!A * !C * !X)	0.00116	0.00116	0.00115
	(!A * !C * !X)	-0.00141	-0.00141	-0.00140
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00138	0.00139	0.00139
	(A * !C * !X)	-0.00094	-0.00095	-0.00094
	(!A * C * !X)	0.00221	0.00221	0.00221
	(!A * C * !X)	-0.00093	-0.00093	-0.00093
	(!A * !C * !X)	0.00155	0.00155	0.00155
	(!A * !C * !X)	-0.00095	-0.00094	-0.00094
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00298	0.00299	0.00300
	(A * !C * !X)	-0.00187	-0.00188	-0.00184
	(!A * C * !X)	0.00465	0.00468	0.00466
	(!A * C * !X)	-0.00182	-0.00185	-0.00182
	(!A * !C * !X)	0.00337	0.00339	0.00337
	(!A * !C * !X)	-0.00188	-0.00191	-0.00188

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00006	-0.00006	-0.00008
	(A * !C * !X)	0.00234	0.00235	0.00230
	(!A * C * !X)	-0.00068	-0.00085	-0.00087
	(!A * C * !X)	0.00251	0.00234	0.00230
	(!A * !C * !X)	-0.00028	-0.00029	-0.00031
	(!A * !C * !X)	0.00238	0.00240	0.00231
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00038	0.00039	0.00037
	(A * !C * !X)	0.00276	0.00275	0.00270
	(!A * C * !X)	-0.00024	-0.00042	-0.00043
	(!A * C * !X)	0.00291	0.00274	0.00270
	(!A * !C * !X)	0.00017	0.00016	0.00015
	(!A * !C * !X)	0.00277	0.00280	0.00271
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00059	0.00058	0.00054
	(A * !C * !X)	0.00549	0.00552	0.00539
	(!A * C * !X)	-0.00062	-0.00107	-0.00112
	(!A * C * !X)	0.00587	0.00546	0.00537
	(!A * !C * !X)	0.00007	0.00007	0.00003
	(!A * !C * !X)	0.00558	0.00562	0.00543

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00182	0.00184	0.00183
	(A * !B * !X)	-0.00143	-0.00144	-0.00143
	(!A * B * !X)	0.00178	0.00179	0.00179
	(!A * B * !X)	-0.00143	-0.00144	-0.00143
	(!A * !B * !X)	0.00180	0.00182	0.00180
	(!A * !B * !X)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00224	0.00226	0.00224
	(A * !B * !X)	-0.00101	-0.00102	-0.00101
	(!A * B * !X)	0.00220	0.00221	0.00221
	(!A * B * !X)	-0.00101	-0.00102	-0.00101
	(!A * !B * !X)	0.00220	0.00222	0.00221
	(!A * !B * !X)	-0.00102	-0.00104	-0.00103
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00463	0.00465	0.00464
	(A * !B * !X)	-0.00200	-0.00201	-0.00201
	(!A * B * !X)	0.00457	0.00461	0.00458
	(!A * B * !X)	-0.00200	-0.00203	-0.00200
	(!A * !B * !X)	0.00457	0.00461	0.00458
	(!A * !B * !X)	-0.00202	-0.00205	-0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00079	-0.00090	-0.00092
	(A * !B * !X)	0.00247	0.00237	0.00235
	(!A * B * !X)	-0.00073	-0.00088	-0.00091
	(!A * B * !X)	0.00247	0.00239	0.00234
	(!A * !B * !X)	-0.00090	-0.00093	-0.00093
	(!A * !B * !X)	0.00234	0.00233	0.00233
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00035	-0.00045	-0.00046
	(A * !B * !X)	0.00291	0.00282	0.00279
	(!A * B * !X)	-0.00029	-0.00043	-0.00046
	(!A * B * !X)	0.00293	0.00283	0.00278
	(!A * !B * !X)	-0.00045	-0.00048	-0.00048
	(!A * !B * !X)	0.00278	0.00278	0.00277
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00082	-0.00106	-0.00109
	(A * !B * !X)	0.00578	0.00561	0.00555
	(!A * B * !X)	-0.00072	-0.00103	-0.00108
	(!A * B * !X)	0.00579	0.00564	0.00554
	(!A * !B * !X)	-0.00103	-0.00111	-0.00113
	(!A * !B * !X)	0.00551	0.00551	0.00551

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00240	0.00243	0.00256	0.00250	1.16017
sky130_fd_sc_hs__and4bb_2	0.00243	0.00231	0.00282	0.00288	2.42749
sky130_fd_sc_hs__and4bb_4	0.00264	0.00279	0.00524	0.00509	4.64032

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	174.46200	406.20600
sky130_fd_sc_hs__and4bb_2	0.00000	212.52300	301.32400
sky130_fd_sc_hs__and4bb_4	0.00000	291.08700	550.41500

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)	0.15011	0.71128	7.49378
	B_N->X (FR)	0.15779	0.71303	7.35990
	C->X (RR)	0.12292	0.62577	6.93070
	D->X (RR)	0.12693	0.60737	6.74927
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.14982	0.61479	7.35604
	B_N->X (FR)	0.16678	0.63196	7.37118
	C->X (RR)	0.12941	0.54195	6.86089
	D->X (RR)	0.13503	0.51793	6.50339
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.18546	0.61350	7.52084
	B_N->X (FR)	0.20709	0.63762	7.54310
	C->X (RR)	0.15820	0.51618	7.19788
	D->X (RR)	0.16316	0.48764	6.86877

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)	0.10523	0.38293	3.13771
	B_N->X (RF)	0.10964	0.39129	3.13195
	C->X (FF)	0.08748	0.48297	4.54384
	D->X (FF)	0.09325	0.50212	4.73205
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.10632	0.35177	3.35385
	B_N->X (RF)	0.11681	0.37224	3.44315
	C->X (FF)	0.09072	0.46875	4.71311
	D->X (FF)	0.09620	0.48542	4.88952
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.11572	0.32756	3.20065
	B_N->X (RF)	0.11925	0.33596	3.21666
	C->X (FF)	0.08362	0.40207	4.43447
	D->X (FF)	0.08812	0.42098	4.69099

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	0.02019	0.02691	0.13282
	A_N	0.02370	0.03043	0.13661
	B_N	0.02098	0.02780	0.13438
	B_N	0.02491	0.03175	0.13869
	C	0.02224	0.02618	0.11908
	C	0.01814	0.02208	0.11494
	D	0.02316	0.02704	0.12502
	D	0.01826	0.02214	0.12007
sky130_fd_sc_hs__and4bb_2	A_N	0.02090	0.02712	0.13451
	A_N	0.02425	0.03054	0.13862
	B_N	0.02272	0.02832	0.13175
	B_N	0.02616	0.03180	0.13601
	C	0.02383	0.02658	0.12168
	C	0.01905	0.02183	0.11690
	D	0.02505	0.02702	0.10972
	D	0.01917	0.02114	0.10420
sky130_fd_sc_hs__and4bb_4	A_N	0.04390	0.04872	0.17349
	A_N	0.04697	0.05189	0.17776
	B_N	0.04637	0.05083	0.17425
	B_N	0.04996	0.05447	0.17903
	C	0.04873	0.05293	0.23397
	C	0.03983	0.04407	0.22563
	D	0.05061	0.05419	0.23469
	D	0.03981	0.04346	0.22366

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01460	0.02068	0.12486
	A_N	0.01110	0.01719	0.12133
	B_N	0.01503	0.02189	0.13130
	B_N	0.01111	0.01791	0.12736
	C	0.00646	0.01230	0.10714
	C	0.01055	0.01639	0.11123
	D	0.00702	0.01303	0.11424
	D	0.01190	0.01783	0.11773
sky130_fd_sc_hs__and4bb_2	A_N	0.01842	0.02470	0.13230
	A_N	0.01509	0.02122	0.12890
	B_N	0.01937	0.02526	0.12971
	B_N	0.01593	0.02169	0.12555
	C	0.01045	0.01591	0.10678
	C	0.01524	0.02058	0.10927
	D	0.01094	0.01599	0.10679
	D	0.01680	0.02175	0.11168
sky130_fd_sc_hs__and4bb_4	A_N	0.03060	0.03770	0.16739
	A_N	0.02752	0.03462	0.16347
	B_N	0.03273	0.03962	0.17131
	B_N	0.02913	0.03601	0.16644
	C	0.02023	0.03023	0.21193
	C	0.02916	0.03905	0.21849
	D	0.02198	0.03155	0.22460
	D	0.03273	0.04215	0.23239

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)	0.00814	0.01438	0.11326
	(B_N * !X)	0.00426	0.01047	0.10937
	(!B_N * C * !D * !X)	0.00755	0.01379	0.11268
	(!B_N * C * !D * !X)	0.00363	0.00985	0.10875
	(!B_N * !C * !X)	0.00755	0.01379	0.11267
	(!B_N * !C * !X)	0.00365	0.00987	0.10876
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00869	0.01503	0.11578
	(B_N * !X)	0.00476	0.01108	0.11185
	(!B_N * C * !D * !X)	0.00808	0.01442	0.11517
	(!B_N * C * !D * !X)	0.00411	0.01044	0.11120
	(!B_N * !C * !X)	0.00809	0.01443	0.11517
	(!B_N * !C * !X)	0.00414	0.01046	0.11121
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.01149	0.01818	0.13138
	(B_N * !X)	0.00738	0.01406	0.12728
	(!B_N * C * !D * !X)	0.01143	0.01812	0.13135
	(!B_N * C * !D * !X)	0.00726	0.01392	0.12718
	(!B_N * !C * !X)	0.01143	0.01811	0.13134
	(!B_N * !C * !X)	0.00730	0.01396	0.12720

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)	0.00178	0.00854	0.10836
	(B_N * !X)	0.00566	0.01243	0.11225
	(!B_N * C * !D * !X)	0.00071	0.00746	0.10725
	(!B_N * C * !D * !X)	0.00470	0.01147	0.11123
	(!B_N * !C * !X)	0.00068	0.00743	0.10723
	(!B_N * !C * !X)	0.00459	0.01136	0.11115
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00207	0.00898	0.11067
	(B_N * !X)	0.00602	0.01292	0.11460
	(!B_N * C * !D * !X)	0.00102	0.00792	0.10957
	(!B_N * C * !D * !X)	0.00510	0.01200	0.11362
	(!B_N * !C * !X)	0.00099	0.00789	0.10956
	(!B_N * !C * !X)	0.00497	0.01187	0.11352
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00371	0.01081	0.12431
	(B_N * !X)	0.00782	0.01493	0.12843
	(!B_N * C * !D * !X)	0.00274	0.00985	0.12334
	(!B_N * C * !D * !X)	0.00712	0.01422	0.12766
	(!B_N * !C * !X)	0.00267	0.00978	0.12330
	(!B_N * !C * !X)	0.00686	0.01397	0.12747

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)	0.00829	0.01443	0.11456
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00398	0.01010	0.11024
	(!C * !X)	0.00828	0.01455	0.11489
	(!C * !X)	0.00388	0.01015	0.11049
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00882	0.01465	0.11474
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00478	0.01059	0.11068
	(!C * !X)	0.00881	0.01504	0.11515
	(!C * !X)	0.00466	0.01088	0.11099
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01174	0.01789	0.13178
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00713	0.01324	0.12715
	(!C * !X)	0.01167	0.01821	0.13250
	(!C * !X)	0.00688	0.01339	0.12768

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)	0.00253	0.00933	0.11066
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00684	0.01366	0.11498
	(!C * !X)	0.00195	0.00881	0.11020
	(!C * !X)	0.00636	0.01321	0.11460
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00347	0.01018	0.11137
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00752	0.01424	0.11542
	(!C * !X)	0.00280	0.00955	0.11080
	(!C * !X)	0.00695	0.01369	0.11495
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00587	0.01294	0.12754
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01049	0.01758	0.13217
	(!C * !X)	0.00463	0.01175	0.12650
	(!C * !X)	0.00943	0.01658	0.13131

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)**	0.00388	0.00391	0.00390
	(A_N * B_N * D * !X)	0.00040	0.00038	0.00039
	(A_N * B_N * !D * !X)	0.00338	0.00340	0.00338
	(A_N * B_N * !D * !X)	0.00039	0.00038	0.00039
	(A_N * !B_N * D * !X)	0.00268	0.00269	0.00269
	(A_N * !B_N * D * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !B_N * !D * !X)	0.00211	0.00211	0.00211
	(A_N * !B_N * !D * !X)	-0.00104	-0.00105	-0.00105
	(!A_N * B_N * D * !X)	0.00305	0.00306	0.00305
	(!A_N * B_N * D * !X)	-0.00046	-0.00046	-0.00046
	(!A_N * B_N * !D * !X)	0.00251	0.00252	0.00251
	(!A_N * B_N * !D * !X)	-0.00048	-0.00048	-0.00047
	(!A_N * !B_N * !D * !X)	0.00106	0.00106	0.00106
	(!A_N * !B_N * !D * !X)	-0.00172	-0.00173	-0.00172
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00444	0.00445	0.00444
	(A_N * B_N * D * !X)	0.00050	0.00050	0.00051
	(A_N * B_N * !D * !X)	0.00383	0.00383	0.00383
	(A_N * B_N * !D * !X)	0.00050	0.00050	0.00051
	(A_N * !B_N * D * !X)	0.00330	0.00331	0.00331
	(A_N * !B_N * D * !X)	-0.00063	-0.00064	-0.00063
	(A_N * !B_N * !D * !X)	0.00263	0.00263	0.00263
	(A_N * !B_N * !D * !X)	-0.00088	-0.00090	-0.00089
	(!A_N * B_N * D * !X)	0.00358	0.00359	0.00359
	(!A_N * B_N * D * !X)	-0.00034	-0.00035	-0.00035
	(!A_N * B_N * !D * !X)	0.00296	0.00297	0.00295
	(!A_N * B_N * !D * !X)	-0.00037	-0.00037	-0.00036
	(!A_N * !B_N * !D * !X)	0.00154	0.00155	0.00155
	(!A_N * !B_N * !D * !X)	-0.00154	-0.00155	-0.00154

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00597	0.00598	0.00597
	(A_N * B_N * D * !X)	-0.00146	-0.00147	-0.00145
	(A_N * B_N * !D * !X)	0.00486	0.00487	0.00485
	(A_N * B_N * !D * !X)	-0.00148	-0.00150	-0.00147
	(A_N * !B_N * D * !X)	0.00529	0.00532	0.00530
	(A_N * !B_N * D * !X)	-0.00215	-0.00217	-0.00214
	(A_N * !B_N * !D * !X)	0.00407	0.00408	0.00407
	(A_N * !B_N * !D * !X)	-0.00263	-0.00264	-0.00263
	(!A_N * B_N * D * !X)	0.00543	0.00542	0.00544
	(!A_N * B_N * D * !X)	-0.00199	-0.00198	-0.00199
	(!A_N * B_N * !D * !X)	0.00424	0.00427	0.00425
	(!A_N * B_N * !D * !X)	-0.00203	-0.00208	-0.00205
	(!A_N * !B_N * !D * !X)	0.00312	0.00314	0.00313
	(!A_N * !B_N * !D * !X)	-0.00276	-0.00280	-0.00279

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)**	0.00051	0.00048	0.00049
	(A_N * B_N * D * !X)	0.00402	0.00400	0.00400
	(A_N * B_N * !D * !X)	0.00093	0.00092	0.00095
	(A_N * B_N * !D * !X)	0.00406	0.00407	0.00402
	(A_N * !B_N * D * !X)	0.00020	-0.00000	-0.00002
	(A_N * !B_N * D * !X)	0.00370	0.00352	0.00349
	(A_N * !B_N * !D * !X)	0.00048	0.00053	0.00049
	(A_N * !B_N * !D * !X)	0.00380	0.00382	0.00375
	(!A_N * B_N * D * !X)	-0.00021	-0.00035	-0.00036
	(!A_N * B_N * D * !X)	0.00332	0.00317	0.00315
	(!A_N * B_N * !D * !X)	0.00012	0.00011	0.00009
	(!A_N * B_N * !D * !X)	0.00321	0.00324	0.00315
	(!A_N * !B_N * !D * !X)	-0.00008	-0.00009	-0.00010
	(!A_N * !B_N * !D * !X)	0.00272	0.00276	0.00269
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00084	0.00080	0.00081
	(A_N * B_N * D * !X)	0.00475	0.00475	0.00474
	(A_N * B_N * !D * !X)	0.00133	0.00132	0.00135
	(A_N * B_N * !D * !X)	0.00480	0.00483	0.00477
	(A_N * !B_N * D * !X)	0.00045	0.00023	0.00021
	(A_N * !B_N * D * !X)	0.00438	0.00418	0.00416
	(A_N * !B_N * !D * !X)	0.00081	0.00085	0.00082
	(A_N * !B_N * !D * !X)	0.00449	0.00454	0.00446
	(!A_N * B_N * D * !X)	0.00012	-0.00004	-0.00005
	(!A_N * B_N * D * !X)	0.00404	0.00391	0.00389
	(!A_N * B_N * !D * !X)	0.00052	0.00051	0.00049
	(!A_N * B_N * !D * !X)	0.00397	0.00399	0.00390
	(!A_N * !B_N * !D * !X)	0.00030	0.00028	0.00027
	(!A_N * !B_N * !D * !X)	0.00340	0.00344	0.00337

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	-0.00009	-0.00016	-0.00015
	(A_N * B_N * D * !X)	0.00729	0.00730	0.00728
	(A_N * B_N * !D * !X)	0.00085	0.00084	0.00089
	(A_N * B_N * !D * !X)	0.00744	0.00747	0.00737
	(A_N * !B_N * D * !X)	-0.00010	-0.00055	-0.00058
	(A_N * !B_N * D * !X)	0.00732	0.00693	0.00687
	(A_N * !B_N * !D * !X)	0.00049	0.00060	0.00053
	(A_N * !B_N * !D * !X)	0.00747	0.00756	0.00744
	(!A_N * B_N * D * !X)	-0.00032	-0.00066	-0.00068
	(!A_N * B_N * D * !X)	0.00707	0.00682	0.00676
	(!A_N * B_N * !D * !X)	0.00040	0.00039	0.00035
	(!A_N * B_N * !D * !X)	0.00699	0.00700	0.00682
	(!A_N * !B_N * !D * !X)	0.00059	0.00056	0.00054
	(!A_N * !B_N * !D * !X)	0.00651	0.00657	0.00647

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)**	0.00373	0.00374	0.00373
	(A_N * B_N * C * !X)	0.00043	0.00043	0.00043
	(A_N * !C * !X)	0.00375	0.00377	0.00375
	(A_N * !C * !X)	0.00043	0.00042	0.00043
	(A_N * !B_N * C * !X)	0.00269	0.00269	0.00269
	(A_N * !B_N * C * !X)	-0.00064	-0.00064	-0.00063
	(!A_N * B_N * C * !X)	0.00288	0.00289	0.00289
	(!A_N * B_N * C * !X)	-0.00042	-0.00043	-0.00042
	(!A_N * B_N * !C * !X)	0.00288	0.00290	0.00289
	(!A_N * B_N * !C * !X)	-0.00043	-0.00045	-0.00044
	(!A_N * !B_N * !C * !X)	0.00185	0.00186	0.00186
	(!A_N * !B_N * !C * !X)	-0.00147	-0.00148	-0.00148

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00425	0.00426	0.00425
	(A_N * B_N * C * !X)	0.00039	0.00039	0.00039
	(A_N * !C * !X)	0.00426	0.00428	0.00427
	(A_N * !C * !X)	0.00040	0.00038	0.00039
	(A_N * !B_N * C * !X)	0.00331	0.00333	0.00332
	(A_N * !B_N * C * !X)	-0.00056	-0.00057	-0.00056
	(!A_N * B_N * C * !X)	0.00339	0.00340	0.00339
	(!A_N * B_N * C * !X)	-0.00047	-0.00047	-0.00047
	(!A_N * B_N * !C * !X)	0.00340	0.00342	0.00340
	(!A_N * B_N * !C * !X)	-0.00047	-0.00049	-0.00048
	(!A_N * !B_N * !C * !X)	0.00248	0.00248	0.00249
	(!A_N * !B_N * !C * !X)	-0.00140	-0.00140	-0.00141
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00566	0.00570	0.00566
	(A_N * B_N * C * !X)	-0.00141	-0.00144	-0.00142
	(A_N * !C * !X)	0.00569	0.00571	0.00569
	(A_N * !C * !X)	-0.00142	-0.00144	-0.00142
	(A_N * !B_N * C * !X)	0.00510	0.00513	0.00511
	(A_N * !B_N * C * !X)	-0.00202	-0.00204	-0.00202
	(!A_N * B_N * C * !X)	0.00512	0.00516	0.00513
	(!A_N * B_N * C * !X)	-0.00197	-0.00199	-0.00197
	(!A_N * B_N * !C * !X)	0.00512	0.00514	0.00512
	(!A_N * B_N * !C * !X)	-0.00199	-0.00200	-0.00199
	(!A_N * !B_N * !C * !X)	0.00460	0.00462	0.00460
	(!A_N * !B_N * !C * !X)	-0.00254	-0.00256	-0.00253

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)**	0.00071	0.00063	0.00063
	(A_N * B_N * C * !X)	0.00395	0.00398	0.00396
	(A_N * !C * !X)	0.00064	0.00062	0.00062
	(A_N * !C * !X)	0.00396	0.00396	0.00395
	(A_N * !B_N * C * !X)	0.00011	-0.00002	-0.00003
	(A_N * !B_N * C * !X)	0.00343	0.00334	0.00330
	(!A_N * B_N * C * !X)	-0.00009	-0.00022	-0.00023
	(!A_N * B_N * C * !X)	0.00317	0.00313	0.00310
	(!A_N * B_N * !C * !X)	-0.00023	-0.00025	-0.00024
	(!A_N * B_N * !C * !X)	0.00310	0.00309	0.00309
	(!A_N * !B_N * !C * !X)	-0.00082	-0.00090	-0.00092
	(!A_N * !B_N * !C * !X)	0.00253	0.00244	0.00242
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00106	0.00098	0.00097
	(A_N * B_N * C * !X)	0.00485	0.00488	0.00486
	(A_N * !C * !X)	0.00100	0.00097	0.00097
	(A_N * !C * !X)	0.00485	0.00486	0.00486
	(A_N * !B_N * C * !X)	0.00037	0.00021	0.00019
	(A_N * !B_N * C * !X)	0.00420	0.00414	0.00409
	(!A_N * B_N * C * !X)	0.00025	0.00012	0.00011
	(!A_N * B_N * C * !X)	0.00407	0.00403	0.00400
	(!A_N * B_N * !C * !X)	0.00013	0.00010	0.00010
	(!A_N * B_N * !C * !X)	0.00398	0.00399	0.00399
	(!A_N * !B_N * !C * !X)	-0.00058	-0.00068	-0.00069
	(!A_N * !B_N * !C * !X)	0.00329	0.00323	0.00320

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00027	0.00013	0.00012
	(A_N * B_N * C * !X)	0.00724	0.00729	0.00724
	(A_N * !C * !X)	0.00017	0.00011	0.00010
	(A_N * !C * !X)	0.00722	0.00724	0.00724
	(A_N * !B_N * C * !X)	-0.00009	-0.00036	-0.00041
	(A_N * !B_N * C * !X)	0.00696	0.00685	0.00675
	(!A_N * B_N * C * !X)	-0.00019	-0.00041	-0.00043
	(!A_N * B_N * C * !X)	0.00683	0.00678	0.00670
	(!A_N * B_N * !C * !X)	-0.00039	-0.00045	-0.00046
	(!A_N * B_N * !C * !X)	0.00666	0.00668	0.00667
	(!A_N * !B_N * !C * !X)	-0.00077	-0.00098	-0.00101
	(!A_N * !B_N * !C * !X)	0.00633	0.00619	0.00614

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00254	0.00267	0.00257	0.00250	1.25095
sky130_fd_sc_hs__and4b_2	0.00236	0.00287	0.00286	0.00295	2.18936
sky130_fd_sc_hs__and4b_4	0.00260	0.00532	0.00571	0.00530	4.11712

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	123.54500	405.24700
sky130_fd_sc_hs__and4b_2	0.00000	161.53200	274.10600
sky130_fd_sc_hs__and4b_4	0.00000	256.12900	548.21000

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)	0.13828	0.68134	7.37409
	B->X (RR)	0.11121	0.62342	7.08308
	C->X (RR)	0.11782	0.60952	6.93420
	D->X (RR)	0.12364	0.58583	6.57621
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.15816	0.63455	7.34317
	B->X (RR)	0.11852	0.55702	6.83607
	C->X (RR)	0.12656	0.54079	6.67419
	D->X (RR)	0.13155	0.51434	6.23083
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.19198	0.63304	7.57427
	B->X (RR)	0.13669	0.52872	7.15646
	C->X (RR)	0.15261	0.51124	6.84665
	D->X (RR)	0.15400	0.48904	6.72285

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)	0.09914	0.38432	3.33359
	B->X (FF)	0.07986	0.46946	4.47803
	C->X (FF)	0.08636	0.48915	4.64396
	D->X (FF)	0.09178	0.50871	4.83312
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.11291	0.34953	2.94801
	B->X (FF)	0.08806	0.44121	4.19241
	C->X (FF)	0.09594	0.46139	4.36490
	D->X (FF)	0.09989	0.47574	4.52145
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.12660	0.33814	2.82296
	B->X (FF)	0.08644	0.39016	3.98852
	C->X (FF)	0.09387	0.41120	4.17332
	D->X (FF)	0.10688	0.44519	4.45711

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	0.01962	0.02636	0.13285
	A_N	0.02295	0.02973	0.13650
	B	0.02132	0.02486	0.10980
	B	0.01657	0.02011	0.10512
	C	0.02237	0.02578	0.11479
	C	0.01677	0.02019	0.10913
	D	0.02311	0.02558	0.10300
	D	0.01666	0.01913	0.09668
sky130_fd_sc_hs__and4b_2	A_N	0.02085	0.02689	0.13172
	A_N	0.02404	0.03007	0.13478
	B	0.02217	0.02549	0.11661
	B	0.01708	0.02040	0.11149
	C	0.02328	0.02632	0.12183
	C	0.01726	0.02029	0.11600
	D	0.02449	0.02652	0.09910
	D	0.01716	0.01923	0.09262
sky130_fd_sc_hs__and4b_4	A_N	0.04319	0.04897	0.17566
	A_N	0.04682	0.05260	0.18043
	B	0.04531	0.05124	0.22352
	B	0.03595	0.04192	0.21431
	C	0.04818	0.05259	0.21234
	C	0.03640	0.04087	0.20054
	D	0.04968	0.05411	0.24038
	D	0.03646	0.04094	0.22712

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.01380	0.02040	0.12933
	A_N	0.01046	0.01696	0.12576
	B	0.00529	0.01079	0.09246
	B	0.01004	0.01553	0.09555
	C	0.00561	0.01128	0.09614
	C	0.01119	0.01682	0.10081
	D	0.00639	0.01165	0.09705
	D	0.01278	0.01799	0.10261
sky130_fd_sc_hs__and4b_2	A_N	0.01887	0.02450	0.12701
	A_N	0.01571	0.02127	0.12330
	B	0.00973	0.01498	0.10274
	B	0.01481	0.02005	0.10778
	C	0.01060	0.01586	0.10846
	C	0.01660	0.02179	0.11384
	D	0.01078	0.01550	0.10692
	D	0.01801	0.02258	0.11358
sky130_fd_sc_hs__and4b_4	A_N	0.03237	0.03847	0.16337
	A_N	0.02874	0.03476	0.15819
	B	0.01869	0.02869	0.20355
	B	0.02805	0.03799	0.21291
	C	0.02000	0.02957	0.21239
	C	0.03171	0.04116	0.22101
	D	0.02295	0.03169	0.22146
	D	0.03596	0.04459	0.23250

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)	0.00741	0.01376	0.11467
	(B * C * !D * !X)	0.00302	0.00936	0.11028
	(B * !C * !X)	0.00742	0.01377	0.11467
	(B * !C * !X)	0.00303	0.00936	0.11027
	(!B * !X)	0.00738	0.01372	0.11464
	(!B * !X)	0.00303	0.00936	0.11029
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00852	0.01466	0.11335
	(B * C * !D * !X)	0.00434	0.01045	0.10917
	(B * !C * !X)	0.00853	0.01466	0.11335
	(B * !C * !X)	0.00434	0.01045	0.10916
	(!B * !X)	0.00848	0.01462	0.11331
	(!B * !X)	0.00434	0.01045	0.10917
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01290	0.01934	0.13135
	(B * C * !D * !X)	0.00783	0.01425	0.12626
	(B * !C * !X)	0.01289	0.01933	0.13133
	(B * !C * !X)	0.00783	0.01425	0.12626
	(!B * !X)	0.01279	0.01922	0.13122
	(!B * !X)	0.00784	0.01425	0.12626

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)	0.00063	0.00755	0.10933
	(B * C * !D * !X)	0.00513	0.01207	0.11380
	(B * !C * !X)	0.00059	0.00751	0.10931
	(B * !C * !X)	0.00504	0.01198	0.11374
	(!B * !X)	0.00059	0.00751	0.10934
	(!B * !X)	0.00496	0.01189	0.11369
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00116	0.00780	0.10742
	(B * C * !D * !X)	0.00548	0.01214	0.11171
	(B * !C * !X)	0.00114	0.00778	0.10741
	(B * !C * !X)	0.00539	0.01206	0.11166
	(!B * !X)	0.00111	0.00777	0.10743
	(!B * !X)	0.00527	0.01194	0.11158
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00245	0.00939	0.12156
	(B * C * !D * !X)	0.00778	0.01476	0.12682
	(B * !C * !X)	0.00242	0.00936	0.12155
	(B * !C * !X)	0.00762	0.01460	0.12673
	(!B * !X)	0.00240	0.00934	0.12159
	(!B * !X)	0.00736	0.01434	0.12656

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)**	0.00291	0.00293	0.00292
	(A_N * C * D * !X)	-0.00068	-0.00069	-0.00068
	(A_N * C * !D * !X)	0.00234	0.00234	0.00234
	(A_N * C * !D * !X)	-0.00070	-0.00071	-0.00070
	(A_N * !C * !X)	0.00233	0.00234	0.00233
	(A_N * !C * !X)	-0.00071	-0.00072	-0.00071
	(!A_N * C * !D * !X)	0.00104	0.00104	0.00104
	(!A_N * C * !D * !X)	-0.00177	-0.00178	-0.00181
	(!A_N * !C * !X)	0.00103	0.00103	0.00104
	(!A_N * !C * !X)	-0.00181	-0.00181	-0.00182
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00355	0.00358	0.00357
	(A_N * C * D * !X)	-0.00036	-0.00038	-0.00037
	(A_N * C * !D * !X)	0.00288	0.00289	0.00288
	(A_N * C * !D * !X)	-0.00038	-0.00040	-0.00038
	(A_N * !C * !X)	0.00293	0.00294	0.00293
	(A_N * !C * !X)	-0.00040	-0.00041	-0.00039
	(!A_N * C * !D * !X)	0.00149	0.00149	0.00150
	(!A_N * C * !D * !X)	-0.00150	-0.00150	-0.00154
	(!A_N * !C * !X)	0.00154	0.00154	0.00154
	(!A_N * !C * !X)	-0.00154	-0.00154	-0.00155
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00603	0.00602	0.00604
	(A_N * C * D * !X)	-0.00171	-0.00170	-0.00171
	(A_N * C * !D * !X)	0.00484	0.00487	0.00485
	(A_N * C * !D * !X)	-0.00174	-0.00177	-0.00174
	(A_N * !C * !X)	0.00495	0.00498	0.00496
	(A_N * !C * !X)	-0.00175	-0.00178	-0.00176
	(!A_N * C * !D * !X)	0.00319	0.00319	0.00320
	(!A_N * C * !D * !X)	-0.00289	-0.00290	-0.00299
	(!A_N * !C * !X)	0.00326	0.00329	0.00326
	(!A_N * !C * !X)	-0.00296	-0.00300	-0.00302

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)	-0.00002	-0.00022	-0.00025
	(A_N * C * D * !X)	0.00358	0.00341	0.00335
	(A_N * C * !D * !X)	0.00035	0.00030	0.00028
	(A_N * C * !D * !X)	0.00354	0.00352	0.00342
	(A_N * !C * !X)	0.00029	0.00028	0.00025
	(A_N * !C * !X)	0.00343	0.00346	0.00336
	(!A_N * C * !D * !X)	-0.00011	-0.00011	-0.00012
	(!A_N * C * !D * !X)	0.00276	0.00276	0.00273
	(!A_N * !C * !X)	-0.00010	-0.00011	-0.00012
	(!A_N * !C * !X)	0.00276	0.00280	0.00274
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	0.00020	-0.00002	-0.00005
	(A_N * C * D * !X)	0.00413	0.00394	0.00389
	(A_N * C * !D * !X)	0.00065	0.00061	0.00058
	(A_N * C * !D * !X)	0.00410	0.00408	0.00396
	(A_N * !C * !X)	0.00054	0.00053	0.00050
	(A_N * !C * !X)	0.00400	0.00402	0.00392
	(!A_N * C * !D * !X)	0.00029	0.00029	0.00027
	(!A_N * C * !D * !X)	0.00335	0.00336	0.00333
	(!A_N * !C * !X)	0.00026	0.00026	0.00025
	(!A_N * !C * !X)	0.00338	0.00337	0.00333

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00086	-0.00123	-0.00132
	(A_N * C * D * !X)	0.00687	0.00653	0.00643
	(A_N * C * !D * !X)	-0.00007	-0.00017	-0.00022
	(A_N * C * !D * !X)	0.00682	0.00678	0.00657
	(A_N * !C * !X)	-0.00026	-0.00031	-0.00038
	(A_N * !C * !X)	0.00667	0.00670	0.00649
	(!A_N * C * !D * !X)	0.00040	0.00038	0.00036
	(!A_N * C * !D * !X)	0.00661	0.00664	0.00657
	(!A_N * !C * !X)	0.00035	0.00033	0.00031
	(!A_N * !C * !X)	0.00662	0.00667	0.00658

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)**	0.00293	0.00294	0.00294
	(A_N * B * D * !X)	-0.00050	-0.00051	-0.00050
	(A_N * B * !D * !X)	0.00238	0.00238	0.00238
	(A_N * B * !D * !X)	-0.00052	-0.00052	-0.00052
	(A_N * !B * D * !X)	0.00293	0.00295	0.00293
	(A_N * !B * D * !X)	-0.00051	-0.00053	-0.00052
	(A_N * !B * !D * !X)	0.00235	0.00236	0.00235
	(A_N * !B * !D * !X)	-0.00052	-0.00054	-0.00053
	(!A_N * B * !D * !X)	0.00132	0.00132	0.00131
	(!A_N * B * !D * !X)	-0.00139	-0.00140	-0.00138
	(!A_N * !B * D * !X)	0.00208	0.00210	0.00208
	(!A_N * !B * D * !X)	-0.00138	-0.00139	-0.00138
	(!A_N * !B * !D * !X)	0.00146	0.00146	0.00146
	(!A_N * !B * !D * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00332	0.00332	0.00333
	(A_N * B * D * !X)	-0.00035	-0.00035	-0.00035
	(A_N * B * !D * !X)	0.00265	0.00265	0.00265
	(A_N * B * !D * !X)	-0.00036	-0.00037	-0.00037
	(A_N * !B * D * !X)	0.00332	0.00333	0.00332
	(A_N * !B * D * !X)	-0.00036	-0.00037	-0.00036
	(A_N * !B * !D * !X)	0.00260	0.00261	0.00260
	(A_N * !B * !D * !X)	-0.00037	-0.00038	-0.00037
	(!A_N * B * !D * !X)	0.00152	0.00153	0.00154
	(!A_N * B * !D * !X)	-0.00123	-0.00125	-0.00122
	(!A_N * !B * D * !X)	0.00245	0.00248	0.00246
	(!A_N * !B * D * !X)	-0.00123	-0.00125	-0.00124
	(!A_N * !B * !D * !X)	0.00169	0.00170	0.00170
	(!A_N * !B * !D * !X)	-0.00125	-0.00126	-0.00126
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00580	0.00584	0.00582
	(A_N * B * D * !X)	-0.00193	-0.00196	-0.00193
	(A_N * B * !D * !X)	0.00466	0.00468	0.00467
	(A_N * B * !D * !X)	-0.00198	-0.00200	-0.00198
	(A_N * !B * D * !X)	0.00578	0.00582	0.00579
	(A_N * !B * D * !X)	-0.00197	-0.00199	-0.00197
	(A_N * !B * !D * !X)	0.00463	0.00465	0.00464
	(A_N * !B * !D * !X)	-0.00198	-0.00199	-0.00198
	(!A_N * B * !D * !X)	0.00363	0.00365	0.00366
	(!A_N * B * !D * !X)	-0.00256	-0.00258	-0.00253
	(!A_N * !B * D * !X)	0.00521	0.00523	0.00523
	(!A_N * !B * D * !X)	-0.00255	-0.00256	-0.00256
	(!A_N * !B * !D * !X)	0.00397	0.00398	0.00397
	(!A_N * !B * !D * !X)	-0.00262	-0.00263	-0.00262

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)	-0.00005	-0.00028	-0.00029
	(A_N * B * D * !X)	0.00337	0.00320	0.00317
	(A_N * B * !D * !X)	0.00022	0.00025	0.00021
	(A_N * B * !D * !X)	0.00329	0.00331	0.00322
	(A_N * !B * D * !X)	-0.00027	-0.00031	-0.00031
	(A_N * !B * D * !X)	0.00316	0.00316	0.00315
	(A_N * !B * !D * !X)	0.00020	0.00019	0.00023
	(A_N * !B * !D * !X)	0.00322	0.00324	0.00319
	(!A_N * B * !D * !X)	-0.00034	-0.00034	-0.00036
	(!A_N * B * !D * !X)	0.00238	0.00238	0.00234
	(!A_N * !B * D * !X)	-0.00098	-0.00114	-0.00115
	(!A_N * !B * D * !X)	0.00247	0.00235	0.00232
	(!A_N * !B * !D * !X)	-0.00059	-0.00060	-0.00060
	(!A_N * !B * !D * !X)	0.00242	0.00242	0.00233
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	0.00042	0.00019	0.00017
	(A_N * B * D * !X)	0.00405	0.00390	0.00387
	(A_N * B * !D * !X)	0.00077	0.00080	0.00077
	(A_N * B * !D * !X)	0.00400	0.00406	0.00392
	(A_N * !B * D * !X)	0.00020	0.00015	0.00016
	(A_N * !B * D * !X)	0.00386	0.00386	0.00386
	(A_N * !B * !D * !X)	0.00079	0.00079	0.00083
	(A_N * !B * !D * !X)	0.00392	0.00394	0.00390
	(!A_N * B * !D * !X)	0.00029	0.00028	0.00027
	(!A_N * B * !D * !X)	0.00310	0.00312	0.00305
	(!A_N * !B * D * !X)	-0.00051	-0.00067	-0.00068
	(!A_N * !B * D * !X)	0.00317	0.00305	0.00302
	(!A_N * !B * !D * !X)	0.00001	0.00001	0.00001
	(!A_N * !B * !D * !X)	0.00311	0.00313	0.00305

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00065	-0.00109	-0.00114
	(A_N * B * D * !X)	0.00702	0.00675	0.00665
	(A_N * B * !D * !X)	-0.00009	-0.00005	-0.00011
	(A_N * B * !D * !X)	0.00691	0.00702	0.00676
	(A_N * !B * D * !X)	-0.00106	-0.00118	-0.00118
	(A_N * !B * D * !X)	0.00664	0.00666	0.00662
	(A_N * !B * !D * !X)	-0.00014	-0.00015	-0.00008
	(A_N * !B * !D * !X)	0.00675	0.00680	0.00670
	(!A_N * B * !D * !X)	0.00003	0.00001	-0.00003
	(!A_N * B * !D * !X)	0.00631	0.00635	0.00620
	(!A_N * !B * D * !X)	-0.00128	-0.00163	-0.00167
	(!A_N * !B * D * !X)	0.00648	0.00623	0.00613
	(!A_N * !B * !D * !X)	-0.00050	-0.00051	-0.00053
	(!A_N * !B * !D * !X)	0.00634	0.00640	0.00621

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)**	0.00266	0.00267	0.00266
	(A_N * B * C * !X)	-0.00065	-0.00065	-0.00064
	(A_N * !C * !X)	0.00268	0.00269	0.00268
	(A_N * !C * !X)	-0.00066	-0.00067	-0.00066
	(A_N * !B * C * !X)	0.00265	0.00266	0.00265
	(A_N * !B * C * !X)	-0.00066	-0.00066	-0.00066
	(!A_N * B * !C * !X)	0.00182	0.00184	0.00183
	(!A_N * B * !C * !X)	-0.00152	-0.00153	-0.00152
	(!A_N * !B * C * !X)	0.00179	0.00180	0.00179
	(!A_N * !B * C * !X)	-0.00152	-0.00153	-0.00152
	(!A_N * !B * !C * !X)	0.00181	0.00182	0.00181
	(!A_N * !B * !C * !X)	-0.00153	-0.00154	-0.00153

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00333	0.00335	0.00333
	(A_N * B * C * !X)	-0.00050	-0.00052	-0.00050
	(A_N * !C * !X)	0.00334	0.00335	0.00334
	(A_N * !C * !X)	-0.00051	-0.00052	-0.00052
	(A_N * !B * C * !X)	0.00330	0.00331	0.00330
	(A_N * !B * C * !X)	-0.00052	-0.00052	-0.00052
	(!A_N * B * !C * !X)	0.00247	0.00248	0.00247
	(!A_N * B * !C * !X)	-0.00139	-0.00141	-0.00140
	(!A_N * !B * C * !X)	0.00243	0.00244	0.00243
	(!A_N * !B * C * !X)	-0.00140	-0.00141	-0.00140
	(!A_N * !B * !C * !X)	0.00245	0.00246	0.00245
	(!A_N * !B * !C * !X)	-0.00140	-0.00141	-0.00141
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00521	0.00522	0.00522
	(A_N * B * C * !X)	-0.00192	-0.00193	-0.00191
	(A_N * !C * !X)	0.00516	0.00520	0.00518
	(A_N * !C * !X)	-0.00193	-0.00197	-0.00195
	(A_N * !B * C * !X)	0.00518	0.00519	0.00517
	(A_N * !B * C * !X)	-0.00195	-0.00197	-0.00195
	(!A_N * B * !C * !X)	0.00458	0.00461	0.00459
	(!A_N * B * !C * !X)	-0.00256	-0.00259	-0.00257
	(!A_N * !B * C * !X)	0.00460	0.00462	0.00460
	(!A_N * !B * C * !X)	-0.00255	-0.00257	-0.00254
	(!A_N * !B * !C * !X)	0.00455	0.00459	0.00457
	(!A_N * !B * !C * !X)	-0.00255	-0.00259	-0.00257

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)**	0.00014	-0.00001	-0.00002
	(A_N * B * C * !X)	0.00339	0.00335	0.00331
	(A_N * !C * !X)	-0.00002	-0.00005	-0.00006
	(A_N * !C * !X)	0.00330	0.00329	0.00330
	(A_N * !B * C * !X)	0.00005	-0.00003	-0.00004
	(A_N * !B * C * !X)	0.00329	0.00332	0.00329
	(!A_N * B * !C * !X)	-0.00081	-0.00089	-0.00091
	(!A_N * B * !C * !X)	0.00253	0.00246	0.00244
	(!A_N * !B * C * !X)	-0.00075	-0.00088	-0.00090
	(!A_N * !B * C * !X)	0.00252	0.00247	0.00244
	(!A_N * !B * !C * !X)	-0.00089	-0.00092	-0.00093
	(!A_N * !B * !C * !X)	0.00244	0.00243	0.00243
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00034	0.00018	0.00017
	(A_N * B * C * !X)	0.00408	0.00406	0.00402
	(A_N * !C * !X)	0.00019	0.00015	0.00014
	(A_N * !C * !X)	0.00400	0.00401	0.00401
	(A_N * !B * C * !X)	0.00026	0.00017	0.00016
	(A_N * !B * C * !X)	0.00400	0.00403	0.00401
	(!A_N * B * !C * !X)	-0.00059	-0.00069	-0.00070
	(!A_N * B * !C * !X)	0.00323	0.00319	0.00318
	(!A_N * !B * C * !X)	-0.00053	-0.00067	-0.00068
	(!A_N * !B * C * !X)	0.00323	0.00321	0.00317
	(!A_N * !B * !C * !X)	-0.00066	-0.00070	-0.00071
	(!A_N * !B * !C * !X)	0.00315	0.00316	0.00316

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00015	-0.00051	-0.00056
	(A_N * B * C * !X)	0.00685	0.00672	0.00663
	(A_N * !C * !X)	-0.00046	-0.00055	-0.00056
	(A_N * !C * !X)	0.00660	0.00663	0.00660
	(A_N * !B * C * !X)	-0.00037	-0.00056	-0.00059
	(A_N * !B * C * !X)	0.00660	0.00665	0.00660
	(!A_N * B * !C * !X)	-0.00075	-0.00098	-0.00102
	(!A_N * B * !C * !X)	0.00637	0.00623	0.00615
	(!A_N * !B * C * !X)	-0.00072	-0.00105	-0.00109
	(!A_N * !B * C * !X)	0.00632	0.00618	0.00611
	(!A_N * !B * !C * !X)	-0.00098	-0.00108	-0.00108
	(!A_N * !B * !C * !X)	0.00609	0.00611	0.00608

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00269	0.00266	0.00257	0.00260	1.28811
sky130_fd_sc_hs__and4_2	0.00291	0.00299	0.00284	0.00281	2.17883
sky130_fd_sc_hs__and4_4	0.00506	0.00522	0.00571	0.00511	4.77959

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	72.54700	404.26300
sky130_fd_sc_hs__and4_2	0.00000	110.60000	273.18900
sky130_fd_sc_hs__and4_4	0.00000	221.27900	546.29700

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)	0.09919	0.62784	7.28447
	B->X (RR)	0.10909	0.62535	7.17419
	C->X (RR)	0.11503	0.60993	7.02166
	D->X (RR)	0.12143	0.58729	6.68089
sky130_fd_sc_hs__and4_2	A->X (RR)	0.10843	0.57247	7.01142
	B->X (RR)	0.11957	0.56514	6.88116
	C->X (RR)	0.12664	0.54787	6.71678
	D->X (RR)	0.13184	0.52014	6.23285
sky130_fd_sc_hs__and4_4	A->X (RR)	0.11564	0.51881	7.40220
	B->X (RR)	0.12950	0.51892	7.36079
	C->X (RR)	0.14328	0.50166	7.10663
	D->X (RR)	0.14406	0.47916	7.00359

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.07177	0.44333	4.41485
	B->X (FF)	0.07956	0.46698	4.53448
	C->X (FF)	0.08558	0.48650	4.70311
	D->X (FF)	0.09136	0.50555	4.87836
sky130_fd_sc_hs__and4_2	A->X (FF)	0.07582	0.40771	3.93429
	B->X (FF)	0.08531	0.43248	4.07964
	C->X (FF)	0.09176	0.45145	4.25466
	D->X (FF)	0.10051	0.47642	4.46894
sky130_fd_sc_hs__and4_4	A->X (FF)	0.07617	0.37820	4.41975
	B->X (FF)	0.08058	0.38846	4.45325
	C->X (FF)	0.08733	0.40947	4.64699
	D->X (FF)	0.08911	0.42355	4.83469

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.02070	0.02507	0.11268
	A	0.01593	0.02032	0.10819
	B	0.02155	0.02534	0.11171
	B	0.01595	0.01974	0.10614
	C	0.02251	0.02615	0.11663
	C	0.01594	0.01959	0.11010
	D	0.02353	0.02632	0.10590
	D	0.01584	0.01864	0.09828
sky130_fd_sc_hs__and4_2	A	0.02164	0.02568	0.11853
	A	0.01633	0.02037	0.11314
	B	0.02282	0.02608	0.11760
	B	0.01645	0.01971	0.11114
	C	0.02385	0.02685	0.12310
	C	0.01644	0.01946	0.11570
	D	0.02504	0.02691	0.09829
	D	0.01639	0.01830	0.09049
sky130_fd_sc_hs__and4_4	A	0.04257	0.04984	0.22429
	A	0.03342	0.04069	0.21574
	B	0.04488	0.05106	0.22596
	B	0.03333	0.03956	0.21509
	C	0.04759	0.05249	0.22294
	C	0.03330	0.03824	0.20898
	D	0.04887	0.05397	0.24999
	D	0.03333	0.03850	0.23454

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00466	0.01037	0.09535
	A	0.00942	0.01510	0.10012
	B	0.00526	0.01099	0.09600
	B	0.01086	0.01653	0.10131
	C	0.00575	0.01151	0.10047
	C	0.01229	0.01799	0.10666
	D	0.00620	0.01158	0.10230
	D	0.01381	0.01915	0.10868
sky130_fd_sc_hs__and4_2	A	0.00850	0.01417	0.10384
	A	0.01381	0.01938	0.10782
	B	0.00930	0.01473	0.10383
	B	0.01566	0.02107	0.10948
	C	0.01021	0.01562	0.10848
	C	0.01756	0.02296	0.11581
	D	0.01073	0.01538	0.10612
	D	0.01925	0.02383	0.11396
sky130_fd_sc_hs__and4_4	A	0.01757	0.02815	0.20755
	A	0.02672	0.03725	0.21382
	B	0.01830	0.02899	0.21073
	B	0.02984	0.04044	0.21970
	C	0.01960	0.02975	0.21569
	C	0.03381	0.04389	0.22945
	D	0.02186	0.03231	0.23546
	D	0.03719	0.04756	0.24638

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)	0.00099	0.00099	0.00092
	(B * C * !D * !X)	-0.00165	-0.00167	-0.00181
	(B * !C * !X)	0.00095	0.00095	0.00091
	(B * !C * !X)	-0.00173	-0.00174	-0.00182
	(!B * !X)	0.00094	0.00094	0.00092
	(!B * !X)	-0.00179	-0.00179	-0.00183
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00153	0.00153	0.00145
	(B * C * !D * !X)	-0.00150	-0.00151	-0.00169
	(B * !C * !X)	0.00150	0.00150	0.00144
	(B * !C * !X)	-0.00159	-0.00160	-0.00170
	(!B * !X)	0.00147	0.00147	0.00145
	(!B * !X)	-0.00167	-0.00167	-0.00171
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00269	0.00269	0.00253
	(B * C * !D * !X)	-0.00262	-0.00267	-0.00300
	(B * !C * !X)	0.00265	0.00266	0.00254
	(B * !C * !X)	-0.00277	-0.00281	-0.00303
	(!B * !X)	0.00259	0.00259	0.00254
	(!B * !X)	-0.00294	-0.00297	-0.00306

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)	-0.00002	-0.00002	-0.00002
	(B * C * !D * !X)	0.00271	0.00272	0.00271
	(B * !C * !X)	-0.00002	-0.00002	-0.00002
	(B * !C * !X)	0.00271	0.00272	0.00271
	(!B * !X)	-0.00003	-0.00003	-0.00003
	(!B * !X)	0.00270	0.00270	0.00271
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00031	0.00031	0.00032
	(B * C * !D * !X)	0.00344	0.00346	0.00345
	(B * !C * !X)	0.00030	0.00031	0.00031
	(B * !C * !X)	0.00346	0.00345	0.00345
	(!B * !X)	0.00030	0.00029	0.00030
	(!B * !X)	0.00345	0.00349	0.00345
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00100	0.00100	0.00100
	(B * C * !D * !X)	0.00651	0.00651	0.00653
	(B * !C * !X)	0.00098	0.00098	0.00098
	(B * !C * !X)	0.00652	0.00654	0.00654
	(!B * !X)	0.00095	0.00093	0.00095
	(!B * !X)	0.00653	0.00661	0.00654

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)**	0.00101	0.00101	0.00100
	(A * C * !D * !X)	-0.00144	-0.00144	-0.00143
	(A * !C * !X)	0.00101	0.00101	0.00101
	(A * !C * !X)	-0.00144	-0.00143	-0.00143
	(!A * C * D * !X)	0.00185	0.00186	0.00185
	(!A * C * D * !X)	-0.00142	-0.00143	-0.00142
	(!A * C * !D * !X)	0.00117	0.00118	0.00117
	(!A * C * !D * !X)	-0.00143	-0.00144	-0.00143
	(!A * !C * !X)	0.00115	0.00115	0.00115
	(!A * !C * !X)	-0.00144	-0.00144	-0.00143
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00154	0.00154	0.00153
	(A * C * !D * !X)	-0.00136	-0.00136	-0.00135
	(A * !C * !X)	0.00156	0.00156	0.00155
	(A * !C * !X)	-0.00136	-0.00136	-0.00135
	(!A * C * D * !X)	0.00249	0.00250	0.00250
	(!A * C * D * !X)	-0.00134	-0.00135	-0.00134
	(!A * C * !D * !X)	0.00174	0.00175	0.00174
	(!A * C * !D * !X)	-0.00135	-0.00136	-0.00135
	(!A * !C * !X)	0.00174	0.00175	0.00174
	(!A * !C * !X)	-0.00136	-0.00137	-0.00135
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00316	0.00318	0.00315
	(A * C * !D * !X)	-0.00247	-0.00250	-0.00247
	(A * !C * !X)	0.00323	0.00324	0.00322
	(A * !C * !X)	-0.00249	-0.00251	-0.00248
	(!A * C * D * !X)	0.00488	0.00489	0.00488
	(!A * C * D * !X)	-0.00243	-0.00244	-0.00243
	(!A * C * !D * !X)	0.00350	0.00351	0.00351
	(!A * C * !D * !X)	-0.00248	-0.00250	-0.00248
	(!A * !C * !X)	0.00355	0.00358	0.00356
	(!A * !C * !X)	-0.00250	-0.00253	-0.00251

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)	-0.00010	-0.00010	-0.00011
	(A * C * !D * !X)	0.00237	0.00237	0.00232
	(A * !C * !X)	-0.00010	-0.00010	-0.00011
	(A * !C * !X)	0.00237	0.00238	0.00232
	(!A * C * D * !X)	-0.00073	-0.00091	-0.00093
	(!A * C * D * !X)	0.00257	0.00239	0.00233
	(!A * C * !D * !X)	-0.00027	-0.00032	-0.00032
	(!A * C * !D * !X)	0.00252	0.00249	0.00239
	(!A * !C * !X)	-0.00029	-0.00029	-0.00031
	(!A * !C * !X)	0.00240	0.00242	0.00233
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	0.00024	0.00024	0.00023
	(A * C * !D * !X)	0.00314	0.00316	0.00310
	(A * !C * !X)	0.00022	0.00021	0.00021
	(A * !C * !X)	0.00315	0.00319	0.00311
	(!A * C * D * !X)	-0.00050	-0.00071	-0.00073
	(!A * C * D * !X)	0.00335	0.00317	0.00311
	(!A * C * !D * !X)	0.00000	-0.00005	-0.00005
	(!A * C * !D * !X)	0.00332	0.00329	0.00317
	(!A * !C * !X)	-0.00002	-0.00004	-0.00005
	(!A * !C * !X)	0.00321	0.00323	0.00312

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00040	0.00039	0.00037
	(A * C * !D * !X)	0.00605	0.00607	0.00598
	(A * !C * !X)	0.00035	0.00032	0.00031
	(A * !C * !X)	0.00607	0.00615	0.00600
	(!A * C * D * !X)	-0.00089	-0.00126	-0.00133
	(!A * C * D * !X)	0.00642	0.00608	0.00597
	(!A * C * !D * !X)	0.00003	-0.00007	-0.00008
	(!A * C * !D * !X)	0.00638	0.00633	0.00613
	(!A * !C * !X)	-0.00008	-0.00012	-0.00015
	(!A * !C * !X)	0.00623	0.00625	0.00606

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)**	0.00112	0.00111	0.00111
	(A * B * !D * !X)	-0.00134	-0.00133	-0.00132
	(A * !B * D * !X)	0.00190	0.00192	0.00191
	(A * !B * D * !X)	-0.00135	-0.00136	-0.00135
	(A * !B * !D * !X)	0.00125	0.00126	0.00125
	(A * !B * !D * !X)	-0.00138	-0.00138	-0.00137
	(!A * B * D * !X)	0.00186	0.00187	0.00187
	(!A * B * D * !X)	-0.00135	-0.00136	-0.00135
	(!A * B * !D * !X)	0.00123	0.00124	0.00123
	(!A * B * !D * !X)	-0.00137	-0.00138	-0.00137
	(!A * !B * D * !X)	0.00187	0.00188	0.00188
	(!A * !B * D * !X)	-0.00137	-0.00138	-0.00137
	(!A * !B * !D * !X)	0.00126	0.00127	0.00126
	(!A * !B * !D * !X)	-0.00138	-0.00138	-0.00137

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00158	0.00159	0.00159
	(A * B * !D * !X)	-0.00117	-0.00120	-0.00117
	(A * !B * D * !X)	0.00249	0.00251	0.00250
	(A * !B * D * !X)	-0.00121	-0.00123	-0.00122
	(A * !B * !D * !X)	0.00179	0.00179	0.00178
	(A * !B * !D * !X)	-0.00124	-0.00124	-0.00123
	(!A * B * D * !X)	0.00246	0.00246	0.00246
	(!A * B * D * !X)	-0.00122	-0.00122	-0.00122
	(!A * B * !D * !X)	0.00175	0.00175	0.00175
	(!A * B * !D * !X)	-0.00123	-0.00124	-0.00123
	(!A * !B * D * !X)	0.00248	0.00249	0.00248
	(!A * !B * D * !X)	-0.00123	-0.00124	-0.00123
	(!A * !B * !D * !X)	0.00180	0.00180	0.00179
	(!A * !B * !D * !X)	-0.00124	-0.00124	-0.00123
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00359	0.00361	0.00362
	(A * B * !D * !X)	-0.00252	-0.00253	-0.00250
	(A * !B * D * !X)	0.00521	0.00525	0.00523
	(A * !B * D * !X)	-0.00257	-0.00259	-0.00256
	(A * !B * !D * !X)	0.00393	0.00394	0.00393
	(A * !B * !D * !X)	-0.00263	-0.00264	-0.00263
	(!A * B * D * !X)	0.00515	0.00520	0.00517
	(!A * B * D * !X)	-0.00256	-0.00259	-0.00256
	(!A * B * !D * !X)	0.00387	0.00389	0.00387
	(!A * B * !D * !X)	-0.00262	-0.00265	-0.00263
	(!A * !B * D * !X)	0.00515	0.00520	0.00517
	(!A * !B * D * !X)	-0.00260	-0.00263	-0.00260
	(!A * !B * !D * !X)	0.00395	0.00396	0.00395
	(!A * !B * !D * !X)	-0.00263	-0.00264	-0.00263

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)	-0.00017	-0.00018	-0.00019
	(A * B * !D * !X)	0.00233	0.00234	0.00227
	(A * !B * D * !X)	-0.00084	-0.00098	-0.00099
	(A * !B * D * !X)	0.00243	0.00229	0.00227
	(A * !B * !D * !X)	-0.00039	-0.00041	-0.00041
	(A * !B * !D * !X)	0.00233	0.00235	0.00227
	(!A * B * D * !X)	-0.00073	-0.00096	-0.00098
	(!A * B * D * !X)	0.00247	0.00230	0.00226
	(!A * B * !D * !X)	-0.00039	-0.00037	-0.00038
	(!A * B * !D * !X)	0.00237	0.00242	0.00230
	(!A * !B * D * !X)	-0.00095	-0.00101	-0.00101
	(!A * !B * D * !X)	0.00227	0.00225	0.00225
	(!A * !B * !D * !X)	-0.00045	-0.00047	-0.00044
	(!A * !B * !D * !X)	0.00230	0.00232	0.00228
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	0.00022	0.00021	0.00020
	(A * B * !D * !X)	0.00305	0.00307	0.00300
	(A * !B * D * !X)	-0.00056	-0.00073	-0.00074
	(A * !B * D * !X)	0.00314	0.00300	0.00299
	(A * !B * !D * !X)	-0.00009	-0.00009	-0.00010
	(A * !B * !D * !X)	0.00306	0.00308	0.00300
	(!A * B * D * !X)	-0.00045	-0.00071	-0.00072
	(!A * B * D * !X)	0.00317	0.00301	0.00298
	(!A * B * !D * !X)	-0.00006	-0.00004	-0.00006
	(!A * B * !D * !X)	0.00311	0.00316	0.00303
	(!A * !B * D * !X)	-0.00069	-0.00075	-0.00075
	(!A * !B * D * !X)	0.00299	0.00297	0.00297
	(!A * !B * !D * !X)	-0.00016	-0.00016	-0.00013
	(!A * !B * !D * !X)	0.00303	0.00305	0.00300

sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00002	-0.00001	-0.00005
	(A * B * !D * !X)	0.00625	0.00630	0.00615
	(A * !B * D * !X)	-0.00131	-0.00166	-0.00170
	(A * !B * D * !X)	0.00643	0.00619	0.00611
	(A * !B * !D * !X)	-0.00051	-0.00052	-0.00053
	(A * !B * !D * !X)	0.00629	0.00635	0.00617
	(!A * B * D * !X)	-0.00115	-0.00163	-0.00167
	(!A * B * D * !X)	0.00649	0.00623	0.00611
	(!A * B * !D * !X)	-0.00048	-0.00044	-0.00047
	(!A * B * !D * !X)	0.00637	0.00647	0.00622
	(!A * !B * D * !X)	-0.00157	-0.00172	-0.00173
	(!A * !B * D * !X)	0.00610	0.00611	0.00607
	(!A * !B * !D * !X)	-0.00065	-0.00066	-0.00059
	(!A * !B * !D * !X)	0.00621	0.00627	0.00617

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)**	0.00186	0.00187	0.00186
	(A * B * !C * !X)	-0.00154	-0.00155	-0.00154
	(A * !B * C * !X)	0.00182	0.00183	0.00183
	(A * !B * C * !X)	-0.00154	-0.00154	-0.00154
	(A * !B * !C * !X)	0.00183	0.00185	0.00184
	(A * !B * !C * !X)	-0.00154	-0.00156	-0.00155
	(!A * B * C * !X)	0.00180	0.00182	0.00181
	(!A * B * C * !X)	-0.00152	-0.00154	-0.00153
	(!A * !C * !X)	0.00183	0.00185	0.00184
	(!A * !C * !X)	-0.00154	-0.00156	-0.00155
	(!A * !B * C * !X)	0.00181	0.00182	0.00181
	(!A * !B * C * !X)	-0.00155	-0.00155	-0.00155

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00252	0.00254	0.00253
	(A * B * !C * !X)	-0.00129	-0.00131	-0.00129
	(A * !B * C * !X)	0.00249	0.00250	0.00249
	(A * !B * C * !X)	-0.00129	-0.00130	-0.00129
	(A * !B * !C * !X)	0.00251	0.00253	0.00251
	(A * !B * !C * !X)	-0.00130	-0.00131	-0.00130
	(!A * B * C * !X)	0.00246	0.00248	0.00247
	(!A * B * C * !X)	-0.00128	-0.00130	-0.00128
	(!A * !C * !X)	0.00251	0.00252	0.00251
	(!A * !C * !X)	-0.00130	-0.00130	-0.00130
	(!A * !B * C * !X)	0.00247	0.00248	0.00247
	(!A * !B * C * !X)	-0.00130	-0.00131	-0.00130
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00449	0.00452	0.00450
	(A * B * !C * !X)	-0.00250	-0.00252	-0.00251
	(A * !B * C * !X)	0.00448	0.00448	0.00448
	(A * !B * C * !X)	-0.00250	-0.00250	-0.00249
	(A * !B * !C * !X)	0.00445	0.00449	0.00447
	(A * !B * !C * !X)	-0.00250	-0.00253	-0.00251
	(!A * B * C * !X)	0.00445	0.00445	0.00445
	(!A * B * C * !X)	-0.00248	-0.00248	-0.00248
	(!A * !C * !X)	0.00444	0.00448	0.00446
	(!A * !C * !X)	-0.00250	-0.00253	-0.00251
	(!A * !B * C * !X)	0.00443	0.00446	0.00443
	(!A * !B * C * !X)	-0.00251	-0.00254	-0.00251

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)**	-0.00085	-0.00094	-0.00096
	(A * B * !C * !X)	0.00251	0.00245	0.00244
	(A * !B * C * !X)	-0.00080	-0.00093	-0.00094
	(A * !B * C * !X)	0.00250	0.00247	0.00244
	(A * !B * !C * !X)	-0.00093	-0.00096	-0.00097
	(A * !B * !C * !X)	0.00243	0.00242	0.00242
	(!A * B * C * !X)	-0.00076	-0.00092	-0.00094
	(!A * B * C * !X)	0.00252	0.00248	0.00244
	(!A * !C * !X)	-0.00093	-0.00096	-0.00097
	(!A * !C * !X)	0.00243	0.00242	0.00242
	(!A * !B * C * !X)	-0.00085	-0.00094	-0.00096
	(!A * !B * C * !X)	0.00242	0.00245	0.00242
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00067	-0.00075	-0.00077
	(A * B * !C * !X)	0.00309	0.00305	0.00305
	(A * !B * C * !X)	-0.00060	-0.00074	-0.00076
	(A * !B * C * !X)	0.00308	0.00307	0.00305
	(A * !B * !C * !X)	-0.00074	-0.00077	-0.00078
	(A * !B * !C * !X)	0.00304	0.00303	0.00303
	(!A * B * C * !X)	-0.00057	-0.00073	-0.00075
	(!A * B * C * !X)	0.00312	0.00308	0.00304
	(!A * !C * !X)	-0.00073	-0.00077	-0.00078
	(!A * !C * !X)	0.00304	0.00303	0.00303
	(!A * !B * C * !X)	-0.00065	-0.00075	-0.00077
	(!A * !B * C * !X)	0.00303	0.00305	0.00303

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00072	-0.00094	-0.00097
	(A * B * !C * !X)	0.00619	0.00608	0.00603
	(A * !B * C * !X)	-0.00065	-0.00096	-0.00099
	(A * !B * C * !X)	0.00617	0.00608	0.00601
	(A * !B * !C * !X)	-0.00092	-0.00101	-0.00102
	(A * !B * !C * !X)	0.00597	0.00600	0.00598
	(!A * B * C * !X)	-0.00057	-0.00092	-0.00098
	(!A * B * C * !X)	0.00622	0.00611	0.00602
	(!A * !C * !X)	-0.00090	-0.00100	-0.00101
	(!A * !C * !X)	0.00598	0.00600	0.00598
	(!A * !B * C * !X)	-0.00078	-0.00099	-0.00102
	(!A * !B * C * !X)	0.00598	0.00603	0.00598

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00259	1.28869
sky130_fd_sc_hs__buf_16	0.01701	19.51136
sky130_fd_sc_hs__buf_2	0.00280	2.29866
sky130_fd_sc_hs__buf_4	0.00385	4.83981
sky130_fd_sc_hs__buf_8	0.00870	9.13539
sky130_fd_sc_hs__bufbuf_16	0.00311	19.68832
sky130_fd_sc_hs__bufbuf_8	0.00242	9.39615

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	76.61230	102.56700
sky130_fd_sc_hs__buf_16	0.00000	561.65400	801.46300
sky130_fd_sc_hs__buf_2	0.00000	85.94160	101.10200
sky130_fd_sc_hs__buf_4	0.00000	203.76900	207.88100
sky130_fd_sc_hs__buf_8	0.00000	280.90200	400.77100
sky130_fd_sc_hs__bufbuf_16	0.00000	663.95400	951.69700
sky130_fd_sc_hs__bufbuf_8	0.00000	357.51900	451.38000

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)**	0.05346	0.51196	6.44706
sky130_fd_sc_hs__buf_16	**A->X (RR)**	0.05496	0.27069	6.41286
sky130_fd_sc_hs__buf_2	**A->X (RR)**	0.05644	0.42831	5.94770
sky130_fd_sc_hs__buf_4	**A->X (RR)**	0.06834	0.42490	6.88702
sky130_fd_sc_hs__buf_8	**A->X (RR)**	0.05514	0.31371	6.24653
sky130_fd_sc_hs__bufbuf_16	**A->X (RR)**	0.16088	0.38267	6.31759
sky130_fd_sc_hs__bufbuf_8	**A->X (RR)**	0.16665	0.40551	6.15628

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (FF)**	0.06059	0.43196	4.71982
sky130_fd_sc_hs__buf_16	**A->X (FF)**	0.07225	0.33837	4.97680
sky130_fd_sc_hs__buf_2	**A->X (FF)**	0.07064	0.41642	4.51063
sky130_fd_sc_hs__buf_4	**A->X (FF)**	0.07010	0.36670	4.47292
sky130_fd_sc_hs__buf_8	**A->X (FF)**	0.07306	0.36937	4.97480
sky130_fd_sc_hs__bufbuf_16	**A->X (FF)**	0.18408	0.45240	4.85194
sky130_fd_sc_hs__bufbuf_8	**A->X (FF)**	0.16604	0.42534	4.67513

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.01029	0.01562	0.09915
	A	0.00613	0.01145	0.09520
sky130_fd_sc_hs__buf_16	A	0.08802	0.13313	0.80423
	A	0.06048	0.10571	0.78112
sky130_fd_sc_hs__buf_2	A	0.01324	0.01846	0.09791
	A	0.00874	0.01400	0.09446
sky130_fd_sc_hs__buf_4	A	0.02457	0.03448	0.19633
	A	0.01835	0.02832	0.18992
sky130_fd_sc_hs__buf_8	A	0.04442	0.06518	0.39083
	A	0.03036	0.05116	0.37999
sky130_fd_sc_hs__bufbuf_16	A	0.10653	0.11853	0.27343
	A	0.10151	0.11383	0.27293
sky130_fd_sc_hs__bufbuf_8	A	0.05573	0.06269	0.17263
	A	0.05182	0.05882	0.17122

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00437	0.01097	0.10257
	A	0.00852	0.01505	0.10587
sky130_fd_sc_hs__buf_16	A	0.07179	0.11392	0.79402
	A	0.09925	0.14141	0.80250
sky130_fd_sc_hs__buf_2	A	0.00826	0.01458	0.10560
	A	0.01274	0.01904	0.11009
sky130_fd_sc_hs__buf_4	A	0.01778	0.02839	0.18459
	A	0.02399	0.03455	0.18754
sky130_fd_sc_hs__buf_8	A	0.03540	0.05598	0.38372
	A	0.04946	0.06998	0.39327
sky130_fd_sc_hs__bufbuf_16	A	0.11247	0.12040	0.26910
	A	0.11751	0.12533	0.26989
sky130_fd_sc_hs__bufbuf_8	A	0.05271	0.05935	0.16821
	A	0.05664	0.06307	0.17011

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00277	1.31122
sky130_fd_sc_hs__clkbuf_16	0.00943	19.66442
sky130_fd_sc_hs__clkbuf_2	0.00278	2.15727
sky130_fd_sc_hs__clkbuf_4	0.00257	4.84498
sky130_fd_sc_hs__clkbuf_8	0.00483	9.24620

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkbuf_1	0.00000	50.20310	50.20610
sky130_fd_sc_hs__clkbuf_16	0.00000	500.45200	794.25900
sky130_fd_sc_hs__clkbuf_2	0.00000	75.14810	99.60340
sky130_fd_sc_hs__clkbuf_4	0.00000	125.20100	198.61700
sky130_fd_sc_hs__clkbuf_8	0.00000	250.22800	397.11800

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)**	0.05745	0.54653	6.94063
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.07813	0.36845	7.08858
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.06412	0.48286	6.46329
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.08271	0.47234	7.03100
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.07785	0.40791	6.90959

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.05920	0.56987	7.18343
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.08644	0.40708	7.42608
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.06694	0.48542	6.21545
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.08606	0.50008	7.14541
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.08327	0.43805	7.02910

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00871	0.01356	0.09136
	A	0.00424	0.00911	0.08703
sky130_fd_sc_hs__clkbuf_16	A	0.07064	0.09122	0.44328
	A	0.05540	0.07612	0.42867
sky130_fd_sc_hs__clkbuf_2	A	0.01157	0.01573	0.08172
	A	0.00722	0.01138	0.07775
sky130_fd_sc_hs__clkbuf_4	A	0.01832	0.02286	0.10409
	A	0.01420	0.01882	0.09961
sky130_fd_sc_hs__clkbuf_8	A	0.03534	0.04539	0.21774
	A	0.02756	0.03772	0.20912

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00405	0.01017	0.09828
	A	0.00851	0.01463	0.10271
sky130_fd_sc_hs__clkbuf_16	A	0.06579	0.08644	0.43927
	A	0.08100	0.10149	0.45168
sky130_fd_sc_hs__clkbuf_2	A	0.00691	0.01236	0.09210
	A	0.01127	0.01661	0.09632
sky130_fd_sc_hs__clkbuf_4	A	0.01595	0.02120	0.10448
	A	0.02008	0.02523	0.10849
sky130_fd_sc_hs__clkbuf_8	A	0.03189	0.04240	0.21757
	A	0.03967	0.05016	0.22512

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00263	1.32241
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00266	1.32423
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00269	1.33454
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00262	1.31226
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00265	1.33103
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00269	1.32584

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	84.33200	99.81660
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	50.44790	99.58040
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	50.43040	99.58090
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	152.65100	168.14400
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	50.99430	100.13500
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	50.92190	100.10000

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)**	0.08847	0.58384	6.91874
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.09998	0.60208	6.90123
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.11620	0.63482	6.99271
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.16264	0.65646	6.93296
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.22609	0.73222	7.08205
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.36237	0.88438	7.24344

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.09358	0.58299	6.79697
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.12559	0.63960	6.98934
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.19124	0.74382	7.26425
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.16718	0.65316	6.78697
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.25486	0.77071	7.13389
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.45009	1.00311	7.49237

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00785	0.01467	0.11692
	A	0.01211	0.01896	0.12107
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00649	0.01266	0.11019
	A	0.01079	0.01701	0.11439
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00734	0.01280	0.10841
	A	0.01169	0.01715	0.11277
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01686	0.02352	0.12611
	A	0.02111	0.02773	0.13025
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01470	0.02058	0.11793
	A	0.01899	0.02486	0.12232
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01790	0.02297	0.11811
	A	0.02224	0.02733	0.12237

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.01249	0.01875	0.12133
	A	0.00823	0.01448	0.11700
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01325	0.01883	0.11538
	A	0.00895	0.01453	0.11103
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01542	0.02049	0.11535
	A	0.01107	0.01614	0.11088
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.02117	0.02725	0.13034
	A	0.01693	0.02302	0.12606
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.02125	0.02657	0.12297
	A	0.01695	0.02226	0.11863
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.02600	0.03071	0.12520
	A	0.02165	0.02637	0.12066

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00338	1.39237
sky130_fd_sc_hs__clkinv_16	0.05042	20.63811
sky130_fd_sc_hs__clkinv_2	0.00648	2.74074
sky130_fd_sc_hs__clkinv_4	0.01284	5.31128
sky130_fd_sc_hs__clkinv_8	0.02572	10.09893

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	101.13400	201.62800
sky130_fd_sc_hs__clkinv_16	0.00000	598.32600	1188.03000
sky130_fd_sc_hs__clkinv_2	0.00000	74.88620	148.60500
sky130_fd_sc_hs__clkinv_4	0.00000	149.61300	296.99000
sky130_fd_sc_hs__clkinv_8	0.00000	299.29400	593.95600

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)**	0.01939	0.54200	7.91054
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.01415	0.27673	7.83604
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.01810	0.48429	8.25905
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.01607	0.40559	8.14854
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.01641	0.34113	8.07153

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.02783	0.69514	10.20800
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.01969	0.36398	9.98687
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.02453	0.58759	10.09310
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.02164	0.50035	10.02990
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.02197	0.42599	9.87564

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00028	0.00319	0.03847
	A	0.00516	0.00868	0.04357
sky130_fd_sc_hs__clkinv_16	A	-0.01270	0.06297	0.46609
	A	0.06853	0.14425	0.55614
sky130_fd_sc_hs__clkinv_2	A	-0.00100	0.00532	0.05765
	A	0.00944	0.01580	0.06820
sky130_fd_sc_hs__clkinv_4	A	-0.00230	0.01257	0.12055
	A	0.01839	0.03363	0.14193
sky130_fd_sc_hs__clkinv_8	A	-0.00447	0.03017	0.26759
	A	0.03691	0.07199	0.31124

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00958	0.01153	0.03009
	A	0.00414	0.00605	0.02456
sky130_fd_sc_hs__clkinv_16	A	0.08805	0.14461	0.43578
	A	0.00689	0.06281	0.35411
sky130_fd_sc_hs__clkinv_2	A	0.01197	0.01642	0.05366
	A	0.00155	0.00589	0.04321
sky130_fd_sc_hs__clkinv_4	A	0.02253	0.03288	0.11067
	A	0.00185	0.01212	0.08982
sky130_fd_sc_hs__clkinv_8	A	0.04458	0.07028	0.24184
	A	0.00320	0.02836	0.20006

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

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

Leakage Information

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

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00165	1.31823
sky130_fd_sc_hs__dlymetal6s4s_1	0.00165	1.31875
sky130_fd_sc_hs__dlymetal6s6s_1	0.00165	1.31425

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	88.65120	150.60800
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	88.65120	150.60800
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	88.65120	150.60800

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)**	0.06374	0.50714	6.01023
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.12693	0.56665	5.91567
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.18313	0.62086	5.94911

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.08892	0.52955	5.36468
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.17596	0.60575	5.34028
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.25659	0.68793	5.40926

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02023	0.02466	0.11038
	A	0.01757	0.02201	0.10768
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02024	0.02604	0.13127
	A	0.01758	0.02339	0.12864
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02023	0.02349	0.07831
	A	0.01758	0.02085	0.07621

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01957	0.02310	0.08420
	A	0.02221	0.02575	0.08655
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01959	0.02432	0.10244
	A	0.02224	0.02696	0.10420
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01957	0.02295	0.07438
	A	0.02221	0.02560	0.07676

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT				OUTPUT	
D	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
0	**1**	**1**	**F**	**0**	**1**
1	**1**	**1**	**F**	**1**	**0**
x	**x**	**0**	**x**	**1**	**0**
x	**0**	**1**	**x**	**0**	**1**
x	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
sky130_fd_sc_hs__dfbbn_1	0.00179	0.00179	0.00561	0.00311	1.32276	1.21813
sky130_fd_sc_hs__dfbbn_2	0.00179	0.00181	0.00554	0.00311	2.46112	2.42884

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbn_1	0.00000	339.08300	573.22300
sky130_fd_sc_hs__dfbbn_2	0.00000	370.61200	590.84500

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)	0.34462	0.90569	7.82199
	SET_B->Q (FR)	0.16983	0.76654	7.90533
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.38375	0.84285	7.62921
	SET_B->Q (FR)	0.19349	0.70326	7.72374

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)	0.34923	0.74890	5.13454
	RESET_B->Q (FF)	0.22787	0.65885	5.17331
	SET_B->Q (RF)	0.14447	0.45864	3.56337
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.38551	0.72441	4.89394
	RESET_B->Q (FF)	0.26214	0.63486	4.96041
	SET_B->Q (RF)	0.17849	0.44870	3.42682

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)	0.31501	0.90302	7.83026
	RESET_B->Q_N (FR)	0.19459	0.81803	7.88493
	SET_B->Q_N (RR)	0.11082	0.62569	6.69505
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.32278	0.81654	7.70702
	RESET_B->Q_N (FR)	0.20091	0.73014	7.78719
	SET_B->Q_N (RR)	0.11678	0.54798	6.61142

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)	0.28195	0.72251	4.87251
	SET_B->Q_N (FF)	0.11326	0.58973	5.18853
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.30630	0.70981	4.80351
	SET_B->Q_N (FF)	0.12404	0.56941	5.14712

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)	-0.00548	0.02664	1.51827
	setup	CLK_N (F)	0.09509	0.04736	-1.49003
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00755	0.02609	1.52730
	setup	CLK_N (F)	0.08880	0.04548	-1.50070

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)	-0.12461	-0.18839	-0.94765
	setup	CLK_N (F)	0.14353	0.20500	0.95886
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12294	-0.19023	-0.95276
	setup	CLK_N (F)	0.14383	0.20500	0.95780

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)	-0.00548	0.02664	1.51827
	setup	CLK_N (F)	0.09509	0.04736	-1.49003
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00755	0.02609	1.52730
	setup	CLK_N (F)	0.08880	0.04548	-1.50070

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)	-0.12461	-0.18839	-0.94765
	setup	CLK_N (F)	0.14353	0.20500	0.95886
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12294	-0.19023	-0.95276
	setup	CLK_N (F)	0.14383	0.20500	0.95780

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)	0.08606	0.04285	-1.21747
	removal	CLK_N (F)	0.01495	0.05526	1.35828
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08180	0.03578	-1.22799
	removal	CLK_N (F)	0.01552	0.05545	1.36417

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)	0.08606	0.04285	-1.21747
	removal	CLK_N (F)	0.01495	0.05526	1.35828
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08180	0.03578	-1.22799
	removal	CLK_N (F)	0.01552	0.05545	1.36417

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 ()	0.19142	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17131	0.67139	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.20649	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17634	0.67139	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)	-0.01236	-0.07454	-0.76855
	removal	CLK_N (F)	0.02626	0.08597	1.27245
	hold	RESET_B (R)	-0.05711	-0.08671	-0.55660
	setup	RESET_B (R)	0.11094	0.13575	1.42416
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01289	-0.07536	-0.44991
	removal	CLK_N (F)	0.02626	0.08597	1.27539
	hold	RESET_B (R)	-0.07840	-0.11223	-0.69173
	setup	RESET_B (R)	0.12159	0.15771	2.29330

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)	-0.01236	-0.07454	-0.76855
	removal	CLK_N (F)	0.02626	0.08597	1.27245
	hold	RESET_B (R)	-0.05711	-0.08671	-0.55812
	hold	RESET_B (R)	-0.05816	-0.08823	-0.55660
	setup	RESET_B (R)	0.11094	0.13575	1.42416
	setup	RESET_B (R)	0.08640	0.11726	1.41175
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01289	-0.07536	-0.44991
	removal	CLK_N (F)	0.02626	0.08597	1.27539
	hold	RESET_B (R)	-0.07989	-0.12258	-0.69627
	hold	RESET_B (R)	-0.07840	-0.11223	-0.69173
	setup	RESET_B (R)	0.12159	0.15771	2.29330
	setup	RESET_B (R)	0.09267	0.14155	2.15593

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 ()	0.12608	0.67139	16.50020
	min_pulse_width	SET_B ()	0.11352	0.67139	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.14618	0.67139	16.50020
	min_pulse_width	SET_B ()	0.12859	0.67139	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 ()	0.15624	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.14367	0.67139	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.15121	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.14367	0.67139	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 ()	0.14618	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.17383	0.67139	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.16377	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.18388	0.67139	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	0.02045	0.02400	0.08918
	CLK_N	0.02291	0.02650	0.09082
	SET_B	0.02014	0.02610	0.13287
	SET_B	0.02472	0.03069	0.13670
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02599	0.02824	0.09435
	CLK_N	0.02849	0.03073	0.09527
	SET_B	0.02490	0.03030	0.13906
	SET_B	0.02949	0.03485	0.14183

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02112	0.02509	0.08723
	CLK_N	0.02340	0.02737	0.08948
	RESET_B	0.02273	0.02499	0.06325
	RESET_B	0.02408	0.02633	0.06426
	SET_B	0.02343	0.02739	0.13277
	SET_B	0.01884	0.02278	0.12794
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02551	0.02907	0.09227
	CLK_N	0.02776	0.03133	0.09358
	RESET_B	0.02724	0.02914	0.06873
	RESET_B	0.02858	0.03046	0.06904
	SET_B	0.02786	0.03147	0.13718
	SET_B	0.02328	0.02686	0.13229

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02370	0.02767	0.09114
	CLK_N	0.02598	0.02995	0.09259
	RESET_B	0.02423	0.02655	0.06570
	RESET_B	0.02557	0.02789	0.06625
	SET_B	0.02497	0.02898	0.13417
	SET_B	0.02038	0.02433	0.12950
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02850	0.03208	0.09629
	CLK_N	0.03076	0.03433	0.09710
	RESET_B	0.02909	0.03105	0.07151
	RESET_B	0.03043	0.03237	0.07134
	SET_B	0.02976	0.03343	0.13908
	SET_B	0.02517	0.02878	0.13425

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01858	0.02213	0.08655
	CLK_N	0.02104	0.02461	0.08860
	SET_B	0.01861	0.02458	0.13046
	SET_B	0.02319	0.02915	0.13461
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02403	0.02625	0.09075
	CLK_N	0.02652	0.02878	0.09262
	SET_B	0.02329	0.02864	0.13547
	SET_B	0.02787	0.03321	0.13939

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)	0.01442	0.01687	0.06604
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01205	0.01451	0.06366
	(CLK_N * !SET_B * Q * !Q_N)	0.01005	0.01209	0.05449
	(CLK_N * !SET_B * Q * !Q_N)	0.00712	0.00914	0.05156
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00936	0.01143	0.05358
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00647	0.00852	0.05069
	!CLK_N	0.00841	0.01081	0.05441
	!CLK_N	0.00552	0.00790	0.05152
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01491	0.01737	0.06659
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01252	0.01498	0.06419
	(CLK_N * !SET_B * Q * !Q_N)	0.01023	0.01227	0.05475
	(CLK_N * !SET_B * Q * !Q_N)	0.00729	0.00932	0.05181
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00979	0.01187	0.05410
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00689	0.00895	0.05120
	!CLK_N	0.00886	0.01127	0.05494
	!CLK_N	0.00596	0.00835	0.05204

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)	0.01607	0.01855	0.06476
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01845	0.02093	0.06714
	(CLK_N * !SET_B * Q * !Q_N)	0.00547	0.00769	0.04978
	(CLK_N * !SET_B * Q * !Q_N)	0.00842	0.01064	0.05272
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00648	0.00878	0.05125
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00938	0.01168	0.05415
	!CLK_N	0.00591	0.00852	0.05199
	!CLK_N	0.00881	0.01142	0.05489
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01649	0.01898	0.06524
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01889	0.02137	0.06762
	(CLK_N * !SET_B * Q * !Q_N)	0.00555	0.00778	0.04994
	(CLK_N * !SET_B * Q * !Q_N)	0.00850	0.01073	0.05288
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00691	0.00922	0.05176
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00981	0.01213	0.05466
	!CLK_N	0.00633	0.00895	0.05249
	!CLK_N	0.00923	0.01186	0.05539

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)	0.01595	0.01928	0.09218
	(CLK_N * D * SET_B * !Q * Q_N)	0.01308	0.01640	0.08931
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01217	0.01540	0.08205
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00879	0.01200	0.07866
	(!SET_B * Q * !Q_N)	0.01031	0.01376	0.08125
	(!SET_B * Q * !Q_N)	0.00685	0.01029	0.07779
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01645	0.01980	0.09302
	(CLK_N * D * SET_B * !Q * Q_N)	0.01353	0.01687	0.09011
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01262	0.01586	0.08288
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00919	0.01243	0.07945
	(!SET_B * Q * !Q_N)	0.01047	0.01394	0.08164
	(!SET_B * Q * !Q_N)	0.00697	0.01043	0.07814

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)	0.01481	0.01880	0.09104
	(CLK_N * D * SET_B * !Q * Q_N)	0.01767	0.02166	0.09391
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00663	0.01050	0.07870
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01001	0.01389	0.08209
	(!SET_B * Q * !Q_N)	0.00440	0.00831	0.07616
	(!SET_B * Q * !Q_N)	0.00788	0.01179	0.07963
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01531	0.01931	0.09187
	(CLK_N * D * SET_B * !Q * Q_N)	0.01822	0.02222	0.09479
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00712	0.01101	0.07955
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01054	0.01443	0.08298
	(!SET_B * Q * !Q_N)	0.00455	0.00848	0.07652
	(!SET_B * Q * !Q_N)	0.00807	0.01199	0.08003

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)	0.00616	0.00619	0.00615
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00191	-0.00192	-0.00188
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01702	0.02078	0.11106
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00830	0.01201	0.10232
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00628	0.00626	0.00627
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00173	-0.00171	-0.00171
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01717	0.02093	0.11114
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00852	0.01223	0.10247

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)	-0.00081	-0.00109	-0.00114
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00725	0.00698	0.00690
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00426	0.00963	0.10307
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01301	0.01840	0.11181
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00062	-0.00090	-0.00095
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00739	0.00711	0.00703
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00438	0.00974	0.10305
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01306	0.01845	0.11173

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)**	0.02483	0.03206	0.16005
	(D * RESET_B * SET_B * !Q * Q_N)	0.02060	0.02781	0.15581
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01632	0.02329	0.14897
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01157	0.01853	0.14421
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01970	0.02682	0.15376
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01495	0.02204	0.14899
	(!D * SET_B * !Q * Q_N)	0.01756	0.02450	0.15012
	(!D * SET_B * !Q * Q_N)	0.01281	0.01972	0.14535
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02826	0.03519	0.16286
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02300	0.02990	0.15758
	(!D * !SET_B * Q * !Q_N)	0.01706	0.02416	0.15261
	(!D * !SET_B * Q * !Q_N)	0.01235	0.01941	0.14788

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.02534	0.03258	0.16056
	(D * RESET_B * SET_B * !Q * Q_N)	0.02111	0.02831	0.15632
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01646	0.02344	0.14912
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01171	0.01867	0.14435
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02016	0.02729	0.15423
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01541	0.02251	0.14947
	(!D * SET_B * !Q * Q_N)	0.01803	0.02497	0.15059
	(!D * SET_B * !Q * Q_N)	0.01328	0.02019	0.14582
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02843	0.03536	0.16303
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02317	0.03007	0.15776
	(!D * !SET_B * Q * !Q_N)	0.01716	0.02426	0.15272
	(!D * !SET_B * Q * !Q_N)	0.01245	0.01951	0.14799

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)	0.01322	0.02100	0.14582
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01798	0.02577	0.15056
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01733	0.02503	0.14914
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02208	0.02979	0.15391
	(!D * SET_B * !Q * Q_N)	0.01572	0.02347	0.14824
	(!D * SET_B * !Q * Q_N)	0.02047	0.02823	0.15301
	(!D * !SET_B * Q * !Q_N)	0.01738	0.02525	0.15242
	(!D * !SET_B * Q * !Q_N)	0.02210	0.03000	0.15715
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01339	0.02116	0.14599
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01814	0.02594	0.15074
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01775	0.02544	0.14956
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02250	0.03021	0.15432
	(!D * SET_B * !Q * Q_N)	0.01616	0.02391	0.14869
	(!D * SET_B * !Q * Q_N)	0.02091	0.02866	0.15345
	(!D * !SET_B * Q * !Q_N)	0.01758	0.02545	0.15264
	(!D * !SET_B * Q * !Q_N)	0.02231	0.03018	0.15738

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT				OUTPUT	
D	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**1**	**R**	**0**	**1**
1	**1**	**1**	**R**	**1**	**0**
x	**x**	**0**	**x**	**1**	**0**
x	**0**	**1**	**x**	**0**	**1**
x	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfbbp_1	0.00158	0.00195	0.00643	0.00308	1.31354	1.18632

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbp_1	0.00000	338.88200	572.90300

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)	0.34070	0.80837	6.38161
	SET_B->Q (FR)	0.15516	0.74524	7.79104

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.27078	0.57821	3.69101
	RESET_B->Q (FF)	0.22158	0.64872	5.15865
	SET_B->Q (RF)	0.14649	0.45198	3.56447

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)	0.23814	0.72687	6.27971
	RESET_B->Q_N (FR)	0.18919	0.80499	7.76253
	SET_B->Q_N (RR)	0.11406	0.61653	6.57495

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)	0.27977	0.61976	3.36087
	SET_B->Q_N (FF)	0.10223	0.55834	4.99886

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)	-0.04102	-0.07023	-0.13796
	setup	CLK (R)	0.06663	0.08445	0.25322

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)	-0.07274	-0.16071	-1.23360
	setup	CLK (R)	0.12239	0.20569	2.80642

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)	-0.04102	-0.07023	-0.13796
	setup	CLK (R)	0.06663	0.08445	0.25322

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)	-0.07274	-0.16071	-1.23360
	setup	CLK (R)	0.12239	0.20569	2.80642

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)	0.06634	0.07172	1.53203
	removal	CLK (R)	-0.03274	-0.04048	-0.02043

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)	0.06634	0.07172	1.53203
	removal	CLK (R)	-0.03274	-0.04048	-0.02043

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 ()	0.16880	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17383	0.67139	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)	0.01317	0.00509	5.53008
	removal	CLK (R)	0.05053	0.07495	-0.00835
	hold	RESET_B (R)	-0.05869	-0.09317	-0.60852
	setup	RESET_B (R)	0.10252	0.13195	1.48837

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)	0.01317	0.00509	5.53008
	removal	CLK (R)	0.05053	0.07495	-0.00835
	hold	RESET_B (R)	-0.05869	-0.09317	-0.61324
	hold	RESET_B (R)	-0.06127	-0.09391	-0.60852
	setup	RESET_B (R)	0.09766	0.12990	1.48837
	setup	RESET_B (R)	0.10252	0.13195	1.47907

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 ()	0.10095	0.67139	16.50020
	min_pulse_width	SET_B ()	0.10849	0.67139	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 ()	0.10095	0.67139	16.50020
	min_pulse_width	CLK ()	0.11854	0.67139	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 ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.18890	0.67139	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	0.02291	0.02629	0.09115
	CLK	0.02051	0.02388	0.08840
	SET_B	0.01982	0.02612	0.13521
	SET_B	0.02483	0.03110	0.13932

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02218	0.02618	0.09407
	CLK	0.01956	0.02356	0.09138
	RESET_B	0.02116	0.02340	0.06178
	RESET_B	0.02254	0.02477	0.06282
	SET_B	0.02246	0.02631	0.13276
	SET_B	0.01748	0.02130	0.12755

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02471	0.02873	0.09773
	CLK	0.02210	0.02610	0.09478
	RESET_B	0.02263	0.02491	0.06427
	RESET_B	0.02401	0.02628	0.06482
	SET_B	0.02397	0.02789	0.13474
	SET_B	0.01899	0.02282	0.12960

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02101	0.02440	0.08843
	CLK	0.01861	0.02199	0.08592
	SET_B	0.01825	0.02457	0.13267
	SET_B	0.02326	0.02955	0.13719

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00709	0.01008	0.05504
	CLK	0.00454	0.00751	0.05249
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01375	0.01647	0.06653
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01144	0.01415	0.06422
	(!CLK * !SET_B * Q * !Q_N)	0.00895	0.01127	0.05481
	(!CLK * !SET_B * Q * !Q_N)	0.00611	0.00844	0.05197
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00812	0.01049	0.05380
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00531	0.00766	0.05098

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00420	0.00737	0.05230
	CLK	0.00675	0.00994	0.05485
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01334	0.01602	0.06345
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01564	0.01834	0.06576
	(!CLK * !SET_B * Q * !Q_N)	0.00446	0.00694	0.05025
	(!CLK * !SET_B * Q * !Q_N)	0.00730	0.00979	0.05309
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00553	0.00810	0.05180
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00835	0.01093	0.05462

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)	0.01165	0.01496	0.08195
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00845	0.01176	0.07875
	(!SET_B * Q * !Q_N)	0.01058	0.01411	0.08196
	(!SET_B * Q * !Q_N)	0.00731	0.01082	0.07869
	(!CLK * D * SET_B * !Q * Q_N)	0.01600	0.01936	0.09251
	(!CLK * D * SET_B * !Q * Q_N)	0.01331	0.01666	0.08982

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)	0.00665	0.01054	0.07904
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00985	0.01376	0.08225
	(!SET_B * Q * !Q_N)	0.00418	0.00813	0.07630
	(!SET_B * Q * !Q_N)	0.00747	0.01144	0.07959
	(!CLK * D * SET_B * !Q * Q_N)	0.01315	0.01719	0.08957
	(!CLK * D * SET_B * !Q * Q_N)	0.01584	0.01989	0.09226

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)	0.00662	0.00665	0.00661
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00251	-0.00252	-0.00249
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01509	0.01890	0.10911
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00531	0.00909	0.09932

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)	-0.00046	-0.00075	-0.00078
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00863	0.00842	0.00834
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00536	0.01078	0.10389
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01513	0.02061	0.11367

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)	0.01883	0.02608	0.15401
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01383	0.02104	0.14899
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02185	0.02920	0.16029
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01712	0.02446	0.15554
	(!D * SET_B * !Q * Q_N)	0.02063	0.02789	0.15609
	(!D * SET_B * !Q * Q_N)	0.01564	0.02286	0.15107
	(!D * !SET_B * Q * !Q_N)	0.02319	0.03049	0.15805
	(!D * !SET_B * Q * !Q_N)	0.01791	0.02519	0.15276

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)	0.01977	0.02799	0.15909
	(D * RESET_B * SET_B * !Q * Q_N)	0.02502	0.03324	0.16435
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01083	0.01884	0.14682
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01583	0.02384	0.15184
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01377	0.02193	0.15189
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01852	0.02670	0.15664
	(!D * SET_B * !Q * Q_N)	0.01275	0.02071	0.14827
	(!D * SET_B * !Q * Q_N)	0.01776	0.02574	0.15329
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02313	0.03129	0.16064
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02790	0.03609	0.16543
	(!D * !SET_B * Q * !Q_N)	0.01367	0.02196	0.15157
	(!D * !SET_B * Q * !Q_N)	0.01895	0.02728	0.15687

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	RESET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfrbp_1	0.00186	0.00578	0.00314	1.34537	1.33115
sky130_fd_sc_hs__dfrbp_2	0.00171	0.00557	0.00314	2.62266	2.57313

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	212.57800	357.11300
sky130_fd_sc_hs__dfrbp_2	0.00000	253.09100	374.62800

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)	0.21047	0.67578	6.29871
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.24961	0.63509	6.69773

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.20227	0.50389	3.49402
	RESET_B->Q (FF)	0.27799	0.73451	5.49254
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.22885	0.48590	3.60468
	RESET_B->Q (FF)	0.32608	0.74591	5.67091

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)	0.16874	0.65815	6.34228
	RESET_B->Q_N (FR)	0.24386	0.88368	8.32676
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.16350	0.56354	6.15933
	RESET_B->Q_N (FR)	0.26116	0.82065	8.21779

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)	0.16273	0.51378	3.51290
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.16716	0.49652	3.53768

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)	-0.06139	-0.12920	-0.65388
	setup	CLK (R)	0.11997	0.17058	0.80907
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05696	-0.12864	-0.67630
	setup	CLK (R)	0.13612	0.18468	0.89177

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)	-0.05595	-0.14943	-1.39575
	setup	CLK (R)	0.12898	0.22800	2.15597
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06805	-0.16794	-1.76053
	setup	CLK (R)	0.14608	0.24500	2.16435

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)	-0.06139	-0.12920	-0.65388
	setup	CLK (R)	0.11997	0.17058	0.80907
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05696	-0.12864	-0.67630
	setup	CLK (R)	0.13612	0.18468	0.89177

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)	-0.05595	-0.14943	-1.39575
	setup	CLK (R)	0.12898	0.22800	2.15597
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06805	-0.16794	-1.76053
	setup	CLK (R)	0.14608	0.24500	2.16435

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)	0.12908	0.16650	1.31745
	removal	CLK (R)	-0.10144	-0.15011	-1.16129
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.14698	0.17662	1.35245
	removal	CLK (R)	-0.10949	-0.15685	-1.16762

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)	0.12908	0.16650	1.31745
	removal	CLK (R)	-0.10144	-0.15011	-1.16129
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.14698	0.17662	1.35245
	removal	CLK (R)	-0.10949	-0.15685	-1.16762

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 ()	0.13362	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.11603	0.67139	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.14618	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.13111	0.67139	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 ()	0.11854	0.67139	16.50020
	min_pulse_width	CLK ()	0.08336	0.67139	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.15624	0.67139	16.50020
	min_pulse_width	CLK ()	0.09844	0.67139	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 ()	0.15372	0.67139	16.50020
	min_pulse_width	CLK ()	0.17383	0.67139	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.17885	0.67139	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	0.02068	0.02377	0.08904
	CLK	0.01816	0.02122	0.08609
sky130_fd_sc_hs__dfrbp_2	CLK	0.02520	0.02703	0.09139
	CLK	0.02271	0.02450	0.08886

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01855	0.02213	0.08578
	CLK	0.01597	0.01955	0.08288
	RESET_B	0.01493	0.01857	0.07497
	RESET_B	0.01988	0.02350	0.07949
sky130_fd_sc_hs__dfrbp_2	CLK	0.02214	0.02561	0.08901
	CLK	0.01966	0.02302	0.08604
	RESET_B	0.01981	0.02314	0.07943
	RESET_B	0.02442	0.02773	0.08384

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01950	0.02307	0.08720
	CLK	0.01692	0.02050	0.08425
	RESET_B	0.01587	0.01951	0.07581
	RESET_B	0.02082	0.02444	0.08067
sky130_fd_sc_hs__dfrbp_2	CLK	0.02332	0.02663	0.09100
	CLK	0.02084	0.02416	0.08781
	RESET_B	0.02096	0.02430	0.08158
	RESET_B	0.02558	0.02890	0.08551

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01936	0.02246	0.08713
	CLK	0.01684	0.01989	0.08430
sky130_fd_sc_hs__dfrbp_2	CLK	0.02367	0.02547	0.08943
	CLK	0.02119	0.02296	0.08673

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00633	0.00857	0.04944
	(CLK * RESET_B)	0.00303	0.00526	0.04614
	(CLK * !RESET_B)	0.00196	0.00195	0.00194
	(CLK * !RESET_B)	0.00006	0.00006	0.00004
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01462	0.01750	0.06869
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01118	0.01405	0.06524
	(!CLK * !RESET_B)	0.00199	0.00199	0.00198
	(!CLK * !RESET_B)	0.00010	0.00010	0.00008
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00711	0.00921	0.04981
	(CLK * RESET_B)	0.00421	0.00631	0.04691
	(CLK * !RESET_B)	0.00247	0.00247	0.00246
	(CLK * !RESET_B)	0.00072	0.00071	0.00069
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01738	0.02017	0.07119
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01466	0.01745	0.06846
	(!CLK * !RESET_B)	0.00250	0.00251	0.00249
	(!CLK * !RESET_B)	0.00076	0.00074	0.00073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00270	0.00515	0.04602
	(CLK * RESET_B)	0.00599	0.00845	0.04931
	(CLK * !RESET_B)	0.00109	0.00109	0.00109
	(CLK * !RESET_B)	0.00299	0.00299	0.00299
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01197	0.01507	0.06412
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01542	0.01852	0.06757
	(!CLK * !RESET_B)	0.00112	0.00112	0.00113
	(!CLK * !RESET_B)	0.00303	0.00305	0.00302
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00323	0.00559	0.04618
	(CLK * RESET_B)	0.00613	0.00849	0.04907
	(CLK * !RESET_B)	0.00148	0.00149	0.00149
	(CLK * !RESET_B)	0.00325	0.00325	0.00325
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01357	0.01645	0.06429
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01630	0.01917	0.06701
	(!CLK * !RESET_B)	0.00152	0.00151	0.00152
	(!CLK * !RESET_B)	0.00329	0.00330	0.00328

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)	0.00959	0.01155	0.05252
	(CLK * D * !Q * Q_N)	-0.00008	0.00185	0.04288
	(CLK * !D * !Q * Q_N)	0.00529	0.00531	0.00529
	(CLK * !D * !Q * Q_N)	-0.00281	-0.00282	-0.00280
	(!CLK * D * !Q * Q_N)	0.01835	0.02130	0.09160
	(!CLK * D * !Q * Q_N)	0.00855	0.01144	0.08179
	(!CLK * !D * !Q * Q_N)	0.00523	0.00525	0.00523
	(!CLK * !D * !Q * Q_N)	-0.00286	-0.00287	-0.00286
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.01100	0.01291	0.05390
	(CLK * D * !Q * Q_N)	0.00175	0.00361	0.04463
	(CLK * !D * !Q * Q_N)	0.00607	0.00612	0.00608
	(CLK * !D * !Q * Q_N)	-0.00186	-0.00189	-0.00186
	(!CLK * D * !Q * Q_N)	0.02167	0.02445	0.09407
	(!CLK * D * !Q * Q_N)	0.01262	0.01534	0.08501
	(!CLK * !D * !Q * Q_N)	0.00605	0.00608	0.00605
	(!CLK * !D * !Q * Q_N)	-0.00189	-0.00190	-0.00188

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)	-0.00046	0.00188	0.04300
	(CLK * D * !Q * Q_N)	0.00922	0.01161	0.05267
	(CLK * !D * !Q * Q_N)	-0.00201	-0.00221	-0.00223
	(CLK * !D * !Q * Q_N)	0.00608	0.00595	0.00587
	(!CLK * D * !Q * Q_N)	0.00779	0.01146	0.08351
	(!CLK * D * !Q * Q_N)	0.01760	0.02133	0.09332
	(!CLK * !D * !Q * Q_N)	-0.00194	-0.00210	-0.00211
	(!CLK * !D * !Q * Q_N)	0.00615	0.00605	0.00599
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00006	0.00228	0.04355
	(CLK * D * !Q * Q_N)	0.00919	0.01160	0.05276
	(CLK * !D * !Q * Q_N)	-0.00190	-0.00209	-0.00211
	(CLK * !D * !Q * Q_N)	0.00603	0.00590	0.00583
	(!CLK * D * !Q * Q_N)	0.00947	0.01293	0.08355
	(!CLK * D * !Q * Q_N)	0.01853	0.02206	0.09261
	(!CLK * !D * !Q * Q_N)	-0.00184	-0.00201	-0.00202
	(!CLK * !D * !Q * Q_N)	0.00608	0.00598	0.00592

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)	0.01760	0.02409	0.14595
	(D * RESET_B * Q * !Q_N)	0.01251	0.01898	0.14084
	(D * !RESET_B * !Q * Q_N)	0.01723	0.02369	0.14558
	(D * !RESET_B * !Q * Q_N)	0.01214	0.01859	0.14048
	(!D * !Q * Q_N)	0.01724	0.02368	0.14559
	(!D * !Q * Q_N)	0.01214	0.01859	0.14050
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01643	0.02303	0.14440
	(D * RESET_B * Q * !Q_N)	0.01145	0.01803	0.13941
	(D * !RESET_B * !Q * Q_N)	0.01598	0.02258	0.14393
	(D * !RESET_B * !Q * Q_N)	0.01101	0.01759	0.13895
	(!D * !Q * Q_N)	0.01598	0.02258	0.14394
	(!D * !Q * Q_N)	0.01102	0.01759	0.13897

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)	0.01056	0.01813	0.13997
	(D * RESET_B * Q * !Q_N)	0.01564	0.02324	0.14508
	(D * RESET_B * !Q * Q_N)	0.01771	0.02554	0.15168
	(D * RESET_B * !Q * Q_N)	0.02265	0.03049	0.15664
	(D * !RESET_B * !Q * Q_N)	0.00942	0.01700	0.13890
	(D * !RESET_B * !Q * Q_N)	0.01451	0.02212	0.14401
	(!D * RESET_B * Q * !Q_N)	0.02072	0.02849	0.15257
	(!D * RESET_B * Q * !Q_N)	0.02595	0.03376	0.15782
	(!D * !Q * Q_N)	0.00942	0.01701	0.13893
	(!D * !Q * Q_N)	0.01451	0.02213	0.14404
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01078	0.01829	0.13954
	(D * RESET_B * Q * !Q_N)	0.01574	0.02328	0.14453
	(D * RESET_B * !Q * Q_N)	0.02140	0.02906	0.15387
	(D * RESET_B * !Q * Q_N)	0.02651	0.03419	0.15900
	(D * !RESET_B * !Q * Q_N)	0.01042	0.01796	0.13944
	(D * !RESET_B * !Q * Q_N)	0.01539	0.02296	0.14441
	(!D * RESET_B * Q * !Q_N)	0.02216	0.02982	0.15376
	(!D * RESET_B * Q * !Q_N)	0.02696	0.03465	0.15857
	(!D * !Q * Q_N)	0.01042	0.01797	0.13947
	(!D * !Q * Q_N)	0.01539	0.02296	0.14446

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	**RESET_B**	**CLK_N**	**Q**
0	**1**	**F**	**0**
1	**1**	**F**	**1**
x	**0**	**x**	**0**
x	**1**	**x**	**IQ**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**RESET_B**	**CLK_N**	**Q**
sky130_fd_sc_hs__dfrtn_1	0.00183	0.00555	0.00301	1.28180

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtn_1	0.00000	194.75400	306.76300

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)	0.22104	0.79630	7.76726

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)	0.18412	0.57967	4.80263
	RESET_B->Q (FF)	0.25365	0.70186	5.28233

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)	0.00014	0.02074	1.16209
	setup	CLK_N (F)	0.07947	0.05442	-1.09032

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)	-0.06060	-0.11926	-0.57828
	setup	CLK_N (F)	0.16124	0.20892	0.62933

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)	0.00014	0.02074	1.16209
	setup	CLK_N (F)	0.07947	0.05442	-1.09032

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)	-0.06060	-0.11926	-0.57828
	setup	CLK_N (F)	0.16124	0.20892	0.62933

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)	0.08691	0.04570	-0.77782
	removal	CLK_N (F)	-0.05804	-0.02393	0.78717

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)	0.08691	0.04570	-0.77782
	removal	CLK_N (F)	-0.05804	-0.02393	0.78717

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 ()	0.10346	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.13362	0.67139	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 ()	0.12608	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.17383	0.67139	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 ()	0.12105	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.11352	0.67139	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	0.03157	0.03963	0.16608
	CLK_N	0.03635	0.04444	0.17132

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.02687	0.03491	0.16465
	CLK_N	0.03153	0.03956	0.16821
	RESET_B	0.02642	0.03375	0.14517
	RESET_B	0.03564	0.04291	0.15397

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)	0.01411	0.01700	0.06815
	(CLK_N * RESET_B)	0.01107	0.01395	0.06511
	(CLK_N * !RESET_B)	0.00198	0.00198	0.00197
	(CLK_N * !RESET_B)	0.00010	0.00010	0.00008
	(!CLK_N * RESET_B)	0.00578	0.00802	0.04889
	(!CLK_N * RESET_B)	0.00266	0.00489	0.04577
	(!CLK_N * !RESET_B)	0.00195	0.00195	0.00193
	(!CLK_N * !RESET_B)	0.00007	0.00006	0.00004

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)	0.01272	0.01564	0.06475
	(CLK_N * RESET_B)	0.01576	0.01869	0.06778
	(CLK_N * !RESET_B)	0.00110	0.00110	0.00111
	(CLK_N * !RESET_B)	0.00300	0.00302	0.00300
	(!CLK_N * RESET_B)	0.00236	0.00481	0.04567
	(!CLK_N * RESET_B)	0.00549	0.00795	0.04880
	(!CLK_N * !RESET_B)	0.00108	0.00107	0.00108
	(!CLK_N * !RESET_B)	0.00296	0.00297	0.00296

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)	0.01822	0.02124	0.09148
	(CLK_N * D * !Q)	0.00910	0.01205	0.08233
	(CLK_N * !D * !Q)	0.00550	0.00551	0.00550
	(CLK_N * !D * !Q)	-0.00233	-0.00234	-0.00233
	(!CLK_N * D * !Q)	0.00924	0.01125	0.05221
	(!CLK_N * D * !Q)	0.00000	0.00196	0.04294
	(!CLK_N * !D * !Q)	0.00537	0.00539	0.00538
	(!CLK_N * !D * !Q)	-0.00245	-0.00246	-0.00245

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)	0.00876	0.01227	0.08447
	(CLK_N * D * !Q)	0.01789	0.02147	0.09363
	(CLK_N * !D * !Q)	-0.00223	-0.00239	-0.00241
	(CLK_N * !D * !Q)	0.00558	0.00548	0.00543
	(!CLK_N * D * !Q)	-0.00025	0.00214	0.04323
	(!CLK_N * D * !Q)	0.00899	0.01142	0.05248
	(!CLK_N * !D * !Q)	-0.00211	-0.00233	-0.00235
	(!CLK_N * !D * !Q)	0.00569	0.00554	0.00549

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)	0.01637	0.02320	0.14781
	(D * RESET_B * Q)	0.01165	0.01846	0.14306
	(D * RESET_B * !Q)	0.02512	0.03214	0.15915
	(D * RESET_B * !Q)	0.02049	0.02748	0.15452
	(D * !RESET_B * !Q)	0.01600	0.02284	0.14755
	(D * !RESET_B * !Q)	0.01128	0.01808	0.14283
	(!D * RESET_B * Q)	0.02617	0.03294	0.16091
	(!D * RESET_B * Q)	0.02136	0.02810	0.15608
	(!D * !Q)	0.01600	0.02279	0.14742
	(!D * !Q)	0.01127	0.01805	0.14268

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)	0.01234	0.01990	0.14355
	(D * RESET_B * Q)	0.01706	0.02466	0.14829
	(D * !RESET_B * !Q)	0.01212	0.01969	0.14353
	(D * !RESET_B * !Q)	0.01685	0.02444	0.14827
	(!D * !Q)	0.01211	0.01968	0.14332
	(!D * !Q)	0.01683	0.02442	0.14806

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00184	0.00576	0.00316	1.34247
sky130_fd_sc_hs__dfrtp_2	0.00183	0.00566	0.00314	2.52505
sky130_fd_sc_hs__dfrtp_4	0.00184	0.00585	0.00314	5.06283

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	194.72600	306.63200
sky130_fd_sc_hs__dfrtp_2	0.00000	228.55000	308.11700
sky130_fd_sc_hs__dfrtp_4	0.00000	329.34300	412.65200

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)**	0.18301	0.64744	6.21821
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RR)**	0.18111	0.55122	6.04682
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RR)**	0.23611	0.54774	6.23204

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RF)**	0.19185	0.49376	3.48094
	RESET_B->Q (FF)	0.25957	0.71618	5.46642
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RF)**	0.21183	0.46648	3.29998
	RESET_B->Q (FF)	0.27808	0.68695	5.28320
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RF)**	0.21348	0.43756	3.52915
	RESET_B->Q (FF)	0.28712	0.66426	5.51423

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)	-0.06668	-0.13703	-0.67955
	setup	CLK (R)	0.13415	0.18212	0.82057
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06642	-0.13490	-0.67088
	setup	CLK (R)	0.13043	0.18165	0.81967
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06707	-0.13515	-0.66386
	setup	CLK (R)	0.13475	0.18108	0.86023

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)	-0.05319	-0.14586	-1.51353
	setup	CLK (R)	0.12565	0.22354	2.14478
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05390	-0.14232	-1.50444
	setup	CLK (R)	0.12459	0.22586	2.15507
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05981	-0.15291	-1.20059
	setup	CLK (R)	0.13672	0.23174	2.16142

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)	-0.06668	-0.13703	-0.67955
	setup	CLK (R)	0.13415	0.18212	0.82057
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06642	-0.13490	-0.67088
	setup	CLK (R)	0.13043	0.18165	0.81967
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06707	-0.13515	-0.66386
	setup	CLK (R)	0.13475	0.18108	0.86023

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)	-0.05319	-0.14586	-1.51353
	setup	CLK (R)	0.12565	0.22354	2.14478
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05390	-0.14232	-1.50444
	setup	CLK (R)	0.12459	0.22586	2.15507
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05981	-0.15291	-1.20059
	setup	CLK (R)	0.13672	0.23174	2.16142

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)	0.14369	0.17637	1.30355
	removal	CLK (R)	-0.10343	-0.15126	-1.17176
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.14196	0.17609	1.30491
	removal	CLK (R)	-0.10221	-0.15011	-1.16823
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.14504	0.17584	1.37317
	removal	CLK (R)	-0.10632	-0.15343	-1.16687

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)	0.14369	0.17637	1.30355
	removal	CLK (R)	-0.10343	-0.15126	-1.17176
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.14196	0.17609	1.30491
	removal	CLK (R)	-0.10221	-0.15011	-1.16823
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.14504	0.17584	1.37317
	removal	CLK (R)	-0.10632	-0.15343	-1.16687

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 ()	0.13111	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.10598	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.13362	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.10849	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.13864	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.11100	0.67139	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 ()	0.09090	0.67139	16.50020
	min_pulse_width	CLK ()	0.07582	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.07833	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.12608	0.67139	16.50020
	min_pulse_width	CLK ()	0.08336	0.67139	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 ()	0.16880	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.16629	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.17634	0.67139	16.50020
	min_pulse_width	CLK ()	0.18388	0.67139	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	0.03500	0.04216	0.17239
	CLK	0.02996	0.03727	0.16770
sky130_fd_sc_hs__dfrtp_2	CLK	0.03850	0.04573	0.17620
	CLK	0.03348	0.04075	0.17189
sky130_fd_sc_hs__dfrtp_4	CLK	0.05173	0.05822	0.18846
	CLK	0.04653	0.05305	0.18510

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.03449	0.04172	0.16889
	CLK	0.02918	0.03643	0.16264
	RESET_B	0.02677	0.03423	0.14633
	RESET_B	0.03660	0.04402	0.15540
sky130_fd_sc_hs__dfrtp_2	CLK	0.03843	0.04526	0.17145
	CLK	0.03316	0.03988	0.16536
	RESET_B	0.03091	0.03789	0.15105
	RESET_B	0.04060	0.04750	0.15857
sky130_fd_sc_hs__dfrtp_4	CLK	0.05111	0.05764	0.18564
	CLK	0.04566	0.05202	0.17791
	RESET_B	0.04311	0.04982	0.16176
	RESET_B	0.05308	0.05972	0.17096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00585	0.00810	0.04898
	(CLK * RESET_B)	0.00258	0.00482	0.04571
	(CLK * !RESET_B)	0.00193	0.00193	0.00192
	(CLK * !RESET_B)	0.00008	0.00008	0.00005
	(!CLK * RESET_B)	0.01452	0.01743	0.06891
	(!CLK * RESET_B)	0.01106	0.01396	0.06545
	(!CLK * !RESET_B)	0.00196	0.00196	0.00195
	(!CLK * !RESET_B)	0.00012	0.00012	0.00009
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00576	0.00802	0.04894
	(CLK * RESET_B)	0.00253	0.00478	0.04571
	(CLK * !RESET_B)	0.00237	0.00237	0.00235
	(CLK * !RESET_B)	0.00051	0.00051	0.00049
	(!CLK * RESET_B)	0.01409	0.01703	0.06866
	(!CLK * RESET_B)	0.01070	0.01363	0.06527
	(!CLK * !RESET_B)	0.00240	0.00240	0.00239
	(!CLK * !RESET_B)	0.00055	0.00055	0.00052
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00679	0.00903	0.04990
	(CLK * RESET_B)	0.00353	0.00576	0.04663
	(CLK * !RESET_B)	0.00324	0.00324	0.00322
	(CLK * !RESET_B)	0.00137	0.00136	0.00134
	(!CLK * RESET_B)	0.01651	0.01925	0.07028
	(!CLK * RESET_B)	0.01306	0.01579	0.06683
	(!CLK * !RESET_B)	0.00327	0.00327	0.00326
	(!CLK * !RESET_B)	0.00141	0.00141	0.00138

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00224	0.00471	0.04558
	(CLK * RESET_B)	0.00552	0.00799	0.04886
	(CLK * !RESET_B)	0.00108	0.00109	0.00109
	(CLK * !RESET_B)	0.00295	0.00295	0.00295
	(!CLK * RESET_B)	0.01199	0.01510	0.06444
	(!CLK * RESET_B)	0.01546	0.01856	0.06789
	(!CLK * !RESET_B)	0.00112	0.00111	0.00112
	(!CLK * !RESET_B)	0.00299	0.00301	0.00299
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00226	0.00474	0.04564
	(CLK * RESET_B)	0.00549	0.00798	0.04887
	(CLK * !RESET_B)	0.00152	0.00152	0.00152
	(CLK * !RESET_B)	0.00339	0.00339	0.00339
	(!CLK * RESET_B)	0.01205	0.01518	0.06461
	(!CLK * RESET_B)	0.01544	0.01857	0.06798
	(!CLK * !RESET_B)	0.00155	0.00155	0.00156
	(!CLK * !RESET_B)	0.00343	0.00345	0.00342
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00317	0.00563	0.04648
	(CLK * RESET_B)	0.00644	0.00890	0.04975
	(CLK * !RESET_B)	0.00237	0.00238	0.00238
	(CLK * !RESET_B)	0.00426	0.00426	0.00426
	(!CLK * RESET_B)	0.01307	0.01608	0.06509
	(!CLK * RESET_B)	0.01653	0.01954	0.06854
	(!CLK * !RESET_B)	0.00241	0.00240	0.00241
	(!CLK * !RESET_B)	0.00430	0.00432	0.00429

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)	0.00955	0.01151	0.05250
	(CLK * D * !Q)	-0.00010	0.00183	0.04287
	(CLK * !D * !Q)	0.00526	0.00529	0.00527
	(CLK * !D * !Q)	-0.00279	-0.00281	-0.00279
	(!CLK * D * !Q)	0.01872	0.02173	0.09229
	(!CLK * D * !Q)	0.00891	0.01185	0.08245
	(!CLK * !D * !Q)	0.00516	0.00519	0.00517
	(!CLK * !D * !Q)	-0.00289	-0.00291	-0.00289
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00983	0.01182	0.05283
	(CLK * D * !Q)	0.00031	0.00226	0.04333
	(CLK * !D * !Q)	0.00567	0.00569	0.00568
	(CLK * !D * !Q)	-0.00230	-0.00231	-0.00230
	(!CLK * D * !Q)	0.01863	0.02169	0.09237
	(!CLK * D * !Q)	0.00898	0.01197	0.08272
	(!CLK * !D * !Q)	0.00558	0.00560	0.00559
	(!CLK * !D * !Q)	-0.00239	-0.00240	-0.00239
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.01105	0.01301	0.05398
	(CLK * D * !Q)	0.00128	0.00321	0.04423
	(CLK * !D * !Q)	0.00677	0.00679	0.00678
	(CLK * !D * !Q)	-0.00144	-0.00145	-0.00144
	(!CLK * D * !Q)	0.02098	0.02388	0.09396
	(!CLK * D * !Q)	0.01105	0.01388	0.08400
	(!CLK * !D * !Q)	0.00648	0.00650	0.00649
	(!CLK * !D * !Q)	-0.00172	-0.00173	-0.00172

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)	-0.00048	0.00186	0.04298
	(CLK * D * !Q)	0.00917	0.01157	0.05263
	(CLK * !D * !Q)	-0.00201	-0.00222	-0.00224
	(CLK * !D * !Q)	0.00605	0.00591	0.00583
	(!CLK * D * !Q)	0.00803	0.01170	0.08405
	(!CLK * D * !Q)	0.01787	0.02158	0.09388
	(!CLK * !D * !Q)	-0.00191	-0.00207	-0.00208
	(!CLK * !D * !Q)	0.00615	0.00606	0.00599
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00001	0.00231	0.04349
	(CLK * D * !Q)	0.00951	0.01190	0.05301
	(CLK * !D * !Q)	-0.00155	-0.00175	-0.00177
	(CLK * !D * !Q)	0.00642	0.00628	0.00621
	(!CLK * D * !Q)	0.00851	0.01229	0.08468
	(!CLK * D * !Q)	0.01818	0.02195	0.09435
	(!CLK * !D * !Q)	-0.00145	-0.00161	-0.00163
	(!CLK * !D * !Q)	0.00651	0.00642	0.00636
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00063	0.00297	0.04407
	(CLK * D * !Q)	0.01040	0.01280	0.05384
	(CLK * !D * !Q)	-0.00092	-0.00113	-0.00114
	(CLK * !D * !Q)	0.00728	0.00714	0.00707
	(!CLK * D * !Q)	0.00966	0.01325	0.08516
	(!CLK * D * !Q)	0.01961	0.02322	0.09510
	(!CLK * !D * !Q)	-0.00063	-0.00079	-0.00080
	(!CLK * !D * !Q)	0.00757	0.00748	0.00741

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)	0.01766	0.02408	0.14589
	(D * RESET_B * Q)	0.01250	0.01889	0.14072
	(D * !RESET_B * !Q)	0.01791	0.02429	0.14610
	(D * !RESET_B * !Q)	0.01275	0.01911	0.14095
	(!D * !Q)	0.01791	0.02430	0.14613
	(!D * !Q)	0.01275	0.01911	0.14096
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01758	0.02401	0.14580
	(D * RESET_B * Q)	0.01245	0.01885	0.14066
	(D * !RESET_B * !Q)	0.01825	0.02465	0.14643
	(D * !RESET_B * !Q)	0.01312	0.01949	0.14131
	(!D * !Q)	0.01825	0.02465	0.14647
	(!D * !Q)	0.01312	0.01949	0.14132
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01933	0.02570	0.14724
	(D * RESET_B * Q)	0.01402	0.02036	0.14191
	(D * !RESET_B * !Q)	0.01983	0.02617	0.14771
	(D * !RESET_B * !Q)	0.01452	0.02083	0.14238
	(!D * !Q)	0.01984	0.02617	0.14773
	(!D * !Q)	0.01453	0.02083	0.14240

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)**	0.01017	0.01775	0.13948
	(D * RESET_B * Q)	0.01532	0.02291	0.14465
	(D * RESET_B * !Q)	0.01814	0.02593	0.15202
	(D * RESET_B * !Q)	0.02311	0.03092	0.15700
	(D * !RESET_B * !Q)	0.00937	0.01694	0.13870
	(D * !RESET_B * !Q)	0.01452	0.02213	0.14388
	(!D * RESET_B * Q)	0.02081	0.02855	0.15249
	(!D * RESET_B * Q)	0.02615	0.03392	0.15783
	(!D * !Q)	0.00937	0.01695	0.13873
	(!D * !Q)	0.01452	0.02213	0.14391
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.01021	0.01775	0.13951
	(D * RESET_B * Q)	0.01533	0.02291	0.14466
	(D * RESET_B * !Q)	0.01825	0.02605	0.15218
	(D * RESET_B * !Q)	0.02322	0.03105	0.15717
	(D * !RESET_B * !Q)	0.00983	0.01737	0.13916
	(D * !RESET_B * !Q)	0.01496	0.02253	0.14431
	(!D * RESET_B * Q)	0.02089	0.02862	0.15256
	(!D * RESET_B * Q)	0.02617	0.03393	0.15786
	(!D * !Q)	0.00983	0.01738	0.13919
	(!D * !Q)	0.01496	0.02254	0.14434
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.01143	0.01892	0.14048
	(D * RESET_B * Q)	0.01673	0.02426	0.14580
	(D * RESET_B * !Q)	0.02100	0.02869	0.15432
	(D * RESET_B * !Q)	0.02612	0.03384	0.15946
	(D * !RESET_B * !Q)	0.01113	0.01862	0.14006
	(D * !RESET_B * !Q)	0.01644	0.02395	0.14539
	(!D * RESET_B * Q)	0.02212	0.02985	0.15372
	(!D * RESET_B * Q)	0.02761	0.03535	0.15923
	(!D * !Q)	0.01113	0.01862	0.14023
	(!D * !Q)	0.01644	0.02396	0.14555

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	**SET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**R**	**0**	**1**
1	**1**	**R**	**1**	**0**
x	**0**	**x**	**1**	**0**
x	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfsbp_1	0.00181	0.00341	0.00311	1.27158	1.22166
sky130_fd_sc_hs__dfsbp_2	0.00182	0.00336	0.00312	2.59673	2.51061

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfsbp_1	0.00000	206.50600	228.69000
sky130_fd_sc_hs__dfsbp_2	0.00000	235.60900	246.65000

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)	0.23861	0.69924	6.17352
	SET_B->Q (FR)	0.23402	0.88387	8.24473
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.28271	0.64187	6.21695
	SET_B->Q (FR)	0.28532	0.84422	8.34122

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.23645	0.52924	3.32032
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.26784	0.51425	3.43537

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)	0.20241	0.70023	6.28291
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.20515	0.60520	6.21667

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)	0.18527	0.53273	3.31681
	SET_B->Q_N (FF)	0.17612	0.71493	5.37628
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.20183	0.51572	3.41541
	SET_B->Q_N (FF)	0.19790	0.71370	5.53454

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)	-0.05797	-0.12071	-0.44832
	setup	CLK (R)	0.09437	0.14590	0.55680
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05568	-0.11623	-0.42953
	setup	CLK (R)	0.08614	0.13908	0.56442

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)	-0.04760	-0.14169	-1.50334
	setup	CLK (R)	0.13993	0.24456	2.45333
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05133	-0.14871	-1.33551
	setup	CLK (R)	0.13736	0.23827	2.49898

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)	-0.05797	-0.12071	-0.44832
	setup	CLK (R)	0.09437	0.14590	0.55680
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05568	-0.11623	-0.42953
	setup	CLK (R)	0.08614	0.13908	0.56442

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)	-0.04760	-0.14169	-1.50334
	setup	CLK (R)	0.13993	0.24456	2.45333
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05133	-0.14871	-1.33551
	setup	CLK (R)	0.13736	0.23827	2.49898

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)	-0.08764	-0.13326	-0.44280
	removal	CLK (R)	0.11429	0.15651	0.55388
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08673	-0.13389	-0.38233
	removal	CLK (R)	0.11429	0.15651	0.53036

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)	-0.08764	-0.13326	-0.44280
	removal	CLK (R)	0.11429	0.15651	0.55388
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08673	-0.13389	-0.38233
	removal	CLK (R)	0.11429	0.15651	0.53036

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 ()	0.18388	0.67139	16.50020
	min_pulse_width	SET_B ()	0.17885	0.67139	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.19644	0.67139	16.50020
	min_pulse_width	SET_B ()	0.22157	0.67139	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 ()	0.13864	0.67139	16.50020
	min_pulse_width	CLK ()	0.10849	0.67139	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.17885	0.67139	16.50020
	min_pulse_width	CLK ()	0.12357	0.67139	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 ()	0.14618	0.67139	16.50020
	min_pulse_width	CLK ()	0.20147	0.67139	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	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	0.02128	0.02418	0.08910
	CLK	0.01877	0.02162	0.08626
	SET_B	0.01401	0.01595	0.05626
	SET_B	0.01672	0.01867	0.05860
sky130_fd_sc_hs__dfsbp_2	CLK	0.02667	0.02808	0.09360
	CLK	0.02414	0.02555	0.09039
	SET_B	0.01998	0.02028	0.06091
	SET_B	0.02267	0.02297	0.06354

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01939	0.02269	0.08437
	CLK	0.01701	0.02031	0.08182
sky130_fd_sc_hs__dfsbp_2	CLK	0.02370	0.02663	0.08813
	CLK	0.02127	0.02420	0.08562

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02033	0.02367	0.08611
	CLK	0.01794	0.02125	0.08341
sky130_fd_sc_hs__dfsbp_2	CLK	0.02488	0.02798	0.09069
	CLK	0.02245	0.02542	0.08766

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02003	0.02286	0.08707
	CLK	0.01753	0.02036	0.08443
	SET_B	0.01283	0.01477	0.05497
	SET_B	0.01553	0.01748	0.05721
sky130_fd_sc_hs__dfsbp_2	CLK	0.02533	0.02679	0.09128
	CLK	0.02280	0.02422	0.08838
	SET_B	0.01871	0.01899	0.05964
	SET_B	0.02140	0.02172	0.06205

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00570	0.00832	0.05254
	CLK	0.00276	0.00537	0.04960
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01347	0.01564	0.06102
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01025	0.01241	0.05780
	(!CLK * !SET_B * Q * !Q_N)	0.01096	0.01300	0.05486
	(!CLK * !SET_B * Q * !Q_N)	0.00762	0.00965	0.05152
sky130_fd_sc_hs__dfsbp_2	CLK	0.00585	0.00847	0.05270
	CLK	0.00290	0.00551	0.04975
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01352	0.01570	0.06113
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01019	0.01237	0.05780
	(!CLK * !SET_B * Q * !Q_N)	0.01110	0.01315	0.05505
	(!CLK * !SET_B * Q * !Q_N)	0.00767	0.00970	0.05162

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00228	0.00513	0.04912
	CLK	0.00523	0.00808	0.05206
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01056	0.01300	0.05796
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01378	0.01622	0.06117
	(!CLK * !SET_B * Q * !Q_N)	0.00650	0.00863	0.05036
	(!CLK * !SET_B * Q * !Q_N)	0.00986	0.01200	0.05371
sky130_fd_sc_hs__dfsbp_2	CLK	0.00243	0.00529	0.04927
	CLK	0.00539	0.00824	0.05222
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01039	0.01284	0.05782
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01372	0.01617	0.06115
	(!CLK * !SET_B * Q * !Q_N)	0.00649	0.00863	0.05040
	(!CLK * !SET_B * Q * !Q_N)	0.00994	0.01207	0.05384

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)	0.00477	0.00481	0.00478
	(CLK * Q * !Q_N)	-0.00051	-0.00053	-0.00051
	(!CLK * D * Q * !Q_N)	0.00499	0.00501	0.00500
	(!CLK * D * Q * !Q_N)	-0.00029	-0.00030	-0.00029
	(!CLK * !D * Q * !Q_N)	0.00801	0.01005	0.05090
	(!CLK * !D * Q * !Q_N)	0.00250	0.00451	0.04539
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00496	0.00499	0.00497
	(CLK * Q * !Q_N)	-0.00029	-0.00030	-0.00029
	(!CLK * D * Q * !Q_N)	0.00511	0.00514	0.00512
	(!CLK * D * Q * !Q_N)	-0.00014	-0.00014	-0.00013
	(!CLK * !D * Q * !Q_N)	0.00794	0.01001	0.05092
	(!CLK * !D * Q * !Q_N)	0.00249	0.00454	0.04546

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)	-0.00074	-0.00082	-0.00083
	(CLK * Q * !Q_N)	0.00454	0.00449	0.00446
	(!CLK * D * Q * !Q_N)	-0.00099	-0.00112	-0.00113
	(!CLK * D * Q * !Q_N)	0.00429	0.00420	0.00416
	(!CLK * !D * Q * !Q_N)	0.00168	0.00417	0.04526
	(!CLK * !D * Q * !Q_N)	0.00717	0.00968	0.05074
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00061	-0.00071	-0.00071
	(CLK * Q * !Q_N)	0.00462	0.00458	0.00455
	(!CLK * D * Q * !Q_N)	-0.00080	-0.00094	-0.00095
	(!CLK * D * Q * !Q_N)	0.00443	0.00435	0.00431
	(!CLK * !D * Q * !Q_N)	0.00188	0.00440	0.04551
	(!CLK * !D * Q * !Q_N)	0.00731	0.00986	0.05096

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)	0.01844	0.02480	0.14677
	(D * Q * !Q_N)	0.01356	0.01989	0.14190
	(!D * SET_B * !Q * Q_N)	0.01756	0.02388	0.14588
	(!D * SET_B * !Q * Q_N)	0.01268	0.01897	0.14098
	(!D * !SET_B * Q * !Q_N)	0.03316	0.03982	0.16251
	(!D * !SET_B * Q * !Q_N)	0.02787	0.03452	0.15721
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01841	0.02478	0.14686
	(D * Q * !Q_N)	0.01345	0.01982	0.14190
	(!D * SET_B * !Q * Q_N)	0.01794	0.02427	0.14637
	(!D * SET_B * !Q * Q_N)	0.01298	0.01931	0.14139
	(!D * !SET_B * Q * !Q_N)	0.03280	0.03950	0.16227
	(!D * !SET_B * Q * !Q_N)	0.02735	0.03404	0.15681

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)	0.01822	0.02595	0.15330
	(D * SET_B * !Q * Q_N)	0.02282	0.03055	0.15790
	(D * Q * !Q_N)	0.01120	0.01884	0.14149
	(D * Q * !Q_N)	0.01607	0.02375	0.14639
	(!D * SET_B * Q * !Q_N)	0.02115	0.02901	0.15332
	(!D * SET_B * Q * !Q_N)	0.02630	0.03418	0.15849
	(!D * SET_B * !Q * Q_N)	0.01063	0.01830	0.14116
	(!D * SET_B * !Q * Q_N)	0.01551	0.02320	0.14605
	(!D * !SET_B * Q * !Q_N)	0.01710	0.02496	0.14924
	(!D * !SET_B * Q * !Q_N)	0.02239	0.03026	0.15455
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01841	0.02615	0.15358
	(D * SET_B * !Q * Q_N)	0.02298	0.03074	0.15818
	(D * Q * !Q_N)	0.01122	0.01887	0.14162
	(D * Q * !Q_N)	0.01617	0.02386	0.14659
	(!D * SET_B * Q * !Q_N)	0.02079	0.02867	0.15307
	(!D * SET_B * Q * !Q_N)	0.02612	0.03403	0.15840
	(!D * SET_B * !Q * Q_N)	0.01086	0.01855	0.14149
	(!D * SET_B * !Q * Q_N)	0.01581	0.02352	0.14646
	(!D * !SET_B * Q * !Q_N)	0.01690	0.02478	0.14916
	(!D * !SET_B * Q * !Q_N)	0.02235	0.03025	0.15462

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	**SET_B**	**CLK**	**Q**
0	**1**	**R**	**0**
1	**1**	**R**	**1**
x	**0**	**x**	**1**
x	**1**	**x**	**IQ**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**SET_B**	**CLK**	**Q**
sky130_fd_sc_hs__dfstp_1	0.00181	0.00353	0.00310	1.30855
sky130_fd_sc_hs__dfstp_2	0.00181	0.00333	0.00312	2.60828
sky130_fd_sc_hs__dfstp_4	0.00180	0.00337	0.00313	4.90645

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	172.88300	193.01800
sky130_fd_sc_hs__dfstp_2	0.00000	168.56800	243.52000
sky130_fd_sc_hs__dfstp_4	0.00000	292.83000	342.10300

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)	0.19935	0.65487	6.08780
	SET_B->Q (FR)	0.19272	0.82058	8.08023
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.20826	0.57670	6.18003
	SET_B->Q (FR)	0.20301	0.74798	8.18719
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.24724	0.55270	6.20751
	SET_B->Q (FR)	0.24202	0.73212	8.24763

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.21793	0.51302	3.40751
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.23034	0.48116	3.44164
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.23810	0.45026	3.34255

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)	-0.05311	-0.11606	-0.44216
	setup	CLK (R)	0.09016	0.14108	0.53387
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05799	-0.11765	-0.44714
	setup	CLK (R)	0.09373	0.14308	0.54623
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05496	-0.11777	-0.43633
	setup	CLK (R)	0.08815	0.13708	0.54291

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)	-0.04344	-0.13720	-1.62703
	setup	CLK (R)	0.13744	0.23919	2.41790
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04648	-0.14309	-1.62658
	setup	CLK (R)	0.14012	0.24183	2.43747
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04878	-0.14730	-1.50406
	setup	CLK (R)	0.13602	0.23627	2.43220

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)	-0.05311	-0.11606	-0.44216
	setup	CLK (R)	0.09016	0.14108	0.53387
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05799	-0.11765	-0.44714
	setup	CLK (R)	0.09373	0.14308	0.54623
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05496	-0.11777	-0.43633
	setup	CLK (R)	0.08815	0.13708	0.54291

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)	-0.04344	-0.13720	-1.62703
	setup	CLK (R)	0.13744	0.23919	2.41790
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04648	-0.14309	-1.62658
	setup	CLK (R)	0.14012	0.24183	2.43747
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04878	-0.14730	-1.50406
	setup	CLK (R)	0.13602	0.23627	2.43220

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)	-0.08635	-0.13803	-0.46973
	removal	CLK (R)	0.11194	0.15431	0.62099
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09117	-0.13908	-0.47108
	removal	CLK (R)	0.11030	0.15651	0.58833
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08883	-0.13506	-0.44282
	removal	CLK (R)	0.10848	0.15210	0.54759

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)	-0.08635	-0.13803	-0.46973
	removal	CLK (R)	0.11194	0.15431	0.62099
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09117	-0.13908	-0.47108
	removal	CLK (R)	0.11030	0.15651	0.58833
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08883	-0.13506	-0.44282
	removal	CLK (R)	0.10848	0.15210	0.54759

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 ()	0.16629	0.67139	16.50020
	min_pulse_width	SET_B ()	0.13864	0.67139	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.17131	0.67139	16.50020
	min_pulse_width	SET_B ()	0.14618	0.67139	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.17885	0.67139	16.50020
	min_pulse_width	SET_B ()	0.16629	0.67139	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 ()	0.10346	0.67139	16.50020
	min_pulse_width	CLK ()	0.09090	0.67139	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.09593	0.67139	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.13613	0.67139	16.50020
	min_pulse_width	CLK ()	0.10095	0.67139	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 ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.14618	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.14116	0.67139	16.50020
	min_pulse_width	CLK ()	0.19393	0.67139	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	0.03449	0.04125	0.17099
	CLK	0.02967	0.03644	0.16652
	SET_B	0.01966	0.02497	0.10444
	SET_B	0.02541	0.03070	0.11036
sky130_fd_sc_hs__dfstp_2	CLK	0.03796	0.04471	0.17502
	CLK	0.03294	0.03970	0.17068
	SET_B	0.02338	0.02867	0.10959
	SET_B	0.02873	0.03405	0.11505
sky130_fd_sc_hs__dfstp_4	CLK	0.05122	0.05728	0.18790
	CLK	0.04615	0.05237	0.18413
	SET_B	0.03674	0.04149	0.12364
	SET_B	0.04212	0.04694	0.12931

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.03464	0.04134	0.16434
	CLK	0.02959	0.03619	0.15894
sky130_fd_sc_hs__dfstp_2	CLK	0.03918	0.04584	0.16932
	CLK	0.03429	0.04075	0.16328
sky130_fd_sc_hs__dfstp_4	CLK	0.05042	0.05689	0.18208
	CLK	0.04551	0.05183	0.17430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00528	0.00788	0.05209
	CLK	0.00235	0.00494	0.04916
	(!CLK * SET_B)	0.01292	0.01509	0.06052
	(!CLK * SET_B)	0.00971	0.01188	0.05731
	(!CLK * !SET_B * Q)	0.01048	0.01252	0.05443
	(!CLK * !SET_B * Q)	0.00712	0.00915	0.05107
sky130_fd_sc_hs__dfstp_2	CLK	0.00503	0.00763	0.05183
	CLK	0.00209	0.00468	0.04889
	(!CLK * SET_B)	0.01263	0.01481	0.06017
	(!CLK * SET_B)	0.00942	0.01158	0.05695
	(!CLK * !SET_B * Q)	0.01019	0.01223	0.05409
	(!CLK * !SET_B * Q)	0.00682	0.00884	0.05072
sky130_fd_sc_hs__dfstp_4	CLK	0.00621	0.00881	0.05301
	CLK	0.00328	0.00588	0.05008
	(!CLK * SET_B)	0.01378	0.01596	0.06138
	(!CLK * SET_B)	0.01055	0.01271	0.05813
	(!CLK * !SET_B * Q)	0.01130	0.01334	0.05528
	(!CLK * !SET_B * Q)	0.00794	0.00997	0.05191

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00195	0.00478	0.04874
	CLK	0.00487	0.00771	0.05167
	(!CLK * SET_B)	0.00981	0.01226	0.05724
	(!CLK * SET_B)	0.01302	0.01546	0.06044
	(!CLK * !SET_B * Q)	0.00592	0.00805	0.04983
	(!CLK * !SET_B * Q)	0.00929	0.01143	0.05319
sky130_fd_sc_hs__dfstp_2	CLK	0.00165	0.00448	0.04844
	CLK	0.00459	0.00743	0.05138
	(!CLK * SET_B)	0.00977	0.01221	0.05712
	(!CLK * SET_B)	0.01299	0.01542	0.06034
	(!CLK * !SET_B * Q)	0.00588	0.00800	0.04972
	(!CLK * !SET_B * Q)	0.00927	0.01138	0.05310
sky130_fd_sc_hs__dfstp_4	CLK	0.00288	0.00570	0.04965
	CLK	0.00580	0.00864	0.05258
	(!CLK * SET_B)	0.01062	0.01306	0.05804
	(!CLK * SET_B)	0.01386	0.01630	0.06128
	(!CLK * !SET_B * Q)	0.00682	0.00896	0.05075
	(!CLK * !SET_B * Q)	0.01020	0.01234	0.05412

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00422	0.00425	0.00423
	(CLK * Q)	-0.00114	-0.00116	-0.00115
	(!CLK * D * Q)	0.00440	0.00442	0.00440
	(!CLK * D * Q)	-0.00098	-0.00099	-0.00098
	(!CLK * !D * Q)	0.00731	0.00935	0.05023
	(!CLK * !D * Q)	0.00170	0.00373	0.04461
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00390	0.00393	0.00390
	(CLK * Q)	-0.00122	-0.00123	-0.00122
	(!CLK * D * Q)	0.00406	0.00409	0.00407
	(!CLK * D * Q)	-0.00105	-0.00107	-0.00105
	(!CLK * !D * Q)	0.00699	0.00903	0.04989
	(!CLK * !D * Q)	0.00162	0.00363	0.04451
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00523	0.00526	0.00524
	(CLK * Q)	0.00003	0.00001	0.00003
	(!CLK * D * Q)	0.00538	0.00539	0.00538
	(!CLK * D * Q)	0.00017	0.00017	0.00017
	(!CLK * !D * Q)	0.00821	0.01027	0.05112
	(!CLK * !D * Q)	0.00278	0.00481	0.04570

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00105	-0.00114	-0.00114
	(CLK * Q)	0.00432	0.00427	0.00424
	(!CLK * D * Q)	-0.00126	-0.00139	-0.00140
	(!CLK * D * Q)	0.00411	0.00402	0.00398
	(!CLK * !D * Q)	0.00136	0.00389	0.04497
	(!CLK * !D * Q)	0.00701	0.00951	0.05056
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00128	-0.00136	-0.00137
	(CLK * Q)	0.00383	0.00379	0.00376
	(!CLK * D * Q)	-0.00149	-0.00161	-0.00162
	(!CLK * D * Q)	0.00362	0.00354	0.00351
	(!CLK * !D * Q)	0.00116	0.00368	0.04476
	(!CLK * !D * Q)	0.00657	0.00906	0.05012
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00022	-0.00031	-0.00031
	(CLK * Q)	0.00497	0.00493	0.00490
	(!CLK * D * Q)	-0.00040	-0.00053	-0.00054
	(!CLK * D * Q)	0.00479	0.00471	0.00467
	(!CLK * !D * Q)	0.00232	0.00483	0.04592
	(!CLK * !D * Q)	0.00777	0.01027	0.05133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01783	0.02420	0.14614
	(D * Q)	0.01292	0.01926	0.14124
	(!D * SET_B * !Q)	0.01752	0.02383	0.14582
	(!D * SET_B * !Q)	0.01261	0.01892	0.14089
	(!D * !SET_B * Q)	0.03186	0.03856	0.16123
	(!D * !SET_B * Q)	0.02652	0.03321	0.15588
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01777	0.02414	0.14618
	(D * Q)	0.01283	0.01916	0.14124
	(!D * SET_B * !Q)	0.01804	0.02434	0.14642
	(!D * SET_B * !Q)	0.01309	0.01940	0.14146
	(!D * !SET_B * Q)	0.03190	0.03857	0.16122
	(!D * !SET_B * Q)	0.02652	0.03319	0.15584
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01879	0.02517	0.14723
	(D * Q)	0.01381	0.02016	0.14225
	(!D * SET_B * !Q)	0.01889	0.02522	0.14731
	(!D * SET_B * !Q)	0.01391	0.02023	0.14231
	(!D * !SET_B * Q)	0.03290	0.03962	0.16234
	(!D * !SET_B * Q)	0.02748	0.03417	0.15691

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)**	0.01813	0.02584	0.15316
	(D * SET_B * !Q)	0.02277	0.03052	0.15782
	(D * Q)	0.01081	0.01844	0.14105
	(D * Q)	0.01571	0.02338	0.14597
	(!D * SET_B * Q)	0.02022	0.02808	0.15236
	(!D * SET_B * Q)	0.02540	0.03326	0.15756
	(!D * SET_B * !Q)	0.01051	0.01817	0.14098
	(!D * SET_B * !Q)	0.01542	0.02310	0.14591
	(!D * !SET_B * Q)	0.01635	0.02419	0.14846
	(!D * !SET_B * Q)	0.02168	0.02956	0.15381
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01847	0.02620	0.15362
	(D * SET_B * !Q)	0.02314	0.03090	0.15830
	(D * Q)	0.01038	0.01802	0.14076
	(D * Q)	0.01532	0.02300	0.14572
	(!D * SET_B * Q)	0.02008	0.02795	0.15237
	(!D * SET_B * Q)	0.02530	0.03319	0.15760
	(!D * SET_B * !Q)	0.01096	0.01863	0.14158
	(!D * SET_B * !Q)	0.01590	0.02359	0.14654
	(!D * !SET_B * Q)	0.01622	0.02408	0.14846
	(!D * !SET_B * Q)	0.02160	0.02949	0.15386
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01926	0.02699	0.15450
	(D * SET_B * !Q)	0.02393	0.03170	0.15918
	(D * Q)	0.01163	0.01928	0.14204
	(D * Q)	0.01661	0.02429	0.14704
	(!D * SET_B * Q)	0.02088	0.02876	0.15320
	(!D * SET_B * Q)	0.02617	0.03407	0.15850
	(!D * SET_B * !Q)	0.01169	0.01937	0.14234
	(!D * SET_B * !Q)	0.01666	0.02436	0.14733
	(!D * !SET_B * Q)	0.01711	0.02498	0.14940
	(!D * !SET_B * Q)	0.02253	0.03042	0.15485

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00184	0.00310	1.29049	1.27740
sky130_fd_sc_hs__dfxbp_2	0.00179	0.00311	2.20539	2.53037

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	275.41800	375.44000
sky130_fd_sc_hs__dfxbp_2	0.00000	376.69400	561.72400

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)	0.19027	0.66316	6.29775
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.22075	0.61396	6.08662

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.20683	0.52406	3.54675
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.20246	0.45073	2.94298

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	0.71553	6.30014
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.25844	0.63229	6.20494

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)	0.22535	0.52067	3.41738
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.27531	0.52621	3.48299

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)	-0.02290	-0.05291	-0.15223
	setup	CLK (R)	0.07333	0.09813	0.31087
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02046	-0.04629	-0.12966
	setup	CLK (R)	0.05902	0.08522	0.30629

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)	-0.03689	-0.11502	-1.47940
	setup	CLK (R)	0.10107	0.18635	2.15870
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03285	-0.11089	-1.27428
	setup	CLK (R)	0.09461	0.18054	2.14822

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 ()	0.09090	0.67139	16.50020
	min_pulse_width	CLK ()	0.07833	0.67139	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.11854	0.67139	16.50020
	min_pulse_width	CLK ()	0.08085	0.67139	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** ()	0.13362	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.16126	0.67139	16.50020
sky130_fd_sc_hs__dfxbp_2	**min_pulse_width**	**CLK** ()	0.12357	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.16126	0.67139	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	0.01899	0.02251	0.09035
	CLK	0.01665	0.02017	0.08765
sky130_fd_sc_hs__dfxbp_2	CLK	0.02587	0.02950	0.09700
	CLK	0.02351	0.02698	0.09430

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01961	0.02327	0.08828
	CLK	0.01728	0.02092	0.08574
sky130_fd_sc_hs__dfxbp_2	CLK	0.02399	0.02771	0.09308
	CLK	0.02162	0.02534	0.09059

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02124	0.02487	0.09079
	CLK	0.01891	0.02255	0.08808
sky130_fd_sc_hs__dfxbp_2	CLK	0.02601	0.02979	0.09660
	CLK	0.02365	0.02737	0.09367

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01796	0.02149	0.08852
	CLK	0.01562	0.01913	0.08599
sky130_fd_sc_hs__dfxbp_2	CLK	0.02387	0.02741	0.09411
	CLK	0.02150	0.02495	0.09124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00437	0.00727	0.05109
	CLK	0.00140	0.00428	0.04811
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01177	0.01480	0.06672
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00878	0.01181	0.06374
sky130_fd_sc_hs__dfxbp_2	CLK	0.00581	0.00874	0.05248
	CLK	0.00291	0.00583	0.04958
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01321	0.01627	0.06811
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01030	0.01335	0.06520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00147	0.00459	0.04827
	CLK	0.00445	0.00757	0.05125
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00994	0.01302	0.06181
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01293	0.01601	0.06480
sky130_fd_sc_hs__dfxbp_2	CLK	0.00307	0.00621	0.04980
	CLK	0.00597	0.00912	0.05270
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01114	0.01424	0.06292
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01405	0.01715	0.06583

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)	0.01630	0.02293	0.14856
	(D * Q * !Q_N)	0.01164	0.01825	0.14389
	(!D * !Q * Q_N)	0.01750	0.02413	0.14980
	(!D * !Q * Q_N)	0.01285	0.01946	0.14512
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01800	0.02462	0.15033
	(D * Q * !Q_N)	0.01329	0.01988	0.14559
	(!D * !Q * Q_N)	0.01759	0.02421	0.14994
	(!D * !Q * Q_N)	0.01288	0.01947	0.14520

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)	0.01238	0.02003	0.14484
	(D * Q * !Q_N)	0.01706	0.02473	0.14952
	(D * !Q * Q_N)	0.02044	0.02833	0.15777
	(D * !Q * Q_N)	0.02508	0.03303	0.16243
	(!D * Q * !Q_N)	0.02232	0.03017	0.15704
	(!D * Q * !Q_N)	0.02700	0.03486	0.16172
	(!D * !Q * Q_N)	0.01315	0.02078	0.14536
	(!D * !Q * Q_N)	0.01779	0.02547	0.15003
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01398	0.02164	0.14655
	(D * Q * !Q_N)	0.01872	0.02639	0.15129
	(D * !Q * Q_N)	0.02071	0.02865	0.15812
	(D * !Q * Q_N)	0.02545	0.03341	0.16286
	(!D * Q * !Q_N)	0.02342	0.03129	0.15841
	(!D * Q * !Q_N)	0.02815	0.03600	0.16315
	(!D * !Q * Q_N)	0.01341	0.02108	0.14574
	(!D * !Q * Q_N)	0.01815	0.02584	0.15048

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00180	0.00310	1.30545
sky130_fd_sc_hs__dfxtp_2	0.00185	0.00310	2.60036
sky130_fd_sc_hs__dfxtp_4	0.00184	0.00311	4.85373

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	214.95400	357.44300
sky130_fd_sc_hs__dfxtp_2	0.00000	223.70900	325.24300
sky130_fd_sc_hs__dfxtp_4	0.00000	341.67000	463.71200

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)**	0.17242	0.64753	6.33268
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.18408	0.56379	6.26916
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.21972	0.53858	6.31541

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.19749	0.51167	3.56210
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.20315	0.46946	3.55604
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.21015	0.43815	3.49331

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)	-0.02070	-0.05025	-0.14072
	setup	CLK (R)	0.07633	0.10079	0.29648
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02137	-0.04838	-0.13950
	setup	CLK (R)	0.07281	0.09484	0.30515
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01799	-0.04629	-0.13268
	setup	CLK (R)	0.06782	0.09135	0.31588

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)	-0.03759	-0.11861	-1.52531
	setup	CLK (R)	0.10440	0.19112	2.17774
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03161	-0.10998	-1.47874
	setup	CLK (R)	0.09576	0.18158	2.14667
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03012	-0.10668	-1.25273
	setup	CLK (R)	0.09522	0.18063	2.14359

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 ()	0.08336	0.67139	16.50020
	min_pulse_width	CLK ()	0.07582	0.67139	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.09090	0.67139	16.50020
	min_pulse_width	CLK ()	0.07833	0.67139	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.11854	0.67139	16.50020
	min_pulse_width	CLK ()	0.08336	0.67139	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** ()	0.13864	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.16629	0.67139	16.50020
sky130_fd_sc_hs__dfxtp_2	**min_pulse_width**	**CLK** ()	0.13362	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.16126	0.67139	16.50020
sky130_fd_sc_hs__dfxtp_4	**min_pulse_width**	**CLK** ()	0.12859	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.16377	0.67139	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	0.02994	0.03707	0.17144
	CLK	0.02522	0.03236	0.16701
sky130_fd_sc_hs__dfxtp_2	CLK	0.03286	0.03997	0.17454
	CLK	0.02811	0.03523	0.17061
sky130_fd_sc_hs__dfxtp_4	CLK	0.04545	0.05181	0.18632
	CLK	0.04075	0.04716	0.18277

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.03014	0.03754	0.16837
	CLK	0.02542	0.03270	0.16316
sky130_fd_sc_hs__dfxtp_2	CLK	0.03463	0.04185	0.17161
	CLK	0.02988	0.03691	0.16687
sky130_fd_sc_hs__dfxtp_4	CLK	0.04584	0.05292	0.18480
	CLK	0.04114	0.04796	0.17803

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00400	0.00688	0.05069
	CLK	0.00110	0.00396	0.04778
	!CLK	0.01146	0.01449	0.06643
	!CLK	0.00854	0.01156	0.06351
sky130_fd_sc_hs__dfxtp_2	CLK	0.00389	0.00681	0.05067
	CLK	0.00091	0.00381	0.04768
	!CLK	0.01108	0.01412	0.06608
	!CLK	0.00810	0.01112	0.06309
sky130_fd_sc_hs__dfxtp_4	CLK	0.00493	0.00787	0.05171
	CLK	0.00197	0.00489	0.04874
	!CLK	0.01227	0.01533	0.06724
	!CLK	0.00930	0.01235	0.06426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00169	0.00474	0.04839
	CLK	0.00462	0.00767	0.05131
	!CLK	0.01020	0.01325	0.06193
	!CLK	0.01312	0.01617	0.06486
sky130_fd_sc_hs__dfxtp_2	CLK	0.00097	0.00411	0.04782
	CLK	0.00395	0.00710	0.05081
	!CLK	0.00958	0.01266	0.06145
	!CLK	0.01257	0.01566	0.06444
sky130_fd_sc_hs__dfxtp_4	CLK	0.00223	0.00539	0.04906
	CLK	0.00519	0.00836	0.05204
	!CLK	0.01069	0.01377	0.06250
	!CLK	0.01366	0.01675	0.06547

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01620	0.02278	0.14845
	(D * Q)	0.01149	0.01805	0.14372
	(!D * !Q)	0.01689	0.02347	0.14917
	(!D * !Q)	0.01219	0.01875	0.14444
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01597	0.02256	0.14827
	(D * Q)	0.01124	0.01781	0.14351
	(!D * !Q)	0.01725	0.02385	0.14957
	(!D * !Q)	0.01252	0.01910	0.14481
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01707	0.02365	0.14913
	(D * Q)	0.01239	0.01893	0.14443
	(!D * !Q)	0.01802	0.02461	0.15013
	(!D * !Q)	0.01335	0.01989	0.14542

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01268	0.02026	0.14509
	(D * Q)	0.01739	0.02500	0.14982
	(D * !Q)	0.01990	0.02781	0.15723
	(D * !Q)	0.02461	0.03254	0.16194
	(!D * Q)	0.02256	0.03029	0.15729
	(!D * Q)	0.02727	0.03502	0.16202
	(!D * !Q)	0.01247	0.02011	0.14469
	(!D * !Q)	0.01718	0.02485	0.14942
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01217	0.01977	0.14463
	(D * Q)	0.01691	0.02454	0.14939
	(D * !Q)	0.01994	0.02785	0.15764
	(D * !Q)	0.02468	0.03262	0.16238
	(!D * Q)	0.02216	0.02990	0.15701
	(!D * Q)	0.02689	0.03466	0.16176
	(!D * !Q)	0.01280	0.02044	0.14533
	(!D * !Q)	0.01753	0.02521	0.15008
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01379	0.02133	0.14592
	(D * Q)	0.01848	0.02605	0.15063
	(D * !Q)	0.02125	0.02912	0.15821
	(D * !Q)	0.02593	0.03383	0.16290
	(!D * Q)	0.02376	0.03148	0.15828
	(!D * Q)	0.02845	0.03618	0.16298
	(!D * !Q)	0.01405	0.02165	0.14597
	(!D * !Q)	0.01873	0.02637	0.15067

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00274	0.00467	1.32353
sky130_fd_sc_hs__dlclkp_2	0.00274	0.00503	2.58003
sky130_fd_sc_hs__dlclkp_4	0.00272	0.00528	5.02876

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	252.04200	380.86800
sky130_fd_sc_hs__dlclkp_2	0.00000	263.14200	315.90100
sky130_fd_sc_hs__dlclkp_4	0.00000	318.17600	354.56100

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)**	0.06884	0.51870	6.47823
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.07216	0.44317	6.39949
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.10096	0.44489	6.63184

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.07178	0.47057	5.08813
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.07768	0.44886	5.11641
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.10235	0.46790	5.13216

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)	-0.03562	-0.07495	-0.73267
	setup	CLK (R)	0.12635	0.18095	0.83334
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03499	-0.07274	-0.73758
	setup	CLK (R)	0.12977	0.17872	0.85250
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03398	-0.07054	-0.70988
	setup	CLK (R)	0.12651	0.15747	0.95023

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)	-0.03528	-0.07227	-1.22523
	setup	CLK (R)	0.08754	0.14344	1.38777
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03282	-0.06782	-1.20325
	setup	CLK (R)	0.08037	0.12787	1.36000
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03160	-0.06861	-1.20635
	setup	CLK (R)	0.05769	0.09095	1.37767

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 ()	0.05069	0.67139	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.05823	0.67139	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.08839	0.67139	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** ()	0.16629	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13613	0.67139	16.50020
sky130_fd_sc_hs__dlclkp_2	**min_pulse_width**	**CLK** ()	0.17634	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13864	0.67139	16.50020
sky130_fd_sc_hs__dlclkp_4	**min_pulse_width**	**CLK** ()	0.16880	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13613	0.67139	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	0.02684	0.03974	0.26188
	CLK	0.01934	0.03222	0.25456
sky130_fd_sc_hs__dlclkp_2	CLK	0.02934	0.04213	0.26999
	CLK	0.02125	0.03405	0.26244
sky130_fd_sc_hs__dlclkp_4	CLK	0.03706	0.04821	0.27219
	CLK	0.02873	0.03994	0.26415

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01477	0.02965	0.25123
	CLK	0.02227	0.03715	0.25821
sky130_fd_sc_hs__dlclkp_2	CLK	0.01941	0.03401	0.26173
	CLK	0.02749	0.04207	0.26790
sky130_fd_sc_hs__dlclkp_4	CLK	0.03057	0.04276	0.26597
	CLK	0.03890	0.05105	0.27266

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00511	0.00481	0.00506
	CLK	0.00118	0.00083	0.00113
	(!CLK * !GCLK)	0.01531	0.01965	0.10936
	(!CLK * !GCLK)	0.01111	0.01543	0.10516
sky130_fd_sc_hs__dlclkp_2	CLK	0.00378	0.00381	0.00379
	CLK	-0.00015	-0.00017	-0.00015
	(!CLK * !GCLK)	0.01586	0.02019	0.10976
	(!CLK * !GCLK)	0.01171	0.01600	0.10558
sky130_fd_sc_hs__dlclkp_4	CLK	0.00460	0.00462	0.00460
	CLK	0.00071	0.00069	0.00072
	(!CLK * !GCLK)	0.01643	0.02072	0.11025
	(!CLK * !GCLK)	0.01245	0.01675	0.10627

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00154	0.00152	0.00144
	CLK	0.00549	0.00550	0.00538
	(!CLK * !GCLK)	0.01133	0.01595	0.10384
	(!CLK * !GCLK)	0.01554	0.02017	0.10803
sky130_fd_sc_hs__dlclkp_2	CLK	0.00083	0.00072	0.00068
	CLK	0.00479	0.00468	0.00462
	(!CLK * !GCLK)	0.01215	0.01676	0.10462
	(!CLK * !GCLK)	0.01633	0.02096	0.10879
sky130_fd_sc_hs__dlclkp_4	CLK	0.00174	0.00163	0.00158
	CLK	0.00565	0.00554	0.00547
	(!CLK * !GCLK)	0.01368	0.01825	0.10604
	(!CLK * !GCLK)	0.01766	0.02226	0.11002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01331	0.02085	0.14464
	(!GATE * !GCLK)	0.00604	0.01354	0.13735
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01433	0.02180	0.14567
	(!GATE * !GCLK)	0.00654	0.01396	0.13786
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01511	0.02247	0.14422
	(!GATE * !GCLK)	0.00705	0.01436	0.13617

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01766	0.02623	0.17041
	(GATE * !GCLK)	0.02492	0.03354	0.17768
	(!GATE * !GCLK)	0.00739	0.01546	0.13771
	(!GATE * !GCLK)	0.01467	0.02277	0.14500
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01857	0.02714	0.17238
	(GATE * !GCLK)	0.02640	0.03504	0.18021
	(!GATE * !GCLK)	0.00811	0.01616	0.13845
	(!GATE * !GCLK)	0.01591	0.02398	0.14628
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01892	0.02725	0.17080
	(GATE * !GCLK)	0.02718	0.03556	0.17908
	(!GATE * !GCLK)	0.00863	0.01645	0.13711
	(!GATE * !GCLK)	0.01672	0.02457	0.14517

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	GATE_N	RESET_B	Q	Q_N
0	0	x	0	1
x	1	0	0	1
x	1	1	1	1
1	x	0	0	1
1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE_N	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbn_1	0.00243	0.00268	0.00299	1.30585	1.31183
sky130_fd_sc_hs__dlrbn_2	0.00243	0.00267	0.00309	2.18322	2.54747

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	332.27200	430.73500
sky130_fd_sc_hs__dlrbn_2	0.00000	360.09100	448.18400

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)	0.23417	0.68897	6.38411
	GATE_N->Q (-R)	0.27039	0.84507	7.96496
	RESET_B->Q (RR)	0.08840	0.56727	6.56591
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.24239	0.61734	6.04491
	GATE_N->Q (-R)	0.28135	0.78057	7.69132
	RESET_B->Q (RR)	0.09655	0.50724	6.18266

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.18819	0.56365	4.68835
	GATE_N->Q (-F)	0.19744	0.61128	5.06062
	RESET_B->Q (FF)	0.08246	0.50316	4.93328
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.20452	0.52820	4.20005
	GATE_N->Q (-F)	0.21418	0.57593	4.56717
	RESET_B->Q (FF)	0.09475	0.48061	4.50188

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)	0.22847	0.75989	7.48105
	GATE_N->Q_N (-R)	0.23783	0.80740	7.85262
	RESET_B->Q_N (FR)	0.12464	0.68584	7.52399
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.26488	0.71406	7.71968
	GATE_N->Q_N (-R)	0.27470	0.76180	8.08612
	RESET_B->Q_N (FR)	0.15725	0.65341	7.82103

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)	0.26921	0.54502	3.55169
	GATE_N->Q_N (-F)	0.30546	0.70092	5.13214
	RESET_B->Q_N (RF)	0.12329	0.41452	3.39154
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.30775	0.55449	3.88569
	GATE_N->Q_N (-F)	0.34690	0.71759	5.53225
	RESET_B->Q_N (RF)	0.16142	0.44020	3.78113

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 ()**	0.09844	0.67139	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.12105	0.67139	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	0.01889	0.02189	0.07655
	D	0.01687	0.01983	0.07421
	GATE_N	0.01931	0.02326	0.08439
	GATE_N	0.02126	0.02521	0.08574
	RESET_B	0.01398	0.01651	0.06404
	RESET_B	0.01158	0.01408	0.06146
sky130_fd_sc_hs__dlrbn_2	D	0.02316	0.02602	0.08039
	D	0.02117	0.02390	0.07775
	GATE_N	0.02362	0.02732	0.08859
	GATE_N	0.02557	0.02926	0.08919
	RESET_B	0.01847	0.02062	0.06275
	RESET_B	0.01601	0.01808	0.05976

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01354	0.01713	0.07135
	D	0.01556	0.01914	0.07298
	GATE_N	0.01585	0.02017	0.08318
	GATE_N	0.01804	0.02234	0.08501
	RESET_B	0.00893	0.01243	0.06481
	RESET_B	0.01134	0.01481	0.06663
sky130_fd_sc_hs__dlrbn_2	D	0.01742	0.02078	0.07430
	D	0.01941	0.02277	0.07593
	GATE_N	0.01973	0.02379	0.08552
	GATE_N	0.02189	0.02593	0.08754
	RESET_B	0.01248	0.01561	0.06645
	RESET_B	0.01494	0.01799	0.06864

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01515	0.01872	0.07353
	D	0.01717	0.02074	0.07490
	GATE_N	0.01746	0.02181	0.08583
	GATE_N	0.01964	0.02398	0.08712
	RESET_B	0.01083	0.01440	0.06714
	RESET_B	0.01324	0.01676	0.06885
sky130_fd_sc_hs__dlrbn_2	D	0.01945	0.02282	0.07792
	D	0.02144	0.02481	0.07844
	GATE_N	0.02177	0.02595	0.08868
	GATE_N	0.02393	0.02803	0.09000
	RESET_B	0.01487	0.01796	0.07060
	RESET_B	0.01734	0.02041	0.07146

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01696	0.01992	0.07424
	D	0.01494	0.01790	0.07190
	GATE_N	0.01739	0.02130	0.08216
	GATE_N	0.01934	0.02324	0.08356
	RESET_B	0.01201	0.01457	0.06168
	RESET_B	0.00961	0.01212	0.05917
sky130_fd_sc_hs__dlrbn_2	D	0.02122	0.02393	0.07831
	D	0.01923	0.02193	0.07537
	GATE_N	0.02167	0.02536	0.08468
	GATE_N	0.02363	0.02730	0.08657
	RESET_B	0.01648	0.01861	0.05933
	RESET_B	0.01402	0.01609	0.05682

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)	0.00928	0.01523	0.11610
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00545	0.01139	0.11228
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01441	0.02033	0.12765
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01082	0.01672	0.12404
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)	0.00970	0.01555	0.11462
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00591	0.01174	0.11082
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01399	0.01982	0.12538
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01042	0.01624	0.12180

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)	0.00393	0.01069	0.11263
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00776	0.01453	0.11647
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01115	0.01793	0.12527
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01475	0.02155	0.12888
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)	0.00429	0.01093	0.11099
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00810	0.01474	0.11479
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01151	0.01817	0.12370
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01509	0.02176	0.12728

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)	0.01362	0.02084	0.14385
	(D * RESET_B * Q * !Q_N)	0.00949	0.01669	0.13972
	(D * !RESET_B * !Q * Q_N)	0.02033	0.02745	0.14964
	(D * !RESET_B * !Q * Q_N)	0.01599	0.02309	0.14529
	(!D * !Q * Q_N)	0.01339	0.02060	0.14371
	(!D * !Q * Q_N)	0.00926	0.01644	0.13958
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01410	0.02119	0.14209
	(D * RESET_B * Q * !Q_N)	0.01000	0.01707	0.13799
	(D * !RESET_B * !Q * Q_N)	0.02069	0.02768	0.14771
	(D * !RESET_B * !Q * Q_N)	0.01637	0.02335	0.14339
	(!D * !Q * Q_N)	0.01344	0.02052	0.14157
	(!D * !Q * Q_N)	0.00936	0.01640	0.13747

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)	0.01142	0.01939	0.14094
	(D * RESET_B * Q * !Q_N)	0.01556	0.02353	0.14507
	(D * !RESET_B * !Q * Q_N)	0.01487	0.02278	0.14324
	(D * !RESET_B * !Q * Q_N)	0.01924	0.02714	0.14760
	(!D * !Q * Q_N)	0.01010	0.01810	0.13978
	(!D * !Q * Q_N)	0.01421	0.02224	0.14391
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01176	0.01959	0.13893
	(D * RESET_B * Q * !Q_N)	0.01586	0.02370	0.14304
	(D * !RESET_B * !Q * Q_N)	0.01448	0.02227	0.14052
	(D * !RESET_B * !Q * Q_N)	0.01882	0.02660	0.14486
	(!D * !Q * Q_N)	0.01023	0.01813	0.13764
	(!D * !Q * Q_N)	0.01432	0.02223	0.14173

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)	0.00550	0.00552	0.00551
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00131	0.00130	0.00131
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00576	0.00578	0.00577
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00144	0.00143	0.00144

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)	0.00216	0.00204	0.00200
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00638	0.00627	0.00620
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00222	0.00208	0.00205
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00654	0.00644	0.00638

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	**GATE**	**RESET_B**	**Q**	**Q_N**
x	**x**	**0**	**0**	**1**
x	**0**	**1**	**1**	**1**
0	**1**	**1**	**0**	**1**
1	**1**	**1**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**GATE**	**RESET_B**	**Q**	**Q_N**
sky130_fd_sc_hs__dlrbp_1	0.00226	0.00257	0.00308	1.29206	1.28662
sky130_fd_sc_hs__dlrbp_2	0.00226	0.00256	0.00308	2.53020	2.65600

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrbp_1	0.00000	332.23900	430.75800
sky130_fd_sc_hs__dlrbp_2	0.00000	360.14000	448.34600

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)	0.22801	0.67800	6.30849
	GATE->Q (-R)	0.20504	0.65421	6.03724
	RESET_B->Q (RR)	0.08983	0.56983	6.54578
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.23665	0.59540	6.17162
	GATE->Q (-R)	0.21188	0.56861	5.89480
	RESET_B->Q (RR)	0.09567	0.49803	6.49420

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.18642	0.56132	4.68744
	GATE->Q (-F)	0.20326	0.48425	3.16844
	RESET_B->Q (FF)	0.08371	0.50555	4.91154
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.20252	0.54148	4.73646
	GATE->Q (-F)	0.21892	0.46285	3.20852
	RESET_B->Q (FF)	0.09117	0.48801	4.99230

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)	0.22864	0.76456	7.53593
	GATE->Q_N (-R)	0.24555	0.68739	6.01800
	RESET_B->Q_N (FR)	0.12788	0.69475	7.55560
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.26095	0.69978	7.63579
	GATE->Q_N (-R)	0.27748	0.62113	6.10925
	RESET_B->Q_N (FR)	0.14941	0.63367	7.68356

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)	0.26440	0.53202	3.42041
	GATE->Q_N (-F)	0.24147	0.50813	3.14993
	RESET_B->Q_N (RF)	0.12610	0.41508	3.31945
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.29557	0.52102	3.62484
	GATE->Q_N (-F)	0.27096	0.49411	3.34837
	RESET_B->Q_N (RF)	0.15413	0.41753	3.62511

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 ()**	0.09593	0.67139	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.11352	0.67139	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	0.01817	0.02115	0.07469
	D	0.01627	0.01919	0.07247
	GATE	0.01986	0.02353	0.08891
	GATE	0.01772	0.02137	0.08638
	RESET_B	0.01403	0.01654	0.06396
	RESET_B	0.01156	0.01402	0.06131
sky130_fd_sc_hs__dlrbp_2	D	0.02282	0.02561	0.07981
	D	0.02091	0.02361	0.07711
	GATE	0.02443	0.02788	0.09253
	GATE	0.02230	0.02574	0.09028
	RESET_B	0.01853	0.02097	0.07228
	RESET_B	0.01605	0.01845	0.06938

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01393	0.01748	0.07056
	D	0.01582	0.01937	0.07215
	GATE	0.01784	0.02170	0.08215
	GATE	0.01597	0.01980	0.08012
	RESET_B	0.00912	0.01260	0.06449
	RESET_B	0.01159	0.01504	0.06667
sky130_fd_sc_hs__dlrbp_2	D	0.01807	0.02138	0.07538
	D	0.01997	0.02324	0.07632
	GATE	0.02196	0.02556	0.08583
	GATE	0.02008	0.02362	0.08386
	RESET_B	0.01312	0.01651	0.07111
	RESET_B	0.01560	0.01895	0.07261

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01552	0.01911	0.07277
	D	0.01742	0.02098	0.07406
	GATE	0.01944	0.02327	0.08472
	GATE	0.01757	0.02140	0.08246
	RESET_B	0.01101	0.01458	0.06716
	RESET_B	0.01348	0.01699	0.06898
sky130_fd_sc_hs__dlrbp_2	D	0.01979	0.02314	0.07800
	D	0.02169	0.02497	0.07836
	GATE	0.02369	0.02736	0.08891
	GATE	0.02181	0.02537	0.08643
	RESET_B	0.01515	0.01858	0.07422
	RESET_B	0.01763	0.02101	0.07505

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01618	0.01911	0.07196
	D	0.01428	0.01721	0.06995
	GATE	0.01788	0.02156	0.08592
	GATE	0.01574	0.01939	0.08368
	RESET_B	0.01201	0.01451	0.06163
	RESET_B	0.00954	0.01200	0.05903
sky130_fd_sc_hs__dlrbp_2	D	0.02076	0.02353	0.07630
	D	0.01885	0.02155	0.07419
	GATE	0.02238	0.02584	0.08974
	GATE	0.02024	0.02368	0.08756
	RESET_B	0.01642	0.01882	0.06972
	RESET_B	0.01395	0.01633	0.06679

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)	0.01296	0.01886	0.12421
	(GATE * !RESET_B * !Q * Q_N)	0.00966	0.01555	0.12090
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00910	0.01504	0.11415
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00556	0.01148	0.11061
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01320	0.01908	0.12442
	(GATE * !RESET_B * !Q * Q_N)	0.00989	0.01576	0.12111
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00955	0.01547	0.11461
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00600	0.01189	0.11104

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)	0.01147	0.01821	0.12354
	(GATE * !RESET_B * !Q * Q_N)	0.01479	0.02154	0.12685
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00355	0.01029	0.11038
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00709	0.01385	0.11392
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01173	0.01845	0.12380
	(GATE * !RESET_B * !Q * Q_N)	0.01505	0.02179	0.12712
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00410	0.01083	0.11094
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00768	0.01442	0.11451

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)	0.01411	0.02130	0.14236
	(D * RESET_B * Q * !Q_N)	0.01011	0.01727	0.13835
	(D * !RESET_B * !Q * Q_N)	0.01595	0.02338	0.15147
	(D * !RESET_B * !Q * Q_N)	0.01219	0.01960	0.14770
	(!D * !Q * Q_N)	0.01347	0.02064	0.14162
	(!D * !Q * Q_N)	0.00946	0.01663	0.13763
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01456	0.02177	0.14286
	(D * RESET_B * Q * !Q_N)	0.01054	0.01773	0.13883
	(D * !RESET_B * !Q * Q_N)	0.01608	0.02352	0.15160
	(D * !RESET_B * !Q * Q_N)	0.01232	0.01974	0.14783
	(!D * !Q * Q_N)	0.01358	0.02078	0.14180
	(!D * !Q * Q_N)	0.00956	0.01675	0.13778

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)	0.01003	0.01788	0.13732
	(D * RESET_B * Q * !Q_N)	0.01404	0.02190	0.14133
	(D * !RESET_B * !Q * Q_N)	0.01572	0.02394	0.14847
	(D * !RESET_B * !Q * Q_N)	0.01951	0.02772	0.15226
	(!D * !Q * Q_N)	0.00903	0.01696	0.13685
	(!D * !Q * Q_N)	0.01306	0.02096	0.14086
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01041	0.01828	0.13775
	(D * RESET_B * Q * !Q_N)	0.01444	0.02233	0.14178
	(D * !RESET_B * !Q * Q_N)	0.01580	0.02401	0.14853
	(D * !RESET_B * !Q * Q_N)	0.01958	0.02778	0.15232
	(!D * !Q * Q_N)	0.00918	0.01711	0.13703
	(!D * !Q * Q_N)	0.01320	0.02114	0.14106

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)	0.00554	0.00556	0.00554
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00126	0.00124	0.00125
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00571	0.00573	0.00571
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00142	0.00140	0.00141

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)	0.00213	0.00201	0.00197
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00644	0.00632	0.00626
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00226	0.00214	0.00211
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00658	0.00647	0.00641

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	GATE_N	RESET_B	Q
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE_N	RESET_B	Q
sky130_fd_sc_hs__dlrtn_1	0.00224	0.00259	0.00292	1.30734
sky130_fd_sc_hs__dlrtn_2	0.00227	0.00257	0.00304	2.56568
sky130_fd_sc_hs__dlrtn_4	0.00226	0.00259	0.00491	4.73670

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	256.11100	342.27000
sky130_fd_sc_hs__dlrtn_2	0.00000	280.28600	377.59200
sky130_fd_sc_hs__dlrtn_4	0.00000	442.86800	614.96900

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)	0.21532	0.65959	6.25130
	GATE_N->Q (-R)	0.24358	0.80194	7.75623
	RESET_B->Q (RR)	0.07703	0.53231	6.38104
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.22589	0.58707	6.30684
	GATE_N->Q (-R)	0.25411	0.72887	7.81055
	RESET_B->Q (RR)	0.08319	0.46820	6.45173
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.24615	0.54186	6.22130
	GATE_N->Q (-R)	0.27455	0.68458	7.72260
	RESET_B->Q (RR)	0.08805	0.40918	6.48580

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.17617	0.54547	4.66496
	GATE_N->Q (-F)	0.18032	0.58404	5.00022
	RESET_B->Q (FF)	0.07527	0.48305	4.94523
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.18260	0.50383	4.59399
	GATE_N->Q (-F)	0.18640	0.54222	4.92951
	RESET_B->Q (FF)	0.08051	0.45315	4.92164
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.19653	0.48358	4.56689
	GATE_N->Q (-F)	0.20328	0.52771	4.92205
	RESET_B->Q (FF)	0.08668	0.42591	4.97208

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** ()	0.08839	0.67139	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B** ()	0.10346	0.67139	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B** ()	0.12105	0.67139	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	0.02873	0.03460	0.14217
	D	0.02498	0.03085	0.13891
	GATE_N	0.02939	0.03721	0.15771
	GATE_N	0.03318	0.04102	0.16195
	RESET_B	0.02057	0.02528	0.11917
	RESET_B	0.01588	0.02058	0.11475
sky130_fd_sc_hs__dlrtn_2	D	0.03138	0.03722	0.14506
	D	0.02765	0.03349	0.14207
	GATE_N	0.03203	0.03990	0.16095
	GATE_N	0.03584	0.04370	0.16558
	RESET_B	0.02300	0.02750	0.11693
	RESET_B	0.01812	0.02263	0.11252
sky130_fd_sc_hs__dlrtn_4	D	0.05049	0.05613	0.16363
	D	0.04656	0.05231	0.16149
	GATE_N	0.05135	0.05903	0.17926
	GATE_N	0.05495	0.06269	0.18448
	RESET_B	0.04269	0.05174	0.23626
	RESET_B	0.03478	0.04385	0.22916

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01923	0.02632	0.13484
	D	0.02298	0.03007	0.13779
	GATE_N	0.02242	0.03101	0.15695
	GATE_N	0.02672	0.03530	0.16100
	RESET_B	0.00920	0.01597	0.11644
	RESET_B	0.01390	0.02066	0.12042
sky130_fd_sc_hs__dlrtn_2	D	0.02387	0.03089	0.13918
	D	0.02760	0.03455	0.14165
	GATE_N	0.02721	0.03585	0.16124
	GATE_N	0.03140	0.03984	0.16507
	RESET_B	0.01366	0.02014	0.12237
	RESET_B	0.01853	0.02477	0.12669
sky130_fd_sc_hs__dlrtn_4	D	0.03517	0.04194	0.15371
	D	0.03910	0.04574	0.15406
	GATE_N	0.03865	0.04676	0.17870
	GATE_N	0.04306	0.05115	0.17867
	RESET_B	0.02370	0.03526	0.23889
	RESET_B	0.03158	0.04301	0.24181

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)	0.00878	0.01473	0.11480
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00527	0.01121	0.11129
	(!GATE_N * !RESET_B * !Q)	0.01189	0.01783	0.12450
	(!GATE_N * !RESET_B * !Q)	0.00862	0.01455	0.12122
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00853	0.01446	0.11455
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00498	0.01091	0.11101
	(!GATE_N * !RESET_B * !Q)	0.01236	0.01829	0.12495
	(!GATE_N * !RESET_B * !Q)	0.00907	0.01498	0.12164
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01118	0.01714	0.11729
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00765	0.01360	0.11375
	(!GATE_N * !RESET_B * !Q)	0.01372	0.01966	0.12608
	(!GATE_N * !RESET_B * !Q)	0.01046	0.01638	0.12282

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)	0.00387	0.01064	0.11179
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00738	0.01416	0.11530
	(!GATE_N * !RESET_B * !Q)	0.01105	0.01784	0.12451
	(!GATE_N * !RESET_B * !Q)	0.01434	0.02114	0.12779
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00354	0.01031	0.11147
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00709	0.01386	0.11502
	(!GATE_N * !RESET_B * !Q)	0.01158	0.01837	0.12505
	(!GATE_N * !RESET_B * !Q)	0.01489	0.02169	0.12836
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00616	0.01295	0.11417
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00970	0.01649	0.11770
	(!GATE_N * !RESET_B * !Q)	0.01386	0.02065	0.12716
	(!GATE_N * !RESET_B * !Q)	0.01714	0.02394	0.13045

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)	0.01331	0.02065	0.14341
	(D * RESET_B * Q)	0.00926	0.01658	0.13936
	(D * !RESET_B * !Q)	0.01923	0.02649	0.14843
	(D * !RESET_B * !Q)	0.01497	0.02220	0.14416
	(!D * !Q)	0.01166	0.01899	0.14189
	(!D * !Q)	0.00762	0.01494	0.13784
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.01297	0.02031	0.14311
	(D * RESET_B * Q)	0.00897	0.01629	0.13910
	(D * !RESET_B * !Q)	0.01977	0.02701	0.14908
	(D * !RESET_B * !Q)	0.01553	0.02279	0.14484
	(!D * !Q)	0.01203	0.01936	0.14230
	(!D * !Q)	0.00803	0.01536	0.13829
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01572	0.02305	0.14586
	(D * RESET_B * Q)	0.01171	0.01901	0.14184
	(D * !RESET_B * !Q)	0.02209	0.02935	0.15148
	(D * !RESET_B * !Q)	0.01783	0.02508	0.14722
	(!D * !Q)	0.01294	0.02026	0.14321
	(!D * !Q)	0.00893	0.01624	0.13918

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)	0.01005	0.01801	0.13946
	(D * RESET_B * Q)	0.01410	0.02207	0.14351
	(D * !RESET_B * !Q)	0.01215	0.02013	0.14047
	(D * !RESET_B * !Q)	0.01643	0.02442	0.14475
	(!D * !Q)	0.00858	0.01660	0.13808
	(!D * !Q)	0.01262	0.02063	0.14213
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00984	0.01780	0.13931
	(D * RESET_B * Q)	0.01383	0.02182	0.14332
	(D * !RESET_B * !Q)	0.01268	0.02068	0.14105
	(D * !RESET_B * !Q)	0.01692	0.02494	0.14530
	(!D * !Q)	0.00912	0.01714	0.13866
	(!D * !Q)	0.01312	0.02117	0.14266
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01256	0.02050	0.14199
	(D * RESET_B * Q)	0.01656	0.02453	0.14601
	(D * !RESET_B * !Q)	0.01406	0.02206	0.14236
	(D * !RESET_B * !Q)	0.01834	0.02636	0.14664
	(!D * !Q)	0.01009	0.01808	0.13972
	(!D * !Q)	0.01411	0.02212	0.14374

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)	0.00464	0.00465	0.00464
	(D * GATE_N * !Q) + (!D * !Q)	0.00058	0.00057	0.00058
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00511	0.00512	0.00511
	(D * GATE_N * !Q) + (!D * !Q)	0.00083	0.00082	0.00083
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00725	0.00728	0.00725
	(D * GATE_N * !Q) + (!D * !Q)	0.00040	0.00038	0.00041

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)	0.00124	0.00112	0.00109
	(D * GATE_N * !Q) + (!D * !Q)	0.00533	0.00521	0.00515
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00163	0.00152	0.00148
	(D * GATE_N * !Q) + (!D * !Q)	0.00594	0.00582	0.00576
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00148	0.00120	0.00112
	(D * GATE_N * !Q) + (!D * !Q)	0.00836	0.00808	0.00796

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	GATE	RESET_B	Q
x	x	0	0
x	0	1	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE	RESET_B	Q
sky130_fd_sc_hs__dlrtp_1	0.00241	0.00261	0.00297	1.33578
sky130_fd_sc_hs__dlrtp_2	0.00238	0.00256	0.00309	2.57806
sky130_fd_sc_hs__dlrtp_4	0.00237	0.00255	0.00469	4.82238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	256.10600	342.16800
sky130_fd_sc_hs__dlrtp_2	0.00000	280.26300	377.55200
sky130_fd_sc_hs__dlrtp_4	0.00000	442.81100	614.70300

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)	0.21388	0.65828	6.32004
	GATE->Q (-R)	0.19043	0.63363	6.04476
	RESET_B->Q (RR)	0.07736	0.53671	6.50847
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.22533	0.58260	6.26505
	GATE->Q (-R)	0.20113	0.55609	5.99134
	RESET_B->Q (RR)	0.08290	0.47001	6.53560
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.24543	0.54086	6.26481
	GATE->Q (-R)	0.22362	0.51831	6.01078
	RESET_B->Q (RR)	0.08785	0.41092	6.58875

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.18231	0.56591	4.92587
	GATE->Q (-F)	0.19908	0.49065	3.42263
	RESET_B->Q (FF)	0.07576	0.49204	5.07683
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.19001	0.52123	4.76795
	GATE->Q (-F)	0.20472	0.44098	3.24010
	RESET_B->Q (FF)	0.07823	0.45082	4.95543
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.20203	0.49410	4.67765
	GATE->Q (-F)	0.21624	0.41715	3.18850
	RESET_B->Q (FF)	0.08586	0.42638	5.03118

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** ()	0.08587	0.67139	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B** ()	0.09844	0.67139	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B** ()	0.11854	0.67139	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	0.02889	0.03466	0.14066
	D	0.02476	0.03052	0.13680
	GATE	0.03248	0.03961	0.16897
	GATE	0.02811	0.03524	0.16511
	RESET_B	0.02024	0.02472	0.11670
	RESET_B	0.01547	0.01993	0.11207
sky130_fd_sc_hs__dlrtp_2	D	0.03200	0.03768	0.14405
	D	0.02786	0.03354	0.14073
	GATE	0.03528	0.04246	0.17210
	GATE	0.03094	0.03815	0.16884
	RESET_B	0.02309	0.02770	0.12289
	RESET_B	0.01812	0.02272	0.11818
sky130_fd_sc_hs__dlrtp_4	D	0.05086	0.05656	0.16195
	D	0.04667	0.05246	0.15940
	GATE	0.05403	0.06112	0.19021
	GATE	0.04965	0.05674	0.18788
	RESET_B	0.04262	0.05190	0.24128
	RESET_B	0.03505	0.04434	0.23406

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01894	0.02595	0.13326
	D	0.02309	0.03006	0.13645
	GATE	0.02728	0.03487	0.15669
	GATE	0.02342	0.03091	0.15238
	RESET_B	0.00965	0.01641	0.11156
	RESET_B	0.01443	0.02114	0.11533
sky130_fd_sc_hs__dlrtp_2	D	0.02331	0.03027	0.13829
	D	0.02746	0.03424	0.13992
	GATE	0.03124	0.03873	0.16040
	GATE	0.02746	0.03481	0.15572
	RESET_B	0.01361	0.02036	0.12327
	RESET_B	0.01857	0.02502	0.12571
sky130_fd_sc_hs__dlrtp_4	D	0.03502	0.04159	0.15262
	D	0.03922	0.04560	0.15215
	GATE	0.04268	0.04967	0.17113
	GATE	0.03896	0.04594	0.16658
	RESET_B	0.02409	0.03590	0.23731
	RESET_B	0.03167	0.04328	0.24374

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)	0.01246	0.01845	0.12365
	(GATE * !RESET_B * !Q)	0.00884	0.01481	0.12002
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00925	0.01512	0.11418
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00537	0.01121	0.11029
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01301	0.01898	0.12410
	(GATE * !RESET_B * !Q)	0.00940	0.01534	0.12047
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00899	0.01483	0.11390
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00512	0.01094	0.11002
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01421	0.02011	0.12445
	(GATE * !RESET_B * !Q)	0.01061	0.01649	0.12084
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01164	0.01742	0.11589
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00778	0.01355	0.11204

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)	0.01044	0.01710	0.12247
	(GATE * !RESET_B * !Q)	0.01407	0.02075	0.12611
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00341	0.01007	0.11021
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00729	0.01398	0.11410
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01110	0.01776	0.12305
	(GATE * !RESET_B * !Q)	0.01473	0.02141	0.12670
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00316	0.00983	0.10990
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00704	0.01371	0.11377
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01333	0.01993	0.12454
	(GATE * !RESET_B * !Q)	0.01695	0.02356	0.12818
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00580	0.01241	0.11195
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00965	0.01628	0.11580

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)	0.01448	0.02162	0.14285
	(D * RESET_B * Q)	0.01036	0.01748	0.13873
	(D * !RESET_B * !Q)	0.01562	0.02302	0.15144
	(D * !RESET_B * !Q)	0.01178	0.01915	0.14758
	(!D * !Q)	0.01292	0.02007	0.14124
	(!D * !Q)	0.00881	0.01592	0.13711
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01391	0.02109	0.14213
	(D * RESET_B * Q)	0.00985	0.01700	0.13808
	(D * !RESET_B * !Q)	0.01587	0.02326	0.15143
	(D * !RESET_B * !Q)	0.01206	0.01943	0.14760
	(!D * !Q)	0.01306	0.02022	0.14122
	(!D * !Q)	0.00900	0.01616	0.13715
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01644	0.02356	0.14399
	(D * RESET_B * Q)	0.01239	0.01948	0.13994
	(D * !RESET_B * !Q)	0.01706	0.02433	0.15157
	(D * !RESET_B * !Q)	0.01325	0.02052	0.14776
	(!D * !Q)	0.01385	0.02095	0.14132
	(!D * !Q)	0.00980	0.01690	0.13726

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)	0.00985	0.01771	0.13738
	(D * RESET_B * Q)	0.01398	0.02184	0.14150
	(D * !RESET_B * !Q)	0.01478	0.02299	0.14788
	(D * !RESET_B * !Q)	0.01865	0.02687	0.15175
	(!D * !Q)	0.00826	0.01617	0.13628
	(!D * !Q)	0.01240	0.02029	0.14041
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00959	0.01744	0.13685
	(D * RESET_B * Q)	0.01365	0.02151	0.14092
	(D * !RESET_B * !Q)	0.01546	0.02364	0.14824
	(D * !RESET_B * !Q)	0.01929	0.02749	0.15207
	(!D * !Q)	0.00875	0.01666	0.13651
	(!D * !Q)	0.01281	0.02072	0.14058
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01220	0.02001	0.13890
	(D * RESET_B * Q)	0.01627	0.02408	0.14296
	(D * !RESET_B * !Q)	0.01769	0.02578	0.14969
	(D * !RESET_B * !Q)	0.02154	0.02962	0.15353
	(!D * !Q)	0.00950	0.01736	0.13670
	(!D * !Q)	0.01357	0.02142	0.14074

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)	0.00463	0.00465	0.00464
	(D * !GATE * !Q) + (!D * !Q)	0.00052	0.00051	0.00052
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00508	0.00510	0.00508
	(D * !GATE * !Q) + (!D * !Q)	0.00078	0.00077	0.00078
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00717	0.00720	0.00717
	(D * !GATE * !Q) + (!D * !Q)	0.00055	0.00054	0.00056

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)	0.00126	0.00112	0.00109
	(D * !GATE * !Q) + (!D * !Q)	0.00537	0.00526	0.00520
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00166	0.00154	0.00150
	(D * !GATE * !Q) + (!D * !Q)	0.00599	0.00587	0.00581
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00155	0.00128	0.00120
	(D * !GATE * !Q) + (!D * !Q)	0.00819	0.00792	0.00780

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT	
D	GATE_N	Q	Q_N
0	0	0	1
x	1	1	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE_N	Q	Q_N
sky130_fd_sc_hs__dlxbn_1	0.00240	0.00261	1.29441	1.30158
sky130_fd_sc_hs__dlxbn_2	0.00228	0.00259	2.16585	2.51683

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	303.35600	430.74500
sky130_fd_sc_hs__dlxbn_2	0.00000	338.14800	448.35300

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)	0.21370	0.66861	6.35953
	GATE_N->Q (-R)	0.24320	0.81279	7.86846
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.22059	0.58906	5.99458
	GATE_N->Q (-R)	0.24977	0.73251	7.49675

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.18626	0.56664	4.77203
	GATE_N->Q (-F)	0.19114	0.60690	5.11323
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.19307	0.50875	4.13401
	GATE_N->Q (-F)	0.19841	0.54918	4.47602

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)	0.22848	0.78451	7.87512
	GATE_N->Q_N (-R)	0.23345	0.82457	8.21591
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.25158	0.69505	7.59112
	GATE_N->Q_N (-R)	0.25707	0.73528	7.93325

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)	0.24895	0.53668	3.73207
	GATE_N->Q_N (-F)	0.27840	0.68084	5.24165
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.28004	0.52750	3.83864
	GATE_N->Q_N (-F)	0.30937	0.67086	5.34142

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01754	0.02090	0.07573
	D	0.01567	0.01902	0.07346
	GATE_N	0.01777	0.02212	0.08393
	GATE_N	0.01983	0.02416	0.08508
sky130_fd_sc_hs__dlxbn_2	D	0.02182	0.02517	0.08067
	D	0.02004	0.02330	0.07826
	GATE_N	0.02208	0.02636	0.08866
	GATE_N	0.02412	0.02839	0.08968

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01409	0.01784	0.07163
	D	0.01595	0.01970	0.07332
	GATE_N	0.01589	0.02037	0.08354
	GATE_N	0.01793	0.02241	0.08515
sky130_fd_sc_hs__dlxbn_2	D	0.01767	0.02126	0.07571
	D	0.01946	0.02304	0.07694
	GATE_N	0.01945	0.02382	0.08688
	GATE_N	0.02149	0.02579	0.08856

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01575	0.01951	0.07429
	D	0.01761	0.02136	0.07535
	GATE_N	0.01754	0.02203	0.08522
	GATE_N	0.01959	0.02407	0.08702
sky130_fd_sc_hs__dlxbn_2	D	0.01968	0.02336	0.07859
	D	0.02146	0.02507	0.07925
	GATE_N	0.02146	0.02576	0.09032
	GATE_N	0.02350	0.02778	0.09103

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01595	0.01929	0.07333
	D	0.01408	0.01742	0.07139
	GATE_N	0.01619	0.02053	0.08143
	GATE_N	0.01824	0.02257	0.08316
sky130_fd_sc_hs__dlxbn_2	D	0.02009	0.02337	0.07742
	D	0.01831	0.02158	0.07558
	GATE_N	0.02037	0.02466	0.08546
	GATE_N	0.02240	0.02669	0.08730

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)	0.00878	0.01472	0.11494
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00505	0.01097	0.11120
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00912	0.01507	0.11531
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00555	0.01148	0.11173

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)	0.00334	0.01008	0.11137
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00707	0.01383	0.11511
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00383	0.01061	0.11192
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00741	0.01420	0.11551

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)	0.01337	0.02064	0.14339
	(D * Q * !Q_N)	0.00928	0.01653	0.13930
	(!D * !Q * Q_N)	0.01281	0.02010	0.14297
	(!D * !Q * Q_N)	0.00873	0.01599	0.13888
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01378	0.02107	0.14382
	(D * Q * !Q_N)	0.00971	0.01698	0.13974
	(!D * !Q * Q_N)	0.01293	0.02023	0.14310
	(!D * !Q * Q_N)	0.00886	0.01613	0.13902

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)	0.00984	0.01780	0.13932
	(D * Q * !Q_N)	0.01395	0.02189	0.14341
	(!D * !Q * Q_N)	0.00966	0.01766	0.13929
	(!D * !Q * Q_N)	0.01377	0.02177	0.14338
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01025	0.01821	0.13973
	(D * Q * !Q_N)	0.01434	0.02228	0.14381
	(!D * !Q * Q_N)	0.00976	0.01776	0.13939
	(!D * !Q * Q_N)	0.01385	0.02186	0.14346

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00238	0.00263	1.29964	1.31713

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	303.27000	430.67300

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)	0.21009	0.66203	6.32102
	GATE->Q (-R)	0.18653	0.63626	6.04310

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.19135	0.57791	4.84842
	GATE->Q (-F)	0.20372	0.49507	3.31438

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)	0.23408	0.79678	8.01751
	GATE->Q_N (-R)	0.24649	0.71387	6.48471

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)	0.24543	0.53120	3.71572
	GATE->Q_N (-F)	0.22188	0.50528	3.43839

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01754	0.02084	0.07500
	D	0.01568	0.01899	0.07276
	GATE	0.01909	0.02318	0.08903
	GATE	0.01704	0.02111	0.08647

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01393	0.01760	0.07103
	D	0.01578	0.01945	0.07241
	GATE	0.01776	0.02176	0.08245
	GATE	0.01571	0.01968	0.08013

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01562	0.01932	0.07305
	D	0.01747	0.02115	0.07432
	GATE	0.01945	0.02344	0.08428
	GATE	0.01741	0.02137	0.08201

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01595	0.01932	0.07264
	D	0.01410	0.01742	0.07067
	GATE	0.01751	0.02161	0.08651
	GATE	0.01546	0.01953	0.08415

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)	0.00892	0.01478	0.11389
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00522	0.01105	0.11018

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)	0.00318	0.00985	0.10994
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00689	0.01357	0.11365

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)	0.01358	0.02080	0.14183
	(D * Q * !Q_N)	0.00948	0.01668	0.13773
	(!D * !Q * Q_N)	0.01341	0.02061	0.14160
	(!D * !Q * Q_N)	0.00932	0.01651	0.13750

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)	0.00944	0.01728	0.13671
	(D * Q * !Q_N)	0.01353	0.02139	0.14081
	(!D * !Q * Q_N)	0.00881	0.01672	0.13661
	(!D * !Q * Q_N)	0.01291	0.02084	0.14071

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
D	**GATE_N**	**Q**
0	**0**	**0**
x	**1**	**1**
1	**x**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	**GATE_N**	**Q**
sky130_fd_sc_hs__dlxtn_1	0.00238	0.00265	1.31440
sky130_fd_sc_hs__dlxtn_2	0.00243	0.00264	2.39494
sky130_fd_sc_hs__dlxtn_4	0.00242	0.00263	4.85972

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlxtn_1	0.00000	236.00100	328.61400
sky130_fd_sc_hs__dlxtn_2	0.00000	252.17600	377.54700
sky130_fd_sc_hs__dlxtn_4	0.00000	380.53500	478.96000

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)	0.19969	0.64673	6.28180
	GATE_N->Q (-R)	0.22913	0.78962	7.79036
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.20289	0.55384	5.99587
	GATE_N->Q (-R)	0.23078	0.69515	7.49817
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.22339	0.51393	6.30527
	GATE_N->Q (-R)	0.24999	0.65385	7.80138

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.17288	0.54163	4.66102
	GATE_N->Q (-F)	0.17934	0.58386	5.00232
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.17901	0.49405	4.38424
	GATE_N->Q (-F)	0.18431	0.53459	4.72486
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.19551	0.48629	4.71778
	GATE_N->Q (-F)	0.20340	0.53197	5.07731

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.02636	0.03254	0.14080
	D	0.02251	0.02882	0.13735
	GATE_N	0.02676	0.03486	0.15607
	GATE_N	0.03094	0.03907	0.16069
sky130_fd_sc_hs__dlxtn_2	D	0.02943	0.03568	0.14411
	D	0.02550	0.03177	0.14128
	GATE_N	0.02967	0.03797	0.15943
	GATE_N	0.03382	0.04217	0.16426
sky130_fd_sc_hs__dlxtn_4	D	0.04410	0.05011	0.15825
	D	0.04018	0.04620	0.15577
	GATE_N	0.04442	0.05246	0.17334
	GATE_N	0.04860	0.05660	0.17906

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01896	0.02600	0.13440
	D	0.02283	0.02985	0.13741
	GATE_N	0.02250	0.03109	0.15703
	GATE_N	0.02668	0.03524	0.16090
sky130_fd_sc_hs__dlxtn_2	D	0.02299	0.02990	0.13709
	D	0.02693	0.03377	0.14087
	GATE_N	0.02650	0.03522	0.16161
	GATE_N	0.03065	0.03903	0.16430
sky130_fd_sc_hs__dlxtn_4	D	0.03484	0.04153	0.15200
	D	0.03877	0.04528	0.15312
	GATE_N	0.03840	0.04676	0.17382
	GATE_N	0.04258	0.05065	0.17759

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00851	0.01437	0.11439
	GATE_N	0.00466	0.01050	0.11054
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00838	0.01424	0.11430
	GATE_N	0.00446	0.01030	0.11037
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00975	0.01560	0.11566
	GATE_N	0.00584	0.01166	0.11173

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00337	0.01005	0.11117
	GATE_N	0.00723	0.01392	0.11504
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00320	0.00989	0.11105
	GATE_N	0.00713	0.01384	0.11498
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00458	0.01126	0.11242
	GATE_N	0.00851	0.01520	0.11636

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01351	0.02072	0.14348
	(D * Q)	0.00933	0.01652	0.13929
	(!D * !Q)	0.01233	0.01955	0.14241
	(!D * !Q)	0.00815	0.01534	0.13822
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01311	0.02038	0.14312
	(D * Q)	0.00896	0.01620	0.13896
	(!D * !Q)	0.01247	0.01973	0.14258
	(!D * !Q)	0.00832	0.01555	0.13842
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01455	0.02178	0.14453
	(D * Q)	0.01039	0.01760	0.14036
	(!D * !Q)	0.01343	0.02067	0.14353
	(!D * !Q)	0.00927	0.01648	0.13936

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00961	0.01755	0.13891
	(D * Q)	0.01381	0.02174	0.14310
	(!D * !Q)	0.00886	0.01684	0.13833
	(!D * !Q)	0.01307	0.02104	0.14251
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00938	0.01732	0.13869
	(D * Q)	0.01356	0.02149	0.14285
	(!D * !Q)	0.00924	0.01724	0.13872
	(!D * !Q)	0.01341	0.02142	0.14287
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01080	0.01873	0.14023
	(D * Q)	0.01498	0.02291	0.14440
	(!D * !Q)	0.01018	0.01816	0.13975
	(!D * !Q)	0.01437	0.02235	0.14392

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00233	0.00270	1.27283

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	226.73300	328.28600

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)	0.23400	0.67962	6.28967
	GATE->Q (-R)	0.19102	0.63659	6.02726

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.18645	0.56093	4.71978
	GATE->Q (-F)	0.19929	0.48829	3.31919

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02778	0.03389	0.14157
	D	0.02381	0.02993	0.13801
	GATE	0.03129	0.03796	0.14597
	GATE	0.02694	0.03362	0.14213

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02122	0.02825	0.13631
	D	0.02518	0.03220	0.13940
	GATE	0.02898	0.03645	0.15373
	GATE	0.02502	0.03230	0.14937

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00853	0.01463	0.11506
	!GATE	0.00476	0.01085	0.11127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00347	0.01014	0.11173
	!GATE	0.00725	0.01394	0.11550

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01405	0.02139	0.14435
	(D * Q)	0.00990	0.01721	0.14019
	(!D * !Q)	0.01301	0.02032	0.14313
	(!D * !Q)	0.00886	0.01615	0.13897

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00822	0.01623	0.13757
	(D * Q)	0.01237	0.02041	0.14174
	(!D * !Q)	0.00775	0.01580	0.13739
	(!D * !Q)	0.01189	0.01996	0.14156

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00186	1.31508
sky130_fd_sc_hs__dlygate4sd2_1	0.00187	1.31262
sky130_fd_sc_hs__dlygate4sd3_1	0.00189	1.30198

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	34.94060	55.59850
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	30.09690	50.75760
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	30.04180	50.72260

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)**	0.14795	0.58646	5.90108
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.18698	0.63628	6.01000
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.30904	0.77947	6.23892

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.17558	0.60543	5.35777
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.21643	0.65932	5.41328
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.32050	0.80184	5.57939

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01456	0.01692	0.06462
	A	0.01156	0.01394	0.06159
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01514	0.01724	0.06291
	A	0.01212	0.01422	0.06023
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01759	0.01945	0.06341
	A	0.01455	0.01640	0.06070

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01167	0.01441	0.06158
	A	0.01468	0.01740	0.06395
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01237	0.01463	0.05943
	A	0.01540	0.01764	0.06228
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01548	0.01683	0.05967
	A	0.01854	0.01987	0.06251

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00243	0.00455	0.67221
sky130_fd_sc_hs__ebufn_2	0.00265	0.00604	1.11035
sky130_fd_sc_hs__ebufn_4	0.00292	0.00933	2.19465
sky130_fd_sc_hs__ebufn_8	0.00565	0.01558	3.72426

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	127.67400	202.15600
sky130_fd_sc_hs__ebufn_2	0.00000	98.91340	136.14700
sky130_fd_sc_hs__ebufn_4	0.00000	95.62960	200.83500
sky130_fd_sc_hs__ebufn_8	0.00000	157.42800	399.62100

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)	0.07056	0.63778	6.38594
	TE_B->Z (RR)	0.03034	0.39406	5.09395
	TE_B->Z (FR)	0.05073	0.72737	8.51830
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.06778	0.55124	6.26515
	TE_B->Z (RR)	0.03307	0.39504	5.09491
	TE_B->Z (FR)	0.05058	0.62429	8.35151
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.07661	0.48750	6.29586
	TE_B->Z (RR)	0.04264	0.39757	5.09747
	TE_B->Z (FR)	0.04784	0.50520	8.21999
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.08013	0.42412	6.16826
	TE_B->Z (RR)	0.07124	0.40321	5.10310
	TE_B->Z (FR)	0.05341	0.41245	7.77851

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.07282	0.45848	4.20584
	TE_B->Z (RF)	0.03010	0.39408	5.09395
	TE_B->Z (FF)	0.05844	0.42031	4.02556
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.08046	0.43709	4.08979
	TE_B->Z (RF)	0.03280	0.39507	5.09491
	TE_B->Z (FF)	0.06147	0.38319	3.88659
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.10520	0.46908	4.37991
	TE_B->Z (RF)	0.04238	0.39765	5.09747
	TE_B->Z (FF)	0.07109	0.38517	4.11635
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.10439	0.43354	4.36842
	TE_B->Z (RF)	0.07031	0.40341	5.10309
	TE_B->Z (FF)	0.09739	0.41520	4.22800

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.01060	0.01687	0.11704
	A	0.00659	0.01286	0.11321
	TE_B	0.00657	0.01357	0.11406
	TE_B	0.01381	0.02085	0.12140
sky130_fd_sc_hs__ebufn_2	A	0.01340	0.02063	0.13557
	A	0.00908	0.01632	0.13164
	TE_B	0.00923	0.01687	0.13053
	TE_B	0.01885	0.02650	0.14061
sky130_fd_sc_hs__ebufn_4	A	0.02042	0.02788	0.14678
	A	0.01565	0.02318	0.14272
	TE_B	0.01618	0.02362	0.14028
	TE_B	0.03108	0.03856	0.15539
sky130_fd_sc_hs__ebufn_8	A	0.03968	0.05586	0.29462
	A	0.03039	0.04662	0.28669
	TE_B	0.03292	0.03958	0.15437
	TE_B	0.05796	0.06480	0.18093

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00469	0.01157	0.11161
	A	0.00869	0.01557	0.11521
	TE_B	0.00475	0.01181	0.11203
	TE_B	0.01188	0.01894	0.11894
sky130_fd_sc_hs__ebufn_2	A	0.00894	0.01643	0.12959
	A	0.01326	0.02069	0.13329
	TE_B	0.00930	0.01693	0.12953
	TE_B	0.01856	0.02618	0.13876
sky130_fd_sc_hs__ebufn_4	A	0.01855	0.02526	0.14021
	A	0.02331	0.02997	0.14464
	TE_B	0.01866	0.02598	0.14086
	TE_B	0.03311	0.04036	0.15525
sky130_fd_sc_hs__ebufn_8	A	0.03655	0.05055	0.28368
	A	0.04584	0.05981	0.29161
	TE_B	0.03794	0.04435	0.15808
	TE_B	0.06196	0.06832	0.18041

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00697	0.01332	0.11190
	(TE_B * Z)	0.00291	0.00924	0.10784
	(TE_B * !Z)	0.00692	0.01326	0.11181
	(TE_B * !Z)	0.00288	0.00920	0.10777
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00862	0.01536	0.12775
	(TE_B * Z)	0.00413	0.01084	0.12324
	(TE_B * !Z)	0.00823	0.01493	0.12723
	(TE_B * !Z)	0.00381	0.01050	0.12280
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01189	0.01814	0.13342
	(TE_B * Z)	0.00687	0.01309	0.12838
	(TE_B * !Z)	0.01129	0.01749	0.13265
	(TE_B * !Z)	0.00639	0.01256	0.12773
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.02180	0.03541	0.26794
	(TE_B * Z)	0.01201	0.02564	0.25813
	(TE_B * !Z)	0.02067	0.03418	0.26642
	(TE_B * !Z)	0.01111	0.02459	0.25684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00155	0.00841	0.10802
	(TE_B * Z)	0.00561	0.01250	0.11210
	(TE_B * !Z)	0.00164	0.00858	0.10833
	(TE_B * !Z)	0.00568	0.01265	0.11238
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00203	0.00933	0.12210
	(TE_B * Z)	0.00653	0.01385	0.12663
	(TE_B * !Z)	0.00244	0.00988	0.12301
	(TE_B * !Z)	0.00688	0.01433	0.12746
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00318	0.01024	0.12589
	(TE_B * Z)	0.00820	0.01530	0.13098
	(TE_B * !Z)	0.00389	0.01113	0.12743
	(TE_B * !Z)	0.00881	0.01608	0.13235
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00508	0.01983	0.25366
	(TE_B * Z)	0.01487	0.02964	0.26354
	(TE_B * !Z)	0.00651	0.02161	0.25666
	(TE_B * !Z)	0.01611	0.03126	0.26626

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00609	0.01224	0.11132
	(A * Z)	-0.00104	0.00505	0.10416
	(!A * !Z)	0.00545	0.01149	0.11083
	(!A * !Z)	-0.00169	0.00433	0.10369
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00607	0.01263	0.12499
	(A * Z)	-0.00320	0.00332	0.11567
	(!A * !Z)	0.00619	0.01246	0.12520
	(!A * !Z)	-0.00313	0.00308	0.11587
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00701	0.01280	0.12810
	(A * Z)	-0.00741	-0.00171	0.11364
	(!A * !Z)	0.00766	0.01296	0.12903
	(!A * !Z)	-0.00684	-0.00158	0.11456
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00955	0.01401	0.12666
	(A * Z)	-0.01446	-0.01017	0.10252
	(!A * !Z)	0.01052	0.01427	0.12886
	(!A * !Z)	-0.01365	-0.01000	0.10470

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00202	0.00916	0.10924
	(A * Z)	0.00916	0.01635	0.11641
	(!A * !Z)	0.00160	0.00868	0.10878
	(!A * !Z)	0.00875	0.01586	0.11597
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00333	0.01123	0.12423
	(A * Z)	0.01262	0.02059	0.13356
	(!A * !Z)	0.00366	0.01138	0.12447
	(!A * !Z)	0.01300	0.02071	0.13382
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00617	0.01392	0.13007
	(A * Z)	0.02059	0.02845	0.14456
	(!A * !Z)	0.00773	0.01521	0.13138
	(!A * !Z)	0.02222	0.02972	0.14587
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01265	0.01965	0.13409
	(A * Z)	0.03675	0.04386	0.15827
	(!A * !Z)	0.01596	0.02268	0.13720
	(!A * !Z)	0.04015	0.04687	0.16145

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00189	0.00376	0.00306	1.32509	1.33907

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	245.47500	352.77300

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)	0.18301	0.65861	6.22900

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.16432	0.51175	3.59780

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)	0.23856	0.70035	6.30833

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)	0.24604	0.55643	3.55406

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)	-0.10412	-0.18223	-0.53019
	setup	CLK (R)	0.13150	0.19985	0.56060

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)	-0.24174	-0.34830	-2.73417
	setup	CLK (R)	0.31480	0.41172	2.96284

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)	-0.10412	-0.18223	-0.53019
	setup	CLK (R)	0.13150	0.19985	0.56060

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)	-0.24174	-0.34830	-2.73417
	setup	CLK (R)	0.31480	0.41172	2.96284

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)	-0.00677	0.00565	0.52775
	setup	CLK (R)	0.34995	0.36103	0.78115

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)	-0.15997	-0.24371	-1.86022
	setup	CLK (R)	0.27187	0.34496	2.58292

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)	-0.00677	0.00565	0.52775
	hold	CLK (R)	-0.13320	-0.14655	-0.25597
	setup	CLK (R)	0.12803	0.17239	0.45092
	setup	CLK (R)	0.34995	0.36103	0.78115

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)	-0.25589	-0.33089	-2.56869
	hold	CLK (R)	-0.15997	-0.24371	-1.86022
	setup	CLK (R)	0.27187	0.34496	2.58292
	setup	CLK (R)	0.17397	0.25117	1.86516

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 ()	0.08839	0.67139	16.50020
	min_pulse_width	CLK ()	0.12859	0.67139	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 ()	0.14116	0.67139	16.50020
	min_pulse_width	CLK ()	0.21906	0.67139	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	0.02104	0.02444	0.08853
	CLK	0.01868	0.02209	0.08567

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02104	0.02431	0.09032
	CLK	0.01851	0.02174	0.08778

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02275	0.02605	0.09321
	CLK	0.02022	0.02346	0.09035

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01986	0.02328	0.08634
	CLK	0.01751	0.02092	0.08364

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00909	0.01042	0.04253
	(CLK * DE)	0.00582	0.00716	0.03927
	(CLK * !DE)	0.00281	0.00281	0.00280
	(CLK * !DE)	0.00076	0.00077	0.00074
	(!CLK * DE * Q * !Q_N)	0.01735	0.01958	0.06219
	(!CLK * DE * Q * !Q_N)	0.01412	0.01636	0.05897
	(!CLK * DE * !Q * Q_N)	0.01693	0.01908	0.06142
	(!CLK * DE * !Q * Q_N)	0.01367	0.01582	0.05816
	(!CLK * !DE)	0.00280	0.00279	0.00277
	(!CLK * !DE)	0.00075	0.00074	0.00072

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00537	0.00697	0.03908
	(CLK * DE)	0.00865	0.01023	0.04233
	(CLK * !DE)	0.00200	0.00199	0.00200
	(CLK * !DE)	0.00405	0.00406	0.00405
	(!CLK * DE * Q * !Q_N)	0.01678	0.01861	0.05787
	(!CLK * DE * Q * !Q_N)	0.01999	0.02183	0.06108
	(!CLK * DE * !Q * Q_N)	0.01760	0.01964	0.05959
	(!CLK * DE * !Q * Q_N)	0.02087	0.02289	0.06285
	(!CLK * !DE)	0.00201	0.00200	0.00200
	(!CLK * !DE)	0.00405	0.00406	0.00405

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01369	0.01897	0.12034
	CLK	0.00632	0.01157	0.11296
	(!CLK * D * Q * !Q_N)	0.00760	0.01149	0.08017
	(!CLK * D * Q * !Q_N)	0.00160	0.00545	0.07416
	(!CLK * D * !Q * Q_N)	0.02151	0.02734	0.13751
	(!CLK * D * !Q * Q_N)	0.01414	0.01995	0.13013
	(!CLK * !D * Q * !Q_N)	0.02389	0.02775	0.09822
	(!CLK * !D * Q * !Q_N)	0.01914	0.02296	0.09345
	(!CLK * !D * !Q * Q_N)	0.00881	0.01283	0.08146
	(!CLK * !D * !Q * Q_N)	0.00284	0.00682	0.07547

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00587	0.01164	0.11373
	CLK	0.01325	0.01902	0.12108
	(!CLK * D * Q * !Q_N)	0.00110	0.00551	0.07463
	(!CLK * D * Q * !Q_N)	0.00709	0.01151	0.08065
	(!CLK * D * !Q * Q_N)	0.01788	0.02384	0.13214
	(!CLK * D * !Q * Q_N)	0.02526	0.03122	0.13951
	(!CLK * !D * Q * !Q_N)	0.01659	0.02106	0.09254
	(!CLK * !D * Q * !Q_N)	0.02137	0.02584	0.09732
	(!CLK * !D * !Q * Q_N)	0.00227	0.00675	0.07585
	(!CLK * !D * !Q * Q_N)	0.00825	0.01274	0.08184

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)	0.01856	0.02544	0.15037
	(D * Q * !Q_N)	0.01368	0.02054	0.14550
	(D * !DE * !Q * Q_N)	0.01878	0.02568	0.15083
	(D * !DE * !Q * Q_N)	0.01390	0.02079	0.14595
	(!D * !Q * Q_N)	0.01927	0.02618	0.15133
	(!D * !Q * Q_N)	0.01440	0.02128	0.14645
	(!D * !DE * Q * !Q_N)	0.01809	0.02498	0.14991
	(!D * !DE * Q * !Q_N)	0.01321	0.02008	0.14504

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)	0.01017	0.01782	0.14202
	(D * Q * !Q_N)	0.01505	0.02272	0.14691
	(D * DE * !Q * Q_N)	0.01978	0.02767	0.15503
	(D * DE * !Q * Q_N)	0.02465	0.03254	0.15992
	(D * !DE * !Q * Q_N)	0.01157	0.01923	0.14302
	(D * !DE * !Q * Q_N)	0.01645	0.02412	0.14791
	(!D * DE * Q * !Q_N)	0.02396	0.03172	0.15740
	(!D * DE * Q * !Q_N)	0.02884	0.03661	0.16229
	(!D * !Q * Q_N)	0.01207	0.01973	0.14354
	(!D * !Q * Q_N)	0.01694	0.02462	0.14843
	(!D * !DE * Q * !Q_N)	0.00971	0.01735	0.14156
	(!D * !DE * Q * !Q_N)	0.01458	0.02225	0.14644

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00193	0.00363	0.00300	1.31898

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	214.20700	341.32900

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)	0.17353	0.64448	6.18483

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.15264	0.48577	3.46102

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)	-0.10122	-0.18186	-0.53043
	setup	CLK (R)	0.12545	0.19933	0.55983

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)	-0.23833	-0.34717	-2.72161
	setup	CLK (R)	0.31481	0.41282	3.08226

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)	-0.00517	0.00591	0.52214
	setup	CLK (R)	0.34872	0.35804	0.87767

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)	-0.15925	-0.24218	-1.87048
	setup	CLK (R)	0.27272	0.34306	2.57767

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)	-0.00517	0.00591	0.52214
	hold	CLK (R)	-0.12800	-0.14243	-0.24623
	setup	CLK (R)	0.12542	0.17136	0.45255
	setup	CLK (R)	0.34872	0.35804	0.87767

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)	-0.25334	-0.33132	-2.56304
	hold	CLK (R)	-0.15925	-0.24218	-1.87048
	setup	CLK (R)	0.27272	0.34306	2.57767
	setup	CLK (R)	0.17127	0.25033	1.87903

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 ()	0.08336	0.67139	16.50020
	min_pulse_width	CLK ()	0.11603	0.67139	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 ()	0.13613	0.67139	16.50020
	min_pulse_width	CLK ()	0.22409	0.67139	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	0.03473	0.04222	0.16868
	CLK	0.03011	0.03761	0.16440

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.03517	0.04216	0.17497
	CLK	0.03024	0.03718	0.16913

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00883	0.01017	0.04234
	(CLK * DE)	0.00553	0.00688	0.03905
	(CLK * !DE)	0.00270	0.00269	0.00268
	(CLK * !DE)	0.00062	0.00063	0.00060
	(!CLK * DE * Q)	0.01679	0.01910	0.06172
	(!CLK * DE * Q)	0.01353	0.01584	0.05847
	(!CLK * DE * !Q)	0.01659	0.01876	0.06120
	(!CLK * DE * !Q)	0.01330	0.01548	0.05792
	(!CLK * !DE)	0.00268	0.00268	0.00266
	(!CLK * !DE)	0.00060	0.00060	0.00058

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00520	0.00679	0.03896
	(CLK * DE)	0.00847	0.01009	0.04224
	(CLK * !DE)	0.00192	0.00191	0.00192
	(CLK * !DE)	0.00399	0.00400	0.00399
	(!CLK * DE * Q)	0.01584	0.01769	0.05700
	(!CLK * DE * Q)	0.01908	0.02093	0.06025
	(!CLK * DE * !Q)	0.01706	0.01910	0.05910
	(!CLK * DE * !Q)	0.02036	0.02238	0.06239
	(!CLK * !DE)	0.00193	0.00191	0.00192
	(!CLK * !DE)	0.00400	0.00400	0.00399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01326	0.01863	0.12001
	CLK	0.00611	0.01145	0.11285
	(!CLK * D * Q)	0.00700	0.01095	0.07964
	(!CLK * D * Q)	0.00120	0.00513	0.07386
	(!CLK * D * !Q)	0.02101	0.02694	0.13717
	(!CLK * D * !Q)	0.01386	0.01976	0.13000
	(!CLK * !D * Q)	0.02281	0.02672	0.09724
	(!CLK * !D * Q)	0.01825	0.02216	0.09270
	(!CLK * !D * !Q)	0.00856	0.01267	0.08130
	(!CLK * !D * !Q)	0.00282	0.00690	0.07553

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00571	0.01147	0.11354
	CLK	0.01287	0.01865	0.12069
	(!CLK * D * Q)	0.00068	0.00510	0.07424
	(!CLK * D * Q)	0.00647	0.01089	0.08004
	(!CLK * D * !Q)	0.01736	0.02332	0.13159
	(!CLK * D * !Q)	0.02452	0.03050	0.13875
	(!CLK * !D * Q)	0.01606	0.02050	0.09204
	(!CLK * !D * Q)	0.02059	0.02508	0.09660
	(!CLK * !D * !Q)	0.00219	0.00667	0.07579
	(!CLK * !D * !Q)	0.00795	0.01245	0.08156

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01744	0.02458	0.14943
	(D * Q)	0.01265	0.01977	0.14464
	(D * !DE * !Q)	0.01850	0.02563	0.15075
	(D * !DE * !Q)	0.01372	0.02083	0.14596
	(!D * !Q)	0.01900	0.02613	0.15124
	(!D * !Q)	0.01422	0.02132	0.14645
	(!D * !DE * Q)	0.01697	0.02411	0.14896
	(!D * !DE * Q)	0.01219	0.01930	0.14417

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00975	0.01742	0.14171
	(D * Q)	0.01453	0.02224	0.14651
	(D * DE * !Q)	0.01915	0.02698	0.15476
	(D * DE * !Q)	0.02392	0.03179	0.15956
	(D * !DE * !Q)	0.01097	0.01859	0.14255
	(D * !DE * !Q)	0.01575	0.02341	0.14734
	(!D * DE * Q)	0.02311	0.03091	0.15636
	(!D * DE * Q)	0.02789	0.03571	0.16116
	(!D * !Q)	0.01147	0.01909	0.14308
	(!D * !Q)	0.01625	0.02390	0.14788
	(!D * !DE * Q)	0.00928	0.01696	0.14124
	(!D * !DE * Q)	0.01406	0.02177	0.14604

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00298	0.00338	0.66848
sky130_fd_sc_hs__einvn_2	0.00561	0.00513	1.20428
sky130_fd_sc_hs__einvn_4	0.01118	0.00927	2.32081
sky130_fd_sc_hs__einvn_8	0.02239	0.01552	3.98810

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvn_1	0.00000	48.07490	59.53730
sky130_fd_sc_hs__einvn_2	0.00000	57.15900	99.42720
sky130_fd_sc_hs__einvn_4	0.00000	70.03460	199.25100
sky130_fd_sc_hs__einvn_8	0.00000	106.37500	396.65900

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)	0.04175	0.78241	9.42424
	TE_B->Z (RR)	0.03185	0.39363	5.09352
	TE_B->Z (FR)	0.04951	0.72706	8.50150
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02918	0.66519	9.32446
	TE_B->Z (RR)	0.04172	0.39586	5.09574
	TE_B->Z (FR)	0.04473	0.60544	8.34486
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.02724	0.57533	9.37887
	TE_B->Z (RR)	0.04346	0.39765	5.09756
	TE_B->Z (FR)	0.04298	0.49223	8.19125
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02903	0.49837	9.13423
	TE_B->Z (RR)	0.06919	0.40578	5.10568
	TE_B->Z (FR)	0.05054	0.39943	7.68957

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.02439	0.45582	5.45592
	TE_B->Z (RF)	0.03140	0.39365	5.09350
	TE_B->Z (FF)	0.05787	0.42225	3.93279
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01977	0.39031	5.47031
	TE_B->Z (RF)	0.04110	0.39589	5.09574
	TE_B->Z (FF)	0.06480	0.40473	4.06695
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01903	0.33175	5.51863
	TE_B->Z (RF)	0.04292	0.39773	5.09756
	TE_B->Z (FF)	0.06502	0.36525	4.09620
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.02105	0.29453	5.60137
	TE_B->Z (RF)	0.06820	0.40605	5.10568
	TE_B->Z (FF)	0.08848	0.39302	4.25144

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00043	0.00222	0.03590
	A	0.00421	0.00688	0.04060
	TE_B	0.00241	0.00716	0.07769
	TE_B	0.00960	0.01438	0.08495
sky130_fd_sc_hs__einvn_2	A	-0.00201	0.00382	0.06787
	A	0.00703	0.01290	0.07704
	TE_B	0.00371	0.00833	0.07894
	TE_B	0.01552	0.02020	0.09124
sky130_fd_sc_hs__einvn_4	A	-0.00399	0.00851	0.12918
	A	0.01405	0.02650	0.14733
	TE_B	0.00765	0.01552	0.13648
	TE_B	0.02973	0.03772	0.15879
sky130_fd_sc_hs__einvn_8	A	-0.00742	0.01799	0.24673
	A	0.02868	0.05415	0.28357
	TE_B	0.01590	0.02306	0.14233
	TE_B	0.05524	0.06246	0.18342

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00517	0.00698	0.03146
	A	0.00051	0.00230	0.02581
	TE_B	0.00517	0.00998	0.07695
	TE_B	0.00898	0.01373	0.08047
sky130_fd_sc_hs__einvn_2	A	0.00888	0.01317	0.05876
	A	-0.00014	0.00405	0.04897
	TE_B	0.00905	0.01373	0.08389
	TE_B	0.01419	0.01878	0.08847
sky130_fd_sc_hs__einvn_4	A	0.01797	0.02701	0.11300
	A	-0.00002	0.00890	0.09500
	TE_B	0.01861	0.02641	0.14627
	TE_B	0.02713	0.03489	0.15396
sky130_fd_sc_hs__einvn_8	A	0.03600	0.05527	0.22162
	A	-0.00003	0.01915	0.18335
	TE_B	0.03776	0.04482	0.16266
	TE_B	0.04967	0.05669	0.17270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00141	0.00142	0.00141
	(TE_B * Z)	-0.00113	-0.00115	-0.00109
	(TE_B * !Z)	0.00152	0.00152	0.00152
	(TE_B * !Z)	-0.00073	-0.00074	-0.00071
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00223	0.00224	0.00216
	(TE_B * Z)	-0.00271	-0.00274	-0.00268
	(TE_B * !Z)	0.00263	0.00263	0.00264
	(TE_B * !Z)	-0.00166	-0.00166	-0.00163
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00359	0.00362	0.00347
	(TE_B * Z)	-0.00590	-0.00598	-0.00583
	(TE_B * !Z)	0.00429	0.00431	0.00432
	(TE_B * !Z)	-0.00396	-0.00399	-0.00391
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00652	0.00656	0.00627
	(TE_B * Z)	-0.01213	-0.01224	-0.01190
	(TE_B * !Z)	0.00792	0.00796	0.00798
	(TE_B * !Z)	-0.00833	-0.00837	-0.00823

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00038	-0.00038	-0.00038
	(TE_B * Z)	0.00207	0.00207	0.00204
	(TE_B * !Z)	-0.00043	-0.00044	-0.00046
	(TE_B * !Z)	0.00202	0.00203	0.00196
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00108	-0.00110	-0.00110
	(TE_B * Z)	0.00362	0.00365	0.00360
	(TE_B * !Z)	-0.00131	-0.00139	-0.00148
	(TE_B * !Z)	0.00333	0.00330	0.00312
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00251	-0.00251	-0.00250
	(TE_B * Z)	0.00664	0.00665	0.00653
	(TE_B * !Z)	-0.00292	-0.00308	-0.00323
	(TE_B * !Z)	0.00613	0.00610	0.00573
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00517	-0.00522	-0.00520
	(TE_B * Z)	0.01262	0.01269	0.01247
	(TE_B * !Z)	-0.00625	-0.00645	-0.00678
	(TE_B * !Z)	0.01182	0.01168	0.01099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00383	0.00800	0.07871
	(A * !Z)	-0.00141	0.00267	0.07342
	(!A * Z)	0.00356	0.00788	0.07839
	(!A * Z)	-0.00166	0.00256	0.07308
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00480	0.00829	0.07813
	(A * !Z)	-0.00314	0.00014	0.07008
	(!A * Z)	0.00412	0.00794	0.07745
	(!A * Z)	-0.00381	-0.00016	0.06937
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00766	0.01342	0.13335
	(A * !Z)	-0.00649	-0.00116	0.11899
	(!A * Z)	0.00637	0.01274	0.13200
	(!A * Z)	-0.00776	-0.00173	0.11758
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00976	0.01404	0.13245
	(A * !Z)	-0.01351	-0.01016	0.10858
	(!A * Z)	0.00742	0.01273	0.12973
	(!A * Z)	-0.01590	-0.01130	0.10576

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00206	0.00691	0.07797
	(A * !Z)	0.00740	0.01227	0.08333
	(!A * Z)	0.00162	0.00655	0.07765
	(!A * Z)	0.00691	0.01185	0.08295
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00375	0.00834	0.07852
	(A * !Z)	0.01189	0.01647	0.08669
	(!A * Z)	0.00286	0.00757	0.07780
	(!A * Z)	0.01089	0.01566	0.08587
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00759	0.01540	0.13547
	(A * !Z)	0.02218	0.03002	0.15009
	(!A * Z)	0.00577	0.01387	0.13400
	(!A * Z)	0.02014	0.02833	0.14839
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01571	0.02275	0.14105
	(A * !Z)	0.03985	0.04697	0.16529
	(!A * Z)	0.01201	0.01930	0.13817
	(!A * Z)	0.03571	0.04315	0.16197

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00297	0.00290	0.59827
sky130_fd_sc_hs__einvp_2	0.00553	0.00450	1.22503
sky130_fd_sc_hs__einvp_4	0.01118	0.00814	2.28050
sky130_fd_sc_hs__einvp_8	0.02240	0.01279	3.96004

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvp_1	0.00000	15.03490	74.88160
sky130_fd_sc_hs__einvp_2	0.00000	37.99510	156.92800
sky130_fd_sc_hs__einvp_4	0.00000	54.07800	247.26500
sky130_fd_sc_hs__einvp_8	0.00000	90.39520	444.60500

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)	0.04529	0.80057	9.34336
	TE->Z (FR)	0.08029	0.39344	5.09332
	TE->Z (RR)	0.07538	0.62224	5.62994
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02876	0.66018	9.29191
	TE->Z (FR)	0.07924	0.39461	5.09447
	TE->Z (RR)	0.07549	0.52980	6.05549
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.02746	0.57039	9.25011
	TE->Z (FR)	0.09032	0.39663	5.09645
	TE->Z (RR)	0.07439	0.43874	5.96568
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02897	0.50008	9.15906
	TE->Z (FR)	0.15565	0.40377	5.10255
	TE->Z (RR)	0.09397	0.42701	5.99048

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02461	0.43599	5.04531
	TE->Z (FF)	0.08107	0.39340	5.09330
	TE->Z (RF)	0.02436	0.37452	4.22914
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01930	0.38025	5.36017
	TE->Z (FF)	0.08009	0.39452	5.09442
	TE->Z (RF)	0.02212	0.31690	4.43717
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01927	0.33221	5.49932
	TE->Z (FF)	0.09116	0.39642	5.09634
	TE->Z (RF)	0.02321	0.25428	4.29869
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.02125	0.30262	5.73625
	TE->Z (FF)	0.15637	0.40325	5.10228
	TE->Z (RF)	0.02830	0.20227	4.06702

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00047	0.00226	0.03817
	A	0.00426	0.00700	0.04295
	TE	0.00791	0.01028	0.05224
	TE	0.00532	0.00769	0.04976
sky130_fd_sc_hs__einvp_2	A	-0.00038	0.00557	0.07083
	A	0.00853	0.01451	0.07992
	TE	0.01372	0.01783	0.08775
	TE	0.01052	0.01462	0.08455
sky130_fd_sc_hs__einvp_4	A	-0.00243	0.01012	0.13189
	A	0.01561	0.02810	0.15027
	TE	0.02464	0.03126	0.15115
	TE	0.01974	0.02640	0.14643
sky130_fd_sc_hs__einvp_8	A	-0.00609	0.01853	0.23681
	A	0.03007	0.05458	0.27356
	TE	0.04247	0.04820	0.16584
	TE	0.03834	0.04423	0.16210

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00566	0.00741	0.03074
	A	0.00094	0.00265	0.02596
	TE	0.01095	0.01344	0.05768
	TE	0.00473	0.00715	0.05124
sky130_fd_sc_hs__einvp_2	A	0.00990	0.01439	0.06077
	A	0.00101	0.00536	0.05101
	TE	0.01838	0.02244	0.09150
	TE	0.00826	0.01222	0.08137
sky130_fd_sc_hs__einvp_4	A	0.01860	0.02803	0.11507
	A	0.00064	0.00993	0.09708
	TE	0.03452	0.04120	0.15950
	TE	0.01548	0.02203	0.14010
sky130_fd_sc_hs__einvp_8	A	0.03698	0.05566	0.21545
	A	0.00091	0.01958	0.17885
	TE	0.06284	0.06840	0.18529
	TE	0.03019	0.03573	0.15032

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00078	0.00078	0.00078
	(!TE * Z)	-0.00162	-0.00163	-0.00159
	(!TE * !Z)	0.00087	0.00088	0.00088
	(!TE * !Z)	-0.00126	-0.00128	-0.00125
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00144	0.00145	0.00138
	(!TE * Z)	-0.00334	-0.00335	-0.00330
	(!TE * !Z)	0.00173	0.00175	0.00175
	(!TE * !Z)	-0.00231	-0.00234	-0.00229
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00274	0.00272	0.00265
	(!TE * Z)	-0.00663	-0.00663	-0.00654
	(!TE * !Z)	0.00338	0.00337	0.00338
	(!TE * !Z)	-0.00468	-0.00466	-0.00461
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00534	0.00535	0.00519
	(!TE * Z)	-0.01286	-0.01285	-0.01264
	(!TE * !Z)	0.00652	0.00656	0.00656
	(!TE * !Z)	-0.00899	-0.00905	-0.00891

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00075	-0.00075	-0.00075
	(!TE * Z)	0.00162	0.00163	0.00159
	(!TE * !Z)	-0.00079	-0.00079	-0.00081
	(!TE * !Z)	0.00164	0.00164	0.00154
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00133	-0.00133	-0.00132
	(!TE * Z)	0.00334	0.00335	0.00330
	(!TE * !Z)	-0.00145	-0.00152	-0.00160
	(!TE * !Z)	0.00298	0.00296	0.00276
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00253	-0.00252	-0.00252
	(!TE * Z)	0.00663	0.00663	0.00654
	(!TE * !Z)	-0.00287	-0.00300	-0.00315
	(!TE * !Z)	0.00597	0.00594	0.00553
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00499	-0.00498	-0.00496
	(!TE * Z)	0.01286	0.01285	0.01264
	(!TE * !Z)	-0.00573	-0.00595	-0.00621
	(!TE * !Z)	0.01157	0.01153	0.01073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00770	0.01023	0.05469
	(A * !Z)	0.00330	0.00581	0.05029
	(!A * Z)	0.00696	0.00952	0.05415
	(!A * Z)	0.00256	0.00511	0.04974
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01266	0.01672	0.08600
	(A * !Z)	0.00579	0.00982	0.07913
	(!A * Z)	0.01142	0.01558	0.08500
	(!A * Z)	0.00459	0.00874	0.07816
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.02349	0.03020	0.14866
	(A * !Z)	0.01122	0.01785	0.13635
	(!A * Z)	0.02109	0.02799	0.14673
	(!A * Z)	0.00887	0.01567	0.13445
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.04098	0.04668	0.16240
	(A * !Z)	0.02204	0.02767	0.14341
	(!A * Z)	0.03645	0.04217	0.15892
	(!A * Z)	0.01756	0.02323	0.13998

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00121	0.00124	0.04596
	(A * !Z)	0.00313	0.00568	0.05028
	(!A * Z)	-0.00137	0.00110	0.04550
	(!A * Z)	0.00302	0.00552	0.04987
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00286	0.00115	0.07124
	(A * !Z)	0.00393	0.00805	0.07786
	(!A * Z)	-0.00339	0.00072	0.07040
	(!A * Z)	0.00337	0.00752	0.07713
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00525	0.00138	0.12108
	(A * !Z)	0.00686	0.01375	0.13290
	(!A * Z)	-0.00618	0.00062	0.11944
	(!A * Z)	0.00595	0.01282	0.13146
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01007	-0.00468	0.11343
	(A * !Z)	0.00844	0.01441	0.13166
	(!A * Z)	-0.01152	-0.00608	0.11013
	(!A * Z)	0.00715	0.01272	0.12877

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	1
0	0	1	0	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fahcin_1	0.00305	0.00726	0.00536	0.62945	1.30038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	601.41100	682.99100

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)	0.16350	0.67877	4.56808
	B->COUT (RR)	0.14203	0.60585	4.76808
	CIN->COUT (FR)	0.06474	0.68445	7.68874

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.17880	0.65315	4.27431
	B->COUT (FF)	0.16163	0.60433	4.37118
	CIN->COUT (RF)	0.04485	0.45608	5.02877

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)	-	0.22223	0.82159	7.84205
	B->SUM (-R)	-	0.20882	0.80049	7.90100
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.09419	0.59991	6.56851
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.13694	0.68486	7.51099

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)	-	0.26695	0.73094	5.21618
	B->SUM (-F)	-	0.20817	0.64746	5.11705
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.11730	0.60358	5.48536
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.12753	0.44119	3.46215

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.02617	0.02941	0.09514
	A	0.02360	0.02681	0.09254
	B	0.02753	0.03276	0.14675
	B	0.02169	0.02693	0.14090
	CIN	0.01690	0.02266	0.10961
	CIN	0.02122	0.02694	0.11396

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.02085	0.02426	0.08898
	A	0.02317	0.02657	0.09141
	B	0.01798	0.02501	0.14829
	B	0.02382	0.03086	0.15426
	CIN	0.01707	0.02285	0.11339
	CIN	0.01274	0.01851	0.10896

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.05015	0.05650	0.18718
	A	-	0.04551	0.05188	0.18287
	B	-	0.04852	0.06124	0.32986
	B	-	0.03684	0.04957	0.31855
	CIN	(A * B) + (!A * !B)	0.02410	0.03971	0.27369
	CIN	(A * B) + (!A * !B)	0.03278	0.04844	0.28324
	CIN	(A * !B) + (!A * B)	0.01968	0.02533	0.11332
	CIN	(A * !B) + (!A * B)	0.01535	0.02100	0.10924

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.04207	0.04926	0.17707
	A	-	0.04670	0.05389	0.18110
	B	-	0.03644	0.05330	0.30912
	B	-	0.04813	0.06494	0.31708
	CIN	(A * B) + (!A * !B)	0.03267	0.04704	0.28130
	CIN	(A * B) + (!A * !B)	0.02401	0.03819	0.27128
	CIN	(A * !B) + (!A * B)	0.01367	0.01896	0.10006
	CIN	(A * !B) + (!A * B)	0.01799	0.02329	0.10428

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00303	0.00930	0.00539	0.64072	1.27201

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	601.33800	700.82900

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)	0.20446	0.74862	5.75588
	B->COUT_N (FR)	0.14280	0.73665	8.03035
	CI->COUT_N (FR)	0.05879	0.66919	7.63284

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)	0.16474	0.50881	2.80425
	B->COUT_N (RF)	0.10815	0.50811	5.41482
	CI->COUT_N (RF)	0.04331	0.45464	5.10096

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)	-	0.20181	0.79775	7.72843
	B->SUM (-R)	-	0.17190	0.75072	7.71018
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09118	0.59467	6.52785
	CI->SUM (FR)	(A * !B) + (!A * B)	0.13607	0.69158	7.58912

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)	-	0.24732	0.70134	5.12028
	B->SUM (-F)	-	0.18137	0.59803	4.91222
	CI->SUM (FF)	(A * B) + (!A * !B)	0.11408	0.57882	5.28520
	CI->SUM (RF)	(A * !B) + (!A * B)	0.13433	0.44516	3.47018

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	0.02366	0.02690	0.09141
	A	0.02604	0.02927	0.09417
	B	0.01610	0.02566	0.18815
	B	0.02351	0.03308	0.19564
	CI	0.01331	0.01936	0.10902
	CI	0.01766	0.02373	0.11372

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.02195	0.02457	0.09069
	A	0.01958	0.02221	0.08838
	B	0.02396	0.03297	0.19811
	B	0.01656	0.02558	0.19068
	CI	0.01807	0.02352	0.11476
	CI	0.01372	0.01911	0.11022

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.04681	0.05339	0.18450
	A	-	0.04206	0.04864	0.18000
	B	-	0.05425	0.07898	0.44708
	B	-	0.03948	0.06419	0.43158
	CI	(A * B) + (!A * !B)	0.03702	0.05192	0.29289
	CI	(A * B) + (!A * !B)	0.02831	0.04318	0.28410
	CI	(A * !B) + (!A * B)	0.01328	0.01911	0.10384
	CI	(A * !B) + (!A * B)	0.01764	0.02347	0.10802

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.04057	0.04784	0.17601
	A	-	0.04534	0.05260	0.18005
	B	-	0.03354	0.05903	0.42412
	B	-	0.04835	0.07383	0.43801
	CI	(A * B) + (!A * !B)	0.02538	0.04084	0.27841
	CI	(A * B) + (!A * !B)	0.03408	0.04956	0.28729
	CI	(A * !B) + (!A * B)	0.01762	0.02294	0.11177
	CI	(A * !B) + (!A * B)	0.01327	0.01857	0.10708

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00508	0.00730	0.00268	1.12315	1.27232
sky130_fd_sc_hs__fah_2	0.00512	0.00826	0.00281	2.19932	2.48475
sky130_fd_sc_hs__fah_4	0.00504	0.00752	0.00270	4.11205	4.82625

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	601.52400	718.10200
sky130_fd_sc_hs__fah_2	0.00000	652.51400	769.25100
sky130_fd_sc_hs__fah_4	0.00000	754.91800	872.04800

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)	0.22944	0.72852	6.42375
	B->COUT (RR)	0.18116	0.72550	6.88953
	CI->COUT (RR)	0.12539	0.69314	6.99506
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.23550	0.63095	6.10932
	B->COUT (RR)	0.17424	0.62070	6.82339
	CI->COUT (RR)	0.11632	0.56761	6.42529
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.24403	0.58965	6.43144
	B->COUT (RR)	0.19930	0.59729	7.02005
	CI->COUT (RR)	0.14589	0.57122	7.06370

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.23350	0.64038	4.67790
	B->COUT (FF)	0.21120	0.66055	5.04641
	CI->COUT (FF)	0.14578	0.63714	5.18641
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.24498	0.61989	4.41780
	B->COUT (FF)	0.22695	0.64413	5.06807
	CI->COUT (FF)	0.14875	0.59885	4.88079
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.27030	0.64505	4.61155
	B->COUT (FF)	0.24189	0.65786	5.21782
	CI->COUT (FF)	0.17794	0.62135	5.15125

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)	-	0.22579	0.84708	8.15208
	B->SUM (-R)	-	0.20651	0.81190	8.09209
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12290	0.65384	6.61480
	CI->SUM (FR)	(A * !B) + (!A * B)	0.22179	0.85959	8.21953
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.22975	0.74056	7.75245
	B->SUM (-R)	-	0.20997	0.71212	7.85358
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11785	0.56637	6.63261
	CI->SUM (FR)	(A * !B) + (!A * B)	0.21538	0.74233	7.85354
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.25350	0.70569	8.05390
	B->SUM (-R)	-	0.23166	0.68890	8.10153
	CI->SUM (RR)	(A * B) + (!A * !B)	0.15285	0.56507	6.73688
	CI->SUM (FR)	(A * !B) + (!A * B)	0.27996	0.78068	8.27955

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)	-	0.23244	0.65125	4.92972
	B->SUM (-F)	-	0.22044	0.67873	6.08862
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14441	0.63950	5.21009
	CI->SUM (RF)	(A * !B) + (!A * B)	0.20791	0.62169	4.13217
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.25511	0.63750	4.79184
	B->SUM (-F)	-	0.23108	0.64579	4.97345
	CI->SUM (FF)	(A * B) + (!A * !B)	0.15478	0.61052	5.28502
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18762	0.53461	3.64013
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.27112	0.65679	4.95242
	B->SUM (-F)	-	0.25320	0.67286	6.07965
	CI->SUM (FF)	(A * B) + (!A * !B)	0.18668	0.63477	5.34876
	CI->SUM (RF)	(A * !B) + (!A * B)	0.27467	0.65863	4.35638

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.03248	0.03899	0.16166
	A	0.02848	0.03499	0.15734
	B	0.02919	0.03541	0.17041
	B	0.02356	0.02974	0.16470
	CI	0.02366	0.02643	0.08422
	CI	0.02174	0.02450	0.08229
sky130_fd_sc_hs__fah_2	A	0.03767	0.04296	0.16376
	A	0.03347	0.03860	0.15898
	B	0.03542	0.03969	0.17175
	B	0.02903	0.03315	0.16529
	CI	0.02634	0.02772	0.08578
	CI	0.02407	0.02546	0.08317
sky130_fd_sc_hs__fah_4	A	0.04976	0.05072	0.17288
	A	0.04579	0.04664	0.16790
	B	0.04757	0.04761	0.18121
	B	0.04172	0.04170	0.17506
	CI	0.04188	0.04008	0.09910
	CI	0.03988	0.03809	0.09651

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02380	0.03085	0.15239
	A	0.02763	0.03468	0.15612
	B	0.01998	0.02754	0.15496
	B	0.02544	0.03301	0.16008
	CI	0.01712	0.02034	0.07897
	CI	0.01904	0.02226	0.08058
sky130_fd_sc_hs__fah_2	A	0.02826	0.03426	0.15451
	A	0.03246	0.03846	0.15847
	B	0.02312	0.02931	0.15241
	B	0.02954	0.03570	0.15821
	CI	0.02003	0.02188	0.07864
	CI	0.02230	0.02414	0.08081
sky130_fd_sc_hs__fah_4	A	0.03882	0.04093	0.16009
	A	0.04272	0.04482	0.16389
	B	0.03578	0.03828	0.16458
	B	0.04156	0.04404	0.16878
	CI	0.03454	0.03256	0.09187
	CI	0.03652	0.03456	0.09222

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.05540	0.06790	0.30741
	A	-	0.04726	0.05975	0.29968
	B	-	0.05346	0.06874	0.36053
	B	-	0.04208	0.05733	0.34911
	CI	(A * B) + (!A * !B)	0.03458	0.04003	0.14044
	CI	(A * B) + (!A * !B)	0.03026	0.03572	0.13619
	CI	(A * !B) + (!A * B)	0.02048	0.02373	0.08238
	CI	(A * !B) + (!A * B)	0.02240	0.02565	0.08408
sky130_fd_sc_hs__fah_2	A	-	0.06073	0.07215	0.30859
	A	-	0.05232	0.06374	0.30073
	B	-	0.05909	0.07422	0.35506
	B	-	0.04629	0.06140	0.34223
	CI	(A * B) + (!A * !B)	0.03602	0.04251	0.16316
	CI	(A * B) + (!A * !B)	0.03148	0.03797	0.15731
	CI	(A * !B) + (!A * B)	0.02372	0.02557	0.08441
	CI	(A * !B) + (!A * B)	0.02599	0.02784	0.08504
sky130_fd_sc_hs__fah_4	A	-	0.06928	0.07928	0.31927
	A	-	0.06111	0.07119	0.31292
	B	-	0.06940	0.08457	0.38200
	B	-	0.05747	0.07267	0.36991
	CI	(A * B) + (!A * !B)	0.04825	0.05266	0.16129
	CI	(A * B) + (!A * !B)	0.04389	0.04840	0.15671
	CI	(A * !B) + (!A * B)	0.03882	0.03677	0.09451
	CI	(A * !B) + (!A * B)	0.04081	0.03878	0.09595

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03921	0.05255	0.28996
	A	-	0.04768	0.06102	0.29774
	B	-	0.03815	0.05537	0.39598
	B	-	0.04989	0.06711	0.40650
	CI	(A * B) + (!A * !B)	0.02742	0.03316	0.13745
	CI	(A * B) + (!A * !B)	0.03173	0.03747	0.14100
	CI	(A * !B) + (!A * B)	0.02021	0.02289	0.08086
	CI	(A * !B) + (!A * B)	0.01829	0.02096	0.07837
sky130_fd_sc_hs__fah_2	A	-	0.04697	0.05805	0.29324
	A	-	0.05539	0.06648	0.29963
	B	-	0.04021	0.05507	0.30246
	B	-	0.05302	0.06781	0.31306
	CI	(A * B) + (!A * !B)	0.03287	0.03730	0.15521
	CI	(A * B) + (!A * !B)	0.03743	0.04183	0.15802
	CI	(A * !B) + (!A * B)	0.02238	0.02385	0.08055
	CI	(A * !B) + (!A * B)	0.02012	0.02153	0.07826
sky130_fd_sc_hs__fah_4	A	-	0.06115	0.06589	0.30173
	A	-	0.06930	0.07402	0.30682
	B	-	0.06012	0.07141	0.40263
	B	-	0.07219	0.08355	0.41152
	CI	(A * B) + (!A * !B)	0.05061	0.04869	0.15454
	CI	(A * B) + (!A * !B)	0.05495	0.05305	0.15688
	CI	(A * !B) + (!A * B)	0.03760	0.03576	0.09516
	CI	(A * !B) + (!A * B)	0.03560	0.03380	0.09138

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT	
A	**B**	**CIN**	**COUT**	**SUM**
0	**0**	**0**	**0**	**0**
0	**0**	**1**	**0**	**1**
0	**1**	**0**	**0**	**1**
0	**1**	**1**	**1**	**0**
1	**0**	**0**	**0**	**1**
1	**0**	**1**	**1**	**0**
1	**1**	**0**	**1**	**0**
1	**1**	**1**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	**B**	**CIN**	**COUT**	**SUM**
sky130_fd_sc_hs__fa_1	0.01069	0.01036	0.00758	1.32504	1.33840
sky130_fd_sc_hs__fa_2	0.01132	0.01074	0.00806	2.20187	2.42488
sky130_fd_sc_hs__fa_4	0.01127	0.01099	0.00792	4.87053	4.82484

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	154.35300	189.95000
sky130_fd_sc_hs__fa_2	0.00000	204.50100	240.06500
sky130_fd_sc_hs__fa_4	0.00000	306.67700	401.38700

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)	0.10898	0.60434	6.54799
	B->COUT (RR)	0.12512	0.64409	6.75371
	CIN->COUT (RR)	0.09651	0.61943	6.73373
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.11312	0.52808	6.19744
	B->COUT (RR)	0.12201	0.56707	6.38110
	CIN->COUT (RR)	0.10494	0.55604	6.35152
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.15546	0.52733	6.51781
	B->COUT (RR)	0.13825	0.54985	6.73627
	CIN->COUT (RR)	0.13349	0.54872	6.70839

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.17571	0.62259	5.49617
	B->COUT (FF)	0.18788	0.65940	5.67609
	CIN->COUT (FF)	0.14028	0.63477	5.60945
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.20548	0.61237	5.15850
	B->COUT (FF)	0.21341	0.65571	5.34518
	CIN->COUT (FF)	0.18488	0.63636	5.27735
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.28093	0.69319	5.75872
	B->COUT (FF)	0.25534	0.70386	5.89266
	CIN->COUT (FF)	0.25367	0.71156	5.89480

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.25710	0.81086	7.93245
	B->SUM (-R)	0.26744	0.84676	8.14990
	CIN->SUM (-R)	0.24409	0.82721	7.99764
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.33239	0.80318	8.06012
	B->SUM (-R)	0.32891	0.84096	8.29144
	CIN->SUM (-R)	0.30937	0.82094	8.16123
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.47129	0.88359	8.31370
	B->SUM (-R)	0.42898	0.88821	8.47906
	CIN->SUM (-R)	0.44226	0.89737	8.43680

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.19758	0.60537	5.57853
	B->SUM (-F)	0.19969	0.65201	5.79808
	CIN->SUM (-F)	0.16103	0.63645	5.86352
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.24668	0.63025	5.44575
	B->SUM (-F)	0.25522	0.68041	5.66656
	CIN->SUM (-F)	0.21813	0.67231	5.74599
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.34517	0.71544	5.79979
	B->SUM (-F)	0.30863	0.72597	5.99980
	CIN->SUM (-F)	0.29250	0.73983	6.12125

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01599	0.01766	0.06222
	A	0.00738	0.00897	0.05337
	B	0.01568	0.01718	0.06241
	B	0.00777	0.00926	0.05448
	CIN	0.01428	0.01634	0.06268
	CIN	0.00931	0.01135	0.05773
sky130_fd_sc_hs__fa_2	A	0.02198	0.02180	0.06619
	A	0.01262	0.01225	0.05630
	B	0.02164	0.02124	0.06621
	B	0.01326	0.01285	0.05740
	CIN	0.02029	0.02014	0.06604
	CIN	0.01435	0.01419	0.06010
sky130_fd_sc_hs__fa_4	A	0.03552	0.03183	0.07667
	A	0.02568	0.02200	0.06621
	B	0.03598	0.03200	0.07618
	B	0.02794	0.02408	0.06808
	CIN	0.03410	0.03027	0.07516
	CIN	0.02849	0.02476	0.06979

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00743	0.00902	0.05266
	A	0.01602	0.01759	0.06099
	B	0.00888	0.01058	0.05538
	B	0.01700	0.01874	0.06337
	CIN	0.00974	0.01174	0.05684
	CIN	0.01481	0.01680	0.06172
sky130_fd_sc_hs__fa_2	A	0.01327	0.01273	0.05596
	A	0.02266	0.02212	0.06458
	B	0.01431	0.01413	0.05949
	B	0.02288	0.02273	0.06752
	CIN	0.01515	0.01536	0.06085
	CIN	0.02086	0.02106	0.06562
sky130_fd_sc_hs__fa_4	A	0.02861	0.02262	0.06377
	A	0.03839	0.03240	0.07343
	B	0.02954	0.02430	0.06944
	B	0.03774	0.03241	0.07634
	CIN	0.03137	0.02573	0.07100
	CIN	0.03674	0.03108	0.07387

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.02318	0.02479	0.10161
	A	0.00495	0.00653	0.08347
	B	0.02165	0.02429	0.09746
	B	0.00478	0.00742	0.08057
	CIN	0.01907	0.02146	0.09537
	CIN	0.00801	0.01045	0.08440
sky130_fd_sc_hs__fa_2	A	0.02839	0.03018	0.11160
	A	0.00928	0.01105	0.09168
	B	0.02669	0.02924	0.10670
	B	0.00952	0.01208	0.08848
	CIN	0.02410	0.02655	0.10445
	CIN	0.01251	0.01497	0.09158
sky130_fd_sc_hs__fa_4	A	0.04121	0.04308	0.10638
	A	0.02031	0.02221	0.08692
	B	0.03742	0.03775	0.11269
	B	0.02033	0.02083	0.09501
	CIN	0.03383	0.03457	0.11126
	CIN	0.02216	0.02297	0.09896

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00508	0.00798	0.07767
	A	0.02332	0.02619	0.09534
	B	0.00510	0.00834	0.07579
	B	0.02134	0.02457	0.09054
	CIN	0.00667	0.00959	0.07650
	CIN	0.01756	0.02043	0.08646
sky130_fd_sc_hs__fa_2	A	0.01095	0.01220	0.09329
	A	0.03006	0.03124	0.11092
	B	0.01142	0.01261	0.08961
	B	0.02792	0.02904	0.10497
	CIN	0.01277	0.01368	0.09209
	CIN	0.02425	0.02496	0.10094
sky130_fd_sc_hs__fa_4	A	0.03443	0.02309	0.09515
	A	0.05516	0.04397	0.11355
	B	0.02765	0.02222	0.08940
	B	0.04419	0.03867	0.10496
	CIN	0.03802	0.02804	0.09954
	CIN	0.05029	0.04031	0.10682

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00510	0.00464	1.26080	1.19124
sky130_fd_sc_hs__ha_2	0.00517	0.00532	2.18852	2.29321
sky130_fd_sc_hs__ha_4	0.00983	0.00884	4.10414	4.79786

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	193.32300	254.97900
sky130_fd_sc_hs__ha_2	0.00000	222.50600	238.87300
sky130_fd_sc_hs__ha_4	0.00000	512.29200	611.51700

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)	0.08330	0.55760	6.37713
	B->COUT (RR)	0.07849	0.57733	6.69705
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.09021	0.50235	6.33004
	B->COUT (RR)	0.08648	0.52382	6.52775
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.10756	0.44809	6.28511
	B->COUT (RR)	0.09340	0.46069	6.54352

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.08923	0.51167	4.91822
	B->COUT (FF)	0.07959	0.48502	4.75895
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.10284	0.49542	4.69014
	B->COUT (FF)	0.09536	0.47381	4.52955
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.12002	0.47091	4.66672
	B->COUT (FF)	0.10296	0.43868	4.51452

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	0.08675	0.56789	6.47703
	A->SUM (FR)	B	0.14676	0.72943	7.66346
	B->SUM (RR)	!A	0.07308	0.53936	6.30462
	B->SUM (FR)	A	0.14915	0.71540	7.41918
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.09275	0.47943	6.10010
	A->SUM (FR)	B	0.18985	0.68936	7.57383
	B->SUM (RR)	!A	0.08203	0.45905	5.97041
	B->SUM (FR)	A	0.19115	0.67646	7.35664
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.10373	0.43960	6.55087
	A->SUM (FR)	B	0.21329	0.64195	7.84265
	B->SUM (RR)	!A	0.08823	0.41008	6.38053
	B->SUM (FR)	A	0.20559	0.62252	7.60866

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	0.11932	0.50822	4.90615
	A->SUM (RF)	B	0.12516	0.40874	3.07819
	B->SUM (FF)	!A	0.10496	0.52208	5.07263
	B->SUM (RF)	A	0.12125	0.42929	3.35613
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.15616	0.53660	5.08786
	A->SUM (RF)	B	0.15236	0.40936	3.16247
	B->SUM (FF)	!A	0.14180	0.55733	5.25080
	B->SUM (RF)	A	0.14974	0.43187	3.40169
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.15914	0.49858	5.29579
	A->SUM (RF)	B	0.18371	0.41465	3.48673
	B->SUM (FF)	!A	0.14126	0.51833	5.48079
	B->SUM (RF)	A	0.17071	0.42960	3.75327

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.01260	0.01498	0.06062
	A	0.00789	0.01027	0.05565
	B	0.01207	0.01521	0.07134
	B	0.00848	0.01159	0.06767
sky130_fd_sc_hs__ha_2	A	0.01654	0.01894	0.07586
	A	0.01176	0.01410	0.07077
	B	0.01617	0.01889	0.07624
	B	0.01219	0.01483	0.07205
sky130_fd_sc_hs__ha_4	A	0.03389	0.03791	0.13349
	A	0.02513	0.02910	0.12406
	B	0.03243	0.03783	0.14732
	B	0.02609	0.03146	0.14062

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00674	0.01013	0.05920
	A	0.01145	0.01482	0.06345
	B	0.00763	0.01090	0.06207
	B	0.01119	0.01444	0.06527
sky130_fd_sc_hs__ha_2	A	0.01175	0.01450	0.07039
	A	0.01653	0.01926	0.07492
	B	0.01217	0.01460	0.06932
	B	0.01613	0.01843	0.07299
sky130_fd_sc_hs__ha_4	A	0.02283	0.02802	0.13233
	A	0.03157	0.03674	0.14086
	B	0.02442	0.02942	0.13714
	B	0.03067	0.03563	0.14278

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	0.00795	0.01134	0.06114
	A	B	0.01266	0.01603	0.06510
	A	!B	0.01893	0.02295	0.10519
	A	!B	0.00973	0.01373	0.09615
	B	A	0.00868	0.01198	0.06356
	B	A	0.01224	0.01550	0.06660
	B	!A	0.01604	0.02061	0.10714
	B	!A	0.00913	0.01371	0.10056
sky130_fd_sc_hs__ha_2	A	B	0.01319	0.01609	0.07336
	A	B	0.01797	0.02075	0.07698
	A	!B	0.02366	0.02722	0.10935
	A	!B	0.01449	0.01805	0.10109
	B	A	0.01344	0.01577	0.07221
	B	A	0.01739	0.01966	0.07488
	B	!A	0.02128	0.02533	0.11115
	B	!A	0.01375	0.01781	0.10459
sky130_fd_sc_hs__ha_4	A	B	0.02615	0.03128	0.13923
	A	B	0.03490	0.04001	0.14511
	A	!B	0.04983	0.05644	0.21425
	A	!B	0.03093	0.03772	0.19574
	B	A	0.02736	0.03244	0.14293
	B	A	0.03361	0.03860	0.14633
	B	!A	0.04345	0.05130	0.21545
	B	!A	0.02957	0.03741	0.20252

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	0.01113	0.01356	0.05867
	A	B	0.00642	0.00882	0.05389
	A	!B	0.00495	0.00901	0.09262
	A	!B	0.01412	0.01813	0.10108
	B	A	0.01060	0.01377	0.06956
	B	A	0.00699	0.01012	0.06587
	B	!A	0.00614	0.01168	0.09902
	B	!A	0.01329	0.01877	0.10617
sky130_fd_sc_hs__ha_2	A	B	0.01516	0.01750	0.07379
	A	B	0.01038	0.01271	0.06885
	A	!B	0.01204	0.01424	0.09725
	A	!B	0.02114	0.02319	0.10455
	B	A	0.01479	0.01741	0.07391
	B	A	0.01080	0.01343	0.06993
	B	!A	0.01277	0.01620	0.10379
	B	!A	0.02055	0.02398	0.11001
sky130_fd_sc_hs__ha_4	A	B	0.03081	0.03480	0.12822
	A	B	0.02205	0.02598	0.11928
	A	!B	0.02472	0.02805	0.18538
	A	!B	0.04353	0.04683	0.20337
	B	A	0.02934	0.03468	0.14263
	B	A	0.02297	0.02831	0.13585
	B	!A	0.02731	0.03378	0.19779
	B	!A	0.04198	0.04837	0.21267

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00869	20.06110
sky130_fd_sc_hs__bufinv_8	0.00297	7.78796
sky130_fd_sc_hs__inv_1	0.00301	1.23947
sky130_fd_sc_hs__inv_16	0.04586	18.88458
sky130_fd_sc_hs__inv_2	0.00557	2.31895
sky130_fd_sc_hs__inv_4	0.01123	4.41540
sky130_fd_sc_hs__inv_8	0.02225	8.66614

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	638.34400	950.09600
sky130_fd_sc_hs__bufinv_8	0.00000	306.47100	450.29400
sky130_fd_sc_hs__inv_1	0.00000	25.61990	49.62040
sky130_fd_sc_hs__inv_16	0.00000	408.45900	792.10900
sky130_fd_sc_hs__inv_2	0.00000	51.06170	99.02230
sky130_fd_sc_hs__inv_4	0.00000	102.11500	198.01800
sky130_fd_sc_hs__inv_8	0.00000	204.21900	396.03300

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)**	0.11560	0.41520	7.65234
sky130_fd_sc_hs__bufinv_8	**A->Y (FR)**	0.14666	0.52356	7.46137
sky130_fd_sc_hs__inv_1	**A->Y (FR)**	0.02472	0.67556	9.56095
sky130_fd_sc_hs__inv_16	**A->Y (FR)**	0.01724	0.37277	9.58072
sky130_fd_sc_hs__inv_2	**A->Y (FR)**	0.01953	0.57006	9.27348
sky130_fd_sc_hs__inv_4	**A->Y (FR)**	0.01818	0.49593	9.30787
sky130_fd_sc_hs__inv_8	**A->Y (FR)**	0.01789	0.42688	9.28205

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (RF)**	0.10712	0.26201	3.38887
sky130_fd_sc_hs__bufinv_8	**A->Y (RF)**	0.12907	0.32733	2.86153
sky130_fd_sc_hs__inv_1	**A->Y (RF)**	0.01752	0.44773	6.38069
sky130_fd_sc_hs__inv_16	**A->Y (RF)**	0.01329	0.21335	6.36267
sky130_fd_sc_hs__inv_2	**A->Y (RF)**	0.01452	0.36310	6.11415
sky130_fd_sc_hs__inv_4	**A->Y (RF)**	0.01373	0.30924	6.17088
sky130_fd_sc_hs__inv_8	**A->Y (RF)**	0.01373	0.25605	6.14373

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.08716	0.11480	0.51148
	A	0.10122	0.12903	0.53198
sky130_fd_sc_hs__bufinv_8	A	0.04585	0.05582	0.20541
	A	0.05064	0.06077	0.21230
sky130_fd_sc_hs__inv_1	A	-0.00082	0.00256	0.03735
	A	0.00403	0.00745	0.04226
sky130_fd_sc_hs__inv_16	A	-0.01729	0.07203	0.58418
	A	0.05660	0.14642	0.65853
sky130_fd_sc_hs__inv_2	A	-0.00208	0.00611	0.07685
	A	0.00690	0.01540	0.08639
sky130_fd_sc_hs__inv_4	A	-0.00410	0.01264	0.14625
	A	0.01400	0.03082	0.16523
sky130_fd_sc_hs__inv_8	A	-0.00808	0.03082	0.31542
	A	0.02774	0.06704	0.35327

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.11267	0.13398	0.53499
	A	0.09863	0.11989	0.51327
sky130_fd_sc_hs__bufinv_8	**A**	0.05400	0.05993	0.20114
	A	0.04921	0.05511	0.19382
sky130_fd_sc_hs__inv_1	**A**	0.00518	0.00737	0.03025
	A	0.00032	0.00246	0.02525
sky130_fd_sc_hs__inv_16	**A**	0.07106	0.13679	0.49040
	A	-0.00281	0.06245	0.40232
sky130_fd_sc_hs__inv_2	**A**	0.00870	0.01430	0.06029
	A	-0.00028	0.00512	0.05103
sky130_fd_sc_hs__inv_4	**A**	0.01768	0.02936	0.12233
	A	-0.00040	0.01115	0.10064
sky130_fd_sc_hs__inv_8	**A**	0.03471	0.06396	0.26300
	A	-0.00111	0.02785	0.22034

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00558	0.00525	0.00545	1.30139
sky130_fd_sc_hs__maj3_2	0.00591	0.00564	0.00577	2.54343
sky130_fd_sc_hs__maj3_4	0.01087	0.01030	0.01071	4.82997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	71.49130	141.78000
sky130_fd_sc_hs__maj3_2	0.00000	96.64570	143.27500
sky130_fd_sc_hs__maj3_4	0.00000	193.75900	286.31700

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)	0.10383	0.58849	6.37832
	B->X (RR)	0.09580	0.59408	6.45122
	C->X (RR)	0.10671	0.61878	6.62440
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.11074	0.51103	6.25523
	B->X (RR)	0.09191	0.51321	6.31064
	C->X (RR)	0.10492	0.53712	6.47834
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.10312	0.44504	6.44393
	B->X (RR)	0.09790	0.46220	6.52404
	C->X (RR)	0.10433	0.47454	6.59821

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.14072	0.57693	5.34328
	B->X (FF)	0.12895	0.58310	5.39506
	C->X (FF)	0.14639	0.60063	5.52143
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.16507	0.57213	5.31687
	B->X (FF)	0.14809	0.59108	5.39989
	C->X (FF)	0.17730	0.60762	5.50883
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.16952	0.51781	5.30448
	B->X (FF)	0.13243	0.52663	5.42037
	C->X (FF)	0.16228	0.54702	5.48693

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.02024	0.02318	0.10236
	A	0.00715	0.01010	0.08955
	B	0.01863	0.02159	0.10575
	B	0.00841	0.01137	0.09574
	C	0.01823	0.02192	0.10753
	C	0.00693	0.01062	0.09659
sky130_fd_sc_hs__maj3_2	A	0.02454	0.02793	0.11152
	A	0.01043	0.01382	0.09829
	B	0.02287	0.02608	0.10682
	B	0.01189	0.01509	0.09640
	C	0.02523	0.02810	0.11111
	C	0.01291	0.01577	0.09916
sky130_fd_sc_hs__maj3_4	A	0.04662	0.05257	0.20453
	A	0.02162	0.02779	0.18038
	B	0.04220	0.04925	0.22128
	B	0.02274	0.02989	0.20234
	C	0.04766	0.05326	0.21339
	C	0.02506	0.03081	0.19101

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00433	0.00737	0.08749
	A	0.01752	0.02056	0.10018
	B	0.00600	0.00973	0.09469
	B	0.01602	0.01977	0.10412
	C	0.00645	0.01030	0.09649
	C	0.01774	0.02158	0.10755
sky130_fd_sc_hs__maj3_2	A	0.01126	0.01260	0.09517
	A	0.02530	0.02663	0.10833
	B	0.01226	0.01405	0.09908
	B	0.02318	0.02500	0.10923
	C	0.01302	0.01488	0.10343
	C	0.02533	0.02720	0.11415
sky130_fd_sc_hs__maj3_4	A	0.02207	0.02471	0.18137
	A	0.04723	0.04979	0.20487
	B	0.02356	0.02734	0.19629
	B	0.04320	0.04704	0.21487
	C	0.02517	0.02915	0.19491
	C	0.04716	0.05112	0.21696

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00515	0.00454	0.00505
	(B * C * X)	-0.00274	-0.00342	-0.00280
	(!B * !C * !X)	0.00399	0.00404	0.00400
	(!B * !C * !X)	-0.00377	-0.00380	-0.00378
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00503	0.00437	0.00494
	(B * C * X)	-0.00326	-0.00394	-0.00332
	(!B * !C * !X)	0.00415	0.00419	0.00416
	(!B * !C * !X)	-0.00401	-0.00403	-0.00401
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00959	0.00829	0.00931
	(B * C * X)	-0.00547	-0.00694	-0.00569
	(!B * !C * !X)	0.00798	0.00803	0.00802
	(!B * !C * !X)	-0.00680	-0.00684	-0.00681

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00263	-0.00267	-0.00284
	(B * C * X)	0.00525	0.00526	0.00505
	(!B * !C * !X)	-0.00273	-0.00297	-0.00303
	(!B * !C * !X)	0.00507	0.00488	0.00475
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00248	-0.00252	-0.00270
	(B * C * X)	0.00580	0.00580	0.00560
	(!B * !C * !X)	-0.00202	-0.00229	-0.00235
	(!B * !C * !X)	0.00616	0.00594	0.00582
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00436	-0.00447	-0.00481
	(B * C * X)	0.01066	0.01067	0.01026
	(!B * !C * !X)	-0.00371	-0.00423	-0.00437
	(!B * !C * !X)	0.01114	0.01078	0.01047

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00329	0.00331	0.00335
	(A * C * X)	-0.00162	-0.00163	-0.00157
	(!A * !C * !X)	0.00126	0.00127	0.00122
	(!A * !C * !X)	-0.00424	-0.00428	-0.00434
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00389	0.00390	0.00393
	(A * C * X)	-0.00156	-0.00154	-0.00148
	(!A * !C * !X)	0.00188	0.00187	0.00181
	(!A * !C * !X)	-0.00392	-0.00393	-0.00401
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00654	0.00659	0.00665
	(A * C * X)	-0.00320	-0.00322	-0.00310
	(!A * !C * !X)	0.00366	0.00368	0.00352
	(!A * !C * !X)	-0.00735	-0.00744	-0.00763

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00224	-0.00228	-0.00260
	(A * C * X)	0.00269	0.00268	0.00236
	(!A * !C * !X)	-0.00031	-0.00031	-0.00030
	(!A * !C * !X)	0.00525	0.00525	0.00524
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00278	-0.00282	-0.00314
	(A * C * X)	0.00264	0.00264	0.00232
	(!A * !C * !X)	-0.00003	-0.00004	-0.00003
	(!A * !C * !X)	0.00576	0.00577	0.00577
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00436	-0.00440	-0.00507
	(A * C * X)	0.00547	0.00543	0.00480
	(!A * !C * !X)	0.00006	0.00003	0.00005
	(!A * !C * !X)	0.01113	0.01117	0.01116

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00402	0.00372	0.00399
	(A * B * X)	-0.00221	-0.00255	-0.00221
	(!A * !B * !X)	0.00225	0.00227	0.00223
	(!A * !B * !X)	-0.00421	-0.00425	-0.00426
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00454	0.00424	0.00450
	(A * B * X)	-0.00214	-0.00249	-0.00215
	(!A * !B * !X)	0.00303	0.00303	0.00302
	(!A * !B * !X)	-0.00372	-0.00373	-0.00379
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00809	0.00738	0.00797
	(A * B * X)	-0.00426	-0.00500	-0.00435
	(!A * !B * !X)	0.00577	0.00576	0.00571
	(!A * !B * !X)	-0.00713	-0.00712	-0.00724

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00222	-0.00225	-0.00250
	(A * B * X)	0.00400	0.00399	0.00374
	(!A * !B * !X)	-0.00112	-0.00127	-0.00128
	(!A * !B * !X)	0.00534	0.00526	0.00520
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00271	-0.00274	-0.00299
	(A * B * X)	0.00399	0.00397	0.00370
	(!A * !B * !X)	-0.00104	-0.00121	-0.00122
	(!A * !B * !X)	0.00573	0.00563	0.00558
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00435	-0.00443	-0.00494
	(A * B * X)	0.00799	0.00799	0.00747
	(!A * !B * !X)	-0.00178	-0.00199	-0.00210
	(!A * !B * !X)	0.01118	0.01089	0.01083

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00301	0.00285	0.00529	0.60673
sky130_fd_sc_hs__mux2i_2	0.00566	0.00597	0.00860	1.00680
sky130_fd_sc_hs__mux2i_4	0.01121	0.01118	0.01504	1.74038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	85.92100	181.52800
sky130_fd_sc_hs__mux2i_2	0.00000	104.68700	228.63100
sky130_fd_sc_hs__mux2i_4	0.00000	240.86900	523.12600

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)	-	0.07355	0.82160	9.33911
	A1->Y (FR)	-	0.06597	0.81415	9.33222
	S->Y (RR)	(A0 * !A1)	0.11160	0.68122	6.12486
	S->Y (FR)	(!A0 * A1)	0.08608	0.77838	8.62172
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.08276	0.73437	9.27913
	A1->Y (FR)	-	0.07550	0.70226	8.89619
	S->Y (RR)	(A0 * !A1)	0.12024	0.57152	5.58592
	S->Y (FR)	(!A0 * A1)	0.09288	0.67040	8.31710
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.07663	0.62770	8.89297
	A1->Y (FR)	-	0.07627	0.63824	9.11876
	S->Y (RR)	(A0 * !A1)	0.13959	0.57649	6.40071
	S->Y (FR)	(!A0 * A1)	0.08832	0.55243	7.79238

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)	-	0.03715	0.46608	5.20863
	A1->Y (RF)	-	0.03883	0.48895	5.48189
	S->Y (FF)	(A0 * !A1)	0.08637	0.44965	3.78004
	S->Y (RF)	(!A0 * A1)	0.04423	0.42506	4.63828
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.04491	0.43856	5.42584
	A1->Y (RF)	-	0.04297	0.42598	5.29172
	S->Y (FF)	(A0 * !A1)	0.10364	0.44917	3.88834
	S->Y (RF)	(!A0 * A1)	0.04608	0.34313	4.18127
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.04123	0.36402	5.09102
	A1->Y (RF)	-	0.04658	0.39665	5.54191
	S->Y (FF)	(A0 * !A1)	0.10411	0.38512	3.33256
	S->Y (RF)	(!A0 * A1)	0.04892	0.28743	4.00436

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	-	0.00166	0.00397	0.03824
	A0	-	0.00819	0.01051	0.04481
	A1	-	0.00396	0.00625	0.03932
	A1	-	0.00996	0.01226	0.04538
	S	(A0 * !A1)	0.01334	0.01944	0.12121
	S	(A0 * !A1)	0.00827	0.01433	0.11631
	S	(!A0 * A1)	0.00246	0.01065	0.14385
	S	(!A0 * A1)	0.01442	0.02259	0.15576
sky130_fd_sc_hs__mux2i_2	A0	-	0.00342	0.00765	0.06699
	A0	-	0.01614	0.02036	0.07978
	A1	-	0.00495	0.00945	0.07143
	A1	-	0.01755	0.02204	0.08409
	S	(A0 * !A1)	0.02014	0.02594	0.13000
	S	(A0 * !A1)	0.01384	0.01958	0.12352
	S	(!A0 * A1)	0.00569	0.01586	0.19211
	S	(!A0 * A1)	0.02618	0.03631	0.21240
sky130_fd_sc_hs__mux2i_4	A0	-	0.00429	0.01354	0.13223
	A0	-	0.02948	0.03876	0.15732
	A1	-	0.00997	0.01840	0.12602
	A1	-	0.03389	0.04221	0.15015
	S	(A0 * !A1)	0.03709	0.04608	0.22297
	S	(A0 * !A1)	0.02749	0.03647	0.21361
	S	(!A0 * A1)	0.00929	0.02699	0.31983
	S	(!A0 * A1)	0.04662	0.06427	0.35752

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.01006	0.01167	0.03594
	A0	-	0.00355	0.00510	0.02870
	A1	-	0.01160	0.01312	0.03614
	A1	-	0.00517	0.00668	0.02927
	S	(A0 * !A1)	0.00833	0.01510	0.11642
	S	(A0 * !A1)	0.01338	0.02013	0.12147
	S	(!A0 * A1)	0.01849	0.02572	0.15258
	S	(!A0 * A1)	0.00653	0.01376	0.14056
sky130_fd_sc_hs__mux2i_2	A0	-	0.02050	0.02337	0.06521
	A0	-	0.00790	0.01078	0.05260
	A1	-	0.02094	0.02402	0.06855
	A1	-	0.00770	0.01074	0.05460
	S	(A0 * !A1)	0.01732	0.02396	0.12706
	S	(A0 * !A1)	0.02352	0.03017	0.13298
	S	(!A0 * A1)	0.03128	0.04045	0.20765
	S	(!A0 * A1)	0.01071	0.01977	0.18710
sky130_fd_sc_hs__mux2i_4	A0	-	0.03826	0.04507	0.12988
	A0	-	0.01314	0.01992	0.10373
	A1	-	0.04209	0.04828	0.12533
	A1	-	0.01659	0.02276	0.09991
	S	(A0 * !A1)	0.03303	0.04385	0.22060
	S	(A0 * !A1)	0.04246	0.05328	0.23008
	S	(!A0 * A1)	0.05999	0.07522	0.35585
	S	(!A0 * A1)	0.02252	0.03765	0.31764

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00342	0.00345	0.00344
	(A1 * S * !Y)	0.00034	0.00033	0.00036
	(!A1 * S * Y)	0.00174	0.00174	0.00170
	(!A1 * S * Y)	-0.00175	-0.00177	-0.00180
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00529	0.00530	0.00532
	(A1 * S * !Y)	-0.00031	-0.00031	-0.00026
	(!A1 * S * Y)	0.00194	0.00193	0.00183
	(!A1 * S * Y)	-0.00453	-0.00453	-0.00466
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.01089	0.01102	0.01098
	(A1 * S * !Y)	-0.00020	-0.00027	-0.00014
	(!A1 * S * Y)	0.00430	0.00431	0.00413
	(!A1 * S * Y)	-0.00853	-0.00860	-0.00878

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00036	-0.00038	-0.00056
	(A1 * S * !Y)	0.00271	0.00271	0.00255
	(!A1 * S * Y)	0.00010	0.00011	0.00011
	(!A1 * S * Y)	0.00358	0.00357	0.00359
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00156	-0.00162	-0.00192
	(A1 * S * !Y)	0.00401	0.00402	0.00376
	(!A1 * S * Y)	-0.00054	-0.00056	-0.00054
	(!A1 * S * Y)	0.00591	0.00598	0.00592
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00236	-0.00245	-0.00304
	(A1 * S * !Y)	0.00877	0.00877	0.00824
	(!A1 * S * Y)	-0.00042	-0.00045	-0.00040
	(!A1 * S * Y)	0.01246	0.01256	0.01245

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00234	0.00236	0.00236
	(A0 * !S * !Y)	-0.00055	-0.00056	-0.00054
	(!A0 * !S * Y)	0.00073	0.00073	0.00067
	(!A0 * !S * Y)	-0.00255	-0.00257	-0.00264
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00482	0.00484	0.00486
	(A0 * !S * !Y)	-0.00116	-0.00117	-0.00113
	(!A0 * !S * Y)	0.00145	0.00145	0.00137
	(!A0 * !S * Y)	-0.00518	-0.00518	-0.00532
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00909	0.00914	0.00916
	(A0 * !S * !Y)	-0.00204	-0.00205	-0.00195
	(!A0 * !S * Y)	0.00231	0.00232	0.00215
	(!A0 * !S * Y)	-0.01018	-0.01026	-0.01052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00101	-0.00106	-0.00126
	(A0 * !S * !Y)	0.00189	0.00187	0.00169
	(!A0 * !S * Y)	-0.00060	-0.00061	-0.00059
	(!A0 * !S * Y)	0.00269	0.00273	0.00270
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00224	-0.00231	-0.00264
	(A0 * !S * !Y)	0.00374	0.00375	0.00345
	(!A0 * !S * Y)	-0.00123	-0.00123	-0.00121
	(!A0 * !S * Y)	0.00545	0.00545	0.00544
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00397	-0.00412	-0.00475
	(A0 * !S * !Y)	0.00709	0.00710	0.00653
	(!A0 * !S * Y)	-0.00193	-0.00194	-0.00190
	(!A0 * !S * Y)	0.01073	0.01084	0.01072

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00990	0.01565	0.11603
	(A0 * A1 * !Y)	0.00163	0.00730	0.10774
	(!A0 * !A1 * Y)	0.00910	0.01505	0.11536
	(!A0 * !A1 * Y)	0.00083	0.00672	0.10706
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01525	0.02066	0.13422
	(A0 * A1 * !Y)	0.00222	0.00757	0.12120
	(!A0 * !A1 * Y)	0.01326	0.01959	0.13278
	(!A0 * !A1 * Y)	0.00026	0.00656	0.11980
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.02815	0.03536	0.21013
	(A0 * A1 * !Y)	0.00543	0.01246	0.18753
	(!A0 * !A1 * Y)	0.02422	0.03295	0.20751
	(!A0 * !A1 * Y)	0.00164	0.01034	0.18490

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00055	0.00709	0.10840
	(A0 * A1 * !Y)	0.00883	0.01543	0.11671
	(!A0 * !A1 * Y)	-0.00043	0.00639	0.10771
	(!A0 * !A1 * Y)	0.00785	0.01471	0.11600
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00117	0.00784	0.12176
	(A0 * A1 * !Y)	0.01418	0.02093	0.13481
	(!A0 * !A1 * Y)	-0.00022	0.00652	0.12039
	(!A0 * !A1 * Y)	0.01271	0.01962	0.13340
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00305	0.01325	0.19043
	(A0 * A1 * !Y)	0.02571	0.03601	0.21320
	(!A0 * !A1 * Y)	0.00026	0.01054	0.18776
	(!A0 * !A1 * Y)	0.02280	0.03327	0.21042

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
A0	**A1**	**S**	**X**
0	**0**	**x**	**0**
0	**1**	**0**	**0**
x	**1**	**1**	**1**
1	**x**	**0**	**1**
1	**0**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	**A1**	**S**	**X**
sky130_fd_sc_hs__mux2_1	0.00289	0.00336	0.00487	1.33044
sky130_fd_sc_hs__mux2_2	0.00268	0.00301	0.00570	2.21107
sky130_fd_sc_hs__mux2_4	0.00517	0.00518	0.00867	4.11117

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2_1	0.00000	122.82900	209.78000
sky130_fd_sc_hs__mux2_2	0.00000	148.29000	211.32200
sky130_fd_sc_hs__mux2_4	0.00000	230.13600	288.26200

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)	-	0.07699	0.55581	6.35905
	A1->X (RR)	-	0.07768	0.55495	6.29462
	S->X (RR)	(!A0 * A1)	0.08017	0.53762	6.22927
	S->X (FR)	(A0 * !A1)	0.13619	0.67522	7.49457
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.09226	0.52398	6.25965
	A1->X (RR)	-	0.08978	0.51287	6.15040
	S->X (RR)	(!A0 * A1)	0.09176	0.48996	6.13641
	S->X (FR)	(A0 * !A1)	0.14814	0.61323	7.31236
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.12307	0.50638	6.30221
	A1->X (RR)	-	0.12463	0.51183	6.41146
	S->X (RR)	(!A0 * A1)	0.12741	0.46594	6.18521
	S->X (FR)	(A0 * !A1)	0.19069	0.62071	7.45548

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)	-	0.11138	0.57908	5.46531
	A1->X (FF)	-	0.10863	0.57662	5.60392
	S->X (FF)	(!A0 * A1)	0.14051	0.57115	5.59366
	S->X (RF)	(A0 * !A1)	0.16496	0.47733	3.68431
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.13814	0.56895	5.05106
	A1->X (FF)	-	0.14197	0.57940	5.13033
	S->X (FF)	(!A0 * A1)	0.16705	0.53695	4.92062
	S->X (RF)	(A0 * !A1)	0.20157	0.46126	3.08452
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.16959	0.55800	4.87179
	A1->X (FF)	-	0.17151	0.56216	4.83430
	S->X (FF)	(!A0 * A1)	0.19313	0.51652	4.66604
	S->X (RF)	(A0 * !A1)	0.22557	0.45801	2.86387

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	-	0.01479	0.01884	0.10266
	A0	-	0.00848	0.01255	0.09665
	A1	-	0.01791	0.02197	0.09905
	A1	-	0.01114	0.01520	0.09265
	S	(A0 * !A1)	0.01391	0.02012	0.12508
	S	(A0 * !A1)	0.01801	0.02424	0.12948
	S	(!A0 * A1)	0.02469	0.03407	0.20913
	S	(!A0 * A1)	0.01339	0.02278	0.19828
sky130_fd_sc_hs__mux2_2	A0	-	0.01903	0.02302	0.10544
	A0	-	0.01281	0.01683	0.10000
	A1	-	0.02219	0.02616	0.10840
	A1	-	0.01282	0.01737	0.10123
	S	(A0 * !A1)	0.01771	0.02449	0.12858
	S	(A0 * !A1)	0.02270	0.02954	0.13422
	S	(!A0 * A1)	0.02913	0.03709	0.18848
	S	(!A0 * A1)	0.01694	0.02493	0.17717
sky130_fd_sc_hs__mux2_4	A0	-	0.03286	0.03955	0.17170
	A0	-	0.02139	0.02811	0.16166
	A1	-	0.03928	0.04572	0.19371
	A1	-	0.02769	0.03422	0.18315
	S	(A0 * !A1)	0.03480	0.04100	0.16578
	S	(A0 * !A1)	0.04188	0.04825	0.17355
	S	(!A0 * A1)	0.05051	0.06054	0.27669
	S	(!A0 * A1)	0.03096	0.04103	0.25878

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00585	0.01078	0.08751
	A0	-	0.01216	0.01706	0.09374
	A1	-	0.00750	0.01245	0.09812
	A1	-	0.01427	0.01921	0.10491
	S	(A0 * !A1)	0.01890	0.02415	0.12976
	S	(A0 * !A1)	0.01477	0.01990	0.12521
	S	(!A0 * A1)	0.00749	0.01749	0.19320
	S	(!A0 * A1)	0.01878	0.02874	0.20446
sky130_fd_sc_hs__mux2_2	A0	-	0.01191	0.01439	0.09680
	A0	-	0.01815	0.02060	0.10107
	A1	-	0.01369	0.01617	0.09900
	A1	-	0.02019	0.02260	0.10387
	S	(A0 * !A1)	0.02442	0.02763	0.12521
	S	(A0 * !A1)	0.01942	0.02252	0.12014
	S	(!A0 * A1)	0.01281	0.02033	0.18812
	S	(!A0 * A1)	0.02499	0.03236	0.19895
sky130_fd_sc_hs__mux2_4	A0	-	0.02766	0.02984	0.17198
	A0	-	0.03909	0.04120	0.18335
	A1	-	0.02954	0.03204	0.17366
	A1	-	0.04110	0.04339	0.18511
	S	(A0 * !A1)	0.04515	0.04563	0.16329
	S	(A0 * !A1)	0.03795	0.03830	0.15457
	S	(!A0 * A1)	0.03008	0.03704	0.28195
	S	(!A0 * A1)	0.04957	0.05611	0.29976

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00344	0.00345	0.00346
	(A1 * S * X)	0.00067	0.00066	0.00069
	(!A1 * S * !X)	0.00206	0.00206	0.00199
	(!A1 * S * !X)	-0.00102	-0.00104	-0.00109
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00335	0.00337	0.00338
	(A1 * S * X)	0.00061	0.00060	0.00063
	(!A1 * S * !X)	0.00258	0.00257	0.00249
	(!A1 * S * !X)	-0.00047	-0.00049	-0.00057
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00518	0.00524	0.00524
	(A1 * S * X)	0.00011	0.00006	0.00014
	(!A1 * S * !X)	0.00357	0.00355	0.00347
	(!A1 * S * !X)	-0.00235	-0.00235	-0.00245

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00003	-0.00000	-0.00018
	(A1 * S * X)	0.00280	0.00280	0.00264
	(!A1 * S * !X)	0.00068	0.00068	0.00068
	(!A1 * S * !X)	0.00377	0.00376	0.00376
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00016	0.00013	-0.00008
	(A1 * S * X)	0.00290	0.00290	0.00271
	(!A1 * S * !X)	0.00105	0.00104	0.00105
	(!A1 * S * !X)	0.00411	0.00410	0.00409
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00057	-0.00061	-0.00096
	(A1 * S * X)	0.00454	0.00454	0.00421
	(!A1 * S * !X)	0.00129	0.00126	0.00128
	(!A1 * S * !X)	0.00720	0.00720	0.00718

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00277	0.00281	0.00280
	(A0 * !S * X)	-0.00040	-0.00042	-0.00038
	(!A0 * !S * !X)	0.00110	0.00108	0.00106
	(!A0 * !S * !X)	-0.00228	-0.00228	-0.00233
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00267	0.00270	0.00269
	(A0 * !S * X)	-0.00021	-0.00023	-0.00020
	(!A0 * !S * !X)	0.00145	0.00145	0.00142
	(!A0 * !S * !X)	-0.00162	-0.00163	-0.00167
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00467	0.00469	0.00472
	(A0 * !S * X)	-0.00048	-0.00048	-0.00042
	(!A0 * !S * !X)	0.00278	0.00276	0.00269
	(!A0 * !S * !X)	-0.00302	-0.00303	-0.00315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00109	-0.00111	-0.00127
	(A0 * !S * X)	0.00210	0.00210	0.00193
	(!A0 * !S * !X)	-0.00012	-0.00013	-0.00013
	(!A0 * !S * !X)	0.00325	0.00324	0.00325
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00091	-0.00093	-0.00111
	(A0 * !S * X)	0.00200	0.00199	0.00181
	(!A0 * !S * !X)	0.00038	0.00036	0.00037
	(!A0 * !S * !X)	0.00345	0.00346	0.00345
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00117	-0.00124	-0.00159
	(A0 * !S * X)	0.00396	0.00395	0.00362
	(!A0 * !S * !X)	0.00095	0.00091	0.00092
	(!A0 * !S * !X)	0.00674	0.00676	0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.01025	0.01565	0.11476
	(A0 * A1 * X)	0.00268	0.00806	0.10723
	(!A0 * !A1 * !X)	0.00974	0.01559	0.11459
	(!A0 * !A1 * !X)	0.00224	0.00802	0.10707
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.01043	0.01588	0.11468
	(A0 * A1 * X)	0.00194	0.00737	0.10623
	(!A0 * !A1 * !X)	0.00977	0.01563	0.11405
	(!A0 * !A1 * !X)	0.00136	0.00716	0.10562
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01586	0.02135	0.13362
	(A0 * A1 * X)	0.00287	0.00830	0.12068
	(!A0 * !A1 * !X)	0.01555	0.02152	0.13301
	(!A0 * !A1 * !X)	0.00260	0.00853	0.12004

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00096	0.00745	0.10744
	(A0 * A1 * X)	0.00853	0.01503	0.11502
	(!A0 * !A1 * !X)	0.00025	0.00676	0.10684
	(!A0 * !A1 * !X)	0.00779	0.01435	0.11440
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00042	0.00691	0.10661
	(A0 * A1 * X)	0.00883	0.01541	0.11507
	(!A0 * !A1 * !X)	0.00052	0.00704	0.10649
	(!A0 * !A1 * !X)	0.00896	0.01553	0.11495
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00158	0.00808	0.12078
	(A0 * A1 * X)	0.01454	0.02109	0.13376
	(!A0 * !A1 * !X)	0.00129	0.00803	0.11993
	(!A0 * !A1 * !X)	0.01422	0.02106	0.13288

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00254	0.00265	0.00264	0.00290	0.00881	0.00564	1.24286
sky130_fd_sc_hs__mux4_2	0.00286	0.00271	0.00282	0.00276	0.00993	0.00583	2.50491
sky130_fd_sc_hs__mux4_4	0.00506	0.00488	0.00505	0.00507	0.01401	0.00872	4.80059

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	209.45800	365.60200
sky130_fd_sc_hs__mux4_2	0.00000	234.28400	414.14400
sky130_fd_sc_hs__mux4_4	0.00000	381.41800	658.88800

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)	0.13870	0.64589	6.47661
	A1->X (RR)	0.13981	0.64561	6.44583
	A2->X (RR)	0.14122	0.65163	6.45183
	A3->X (RR)	0.13895	0.64639	6.42822
	S0->X (-R)	0.20297	0.77971	7.51776
	S1->X (-R)	0.10996	0.65964	7.47354
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.14777	0.57045	6.36471
	A1->X (RR)	0.14283	0.56842	6.36808
	A2->X (RR)	0.13842	0.55719	6.32689
	A3->X (RR)	0.13282	0.55252	6.33194
	S0->X (-R)	0.19058	0.68150	7.54375
	S1->X (-R)	0.11803	0.58666	7.42652
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.16738	0.52870	6.63526
	A1->X (RR)	0.17105	0.53287	6.66363
	A2->X (RR)	0.17137	0.53351	6.60643
	A3->X (RR)	0.16433	0.52988	6.60633
	S0->X (-R)	0.25924	0.71554	7.82140
	S1->X (-R)	0.13694	0.57088	7.67225

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.18988	0.64227	5.19046
	A1->X (FF)	0.20011	0.65919	5.25204
	A2->X (FF)	0.20545	0.67028	5.27363
	A3->X (FF)	0.20565	0.66925	5.28060
	S0->X (-F)	0.18945	0.68587	5.38211
	S1->X (-F)	0.09354	0.53957	5.20252
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.23704	0.68607	5.49816
	A1->X (FF)	0.23505	0.68037	5.48317
	A2->X (FF)	0.23451	0.67931	5.50036
	A3->X (FF)	0.22746	0.66748	5.47184
	S0->X (-F)	0.20863	0.68866	5.58524
	S1->X (-F)	0.11451	0.55215	5.45348
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.24086	0.62968	5.49197
	A1->X (FF)	0.23637	0.62301	5.46478
	A2->X (FF)	0.26232	0.65392	5.55910
	A3->X (FF)	0.25041	0.64008	5.51853
	S0->X (-F)	0.23686	0.69222	5.75782
	S1->X (-F)	0.12520	0.52947	5.47779

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.02191	0.02524	0.10645
	A0	0.01434	0.01766	0.09909
	A1	0.02183	0.02501	0.10416
	A1	0.01444	0.01763	0.09704
	A2	0.02167	0.02488	0.10378
	A2	0.01441	0.01762	0.09676
	A3	0.02199	0.02521	0.10472
	A3	0.01459	0.01795	0.09758
	S0	0.03740	0.05334	0.33864
	S0	0.01978	0.03573	0.32119
	S1	0.02055	0.03097	0.19499
	S1	0.01148	0.02191	0.18629
sky130_fd_sc_hs__mux4_2	A0	0.02700	0.02989	0.11259
	A0	0.01862	0.02151	0.10482
	A1	0.02701	0.02999	0.11309
	A1	0.01881	0.02179	0.10550
	A2	0.02574	0.02866	0.10946
	A2	0.01789	0.02084	0.10224
	A3	0.02608	0.02919	0.11153
	A3	0.01848	0.02161	0.10454
	S0	0.04386	0.05934	0.35033
	S0	0.02565	0.04114	0.33257
	S1	0.02427	0.03477	0.20356
	S1	0.01488	0.02540	0.19511

sky130_fd_sc_hs__mux4_4	**A0**	0.05144	0.05605	0.21357
	A0	0.03655	0.04134	0.19887
	A1	0.04938	0.05379	0.21345
	A1	0.03504	0.03971	0.19947
	A2	0.04941	0.05352	0.20804
	A2	0.03507	0.03945	0.19398
	A3	0.04805	0.05251	0.20988
	A3	0.03392	0.03857	0.19602
	S0	0.07652	0.09725	0.52216
	S0	0.04837	0.06911	0.49395
	S1	0.04245	0.05413	0.28122
	S1	0.02838	0.04011	0.26717

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.01024	0.01273	0.09378
	A0	0.01783	0.02030	0.10062
	A1	0.01345	0.01572	0.09433
	A1	0.02081	0.02308	0.10132
	A2	0.01459	0.01670	0.09548
	A2	0.02185	0.02397	0.10207
	A3	0.01699	0.01911	0.09819
	A3	0.02437	0.02651	0.10529
	S0	0.01376	0.03051	0.31628
	S0	0.03116	0.04796	0.33243
	S1	0.00787	0.01923	0.19199
	S1	0.01695	0.02828	0.20043

sky130_fd_sc_hs__mux4_2	**A0**	0.02089	0.01965	0.10036
	A0	0.02926	0.02802	0.10851
	A1	0.02342	0.02222	0.10370
	A1	0.03160	0.03043	0.11140
	A2	0.02317	0.02195	0.10101
	A2	0.03100	0.02981	0.10867
	A3	0.02511	0.02414	0.10628
	A3	0.03270	0.03175	0.11235
	S0	0.02247	0.03590	0.32598
	S0	0.04070	0.05421	0.34239
	S1	0.01622	0.02483	0.19963
	S1	0.02561	0.03420	0.20792
sky130_fd_sc_hs__mux4_4	**A0**	0.04079	0.03746	0.19170
	A0	0.05564	0.05235	0.20566
	A1	0.04521	0.04225	0.19967
	A1	0.05954	0.05656	0.21152
	A2	0.04696	0.04217	0.19212
	A2	0.06128	0.05649	0.20641
	A3	0.04942	0.04584	0.19891
	A3	0.06355	0.05994	0.21280
	S0	0.04372	0.05930	0.48028
	S0	0.07155	0.08718	0.50800
	S1	0.03302	0.04055	0.27085
	S1	0.04709	0.05442	0.28274

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)**	0.01156	0.01544	0.09728
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00557	0.00943	0.09129
	(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)	0.00424	0.00387	0.00410
	(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)	0.00060	0.00021	0.00048
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01260	0.01642	0.10004
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00583	0.00962	0.09329
	(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)	0.00431	0.00399	0.00426
	(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)	0.00055	0.00020	0.00051
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.02101	0.02859	0.18837
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00922	0.01677	0.17660
	(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)	0.00688	0.00618	0.00668
	(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)	-0.00041	-0.00115	-0.00058

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)	0.00322	0.00732	0.08936
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00922	0.01331	0.09533
	(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)	0.00093	0.00090	0.00082
	(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)	0.00456	0.00457	0.00446
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00419	0.00828	0.09199
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01097	0.01506	0.09876
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00079	0.00076	0.00067
	(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)	0.00456	0.00455	0.00445
sky130_fd_sc_hs__mux4_4	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00608	0.01403	0.17414
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01788	0.02584	0.18592
	(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)	0.00043	0.00037	0.00022
	(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)	0.00772	0.00772	0.00753

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)	0.01030	0.01404	0.09403
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00454	0.00828	0.08826
	(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)	0.00347	0.00312	0.00338
	(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)	-0.00021	-0.00057	-0.00028
sky130_fd_sc_hs__mux4_2	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01154	0.01543	0.09947
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00499	0.00885	0.09290
	(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)	0.00368	0.00331	0.00353
	(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)	-0.00002	-0.00042	-0.00018

sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01788	0.02544	0.18713
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00667	0.01422	0.17593
	(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)	0.00623	0.00552	0.00597
	(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)	-0.00081	-0.00160	-0.00105

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)**	0.00577	0.00974	0.08973
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01155	0.01553	0.09547
	(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)	0.00051	0.00047	0.00038
	(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)	0.00416	0.00418	0.00406

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00636	0.01038	0.09464
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01294	0.01697	0.10116
	(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)	0.00038	0.00035	0.00027
	(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)	0.00409	0.00410	0.00399
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01051	0.01837	0.18034
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02175	0.02964	0.19149
	(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)	0.00035	0.00027	0.00010
	(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)	0.00737	0.00740	0.00718

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)**	0.00428	0.00391	0.00418
	(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)	0.00061	0.00024	0.00052
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01123	0.01491	0.09456
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00521	0.00888	0.08855
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)**	0.00449	0.00416	0.00442
	(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)	0.00058	0.00021	0.00052
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01150	0.01521	0.09711
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00502	0.00872	0.09064
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)**	0.00684	0.00615	0.00666
	(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)	-0.00035	-0.00107	-0.00047
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02080	0.02804	0.18485
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00889	0.01610	0.17295

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)	0.00084	0.00082	0.00073
	(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)	0.00452	0.00451	0.00441
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00355	0.00744	0.08730
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00957	0.01347	0.09330
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)	0.00063	0.00059	0.00051
	(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)	0.00455	0.00456	0.00444
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00373	0.00772	0.08970
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01020	0.01419	0.09617
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)	0.00045	0.00041	0.00023
	(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)	0.00763	0.00761	0.00742
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00555	0.01330	0.17044
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01748	0.02526	0.18235

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)	0.01041	0.01411	0.09451
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00430	0.00796	0.08838
	(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)	0.00387	0.00353	0.00380
	(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)	-0.00016	-0.00051	-0.00022
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01080	0.01466	0.09809
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00460	0.00844	0.09190
	(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)	0.00376	0.00341	0.00363
	(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)	0.00002	-0.00038	-0.00012

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01885	0.02626	0.18609
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00717	0.01455	0.17441
	(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)	0.00640	0.00565	0.00615
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00067	-0.00143	-0.00091

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)**	0.00549	0.00940	0.08996
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01162	0.01554	0.09605
	(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)	0.00007	0.00004	-0.00004
	(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)	0.00412	0.00412	0.00400

sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00543	0.00950	0.09320
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01166	0.01573	0.09937
	(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)	0.00028	0.00025	0.00017
	(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)	0.00404	0.00405	0.00394
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00908	0.01677	0.17692
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02078	0.02849	0.18853
	(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)	0.00015	0.00007	-0.00010
	(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)	0.00721	0.00723	0.00701

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)**	0.01251	0.01885	0.13303
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00077	0.00705	0.12129
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01758	0.02404	0.14559
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00765	0.01407	0.13570
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01732	0.02883	0.22889
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00350	0.01494	0.21504
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01370	0.02009	0.13431
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00163	0.00797	0.12217
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01728	0.02404	0.14550
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00729	0.01398	0.13553
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01671	0.02359	0.14570
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00633	0.01316	0.13531
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01742	0.02900	0.22730
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00359	0.01510	0.21345
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01912	0.03069	0.22862
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00502	0.01651	0.21446
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01694	0.02349	0.14565
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00661	0.01316	0.13536
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01906	0.03046	0.23015
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00482	0.01618	0.21586

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01365	0.02017	0.13499
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00206	0.00852	0.12337
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01857	0.02482	0.14724
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00911	0.01530	0.13778
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01845	0.03010	0.23237
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00464	0.01617	0.21851
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01475	0.02129	0.13615
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00294	0.00944	0.12430
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01972	0.02557	0.14743
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01066	0.01645	0.13838
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01922	0.02520	0.14771
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00992	0.01583	0.13837
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01913	0.03079	0.23347
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00488	0.01648	0.21920
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02055	0.03225	0.23459
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00619	0.01778	0.22013
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01777	0.02410	0.14720
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00811	0.01440	0.13753
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02072	0.03234	0.23431
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00669	0.01824	0.22019

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01901	0.02545	0.14368
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00237	0.00876	0.12702
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02859	0.03438	0.16530
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01568	0.02147	0.15248
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02829	0.04338	0.31164
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00760	0.02257	0.29096
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02150	0.02801	0.14627
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00434	0.01080	0.12903
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02937	0.03560	0.16621
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01592	0.02209	0.15291
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02860	0.03504	0.16710
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01454	0.02096	0.15305
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02775	0.04347	0.31867
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00731	0.02297	0.29821
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.03099	0.04677	0.32117
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01013	0.02588	0.30021
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02842	0.03443	0.16665
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01485	0.02078	0.15311
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.03235	0.04743	0.31490
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01096	0.02592	0.29340

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)**	0.00218	0.00933	0.12410
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01395	0.02118	0.13593
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00950	0.01691	0.13825
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01948	0.02688	0.14801
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00393	0.01675	0.21768
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01778	0.03064	0.23158
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00252	0.00955	0.12419
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01462	0.02174	0.13635
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00975	0.01728	0.13796
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01980	0.02738	0.14770
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01064	0.01796	0.13796
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02108	0.02842	0.14811
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00358	0.01641	0.21557
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01744	0.03034	0.22946
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00215	0.01490	0.21459
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01629	0.02911	0.22876
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01050	0.01770	0.13836
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02088	0.02813	0.14850
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00250	0.01523	0.21677
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01677	0.02958	0.23108

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00033	0.00781	0.12323
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01200	0.01944	0.13488
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00780	0.01526	0.13749
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01734	0.02483	0.14672
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00233	0.01534	0.21835
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01616	0.02928	0.23220
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00155	0.00891	0.12420
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01342	0.02073	0.13607
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00900	0.01644	0.13897
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01812	0.02562	0.14781
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01060	0.01785	0.13964
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01999	0.02730	0.14873
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00228	0.01533	0.21881
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01652	0.02965	0.23307
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00188	0.01487	0.21892
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01636	0.02938	0.23331
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00972	0.01701	0.13852
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01945	0.02678	0.14794
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00112	0.01409	0.21766
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01520	0.02826	0.23173

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00075	0.00834	0.12754
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01747	0.02505	0.14429
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01582	0.02340	0.15394
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02886	0.03651	0.16624
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00370	0.02062	0.29022
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02453	0.04152	0.31103
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00290	0.01029	0.12929
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02014	0.02763	0.14655
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01493	0.02295	0.15187
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02850	0.03647	0.16482
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01800	0.02579	0.15310
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03222	0.03996	0.16668
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00371	0.02190	0.29908
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02426	0.04241	0.31960
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00259	0.02068	0.29890
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02356	0.04167	0.31985
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01837	0.02553	0.15463
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03208	0.03932	0.16759
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00184	0.01872	0.28930
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02333	0.04029	0.31082

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)	0.00895	0.01637	0.13125
	(A1 * A3 * S0 * X)	0.00146	0.00884	0.12373
	(A0 * A2 * !S0 * X)	0.00838	0.01580	0.13068
	(A0 * A2 * !S0 * X)	0.00089	0.00827	0.12316
	(!A1 * !A3 * S0 * !X)	0.00911	0.01654	0.13131
	(!A1 * !A3 * S0 * !X)	0.00124	0.00862	0.12342
	(!A0 * !A2 * !S0 * !X)	0.00854	0.01598	0.13074
	(!A0 * !A2 * !S0 * !X)	0.00067	0.00805	0.12285
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00933	0.01668	0.13112
	(A1 * A3 * S0 * X)	0.00151	0.00886	0.12329
	(A0 * A2 * !S0 * X)	0.00876	0.01611	0.13055
	(A0 * A2 * !S0 * X)	0.00094	0.00829	0.12272
	(!A1 * !A3 * S0 * !X)	0.00963	0.01706	0.13142
	(!A1 * !A3 * S0 * !X)	0.00151	0.00891	0.12329
	(!A0 * !A2 * !S0 * !X)	0.00906	0.01649	0.13085
	(!A0 * !A2 * !S0 * !X)	0.00094	0.00834	0.12272
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01311	0.02019	0.13963
	(A1 * A3 * S0 * X)	0.00207	0.00913	0.12859
	(A0 * A2 * !S0 * X)	0.01269	0.01978	0.13921
	(A0 * A2 * !S0 * X)	0.00165	0.00871	0.12817
	(!A1 * !A3 * S0 * !X)	0.01375	0.02088	0.14015
	(!A1 * !A3 * S0 * !X)	0.00192	0.00901	0.12832
	(!A0 * !A2 * !S0 * !X)	0.01333	0.02046	0.13973
	(!A0 * !A2 * !S0 * !X)	0.00150	0.00859	0.12790

Passive power(pJ) for S1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X)	0.00049	0.00861	0.12399
	(A1 * A3 * S0 * X)	0.00796	0.01612	0.13150
	(A0 * A2 * !S0 * X)	-0.00008	0.00804	0.12342
	(A0 * A2 * !S0 * X)	0.00738	0.01555	0.13093
	(!A1 * !A3 * S0 * !X)	0.00012	0.00811	0.12329
	(!A1 * !A3 * S0 * !X)	0.00800	0.01605	0.13120
	(!A0 * !A2 * !S0 * !X)	-0.00045	0.00754	0.12272
	(!A0 * !A2 * !S0 * !X)	0.00742	0.01548	0.13062
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00040	0.00847	0.12348
	(A1 * A3 * S0 * X)	0.00821	0.01631	0.13128
	(A0 * A2 * !S0 * X)	-0.00018	0.00790	0.12291
	(A0 * A2 * !S0 * X)	0.00764	0.01573	0.13070
	(!A1 * !A3 * S0 * !X)	0.00059	0.00853	0.12337
	(!A1 * !A3 * S0 * !X)	0.00869	0.01668	0.13149
	(!A0 * !A2 * !S0 * !X)	0.00002	0.00797	0.12281
	(!A0 * !A2 * !S0 * !X)	0.00812	0.01611	0.13093
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00060	0.00873	0.12866
	(A1 * A3 * S0 * X)	0.01164	0.01978	0.13968
	(A0 * A2 * !S0 * X)	0.00018	0.00832	0.12824
	(A0 * A2 * !S0 * X)	0.01123	0.01936	0.13926
	(!A1 * !A3 * S0 * !X)	0.00124	0.00911	0.12859
	(!A1 * !A3 * S0 * !X)	0.01303	0.02099	0.14039
	(!A0 * !A2 * !S0 * !X)	0.00083	0.00868	0.12817
	(!A0 * !A2 * !S0 * !X)	0.01261	0.02055	0.14000

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00244	0.00294	1.19869
sky130_fd_sc_hs__nand2b_2	0.00276	0.00560	2.05648
sky130_fd_sc_hs__nand2b_4	0.00407	0.00847	2.51201

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	76.62380	102.60200
sky130_fd_sc_hs__nand2b_2	0.00000	86.08370	200.02900
sky130_fd_sc_hs__nand2b_4	0.00000	154.60500	207.96600

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)	0.05893	0.53225	6.54044
	B->Y (FR)	0.03327	0.68279	9.48393
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.05887	0.41946	5.55294
	B->Y (FR)	0.03147	0.59009	9.17425
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.07169	0.46611	6.54293
	B->Y (FR)	0.04026	0.60701	9.63339

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)	0.07178	0.54604	6.28782
	B->Y (RF)	0.03026	0.52025	7.28699
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.07615	0.49574	6.13129
	B->Y (RF)	0.02986	0.42279	6.82954
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.05952	0.34136	4.02338
	B->Y (RF)	0.02538	0.28111	4.81076

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	0.01096	0.01731	0.11936
	A_N	0.00694	0.01329	0.11536
	B	0.00035	0.00321	0.03335
	B	0.00495	0.00783	0.03792
sky130_fd_sc_hs__nand2b_2	A_N	0.01293	0.01926	0.11603
	A_N	0.00875	0.01509	0.11192
	B	0.00045	0.00645	0.06732
	B	0.00948	0.01553	0.07675
sky130_fd_sc_hs__nand2b_4	A_N	0.02008	0.03100	0.20040
	A_N	0.01403	0.02497	0.19478
	B	0.00031	0.00998	0.10144
	B	0.01392	0.02372	0.11490

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00637	0.01330	0.11067
	A_N	0.01038	0.01730	0.11438
	B	0.00801	0.00946	0.02861
	B	0.00341	0.00484	0.02390
sky130_fd_sc_hs__nand2b_2	A_N	0.01169	0.01874	0.12812
	A_N	0.01588	0.02287	0.13232
	B	0.01550	0.01876	0.05847
	B	0.00644	0.00972	0.04806
sky130_fd_sc_hs__nand2b_4	A_N	0.01596	0.02790	0.20546
	A_N	0.02202	0.03393	0.21013
	B	0.02281	0.02797	0.08763
	B	0.00916	0.01430	0.07295

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00759	0.01396	0.11514
	(!B * Y)	0.00335	0.00969	0.11090
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.01012	0.01671	0.13037
	(!B * Y)	0.00540	0.01197	0.12564
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01338	0.02410	0.20077
	(!B * Y)	0.00640	0.01712	0.19380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00008	0.00694	0.10909
	(!B * Y)	0.00435	0.01121	0.11335
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00084	0.00797	0.12198
	(!B * Y)	0.00560	0.01275	0.12674
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00151	0.01332	0.19208
	(!B * Y)	0.00852	0.02037	0.19909

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00287	0.00290	0.00288
	(A_N * Y)	-0.00133	-0.00135	-0.00133
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00406	0.00409	0.00408
	(A_N * Y)	-0.00393	-0.00395	-0.00393
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00874	0.00884	0.00877
	(A_N * Y)	-0.00297	-0.00300	-0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00091	-0.00105	-0.00108
	(A_N * Y)	0.00329	0.00319	0.00313
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00244	-0.00277	-0.00283
	(A_N * Y)	0.00555	0.00529	0.00519
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00426	-0.00492	-0.00509
	(A_N * Y)	0.00745	0.00688	0.00663

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00295	0.00287	1.24274
sky130_fd_sc_hs__nand2_2	0.00566	0.00562	2.39448
sky130_fd_sc_hs__nand2_4	0.00851	0.00828	2.44277
sky130_fd_sc_hs__nand2_8	0.01633	0.01638	4.29168

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2_1	0.00000	25.63260	99.01010
sky130_fd_sc_hs__nand2_2	0.00000	51.22620	197.98800
sky130_fd_sc_hs__nand2_4	0.00000	53.00200	198.29600
sky130_fd_sc_hs__nand2_8	0.00000	105.76500	396.06300

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)	0.02631	0.67430	9.53818
	B->Y (FR)	0.03218	0.68012	9.54862
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02298	0.57947	9.48518
	B->Y (FR)	0.03049	0.58586	9.45281
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03210	0.60036	9.66601
	B->Y (FR)	0.04732	0.61498	9.64831
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02633	0.50439	9.18394
	B->Y (FR)	0.03958	0.50473	8.79216

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.02421	0.57858	8.21621
	B->Y (RF)	0.02804	0.52589	7.48163
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.02274	0.51744	8.66798
	B->Y (RF)	0.02913	0.46306	7.87676
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.02037	0.34553	5.85029
	B->Y (RF)	0.02598	0.28647	4.83858
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01777	0.29514	5.87097
	B->Y (RF)	0.02334	0.21927	4.49092

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00052	0.00234	0.03185
	A	0.00428	0.00717	0.03660
	B	0.00003	0.00278	0.03314
	B	0.00599	0.00876	0.03902
sky130_fd_sc_hs__nand2_2	A	-0.00154	0.00491	0.05856
	A	0.00778	0.01421	0.06778
	B	0.00052	0.00676	0.06220
	B	0.01237	0.01858	0.07397
sky130_fd_sc_hs__nand2_4	A	-0.00299	0.00650	0.09414
	A	0.01106	0.02057	0.10772
	B	0.00080	0.01008	0.10090
	B	0.01969	0.02907	0.11956
sky130_fd_sc_hs__nand2_8	A	-0.00667	0.01472	0.20834
	A	0.02063	0.04190	0.23674
	B	0.00013	0.02049	0.20631
	B	0.03751	0.05785	0.24409

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00677	0.00844	0.02674
	A	0.00198	0.00360	0.02184
	B	0.00790	0.00937	0.02809
	B	0.00194	0.00337	0.02195
sky130_fd_sc_hs__nand2_2	A	0.01374	0.01749	0.05190
	A	0.00443	0.00817	0.04236
	B	0.01622	0.01949	0.05533
	B	0.00434	0.00748	0.04259
sky130_fd_sc_hs__nand2_4	A	0.01975	0.02552	0.08223
	A	0.00576	0.01142	0.06632
	B	0.02463	0.02950	0.08932
	B	0.00565	0.01056	0.06902
sky130_fd_sc_hs__nand2_8	A	0.03301	0.04687	0.16580
	A	0.00580	0.01958	0.13673
	B	0.04306	0.05584	0.18577
	B	0.00555	0.01834	0.14452

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00060	0.00059	0.00057
	(!B * Y)	-0.00264	-0.00265	-0.00269
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00114	0.00114	0.00106
	(!B * Y)	-0.00513	-0.00516	-0.00529
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00220	0.00222	0.00207
	(!B * Y)	-0.00601	-0.00607	-0.00632
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00438	0.00437	0.00410
	(!B * Y)	-0.01169	-0.01174	-0.01222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00055	-0.00056	-0.00055
	(!B * Y)	0.00270	0.00276	0.00271
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00100	-0.00100	-0.00100
	(!B * Y)	0.00532	0.00532	0.00532
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00196	-0.00197	-0.00196
	(!B * Y)	0.00636	0.00641	0.00638
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00386	-0.00392	-0.00389
	(!B * Y)	0.01225	0.01240	0.01233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00171	0.00174	0.00173
	(!A * Y)	-0.00230	-0.00233	-0.00231
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00333	0.00335	0.00333
	(!A * Y)	-0.00454	-0.00455	-0.00453
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00661	0.00671	0.00664
	(!A * Y)	-0.00468	-0.00472	-0.00468
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01325	0.01338	0.01327
	(!A * Y)	-0.00939	-0.00943	-0.00936

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)	0.00254	0.00242	0.00235
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00285	-0.00321	-0.00326
	(!A * Y)	0.00500	0.00472	0.00461
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00566	-0.00638	-0.00648
	(!A * Y)	0.00565	0.00505	0.00484
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.01144	-0.01276	-0.01296
	(!A * Y)	0.01128	0.01007	0.00968

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00229	0.00296	0.00288	1.14253
sky130_fd_sc_hs__nand3b_2	0.00272	0.00564	0.00561	1.91686
sky130_fd_sc_hs__nand3b_4	0.00387	0.00804	0.00812	2.13257

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	70.38890	149.55900
sky130_fd_sc_hs__nand3b_2	0.00000	73.60030	298.98200
sky130_fd_sc_hs__nand3b_4	0.00000	141.80000	298.56900

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)	0.06027	0.49234	5.80531
	B->Y (FR)	0.03792	0.67376	9.18311
	C->Y (FR)	0.04162	0.67004	9.05340
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.06201	0.39286	4.90604
	B->Y (FR)	0.03279	0.54528	8.25190
	C->Y (FR)	0.03762	0.55815	8.33301
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.07692	0.47306	6.20275
	B->Y (FR)	0.04553	0.58570	8.91388
	C->Y (FR)	0.06063	0.62074	9.22735

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)	0.08126	0.65904	7.84648
	B->Y (RF)	0.04519	0.64860	8.91200
	C->Y (RF)	0.04900	0.60011	8.21058
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.09013	0.60485	7.79665
	B->Y (RF)	0.04501	0.55669	8.74212
	C->Y (RF)	0.04869	0.49124	7.80443
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.07560	0.49075	6.47818
	B->Y (RF)	0.04677	0.49247	7.86192
	C->Y (RF)	0.05099	0.36976	6.06046

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	0.01048	0.01693	0.11979
	A_N	0.00692	0.01337	0.11614
	B	0.00073	0.00324	0.03080
	B	0.00544	0.00795	0.03550
	C	0.00125	0.00373	0.03226
	C	0.00688	0.00936	0.03789
sky130_fd_sc_hs__nand3b_2	A_N	0.01313	0.02020	0.13521
	A_N	0.00913	0.01617	0.13075
	B	0.00122	0.00664	0.06163
	B	0.01065	0.01615	0.07070
	C	0.00228	0.00759	0.06454
	C	0.01411	0.01940	0.07489
sky130_fd_sc_hs__nand3b_4	A_N	0.02061	0.03182	0.20672
	A_N	0.01459	0.02576	0.20077
	B	0.00165	0.00839	0.08012
	B	0.01499	0.02170	0.09336
	C	0.00347	0.01006	0.08503
	C	0.02204	0.02867	0.10365

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00933	0.01627	0.11515
	A_N	0.01289	0.01982	0.11842
	B	0.01096	0.01199	0.02794
	B	0.00625	0.00731	0.02317
	C	0.01201	0.01313	0.03163
	C	0.00636	0.00746	0.02598
sky130_fd_sc_hs__nand3b_2	A_N	0.01777	0.02507	0.13129
	A_N	0.02177	0.02903	0.13465
	B	0.02116	0.02356	0.05592
	B	0.01168	0.01410	0.04622
	C	0.02345	0.02613	0.06606
	C	0.01154	0.01414	0.05345
sky130_fd_sc_hs__nand3b_4	A_N	0.02066	0.03214	0.20011
	A_N	0.02670	0.03816	0.20495
	B	0.02689	0.02972	0.06892
	B	0.01357	0.01637	0.05464
	C	0.03279	0.03638	0.09202
	C	0.01403	0.01766	0.07281

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)	0.00732	0.01382	0.11559
	(B * !C * Y)	0.00329	0.00978	0.11158
	(!B * Y)	0.00726	0.01378	0.11551
	(!B * Y)	0.00330	0.00980	0.11155
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.01051	0.01709	0.13102
	(B * !C * Y)	0.00546	0.01202	0.12596
	(!B * Y)	0.01034	0.01693	0.13079
	(!B * Y)	0.00547	0.01205	0.12590
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01357	0.02395	0.19647
	(B * !C * Y)	0.00636	0.01673	0.18926
	(!B * Y)	0.01328	0.02370	0.19651
	(!B * Y)	0.00630	0.01670	0.18953

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)	0.00025	0.00721	0.10997
	(B * !C * Y)	0.00436	0.01133	0.11405
	(!B * Y)	0.00026	0.00723	0.10995
	(!B * Y)	0.00425	0.01121	0.11392
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00078	0.00787	0.12210
	(B * !C * Y)	0.00601	0.01311	0.12729
	(!B * Y)	0.00092	0.00801	0.12217
	(!B * Y)	0.00583	0.01294	0.12708
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00165	0.01311	0.18761
	(B * !C * Y)	0.00922	0.02070	0.19508
	(!B * Y)	0.00183	0.01332	0.18819
	(!B * Y)	0.00885	0.02038	0.19521

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)	0.00275	0.00277	0.00275
	(A_N * C * Y)	-0.00139	-0.00140	-0.00139
	(A_N * !C * Y)	0.00208	0.00208	0.00208
	(A_N * !C * Y)	-0.00140	-0.00140	-0.00140
	(!A_N * !C * Y)	0.00063	0.00064	0.00065
	(!A_N * !C * Y)	-0.00259	-0.00260	-0.00262
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00405	0.00408	0.00407
	(A_N * C * Y)	-0.00405	-0.00408	-0.00406
	(A_N * !C * Y)	0.00281	0.00282	0.00281
	(A_N * !C * Y)	-0.00410	-0.00411	-0.00410
	(!A_N * !C * Y)	0.00137	0.00138	0.00142
	(!A_N * !C * Y)	-0.00495	-0.00497	-0.00497
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00878	0.00885	0.00882
	(A_N * C * Y)	-0.00275	-0.00278	-0.00275
	(A_N * !C * Y)	0.00572	0.00576	0.00571
	(A_N * !C * Y)	-0.00328	-0.00332	-0.00328
	(!A_N * !C * Y)	0.00252	0.00254	0.00262
	(!A_N * !C * Y)	-0.00538	-0.00540	-0.00539

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)	-0.00073	-0.00092	-0.00095
	(A_N * C * Y)	0.00339	0.00323	0.00319
	(A_N * !C * Y)	-0.00034	-0.00035	-0.00038
	(A_N * !C * Y)	0.00327	0.00331	0.00320
	(!A_N * !C * Y)	-0.00057	-0.00057	-0.00059
	(!A_N * !C * Y)	0.00270	0.00272	0.00268
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00231	-0.00277	-0.00282
	(A_N * C * Y)	0.00582	0.00542	0.00532
	(A_N * !C * Y)	-0.00166	-0.00166	-0.00174
	(A_N * !C * Y)	0.00554	0.00561	0.00537
	(!A_N * !C * Y)	-0.00122	-0.00124	-0.00129
	(!A_N * !C * Y)	0.00519	0.00527	0.00510
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00379	-0.00496	-0.00516
	(A_N * C * Y)	0.00775	0.00664	0.00641
	(A_N * !C * Y)	-0.00221	-0.00228	-0.00239
	(A_N * !C * Y)	0.00737	0.00739	0.00698
	(!A_N * !C * Y)	-0.00235	-0.00237	-0.00244
	(!A_N * !C * Y)	0.00569	0.00573	0.00556

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)	0.00252	0.00253	0.00253
	(A_N * B * Y)	-0.00135	-0.00136	-0.00135
	(A_N * !B * Y)	0.00251	0.00253	0.00252
	(A_N * !B * Y)	-0.00136	-0.00137	-0.00137
	(!A_N * !B * Y)	0.00161	0.00163	0.00162
	(!A_N * !B * Y)	-0.00229	-0.00230	-0.00229
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00411	0.00413	0.00412
	(A_N * B * Y)	-0.00390	-0.00392	-0.00390
	(A_N * !B * Y)	0.00410	0.00412	0.00411
	(A_N * !B * Y)	-0.00392	-0.00394	-0.00393
	(!A_N * !B * Y)	0.00321	0.00326	0.00322
	(!A_N * !B * Y)	-0.00483	-0.00487	-0.00484
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00854	0.00860	0.00857
	(A_N * B * Y)	-0.00279	-0.00282	-0.00279
	(A_N * !B * Y)	0.00853	0.00851	0.00852
	(A_N * !B * Y)	-0.00290	-0.00288	-0.00289
	(!A_N * !B * Y)	0.00637	0.00642	0.00640
	(!A_N * !B * Y)	-0.00505	-0.00507	-0.00505

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)	-0.00057	-0.00073	-0.00075
	(A_N * B * Y)	0.00327	0.00320	0.00315
	(A_N * !B * Y)	-0.00073	-0.00076	-0.00076
	(A_N * !B * Y)	0.00314	0.00315	0.00314
	(!A_N * !B * Y)	-0.00142	-0.00154	-0.00156
	(!A_N * !B * Y)	0.00246	0.00238	0.00235
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00258	-0.00288	-0.00292
	(A_N * B * Y)	0.00536	0.00525	0.00516
	(A_N * !B * Y)	-0.00288	-0.00292	-0.00294
	(A_N * !B * Y)	0.00516	0.00514	0.00514
	(!A_N * !B * Y)	-0.00289	-0.00309	-0.00312
	(!A_N * !B * Y)	0.00519	0.00500	0.00496
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00439	-0.00492	-0.00502
	(A_N * B * Y)	0.00688	0.00659	0.00643
	(A_N * !B * Y)	-0.00485	-0.00505	-0.00506
	(A_N * !B * Y)	0.00649	0.00644	0.00641
	(!A_N * !B * Y)	-0.00571	-0.00624	-0.00627
	(!A_N * !B * Y)	0.00571	0.00528	0.00521

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00299	0.00303	0.00295	1.12181
sky130_fd_sc_hs__nand3_2	0.00562	0.00607	0.00558	1.99030
sky130_fd_sc_hs__nand3_4	0.00826	0.00817	0.00820	2.44347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	19.38840	148.58200
sky130_fd_sc_hs__nand3_2	0.00000	38.69160	296.84900
sky130_fd_sc_hs__nand3_4	0.00000	40.16020	297.06100

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)	0.03130	0.65402	8.93297
	B->Y (FR)	0.03807	0.65880	8.91960
	C->Y (FR)	0.04226	0.66639	8.94659
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.02918	0.60550	9.48033
	B->Y (FR)	0.03391	0.55922	8.54494
	C->Y (FR)	0.03924	0.57092	8.59607
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03158	0.59756	9.63903
	B->Y (FR)	0.04744	0.60854	9.56753
	C->Y (FR)	0.05649	0.61502	9.46336

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.03651	0.68030	9.36789
	B->Y (RF)	0.04452	0.64575	8.81500
	C->Y (RF)	0.04773	0.59614	8.11275
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.03017	0.57448	9.16151
	B->Y (RF)	0.04077	0.54339	8.65018
	C->Y (RF)	0.04601	0.49560	7.93066
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.02294	0.42573	7.19407
	B->Y (RF)	0.03343	0.38258	6.41548
	C->Y (RF)	0.03737	0.32331	5.49053

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00036	0.00222	0.03041
	A	0.00471	0.00729	0.03526
	B	0.00044	0.00295	0.03096
	B	0.00667	0.00916	0.03696
	C	0.00087	0.00326	0.03205
	C	0.00834	0.01077	0.03921
sky130_fd_sc_hs__nand3_2	A	-0.00142	0.00407	0.05355
	A	0.00822	0.01376	0.06273
	B	0.00080	0.00616	0.06016
	B	0.01322	0.01858	0.07240
	C	0.00242	0.00767	0.06554
	C	0.01706	0.02227	0.07961
sky130_fd_sc_hs__nand3_4	A	-0.00291	0.00567	0.08338
	A	0.01122	0.01981	0.09703
	B	0.00109	0.00924	0.08888
	B	0.02012	0.02828	0.10749
	C	0.00342	0.01146	0.09588
	C	0.02755	0.03569	0.11980

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.01016	0.01154	0.02867
	A	0.00509	0.00644	0.02347
	B	0.01129	0.01235	0.02863
	B	0.00505	0.00612	0.02228
	C	0.01244	0.01360	0.03233
	C	0.00494	0.00604	0.02477
sky130_fd_sc_hs__nand3_2	A	0.01864	0.02159	0.05333
	A	0.00900	0.01194	0.04326
	B	0.02106	0.02359	0.05616
	B	0.00860	0.01110	0.04353
	C	0.02328	0.02600	0.06575
	C	0.00855	0.01118	0.05040
sky130_fd_sc_hs__nand3_4	A	0.02209	0.02690	0.07326
	A	0.00799	0.01280	0.05876
	B	0.02684	0.03072	0.07772
	B	0.00785	0.01164	0.05783
	C	0.03173	0.03582	0.09320
	C	0.00738	0.01136	0.06682

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00057	0.00058	0.00053
	(B * !C * Y)	-0.00256	-0.00259	-0.00269
	(!B * Y)	0.00058	0.00058	0.00055
	(!B * Y)	-0.00263	-0.00265	-0.00270
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00115	0.00116	0.00101
	(B * !C * Y)	-0.00479	-0.00482	-0.00508
	(!B * Y)	0.00117	0.00118	0.00109
	(!B * Y)	-0.00495	-0.00498	-0.00510
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00211	0.00213	0.00188
	(B * !C * Y)	-0.00556	-0.00563	-0.00612
	(!B * Y)	0.00215	0.00216	0.00201
	(!B * Y)	-0.00589	-0.00594	-0.00618

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00050	-0.00051	-0.00050
	(B * !C * Y)	0.00271	0.00274	0.00271
	(!B * Y)	-0.00053	-0.00053	-0.00053
	(!B * Y)	0.00271	0.00271	0.00272
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00096	-0.00096	-0.00095
	(B * !C * Y)	0.00515	0.00515	0.00514
	(!B * Y)	-0.00105	-0.00106	-0.00104
	(!B * Y)	0.00515	0.00522	0.00514
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00180	-0.00180	-0.00179
	(B * !C * Y)	0.00622	0.00627	0.00622
	(!B * Y)	-0.00191	-0.00192	-0.00191
	(!B * Y)	0.00623	0.00627	0.00624

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	0.00071	0.00072
	(A * !C * Y)	-0.00233	-0.00232	-0.00231
	(!A * C * Y)	0.00167	0.00170	0.00168
	(!A * C * Y)	-0.00231	-0.00233	-0.00231
	(!A * !C * Y)	0.00091	0.00091	0.00091
	(!A * !C * Y)	-0.00232	-0.00232	-0.00232
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00144	0.00144	0.00146
	(A * !C * Y)	-0.00485	-0.00487	-0.00483
	(!A * C * Y)	0.00329	0.00332	0.00331
	(!A * C * Y)	-0.00480	-0.00482	-0.00480
	(!A * !C * Y)	0.00191	0.00191	0.00192
	(!A * !C * Y)	-0.00486	-0.00486	-0.00487
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00256	0.00258	0.00263
	(A * !C * Y)	-0.00475	-0.00476	-0.00474
	(!A * C * Y)	0.00654	0.00662	0.00658
	(!A * C * Y)	-0.00471	-0.00474	-0.00471
	(!A * !C * Y)	0.00339	0.00343	0.00339
	(!A * !C * Y)	-0.00480	-0.00484	-0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00066	-0.00068	-0.00069
	(A * !C * Y)	0.00240	0.00244	0.00235
	(!A * C * Y)	-0.00143	-0.00162	-0.00164
	(!A * C * Y)	0.00258	0.00240	0.00235
	(!A * !C * Y)	-0.00091	-0.00091	-0.00091
	(!A * !C * Y)	0.00244	0.00247	0.00236
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00131	-0.00134	-0.00137
	(A * !C * Y)	0.00502	0.00512	0.00493
	(!A * C * Y)	-0.00277	-0.00320	-0.00324
	(!A * C * Y)	0.00537	0.00497	0.00488
	(!A * !C * Y)	-0.00191	-0.00191	-0.00192
	(!A * !C * Y)	0.00515	0.00520	0.00497
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00236	-0.00236	-0.00246
	(A * !C * Y)	0.00513	0.00512	0.00492
	(!A * C * Y)	-0.00543	-0.00633	-0.00643
	(!A * C * Y)	0.00591	0.00507	0.00486
	(!A * !C * Y)	-0.00339	-0.00343	-0.00339
	(!A * !C * Y)	0.00531	0.00537	0.00497

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00178	0.00179	0.00178
	(A * !B * Y)	-0.00232	-0.00233	-0.00232
	(!A * B * Y)	0.00173	0.00174	0.00174
	(!A * B * Y)	-0.00232	-0.00233	-0.00232
	(!A * !B * Y)	0.00175	0.00176	0.00175
	(!A * !B * Y)	-0.00233	-0.00234	-0.00234
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00327	0.00328	0.00328
	(A * !B * Y)	-0.00457	-0.00458	-0.00457
	(!A * B * Y)	0.00321	0.00324	0.00322
	(!A * B * Y)	-0.00457	-0.00459	-0.00457
	(!A * !B * Y)	0.00323	0.00324	0.00323
	(!A * !B * Y)	-0.00460	-0.00461	-0.00460
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00666	0.00671	0.00669
	(A * !B * Y)	-0.00476	-0.00478	-0.00477
	(!A * B * Y)	0.00649	0.00653	0.00652
	(!A * B * Y)	-0.00477	-0.00478	-0.00476
	(!A * !B * Y)	0.00656	0.00665	0.00658
	(!A * !B * Y)	-0.00481	-0.00485	-0.00482

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00162	-0.00171	-0.00174
	(A * !B * Y)	0.00248	0.00239	0.00237
	(!A * B * Y)	-0.00153	-0.00170	-0.00173
	(!A * B * Y)	0.00248	0.00241	0.00236
	(!A * !B * Y)	-0.00171	-0.00174	-0.00175
	(!A * !B * Y)	0.00237	0.00236	0.00235
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00292	-0.00320	-0.00321
	(A * !B * Y)	0.00485	0.00470	0.00466
	(!A * B * Y)	-0.00277	-0.00315	-0.00320
	(!A * B * Y)	0.00491	0.00475	0.00464
	(!A * !B * Y)	-0.00312	-0.00324	-0.00323
	(!A * !B * Y)	0.00462	0.00465	0.00462
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00592	-0.00646	-0.00653
	(A * !B * Y)	0.00540	0.00502	0.00493
	(!A * B * Y)	-0.00563	-0.00636	-0.00649
	(!A * B * Y)	0.00548	0.00508	0.00491
	(!A * !B * Y)	-0.00634	-0.00657	-0.00658
	(!A * !B * Y)	0.00488	0.00489	0.00486

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00232	0.00226	0.00302	0.00305	0.85064
sky130_fd_sc_hs__nand4bb_2	0.00266	0.00263	0.00571	0.00564	1.41074
sky130_fd_sc_hs__nand4bb_4	0.00374	0.00385	0.01113	0.01117	2.32397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	114.98900	202.25800
sky130_fd_sc_hs__nand4bb_2	0.00000	95.90370	399.82700
sky130_fd_sc_hs__nand4bb_4	0.00000	255.41900	794.41500

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)	0.06841	0.46506	4.72391
	B_N->Y (RR)	0.07645	0.47184	4.70253
	C->Y (FR)	0.04862	0.62240	7.72054
	D->Y (FR)	0.05358	0.63079	7.74581
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.06581	0.35767	3.72697
	B_N->Y (RR)	0.07421	0.35379	3.49497
	C->Y (FR)	0.03932	0.50107	6.86284
	D->Y (FR)	0.04358	0.51355	6.92393
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.08087	0.35503	3.68850
	B_N->Y (RR)	0.09269	0.37313	3.79572
	C->Y (FR)	0.03810	0.42792	6.42083
	D->Y (FR)	0.04188	0.44113	6.48611

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)	0.09769	0.71687	7.76159
	B_N->Y (FF)	0.11022	0.73043	7.70546
	C->Y (RF)	0.07572	0.68076	8.25795
	D->Y (RF)	0.08139	0.64846	7.71840
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.10424	0.66102	7.87067
	B_N->Y (FF)	0.12709	0.68757	7.84018
	C->Y (RF)	0.07470	0.56739	7.93218
	D->Y (RF)	0.08011	0.53827	7.40749
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.10559	0.54780	6.98695
	B_N->Y (FF)	0.12294	0.56680	6.91225
	C->Y (RF)	0.07718	0.47263	7.48471
	D->Y (RF)	0.08185	0.43705	6.86693

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	0.01041	0.01682	0.11911
	A_N	0.00729	0.01368	0.11579
	B_N	0.01116	0.01742	0.11960
	B_N	0.00814	0.01437	0.11640
	C	0.00151	0.00376	0.03337
	C	0.00661	0.00885	0.03833
	D	0.00217	0.00435	0.03542
	D	0.00832	0.01049	0.04142
sky130_fd_sc_hs__nand4bb_2	A_N	0.01326	0.02039	0.13522
	A_N	0.00986	0.01700	0.13139
	B_N	0.01605	0.02282	0.13724
	B_N	0.01276	0.01953	0.13339
	C	0.00265	0.00750	0.06771
	C	0.01203	0.01681	0.07693
	D	0.00437	0.00913	0.07085
	D	0.01616	0.02085	0.08212
sky130_fd_sc_hs__nand4bb_4	A_N	0.02371	0.03451	0.21351
	A_N	0.01922	0.02997	0.20699
	B_N	0.02815	0.03866	0.22022
	B_N	0.02353	0.03396	0.21429
	C	0.00425	0.01563	0.15015
	C	0.02282	0.03406	0.16661
	D	0.00705	0.01831	0.15869
	D	0.03042	0.04160	0.18041

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.01199	0.01880	0.11960
	A_N	0.01512	0.02192	0.12246
	B_N	0.01356	0.02039	0.12104
	B_N	0.01658	0.02342	0.12379
	C	0.01527	0.01609	0.03435
	C	0.01015	0.01096	0.02917
	D	0.01643	0.01740	0.03880
	D	0.01024	0.01106	0.03228
sky130_fd_sc_hs__nand4bb_2	A_N	0.02217	0.02928	0.13947
	A_N	0.02556	0.03267	0.14264
	B_N	0.02493	0.03202	0.14151
	B_N	0.02822	0.03530	0.14478
	C	0.02820	0.03016	0.06919
	C	0.01880	0.02073	0.05935
	D	0.03056	0.03240	0.07670
	D	0.01865	0.02049	0.06438
sky130_fd_sc_hs__nand4bb_4	A_N	0.04384	0.05507	0.22732
	A_N	0.04832	0.05953	0.23152
	B_N	0.04853	0.05974	0.23262
	B_N	0.05316	0.06436	0.23716
	C	0.05536	0.06072	0.15774
	C	0.03681	0.04208	0.13837
	D	0.06012	0.06560	0.17761
	D	0.03648	0.04188	0.15393

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)	0.00780	0.01415	0.11471
	(B_N * Y)	0.00397	0.01031	0.11088
	(!B_N * C * !D * Y)	0.00749	0.01383	0.11443
	(!B_N * C * !D * Y)	0.00362	0.00996	0.11057
	(!B_N * !C * Y)	0.00750	0.01383	0.11443
	(!B_N * !C * Y)	0.00365	0.00998	0.11058
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.01035	0.01689	0.12901
	(B_N * Y)	0.00614	0.01268	0.12480
	(!B_N * C * !D * Y)	0.01046	0.01698	0.12915
	(!B_N * C * !D * Y)	0.00618	0.01269	0.12487
	(!B_N * !C * Y)	0.01045	0.01697	0.12914
	(!B_N * !C * Y)	0.00622	0.01272	0.12489
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01864	0.02836	0.20216
	(B_N * Y)	0.01257	0.02226	0.19607
	(!B_N * C * !D * Y)	0.01786	0.02758	0.20148
	(!B_N * C * !D * Y)	0.01163	0.02132	0.19524
	(!B_N * !C * Y)	0.01786	0.02757	0.20146
	(!B_N * !C * Y)	0.01171	0.02140	0.19529

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)	0.00138	0.00826	0.10966
	(B_N * Y)	0.00519	0.01210	0.11349
	(!B_N * C * !D * Y)	0.00003	0.00692	0.10833
	(!B_N * C * !D * Y)	0.00398	0.01089	0.11228
	(!B_N * !C * Y)	-0.00001	0.00689	0.10831
	(!B_N * !C * Y)	0.00385	0.01077	0.11218
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00198	0.00896	0.12131
	(B_N * Y)	0.00619	0.01320	0.12553
	(!B_N * C * !D * Y)	0.00087	0.00786	0.12020
	(!B_N * C * !D * Y)	0.00536	0.01236	0.12465
	(!B_N * !C * Y)	0.00080	0.00779	0.12017
	(!B_N * !C * Y)	0.00507	0.01210	0.12445
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00455	0.01547	0.19144
	(B_N * Y)	0.01063	0.02157	0.19753
	(!B_N * C * !D * Y)	0.00214	0.01307	0.18902
	(!B_N * C * !D * Y)	0.00884	0.01979	0.19563
	(!B_N * !C * Y)	0.00203	0.01297	0.18898
	(!B_N * !C * Y)	0.00827	0.01924	0.19522

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)	0.00785	0.01380	0.11401
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00412	0.01005	0.11028
	(!C * Y)	0.00783	0.01401	0.11443
	(!C * Y)	0.00401	0.01017	0.11059
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01037	0.01631	0.12746
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00626	0.01219	0.12334
	(!C * Y)	0.01034	0.01670	0.12817
	(!C * Y)	0.00605	0.01238	0.12387
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01893	0.02746	0.19996
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01271	0.02121	0.19372
	(!C * Y)	0.01911	0.02828	0.20159
	(!C * Y)	0.01250	0.02162	0.19492

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)	0.00234	0.00915	0.11043
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00607	0.01289	0.11417
	(!C * Y)	0.00168	0.00853	0.10987
	(!C * Y)	0.00551	0.01235	0.11369
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00398	0.01083	0.12262
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00808	0.01496	0.12674
	(!C * Y)	0.00274	0.00965	0.12157
	(!C * Y)	0.00704	0.01396	0.12588
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00803	0.01877	0.19433
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01426	0.02503	0.20058
	(!C * Y)	0.00551	0.01634	0.19207
	(!C * Y)	0.01214	0.02297	0.19871

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)**	0.00354	0.00355	0.00353
	(A_N * B_N * D * Y)	-0.00063	-0.00063	-0.00062
	(A_N * B_N * !D * Y)	0.00294	0.00293	0.00293
	(A_N * B_N * !D * Y)	-0.00064	-0.00063	-0.00064
	(A_N * !B_N * D * Y)	0.00245	0.00246	0.00246
	(A_N * !B_N * D * Y)	-0.00171	-0.00172	-0.00171
	(A_N * !B_N * !D * Y)	0.00179	0.00180	0.00179
	(A_N * !B_N * !D * Y)	-0.00196	-0.00198	-0.00197
	(!A_N * B_N * D * Y)	0.00268	0.00269	0.00268
	(!A_N * B_N * D * Y)	-0.00147	-0.00148	-0.00148
	(!A_N * B_N * !D * Y)	0.00206	0.00207	0.00206
	(!A_N * B_N * !D * Y)	-0.00151	-0.00152	-0.00150
	(!A_N * !B_N * !D * Y)	0.00070	0.00070	0.00071
	(!A_N * !B_N * !D * Y)	-0.00261	-0.00260	-0.00262
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00454	0.00456	0.00455
	(A_N * B_N * D * Y)	-0.00348	-0.00350	-0.00349
	(A_N * B_N * !D * Y)	0.00328	0.00328	0.00327
	(A_N * B_N * !D * Y)	-0.00350	-0.00352	-0.00350
	(A_N * !B_N * D * Y)	0.00392	0.00396	0.00393
	(A_N * !B_N * D * Y)	-0.00414	-0.00416	-0.00413
	(A_N * !B_N * !D * Y)	0.00260	0.00260	0.00259
	(A_N * !B_N * !D * Y)	-0.00463	-0.00464	-0.00463
	(!A_N * B_N * D * Y)	0.00400	0.00405	0.00402
	(!A_N * B_N * D * Y)	-0.00403	-0.00407	-0.00404
	(!A_N * B_N * !D * Y)	0.00268	0.00271	0.00268
	(!A_N * B_N * !D * Y)	-0.00407	-0.00410	-0.00407
	(!A_N * !B_N * !D * Y)	0.00152	0.00155	0.00155
	(!A_N * !B_N * !D * Y)	-0.00470	-0.00474	-0.00474

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.01021	0.01028	0.01024
	(A_N * B_N * D * Y)	-0.00563	-0.00569	-0.00565
	(A_N * B_N * !D * Y)	0.00766	0.00766	0.00764
	(A_N * B_N * !D * Y)	-0.00569	-0.00570	-0.00567
	(A_N * !B_N * D * Y)	0.00832	0.00836	0.00834
	(A_N * !B_N * D * Y)	-0.00762	-0.00765	-0.00761
	(A_N * !B_N * !D * Y)	0.00553	0.00557	0.00555
	(A_N * !B_N * !D * Y)	-0.00858	-0.00865	-0.00862
	(!A_N * B_N * D * Y)	0.00858	0.00862	0.00858
	(!A_N * B_N * D * Y)	-0.00736	-0.00739	-0.00734
	(!A_N * B_N * !D * Y)	0.00585	0.00585	0.00586
	(!A_N * B_N * !D * Y)	-0.00741	-0.00741	-0.00742
	(!A_N * !B_N * !D * Y)	0.00286	0.00286	0.00292
	(!A_N * !B_N * !D * Y)	-0.00941	-0.00941	-0.00946

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)**	0.00000	-0.00002	-0.00001
	(A_N * B_N * D * Y)	0.00417	0.00416	0.00415
	(A_N * B_N * !D * Y)	0.00051	0.00049	0.00052
	(A_N * B_N * !D * Y)	0.00422	0.00425	0.00419
	(A_N * !B_N * D * Y)	-0.00042	-0.00065	-0.00066
	(A_N * !B_N * D * Y)	0.00373	0.00354	0.00351
	(A_N * !B_N * !D * Y)	-0.00007	-0.00004	-0.00007
	(A_N * !B_N * !D * Y)	0.00384	0.00392	0.00381
	(!A_N * B_N * D * Y)	-0.00071	-0.00086	-0.00087
	(!A_N * B_N * D * Y)	0.00347	0.00332	0.00329
	(!A_N * B_N * !D * Y)	-0.00031	-0.00032	-0.00034
	(!A_N * B_N * !D * Y)	0.00339	0.00342	0.00332
	(!A_N * !B_N * !D * Y)	-0.00059	-0.00060	-0.00061
	(!A_N * !B_N * !D * Y)	0.00275	0.00280	0.00272
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00215	-0.00220	-0.00219
	(A_N * B_N * D * Y)	0.00592	0.00590	0.00588
	(A_N * B_N * !D * Y)	-0.00107	-0.00108	-0.00101
	(A_N * B_N * !D * Y)	0.00603	0.00606	0.00596
	(A_N * !B_N * D * Y)	-0.00222	-0.00266	-0.00269
	(A_N * !B_N * D * Y)	0.00585	0.00546	0.00539
	(A_N * !B_N * !D * Y)	-0.00153	-0.00142	-0.00149
	(A_N * !B_N * !D * Y)	0.00604	0.00617	0.00600
	(!A_N * B_N * D * Y)	-0.00241	-0.00272	-0.00273
	(!A_N * B_N * D * Y)	0.00568	0.00539	0.00533
	(!A_N * B_N * !D * Y)	-0.00148	-0.00151	-0.00155
	(!A_N * B_N * !D * Y)	0.00553	0.00560	0.00541
	(!A_N * !B_N * !D * Y)	-0.00126	-0.00129	-0.00131
	(!A_N * !B_N * !D * Y)	0.00506	0.00514	0.00499

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00311	-0.00323	-0.00321
	(A_N * B_N * D * Y)	0.01283	0.01280	0.01273
	(A_N * B_N * !D * Y)	-0.00091	-0.00093	-0.00082
	(A_N * B_N * !D * Y)	0.01305	0.01312	0.01289
	(A_N * !B_N * D * Y)	-0.00371	-0.00468	-0.00474
	(A_N * !B_N * D * Y)	0.01225	0.01139	0.01124
	(A_N * !B_N * !D * Y)	-0.00231	-0.00210	-0.00222
	(A_N * !B_N * !D * Y)	0.01258	0.01282	0.01248
	(!A_N * B_N * D * Y)	-0.00415	-0.00485	-0.00489
	(!A_N * B_N * D * Y)	0.01184	0.01120	0.01105
	(!A_N * B_N * !D * Y)	-0.00237	-0.00242	-0.00250
	(!A_N * B_N * !D * Y)	0.01143	0.01157	0.01118
	(!A_N * !B_N * !D * Y)	-0.00249	-0.00251	-0.00257
	(!A_N * !B_N * !D * Y)	0.01002	0.01014	0.00984

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)	0.00331	0.00332	0.00331
	(A_N * B_N * C * Y)	-0.00074	-0.00075	-0.00074
	(A_N * !C * Y)	0.00334	0.00336	0.00334
	(A_N * !C * Y)	-0.00074	-0.00075	-0.00074
	(A_N * !B_N * C * Y)	0.00244	0.00247	0.00245
	(A_N * !B_N * C * Y)	-0.00163	-0.00164	-0.00163
	(!A_N * B_N * C * Y)	0.00246	0.00248	0.00247
	(!A_N * B_N * C * Y)	-0.00160	-0.00161	-0.00160
	(!A_N * B_N * !C * Y)	0.00247	0.00249	0.00247
	(!A_N * B_N * !C * Y)	-0.00161	-0.00162	-0.00161
	(!A_N * !B_N * !C * Y)	0.00161	0.00164	0.00162
	(!A_N * !B_N * !C * Y)	-0.00246	-0.00248	-0.00246

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00446	0.00450	0.00446
	(A_N * B_N * C * Y)	-0.00339	-0.00342	-0.00339
	(A_N * !C * Y)	0.00450	0.00452	0.00451
	(A_N * !C * Y)	-0.00339	-0.00341	-0.00339
	(A_N * !B_N * C * Y)	0.00387	0.00391	0.00389
	(A_N * !B_N * C * Y)	-0.00402	-0.00405	-0.00402
	(!A_N * B_N * C * Y)	0.00392	0.00391	0.00392
	(!A_N * B_N * C * Y)	-0.00395	-0.00394	-0.00395
	(!A_N * B_N * !C * Y)	0.00393	0.00397	0.00394
	(!A_N * B_N * !C * Y)	-0.00396	-0.00398	-0.00396
	(!A_N * !B_N * !C * Y)	0.00341	0.00343	0.00340
	(!A_N * !B_N * !C * Y)	-0.00452	-0.00454	-0.00451
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.01004	0.01005	0.01005
	(A_N * B_N * C * Y)	-0.00560	-0.00561	-0.00560
	(A_N * !C * Y)	0.01013	0.01016	0.01012
	(A_N * !C * Y)	-0.00561	-0.00563	-0.00560
	(A_N * !B_N * C * Y)	0.00834	0.00839	0.00832
	(A_N * !B_N * C * Y)	-0.00749	-0.00750	-0.00744
	(!A_N * B_N * C * Y)	0.00836	0.00838	0.00837
	(!A_N * B_N * C * Y)	-0.00731	-0.00732	-0.00731
	(!A_N * B_N * !C * Y)	0.00840	0.00847	0.00840
	(!A_N * B_N * !C * Y)	-0.00735	-0.00739	-0.00734
	(!A_N * !B_N * !C * Y)	0.00672	0.00681	0.00674
	(!A_N * !B_N * !C * Y)	-0.00904	-0.00910	-0.00904

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)**	0.00026	0.00018	0.00018
	(A_N * B_N * C * Y)	0.00426	0.00429	0.00426
	(A_N * !C * Y)	0.00020	0.00017	0.00017
	(A_N * !C * Y)	0.00425	0.00427	0.00426
	(A_N * !B_N * C * Y)	-0.00049	-0.00065	-0.00067
	(A_N * !B_N * C * Y)	0.00354	0.00348	0.00343
	(!A_N * B_N * C * Y)	-0.00055	-0.00067	-0.00068
	(!A_N * B_N * C * Y)	0.00347	0.00344	0.00341
	(!A_N * B_N * !C * Y)	-0.00066	-0.00069	-0.00070
	(!A_N * B_N * !C * Y)	0.00338	0.00340	0.00340
	(!A_N * !B_N * !C * Y)	-0.00144	-0.00155	-0.00156
	(!A_N * !B_N * !C * Y)	0.00262	0.00257	0.00254
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00194	-0.00210	-0.00214
	(A_N * B_N * C * Y)	0.00577	0.00577	0.00577
	(A_N * !C * Y)	-0.00208	-0.00217	-0.00216
	(A_N * !C * Y)	0.00575	0.00580	0.00577
	(A_N * !B_N * C * Y)	-0.00229	-0.00262	-0.00267
	(A_N * !B_N * C * Y)	0.00555	0.00539	0.00528
	(!A_N * B_N * C * Y)	-0.00242	-0.00265	-0.00269
	(!A_N * B_N * C * Y)	0.00538	0.00523	0.00523
	(!A_N * B_N * !C * Y)	-0.00264	-0.00273	-0.00272
	(!A_N * B_N * !C * Y)	0.00519	0.00523	0.00520
	(!A_N * !B_N * !C * Y)	-0.00303	-0.00326	-0.00327
	(!A_N * !B_N * !C * Y)	0.00485	0.00472	0.00466

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00274	-0.00301	-0.00310
	(A_N * B_N * C * Y)	0.01270	0.01265	0.01267
	(A_N * !C * Y)	-0.00299	-0.00315	-0.00313
	(A_N * !C * Y)	0.01263	0.01272	0.01267
	(A_N * !B_N * C * Y)	-0.00400	-0.00465	-0.00476
	(A_N * !B_N * C * Y)	0.01163	0.01130	0.01108
	(!A_N * B_N * C * Y)	-0.00423	-0.00470	-0.00481
	(!A_N * B_N * C * Y)	0.01132	0.01098	0.01097
	(!A_N * B_N * !C * Y)	-0.00471	-0.00488	-0.00486
	(!A_N * B_N * !C * Y)	0.01091	0.01099	0.01093
	(!A_N * !B_N * !C * Y)	-0.00605	-0.00654	-0.00656
	(!A_N * !B_N * !C * Y)	0.00966	0.00937	0.00925

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00228	0.00297	0.00297	0.00288	0.86297
sky130_fd_sc_hs__nand4b_2	0.00286	0.00586	0.00570	0.00570	1.41800
sky130_fd_sc_hs__nand4b_4	0.00401	0.00825	0.00841	0.00809	2.39139

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	64.11400	198.92700
sky130_fd_sc_hs__nand4b_2	0.00000	61.00830	397.77200
sky130_fd_sc_hs__nand4b_4	0.00000	129.03400	397.62900

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)	0.06288	0.43075	4.31692
	B->Y (FR)	0.03951	0.61526	7.77826
	C->Y (FR)	0.04553	0.62208	7.78670
	D->Y (FR)	0.04728	0.61918	7.68802
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.06463	0.34130	3.45879
	B->Y (FR)	0.03532	0.49239	6.85705
	C->Y (FR)	0.04101	0.50791	6.97294
	D->Y (FR)	0.04455	0.51424	6.94740
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.07971	0.46791	6.34744
	B->Y (FR)	0.04815	0.59738	9.27501
	C->Y (FR)	0.05977	0.61075	9.29594
	D->Y (FR)	0.07070	0.63240	9.44729

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)	0.09218	0.71181	7.71024
	B->Y (RF)	0.05823	0.70464	8.84150
	C->Y (RF)	0.06658	0.66996	8.26882
	D->Y (RF)	0.06982	0.63612	7.73465
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.09780	0.64397	7.74828
	B->Y (RF)	0.06200	0.61665	8.74876
	C->Y (RF)	0.07055	0.56234	7.90890
	D->Y (RF)	0.07638	0.53396	7.39128
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.07552	0.49285	6.90251
	B->Y (RF)	0.05072	0.49464	8.15261
	C->Y (RF)	0.06007	0.44536	7.33327
	D->Y (RF)	0.06490	0.40870	6.68056

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	0.01005	0.01634	0.11807
	A_N	0.00674	0.01303	0.11469
	B	0.00076	0.00317	0.03235
	B	0.00568	0.00812	0.03712
	C	0.00150	0.00380	0.03366
	C	0.00738	0.00967	0.03934
	D	0.00199	0.00421	0.03537
	D	0.00894	0.01115	0.04217
sky130_fd_sc_hs__nand4b_2	A_N	0.01321	0.01978	0.12323
	A_N	0.00993	0.01646	0.11939
	B	0.00084	0.00581	0.06367
	B	0.01102	0.01595	0.07378
	C	0.00246	0.00730	0.06716
	C	0.01473	0.01950	0.07874
	D	0.00409	0.00883	0.07073
	D	0.01884	0.02353	0.08487
sky130_fd_sc_hs__nand4b_4	A_N	0.02054	0.03142	0.20034
	A_N	0.01573	0.02657	0.19568
	B	0.00118	0.00821	0.07744
	B	0.01554	0.02255	0.09134
	C	0.00392	0.01050	0.08171
	C	0.02304	0.02970	0.10037
	D	0.00677	0.01315	0.08592
	D	0.03046	0.03684	0.10892

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.01133	0.01804	0.11413
	A_N	0.01463	0.02135	0.11717
	B	0.01283	0.01374	0.03013
	B	0.00788	0.00877	0.02510
	C	0.01391	0.01476	0.03289
	C	0.00800	0.00884	0.02697
	D	0.01493	0.01580	0.03688
	D	0.00792	0.00877	0.02956
sky130_fd_sc_hs__nand4b_2	A_N	0.02163	0.02862	0.13900
	A_N	0.02493	0.03191	0.14217
	B	0.02575	0.02773	0.06067
	B	0.01553	0.01750	0.05025
	C	0.02785	0.02983	0.06887
	C	0.01550	0.01746	0.05604
	D	0.03028	0.03219	0.07656
	D	0.01532	0.01720	0.06118
sky130_fd_sc_hs__nand4b_4	A_N	0.02698	0.03857	0.21227
	A_N	0.03179	0.04336	0.21710
	B	0.03370	0.03657	0.07489
	B	0.01935	0.02222	0.06019
	C	0.03850	0.04129	0.08610
	C	0.01921	0.02193	0.06616
	D	0.04313	0.04599	0.09716
	D	0.01914	0.02184	0.07273

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)	0.00739	0.01377	0.11475
	(B * C * !D * Y)	0.00337	0.00975	0.11074
	(B * !C * Y)	0.00739	0.01379	0.11471
	(B * !C * Y)	0.00338	0.00977	0.11070
	(!B * Y)	0.00733	0.01355	0.11466
	(!B * Y)	0.00338	0.00959	0.11070
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.01045	0.01713	0.13189
	(B * C * !D * Y)	0.00547	0.01212	0.12689
	(B * !C * Y)	0.01045	0.01712	0.13188
	(B * !C * Y)	0.00547	0.01212	0.12689
	(!B * Y)	0.01037	0.01704	0.13180
	(!B * Y)	0.00549	0.01214	0.12690
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01342	0.02410	0.20007
	(B * C * !D * Y)	0.00638	0.01703	0.19300
	(B * !C * Y)	0.01343	0.02409	0.20006
	(B * !C * Y)	0.00639	0.01703	0.19299
	(!B * Y)	0.01326	0.02392	0.19989
	(!B * Y)	0.00642	0.01706	0.19302

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)	0.00052	0.00733	0.10932
	(B * C * !D * Y)	0.00468	0.01150	0.11345
	(B * !C * Y)	0.00051	0.00732	0.10927
	(B * !C * Y)	0.00459	0.01141	0.11333
	(!B * Y)	0.00051	0.00733	0.10930
	(!B * Y)	0.00447	0.01130	0.11326
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00068	0.00782	0.12285
	(B * C * !D * Y)	0.00599	0.01314	0.12807
	(B * !C * Y)	0.00061	0.00776	0.12282
	(B * !C * Y)	0.00577	0.01292	0.12793
	(!B * Y)	0.00057	0.00773	0.12284
	(!B * Y)	0.00550	0.01266	0.12776
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00153	0.01328	0.19112
	(B * C * !D * Y)	0.00922	0.02101	0.19866
	(B * !C * Y)	0.00141	0.01317	0.19107
	(B * !C * Y)	0.00880	0.02059	0.19838
	(!B * Y)	0.00138	0.01315	0.19114
	(!B * Y)	0.00828	0.02010	0.19804

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)**	0.00272	0.00275	0.00273
	(A_N * C * D * Y)	-0.00139	-0.00141	-0.00140
	(A_N * C * !D * Y)	0.00205	0.00205	0.00205
	(A_N * C * !D * Y)	-0.00141	-0.00141	-0.00141
	(A_N * !C * Y)	0.00209	0.00211	0.00210
	(A_N * !C * Y)	-0.00140	-0.00143	-0.00141
	(!A_N * C * !D * Y)	0.00063	0.00063	0.00064
	(!A_N * C * !D * Y)	-0.00255	-0.00256	-0.00259
	(!A_N * !C * Y)	0.00067	0.00067	0.00067
	(!A_N * !C * Y)	-0.00259	-0.00259	-0.00260
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00399	0.00402	0.00401
	(A_N * C * D * Y)	-0.00419	-0.00422	-0.00420
	(A_N * C * !D * Y)	0.00271	0.00271	0.00270
	(A_N * C * !D * Y)	-0.00427	-0.00428	-0.00425
	(A_N * !C * Y)	0.00280	0.00280	0.00280
	(A_N * !C * Y)	-0.00427	-0.00428	-0.00427
	(!A_N * C * !D * Y)	0.00135	0.00136	0.00136
	(!A_N * C * !D * Y)	-0.00498	-0.00501	-0.00509
	(!A_N * !C * Y)	0.00143	0.00144	0.00144
	(!A_N * !C * Y)	-0.00507	-0.00509	-0.00511
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00830	0.00836	0.00833
	(A_N * C * D * Y)	-0.00317	-0.00320	-0.00317
	(A_N * C * !D * Y)	0.00558	0.00557	0.00556
	(A_N * C * !D * Y)	-0.00327	-0.00327	-0.00325
	(A_N * !C * Y)	0.00572	0.00578	0.00573
	(A_N * !C * Y)	-0.00329	-0.00333	-0.00329
	(!A_N * C * !D * Y)	0.00247	0.00250	0.00252
	(!A_N * C * !D * Y)	-0.00517	-0.00521	-0.00538
	(!A_N * !C * Y)	0.00263	0.00265	0.00266
	(!A_N * !C * Y)	-0.00535	-0.00538	-0.00543

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)	-0.00069	-0.00090	-0.00093
	(A_N * C * D * Y)	0.00344	0.00326	0.00320
	(A_N * C * !D * Y)	-0.00023	-0.00028	-0.00030
	(A_N * C * !D * Y)	0.00339	0.00338	0.00326
	(A_N * !C * Y)	-0.00034	-0.00036	-0.00039
	(A_N * !C * Y)	0.00329	0.00332	0.00321
	(!A_N * C * !D * Y)	-0.00057	-0.00057	-0.00059
	(!A_N * C * !D * Y)	0.00269	0.00270	0.00266
	(!A_N * !C * Y)	-0.00059	-0.00060	-0.00061
	(!A_N * !C * Y)	0.00268	0.00271	0.00266
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00219	-0.00268	-0.00276
	(A_N * C * D * Y)	0.00602	0.00562	0.00546
	(A_N * C * !D * Y)	-0.00138	-0.00150	-0.00155
	(A_N * C * !D * Y)	0.00592	0.00586	0.00562
	(A_N * !C * Y)	-0.00161	-0.00164	-0.00171
	(A_N * !C * Y)	0.00570	0.00578	0.00555
	(!A_N * C * !D * Y)	-0.00120	-0.00120	-0.00125
	(!A_N * C * !D * Y)	0.00530	0.00532	0.00524
	(!A_N * !C * Y)	-0.00125	-0.00128	-0.00130
	(!A_N * !C * Y)	0.00530	0.00540	0.00525

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00350	-0.00450	-0.00467
	(A_N * C * D * Y)	0.00799	0.00712	0.00684
	(A_N * C * !D * Y)	-0.00178	-0.00201	-0.00211
	(A_N * C * !D * Y)	0.00776	0.00758	0.00714
	(A_N * !C * Y)	-0.00223	-0.00228	-0.00242
	(A_N * !C * Y)	0.00728	0.00737	0.00697
	(!A_N * C * !D * Y)	-0.00227	-0.00227	-0.00235
	(!A_N * C * !D * Y)	0.00573	0.00572	0.00561
	(!A_N * !C * Y)	-0.00236	-0.00238	-0.00246
	(!A_N * !C * Y)	0.00574	0.00577	0.00563

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)**	0.00251	0.00252	0.00251
	(A_N * B * D * Y)	-0.00140	-0.00141	-0.00139
	(A_N * B * !D * Y)	0.00184	0.00184	0.00183
	(A_N * B * !D * Y)	-0.00141	-0.00142	-0.00141
	(A_N * !B * D * Y)	0.00250	0.00252	0.00250
	(A_N * !B * D * Y)	-0.00141	-0.00142	-0.00141
	(A_N * !B * !D * Y)	0.00178	0.00179	0.00178
	(A_N * !B * !D * Y)	-0.00141	-0.00142	-0.00141
	(!A_N * B * !D * Y)	0.00066	0.00067	0.00067
	(!A_N * B * !D * Y)	-0.00232	-0.00233	-0.00231
	(!A_N * !B * D * Y)	0.00160	0.00162	0.00160
	(!A_N * !B * D * Y)	-0.00232	-0.00234	-0.00232
	(!A_N * !B * !D * Y)	0.00083	0.00084	0.00083
	(!A_N * !B * !D * Y)	-0.00234	-0.00236	-0.00234

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00386	0.00390	0.00387
	(A_N * B * D * Y)	-0.00403	-0.00405	-0.00403
	(A_N * B * !D * Y)	0.00254	0.00253	0.00253
	(A_N * B * !D * Y)	-0.00408	-0.00408	-0.00408
	(A_N * !B * D * Y)	0.00387	0.00389	0.00388
	(A_N * !B * D * Y)	-0.00405	-0.00407	-0.00405
	(A_N * !B * !D * Y)	0.00248	0.00249	0.00247
	(A_N * !B * !D * Y)	-0.00407	-0.00408	-0.00406
	(!A_N * B * !D * Y)	0.00147	0.00149	0.00150
	(!A_N * B * !D * Y)	-0.00457	-0.00461	-0.00455
	(!A_N * !B * D * Y)	0.00333	0.00338	0.00335
	(!A_N * !B * D * Y)	-0.00460	-0.00463	-0.00460
	(!A_N * !B * !D * Y)	0.00188	0.00189	0.00187
	(!A_N * !B * !D * Y)	-0.00466	-0.00467	-0.00464
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00835	0.00844	0.00839
	(A_N * B * D * Y)	-0.00315	-0.00318	-0.00314
	(A_N * B * !D * Y)	0.00550	0.00552	0.00550
	(A_N * B * !D * Y)	-0.00323	-0.00326	-0.00324
	(A_N * !B * D * Y)	0.00834	0.00840	0.00837
	(A_N * !B * D * Y)	-0.00318	-0.00321	-0.00320
	(A_N * !B * !D * Y)	0.00532	0.00535	0.00533
	(A_N * !B * !D * Y)	-0.00320	-0.00322	-0.00321
	(!A_N * B * !D * Y)	0.00284	0.00284	0.00289
	(!A_N * B * !D * Y)	-0.00486	-0.00486	-0.00481
	(!A_N * !B * D * Y)	0.00673	0.00681	0.00674
	(!A_N * !B * D * Y)	-0.00490	-0.00492	-0.00488
	(!A_N * !B * !D * Y)	0.00354	0.00356	0.00352
	(!A_N * !B * !D * Y)	-0.00497	-0.00499	-0.00496

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)	-0.00048	-0.00071	-0.00073
	(A_N * B * D * Y)	0.00337	0.00322	0.00319
	(A_N * B * !D * Y)	-0.00013	-0.00010	-0.00013
	(A_N * B * !D * Y)	0.00332	0.00338	0.00324
	(A_N * !B * D * Y)	-0.00071	-0.00075	-0.00074
	(A_N * !B * D * Y)	0.00320	0.00319	0.00318
	(A_N * !B * !D * Y)	-0.00010	-0.00011	-0.00007
	(A_N * !B * !D * Y)	0.00324	0.00327	0.00322
	(!A_N * B * !D * Y)	-0.00057	-0.00058	-0.00059
	(!A_N * B * !D * Y)	0.00246	0.00250	0.00242
	(!A_N * !B * D * Y)	-0.00138	-0.00154	-0.00154
	(!A_N * !B * D * Y)	0.00255	0.00241	0.00238
	(!A_N * !B * !D * Y)	-0.00083	-0.00084	-0.00083
	(!A_N * !B * !D * Y)	0.00247	0.00250	0.00241
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00216	-0.00264	-0.00267
	(A_N * B * D * Y)	0.00564	0.00534	0.00528
	(A_N * B * !D * Y)	-0.00149	-0.00141	-0.00146
	(A_N * B * !D * Y)	0.00556	0.00570	0.00542
	(A_N * !B * D * Y)	-0.00261	-0.00270	-0.00270
	(A_N * !B * D * Y)	0.00530	0.00528	0.00526
	(A_N * !B * !D * Y)	-0.00147	-0.00148	-0.00139
	(A_N * !B * !D * Y)	0.00541	0.00545	0.00534
	(!A_N * B * !D * Y)	-0.00125	-0.00128	-0.00131
	(!A_N * B * !D * Y)	0.00490	0.00497	0.00479
	(!A_N * !B * D * Y)	-0.00287	-0.00323	-0.00324
	(!A_N * !B * D * Y)	0.00508	0.00477	0.00472
	(!A_N * !B * !D * Y)	-0.00187	-0.00188	-0.00187
	(!A_N * !B * !D * Y)	0.00495	0.00499	0.00479

sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	-0.00369	-0.00475	-0.00482
	(A_N * B * D * Y)	0.00766	0.00691	0.00680
	(A_N * B * !D * Y)	-0.00228	-0.00212	-0.00222
	(A_N * B * !D * Y)	0.00735	0.00758	0.00705
	(A_N * !B * D * Y)	-0.00466	-0.00489	-0.00488
	(A_N * !B * D * Y)	0.00684	0.00679	0.00675
	(A_N * !B * !D * Y)	-0.00215	-0.00217	-0.00200
	(A_N * !B * !D * Y)	0.00705	0.00709	0.00691
	(!A_N * B * !D * Y)	-0.00247	-0.00252	-0.00257
	(!A_N * B * !D * Y)	0.00541	0.00549	0.00520
	(!A_N * !B * D * Y)	-0.00574	-0.00652	-0.00657
	(!A_N * !B * D * Y)	0.00586	0.00520	0.00507
	(!A_N * !B * !D * Y)	-0.00354	-0.00356	-0.00352
	(!A_N * !B * !D * Y)	0.00549	0.00553	0.00518

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)**	0.00248	0.00250	0.00249
	(A_N * B * C * Y)	-0.00135	-0.00136	-0.00135
	(A_N * !C * Y)	0.00251	0.00253	0.00252
	(A_N * !C * Y)	-0.00135	-0.00137	-0.00136
	(A_N * !B * C * Y)	0.00247	0.00248	0.00248
	(A_N * !B * C * Y)	-0.00136	-0.00137	-0.00136
	(!A_N * B * !C * Y)	0.00161	0.00162	0.00161
	(!A_N * B * !C * Y)	-0.00228	-0.00229	-0.00228
	(!A_N * !B * C * Y)	0.00156	0.00156	0.00156
	(!A_N * !B * C * Y)	-0.00228	-0.00229	-0.00228
	(!A_N * !B * !C * Y)	0.00159	0.00160	0.00159
	(!A_N * !B * !C * Y)	-0.00229	-0.00230	-0.00229

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00386	0.00391	0.00388
	(A_N * B * C * Y)	-0.00400	-0.00403	-0.00400
	(A_N * !C * Y)	0.00391	0.00392	0.00391
	(A_N * !C * Y)	-0.00403	-0.00403	-0.00402
	(A_N * !B * C * Y)	0.00384	0.00387	0.00384
	(A_N * !B * C * Y)	-0.00402	-0.00405	-0.00402
	(!A_N * B * !C * Y)	0.00338	0.00340	0.00338
	(!A_N * B * !C * Y)	-0.00458	-0.00460	-0.00458
	(!A_N * !B * C * Y)	0.00330	0.00333	0.00330
	(!A_N * !B * C * Y)	-0.00458	-0.00461	-0.00458
	(!A_N * !B * !C * Y)	0.00334	0.00335	0.00334
	(!A_N * !B * !C * Y)	-0.00460	-0.00461	-0.00459
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00817	0.00826	0.00820
	(A_N * B * C * Y)	-0.00279	-0.00282	-0.00279
	(A_N * !C * Y)	0.00829	0.00836	0.00833
	(A_N * !C * Y)	-0.00283	-0.00286	-0.00284
	(A_N * !B * C * Y)	0.00812	0.00817	0.00813
	(A_N * !B * C * Y)	-0.00285	-0.00286	-0.00284
	(!A_N * B * !C * Y)	0.00664	0.00674	0.00667
	(!A_N * B * !C * Y)	-0.00454	-0.00458	-0.00455
	(!A_N * !B * C * Y)	0.00645	0.00645	0.00647
	(!A_N * !B * C * Y)	-0.00456	-0.00455	-0.00455
	(!A_N * !B * !C * Y)	0.00655	0.00662	0.00658
	(!A_N * !B * !C * Y)	-0.00457	-0.00460	-0.00458

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)**	-0.00055	-0.00072	-0.00073
	(A_N * B * C * Y)	0.00321	0.00318	0.00314
	(A_N * !C * Y)	-0.00071	-0.00075	-0.00076
	(A_N * !C * Y)	0.00312	0.00314	0.00314
	(A_N * !B * C * Y)	-0.00063	-0.00073	-0.00074
	(A_N * !B * C * Y)	0.00312	0.00316	0.00313
	(!A_N * B * !C * Y)	-0.00145	-0.00154	-0.00156
	(!A_N * B * !C * Y)	0.00239	0.00236	0.00234
	(!A_N * !B * C * Y)	-0.00138	-0.00153	-0.00154
	(!A_N * !B * C * Y)	0.00240	0.00237	0.00234
	(!A_N * !B * !C * Y)	-0.00152	-0.00156	-0.00157
	(!A_N * !B * !C * Y)	0.00232	0.00233	0.00233
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00229	-0.00262	-0.00269
	(A_N * B * C * Y)	0.00544	0.00528	0.00525
	(A_N * !C * Y)	-0.00262	-0.00274	-0.00274
	(A_N * !C * Y)	0.00522	0.00526	0.00523
	(A_N * !B * C * Y)	-0.00245	-0.00268	-0.00271
	(A_N * !B * C * Y)	0.00522	0.00524	0.00523
	(!A_N * B * !C * Y)	-0.00303	-0.00328	-0.00329
	(!A_N * B * !C * Y)	0.00481	0.00473	0.00469
	(!A_N * !B * C * Y)	-0.00290	-0.00322	-0.00326
	(!A_N * !B * C * Y)	0.00485	0.00471	0.00468
	(!A_N * !B * !C * Y)	-0.00319	-0.00331	-0.00331
	(!A_N * !B * !C * Y)	0.00465	0.00469	0.00466

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00392	-0.00464	-0.00473
	(A_N * B * C * Y)	0.00675	0.00652	0.00644
	(A_N * !C * Y)	-0.00459	-0.00484	-0.00483
	(A_N * !C * Y)	0.00640	0.00642	0.00640
	(A_N * !B * C * Y)	-0.00424	-0.00472	-0.00476
	(A_N * !B * C * Y)	0.00638	0.00641	0.00639
	(!A_N * B * !C * Y)	-0.00602	-0.00652	-0.00652
	(!A_N * B * !C * Y)	0.00500	0.00477	0.00471
	(!A_N * !B * C * Y)	-0.00574	-0.00642	-0.00647
	(!A_N * !B * C * Y)	0.00501	0.00475	0.00470
	(!A_N * !B * !C * Y)	-0.00633	-0.00658	-0.00657
	(!A_N * !B * !C * Y)	0.00466	0.00468	0.00466

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00290	0.00305	0.00301	0.00301	0.86086
sky130_fd_sc_hs__nand4_2	0.00567	0.00572	0.00578	0.00561	1.38884
sky130_fd_sc_hs__nand4_4	0.00838	0.00820	0.00821	0.00842	2.27460

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	13.09660	197.90400
sky130_fd_sc_hs__nand4_2	0.00000	26.11560	395.69900
sky130_fd_sc_hs__nand4_4	0.00000	27.42090	396.06900

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)	0.03305	0.59833	7.62437
	B->Y (FR)	0.04195	0.61667	7.77352
	C->Y (FR)	0.04732	0.62407	7.78695
	D->Y (FR)	0.04941	0.62129	7.67943
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02804	0.48358	6.84155
	B->Y (FR)	0.03587	0.48952	6.79068
	C->Y (FR)	0.04082	0.49966	6.82267
	D->Y (FR)	0.04457	0.51187	6.88205
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03535	0.57500	9.00187
	B->Y (FR)	0.05097	0.58821	8.98220
	C->Y (FR)	0.06504	0.61728	9.24059
	D->Y (FR)	0.07502	0.63250	9.27894

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.04574	0.71944	9.16659
	B->Y (RF)	0.05889	0.69842	8.72802
	C->Y (RF)	0.06639	0.66376	8.14675
	D->Y (RF)	0.07035	0.62792	7.60355
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.04155	0.63217	9.08166
	B->Y (RF)	0.05906	0.61256	8.65038
	C->Y (RF)	0.06784	0.55863	7.82029
	D->Y (RF)	0.07308	0.52845	7.28844
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.03108	0.50937	8.37492
	B->Y (RF)	0.04780	0.48258	7.82139
	C->Y (RF)	0.05719	0.43267	6.99258
	D->Y (RF)	0.06214	0.39647	6.34202

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00014	0.00223	0.03107
	A	0.00529	0.00767	0.03630
	B	0.00076	0.00309	0.03220
	B	0.00734	0.00969	0.03862
	C	0.00152	0.00384	0.03392
	C	0.00919	0.01149	0.04138
	D	0.00199	0.00421	0.03567
	D	0.01084	0.01306	0.04436
sky130_fd_sc_hs__nand4_2	A	-0.00126	0.00435	0.06079
	A	0.00886	0.01447	0.07087
	B	0.00105	0.00598	0.06459
	B	0.01367	0.01862	0.07718
	C	0.00227	0.00717	0.06840
	C	0.01741	0.02228	0.08349
	D	0.00402	0.00884	0.07182
	D	0.02150	0.02624	0.08880
sky130_fd_sc_hs__nand4_4	A	-0.00254	0.00524	0.07649
	A	0.01224	0.01998	0.09035
	B	0.00144	0.00855	0.08168
	B	0.02102	0.02805	0.10050
	C	0.00411	0.01068	0.08507
	C	0.02846	0.03506	0.10911
	D	0.00706	0.01339	0.08997
	D	0.03657	0.04288	0.11914

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.01203	0.01331	0.03061
	A	0.00661	0.00785	0.02501
	B	0.01319	0.01408	0.03062
	B	0.00658	0.00745	0.02391
	C	0.01422	0.01508	0.03368
	C	0.00651	0.00737	0.02587
	D	0.01535	0.01626	0.03790
	D	0.00640	0.00729	0.02870
sky130_fd_sc_hs__nand4_2	A	0.02292	0.02572	0.06028
	A	0.01278	0.01557	0.04982
	B	0.02532	0.02728	0.05995
	B	0.01264	0.01458	0.04729
	C	0.02772	0.02967	0.06895
	C	0.01241	0.01434	0.05311
	D	0.02996	0.03187	0.07650
	D	0.01224	0.01411	0.05817
sky130_fd_sc_hs__nand4_4	A	0.02892	0.03289	0.07411
	A	0.01417	0.01806	0.05890
	B	0.03365	0.03646	0.07664
	B	0.01403	0.01686	0.05604
	C	0.03837	0.04118	0.08735
	C	0.01384	0.01649	0.06140
	D	0.04334	0.04615	0.09949
	D	0.01342	0.01612	0.06822

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)	0.00066	0.00066	0.00058
	(B * C * !D * Y)	-0.00242	-0.00243	-0.00261
	(B * !C * Y)	0.00064	0.00064	0.00058
	(B * !C * Y)	-0.00250	-0.00251	-0.00262
	(!B * Y)	0.00063	0.00063	0.00060
	(!B * Y)	-0.00258	-0.00258	-0.00263
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00122	0.00122	0.00102
	(B * C * !D * Y)	-0.00475	-0.00479	-0.00521
	(B * !C * Y)	0.00112	0.00113	0.00100
	(B * !C * Y)	-0.00495	-0.00500	-0.00526
	(!B * Y)	0.00115	0.00115	0.00107
	(!B * Y)	-0.00512	-0.00516	-0.00529
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00233	0.00236	0.00199
	(B * C * !D * Y)	-0.00523	-0.00532	-0.00612
	(B * !C * Y)	0.00216	0.00219	0.00196
	(B * !C * Y)	-0.00563	-0.00572	-0.00620
	(!B * Y)	0.00223	0.00221	0.00208
	(!B * Y)	-0.00601	-0.00602	-0.00626

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)	-0.00055	-0.00055	-0.00055
	(B * C * !D * Y)	0.00264	0.00265	0.00265
	(B * !C * Y)	-0.00056	-0.00056	-0.00055
	(B * !C * Y)	0.00264	0.00266	0.00265
	(!B * Y)	-0.00057	-0.00058	-0.00057
	(!B * Y)	0.00264	0.00270	0.00265
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00095	-0.00095	-0.00095
	(B * C * !D * Y)	0.00529	0.00531	0.00531
	(B * !C * Y)	-0.00095	-0.00095	-0.00095
	(B * !C * Y)	0.00530	0.00531	0.00532
	(!B * Y)	-0.00101	-0.00101	-0.00101
	(!B * Y)	0.00531	0.00532	0.00533
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00188	-0.00187	-0.00186
	(B * C * !D * Y)	0.00632	0.00632	0.00630
	(B * !C * Y)	-0.00186	-0.00187	-0.00186
	(B * !C * Y)	0.00627	0.00633	0.00630
	(!B * Y)	-0.00199	-0.00198	-0.00197
	(!B * Y)	0.00632	0.00634	0.00632

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)**	0.00063	0.00064	0.00065
	(A * C * !D * Y)	-0.00240	-0.00241	-0.00240
	(A * !C * Y)	0.00069	0.00068	0.00069
	(A * !C * Y)	-0.00241	-0.00241	-0.00240
	(!A * C * D * Y)	0.00160	0.00162	0.00161
	(!A * C * D * Y)	-0.00238	-0.00240	-0.00239
	(!A * C * !D * Y)	0.00086	0.00086	0.00086
	(!A * C * !D * Y)	-0.00241	-0.00241	-0.00240
	(!A * !C * Y)	0.00090	0.00090	0.00089
	(!A * !C * Y)	-0.00242	-0.00243	-0.00241
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00133	0.00135	0.00138
	(A * C * !D * Y)	-0.00460	-0.00462	-0.00459
	(A * !C * Y)	0.00135	0.00136	0.00139
	(A * !C * Y)	-0.00461	-0.00462	-0.00460
	(!A * C * D * Y)	0.00334	0.00334	0.00335
	(!A * C * D * Y)	-0.00460	-0.00460	-0.00459
	(!A * C * !D * Y)	0.00184	0.00185	0.00183
	(!A * C * !D * Y)	-0.00463	-0.00465	-0.00462
	(!A * !C * Y)	0.00180	0.00182	0.00180
	(!A * !C * Y)	-0.00463	-0.00466	-0.00464
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00258	0.00258	0.00263
	(A * C * !D * Y)	-0.00480	-0.00480	-0.00478
	(A * !C * Y)	0.00264	0.00267	0.00268
	(A * !C * Y)	-0.00481	-0.00484	-0.00478
	(!A * C * D * Y)	0.00661	0.00668	0.00663
	(!A * C * D * Y)	-0.00476	-0.00478	-0.00474
	(!A * C * !D * Y)	0.00348	0.00350	0.00348
	(!A * C * !D * Y)	-0.00481	-0.00484	-0.00481
	(!A * !C * Y)	0.00345	0.00347	0.00343
	(!A * !C * Y)	-0.00485	-0.00488	-0.00485

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)	-0.00060	-0.00060	-0.00062
	(A * C * !D * Y)	0.00248	0.00249	0.00243
	(A * !C * Y)	-0.00062	-0.00063	-0.00064
	(A * !C * Y)	0.00248	0.00251	0.00244
	(!A * C * D * Y)	-0.00132	-0.00154	-0.00157
	(!A * C * D * Y)	0.00267	0.00248	0.00243
	(!A * C * !D * Y)	-0.00083	-0.00086	-0.00086
	(!A * C * !D * Y)	0.00263	0.00262	0.00250
	(!A * !C * Y)	-0.00090	-0.00090	-0.00089
	(!A * !C * Y)	0.00254	0.00257	0.00246
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00124	-0.00124	-0.00129
	(A * C * !D * Y)	0.00479	0.00481	0.00469
	(A * !C * Y)	-0.00125	-0.00127	-0.00130
	(A * !C * Y)	0.00482	0.00489	0.00470
	(!A * C * D * Y)	-0.00267	-0.00321	-0.00328
	(!A * C * D * Y)	0.00526	0.00482	0.00467
	(!A * C * !D * Y)	-0.00174	-0.00185	-0.00183
	(!A * C * !D * Y)	0.00514	0.00507	0.00482
	(!A * !C * Y)	-0.00180	-0.00182	-0.00180
	(!A * !C * Y)	0.00487	0.00496	0.00473

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00239	-0.00241	-0.00248
	(A * C * !D * Y)	0.00513	0.00515	0.00493
	(A * !C * Y)	-0.00241	-0.00245	-0.00252
	(A * !C * Y)	0.00515	0.00519	0.00495
	(!A * C * D * Y)	-0.00528	-0.00633	-0.00649
	(!A * C * D * Y)	0.00610	0.00519	0.00490
	(!A * C * !D * Y)	-0.00332	-0.00350	-0.00348
	(!A * C * !D * Y)	0.00584	0.00565	0.00520
	(!A * !C * Y)	-0.00345	-0.00347	-0.00343
	(!A * !C * Y)	0.00534	0.00540	0.00500

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)	-0.00231	-0.00231	-0.00231
	(A * !B * D * Y)	0.00159	0.00161	0.00159
	(A * !B * D * Y)	-0.00235	-0.00237	-0.00235
	(A * !B * !D * Y)	0.00084	0.00084	0.00084
	(A * !B * !D * Y)	-0.00237	-0.00238	-0.00238
	(!A * B * D * Y)	0.00155	0.00157	0.00156
	(!A * B * D * Y)	-0.00235	-0.00236	-0.00235
	(!A * B * !D * Y)	0.00085	0.00085	0.00084
	(!A * B * !D * Y)	-0.00238	-0.00238	-0.00237
	(!A * !B * D * Y)	0.00157	0.00158	0.00157
	(!A * !B * D * Y)	-0.00236	-0.00237	-0.00236
	(!A * !B * !D * Y)	0.00085	0.00086	0.00085
	(!A * !B * !D * Y)	-0.00238	-0.00239	-0.00238

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00151	0.00152	0.00149
	(A * B * !D * Y)	-0.00452	-0.00454	-0.00447
	(A * !B * D * Y)	0.00337	0.00338	0.00337
	(A * !B * D * Y)	-0.00459	-0.00459	-0.00458
	(A * !B * !D * Y)	0.00181	0.00182	0.00181
	(A * !B * !D * Y)	-0.00461	-0.00463	-0.00461
	(!A * B * D * Y)	0.00328	0.00332	0.00329
	(!A * B * D * Y)	-0.00459	-0.00462	-0.00458
	(!A * B * !D * Y)	0.00186	0.00187	0.00185
	(!A * B * !D * Y)	-0.00462	-0.00465	-0.00462
	(!A * !B * D * Y)	0.00331	0.00334	0.00331
	(!A * !B * D * Y)	-0.00462	-0.00463	-0.00461
	(!A * !B * !D * Y)	0.00185	0.00186	0.00184
	(!A * !B * !D * Y)	-0.00462	-0.00465	-0.00462
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00278	0.00277	0.00276
	(A * B * !D * Y)	-0.00456	-0.00454	-0.00449
	(A * !B * D * Y)	0.00651	0.00653	0.00654
	(A * !B * D * Y)	-0.00467	-0.00469	-0.00468
	(A * !B * !D * Y)	0.00340	0.00342	0.00338
	(A * !B * !D * Y)	-0.00476	-0.00478	-0.00475
	(!A * B * D * Y)	0.00633	0.00642	0.00637
	(!A * B * D * Y)	-0.00469	-0.00473	-0.00468
	(!A * B * !D * Y)	0.00341	0.00344	0.00341
	(!A * B * !D * Y)	-0.00476	-0.00479	-0.00477
	(!A * !B * D * Y)	0.00640	0.00647	0.00642
	(!A * !B * D * Y)	-0.00474	-0.00477	-0.00474
	(!A * !B * !D * Y)	0.00342	0.00347	0.00343
	(!A * !B * !D * Y)	-0.00475	-0.00478	-0.00476

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)	-0.00058	-0.00060	-0.00061
	(A * B * !D * Y)	0.00246	0.00250	0.00241
	(A * !B * D * Y)	-0.00139	-0.00155	-0.00156
	(A * !B * D * Y)	0.00253	0.00241	0.00239
	(A * !B * !D * Y)	-0.00084	-0.00084	-0.00084
	(A * !B * !D * Y)	0.00247	0.00250	0.00242
	(!A * B * D * Y)	-0.00128	-0.00153	-0.00154
	(!A * B * D * Y)	0.00256	0.00242	0.00239
	(!A * B * !D * Y)	-0.00085	-0.00085	-0.00084
	(!A * B * !D * Y)	0.00253	0.00258	0.00245
	(!A * !B * D * Y)	-0.00151	-0.00157	-0.00157
	(!A * !B * D * Y)	0.00239	0.00239	0.00238
	(!A * !B * !D * Y)	-0.00085	-0.00086	-0.00085
	(!A * !B * !D * Y)	0.00244	0.00247	0.00242
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00127	-0.00128	-0.00132
	(A * B * !D * Y)	0.00486	0.00490	0.00472
	(A * !B * D * Y)	-0.00290	-0.00327	-0.00329
	(A * !B * D * Y)	0.00504	0.00473	0.00468
	(A * !B * !D * Y)	-0.00181	-0.00182	-0.00181
	(A * !B * !D * Y)	0.00496	0.00495	0.00474
	(!A * B * D * Y)	-0.00268	-0.00324	-0.00328
	(!A * B * D * Y)	0.00509	0.00473	0.00466
	(!A * B * !D * Y)	-0.00186	-0.00187	-0.00185
	(!A * B * !D * Y)	0.00496	0.00508	0.00479
	(!A * !B * D * Y)	-0.00319	-0.00332	-0.00331
	(!A * !B * D * Y)	0.00469	0.00467	0.00464
	(!A * !B * !D * Y)	-0.00185	-0.00186	-0.00184
	(!A * !B * !D * Y)	0.00481	0.00484	0.00472

sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	-0.00236	-0.00239	-0.00246
	(A * B * !D * Y)	0.00518	0.00523	0.00492
	(A * !B * D * Y)	-0.00556	-0.00633	-0.00638
	(A * !B * D * Y)	0.00561	0.00497	0.00487
	(A * !B * !D * Y)	-0.00340	-0.00342	-0.00338
	(A * !B * !D * Y)	0.00531	0.00530	0.00497
	(!A * B * D * Y)	-0.00510	-0.00626	-0.00634
	(!A * B * D * Y)	0.00573	0.00495	0.00483
	(!A * B * !D * Y)	-0.00341	-0.00344	-0.00341
	(!A * B * !D * Y)	0.00541	0.00561	0.00507
	(!A * !B * D * Y)	-0.00613	-0.00643	-0.00642
	(!A * !B * D * Y)	0.00489	0.00483	0.00479
	(!A * !B * !D * Y)	-0.00342	-0.00347	-0.00343
	(!A * !B * !D * Y)	0.00511	0.00513	0.00494

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)**	0.00160	0.00162	0.00161
	(A * B * !C * Y)	-0.00243	-0.00245	-0.00245
	(A * !B * C * Y)	0.00156	0.00156	0.00156
	(A * !B * C * Y)	-0.00244	-0.00245	-0.00244
	(A * !B * !C * Y)	0.00158	0.00159	0.00159
	(A * !B * !C * Y)	-0.00244	-0.00245	-0.00245
	(!A * B * C * Y)	0.00154	0.00156	0.00154
	(!A * B * C * Y)	-0.00243	-0.00245	-0.00244
	(!A * !C * Y)	0.00158	0.00160	0.00159
	(!A * !C * Y)	-0.00244	-0.00246	-0.00245
	(!A * !B * C * Y)	0.00155	0.00155	0.00155
	(!A * !B * C * Y)	-0.00245	-0.00246	-0.00245

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00338	0.00340	0.00338
	(A * B * !C * Y)	-0.00456	-0.00458	-0.00455
	(A * !B * C * Y)	0.00327	0.00328	0.00328
	(A * !B * C * Y)	-0.00455	-0.00455	-0.00455
	(A * !B * !C * Y)	0.00333	0.00337	0.00334
	(A * !B * !C * Y)	-0.00455	-0.00458	-0.00456
	(!A * B * C * Y)	0.00324	0.00328	0.00326
	(!A * B * C * Y)	-0.00453	-0.00456	-0.00453
	(!A * !C * Y)	0.00332	0.00335	0.00333
	(!A * !C * Y)	-0.00455	-0.00458	-0.00456
	(!A * !B * C * Y)	0.00324	0.00329	0.00325
	(!A * !B * C * Y)	-0.00456	-0.00458	-0.00456
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00678	0.00679	0.00680
	(A * B * !C * Y)	-0.00481	-0.00482	-0.00482
	(A * !B * C * Y)	0.00658	0.00660	0.00660
	(A * !B * C * Y)	-0.00481	-0.00481	-0.00481
	(A * !B * !C * Y)	0.00670	0.00677	0.00672
	(A * !B * !C * Y)	-0.00483	-0.00486	-0.00483
	(!A * B * C * Y)	0.00648	0.00654	0.00651
	(!A * B * C * Y)	-0.00478	-0.00480	-0.00477
	(!A * !C * Y)	0.00667	0.00678	0.00672
	(!A * !C * Y)	-0.00481	-0.00486	-0.00483
	(!A * !B * C * Y)	0.00652	0.00654	0.00653
	(!A * !B * C * Y)	-0.00483	-0.00484	-0.00484

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)**	-0.00148	-0.00156	-0.00157
	(A * B * !C * Y)	0.00252	0.00249	0.00248
	(A * !B * C * Y)	-0.00141	-0.00154	-0.00156
	(A * !B * C * Y)	0.00251	0.00251	0.00248
	(A * !B * !C * Y)	-0.00154	-0.00158	-0.00158
	(A * !B * !C * Y)	0.00247	0.00247	0.00246
	(!A * B * C * Y)	-0.00137	-0.00153	-0.00154
	(!A * B * C * Y)	0.00253	0.00251	0.00247
	(!A * !C * Y)	-0.00154	-0.00158	-0.00158
	(!A * !C * Y)	0.00247	0.00247	0.00246
	(!A * !B * C * Y)	-0.00145	-0.00155	-0.00155
	(!A * !B * C * Y)	0.00246	0.00249	0.00246
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00306	-0.00330	-0.00332
	(A * B * !C * Y)	0.00468	0.00464	0.00461
	(A * !B * C * Y)	-0.00293	-0.00322	-0.00328
	(A * !B * C * Y)	0.00472	0.00461	0.00461
	(A * !B * !C * Y)	-0.00320	-0.00334	-0.00334
	(A * !B * !C * Y)	0.00458	0.00461	0.00459
	(!A * B * C * Y)	-0.00283	-0.00321	-0.00326
	(!A * B * C * Y)	0.00480	0.00470	0.00461
	(!A * !C * Y)	-0.00320	-0.00334	-0.00333
	(!A * !C * Y)	0.00458	0.00461	0.00459
	(!A * !B * C * Y)	-0.00302	-0.00324	-0.00325
	(!A * !B * C * Y)	0.00458	0.00458	0.00459

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00611	-0.00665	-0.00668
	(A * B * !C * Y)	0.00513	0.00497	0.00493
	(A * !B * C * Y)	-0.00585	-0.00649	-0.00660
	(A * !B * C * Y)	0.00516	0.00493	0.00492
	(A * !B * !C * Y)	-0.00644	-0.00672	-0.00672
	(A * !B * !C * Y)	0.00485	0.00491	0.00488
	(!A * B * C * Y)	-0.00567	-0.00645	-0.00651
	(!A * B * C * Y)	0.00529	0.00505	0.00492
	(!A * !C * Y)	-0.00642	-0.00672	-0.00672
	(!A * !C * Y)	0.00486	0.00491	0.00488
	(!A * !B * C * Y)	-0.00607	-0.00653	-0.00653
	(!A * !B * C * Y)	0.00488	0.00487	0.00487

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00290	0.00233	0.67431
sky130_fd_sc_hs__nor2b_2	0.00572	0.00271	1.19718
sky130_fd_sc_hs__nor2b_4	0.00950	0.00391	2.31487

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	73.07830	132.03500
sky130_fd_sc_hs__nor2b_2	0.00000	78.96360	129.84300
sky130_fd_sc_hs__nor2b_4	0.00000	188.12200	325.59200

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)	0.05775	0.75789	8.94833
	B_N->Y (RR)	0.07286	0.64006	6.41149
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.05645	0.64602	8.79227
	B_N->Y (RR)	0.06832	0.53183	6.23914
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.04440	0.50971	8.35979
	B_N->Y (RR)	0.06904	0.47353	6.62672

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02244	0.36280	4.25000
	B_N->Y (FF)	0.06380	0.36887	3.18519
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01985	0.29711	3.99760
	B_N->Y (FF)	0.06918	0.35478	2.99212
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02991	0.40591	6.37220
	B_N->Y (FF)	0.07386	0.38931	4.34297

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00407	0.00598	0.03976
	A	0.00868	0.01059	0.04439
	B_N	0.01065	0.01669	0.11305
	B_N	0.00694	0.01299	0.10948
sky130_fd_sc_hs__nor2b_2	A	0.00452	0.00874	0.07740
	A	0.01378	0.01809	0.08682
	B_N	0.01360	0.02081	0.13881
	B_N	0.00988	0.01711	0.13558
sky130_fd_sc_hs__nor2b_4	A	0.01020	0.01610	0.09481
	A	0.02544	0.03142	0.11019
	B_N	0.02320	0.03383	0.20709
	B_N	0.01772	0.02834	0.20178

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00756	0.00970	0.04020
	A	0.00296	0.00502	0.03517
	B_N	0.00494	0.01186	0.11275
	B_N	0.00864	0.01556	0.11647
sky130_fd_sc_hs__nor2b_2	A	0.01301	0.01773	0.07917
	A	0.00377	0.00843	0.06952
	B_N	0.00910	0.01656	0.12496
	B_N	0.01279	0.02026	0.12862
sky130_fd_sc_hs__nor2b_4	A	0.02362	0.03011	0.10418
	A	0.00843	0.01481	0.08778
	B_N	0.01471	0.02675	0.20336
	B_N	0.02019	0.03217	0.20837

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00233	0.00198	0.00214
	(!B_N * !Y)	-0.00192	-0.00228	-0.00210
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00505	0.00416	0.00434
	(!B_N * !Y)	-0.00312	-0.00408	-0.00382
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00692	0.00540	0.00592
	(!B_N * !Y)	-0.00675	-0.00830	-0.00766

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00126	-0.00128	-0.00133
	(!B_N * !Y)	0.00298	0.00299	0.00291
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00256	-0.00260	-0.00270
	(!B_N * !Y)	0.00559	0.00561	0.00547
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00244	-0.00251	-0.00272
	(!B_N * !Y)	0.01120	0.01123	0.01090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00596	0.01220	0.11372
	(A * !Y)	0.00193	0.00815	0.10968
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00739	0.01408	0.12965
	(A * !Y)	0.00283	0.00950	0.12509
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.01243	0.02276	0.19843
	(A * !Y)	0.00560	0.01592	0.19159

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00162	0.00868	0.11132
	(A * !Y)	0.00565	0.01273	0.11535
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00341	0.01100	0.12751
	(A * !Y)	0.00798	0.01559	0.13207
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00410	0.01609	0.19482
	(A * !Y)	0.01097	0.02296	0.20166

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00291	0.00298	0.67042
sky130_fd_sc_hs__nor2_2	0.00465	0.00444	1.18358
sky130_fd_sc_hs__nor2_4	0.00892	0.00887	2.23671
sky130_fd_sc_hs__nor2_8	0.01743	0.01751	4.07662

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	22.07680	49.55010
sky130_fd_sc_hs__nor2_2	0.00000	43.30300	98.84260
sky130_fd_sc_hs__nor2_4	0.00000	86.56290	197.63600
sky130_fd_sc_hs__nor2_8	0.00000	172.91200	395.06700

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)	0.05598	0.75450	8.91355
	B->Y (FR)	0.04342	0.78923	9.49899
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.04568	0.62266	8.55366
	B->Y (FR)	0.02764	0.65344	9.15723
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.04548	0.51992	8.42511
	B->Y (FR)	0.02726	0.56346	9.15753
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.04543	0.42973	8.18746
	B->Y (FR)	0.03229	0.49681	9.17511

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02286	0.36178	4.22926
	B->Y (RF)	0.01930	0.35298	4.20208
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.03171	0.46782	6.28527
	B->Y (RF)	0.02203	0.45099	6.26367
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.03099	0.39613	6.12541
	B->Y (RF)	0.02110	0.37361	6.04684
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02890	0.32971	5.82755
	B->Y (RF)	0.02831	0.31630	5.79591

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00047	0.00146	0.03568
	A	0.00587	0.00774	0.04205
	B	-0.00062	0.00243	0.04087
	B	0.00443	0.00748	0.04595
sky130_fd_sc_hs__nor2_2	A	-0.00094	0.00154	0.04393
	A	0.00972	0.01221	0.05450
	B	-0.00077	0.00361	0.05215
	B	0.00663	0.01103	0.05978
sky130_fd_sc_hs__nor2_4	A	0.00020	0.00607	0.09115
	A	0.02091	0.02682	0.11182
	B	-0.00044	0.00942	0.10437
	B	0.01453	0.02439	0.11976
sky130_fd_sc_hs__nor2_8	A	-0.00053	0.01332	0.18234
	A	0.04024	0.05432	0.22330
	B	-0.00191	0.01997	0.21026
	B	0.02780	0.04962	0.24069

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00770	0.00979	0.04052
	A	0.00137	0.00341	0.03378
	B	0.00559	0.00775	0.03609
	B	0.00056	0.00270	0.03078
sky130_fd_sc_hs__nor2_2	A	0.01372	0.01639	0.05527
	A	0.00310	0.00576	0.04365
	B	0.00758	0.01100	0.04741
	B	0.00017	0.00350	0.03891
sky130_fd_sc_hs__nor2_4	A	0.02617	0.03256	0.10881
	A	0.00552	0.01178	0.08754
	B	0.01505	0.02249	0.09417
	B	0.00010	0.00737	0.07821
sky130_fd_sc_hs__nor2_8	A	0.05004	0.06538	0.21897
	A	0.00927	0.02445	0.17829
	B	0.02984	0.04653	0.19046
	B	0.00015	0.01677	0.15843

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00246	0.00209	0.00225
	(B * !Y)	-0.00166	-0.00204	-0.00184
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00386	0.00293	0.00313
	(B * !Y)	-0.00301	-0.00399	-0.00370
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00687	0.00502	0.00544
	(B * !Y)	-0.00618	-0.00805	-0.00744
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01291	0.00970	0.01059
	(B * !Y)	-0.01263	-0.01611	-0.01481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00139	-0.00140	-0.00146
	(B * !Y)	0.00272	0.00272	0.00265
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00138	-0.00142	-0.00153
	(B * !Y)	0.00545	0.00549	0.00534
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00195	-0.00204	-0.00226
	(B * !Y)	0.01096	0.01104	0.01072
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00363	-0.00379	-0.00424
	(B * !Y)	0.02183	0.02196	0.02135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00207	0.00209	0.00207
	(A * !Y)	-0.00091	-0.00092	-0.00088
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00229	0.00233	0.00232
	(A * !Y)	-0.00181	-0.00184	-0.00178
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00457	0.00467	0.00465
	(A * !Y)	-0.00358	-0.00366	-0.00353
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00905	0.00922	0.00920
	(A * !Y)	-0.00709	-0.00721	-0.00695

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	**(A * !Y)**	-0.00167	-0.00170	-0.00182
	(A * !Y)	0.00129	0.00129	0.00116
sky130_fd_sc_hs__nor2_2	**(A * !Y)**	-0.00146	-0.00149	-0.00181
	(A * !Y)	0.00266	0.00266	0.00236
sky130_fd_sc_hs__nor2_4	**(A * !Y)**	-0.00297	-0.00304	-0.00365
	(A * !Y)	0.00524	0.00525	0.00468
sky130_fd_sc_hs__nor2_8	**(A * !Y)**	-0.00586	-0.00594	-0.00717
	(A * !Y)	0.01031	0.01029	0.00927

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00286	0.00297	0.00227	0.44786
sky130_fd_sc_hs__nor3b_2	0.00561	0.00559	0.00270	0.80970
sky130_fd_sc_hs__nor3b_4	0.01125	0.01118	0.00383	1.38784

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	67.32890	132.00200
sky130_fd_sc_hs__nor3b_2	0.00000	67.48350	129.77500
sky130_fd_sc_hs__nor3b_4	0.00000	166.78000	325.62400

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)	0.10688	0.84654	8.46847
	B->Y (FR)	0.09579	0.88277	9.07027
	C_N->Y (RR)	0.09321	0.75011	6.43033
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.10207	0.70824	8.31933
	B->Y (FR)	0.08947	0.75638	9.11096
	C_N->Y (RR)	0.08159	0.62195	6.38864
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.10601	0.60003	8.02246
	B->Y (FR)	0.09357	0.65382	8.87580
	C_N->Y (RR)	0.10401	0.59654	6.81815

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02422	0.31899	3.15387
	B->Y (RF)	0.02548	0.31953	3.21579
	C_N->Y (FF)	0.06624	0.33675	2.53202
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01979	0.25674	2.90787
	B->Y (RF)	0.02058	0.24571	2.85110
	C_N->Y (FF)	0.07095	0.32884	2.39255
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01890	0.21179	2.71424
	B->Y (RF)	0.01983	0.20082	2.65725
	C_N->Y (FF)	0.07801	0.30231	2.02344

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00504	0.00630	0.04448
	A	0.01098	0.01226	0.05045
	B	0.00489	0.00642	0.03987
	B	0.00976	0.01132	0.04474
	C_N	0.01124	0.01724	0.11353
	C_N	0.00805	0.01405	0.11043
sky130_fd_sc_hs__nor3b_2	A	0.00557	0.00833	0.08598
	A	0.01799	0.02083	0.09840
	B	0.00557	0.00897	0.07515
	B	0.01524	0.01855	0.08477
	C_N	0.01454	0.02169	0.13999
	C_N	0.01148	0.01864	0.13712
sky130_fd_sc_hs__nor3b_4	A	0.01243	0.01879	0.17143
	A	0.03744	0.04377	0.19673
	B	0.01273	0.02006	0.14908
	B	0.03228	0.03959	0.16880
	C_N	0.02862	0.03926	0.21848
	C_N	0.02493	0.03558	0.21473

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00999	0.01177	0.04604
	A	0.00406	0.00582	0.04009
	B	0.00785	0.00981	0.04103
	B	0.00296	0.00490	0.03609
	C_N	0.00521	0.01211	0.11260
	C_N	0.00839	0.01529	0.11581
sky130_fd_sc_hs__nor3b_2	A	0.01860	0.02256	0.09185
	A	0.00618	0.01006	0.07938
	B	0.01351	0.01783	0.07998
	B	0.00388	0.00813	0.07028
	C_N	0.00976	0.01719	0.12606
	C_N	0.01282	0.02024	0.12914
sky130_fd_sc_hs__nor3b_4	A	0.03726	0.04571	0.18116
	A	0.01232	0.02071	0.15626
	B	0.02732	0.03621	0.15632
	B	0.00781	0.01661	0.13676
	C_N	0.02114	0.03243	0.21151
	C_N	0.02483	0.03614	0.21525

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)	0.00318	0.00284	0.00285
	(B * C_N * !Y)	-0.00077	-0.00113	-0.00107
	(B * !C_N * !Y)	0.00190	0.00172	0.00169
	(B * !C_N * !Y)	-0.00202	-0.00222	-0.00222
	(!B * !C_N * !Y)	0.00247	0.00204	0.00208
	(!B * !C_N * !Y)	-0.00150	-0.00196	-0.00185
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00533	0.00460	0.00458
	(B * C_N * !Y)	-0.00278	-0.00355	-0.00347
	(B * !C_N * !Y)	0.00396	0.00362	0.00356
	(B * !C_N * !Y)	-0.00408	-0.00447	-0.00447
	(!B * !C_N * !Y)	0.00512	0.00429	0.00432
	(!B * !C_N * !Y)	-0.00302	-0.00391	-0.00373
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.01164	0.01019	0.01014
	(B * C_N * !Y)	-0.00471	-0.00621	-0.00603
	(B * !C_N * !Y)	0.00791	0.00718	0.00704
	(B * !C_N * !Y)	-0.00830	-0.00909	-0.00910
	(!B * !C_N * !Y)	0.01011	0.00851	0.00857
	(!B * !C_N * !Y)	-0.00632	-0.00801	-0.00762

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)	-0.00055	-0.00057	-0.00059
	(B * C_N * !Y)	0.00338	0.00340	0.00334
	(B * !C_N * !Y)	-0.00156	-0.00156	-0.00156
	(B * !C_N * !Y)	0.00235	0.00235	0.00235
	(!B * !C_N * !Y)	-0.00119	-0.00120	-0.00124
	(!B * !C_N * !Y)	0.00275	0.00275	0.00271
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00230	-0.00234	-0.00238
	(B * C_N * !Y)	0.00577	0.00581	0.00571
	(B * !C_N * !Y)	-0.00329	-0.00332	-0.00330
	(B * !C_N * !Y)	0.00473	0.00478	0.00474
	(!B * !C_N * !Y)	-0.00255	-0.00257	-0.00263
	(!B * !C_N * !Y)	0.00554	0.00555	0.00546
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00443	-0.00452	-0.00458
	(B * C_N * !Y)	0.01177	0.01188	0.01167
	(B * !C_N * !Y)	-0.00654	-0.00658	-0.00656
	(B * !C_N * !Y)	0.00956	0.00964	0.00959
	(!B * !C_N * !Y)	-0.00507	-0.00512	-0.00524
	(!B * !C_N * !Y)	0.01119	0.01121	0.01102

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)	0.00304	0.00303	0.00301
	(A * C_N * !Y)	0.00000	0.00002	0.00000
	(A * !C_N * !Y)	0.00191	0.00194	0.00184
	(A * !C_N * !Y)	-0.00162	-0.00162	-0.00167
	(!A * !C_N * !Y)	0.00251	0.00202	0.00215
	(!A * !C_N * !Y)	-0.00167	-0.00218	-0.00201
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00452	0.00456	0.00445
	(A * C_N * !Y)	-0.00121	-0.00123	-0.00123
	(A * !C_N * !Y)	0.00391	0.00400	0.00376
	(A * !C_N * !Y)	-0.00296	-0.00292	-0.00307
	(!A * !C_N * !Y)	0.00527	0.00408	0.00429
	(!A * !C_N * !Y)	-0.00286	-0.00407	-0.00377
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00983	0.00992	0.00968
	(A * C_N * !Y)	-0.00175	-0.00179	-0.00180
	(A * !C_N * !Y)	0.00787	0.00794	0.00747
	(A * !C_N * !Y)	-0.00585	-0.00582	-0.00609
	(!A * !C_N * !Y)	0.01049	0.00810	0.00862
	(!A * !C_N * !Y)	-0.00581	-0.00813	-0.00753

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)	-0.00087	-0.00090	-0.00102
	(A * C_N * !Y)	0.00213	0.00214	0.00201
	(A * !C_N * !Y)	-0.00167	-0.00169	-0.00167
	(A * !C_N * !Y)	0.00176	0.00178	0.00176
	(!A * !C_N * !Y)	-0.00126	-0.00129	-0.00134
	(!A * !C_N * !Y)	0.00288	0.00290	0.00282
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00251	-0.00255	-0.00276
	(A * C_N * !Y)	0.00318	0.00320	0.00297
	(A * !C_N * !Y)	-0.00340	-0.00340	-0.00339
	(A * !C_N * !Y)	0.00325	0.00325	0.00323
	(!A * !C_N * !Y)	-0.00251	-0.00256	-0.00265
	(!A * !C_N * !Y)	0.00555	0.00557	0.00542
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00468	-0.00476	-0.00515
	(A * C_N * !Y)	0.00684	0.00685	0.00644
	(A * !C_N * !Y)	-0.00682	-0.00687	-0.00679
	(A * !C_N * !Y)	0.00642	0.00648	0.00640
	(!A * !C_N * !Y)	-0.00509	-0.00516	-0.00541
	(!A * !C_N * !Y)	0.01100	0.01098	0.01076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00564	0.01187	0.11300
	(B * !Y)	0.00176	0.00798	0.10912
	(A * !B * !Y)	0.00595	0.01218	0.11323
	(A * !B * !Y)	0.00199	0.00820	0.10928
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00689	0.01360	0.12930
	(B * !Y)	0.00239	0.00910	0.12480
	(A * !B * !Y)	0.00754	0.01424	0.12985
	(A * !B * !Y)	0.00287	0.00957	0.12520
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01179	0.02110	0.19735
	(B * !Y)	0.00500	0.01430	0.19057
	(A * !B * !Y)	0.01315	0.02245	0.19845
	(A * !B * !Y)	0.00601	0.01528	0.19136

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00166	0.00871	0.11081
	(B * !Y)	0.00554	0.01259	0.11467
	(A * !B * !Y)	0.00168	0.00871	0.11087
	(A * !B * !Y)	0.00564	0.01268	0.11480
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00334	0.01094	0.12734
	(B * !Y)	0.00781	0.01544	0.13183
	(A * !B * !Y)	0.00336	0.01096	0.12751
	(A * !B * !Y)	0.00801	0.01563	0.13213
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00790	0.01940	0.19832
	(B * !Y)	0.01465	0.02619	0.20508
	(A * !B * !Y)	0.00794	0.01945	0.19863
	(A * !B * !Y)	0.01506	0.02659	0.20566

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00296	0.00318	0.00303	0.44898
sky130_fd_sc_hs__nor3_2	0.00461	0.00482	0.00449	0.84009
sky130_fd_sc_hs__nor3_4	0.01004	0.00990	0.00956	1.33206

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	16.34140	49.47710
sky130_fd_sc_hs__nor3_2	0.00000	32.04860	98.71280
sky130_fd_sc_hs__nor3_4	0.00000	63.94900	197.26600

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)	0.10812	0.84193	8.40746
	B->Y (FR)	0.09843	0.88037	9.01665
	C->Y (FR)	0.06867	0.88633	9.39058
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.08586	0.67961	8.07992
	B->Y (FR)	0.07224	0.71016	8.69494
	C->Y (FR)	0.03615	0.71199	9.09148
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.09620	0.57836	7.56510
	B->Y (FR)	0.07829	0.60950	8.25225
	C->Y (FR)	0.04295	0.62457	8.75733

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02524	0.31987	3.15657
	B->Y (RF)	0.02701	0.31931	3.20290
	C->Y (RF)	0.02213	0.31044	3.18795
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03837	0.43230	5.06417
	B->Y (RF)	0.03604	0.41647	5.00733
	C->Y (RF)	0.02422	0.39760	4.97976
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02853	0.34691	4.38398
	B->Y (RF)	0.03145	0.33863	4.42269
	C->Y (RF)	0.03063	0.32388	4.39515

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00023	0.00151	0.03992
	A	0.00851	0.00982	0.04822
	B	0.00029	0.00184	0.03534
	B	0.00728	0.00884	0.04235
	C	0.00018	0.00281	0.04137
	C	0.00584	0.00847	0.04707
sky130_fd_sc_hs__nor3_2	A	0.00008	0.00166	0.04929
	A	0.01371	0.01532	0.06304
	B	0.00039	0.00245	0.04595
	B	0.01140	0.01346	0.05699
	C	0.00030	0.00444	0.05576
	C	0.00811	0.01228	0.06372
sky130_fd_sc_hs__nor3_4	A	-0.00022	0.00316	0.10506
	A	0.02874	0.03217	0.13417
	B	-0.00019	0.00494	0.09771
	B	0.02259	0.02773	0.12057
	C	-0.00098	0.00832	0.11463
	C	0.01651	0.02584	0.13229

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01104	0.01281	0.04731
	A	0.00275	0.00451	0.03901
	B	0.00870	0.01064	0.04211
	B	0.00171	0.00363	0.03506
	C	0.00619	0.00826	0.03809
	C	0.00053	0.00260	0.03235
sky130_fd_sc_hs__nor3_2	A	0.01935	0.02184	0.06512
	A	0.00573	0.00810	0.05140
	B	0.01430	0.01694	0.05857
	B	0.00333	0.00591	0.04710
	C	0.00786	0.01115	0.05036
	C	0.00007	0.00333	0.04204
sky130_fd_sc_hs__nor3_4	A	0.04055	0.04514	0.13271
	A	0.01162	0.01609	0.10382
	B	0.02891	0.03438	0.11978
	B	0.00613	0.01154	0.09660
	C	0.01733	0.02452	0.10649
	C	-0.00017	0.00696	0.08902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00212	0.00194	0.00191
	(B * C * !Y)	-0.00200	-0.00219	-0.00220
	(B * !C * !Y)	0.00247	0.00213	0.00214
	(B * !C * !Y)	-0.00169	-0.00204	-0.00198
	(!B * C * !Y)	0.00268	0.00225	0.00230
	(!B * C * !Y)	-0.00149	-0.00195	-0.00183
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00270	0.00234	0.00227
	(B * C * !Y)	-0.00389	-0.00431	-0.00433
	(B * !C * !Y)	0.00353	0.00279	0.00274
	(B * !C * !Y)	-0.00316	-0.00395	-0.00387
	(!B * C * !Y)	0.00394	0.00302	0.00303
	(!B * C * !Y)	-0.00280	-0.00378	-0.00359
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00556	0.00457	0.00438
	(B * C * !Y)	-0.00811	-0.00919	-0.00925
	(B * !C * !Y)	0.00738	0.00552	0.00531
	(B * !C * !Y)	-0.00650	-0.00842	-0.00835
	(!B * C * !Y)	0.00820	0.00600	0.00592
	(!B * C * !Y)	-0.00570	-0.00805	-0.00775

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00180	-0.00181	-0.00180
	(B * C * !Y)	0.00231	0.00232	0.00231
	(B * !C * !Y)	-0.00160	-0.00162	-0.00164
	(B * !C * !Y)	0.00253	0.00255	0.00250
	(!B * C * !Y)	-0.00143	-0.00144	-0.00148
	(!B * C * !Y)	0.00271	0.00272	0.00267
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00207	-0.00208	-0.00206
	(B * C * !Y)	0.00452	0.00457	0.00454
	(B * !C * !Y)	-0.00167	-0.00169	-0.00173
	(B * !C * !Y)	0.00498	0.00502	0.00493
	(!B * C * !Y)	-0.00131	-0.00132	-0.00138
	(!B * C * !Y)	0.00537	0.00539	0.00529
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00391	-0.00394	-0.00390
	(B * C * !Y)	0.00968	0.00977	0.00972
	(B * !C * !Y)	-0.00312	-0.00317	-0.00326
	(B * !C * !Y)	0.01060	0.01067	0.01050
	(!B * C * !Y)	-0.00243	-0.00248	-0.00260
	(!B * C * !Y)	0.01133	0.01138	0.01117

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00212	0.00215	0.00205
	(A * C * !Y)	-0.00128	-0.00128	-0.00132
	(A * !C * !Y)	0.00214	0.00213	0.00210
	(A * !C * !Y)	-0.00085	-0.00085	-0.00086
	(!A * C * !Y)	0.00272	0.00223	0.00235
	(!A * C * !Y)	-0.00143	-0.00193	-0.00175
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00243	0.00248	0.00222
	(A * C * !Y)	-0.00281	-0.00279	-0.00292
	(A * !C * !Y)	0.00251	0.00252	0.00235
	(A * !C * !Y)	-0.00183	-0.00185	-0.00189
	(!A * C * !Y)	0.00381	0.00256	0.00278
	(!A * C * !Y)	-0.00284	-0.00409	-0.00383
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00547	0.00550	0.00509
	(A * C * !Y)	-0.00521	-0.00523	-0.00546
	(A * !C * !Y)	0.00543	0.00542	0.00526
	(A * !C * !Y)	-0.00331	-0.00329	-0.00336
	(!A * C * !Y)	0.00787	0.00567	0.00620
	(!A * C * !Y)	-0.00553	-0.00779	-0.00712

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	-0.00192	-0.00190
	(A * C * !Y)	0.00141	0.00143	0.00141
	(A * !C * !Y)	-0.00173	-0.00176	-0.00188
	(A * !C * !Y)	0.00123	0.00124	0.00111
	(!A * C * !Y)	-0.00149	-0.00151	-0.00157
	(!A * C * !Y)	0.00262	0.00263	0.00256
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00191	-0.00193	-0.00190
	(A * C * !Y)	0.00309	0.00312	0.00308
	(A * !C * !Y)	-0.00175	-0.00177	-0.00183
	(A * !C * !Y)	0.00257	0.00259	0.00247
	(!A * C * !Y)	-0.00103	-0.00106	-0.00118
	(!A * C * !Y)	0.00563	0.00561	0.00549
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00441	-0.00444	-0.00437
	(A * C * !Y)	0.00586	0.00591	0.00584
	(A * !C * !Y)	-0.00372	-0.00378	-0.00429
	(A * !C * !Y)	0.00498	0.00500	0.00450
	(!A * C * !Y)	-0.00274	-0.00281	-0.00304
	(!A * C * !Y)	0.01060	0.01061	0.01036

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00201	0.00205	0.00202
	(B * !Y)	-0.00093	-0.00094	-0.00093
	(A * !B * !Y)	0.00201	0.00204	0.00204
	(A * !B * !Y)	-0.00084	-0.00085	-0.00083
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00224	0.00226	0.00224
	(B * !Y)	-0.00186	-0.00187	-0.00185
	(A * !B * !Y)	0.00226	0.00227	0.00228
	(A * !B * !Y)	-0.00172	-0.00171	-0.00168
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00499	0.00505	0.00502
	(B * !Y)	-0.00381	-0.00387	-0.00383
	(A * !B * !Y)	0.00503	0.00506	0.00511
	(A * !B * !Y)	-0.00349	-0.00351	-0.00345

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00186	-0.00188	-0.00196
	(B * !Y)	0.00106	0.00106	0.00100
	(A * !B * !Y)	-0.00157	-0.00159	-0.00179
	(A * !B * !Y)	0.00129	0.00130	0.00115
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00194	-0.00195	-0.00216
	(B * !Y)	0.00213	0.00213	0.00196
	(A * !B * !Y)	-0.00127	-0.00130	-0.00180
	(A * !B * !Y)	0.00266	0.00267	0.00230
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00444	-0.00450	-0.00486
	(B * !Y)	0.00432	0.00437	0.00406
	(A * !B * !Y)	-0.00308	-0.00316	-0.00415
	(A * !B * !Y)	0.00539	0.00542	0.00468

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00299	0.00306	0.00240	0.00237	0.33793
sky130_fd_sc_hs__nor4bb_2	0.00560	0.00585	0.00279	0.00266	0.57949
sky130_fd_sc_hs__nor4bb_4	0.01107	0.01175	0.00388	0.00378	1.07805

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	113.44400	231.17200
sky130_fd_sc_hs__nor4bb_2	0.00000	92.72310	193.88700
sky130_fd_sc_hs__nor4bb_4	0.00000	248.92600	520.16400

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)	0.17360	0.95455	8.27820
	B->Y (FR)	0.16307	0.97521	8.71771
	C_N->Y (RR)	0.16724	0.90274	6.47120
	D_N->Y (RR)	0.10915	0.83823	6.44048
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.17656	0.82238	8.16699
	B->Y (FR)	0.16181	0.83329	8.56793
	C_N->Y (RR)	0.16499	0.78029	6.47417
	D_N->Y (RR)	0.09894	0.71236	6.47500
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.17833	0.69531	8.01366
	B->Y (FR)	0.16365	0.71391	8.48162
	C_N->Y (RR)	0.16934	0.69920	6.79568
	D_N->Y (RR)	0.11297	0.64298	6.81517

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02522	0.29651	2.53422
	B->Y (RF)	0.02615	0.28798	2.47679
	C_N->Y (FF)	0.08230	0.33744	2.19270
	D_N->Y (FF)	0.06855	0.31523	2.11492
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.02082	0.23264	2.20255
	B->Y (RF)	0.02202	0.22953	2.19554
	C_N->Y (FF)	0.08501	0.33059	2.17232
	D_N->Y (FF)	0.07229	0.31499	2.14651
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.02146	0.21212	2.30997
	B->Y (RF)	0.02212	0.19822	2.17626
	C_N->Y (FF)	0.08676	0.29760	1.70033
	D_N->Y (FF)	0.07990	0.29141	1.75340

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00982	0.01047	0.05107
	A	0.01620	0.01686	0.05745
	B	0.00982	0.01074	0.04683
	B	0.01499	0.01591	0.05199
	C_N	0.01688	0.02252	0.11973
	C_N	0.01361	0.01922	0.11652
	D_N	0.01462	0.02086	0.12389
	D_N	0.01168	0.01791	0.12101
sky130_fd_sc_hs__nor4bb_2	A	0.01180	0.01301	0.09251
	A	0.02438	0.02559	0.10512
	B	0.01178	0.01373	0.08441
	B	0.02178	0.02375	0.09445
	C_N	0.02113	0.02781	0.14595
	C_N	0.01813	0.02482	0.14307
	D_N	0.01783	0.02496	0.14459
	D_N	0.01515	0.02228	0.14202
sky130_fd_sc_hs__nor4bb_4	A	0.02755	0.03025	0.18236
	A	0.05191	0.05469	0.20696
	B	0.02734	0.03134	0.16859
	B	0.04724	0.05128	0.18851
	C_N	0.04265	0.05206	0.23144
	C_N	0.03915	0.04856	0.22792
	D_N	0.03620	0.04706	0.23106
	D_N	0.03291	0.04380	0.22775

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.01284	0.01431	0.05052
	A	0.00648	0.00792	0.04416
	B	0.01057	0.01224	0.04595
	B	0.00540	0.00706	0.04078
	C_N	0.00820	0.01476	0.11528
	C_N	0.01147	0.01804	0.11858
	D_N	0.00632	0.01325	0.11251
	D_N	0.00927	0.01620	0.11547
sky130_fd_sc_hs__nor4bb_2	A	0.02290	0.02606	0.09757
	A	0.01036	0.01347	0.08508
	B	0.01698	0.02059	0.08659
	B	0.00699	0.01058	0.07659
	C_N	0.01454	0.02185	0.13905
	C_N	0.01754	0.02484	0.14206
	D_N	0.01059	0.01829	0.13528
	D_N	0.01327	0.02098	0.13798
sky130_fd_sc_hs__nor4bb_4	A	0.04577	0.05226	0.19357
	A	0.02142	0.02783	0.16925
	B	0.03587	0.04344	0.17495
	B	0.01603	0.02348	0.15507
	C_N	0.02750	0.03853	0.20905
	C_N	0.03101	0.04206	0.21259
	D_N	0.02277	0.03437	0.21517
	D_N	0.02605	0.03765	0.21849

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)**	0.00427	0.00394	0.00394
	(B * C_N * D_N * !Y)	0.00010	-0.00024	-0.00021
	(B * !D_N * !Y)	0.00298	0.00287	0.00285
	(B * !D_N * !Y)	-0.00116	-0.00129	-0.00129
	(B * !C_N * D_N * !Y)	0.00286	0.00273	0.00272
	(B * !C_N * D_N * !Y)	-0.00128	-0.00143	-0.00142
	(!B * C_N * !D_N * !Y)	0.00357	0.00321	0.00324
	(!B * C_N * !D_N * !Y)	-0.00058	-0.00099	-0.00091
	(!B * !C_N * D_N * !Y)	0.00334	0.00298	0.00294
	(!B * !C_N * D_N * !Y)	-0.00081	-0.00122	-0.00120
	(!B * !C_N * !D_N * !Y)	0.00199	0.00186	0.00184
	(!B * !C_N * !D_N * !Y)	-0.00208	-0.00228	-0.00228
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00603	0.00520	0.00512
	(B * C_N * D_N * !Y)	-0.00204	-0.00290	-0.00288
	(B * !D_N * !Y)	0.00444	0.00417	0.00410
	(B * !D_N * !Y)	-0.00356	-0.00388	-0.00388
	(B * !C_N * D_N * !Y)	0.00448	0.00416	0.00411
	(B * !C_N * D_N * !Y)	-0.00352	-0.00388	-0.00387
	(!B * C_N * !D_N * !Y)	0.00571	0.00489	0.00488
	(!B * C_N * !D_N * !Y)	-0.00230	-0.00322	-0.00312
	(!B * !C_N * D_N * !Y)	0.00553	0.00469	0.00456
	(!B * !C_N * D_N * !Y)	-0.00249	-0.00342	-0.00342
	(!B * !C_N * !D_N * !Y)	0.00385	0.00358	0.00353
	(!B * !C_N * !D_N * !Y)	-0.00398	-0.00441	-0.00442

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.01296	0.01139	0.01124
	(B * C_N * D_N * !Y)	-0.00274	-0.00436	-0.00428
	(B * !D_N * !Y)	0.00928	0.00874	0.00860
	(B * !D_N * !Y)	-0.00628	-0.00689	-0.00690
	(B * !C_N * D_N * !Y)	0.00931	0.00871	0.00859
	(B * !C_N * D_N * !Y)	-0.00624	-0.00692	-0.00690
	(!B * C_N * !D_N * !Y)	0.01180	0.01014	0.01013
	(!B * C_N * !D_N * !Y)	-0.00385	-0.00564	-0.00540
	(!B * !C_N * D_N * !Y)	0.01140	0.00976	0.00949
	(!B * !C_N * D_N * !Y)	-0.00422	-0.00601	-0.00601
	(!B * !C_N * !D_N * !Y)	0.00754	0.00696	0.00683
	(!B * !C_N * !D_N * !Y)	-0.00773	-0.00857	-0.00861

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)**	0.00009	0.00007	0.00005
	(B * C_N * D_N * !Y)	0.00424	0.00426	0.00421
	(B * !D_N * !Y)	-0.00098	-0.00099	-0.00099
	(B * !D_N * !Y)	0.00315	0.00316	0.00315
	(B * !C_N * D_N * !Y)	-0.00085	-0.00084	-0.00084
	(B * !C_N * D_N * !Y)	0.00330	0.00329	0.00329
	(!B * C_N * !D_N * !Y)	-0.00059	-0.00060	-0.00062
	(!B * C_N * !D_N * !Y)	0.00356	0.00356	0.00353
	(!B * !C_N * D_N * !Y)	-0.00061	-0.00062	-0.00062
	(!B * !C_N * D_N * !Y)	0.00354	0.00355	0.00352
	(!B * !C_N * !D_N * !Y)	-0.00170	-0.00171	-0.00170
	(!B * !C_N * !D_N * !Y)	0.00238	0.00240	0.00239

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00169	-0.00174	-0.00176
	(B * C_N * D_N * !Y)	0.00630	0.00636	0.00628
	(B * !D_N * !Y)	-0.00271	-0.00273	-0.00271
	(B * !D_N * !Y)	0.00527	0.00531	0.00528
	(B * !C_N * D_N * !Y)	-0.00270	-0.00271	-0.00270
	(B * !C_N * D_N * !Y)	0.00528	0.00532	0.00528
	(!B * C_N * !D_N * !Y)	-0.00193	-0.00195	-0.00198
	(!B * C_N * !D_N * !Y)	0.00607	0.00608	0.00603
	(!B * !C_N * D_N * !Y)	-0.00221	-0.00223	-0.00224
	(!B * !C_N * D_N * !Y)	0.00577	0.00581	0.00575
	(!B * !C_N * !D_N * !Y)	-0.00325	-0.00327	-0.00325
	(!B * !C_N * !D_N * !Y)	0.00461	0.00465	0.00463
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00216	-0.00222	-0.00228
	(B * C_N * D_N * !Y)	0.01337	0.01343	0.01332
	(B * !D_N * !Y)	-0.00471	-0.00473	-0.00471
	(B * !D_N * !Y)	0.01078	0.01083	0.01080
	(B * !C_N * D_N * !Y)	-0.00466	-0.00472	-0.00468
	(B * !C_N * D_N * !Y)	0.01075	0.01087	0.01081
	(!B * C_N * !D_N * !Y)	-0.00313	-0.00316	-0.00322
	(!B * C_N * !D_N * !Y)	0.01240	0.01243	0.01231
	(!B * !C_N * D_N * !Y)	-0.00370	-0.00373	-0.00374
	(!B * !C_N * D_N * !Y)	0.01179	0.01184	0.01176
	(!B * !C_N * !D_N * !Y)	-0.00636	-0.00638	-0.00635
	(!B * !C_N * !D_N * !Y)	0.00892	0.00897	0.00894

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)**	0.00401	0.00400	0.00397
	(A * C_N * D_N * !Y)	0.00090	0.00091	0.00089
	(A * C_N * !D_N * !Y)	0.00348	0.00359	0.00346
	(A * C_N * !D_N * !Y)	-0.00043	-0.00034	-0.00043
	(A * !C_N * D_N * !Y)	0.00293	0.00296	0.00282
	(A * !C_N * D_N * !Y)	-0.00070	-0.00070	-0.00078
	(A * !C_N * !D_N * !Y)	0.00202	0.00204	0.00194
	(A * !C_N * !D_N * !Y)	-0.00166	-0.00167	-0.00170
	(!A * C_N * !D_N * !Y)	0.00386	0.00330	0.00335
	(!A * C_N * !D_N * !Y)	-0.00039	-0.00096	-0.00087
	(!A * !C_N * D_N * !Y)	0.00349	0.00302	0.00301
	(!A * !C_N * D_N * !Y)	-0.00076	-0.00124	-0.00121
	(!A * !C_N * !D_N * !Y)	0.00220	0.00196	0.00192
	(!A * !C_N * !D_N * !Y)	-0.00204	-0.00230	-0.00230
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00530	0.00529	0.00521
	(A * C_N * D_N * !Y)	-0.00070	-0.00069	-0.00074
	(A * C_N * !D_N * !Y)	0.00535	0.00561	0.00534
	(A * C_N * !D_N * !Y)	-0.00236	-0.00208	-0.00227
	(A * !C_N * D_N * !Y)	0.00466	0.00468	0.00439
	(A * !C_N * D_N * !Y)	-0.00243	-0.00247	-0.00265
	(A * !C_N * !D_N * !Y)	0.00396	0.00398	0.00376
	(A * !C_N * !D_N * !Y)	-0.00322	-0.00326	-0.00333
	(!A * C_N * !D_N * !Y)	0.00601	0.00502	0.00508
	(!A * C_N * !D_N * !Y)	-0.00227	-0.00336	-0.00321
	(!A * !C_N * D_N * !Y)	0.00567	0.00473	0.00470
	(!A * !C_N * D_N * !Y)	-0.00270	-0.00366	-0.00358
	(!A * !C_N * !D_N * !Y)	0.00423	0.00376	0.00368
	(!A * !C_N * !D_N * !Y)	-0.00411	-0.00461	-0.00460

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.01166	0.01170	0.01142
	(A * C_N * D_N * !Y)	-0.00003	-0.00007	-0.00026
	(A * C_N * !D_N * !Y)	0.01112	0.01161	0.01101
	(A * C_N * !D_N * !Y)	-0.00389	-0.00346	-0.00387
	(A * !C_N * D_N * !Y)	0.00959	0.00965	0.00903
	(A * !C_N * D_N * !Y)	-0.00433	-0.00428	-0.00474
	(A * !C_N * !D_N * !Y)	0.00757	0.00760	0.00716
	(A * !C_N * !D_N * !Y)	-0.00649	-0.00651	-0.00673
	(!A * C_N * !D_N * !Y)	0.01280	0.01034	0.01049
	(!A * C_N * !D_N * !Y)	-0.00356	-0.00602	-0.00580
	(!A * !C_N * D_N * !Y)	0.01202	0.00983	0.00971
	(!A * !C_N * D_N * !Y)	-0.00436	-0.00656	-0.00657
	(!A * !C_N * !D_N * !Y)	0.00838	0.00720	0.00707
	(!A * !C_N * !D_N * !Y)	-0.00792	-0.00913	-0.00919

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)**	-0.00006	-0.00008	-0.00017
	(A * C_N * D_N * !Y)	0.00302	0.00303	0.00293
	(A * C_N * !D_N * !Y)	-0.00142	-0.00145	-0.00143
	(A * C_N * !D_N * !Y)	0.00231	0.00232	0.00231
	(A * !C_N * D_N * !Y)	-0.00094	-0.00095	-0.00094
	(A * !C_N * D_N * !Y)	0.00259	0.00260	0.00257
	(A * !C_N * !D_N * !Y)	-0.00182	-0.00183	-0.00182
	(A * !C_N * !D_N * !Y)	0.00174	0.00174	0.00172
	(!A * C_N * !D_N * !Y)	-0.00069	-0.00071	-0.00073
	(!A * C_N * !D_N * !Y)	0.00353	0.00354	0.00349
	(!A * !C_N * D_N * !Y)	-0.00068	-0.00070	-0.00072
	(!A * !C_N * D_N * !Y)	0.00352	0.00354	0.00350
	(!A * !C_N * !D_N * !Y)	-0.00176	-0.00177	-0.00176
	(!A * !C_N * !D_N * !Y)	0.00245	0.00248	0.00246
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00199	-0.00202	-0.00222
	(A * C_N * D_N * !Y)	0.00396	0.00396	0.00377
	(A * C_N * !D_N * !Y)	-0.00356	-0.00359	-0.00357
	(A * C_N * !D_N * !Y)	0.00371	0.00374	0.00373
	(A * !C_N * D_N * !Y)	-0.00289	-0.00291	-0.00289
	(A * !C_N * D_N * !Y)	0.00395	0.00397	0.00394
	(A * !C_N * !D_N * !Y)	-0.00347	-0.00350	-0.00347
	(A * !C_N * !D_N * !Y)	0.00342	0.00346	0.00341
	(!A * C_N * !D_N * !Y)	-0.00211	-0.00215	-0.00219
	(!A * C_N * !D_N * !Y)	0.00618	0.00620	0.00610
	(!A * !C_N * D_N * !Y)	-0.00238	-0.00243	-0.00246
	(!A * !C_N * D_N * !Y)	0.00589	0.00593	0.00584
	(!A * !C_N * !D_N * !Y)	-0.00338	-0.00340	-0.00338
	(!A * !C_N * !D_N * !Y)	0.00489	0.00493	0.00490

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	-0.00291	-0.00294	-0.00314
	(A * C_N * D_N * !Y)	0.00882	0.00882	0.00861
	(A * C_N * !D_N * !Y)	-0.00640	-0.00646	-0.00641
	(A * C_N * !D_N * !Y)	0.00783	0.00789	0.00783
	(A * !C_N * D_N * !Y)	-0.00500	-0.00505	-0.00497
	(A * !C_N * D_N * !Y)	0.00841	0.00848	0.00839
	(A * !C_N * !D_N * !Y)	-0.00673	-0.00676	-0.00672
	(A * !C_N * !D_N * !Y)	0.00680	0.00684	0.00676
	(!A * C_N * !D_N * !Y)	-0.00341	-0.00343	-0.00357
	(!A * C_N * !D_N * !Y)	0.01288	0.01284	0.01272
	(!A * !C_N * D_N * !Y)	-0.00393	-0.00399	-0.00408
	(!A * !C_N * D_N * !Y)	0.01232	0.01235	0.01223
	(!A * !C_N * !D_N * !Y)	-0.00647	-0.00652	-0.00649
	(!A * !C_N * !D_N * !Y)	0.00973	0.00981	0.00977

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * !Y)**	0.00718	0.01308	0.11356
	(B * !Y)	0.00300	0.00889	0.10937
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00745	0.01334	0.11371
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00317	0.00905	0.10943
sky130_fd_sc_hs__nor4bb_2	**(B * !Y)**	0.00744	0.01402	0.12994
	(B * !Y)	0.00288	0.00947	0.12540
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00803	0.01461	0.13033
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00327	0.00983	0.12560
sky130_fd_sc_hs__nor4bb_4	**(B * !Y)**	0.01335	0.02269	0.19777
	(B * !Y)	0.00686	0.01616	0.19130
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01439	0.02370	0.19834
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00755	0.01682	0.19155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00311	0.00990	0.11133
	(B * !Y)	0.00729	0.01409	0.11550
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00321	0.01000	0.11147
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00748	0.01429	0.11572
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00470	0.01222	0.12876
	(B * !Y)	0.00922	0.01676	0.13329
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00492	0.01244	0.12909
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00961	0.01715	0.13375
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00917	0.02069	0.19815
	(B * !Y)	0.01560	0.02717	0.20456
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00977	0.02127	0.19894
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01650	0.02805	0.20559

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)	0.00661	0.01278	0.11418
	(B * C_N * !Y)	0.00277	0.00893	0.11034
	(A * !B * C_N * !Y)	0.00691	0.01308	0.11444
	(A * !B * C_N * !Y)	0.00302	0.00917	0.11055
	(!C_N * !Y)	0.00604	0.01221	0.11364
	(!C_N * !Y)	0.00222	0.00837	0.10981
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00729	0.01400	0.12971
	(B * C_N * !Y)	0.00310	0.00979	0.12551
	(A * !B * C_N * !Y)	0.00801	0.01473	0.13032
	(A * !B * C_N * !Y)	0.00365	0.01033	0.12598
	(!C_N * !Y)	0.00702	0.01374	0.12951
	(!C_N * !Y)	0.00286	0.00955	0.12534
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.01287	0.02261	0.19788
	(B * C_N * !Y)	0.00669	0.01639	0.19172
	(A * !B * C_N * !Y)	0.01421	0.02358	0.19901
	(A * !B * C_N * !Y)	0.00778	0.01712	0.19265
	(!C_N * !Y)	0.01159	0.02133	0.19687
	(!C_N * !Y)	0.00551	0.01521	0.19078

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)	0.00282	0.00985	0.11226
	(B * C_N * !Y)	0.00664	0.01370	0.11610
	(A * !B * C_N * !Y)	0.00286	0.00989	0.11237
	(A * !B * C_N * !Y)	0.00674	0.01378	0.11624
	(!C_N * !Y)	0.00156	0.00859	0.11100
	(!C_N * !Y)	0.00538	0.01243	0.11483
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00423	0.01184	0.12832
	(B * C_N * !Y)	0.00841	0.01604	0.13251
	(A * !B * C_N * !Y)	0.00430	0.01190	0.12853
	(A * !B * C_N * !Y)	0.00859	0.01622	0.13281
	(!C_N * !Y)	0.00318	0.01079	0.12728
	(!C_N * !Y)	0.00733	0.01498	0.13146
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.01018	0.02181	0.20024
	(B * C_N * !Y)	0.01630	0.02796	0.20635
	(A * !B * C_N * !Y)	0.01033	0.02196	0.20065
	(A * !B * C_N * !Y)	0.01666	0.02828	0.20690
	(!C_N * !Y)	0.00753	0.01917	0.19770
	(!C_N * !Y)	0.01362	0.02528	0.20379

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00289	0.00300	0.00299	0.00230	0.34542
sky130_fd_sc_hs__nor4b_2	0.00571	0.00577	0.00581	0.00270	0.57079
sky130_fd_sc_hs__nor4b_4	0.01121	0.01126	0.01143	0.00406	1.05543

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	62.45810	131.99300
sky130_fd_sc_hs__nor4b_2	0.00000	57.82190	129.69800
sky130_fd_sc_hs__nor4b_4	0.00000	147.35200	325.48200

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)	0.16697	0.95453	8.36973
	B->Y (FR)	0.15581	0.97472	8.80662
	C->Y (FR)	0.12808	0.99106	9.28765
	D_N->Y (RR)	0.11195	0.85298	6.61888
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.17729	0.81822	8.07610
	B->Y (FR)	0.16257	0.82947	8.47381
	C->Y (FR)	0.13297	0.86114	9.16133
	D_N->Y (RR)	0.10034	0.70462	6.31798
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.17707	0.69325	7.96014
	B->Y (FR)	0.16265	0.71186	8.42864
	C->Y (FR)	0.13071	0.74140	9.10312
	D_N->Y (RR)	0.11458	0.64767	6.85190

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02583	0.30482	2.64736
	B->Y (RF)	0.02739	0.29904	2.61854
	C->Y (RF)	0.02681	0.29028	2.58902
	D_N->Y (FF)	0.06934	0.32212	2.21415
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.02077	0.23127	2.16495
	B->Y (RF)	0.02189	0.22747	2.15852
	C->Y (RF)	0.02421	0.22410	2.17124
	D_N->Y (FF)	0.07459	0.31620	2.06923
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.02072	0.19762	2.14982
	B->Y (RF)	0.02110	0.19088	2.09318
	C->Y (RF)	0.02144	0.17433	1.96835
	D_N->Y (FF)	0.07805	0.28520	1.68384

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00531	0.00594	0.04511
	A	0.01294	0.01358	0.05272
	B	0.00532	0.00622	0.04086
	B	0.01168	0.01259	0.04727
	C	0.00512	0.00648	0.03821
	C	0.01041	0.01175	0.04355
	D_N	0.01170	0.01770	0.11517
	D_N	0.00877	0.01476	0.11226
sky130_fd_sc_hs__nor4b_2	A	0.00656	0.00777	0.08861
	A	0.02282	0.02409	0.10500
	B	0.00661	0.00857	0.08020
	B	0.02011	0.02210	0.09374
	C	0.00652	0.00925	0.07135
	C	0.01739	0.02015	0.08235
	D_N	0.01561	0.02265	0.14125
	D_N	0.01356	0.02060	0.13939
sky130_fd_sc_hs__nor4b_4	A	0.01476	0.01760	0.17450
	A	0.04691	0.04983	0.20696
	B	0.01485	0.01935	0.15922
	B	0.04152	0.04608	0.18588
	C	0.01459	0.02080	0.14160
	C	0.03614	0.04234	0.16311
	D_N	0.02993	0.04048	0.22191
	D_N	0.02815	0.03877	0.22008

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01305	0.01451	0.04966
	A	0.00545	0.00687	0.04207
	B	0.01072	0.01239	0.04505
	B	0.00436	0.00600	0.03870
	C	0.00826	0.01019	0.04078
	C	0.00297	0.00490	0.03550
	D_N	0.00578	0.01266	0.11312
	D_N	0.00871	0.01559	0.11608
sky130_fd_sc_hs__nor4b_2	A	0.02571	0.02861	0.10059
	A	0.00945	0.01229	0.08439
	B	0.01980	0.02335	0.08941
	B	0.00630	0.00981	0.07595
	C	0.01466	0.01853	0.07803
	C	0.00379	0.00762	0.06716
	D_N	0.01089	0.01839	0.12821
	D_N	0.01294	0.02045	0.13028
sky130_fd_sc_hs__nor4b_4	A	0.05076	0.05745	0.19673
	A	0.01866	0.02524	0.16480
	B	0.03951	0.04689	0.17485
	B	0.01286	0.02016	0.14827
	C	0.02884	0.03714	0.15340
	C	0.00738	0.01553	0.13196
	D_N	0.02222	0.03374	0.20423
	D_N	0.02400	0.03554	0.20604

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)**	0.00280	0.00267	0.00265
	(B * C * D_N * !Y)	-0.00112	-0.00129	-0.00128
	(B * !D_N * !Y)	0.00174	0.00170	0.00168
	(B * !D_N * !Y)	-0.00218	-0.00225	-0.00225
	(B * !C * D_N * !Y)	0.00320	0.00287	0.00286
	(B * !C * D_N * !Y)	-0.00077	-0.00112	-0.00108
	(!B * C * D_N * !Y)	0.00328	0.00290	0.00287
	(!B * C * D_N * !Y)	-0.00067	-0.00109	-0.00106
	(!B * C * !D_N * !Y)	0.00186	0.00173	0.00171
	(!B * C * !D_N * !Y)	-0.00199	-0.00220	-0.00221
	(!B * !C * !D_N * !Y)	0.00245	0.00209	0.00209
	(!B * !C * !D_N * !Y)	-0.00152	-0.00193	-0.00185
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00451	0.00421	0.00415
	(B * C * D_N * !Y)	-0.00354	-0.00394	-0.00393
	(B * !D_N * !Y)	0.00365	0.00357	0.00353
	(B * !D_N * !Y)	-0.00438	-0.00457	-0.00456
	(B * !C * D_N * !Y)	0.00550	0.00469	0.00459
	(B * !C * D_N * !Y)	-0.00266	-0.00354	-0.00351
	(!B * C * D_N * !Y)	0.00557	0.00473	0.00461
	(!B * C * D_N * !Y)	-0.00254	-0.00350	-0.00348
	(!B * C * !D_N * !Y)	0.00390	0.00363	0.00357
	(!B * C * !D_N * !Y)	-0.00400	-0.00446	-0.00448
	(!B * !C * !D_N * !Y)	0.00521	0.00441	0.00435
	(!B * !C * !D_N * !Y)	-0.00293	-0.00386	-0.00375

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00947	0.00884	0.00874
	(B * C * D_N * !Y)	-0.00643	-0.00718	-0.00716
	(B * !D_N * !Y)	0.00715	0.00696	0.00688
	(B * !D_N * !Y)	-0.00870	-0.00905	-0.00902
	(B * !C * D_N * !Y)	0.01132	0.00978	0.00959
	(B * !C * D_N * !Y)	-0.00474	-0.00640	-0.00633
	(!B * C * D_N * !Y)	0.01146	0.00988	0.00963
	(!B * C * D_N * !Y)	-0.00451	-0.00631	-0.00627
	(!B * C * !D_N * !Y)	0.00762	0.00708	0.00697
	(!B * C * !D_N * !Y)	-0.00793	-0.00881	-0.00885
	(!B * !C * !D_N * !Y)	0.01013	0.00863	0.00853
	(!B * !C * !D_N * !Y)	-0.00590	-0.00765	-0.00740

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)**	-0.00079	-0.00080	-0.00079
	(B * C * D_N * !Y)	0.00315	0.00315	0.00314
	(B * !D_N * !Y)	-0.00162	-0.00163	-0.00162
	(B * !D_N * !Y)	0.00232	0.00234	0.00231
	(B * !C * D_N * !Y)	-0.00059	-0.00061	-0.00063
	(B * !C * D_N * !Y)	0.00336	0.00338	0.00333
	(!B * C * D_N * !Y)	-0.00056	-0.00057	-0.00057
	(!B * C * D_N * !Y)	0.00338	0.00340	0.00337
	(!B * C * !D_N * !Y)	-0.00158	-0.00159	-0.00159
	(!B * C * !D_N * !Y)	0.00229	0.00230	0.00230
	(!B * !C * !D_N * !Y)	-0.00121	-0.00122	-0.00124
	(!B * !C * !D_N * !Y)	0.00274	0.00274	0.00271

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00277	-0.00278	-0.00278
	(B * C * D_N * !Y)	0.00529	0.00531	0.00531
	(B * !D_N * !Y)	-0.00339	-0.00341	-0.00339
	(B * !D_N * !Y)	0.00469	0.00472	0.00469
	(B * !C * D_N * !Y)	-0.00234	-0.00239	-0.00241
	(B * !C * D_N * !Y)	0.00575	0.00582	0.00573
	(!B * C * D_N * !Y)	-0.00229	-0.00231	-0.00232
	(!B * C * D_N * !Y)	0.00579	0.00583	0.00578
	(!B * C * !D_N * !Y)	-0.00333	-0.00335	-0.00333
	(!B * C * !D_N * !Y)	0.00462	0.00466	0.00464
	(!B * !C * !D_N * !Y)	-0.00258	-0.00259	-0.00263
	(!B * !C * !D_N * !Y)	0.00552	0.00553	0.00548
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00481	-0.00483	-0.00481
	(B * C * D_N * !Y)	0.01107	0.01112	0.01108
	(B * !D_N * !Y)	-0.00664	-0.00668	-0.00664
	(B * !D_N * !Y)	0.00922	0.00932	0.00923
	(B * !C * D_N * !Y)	-0.00396	-0.00405	-0.00409
	(B * !C * D_N * !Y)	0.01198	0.01210	0.01191
	(!B * C * D_N * !Y)	-0.00386	-0.00391	-0.00391
	(!B * C * D_N * !Y)	0.01204	0.01212	0.01200
	(!B * C * !D_N * !Y)	-0.00652	-0.00655	-0.00652
	(!B * C * !D_N * !Y)	0.00911	0.00918	0.00914
	(!B * !C * !D_N * !Y)	-0.00502	-0.00504	-0.00512
	(!B * !C * !D_N * !Y)	0.01091	0.01090	0.01082

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)**	0.00283	0.00285	0.00273
	(A * C * D_N * !Y)	-0.00045	-0.00045	-0.00052
	(A * C * !D_N * !Y)	0.00185	0.00186	0.00177
	(A * C * !D_N * !Y)	-0.00149	-0.00150	-0.00152
	(A * !C * D_N * !Y)	0.00287	0.00287	0.00283
	(A * !C * D_N * !Y)	0.00001	0.00002	0.00001
	(A * !C * !D_N * !Y)	0.00201	0.00211	0.00193
	(A * !C * !D_N * !Y)	-0.00137	-0.00128	-0.00138
	(!A * C * D_N * !Y)	0.00338	0.00292	0.00291
	(!A * C * D_N * !Y)	-0.00062	-0.00110	-0.00104
	(!A * C * !D_N * !Y)	0.00205	0.00180	0.00176
	(!A * C * !D_N * !Y)	-0.00193	-0.00219	-0.00219
	(!A * !C * !D_N * !Y)	0.00269	0.00214	0.00214
	(!A * !C * !D_N * !Y)	-0.00133	-0.00191	-0.00182
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00464	0.00464	0.00435
	(A * C * D_N * !Y)	-0.00225	-0.00227	-0.00241
	(A * C * !D_N * !Y)	0.00394	0.00394	0.00372
	(A * C * !D_N * !Y)	-0.00305	-0.00307	-0.00311
	(A * !C * D_N * !Y)	0.00465	0.00464	0.00453
	(A * !C * D_N * !Y)	-0.00125	-0.00124	-0.00129
	(A * !C * !D_N * !Y)	0.00420	0.00446	0.00409
	(A * !C * !D_N * !Y)	-0.00286	-0.00263	-0.00282
	(!A * C * D_N * !Y)	0.00565	0.00463	0.00467
	(!A * C * D_N * !Y)	-0.00261	-0.00356	-0.00349
	(!A * C * !D_N * !Y)	0.00421	0.00367	0.00364
	(!A * C * !D_N * !Y)	-0.00399	-0.00447	-0.00450
	(!A * !C * !D_N * !Y)	0.00542	0.00443	0.00442
	(!A * !C * !D_N * !Y)	-0.00280	-0.00391	-0.00375

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00960	0.00963	0.00905
	(A * C * D_N * !Y)	-0.00387	-0.00387	-0.00414
	(A * C * !D_N * !Y)	0.00763	0.00765	0.00721
	(A * C * !D_N * !Y)	-0.00605	-0.00607	-0.00613
	(A * !C * D_N * !Y)	0.00967	0.00965	0.00945
	(A * !C * D_N * !Y)	-0.00186	-0.00185	-0.00193
	(A * !C * !D_N * !Y)	0.00817	0.00868	0.00793
	(A * !C * !D_N * !Y)	-0.00562	-0.00517	-0.00554
	(!A * C * D_N * !Y)	0.01179	0.00970	0.00975
	(!A * C * D_N * !Y)	-0.00450	-0.00649	-0.00632
	(!A * C * !D_N * !Y)	0.00832	0.00718	0.00710
	(!A * C * !D_N * !Y)	-0.00784	-0.00890	-0.00893
	(!A * !C * !D_N * !Y)	0.01073	0.00856	0.00865
	(!A * !C * !D_N * !Y)	-0.00548	-0.00771	-0.00744

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)**	-0.00086	-0.00087	-0.00086
	(A * C * D_N * !Y)	0.00233	0.00234	0.00231
	(A * C * !D_N * !Y)	-0.00166	-0.00167	-0.00167
	(A * C * !D_N * !Y)	0.00155	0.00156	0.00154
	(A * !C * D_N * !Y)	-0.00068	-0.00070	-0.00079
	(A * !C * D_N * !Y)	0.00215	0.00215	0.00205
	(A * !C * !D_N * !Y)	-0.00167	-0.00168	-0.00166
	(A * !C * !D_N * !Y)	0.00150	0.00151	0.00150
	(!A * C * D_N * !Y)	-0.00060	-0.00063	-0.00065
	(!A * C * D_N * !Y)	0.00335	0.00336	0.00332
	(!A * C * !D_N * !Y)	-0.00161	-0.00163	-0.00162
	(!A * C * !D_N * !Y)	0.00232	0.00235	0.00233
	(!A * !C * !D_N * !Y)	-0.00125	-0.00127	-0.00130
	(!A * !C * !D_N * !Y)	0.00272	0.00273	0.00268
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00290	-0.00291	-0.00289
	(A * C * D_N * !Y)	0.00371	0.00373	0.00370
	(A * C * !D_N * !Y)	-0.00347	-0.00350	-0.00347
	(A * C * !D_N * !Y)	0.00319	0.00323	0.00318
	(A * !C * D_N * !Y)	-0.00251	-0.00254	-0.00273
	(A * !C * D_N * !Y)	0.00333	0.00332	0.00315
	(A * !C * !D_N * !Y)	-0.00351	-0.00353	-0.00350
	(A * !C * !D_N * !Y)	0.00308	0.00310	0.00309
	(!A * C * D_N * !Y)	-0.00238	-0.00243	-0.00246
	(!A * C * D_N * !Y)	0.00577	0.00582	0.00572
	(!A * C * !D_N * !Y)	-0.00338	-0.00340	-0.00338
	(!A * C * !D_N * !Y)	0.00474	0.00477	0.00476
	(!A * !C * !D_N * !Y)	-0.00264	-0.00267	-0.00272
	(!A * !C * !D_N * !Y)	0.00554	0.00556	0.00546

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00504	-0.00508	-0.00503
	(A * C * D_N * !Y)	0.00788	0.00793	0.00784
	(A * C * !D_N * !Y)	-0.00680	-0.00685	-0.00680
	(A * C * !D_N * !Y)	0.00623	0.00630	0.00619
	(A * !C * D_N * !Y)	-0.00431	-0.00435	-0.00475
	(A * !C * D_N * !Y)	0.00712	0.00710	0.00674
	(A * !C * !D_N * !Y)	-0.00686	-0.00691	-0.00685
	(A * !C * !D_N * !Y)	0.00599	0.00604	0.00600
	(!A * C * D_N * !Y)	-0.00403	-0.00412	-0.00420
	(!A * C * D_N * !Y)	0.01204	0.01212	0.01194
	(!A * C * !D_N * !Y)	-0.00661	-0.00661	-0.00661
	(!A * C * !D_N * !Y)	0.00942	0.00942	0.00943
	(!A * !C * !D_N * !Y)	-0.00514	-0.00521	-0.00531
	(!A * !C * !D_N * !Y)	0.01098	0.01102	0.01082

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)	0.00294	0.00297	0.00292
	(B * D_N * !Y)	-0.00008	-0.00010	-0.00011
	(B * !D_N * !Y)	0.00198	0.00201	0.00189
	(B * !D_N * !Y)	-0.00160	-0.00161	-0.00168
	(A * !B * D_N * !Y)	0.00304	0.00308	0.00302
	(A * !B * D_N * !Y)	0.00009	0.00007	0.00006
	(A * !B * !D_N * !Y)	0.00220	0.00209	0.00202
	(A * !B * !D_N * !Y)	-0.00139	-0.00152	-0.00153
	(!A * !B * !D_N * !Y)	0.00253	0.00199	0.00215
	(!A * !B * !D_N * !Y)	-0.00167	-0.00218	-0.00202

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00456	0.00460	0.00448
	(B * D_N * !Y)	-0.00138	-0.00140	-0.00142
	(B * !D_N * !Y)	0.00422	0.00428	0.00402
	(B * !D_N * !Y)	-0.00292	-0.00290	-0.00306
	(A * !B * D_N * !Y)	0.00477	0.00479	0.00470
	(A * !B * D_N * !Y)	-0.00104	-0.00105	-0.00108
	(A * !B * !D_N * !Y)	0.00473	0.00439	0.00424
	(A * !B * !D_N * !Y)	-0.00239	-0.00270	-0.00278
	(!A * !B * !D_N * !Y)	0.00548	0.00426	0.00446
	(!A * !B * !D_N * !Y)	-0.00279	-0.00399	-0.00374
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00956	0.00963	0.00939
	(B * D_N * !Y)	-0.00218	-0.00222	-0.00225
	(B * !D_N * !Y)	0.00845	0.00849	0.00808
	(B * !D_N * !Y)	-0.00551	-0.00547	-0.00586
	(A * !B * D_N * !Y)	0.00990	0.01007	0.00984
	(A * !B * D_N * !Y)	-0.00143	-0.00154	-0.00155
	(A * !B * !D_N * !Y)	0.00951	0.00882	0.00854
	(A * !B * !D_N * !Y)	-0.00459	-0.00515	-0.00528
	(!A * !B * !D_N * !Y)	0.01085	0.00862	0.00899
	(!A * !B * !D_N * !Y)	-0.00542	-0.00776	-0.00725

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)**	-0.00103	-0.00105	-0.00108
	(B * D_N * !Y)	0.00197	0.00198	0.00195
	(B * !D_N * !Y)	-0.00167	-0.00169	-0.00167
	(B * !D_N * !Y)	0.00175	0.00178	0.00176
	(A * !B * D_N * !Y)	-0.00078	-0.00081	-0.00103
	(A * !B * D_N * !Y)	0.00215	0.00216	0.00198
	(A * !B * !D_N * !Y)	-0.00167	-0.00168	-0.00165
	(A * !B * !D_N * !Y)	0.00172	0.00173	0.00172
	(!A * !B * !D_N * !Y)	-0.00127	-0.00128	-0.00134
	(!A * !B * !D_N * !Y)	0.00290	0.00290	0.00283
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00303	-0.00307	-0.00311
	(B * D_N * !Y)	0.00282	0.00285	0.00281
	(B * !D_N * !Y)	-0.00359	-0.00361	-0.00358
	(B * !D_N * !Y)	0.00321	0.00325	0.00322
	(A * !B * D_N * !Y)	-0.00249	-0.00252	-0.00300
	(A * !B * D_N * !Y)	0.00322	0.00322	0.00288
	(A * !B * !D_N * !Y)	-0.00355	-0.00357	-0.00350
	(A * !B * !D_N * !Y)	0.00316	0.00319	0.00318
	(!A * !B * !D_N * !Y)	-0.00268	-0.00273	-0.00283
	(!A * !B * !D_N * !Y)	0.00552	0.00553	0.00538
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00536	-0.00543	-0.00552
	(B * D_N * !Y)	0.00621	0.00625	0.00615
	(B * !D_N * !Y)	-0.00725	-0.00730	-0.00723
	(B * !D_N * !Y)	0.00612	0.00619	0.00614
	(A * !B * D_N * !Y)	-0.00430	-0.00436	-0.00532
	(A * !B * D_N * !Y)	0.00698	0.00697	0.00627
	(A * !B * !D_N * !Y)	-0.00720	-0.00724	-0.00710
	(A * !B * !D_N * !Y)	0.00599	0.00604	0.00602
	(!A * !B * !D_N * !Y)	-0.00545	-0.00555	-0.00578
	(!A * !B * !D_N * !Y)	0.01072	0.01072	0.01048

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00578	0.01193	0.11259
	(C * !Y)	0.00178	0.00791	0.10858
	(B * !C * !Y)	0.00591	0.01206	0.11267
	(B * !C * !Y)	0.00183	0.00796	0.10859
	(A * !B * !C * !Y)	0.00621	0.01236	0.11286
	(A * !B * !C * !Y)	0.00207	0.00819	0.10873
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00691	0.01359	0.12929
	(C * !Y)	0.00232	0.00900	0.12470
	(B * !C * !Y)	0.00718	0.01386	0.12948
	(B * !C * !Y)	0.00245	0.00914	0.12478
	(A * !B * !C * !Y)	0.00790	0.01458	0.13009
	(A * !B * !C * !Y)	0.00302	0.00970	0.12526
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.01142	0.02085	0.19711
	(C * !Y)	0.00462	0.01404	0.19034
	(B * !C * !Y)	0.01199	0.02140	0.19749
	(B * !C * !Y)	0.00491	0.01432	0.19050
	(A * !B * !C * !Y)	0.01337	0.02278	0.19862
	(A * !B * !C * !Y)	0.00599	0.01538	0.19140

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00163	0.00863	0.11027
	(C * !Y)	0.00563	0.01265	0.11427
	(B * !C * !Y)	0.00164	0.00862	0.11026
	(B * !C * !Y)	0.00566	0.01268	0.11428
	(A * !B * !C * !Y)	0.00165	0.00862	0.11028
	(A * !B * !C * !Y)	0.00576	0.01276	0.11436
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00333	0.01093	0.12728
	(C * !Y)	0.00789	0.01550	0.13185
	(B * !C * !Y)	0.00333	0.01092	0.12728
	(B * !C * !Y)	0.00793	0.01554	0.13189
	(A * !B * !C * !Y)	0.00335	0.01094	0.12746
	(A * !B * !C * !Y)	0.00811	0.01572	0.13218
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00694	0.01857	0.19733
	(C * !Y)	0.01370	0.02533	0.20406
	(B * !C * !Y)	0.00693	0.01856	0.19733
	(B * !C * !Y)	0.01378	0.02541	0.20415
	(A * !B * !C * !Y)	0.00697	0.01860	0.19766
	(A * !B * !C * !Y)	0.01415	0.02576	0.20470

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00283	0.00300	0.00299	0.00302	0.34000
sky130_fd_sc_hs__nor4_2	0.00443	0.00504	0.00500	0.00469	0.60769
sky130_fd_sc_hs__nor4_4	0.00876	0.00913	0.00892	0.00906	1.06712

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	11.48770	49.40830
sky130_fd_sc_hs__nor4_2	0.00000	22.45870	98.53870
sky130_fd_sc_hs__nor4_4	0.00000	44.91630	196.81800

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)	0.16246	0.93786	8.20522
	B->Y (FR)	0.15248	0.95889	8.63644
	C->Y (FR)	0.12503	0.97518	9.12782
	D->Y (FR)	0.08045	0.96425	9.38507
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.13986	0.77076	7.78144
	B->Y (FR)	0.12510	0.78214	8.22286
	C->Y (FR)	0.09041	0.78880	8.74797
	D->Y (FR)	0.04398	0.76910	8.95855
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.15432	0.65405	7.44092
	B->Y (FR)	0.14071	0.67040	7.97155
	C->Y (FR)	0.10840	0.69318	8.65583
	D->Y (FR)	0.05265	0.67985	8.98207

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02493	0.29489	2.53352
	B->Y (RF)	0.02758	0.29743	2.58804
	C->Y (RF)	0.02741	0.28953	2.56817
	D->Y (RF)	0.02257	0.27706	2.51791
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.03652	0.39882	4.09375
	B->Y (RF)	0.04079	0.39962	4.17378
	C->Y (RF)	0.03775	0.38307	4.13229
	D->Y (RF)	0.02781	0.35566	3.98175
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.03704	0.33570	3.74977
	B->Y (RF)	0.03962	0.32740	3.74040
	C->Y (RF)	0.03881	0.31743	3.76741
	D->Y (RF)	0.02699	0.29458	3.71566

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00053	0.00122	0.04122
	A	0.01013	0.01083	0.05084
	B	0.00067	0.00159	0.03657
	B	0.00893	0.00985	0.04484
	C	0.00068	0.00202	0.03437
	C	0.00757	0.00893	0.04132
	D	0.00053	0.00302	0.04065
	D	0.00626	0.00873	0.04640
sky130_fd_sc_hs__nor4_2	A	0.00060	0.00134	0.05137
	A	0.01709	0.01790	0.06807
	B	0.00023	0.00138	0.04672
	B	0.01478	0.01592	0.06127
	C	0.00052	0.00245	0.04522
	C	0.01196	0.01387	0.05671
	D	0.00015	0.00405	0.05534
	D	0.00881	0.01276	0.06400
sky130_fd_sc_hs__nor4_4	A	0.00429	0.00595	0.10952
	A	0.03782	0.03949	0.14337
	B	0.00440	0.00701	0.09976
	B	0.03268	0.03524	0.12826
	C	0.00453	0.00851	0.09344
	C	0.02711	0.03110	0.11604
	D	0.00413	0.01221	0.11088
	D	0.02122	0.02932	0.12794

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01367	0.01520	0.05170
	A	0.00408	0.00560	0.04213
	B	0.01128	0.01297	0.04619
	B	0.00302	0.00468	0.03792
	C	0.00855	0.01051	0.04153
	C	0.00164	0.00358	0.03463
	D	0.00606	0.00819	0.03860
	D	0.00034	0.00244	0.03287
sky130_fd_sc_hs__nor4_2	A	0.02493	0.02677	0.07364
	A	0.00846	0.01025	0.05692
	B	0.02035	0.02233	0.06611
	B	0.00582	0.00781	0.05136
	C	0.01391	0.01660	0.05794
	C	0.00251	0.00512	0.04632
	D	0.00852	0.01193	0.05230
	D	-0.00013	0.00327	0.04353
sky130_fd_sc_hs__nor4_4	A	0.05000	0.05406	0.15093
	A	0.01642	0.02046	0.11716
	B	0.03898	0.04356	0.13341
	B	0.01072	0.01527	0.10493
	C	0.02809	0.03363	0.11588
	C	0.00554	0.01104	0.09294
	D	0.01682	0.02365	0.10204
	D	-0.00023	0.00649	0.08446

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00185	0.00181	0.00179
	(B * D * !Y)	-0.00216	-0.00224	-0.00224
	(B * C * !D * !Y)	0.00196	0.00184	0.00182
	(B * C * !D * !Y)	-0.00206	-0.00221	-0.00221
	(B * !C * !D * !Y)	0.00238	0.00205	0.00203
	(B * !C * !D * !Y)	-0.00170	-0.00204	-0.00200
	(!B * C * D * !Y)	0.00197	0.00184	0.00181
	(!B * C * D * !Y)	-0.00198	-0.00219	-0.00220
	(!B * C * !D * !Y)	0.00245	0.00208	0.00204
	(!B * C * !D * !Y)	-0.00161	-0.00202	-0.00199
	(!B * !C * D * !Y)	0.00256	0.00220	0.00220
	(!B * !C * D * !Y)	-0.00152	-0.00193	-0.00184
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00195	0.00184	0.00181
	(B * D * !Y)	-0.00418	-0.00438	-0.00437
	(B * C * !D * !Y)	0.00221	0.00191	0.00187
	(B * C * !D * !Y)	-0.00394	-0.00432	-0.00432
	(B * !C * !D * !Y)	0.00320	0.00240	0.00231
	(B * !C * !D * !Y)	-0.00310	-0.00393	-0.00389
	(!B * C * D * !Y)	0.00223	0.00190	0.00186
	(!B * C * D * !Y)	-0.00375	-0.00427	-0.00430
	(!B * C * !D * !Y)	0.00330	0.00243	0.00231
	(!B * C * !D * !Y)	-0.00292	-0.00390	-0.00388
	(!B * !C * D * !Y)	0.00354	0.00268	0.00264
	(!B * !C * D * !Y)	-0.00273	-0.00370	-0.00357

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00404	0.00382	0.00377
	(B * D * !Y)	-0.00860	-0.00899	-0.00897
	(B * C * !D * !Y)	0.00456	0.00395	0.00388
	(B * C * !D * !Y)	-0.00813	-0.00887	-0.00886
	(B * !C * !D * !Y)	0.00650	0.00494	0.00474
	(B * !C * !D * !Y)	-0.00649	-0.00810	-0.00803
	(!B * C * D * !Y)	0.00453	0.00395	0.00386
	(!B * C * D * !Y)	-0.00783	-0.00875	-0.00881
	(!B * C * !D * !Y)	0.00663	0.00502	0.00477
	(!B * C * !D * !Y)	-0.00622	-0.00800	-0.00796
	(!B * !C * D * !Y)	0.00704	0.00551	0.00542
	(!B * !C * D * !Y)	-0.00587	-0.00762	-0.00735

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00174	-0.00175	-0.00174
	(B * D * !Y)	0.00228	0.00231	0.00229
	(B * C * !D * !Y)	-0.00172	-0.00173	-0.00172
	(B * C * !D * !Y)	0.00231	0.00232	0.00231
	(B * !C * !D * !Y)	-0.00152	-0.00154	-0.00155
	(B * !C * !D * !Y)	0.00253	0.00255	0.00250
	(!B * C * D * !Y)	-0.00170	-0.00172	-0.00171
	(!B * C * D * !Y)	0.00226	0.00228	0.00227
	(!B * C * !D * !Y)	-0.00148	-0.00150	-0.00150
	(!B * C * !D * !Y)	0.00255	0.00257	0.00254
	(!B * !C * D * !Y)	-0.00133	-0.00134	-0.00136
	(!B * !C * D * !Y)	0.00271	0.00272	0.00269

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00171	-0.00172	-0.00172
	(B * D * !Y)	0.00444	0.00448	0.00447
	(B * C * !D * !Y)	-0.00169	-0.00169	-0.00168
	(B * C * !D * !Y)	0.00450	0.00453	0.00451
	(B * !C * !D * !Y)	-0.00130	-0.00132	-0.00134
	(B * !C * !D * !Y)	0.00494	0.00498	0.00490
	(!B * C * D * !Y)	-0.00165	-0.00166	-0.00165
	(!B * C * D * !Y)	0.00440	0.00442	0.00442
	(!B * C * !D * !Y)	-0.00119	-0.00120	-0.00121
	(!B * C * !D * !Y)	0.00498	0.00501	0.00497
	(!B * !C * D * !Y)	-0.00090	-0.00092	-0.00095
	(!B * !C * D * !Y)	0.00530	0.00535	0.00526
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00358	-0.00359	-0.00357
	(B * D * !Y)	0.00915	0.00920	0.00916
	(B * C * !D * !Y)	-0.00348	-0.00351	-0.00350
	(B * C * !D * !Y)	0.00920	0.00930	0.00925
	(B * !C * !D * !Y)	-0.00266	-0.00269	-0.00277
	(B * !C * !D * !Y)	0.01016	0.01020	0.01008
	(!B * C * D * !Y)	-0.00345	-0.00347	-0.00344
	(!B * C * D * !Y)	0.00903	0.00909	0.00906
	(!B * C * !D * !Y)	-0.00251	-0.00254	-0.00256
	(!B * C * !D * !Y)	0.01021	0.01028	0.01018
	(!B * !C * D * !Y)	-0.00195	-0.00197	-0.00205
	(!B * !C * D * !Y)	0.01081	0.01083	0.01074

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)**	0.00185	0.00186	0.00176
	(A * C * D * !Y)	-0.00150	-0.00152	-0.00153
	(A * C * !D * !Y)	0.00188	0.00191	0.00177
	(A * C * !D * !Y)	-0.00141	-0.00141	-0.00148
	(A * !C * D * !Y)	0.00201	0.00211	0.00193
	(A * !C * D * !Y)	-0.00135	-0.00126	-0.00135
	(A * !C * !D * !Y)	0.00196	0.00195	0.00189
	(A * !C * !D * !Y)	-0.00093	-0.00092	-0.00094
	(!A * C * D * !Y)	0.00206	0.00180	0.00176
	(!A * C * D * !Y)	-0.00194	-0.00221	-0.00222
	(!A * C * !D * !Y)	0.00248	0.00200	0.00198
	(!A * C * !D * !Y)	-0.00156	-0.00204	-0.00200
	(!A * !C * D * !Y)	0.00271	0.00214	0.00214
	(!A * !C * D * !Y)	-0.00135	-0.00194	-0.00184
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00259	0.00260	0.00237
	(A * C * D * !Y)	-0.00310	-0.00309	-0.00314
	(A * C * !D * !Y)	0.00270	0.00273	0.00240
	(A * C * !D * !Y)	-0.00287	-0.00284	-0.00300
	(A * !C * D * !Y)	0.00289	0.00309	0.00269
	(A * !C * D * !Y)	-0.00272	-0.00253	-0.00272
	(A * !C * !D * !Y)	0.00281	0.00282	0.00262
	(A * !C * !D * !Y)	-0.00183	-0.00184	-0.00190
	(!A * C * D * !Y)	0.00298	0.00234	0.00230
	(!A * C * D * !Y)	-0.00390	-0.00450	-0.00454
	(!A * C * !D * !Y)	0.00393	0.00278	0.00274
	(!A * C * !D * !Y)	-0.00304	-0.00414	-0.00410
	(!A * !C * D * !Y)	0.00433	0.00311	0.00307
	(!A * !C * D * !Y)	-0.00262	-0.00393	-0.00378

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00452	0.00454	0.00412
	(A * C * D * !Y)	-0.00602	-0.00609	-0.00616
	(A * C * !D * !Y)	0.00473	0.00476	0.00417
	(A * C * !D * !Y)	-0.00560	-0.00565	-0.00591
	(A * !C * D * !Y)	0.00507	0.00554	0.00479
	(A * !C * D * !Y)	-0.00552	-0.00507	-0.00540
	(A * !C * !D * !Y)	0.00485	0.00484	0.00461
	(A * !C * !D * !Y)	-0.00366	-0.00367	-0.00376
	(!A * C * D * !Y)	0.00524	0.00408	0.00401
	(!A * C * D * !Y)	-0.00789	-0.00900	-0.00906
	(!A * C * !D * !Y)	0.00702	0.00491	0.00492
	(!A * C * !D * !Y)	-0.00632	-0.00834	-0.00817
	(!A * !C * D * !Y)	0.00779	0.00554	0.00555
	(!A * !C * D * !Y)	-0.00562	-0.00794	-0.00757

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)	0.00155	0.00155	0.00153
	(A * C * !D * !Y)	-0.00167	-0.00168	-0.00167
	(A * C * !D * !Y)	0.00153	0.00154	0.00151
	(A * !C * D * !Y)	-0.00169	-0.00170	-0.00168
	(A * !C * D * !Y)	0.00147	0.00148	0.00146
	(A * !C * !D * !Y)	-0.00152	-0.00153	-0.00161
	(A * !C * !D * !Y)	0.00133	0.00133	0.00124
	(!A * C * D * !Y)	-0.00163	-0.00164	-0.00163
	(!A * C * D * !Y)	0.00232	0.00234	0.00233
	(!A * C * !D * !Y)	-0.00144	-0.00145	-0.00147
	(!A * C * !D * !Y)	0.00256	0.00256	0.00252
	(!A * !C * D * !Y)	-0.00127	-0.00129	-0.00131
	(!A * !C * D * !Y)	0.00272	0.00274	0.00269
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00220	-0.00221	-0.00219
	(A * C * D * !Y)	0.00317	0.00318	0.00314
	(A * C * !D * !Y)	-0.00218	-0.00220	-0.00217
	(A * C * !D * !Y)	0.00311	0.00314	0.00309
	(A * !C * D * !Y)	-0.00218	-0.00220	-0.00217
	(A * !C * D * !Y)	0.00296	0.00300	0.00297
	(A * !C * !D * !Y)	-0.00191	-0.00191	-0.00197
	(A * !C * !D * !Y)	0.00268	0.00266	0.00255
	(!A * C * D * !Y)	-0.00205	-0.00206	-0.00205
	(!A * C * D * !Y)	0.00477	0.00479	0.00477
	(!A * C * !D * !Y)	-0.00165	-0.00167	-0.00171
	(!A * C * !D * !Y)	0.00524	0.00526	0.00518
	(!A * !C * D * !Y)	-0.00133	-0.00136	-0.00141
	(!A * !C * D * !Y)	0.00556	0.00558	0.00548

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	-0.00373	-0.00376	-0.00373
	(A * C * D * !Y)	0.00622	0.00631	0.00621
	(A * C * !D * !Y)	-0.00371	-0.00373	-0.00368
	(A * C * !D * !Y)	0.00615	0.00619	0.00612
	(A * !C * D * !Y)	-0.00379	-0.00380	-0.00376
	(A * !C * D * !Y)	0.00591	0.00593	0.00589
	(A * !C * !D * !Y)	-0.00303	-0.00307	-0.00338
	(A * !C * !D * !Y)	0.00540	0.00539	0.00505
	(!A * C * D * !Y)	-0.00355	-0.00356	-0.00355
	(!A * C * D * !Y)	0.00950	0.00952	0.00951
	(!A * C * !D * !Y)	-0.00275	-0.00281	-0.00289
	(!A * C * !D * !Y)	0.01041	0.01046	0.01028
	(!A * !C * D * !Y)	-0.00207	-0.00213	-0.00224
	(!A * !C * D * !Y)	0.01107	0.01114	0.01094

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00201	0.00203	0.00191
	(B * D * !Y)	-0.00129	-0.00131	-0.00136
	(B * !D * !Y)	0.00181	0.00184	0.00177
	(B * !D * !Y)	-0.00097	-0.00099	-0.00100
	(A * !B * D * !Y)	0.00223	0.00211	0.00204
	(A * !B * D * !Y)	-0.00111	-0.00124	-0.00124
	(A * !B * !D * !Y)	0.00194	0.00198	0.00191
	(A * !B * !D * !Y)	-0.00080	-0.00082	-0.00082
	(!A * !B * D * !Y)	0.00257	0.00201	0.00217
	(!A * !B * D * !Y)	-0.00142	-0.00195	-0.00178

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00287	0.00284	0.00263
	(B * D * !Y)	-0.00259	-0.00262	-0.00272
	(B * !D * !Y)	0.00236	0.00239	0.00228
	(B * !D * !Y)	-0.00197	-0.00200	-0.00202
	(A * !B * D * !Y)	0.00323	0.00292	0.00284
	(A * !B * D * !Y)	-0.00225	-0.00251	-0.00251
	(A * !B * !D * !Y)	0.00265	0.00265	0.00256
	(A * !B * !D * !Y)	-0.00166	-0.00166	-0.00168
	(!A * !B * D * !Y)	0.00384	0.00275	0.00304
	(!A * !B * D * !Y)	-0.00295	-0.00400	-0.00364
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00488	0.00493	0.00444
	(B * D * !Y)	-0.00532	-0.00530	-0.00555
	(B * !D * !Y)	0.00406	0.00412	0.00387
	(B * !D * !Y)	-0.00400	-0.00408	-0.00414
	(A * !B * D * !Y)	0.00593	0.00521	0.00493
	(A * !B * D * !Y)	-0.00442	-0.00503	-0.00509
	(A * !B * !D * !Y)	0.00466	0.00468	0.00447
	(A * !B * !D * !Y)	-0.00328	-0.00331	-0.00340
	(!A * !B * D * !Y)	0.00742	0.00493	0.00540
	(!A * !B * D * !Y)	-0.00557	-0.00798	-0.00738

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	-0.00172	-0.00170
	(B * D * !Y)	0.00144	0.00145	0.00144
	(B * !D * !Y)	-0.00168	-0.00168	-0.00170
	(B * !D * !Y)	0.00111	0.00111	0.00109
	(A * !B * D * !Y)	-0.00171	-0.00172	-0.00169
	(A * !B * D * !Y)	0.00141	0.00142	0.00141
	(A * !B * !D * !Y)	-0.00145	-0.00147	-0.00169
	(A * !B * !D * !Y)	0.00128	0.00129	0.00111
	(!A * !B * D * !Y)	-0.00130	-0.00132	-0.00137
	(!A * !B * D * !Y)	0.00266	0.00266	0.00258
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00218	-0.00219	-0.00216
	(B * D * !Y)	0.00290	0.00292	0.00291
	(B * !D * !Y)	-0.00207	-0.00210	-0.00213
	(B * !D * !Y)	0.00222	0.00224	0.00220
	(A * !B * D * !Y)	-0.00216	-0.00217	-0.00212
	(A * !B * D * !Y)	0.00287	0.00290	0.00288
	(A * !B * !D * !Y)	-0.00156	-0.00160	-0.00211
	(A * !B * !D * !Y)	0.00265	0.00266	0.00228
	(!A * !B * D * !Y)	-0.00131	-0.00136	-0.00147
	(!A * !B * D * !Y)	0.00539	0.00541	0.00526
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00365	-0.00367	-0.00363
	(B * D * !Y)	0.00583	0.00589	0.00586
	(B * !D * !Y)	-0.00352	-0.00353	-0.00352
	(B * !D * !Y)	0.00454	0.00456	0.00452
	(A * !B * D * !Y)	-0.00361	-0.00363	-0.00352
	(A * !B * D * !Y)	0.00578	0.00584	0.00581
	(A * !B * !D * !Y)	-0.00262	-0.00268	-0.00349
	(A * !B * !D * !Y)	0.00525	0.00526	0.00464
	(!A * !B * D * !Y)	-0.00192	-0.00200	-0.00223
	(!A * !B * D * !Y)	0.01091	0.01094	0.01064

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00198	0.00202	0.00199
	(C * !Y)	-0.00094	-0.00096	-0.00094
	(B * !C * !Y)	0.00199	0.00202	0.00199
	(B * !C * !Y)	-0.00093	-0.00095	-0.00093
	(A * !B * !C * !Y)	0.00199	0.00201	0.00201
	(A * !B * !C * !Y)	-0.00085	-0.00086	-0.00084
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00240	0.00242	0.00241
	(C * !Y)	-0.00186	-0.00188	-0.00187
	(B * !C * !Y)	0.00241	0.00243	0.00242
	(B * !C * !Y)	-0.00182	-0.00184	-0.00183
	(A * !B * !C * !Y)	0.00244	0.00247	0.00246
	(A * !B * !C * !Y)	-0.00168	-0.00170	-0.00165
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00455	0.00462	0.00456
	(C * !Y)	-0.00373	-0.00378	-0.00372
	(B * !C * !Y)	0.00452	0.00462	0.00455
	(B * !C * !Y)	-0.00366	-0.00373	-0.00367
	(A * !B * !C * !Y)	0.00457	0.00462	0.00464
	(A * !B * !C * !Y)	-0.00337	-0.00339	-0.00331

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00185	-0.00186	-0.00194
	(C * !Y)	0.00107	0.00107	0.00100
	(B * !C * !Y)	-0.00172	-0.00175	-0.00192
	(B * !C * !Y)	0.00112	0.00113	0.00100
	(A * !B * !C * !Y)	-0.00142	-0.00145	-0.00176
	(A * !B * !C * !Y)	0.00137	0.00138	0.00116
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00218	-0.00219	-0.00235
	(C * !Y)	0.00207	0.00207	0.00195
	(B * !C * !Y)	-0.00187	-0.00189	-0.00228
	(B * !C * !Y)	0.00223	0.00224	0.00197
	(A * !B * !C * !Y)	-0.00122	-0.00124	-0.00196
	(A * !B * !C * !Y)	0.00277	0.00277	0.00230
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00401	-0.00407	-0.00442
	(C * !Y)	0.00416	0.00420	0.00391
	(B * !C * !Y)	-0.00348	-0.00354	-0.00429
	(B * !C * !Y)	0.00447	0.00449	0.00396
	(A * !B * !C * !Y)	-0.00211	-0.00219	-0.00362
	(A * !B * !C * !Y)	0.00556	0.00558	0.00462

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00288	0.00298	0.00289	0.00307	0.00299	0.65748
sky130_fd_sc_hs__o2111ai_2	0.00559	0.00560	0.00579	0.00566	0.00562	1.16212
sky130_fd_sc_hs__o2111ai_4	0.01114	0.01120	0.00836	0.00844	0.00834	1.91211

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	17.45510	197.84400
sky130_fd_sc_hs__o2111ai_2	0.00000	34.72760	395.52500
sky130_fd_sc_hs__o2111ai_4	0.00000	41.56320	494.61900

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)	0.11037	0.80190	8.74599
	A2->Y (FR)	0.09873	0.83288	9.32973
	B1->Y (FR)	0.04528	0.56448	6.57597
	C1->Y (FR)	0.04033	0.55788	6.57088
	D1->Y (FR)	0.03381	0.55024	6.54771
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.11297	0.69280	8.54387
	A2->Y (FR)	0.09565	0.72250	9.16690
	B1->Y (FR)	0.04189	0.47944	6.22840
	C1->Y (FR)	0.03653	0.46891	6.19768
	D1->Y (FR)	0.02823	0.45621	6.16137
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.12101	0.60401	8.14926
	A2->Y (FR)	0.10053	0.64036	8.85143
	B1->Y (FR)	0.07477	0.62151	8.79191
	C1->Y (FR)	0.05741	0.57859	8.36685
	D1->Y (FR)	0.04295	0.58510	8.71963

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.09094	0.59623	6.27689
	A2->Y (RF)	0.07419	0.56681	6.10857
	B1->Y (RF)	0.08497	0.63415	6.93504
	C1->Y (RF)	0.07692	0.66736	7.49662
	D1->Y (RF)	0.06507	0.68834	7.91875
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.09954	0.52252	6.33097
	A2->Y (RF)	0.07644	0.48968	6.17262
	B1->Y (RF)	0.09249	0.55742	6.97938
	C1->Y (RF)	0.08258	0.60976	7.80730
	D1->Y (RF)	0.06377	0.62597	8.21714
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.09392	0.40560	5.49890
	A2->Y (RF)	0.07585	0.39189	5.64828
	B1->Y (RF)	0.06407	0.42610	6.34721
	C1->Y (RF)	0.05419	0.47219	7.13803
	D1->Y (RF)	0.03526	0.49224	7.64475

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00283	0.00398	0.02969
	A1	0.01319	0.01430	0.03988
	A2	0.00288	0.00473	0.03400
	A2	0.01185	0.01371	0.04274
	B1	0.00150	0.00407	0.04174
	B1	0.00898	0.01153	0.04908
	C1	0.00074	0.00331	0.03971
	C1	0.00719	0.00978	0.04603
	D1	0.00014	0.00283	0.03814
	D1	0.00542	0.00813	0.04325
sky130_fd_sc_hs__o2111ai_2	A1	0.00477	0.00696	0.05513
	A1	0.02562	0.02778	0.07526
	A2	0.00484	0.00845	0.06282
	A2	0.02274	0.02634	0.08019
	B1	0.00217	0.00766	0.07937
	B1	0.01739	0.02288	0.09518
	C1	0.00086	0.00629	0.07442
	C1	0.01358	0.01908	0.08795
	D1	-0.00152	0.00433	0.07043
	D1	0.00875	0.01466	0.08154

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00842	0.01318	0.11221
	A1	0.04936	0.05415	0.15250
	A2	0.00828	0.01599	0.12021
	A2	0.04382	0.05152	0.15515
	B1	0.00377	0.01096	0.09483
	B1	0.02925	0.03647	0.12013
	C1	0.00123	0.00866	0.09191
	C1	0.02206	0.02945	0.11211
	D1	-0.00270	0.00515	0.08466
	D1	0.01308	0.02084	0.10021

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01690	0.01761	0.03999
	A1	0.00646	0.00714	0.02935
	A2	0.01474	0.01551	0.03613
	A2	0.00567	0.00643	0.02708
	B1	0.01195	0.01309	0.03745
	B1	0.00441	0.00554	0.02993
	C1	0.01097	0.01214	0.03408
	C1	0.00449	0.00563	0.02742
	D1	0.00983	0.01131	0.03388
	D1	0.00453	0.00599	0.02849

sky130_fd_sc_hs__o2111ai_2	**A1**	0.03510	0.03641	0.07920
	A1	0.01411	0.01536	0.05818
	A2	0.02951	0.03119	0.07128
	A2	0.01142	0.01304	0.05280
	B1	0.02403	0.02653	0.07584
	B1	0.00865	0.01116	0.06048
	C1	0.02173	0.02411	0.06554
	C1	0.00895	0.01131	0.05239
	D1	0.01929	0.02255	0.06468
	D1	0.00901	0.01226	0.05430
sky130_fd_sc_hs__o2111ai_4	**A1**	0.06057	0.06380	0.15574
	A1	0.01932	0.02237	0.11350
	A2	0.04981	0.05403	0.13680
	A2	0.01389	0.01788	0.10062
	B1	0.05313	0.05572	0.10647
	B1	0.01191	0.01508	0.07054
	C1	0.04862	0.05175	0.09756
	C1	0.01219	0.01541	0.06414
	D1	0.04374	0.04768	0.09288
	D1	0.01237	0.01658	0.06508

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)**	0.00371	0.00334	0.00350
	(A2 * B1 * C1 * D1 * !Y)	-0.00037	-0.00075	-0.00055
	(A2 * B1 * C1 * !D1 * Y)	0.00178	0.00179	0.00178
	(A2 * B1 * C1 * !D1 * Y)	-0.00226	-0.00227	-0.00226
	(A2 * B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(A2 * B1 * !C1 * Y)	-0.00227	-0.00227	-0.00226
	(A2 * !B1 * Y)	0.00178	0.00179	0.00178
	(A2 * !B1 * Y)	-0.00227	-0.00227	-0.00226
	(!A2 * B1 * C1 * !D1 * Y)	0.00166	0.00167	0.00166
	(!A2 * B1 * C1 * !D1 * Y)	-0.00226	-0.00227	-0.00226
	(!A2 * B1 * !C1 * D1 * Y)	0.00168	0.00170	0.00168
	(!A2 * B1 * !C1 * D1 * Y)	-0.00226	-0.00227	-0.00226
	(!A2 * B1 * !C1 * !D1 * Y)	0.00167	0.00167	0.00167
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00227	-0.00227	-0.00227
	(!A2 * !B1 * C1 * D1 * Y)	0.00171	0.00173	0.00172
	(!A2 * !B1 * C1 * D1 * Y)	-0.00226	-0.00228	-0.00227
	(!A2 * !B1 * !D1 * Y)	0.00169	0.00170	0.00170
	(!A2 * !B1 * !D1 * Y)	-0.00227	-0.00227	-0.00227
	(!A2 * !B1 * !C1 * D1 * Y)	0.00169	0.00170	0.00170
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00227	-0.00227	-0.00227

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00760	0.00670	0.00688
	(A2 * B1 * C1 * D1 * !Y)	-0.00047	-0.00144	-0.00114
	(A2 * B1 * C1 * !D1 * Y)	0.00345	0.00348	0.00344
	(A2 * B1 * C1 * !D1 * Y)	-0.00457	-0.00459	-0.00456
	(A2 * B1 * !C1 * Y)	0.00345	0.00348	0.00344
	(A2 * B1 * !C1 * Y)	-0.00458	-0.00459	-0.00456
	(A2 * !B1 * Y)	0.00345	0.00348	0.00344
	(A2 * !B1 * Y)	-0.00457	-0.00459	-0.00456
	(!A2 * B1 * C1 * !D1 * Y)	0.00322	0.00326	0.00323
	(!A2 * B1 * C1 * !D1 * Y)	-0.00456	-0.00459	-0.00456
	(!A2 * B1 * !C1 * D1 * Y)	0.00324	0.00327	0.00326
	(!A2 * B1 * !C1 * D1 * Y)	-0.00457	-0.00459	-0.00458
	(!A2 * B1 * !C1 * !D1 * Y)	0.00322	0.00324	0.00322
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00459	-0.00460	-0.00459
	(!A2 * !B1 * C1 * D1 * Y)	0.00331	0.00333	0.00332
	(!A2 * !B1 * C1 * D1 * Y)	-0.00457	-0.00459	-0.00458
	(!A2 * !B1 * !D1 * Y)	0.00326	0.00329	0.00328
	(!A2 * !B1 * !D1 * Y)	-0.00458	-0.00460	-0.00459
	(!A2 * !B1 * !C1 * D1 * Y)	0.00326	0.00329	0.00328
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00458	-0.00460	-0.00459

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.01282	0.01091	0.01127
	(A2 * B1 * C1 * D1 * !Y)	-0.00314	-0.00518	-0.00461
	(A2 * B1 * C1 * !D1 * Y)	0.00673	0.00681	0.00675
	(A2 * B1 * C1 * !D1 * Y)	-0.00909	-0.00915	-0.00909
	(A2 * B1 * !C1 * Y)	0.00673	0.00681	0.00674
	(A2 * B1 * !C1 * Y)	-0.00909	-0.00916	-0.00910
	(A2 * !B1 * Y)	0.00675	0.00682	0.00675
	(A2 * !B1 * Y)	-0.00912	-0.00915	-0.00909
	(!A2 * B1 * C1 * !D1 * Y)	0.00630	0.00637	0.00633
	(!A2 * B1 * C1 * !D1 * Y)	-0.00910	-0.00915	-0.00910
	(!A2 * B1 * !C1 * D1 * Y)	0.00637	0.00643	0.00638
	(!A2 * B1 * !C1 * D1 * Y)	-0.00912	-0.00917	-0.00913
	(!A2 * B1 * !C1 * !D1 * Y)	0.00631	0.00637	0.00632
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00915	-0.00919	-0.00915
	(!A2 * !B1 * C1 * D1 * Y)	0.00653	0.00655	0.00652
	(!A2 * !B1 * C1 * D1 * Y)	-0.00917	-0.00916	-0.00913
	(!A2 * !B1 * !D1 * Y)	0.00643	0.00648	0.00644
	(!A2 * !B1 * !D1 * Y)	-0.00914	-0.00918	-0.00915
	(!A2 * !B1 * !C1 * D1 * Y)	0.00643	0.00649	0.00645
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00914	-0.00918	-0.00915

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)**	-0.00005	-0.00007	-0.00013
	(A2 * B1 * C1 * D1 * !Y)	0.00401	0.00401	0.00394
	(A2 * B1 * C1 * !D1 * Y)	-0.00174	-0.00176	-0.00175
	(A2 * B1 * C1 * !D1 * Y)	0.00229	0.00231	0.00229
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00176	-0.00175
	(A2 * B1 * !C1 * Y)	0.00229	0.00231	0.00229
	(A2 * !B1 * Y)	-0.00174	-0.00176	-0.00175
	(A2 * !B1 * Y)	0.00229	0.00231	0.00229
	(!A2 * B1 * C1 * !D1 * Y)	-0.00147	-0.00165	-0.00166
	(!A2 * B1 * C1 * !D1 * Y)	0.00236	0.00234	0.00230
	(!A2 * B1 * !C1 * D1 * Y)	-0.00151	-0.00167	-0.00168
	(!A2 * B1 * !C1 * D1 * Y)	0.00233	0.00233	0.00230
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00156	-0.00167	-0.00167
	(!A2 * B1 * !C1 * !D1 * Y)	0.00228	0.00231	0.00229
	(!A2 * !B1 * C1 * D1 * Y)	-0.00159	-0.00168	-0.00170
	(!A2 * !B1 * C1 * D1 * Y)	0.00233	0.00230	0.00230
	(!A2 * !B1 * !D1 * Y)	-0.00164	-0.00170	-0.00170
	(!A2 * !B1 * !D1 * Y)	0.00229	0.00229	0.00229
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00165	-0.00170	-0.00170
	(!A2 * !B1 * !C1 * D1 * Y)	0.00229	0.00229	0.00229

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00003	-0.00001	-0.00012
	(A2 * B1 * C1 * D1 * !Y)	0.00807	0.00809	0.00795
	(A2 * B1 * C1 * !D1 * Y)	-0.00337	-0.00340	-0.00338
	(A2 * B1 * C1 * !D1 * Y)	0.00459	0.00466	0.00462
	(A2 * B1 * !C1 * Y)	-0.00337	-0.00341	-0.00339
	(A2 * B1 * !C1 * Y)	0.00459	0.00466	0.00461
	(A2 * !B1 * Y)	-0.00337	-0.00341	-0.00339
	(A2 * !B1 * Y)	0.00459	0.00466	0.00462
	(!A2 * B1 * C1 * !D1 * Y)	-0.00284	-0.00319	-0.00323
	(!A2 * B1 * C1 * !D1 * Y)	0.00478	0.00468	0.00464
	(!A2 * B1 * !C1 * D1 * Y)	-0.00294	-0.00324	-0.00326
	(!A2 * B1 * !C1 * D1 * Y)	0.00471	0.00467	0.00464
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00301	-0.00324	-0.00322
	(!A2 * B1 * !C1 * !D1 * Y)	0.00462	0.00464	0.00462
	(!A2 * !B1 * C1 * D1 * Y)	-0.00307	-0.00329	-0.00329
	(!A2 * !B1 * C1 * D1 * Y)	0.00469	0.00467	0.00464
	(!A2 * !B1 * !D1 * Y)	-0.00317	-0.00329	-0.00328
	(!A2 * !B1 * !D1 * Y)	0.00463	0.00464	0.00462
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00318	-0.00329	-0.00328
	(!A2 * !B1 * !C1 * D1 * Y)	0.00463	0.00464	0.00462

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00262	-0.00270	-0.00289
	(A2 * B1 * C1 * D1 * !Y)	0.01332	0.01336	0.01306
	(A2 * B1 * C1 * !D1 * Y)	-0.00663	-0.00666	-0.00663
	(A2 * B1 * C1 * !D1 * Y)	0.00920	0.00927	0.00921
	(A2 * B1 * !C1 * Y)	-0.00663	-0.00666	-0.00663
	(A2 * B1 * !C1 * Y)	0.00919	0.00926	0.00920
	(A2 * !B1 * Y)	-0.00661	-0.00666	-0.00663
	(A2 * !B1 * Y)	0.00917	0.00926	0.00921
	(!A2 * B1 * C1 * !D1 * Y)	-0.00551	-0.00623	-0.00633
	(!A2 * B1 * C1 * !D1 * Y)	0.00956	0.00941	0.00925
	(!A2 * B1 * !C1 * D1 * Y)	-0.00571	-0.00627	-0.00638
	(!A2 * B1 * !C1 * D1 * Y)	0.00940	0.00922	0.00925
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00587	-0.00632	-0.00632
	(!A2 * B1 * !C1 * !D1 * Y)	0.00923	0.00919	0.00920
	(!A2 * !B1 * C1 * D1 * Y)	-0.00598	-0.00641	-0.00644
	(!A2 * !B1 * C1 * D1 * Y)	0.00936	0.00929	0.00925
	(!A2 * !B1 * !D1 * Y)	-0.00620	-0.00647	-0.00644
	(!A2 * !B1 * !D1 * Y)	0.00923	0.00924	0.00920
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00622	-0.00647	-0.00645
	(!A2 * !B1 * !C1 * D1 * Y)	0.00923	0.00924	0.00921

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)**	0.00321	0.00325	0.00323
	(A1 * B1 * C1 * D1 * !Y)	0.00039	0.00037	0.00041
	(A1 * B1 * C1 * !D1 * Y)	0.00174	0.00176	0.00174
	(A1 * B1 * C1 * !D1 * Y)	-0.00223	-0.00225	-0.00223
	(A1 * B1 * !C1 * D1 * Y)	0.00174	0.00176	0.00174
	(A1 * B1 * !C1 * D1 * Y)	-0.00224	-0.00225	-0.00223
	(A1 * B1 * !C1 * !D1 * Y)	0.00172	0.00175	0.00173
	(A1 * B1 * !C1 * !D1 * Y)	-0.00224	-0.00226	-0.00224
	(A1 * !B1 * C1 * D1 * Y)	0.00173	0.00176	0.00174
	(A1 * !B1 * C1 * D1 * Y)	-0.00223	-0.00225	-0.00223
	(A1 * !B1 * !D1 * Y)	0.00173	0.00175	0.00173
	(A1 * !B1 * !D1 * Y)	-0.00224	-0.00226	-0.00224
	(A1 * !B1 * !C1 * D1 * Y)	0.00173	0.00175	0.00173
	(A1 * !B1 * !C1 * D1 * Y)	-0.00224	-0.00226	-0.00224
	(!A1 * B1 * C1 * !D1 * Y)	0.00161	0.00163	0.00162
	(!A1 * B1 * C1 * !D1 * Y)	-0.00223	-0.00224	-0.00223
	(!A1 * B1 * !C1 * D1 * Y)	0.00164	0.00165	0.00164
	(!A1 * B1 * !C1 * D1 * Y)	-0.00223	-0.00225	-0.00224
	(!A1 * B1 * !C1 * !D1 * Y)	0.00162	0.00163	0.00162
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00224	-0.00225	-0.00225
	(!A1 * !B1 * C1 * D1 * Y)	0.00169	0.00169	0.00168
	(!A1 * !B1 * C1 * D1 * Y)	-0.00225	-0.00225	-0.00224
	(!A1 * !B1 * !D1 * Y)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !D1 * Y)	-0.00224	-0.00224	-0.00225
	(!A1 * !B1 * !C1 * D1 * Y)	0.00165	0.00168	0.00166
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00224	-0.00226	-0.00225

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00635	0.00634	0.00638
	(A1 * B1 * C1 * D1 * !Y)	0.00076	0.00077	0.00080
	(A1 * B1 * C1 * !D1 * Y)	0.00339	0.00338	0.00337
	(A1 * B1 * C1 * !D1 * Y)	-0.00453	-0.00452	-0.00450
	(A1 * B1 * !C1 * D1 * Y)	0.00339	0.00338	0.00337
	(A1 * B1 * !C1 * D1 * Y)	-0.00453	-0.00452	-0.00451
	(A1 * B1 * !C1 * !D1 * Y)	0.00337	0.00340	0.00335
	(A1 * B1 * !C1 * !D1 * Y)	-0.00453	-0.00456	-0.00452
	(A1 * !B1 * C1 * D1 * Y)	0.00339	0.00338	0.00337
	(A1 * !B1 * C1 * D1 * Y)	-0.00453	-0.00452	-0.00450
	(A1 * !B1 * !D1 * Y)	0.00337	0.00340	0.00335
	(A1 * !B1 * !D1 * Y)	-0.00453	-0.00456	-0.00452
	(A1 * !B1 * !C1 * D1 * Y)	0.00333	0.00340	0.00335
	(A1 * !B1 * !C1 * D1 * Y)	-0.00451	-0.00456	-0.00452
	(!A1 * B1 * C1 * !D1 * Y)	0.00315	0.00320	0.00318
	(!A1 * B1 * C1 * !D1 * Y)	-0.00450	-0.00454	-0.00451
	(!A1 * B1 * !C1 * D1 * Y)	0.00318	0.00319	0.00320
	(!A1 * B1 * !C1 * D1 * Y)	-0.00451	-0.00452	-0.00452
	(!A1 * B1 * !C1 * !D1 * Y)	0.00315	0.00319	0.00317
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00453	-0.00455	-0.00454
	(!A1 * !B1 * C1 * D1 * Y)	0.00325	0.00327	0.00325
	(!A1 * !B1 * C1 * D1 * Y)	-0.00454	-0.00455	-0.00453
	(!A1 * !B1 * !D1 * Y)	0.00319	0.00321	0.00321
	(!A1 * !B1 * !D1 * Y)	-0.00452	-0.00453	-0.00454
	(!A1 * !B1 * !C1 * D1 * Y)	0.00319	0.00321	0.00321
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00452	-0.00453	-0.00454

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.01041	0.01036	0.01043
	(A1 * B1 * C1 * D1 * !Y)	-0.00109	-0.00104	-0.00098
	(A1 * B1 * C1 * !D1 * Y)	0.00691	0.00689	0.00686
	(A1 * B1 * C1 * !D1 * Y)	-0.00916	-0.00913	-0.00909
	(A1 * B1 * !C1 * D1 * Y)	0.00691	0.00687	0.00685
	(A1 * B1 * !C1 * D1 * Y)	-0.00916	-0.00912	-0.00910
	(A1 * B1 * !C1 * !D1 * Y)	0.00687	0.00680	0.00681
	(A1 * B1 * !C1 * !D1 * Y)	-0.00913	-0.00913	-0.00913
	(A1 * !B1 * C1 * D1 * Y)	0.00691	0.00688	0.00686
	(A1 * !B1 * C1 * D1 * Y)	-0.00915	-0.00912	-0.00910
	(A1 * !B1 * !D1 * Y)	0.00687	0.00681	0.00682
	(A1 * !B1 * !D1 * Y)	-0.00912	-0.00914	-0.00913
	(A1 * !B1 * !C1 * D1 * Y)	0.00687	0.00680	0.00682
	(A1 * !B1 * !C1 * D1 * Y)	-0.00913	-0.00912	-0.00913
	(!A1 * B1 * C1 * !D1 * Y)	0.00636	0.00640	0.00638
	(!A1 * B1 * C1 * !D1 * Y)	-0.00910	-0.00913	-0.00909
	(!A1 * B1 * !C1 * D1 * Y)	0.00643	0.00652	0.00645
	(!A1 * B1 * !C1 * D1 * Y)	-0.00911	-0.00918	-0.00912
	(!A1 * B1 * !C1 * !D1 * Y)	0.00638	0.00646	0.00639
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00914	-0.00921	-0.00915
	(!A1 * !B1 * C1 * D1 * Y)	0.00662	0.00663	0.00660
	(!A1 * !B1 * C1 * D1 * Y)	-0.00916	-0.00916	-0.00913
	(!A1 * !B1 * !D1 * Y)	0.00648	0.00654	0.00653
	(!A1 * !B1 * !D1 * Y)	-0.00911	-0.00916	-0.00915
	(!A1 * !B1 * !C1 * D1 * Y)	0.00648	0.00653	0.00653
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00911	-0.00916	-0.00915

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)**	-0.00025	-0.00027	-0.00040
	(A1 * B1 * C1 * D1 * !Y)	0.00258	0.00258	0.00245
	(A1 * B1 * C1 * !D1 * Y)	-0.00170	-0.00172	-0.00170
	(A1 * B1 * C1 * !D1 * Y)	0.00226	0.00228	0.00227
	(A1 * B1 * !C1 * D1 * Y)	-0.00170	-0.00172	-0.00171
	(A1 * B1 * !C1 * D1 * Y)	0.00226	0.00228	0.00226
	(A1 * B1 * !C1 * !D1 * Y)	-0.00171	-0.00172	-0.00172
	(A1 * B1 * !C1 * !D1 * Y)	0.00225	0.00227	0.00226
	(A1 * !B1 * C1 * D1 * Y)	-0.00170	-0.00172	-0.00171
	(A1 * !B1 * C1 * D1 * Y)	0.00226	0.00228	0.00226
	(A1 * !B1 * !D1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * !D1 * Y)	0.00225	0.00226	0.00226
	(A1 * !B1 * !C1 * D1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * !C1 * D1 * Y)	0.00225	0.00226	0.00226
	(!A1 * B1 * C1 * !D1 * Y)	-0.00142	-0.00161	-0.00162
	(!A1 * B1 * C1 * !D1 * Y)	0.00234	0.00231	0.00227
	(!A1 * B1 * !C1 * D1 * Y)	-0.00147	-0.00163	-0.00164
	(!A1 * B1 * !C1 * D1 * Y)	0.00230	0.00230	0.00227
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00151	-0.00163	-0.00162
	(!A1 * B1 * !C1 * !D1 * Y)	0.00225	0.00228	0.00226
	(!A1 * !B1 * C1 * D1 * Y)	-0.00155	-0.00164	-0.00166
	(!A1 * !B1 * C1 * D1 * Y)	0.00230	0.00227	0.00227
	(!A1 * !B1 * !D1 * Y)	-0.00160	-0.00165	-0.00166
	(!A1 * !B1 * !D1 * Y)	0.00226	0.00226	0.00226
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00161	-0.00165	-0.00166
	(!A1 * !B1 * !C1 * D1 * Y)	0.00226	0.00226	0.00226

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00034	-0.00036	-0.00070
	(A1 * B1 * C1 * D1 * !Y)	0.00524	0.00523	0.00495
	(A1 * B1 * C1 * !D1 * Y)	-0.00331	-0.00332	-0.00331
	(A1 * B1 * C1 * !D1 * Y)	0.00454	0.00457	0.00456
	(A1 * B1 * !C1 * D1 * Y)	-0.00331	-0.00332	-0.00331
	(A1 * B1 * !C1 * D1 * Y)	0.00454	0.00457	0.00456
	(A1 * B1 * !C1 * !D1 * Y)	-0.00333	-0.00334	-0.00333
	(A1 * B1 * !C1 * !D1 * Y)	0.00453	0.00456	0.00454
	(A1 * !B1 * C1 * D1 * Y)	-0.00331	-0.00332	-0.00331
	(A1 * !B1 * C1 * D1 * Y)	0.00455	0.00457	0.00456
	(A1 * !B1 * !D1 * Y)	-0.00333	-0.00334	-0.00333
	(A1 * !B1 * !D1 * Y)	0.00453	0.00456	0.00454
	(A1 * !B1 * !C1 * D1 * Y)	-0.00332	-0.00334	-0.00333
	(A1 * !B1 * !C1 * D1 * Y)	0.00452	0.00456	0.00454
	(!A1 * B1 * C1 * !D1 * Y)	-0.00276	-0.00311	-0.00318
	(!A1 * B1 * C1 * !D1 * Y)	0.00471	0.00460	0.00458
	(!A1 * B1 * !C1 * D1 * Y)	-0.00286	-0.00316	-0.00319
	(!A1 * B1 * !C1 * D1 * Y)	0.00463	0.00460	0.00458
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00293	-0.00318	-0.00317
	(!A1 * B1 * !C1 * !D1 * Y)	0.00455	0.00457	0.00456
	(!A1 * !B1 * C1 * D1 * Y)	-0.00300	-0.00321	-0.00322
	(!A1 * !B1 * C1 * D1 * Y)	0.00463	0.00460	0.00458
	(!A1 * !B1 * !D1 * Y)	-0.00310	-0.00321	-0.00321
	(!A1 * !B1 * !D1 * Y)	0.00457	0.00458	0.00456
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00311	-0.00321	-0.00321
	(!A1 * !B1 * !C1 * D1 * Y)	0.00457	0.00458	0.00456

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00351	-0.00357	-0.00422
	(A1 * B1 * C1 * D1 * !Y)	0.00796	0.00795	0.00733
	(A1 * B1 * C1 * !D1 * Y)	-0.00672	-0.00677	-0.00673
	(A1 * B1 * C1 * !D1 * Y)	0.00917	0.00925	0.00919
	(A1 * B1 * !C1 * D1 * Y)	-0.00672	-0.00677	-0.00674
	(A1 * B1 * !C1 * D1 * Y)	0.00916	0.00925	0.00919
	(A1 * B1 * !C1 * !D1 * Y)	-0.00676	-0.00680	-0.00677
	(A1 * B1 * !C1 * !D1 * Y)	0.00913	0.00922	0.00916
	(A1 * !B1 * C1 * D1 * Y)	-0.00671	-0.00677	-0.00674
	(A1 * !B1 * C1 * D1 * Y)	0.00915	0.00925	0.00919
	(A1 * !B1 * !D1 * Y)	-0.00675	-0.00681	-0.00677
	(A1 * !B1 * !D1 * Y)	0.00912	0.00924	0.00916
	(A1 * !B1 * !C1 * D1 * Y)	-0.00675	-0.00680	-0.00677
	(A1 * !B1 * !C1 * D1 * Y)	0.00913	0.00924	0.00916
	(!A1 * B1 * C1 * !D1 * Y)	-0.00563	-0.00634	-0.00638
	(!A1 * B1 * C1 * !D1 * Y)	0.00951	0.00940	0.00924
	(!A1 * B1 * !C1 * D1 * Y)	-0.00580	-0.00642	-0.00645
	(!A1 * B1 * !C1 * D1 * Y)	0.00936	0.00936	0.00924
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00596	-0.00645	-0.00639
	(!A1 * B1 * !C1 * !D1 * Y)	0.00918	0.00930	0.00920
	(!A1 * !B1 * C1 * D1 * Y)	-0.00608	-0.00653	-0.00653
	(!A1 * !B1 * C1 * D1 * Y)	0.00936	0.00929	0.00925
	(!A1 * !B1 * !D1 * Y)	-0.00630	-0.00654	-0.00653
	(!A1 * !B1 * !D1 * Y)	0.00922	0.00923	0.00920
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00632	-0.00653	-0.00653
	(!A1 * !B1 * !C1 * D1 * Y)	0.00921	0.00924	0.00920

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)**	0.00160	0.00160	0.00160
	(A2 * C1 * !D1 * Y)	-0.00225	-0.00226	-0.00225
	(A2 * !C1 * D1 * Y)	0.00164	0.00166	0.00164
	(A2 * !C1 * D1 * Y)	-0.00226	-0.00227	-0.00226
	(A2 * !C1 * !D1 * Y)	0.00161	0.00163	0.00162
	(A2 * !C1 * !D1 * Y)	-0.00227	-0.00228	-0.00227
	(A1 * !A2 * C1 * !D1 * Y)	0.00160	0.00161	0.00160
	(A1 * !A2 * C1 * !D1 * Y)	-0.00225	-0.00226	-0.00225
	(A1 * !A2 * !C1 * D1 * Y)	0.00164	0.00166	0.00164
	(A1 * !A2 * !C1 * D1 * Y)	-0.00225	-0.00227	-0.00226
	(A1 * !A2 * !C1 * !D1 * Y)	0.00161	0.00163	0.00162
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00226	-0.00228	-0.00227
	(!A1 * !A2 * C1 * D1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A2 * C1 * D1 * Y)	-0.00222	-0.00223	-0.00221
	(!A1 * !A2 * C1 * !D1 * Y)	0.00091	0.00092	0.00091
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00226	-0.00228	-0.00227
	(!A1 * !A2 * !C1 * D1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00227	-0.00227	-0.00227
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00226	-0.00228	-0.00227

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00338	0.00339	0.00338
	(A2 * C1 * !D1 * Y)	-0.00467	-0.00468	-0.00466
	(A2 * !C1 * D1 * Y)	0.00342	0.00346	0.00345
	(A2 * !C1 * D1 * Y)	-0.00465	-0.00468	-0.00466
	(A2 * !C1 * !D1 * Y)	0.00340	0.00342	0.00340
	(A2 * !C1 * !D1 * Y)	-0.00469	-0.00470	-0.00469
	(A1 * !A2 * C1 * !D1 * Y)	0.00337	0.00339	0.00338
	(A1 * !A2 * C1 * !D1 * Y)	-0.00467	-0.00468	-0.00466
	(A1 * !A2 * !C1 * D1 * Y)	0.00344	0.00347	0.00345
	(A1 * !A2 * !C1 * D1 * Y)	-0.00467	-0.00469	-0.00466
	(A1 * !A2 * !C1 * !D1 * Y)	0.00339	0.00342	0.00340
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00468	-0.00471	-0.00469
	(!A1 * !A2 * C1 * D1 * Y)	0.00156	0.00157	0.00158
	(!A1 * !A2 * C1 * D1 * Y)	-0.00457	-0.00460	-0.00454
	(!A1 * !A2 * C1 * !D1 * Y)	0.00195	0.00196	0.00194
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00469	-0.00471	-0.00469
	(!A1 * !A2 * !C1 * D1 * Y)	0.00198	0.00198	0.00197
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00469	-0.00470	-0.00469
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00200	0.00201	0.00200
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00469	-0.00471	-0.00469

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00644	0.00652	0.00648
	(A2 * C1 * !D1 * Y)	-0.00481	-0.00484	-0.00480
	(A2 * !C1 * D1 * Y)	0.00664	0.00672	0.00667
	(A2 * !C1 * D1 * Y)	-0.00481	-0.00484	-0.00482
	(A2 * !C1 * !D1 * Y)	0.00654	0.00664	0.00657
	(A2 * !C1 * !D1 * Y)	-0.00485	-0.00489	-0.00486
	(A1 * !A2 * C1 * !D1 * Y)	0.00644	0.00652	0.00648
	(A1 * !A2 * C1 * !D1 * Y)	-0.00481	-0.00484	-0.00480
	(A1 * !A2 * !C1 * D1 * Y)	0.00664	0.00673	0.00667
	(A1 * !A2 * !C1 * D1 * Y)	-0.00481	-0.00485	-0.00482
	(A1 * !A2 * !C1 * !D1 * Y)	0.00653	0.00662	0.00657
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00485	-0.00489	-0.00486
	(!A1 * !A2 * C1 * D1 * Y)	0.00288	0.00288	0.00289
	(!A1 * !A2 * C1 * D1 * Y)	-0.00466	-0.00465	-0.00460
	(!A1 * !A2 * C1 * !D1 * Y)	0.00355	0.00359	0.00355
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00488	-0.00492	-0.00489
	(!A1 * !A2 * !C1 * D1 * Y)	0.00363	0.00367	0.00364
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00486	-0.00489	-0.00487
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00368	0.00372	0.00368
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00487	-0.00490	-0.00487

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)**	-0.00134	-0.00156	-0.00159
	(A2 * C1 * !D1 * Y)	0.00246	0.00232	0.00229
	(A2 * !C1 * D1 * Y)	-0.00144	-0.00159	-0.00160
	(A2 * !C1 * D1 * Y)	0.00244	0.00232	0.00230
	(A2 * !C1 * !D1 * Y)	-0.00155	-0.00162	-0.00161
	(A2 * !C1 * !D1 * Y)	0.00230	0.00229	0.00228
	(A1 * !A2 * C1 * !D1 * Y)	-0.00131	-0.00157	-0.00159
	(A1 * !A2 * C1 * !D1 * Y)	0.00251	0.00232	0.00229
	(A1 * !A2 * !C1 * D1 * Y)	-0.00141	-0.00159	-0.00160
	(A1 * !A2 * !C1 * D1 * Y)	0.00245	0.00232	0.00230
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00154	-0.00161	-0.00161
	(A1 * !A2 * !C1 * !D1 * Y)	0.00230	0.00229	0.00228
	(!A1 * !A2 * C1 * D1 * Y)	-0.00062	-0.00062	-0.00065
	(!A1 * !A2 * C1 * D1 * Y)	0.00239	0.00238	0.00232
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * C1 * !D1 * Y)	0.00242	0.00247	0.00235
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * !C1 * D1 * Y)	0.00242	0.00241	0.00231
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00235	0.00236	0.00231

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00289	-0.00332	-0.00336
	(A2 * C1 * !D1 * Y)	0.00505	0.00478	0.00473
	(A2 * !C1 * D1 * Y)	-0.00305	-0.00337	-0.00338
	(A2 * !C1 * D1 * Y)	0.00497	0.00478	0.00475
	(A2 * !C1 * !D1 * Y)	-0.00327	-0.00341	-0.00340
	(A2 * !C1 * !D1 * Y)	0.00471	0.00473	0.00471
	(A1 * !A2 * C1 * !D1 * Y)	-0.00279	-0.00333	-0.00336
	(A1 * !A2 * C1 * !D1 * Y)	0.00511	0.00480	0.00473
	(A1 * !A2 * !C1 * D1 * Y)	-0.00300	-0.00336	-0.00338
	(A1 * !A2 * !C1 * D1 * Y)	0.00506	0.00480	0.00475
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00327	-0.00341	-0.00340
	(A1 * !A2 * !C1 * !D1 * Y)	0.00475	0.00475	0.00471
	(!A1 * !A2 * C1 * D1 * Y)	-0.00132	-0.00135	-0.00139
	(!A1 * !A2 * C1 * D1 * Y)	0.00493	0.00502	0.00481
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00195	-0.00196	-0.00194
	(!A1 * !A2 * C1 * !D1 * Y)	0.00498	0.00512	0.00485
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00198	-0.00198	-0.00197
	(!A1 * !A2 * !C1 * D1 * Y)	0.00499	0.00502	0.00482
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00482	0.00488	0.00477

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00543	-0.00641	-0.00647
	(A2 * C1 * !D1 * Y)	0.00569	0.00505	0.00495
	(A2 * !C1 * D1 * Y)	-0.00579	-0.00649	-0.00653
	(A2 * !C1 * D1 * Y)	0.00554	0.00504	0.00498
	(A2 * !C1 * !D1 * Y)	-0.00628	-0.00658	-0.00657
	(A2 * !C1 * !D1 * Y)	0.00494	0.00493	0.00491
	(A1 * !A2 * C1 * !D1 * Y)	-0.00532	-0.00640	-0.00647
	(A1 * !A2 * C1 * !D1 * Y)	0.00579	0.00507	0.00495
	(A1 * !A2 * !C1 * D1 * Y)	-0.00571	-0.00648	-0.00653
	(A1 * !A2 * !C1 * D1 * Y)	0.00561	0.00506	0.00497
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00625	-0.00657	-0.00657
	(A1 * !A2 * !C1 * !D1 * Y)	0.00496	0.00495	0.00491
	(!A1 * !A2 * C1 * D1 * Y)	-0.00242	-0.00246	-0.00254
	(!A1 * !A2 * C1 * D1 * Y)	0.00534	0.00540	0.00508
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00355	-0.00359	-0.00355
	(!A1 * !A2 * C1 * !D1 * Y)	0.00548	0.00569	0.00519
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00363	-0.00367	-0.00364
	(!A1 * !A2 * !C1 * D1 * Y)	0.00547	0.00544	0.00510
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00368	-0.00372	-0.00368
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00517	0.00521	0.00504

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)**	0.00168	0.00169	0.00169
	(A2 * B1 * !D1 * Y)	-0.00232	-0.00233	-0.00233
	(A2 * !B1 * D1 * Y)	0.00074	0.00073	0.00073
	(A2 * !B1 * D1 * Y)	-0.00234	-0.00234	-0.00233
	(A2 * !B1 * !D1 * Y)	0.00091	0.00092	0.00091
	(A2 * !B1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !A2 * B1 * !D1 * Y)	0.00168	0.00170	0.00169
	(A1 * !A2 * B1 * !D1 * Y)	-0.00232	-0.00234	-0.00233
	(!A2 * !B1 * D1 * Y)	0.00074	0.00073	0.00073
	(!A2 * !B1 * D1 * Y)	-0.00234	-0.00235	-0.00233
	(!A2 * !B1 * !D1 * Y)	0.00091	0.00092	0.00091
	(!A2 * !B1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * B1 * D1 * Y)	0.00073	0.00072	0.00070
	(!A1 * !A2 * B1 * D1 * Y)	-0.00234	-0.00234	-0.00233
	(!A1 * !A2 * B1 * !D1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00233	-0.00235	-0.00233

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00328	0.00331	0.00330
	(A2 * B1 * !D1 * Y)	-0.00454	-0.00457	-0.00455
	(A2 * !B1 * D1 * Y)	0.00145	0.00146	0.00147
	(A2 * !B1 * D1 * Y)	-0.00457	-0.00459	-0.00456
	(A2 * !B1 * !D1 * Y)	0.00189	0.00193	0.00190
	(A2 * !B1 * !D1 * Y)	-0.00457	-0.00462	-0.00459
	(A1 * !A2 * B1 * !D1 * Y)	0.00330	0.00332	0.00330
	(A1 * !A2 * B1 * !D1 * Y)	-0.00456	-0.00457	-0.00455
	(!A2 * !B1 * D1 * Y)	0.00145	0.00147	0.00147
	(!A2 * !B1 * D1 * Y)	-0.00457	-0.00459	-0.00456
	(!A2 * !B1 * !D1 * Y)	0.00190	0.00190	0.00190
	(!A2 * !B1 * !D1 * Y)	-0.00458	-0.00458	-0.00459
	(!A1 * !A2 * B1 * D1 * Y)	0.00137	0.00139	0.00140
	(!A1 * !A2 * B1 * D1 * Y)	-0.00456	-0.00458	-0.00456
	(!A1 * !A2 * B1 * !D1 * Y)	0.00188	0.00188	0.00188
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00458	-0.00459	-0.00457

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00658	0.00667	0.00662
	(A2 * B1 * !D1 * Y)	-0.00474	-0.00478	-0.00474
	(A2 * !B1 * D1 * Y)	0.00273	0.00272	0.00273
	(A2 * !B1 * D1 * Y)	-0.00483	-0.00482	-0.00479
	(A2 * !B1 * !D1 * Y)	0.00351	0.00353	0.00349
	(A2 * !B1 * !D1 * Y)	-0.00486	-0.00488	-0.00485
	(A1 * !A2 * B1 * !D1 * Y)	0.00658	0.00667	0.00662
	(A1 * !A2 * B1 * !D1 * Y)	-0.00474	-0.00478	-0.00474
	(!A2 * !B1 * D1 * Y)	0.00273	0.00272	0.00273
	(!A2 * !B1 * D1 * Y)	-0.00483	-0.00482	-0.00479
	(!A2 * !B1 * !D1 * Y)	0.00351	0.00353	0.00349
	(!A2 * !B1 * !D1 * Y)	-0.00486	-0.00488	-0.00485
	(!A1 * !A2 * B1 * D1 * Y)	0.00264	0.00264	0.00264
	(!A1 * !A2 * B1 * D1 * Y)	-0.00481	-0.00481	-0.00478
	(!A1 * !A2 * B1 * !D1 * Y)	0.00352	0.00357	0.00354
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00481	-0.00484	-0.00480

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)**	-0.00142	-0.00162	-0.00164
	(A2 * B1 * !D1 * Y)	0.00261	0.00243	0.00237
	(A2 * !B1 * D1 * Y)	-0.00067	-0.00068	-0.00069
	(A2 * !B1 * D1 * Y)	0.00241	0.00245	0.00237
	(A2 * !B1 * !D1 * Y)	-0.00091	-0.00092	-0.00091
	(A2 * !B1 * !D1 * Y)	0.00247	0.00249	0.00238
	(A1 * !A2 * B1 * !D1 * Y)	-0.00140	-0.00161	-0.00164
	(A1 * !A2 * B1 * !D1 * Y)	0.00262	0.00244	0.00237
	(!A2 * !B1 * D1 * Y)	-0.00067	-0.00068	-0.00069
	(!A2 * !B1 * D1 * Y)	0.00241	0.00245	0.00237
	(!A2 * !B1 * !D1 * Y)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * !D1 * Y)	0.00247	0.00249	0.00238
	(!A1 * !A2 * B1 * D1 * Y)	-0.00064	-0.00064	-0.00065
	(!A1 * !A2 * B1 * D1 * Y)	0.00240	0.00242	0.00236
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00091	-0.00095	-0.00094
	(!A1 * !A2 * B1 * !D1 * Y)	0.00259	0.00255	0.00243

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00265	-0.00317	-0.00324
	(A2 * B1 * !D1 * Y)	0.00521	0.00478	0.00463
	(A2 * !B1 * D1 * Y)	-0.00132	-0.00132	-0.00137
	(A2 * !B1 * D1 * Y)	0.00478	0.00477	0.00466
	(A2 * !B1 * !D1 * Y)	-0.00189	-0.00192	-0.00190
	(A2 * !B1 * !D1 * Y)	0.00488	0.00492	0.00469
	(A1 * !A2 * B1 * !D1 * Y)	-0.00262	-0.00316	-0.00324
	(A1 * !A2 * B1 * !D1 * Y)	0.00523	0.00479	0.00463
	(!A2 * !B1 * D1 * Y)	-0.00132	-0.00132	-0.00137
	(!A2 * !B1 * D1 * Y)	0.00478	0.00477	0.00466
	(!A2 * !B1 * !D1 * Y)	-0.00190	-0.00190	-0.00190
	(!A2 * !B1 * !D1 * Y)	0.00488	0.00492	0.00469
	(!A1 * !A2 * B1 * D1 * Y)	-0.00124	-0.00127	-0.00130
	(!A1 * !A2 * B1 * D1 * Y)	0.00475	0.00484	0.00465
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00176	-0.00188	-0.00188
	(!A1 * !A2 * B1 * !D1 * Y)	0.00513	0.00501	0.00477

sky130_fd_sc_hs__o2111ai_4	(A2 * B1 * !D1 * Y)	-0.00525	-0.00629	-0.00646
	(A2 * B1 * !D1 * Y)	0.00613	0.00521	0.00490
	(A2 * !B1 * D1 * Y)	-0.00246	-0.00249	-0.00257
	(A2 * !B1 * D1 * Y)	0.00516	0.00519	0.00495
	(A2 * !B1 * !D1 * Y)	-0.00351	-0.00353	-0.00349
	(A2 * !B1 * !D1 * Y)	0.00539	0.00543	0.00501
	(A1 * !A2 * B1 * !D1 * Y)	-0.00521	-0.00628	-0.00646
	(A1 * !A2 * B1 * !D1 * Y)	0.00616	0.00521	0.00490
	(!A2 * !B1 * D1 * Y)	-0.00246	-0.00249	-0.00257
	(!A2 * !B1 * D1 * Y)	0.00516	0.00519	0.00495
	(!A2 * !B1 * !D1 * Y)	-0.00351	-0.00353	-0.00349
	(!A2 * !B1 * !D1 * Y)	0.00539	0.00543	0.00501
	(!A1 * !A2 * B1 * D1 * Y)	-0.00236	-0.00238	-0.00245
	(!A1 * !A2 * B1 * D1 * Y)	0.00515	0.00517	0.00494
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00334	-0.00357	-0.00354
	(!A1 * !A2 * B1 * !D1 * Y)	0.00594	0.00562	0.00518

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	(A2 * !C1 * Y)	0.00055	0.00054	0.00052
	(A2 * !C1 * Y)	-0.00265	-0.00266	-0.00269
	(A2 * !B1 * C1 * Y)	0.00056	0.00057	0.00052
	(A2 * !B1 * C1 * Y)	-0.00255	-0.00258	-0.00269
	(!A2 * !C1 * Y)	0.00055	0.00054	0.00052
	(!A2 * !C1 * Y)	-0.00265	-0.00265	-0.00270
	(!A2 * !B1 * C1 * Y)	0.00056	0.00057	0.00052
	(!A2 * !B1 * C1 * Y)	-0.00256	-0.00258	-0.00269
	(!A1 * !A2 * B1 * C1 * Y)	0.00065	0.00065	0.00055
	(!A1 * !A2 * B1 * C1 * Y)	-0.00242	-0.00243	-0.00265

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00126	0.00127	0.00118
	(A2 * !C1 * Y)	-0.00505	-0.00508	-0.00521
	(A2 * !B1 * C1 * Y)	0.00129	0.00130	0.00115
	(A2 * !B1 * C1 * Y)	-0.00488	-0.00492	-0.00518
	(!A2 * !C1 * Y)	0.00126	0.00127	0.00118
	(!A2 * !C1 * Y)	-0.00505	-0.00508	-0.00521
	(!A2 * !B1 * C1 * Y)	0.00129	0.00129	0.00115
	(!A2 * !B1 * C1 * Y)	-0.00488	-0.00492	-0.00518
	(!A1 * !A2 * B1 * C1 * Y)	0.00140	0.00141	0.00117
	(!A1 * !A2 * B1 * C1 * Y)	-0.00459	-0.00463	-0.00511
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00223	0.00224	0.00210
	(A2 * !C1 * Y)	-0.00589	-0.00593	-0.00617
	(A2 * !B1 * C1 * Y)	0.00227	0.00229	0.00204
	(A2 * !B1 * C1 * Y)	-0.00555	-0.00561	-0.00611
	(!A2 * !C1 * Y)	0.00223	0.00223	0.00210
	(!A2 * !C1 * Y)	-0.00589	-0.00593	-0.00617
	(!A2 * !B1 * C1 * Y)	0.00227	0.00228	0.00204
	(!A2 * !B1 * C1 * Y)	-0.00555	-0.00561	-0.00611
	(!A1 * !A2 * B1 * C1 * Y)	0.00252	0.00253	0.00211
	(!A1 * !A2 * B1 * C1 * Y)	-0.00499	-0.00505	-0.00598

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)	0.00270	0.00276	0.00271
	(A2 * !B1 * C1 * Y)	-0.00049	-0.00049	-0.00049
	(A2 * !B1 * C1 * Y)	0.00270	0.00271	0.00271
	(!A2 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !C1 * Y)	0.00270	0.00276	0.00271
	(!A2 * !B1 * C1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * C1 * Y)	0.00270	0.00271	0.00271
	(!A1 * !A2 * B1 * C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * B1 * C1 * Y)	0.00271	0.00273	0.00271
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00113	-0.00113	-0.00113
	(A2 * !C1 * Y)	0.00522	0.00526	0.00525
	(A2 * !B1 * C1 * Y)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * C1 * Y)	0.00522	0.00526	0.00524
	(!A2 * !C1 * Y)	-0.00112	-0.00113	-0.00113
	(!A2 * !C1 * Y)	0.00522	0.00525	0.00525
	(!A2 * !B1 * C1 * Y)	-0.00108	-0.00109	-0.00109
	(!A2 * !B1 * C1 * Y)	0.00521	0.00525	0.00524
	(!A1 * !A2 * B1 * C1 * Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A2 * B1 * C1 * Y)	0.00522	0.00526	0.00524
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00201	-0.00201	-0.00200
	(A2 * !C1 * Y)	0.00622	0.00624	0.00623
	(A2 * !B1 * C1 * Y)	-0.00193	-0.00194	-0.00192
	(A2 * !B1 * C1 * Y)	0.00619	0.00623	0.00621
	(!A2 * !C1 * Y)	-0.00201	-0.00204	-0.00200
	(!A2 * !C1 * Y)	0.00622	0.00633	0.00623
	(!A2 * !B1 * C1 * Y)	-0.00192	-0.00194	-0.00192
	(!A2 * !B1 * C1 * Y)	0.00619	0.00623	0.00621
	(!A1 * !A2 * B1 * C1 * Y)	-0.00189	-0.00190	-0.00188
	(!A1 * !A2 * B1 * C1 * Y)	0.00619	0.00622	0.00621

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00275	0.00280	0.00258	0.00279	0.00281	1.25828
sky130_fd_sc_hs__o2111a_2	0.00278	0.00277	0.00273	0.00283	0.00293	2.56846
sky130_fd_sc_hs__o2111a_4	0.00533	0.00569	0.00484	0.00496	0.00500	4.74277

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111a_1	0.00000	77.75490	370.97200
sky130_fd_sc_hs__o2111a_2	0.00000	113.37600	273.08800
sky130_fd_sc_hs__o2111a_4	0.00000	245.27300	744.42600

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)	0.13560	0.60067	6.45647
	A2->X (RR)	0.11706	0.57536	6.32024
	B1->X (RR)	0.12879	0.62535	6.82020
	C1->X (RR)	0.12162	0.63973	6.96772
	D1->X (RR)	0.11047	0.64033	6.95289
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.15145	0.53943	6.47870
	A2->X (RR)	0.13257	0.51468	6.34719
	B1->X (RR)	0.14564	0.56838	6.97082
	C1->X (RR)	0.13802	0.58650	7.13665
	D1->X (RR)	0.12577	0.59209	7.18417
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.17433	0.49161	6.41845
	A2->X (RR)	0.15571	0.47348	6.25996
	B1->X (RR)	0.16819	0.52660	6.92709
	C1->X (RR)	0.16000	0.55973	7.18649
	D1->X (RR)	0.14180	0.56014	7.27722

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.15643	0.57314	5.12415
	A2->X (FF)	0.14471	0.59683	5.30970
	B1->X (FF)	0.09168	0.50513	4.93979
	C1->X (FF)	0.08352	0.48234	4.76064
	D1->X (FF)	0.07003	0.44765	4.58630
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.18145	0.57781	5.35392
	A2->X (FF)	0.16971	0.60464	5.55371
	B1->X (FF)	0.09032	0.46888	4.97137
	C1->X (FF)	0.08391	0.45020	4.79546
	D1->X (FF)	0.07277	0.42070	4.62210
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.21467	0.56420	5.33211
	A2->X (FF)	0.20373	0.61690	5.66646
	B1->X (FF)	0.11681	0.48156	5.12363
	C1->X (FF)	0.10892	0.45815	4.86656
	D1->X (FF)	0.09524	0.42871	4.72842

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.02496	0.02744	0.10775
	A1	0.01501	0.01750	0.09804
	A2	0.02331	0.02624	0.11029
	A2	0.01463	0.01755	0.10198
	B1	0.02009	0.02439	0.12148
	B1	0.01315	0.01746	0.11468
	C1	0.01904	0.02350	0.11650
	C1	0.01316	0.01761	0.11060
	D1	0.01792	0.02232	0.10231
	D1	0.01309	0.01751	0.09747
sky130_fd_sc_hs__o2111a_2	A1	0.02715	0.02879	0.10942
	A1	0.01719	0.01888	0.09994
	A2	0.02518	0.02737	0.11153
	A2	0.01654	0.01879	0.10353
	B1	0.02186	0.02560	0.12696
	B1	0.01467	0.01845	0.11977
	C1	0.02076	0.02464	0.12089
	C1	0.01468	0.01861	0.11492
	D1	0.01964	0.02403	0.11302
	D1	0.01458	0.01900	0.10787

sky130_fd_sc_hs__o2111a_4	**A1**	0.06167	0.06283	0.20334
	A1	0.04140	0.04262	0.18414
	A2	0.05813	0.05999	0.19429
	A2	0.04004	0.04197	0.17793
	B1	0.05890	0.06145	0.23310
	B1	0.03634	0.04194	0.22530
	C1	0.04833	0.05383	0.22420
	C1	0.03640	0.04195	0.21205
	D1	0.04581	0.05298	0.22430
	D1	0.03631	0.04352	0.21459

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00771	0.01090	0.09477
	A1	0.01756	0.02071	0.10340
	A2	0.00779	0.01218	0.09973
	A2	0.01637	0.02075	0.10760
	B1	0.00592	0.01210	0.11280
	B1	0.01279	0.01890	0.11850
	C1	0.00530	0.01139	0.10773
	C1	0.01119	0.01725	0.11276
	D1	0.00445	0.01055	0.10403
	D1	0.00927	0.01525	0.10852

sky130_fd_sc_hs__o2111a_2	**A1**	0.01412	0.01512	0.09699
	A1	0.02398	0.02493	0.10616
	A2	0.01432	0.01683	0.10213
	A2	0.02283	0.02511	0.11043
	B1	0.01043	0.01617	0.12022
	B1	0.01755	0.02329	0.12607
	C1	0.00970	0.01546	0.11490
	C1	0.01720	0.02238	0.11602
	D1	0.00858	0.01446	0.11085
	D1	0.01498	0.02036	0.11291
sky130_fd_sc_hs__o2111a_4	**A1**	0.03039	0.02947	0.18056
	A1	0.05041	0.04947	0.19858
	A2	0.03043	0.03118	0.17955
	A2	0.04831	0.04901	0.19697
	B1	0.02253	0.03154	0.21689
	B1	0.04002	0.04745	0.22088
	C1	0.02199	0.02970	0.19624
	C1	0.03613	0.04359	0.20593
	D1	0.01908	0.02758	0.18934
	D1	0.03084	0.03923	0.20090

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)**	0.00505	0.00472	0.00500
	(A2 * B1 * C1 * D1 * X)	0.00117	0.00082	0.00114
	(A2 * B1 * C1 * !D1 * !X)	0.00222	0.00223	0.00222
	(A2 * B1 * C1 * !D1 * !X)	-0.00163	-0.00163	-0.00162
	(A2 * B1 * !C1 * !X)	0.00222	0.00223	0.00222
	(A2 * B1 * !C1 * !X)	-0.00163	-0.00163	-0.00162
	(A2 * !B1 * !X)	0.00222	0.00223	0.00222
	(A2 * !B1 * !X)	-0.00163	-0.00163	-0.00162
	(!A2 * B1 * C1 * !D1 * !X)	0.00210	0.00211	0.00210
	(!A2 * B1 * C1 * !D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !C1 * D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * B1 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00163
	(!A2 * B1 * !C1 * !D1 * !X)	0.00211	0.00212	0.00211
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * C1 * D1 * !X)	0.00217	0.00218	0.00216
	(!A2 * !B1 * C1 * D1 * !X)	-0.00164	-0.00164	-0.00163
	(!A2 * !B1 * !D1 * !X)	0.00213	0.00214	0.00214
	(!A2 * !B1 * !D1 * !X)	-0.00163	-0.00163	-0.00164
	(!A2 * !B1 * !C1 * D1 * !X)	0.00213	0.00214	0.00214
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00164

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00426	0.00393	0.00420
	(A2 * B1 * C1 * D1 * X)	0.00033	-0.00001	0.00030
	(A2 * B1 * C1 * !D1 * !X)	0.00272	0.00272	0.00271
	(A2 * B1 * C1 * !D1 * !X)	-0.00118	-0.00118	-0.00117
	(A2 * B1 * !C1 * !X)	0.00271	0.00272	0.00271
	(A2 * B1 * !C1 * !X)	-0.00118	-0.00118	-0.00117
	(A2 * !B1 * !X)	0.00271	0.00272	0.00271
	(A2 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(!A2 * B1 * C1 * !D1 * !X)	0.00260	0.00261	0.00260
	(!A2 * B1 * C1 * !D1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * B1 * !C1 * D1 * !X)	0.00261	0.00263	0.00262
	(!A2 * B1 * !C1 * D1 * !X)	-0.00118	-0.00119	-0.00118
	(!A2 * B1 * !C1 * !D1 * !X)	0.00260	0.00260	0.00260
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00119	-0.00119
	(!A2 * !B1 * C1 * D1 * !X)	0.00267	0.00267	0.00266
	(!A2 * !B1 * C1 * D1 * !X)	-0.00119	-0.00119	-0.00118
	(!A2 * !B1 * !D1 * !X)	0.00265	0.00266	0.00264
	(!A2 * !B1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(!A2 * !B1 * !C1 * D1 * !X)	0.00265	0.00266	0.00264
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00120	-0.00119

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.01019	0.00951	0.01000
	(A2 * B1 * C1 * D1 * X)	0.00252	0.00179	0.00237
	(A2 * B1 * C1 * !D1 * !X)	0.00505	0.00508	0.00504
	(A2 * B1 * C1 * !D1 * !X)	-0.00258	-0.00258	-0.00255
	(A2 * B1 * !C1 * !X)	0.00505	0.00508	0.00504
	(A2 * B1 * !C1 * !X)	-0.00258	-0.00259	-0.00255
	(A2 * !B1 * !X)	0.00505	0.00508	0.00504
	(A2 * !B1 * !X)	-0.00258	-0.00258	-0.00255
	(!A2 * B1 * C1 * !D1 * !X)	0.00485	0.00487	0.00484
	(!A2 * B1 * C1 * !D1 * !X)	-0.00257	-0.00258	-0.00256
	(!A2 * B1 * !C1 * D1 * !X)	0.00487	0.00487	0.00486
	(!A2 * B1 * !C1 * D1 * !X)	-0.00258	-0.00258	-0.00257
	(!A2 * B1 * !C1 * !D1 * !X)	0.00484	0.00485	0.00483
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00259	-0.00260	-0.00258
	(!A2 * !B1 * C1 * D1 * !X)	0.00490	0.00496	0.00492
	(!A2 * !B1 * C1 * D1 * !X)	-0.00256	-0.00260	-0.00257
	(!A2 * !B1 * !D1 * !X)	0.00488	0.00493	0.00489
	(!A2 * !B1 * !D1 * !X)	-0.00258	-0.00261	-0.00258
	(!A2 * !B1 * !C1 * D1 * !X)	0.00489	0.00493	0.00490
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00258	-0.00261	-0.00258

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)**	0.00144	0.00142	0.00134
	(A2 * B1 * C1 * D1 * X)	0.00532	0.00533	0.00521
	(A2 * B1 * C1 * !D1 * !X)	-0.00133	-0.00133	-0.00132
	(A2 * B1 * C1 * !D1 * !X)	0.00253	0.00254	0.00252
	(A2 * B1 * !C1 * !X)	-0.00133	-0.00134	-0.00132
	(A2 * B1 * !C1 * !X)	0.00253	0.00254	0.00252
	(A2 * !B1 * !X)	-0.00133	-0.00134	-0.00132
	(A2 * !B1 * !X)	0.00253	0.00254	0.00252
	(!A2 * B1 * C1 * !D1 * !X)	-0.00104	-0.00123	-0.00125
	(!A2 * B1 * C1 * !D1 * !X)	0.00260	0.00256	0.00252
	(!A2 * B1 * !C1 * D1 * !X)	-0.00109	-0.00124	-0.00126
	(!A2 * B1 * !C1 * D1 * !X)	0.00257	0.00255	0.00253
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00114	-0.00126	-0.00127
	(!A2 * B1 * !C1 * !D1 * !X)	0.00251	0.00254	0.00251
	(!A2 * !B1 * C1 * D1 * !X)	-0.00116	-0.00126	-0.00128
	(!A2 * !B1 * C1 * D1 * !X)	0.00256	0.00253	0.00253
	(!A2 * !B1 * !D1 * !X)	-0.00122	-0.00127	-0.00129
	(!A2 * !B1 * !D1 * !X)	0.00252	0.00251	0.00251
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00123	-0.00127	-0.00129
	(!A2 * !B1 * !C1 * D1 * !X)	0.00252	0.00251	0.00251

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00054	0.00050	0.00042
	(A2 * B1 * C1 * D1 * X)	0.00444	0.00446	0.00435
	(A2 * B1 * C1 * !D1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * B1 * C1 * !D1 * !X)	0.00293	0.00295	0.00293
	(A2 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * B1 * !C1 * !X)	0.00293	0.00295	0.00293
	(A2 * !B1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A2 * B1 * C1 * !D1 * !X)	-0.00068	-0.00087	-0.00089
	(!A2 * B1 * C1 * !D1 * !X)	0.00300	0.00297	0.00294
	(!A2 * B1 * !C1 * D1 * !X)	-0.00073	-0.00088	-0.00090
	(!A2 * B1 * !C1 * D1 * !X)	0.00296	0.00296	0.00294
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00077	-0.00089	-0.00091
	(!A2 * B1 * !C1 * !D1 * !X)	0.00292	0.00295	0.00292
	(!A2 * !B1 * C1 * D1 * !X)	-0.00080	-0.00090	-0.00091
	(!A2 * !B1 * C1 * D1 * !X)	0.00296	0.00296	0.00294
	(!A2 * !B1 * !D1 * !X)	-0.00085	-0.00092	-0.00092
	(!A2 * !B1 * !D1 * !X)	0.00292	0.00295	0.00293
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00086	-0.00092	-0.00092
	(!A2 * !B1 * !C1 * D1 * !X)	0.00292	0.00295	0.00293

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00295	0.00289	0.00273
	(A2 * B1 * C1 * D1 * X)	0.01060	0.01062	0.01039
	(A2 * B1 * C1 * !D1 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * B1 * C1 * !D1 * !X)	0.00604	0.00606	0.00606
	(A2 * B1 * !C1 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * B1 * !C1 * !X)	0.00604	0.00606	0.00606
	(A2 * !B1 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * !B1 * !X)	0.00604	0.00606	0.00606
	(!A2 * B1 * C1 * !D1 * !X)	-0.00107	-0.00136	-0.00141
	(!A2 * B1 * C1 * !D1 * !X)	0.00619	0.00615	0.00608
	(!A2 * B1 * !C1 * D1 * !X)	-0.00115	-0.00139	-0.00142
	(!A2 * B1 * !C1 * D1 * !X)	0.00612	0.00613	0.00608
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00120	-0.00141	-0.00144
	(!A2 * B1 * !C1 * !D1 * !X)	0.00607	0.00611	0.00605
	(!A2 * !B1 * C1 * D1 * !X)	-0.00126	-0.00142	-0.00144
	(!A2 * !B1 * C1 * D1 * !X)	0.00611	0.00609	0.00608
	(!A2 * !B1 * !D1 * !X)	-0.00134	-0.00145	-0.00147
	(!A2 * !B1 * !D1 * !X)	0.00607	0.00606	0.00606
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00134	-0.00145	-0.00147
	(!A2 * !B1 * !C1 * D1 * !X)	0.00607	0.00606	0.00606

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)**	0.00450	0.00453	0.00452
	(A1 * B1 * C1 * D1 * X)	0.00178	0.00177	0.00182
	(A1 * B1 * C1 * !D1 * !X)	0.00213	0.00215	0.00213
	(A1 * B1 * C1 * !D1 * !X)	-0.00159	-0.00161	-0.00159
	(A1 * B1 * !C1 * D1 * !X)	0.00212	0.00212	0.00213
	(A1 * B1 * !C1 * D1 * !X)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * !C1 * !D1 * !X)	0.00212	0.00214	0.00212
	(A1 * B1 * !C1 * !D1 * !X)	-0.00160	-0.00162	-0.00160
	(A1 * !B1 * C1 * D1 * !X)	0.00213	0.00215	0.00213
	(A1 * !B1 * C1 * D1 * !X)	-0.00159	-0.00161	-0.00159
	(A1 * !B1 * !D1 * !X)	0.00212	0.00214	0.00212
	(A1 * !B1 * !D1 * !X)	-0.00160	-0.00162	-0.00160
	(A1 * !B1 * !C1 * D1 * !X)	0.00212	0.00214	0.00212
	(A1 * !B1 * !C1 * D1 * !X)	-0.00160	-0.00162	-0.00160
	(!A1 * B1 * C1 * !D1 * !X)	0.00202	0.00203	0.00203
	(!A1 * B1 * C1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(!A1 * B1 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !C1 * !D1 * !X)	0.00202	0.00204	0.00203
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00160	-0.00161	-0.00161
	(!A1 * !B1 * C1 * D1 * !X)	0.00208	0.00209	0.00208
	(!A1 * !B1 * C1 * D1 * !X)	-0.00161	-0.00161	-0.00160
	(!A1 * !B1 * !D1 * !X)	0.00207	0.00208	0.00207
	(!A1 * !B1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * D1 * !X)	0.00207	0.00207	0.00206
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00161	-0.00161

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00364	0.00367	0.00367
	(A1 * B1 * C1 * D1 * X)	0.00096	0.00095	0.00099
	(A1 * B1 * C1 * !D1 * !X)	0.00257	0.00259	0.00257
	(A1 * B1 * C1 * !D1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * B1 * !C1 * D1 * !X)	0.00257	0.00259	0.00257
	(A1 * B1 * !C1 * D1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * B1 * !C1 * !D1 * !X)	0.00256	0.00258	0.00256
	(A1 * B1 * !C1 * !D1 * !X)	-0.00114	-0.00115	-0.00113
	(A1 * !B1 * C1 * D1 * !X)	0.00257	0.00259	0.00257
	(A1 * !B1 * C1 * D1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !B1 * !D1 * !X)	0.00256	0.00258	0.00256
	(A1 * !B1 * !D1 * !X)	-0.00114	-0.00115	-0.00113
	(A1 * !B1 * !C1 * D1 * !X)	0.00256	0.00258	0.00256
	(A1 * !B1 * !C1 * D1 * !X)	-0.00114	-0.00115	-0.00113
	(!A1 * B1 * C1 * !D1 * !X)	0.00245	0.00247	0.00246
	(!A1 * B1 * C1 * !D1 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * !C1 * D1 * !X)	0.00247	0.00248	0.00248
	(!A1 * B1 * !C1 * D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !C1 * !D1 * !X)	0.00246	0.00246	0.00246
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1 * C1 * D1 * !X)	0.00252	0.00252	0.00251
	(!A1 * !B1 * C1 * D1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * !B1 * !D1 * !X)	0.00250	0.00250	0.00250
	(!A1 * !B1 * !D1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	0.00250	0.00250	0.00250
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00114	-0.00114	-0.00114

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00942	0.00948	0.00946
	(A1 * B1 * C1 * D1 * X)	0.00366	0.00363	0.00371
	(A1 * B1 * C1 * !D1 * !X)	0.00518	0.00523	0.00519
	(A1 * B1 * C1 * !D1 * !X)	-0.00259	-0.00263	-0.00259
	(A1 * B1 * !C1 * D1 * !X)	0.00518	0.00523	0.00519
	(A1 * B1 * !C1 * D1 * !X)	-0.00259	-0.00263	-0.00259
	(A1 * B1 * !C1 * !D1 * !X)	0.00517	0.00522	0.00518
	(A1 * B1 * !C1 * !D1 * !X)	-0.00260	-0.00264	-0.00260
	(A1 * !B1 * C1 * D1 * !X)	0.00518	0.00523	0.00519
	(A1 * !B1 * C1 * D1 * !X)	-0.00259	-0.00263	-0.00259
	(A1 * !B1 * !D1 * !X)	0.00517	0.00522	0.00518
	(A1 * !B1 * !D1 * !X)	-0.00260	-0.00264	-0.00260
	(A1 * !B1 * !C1 * D1 * !X)	0.00517	0.00522	0.00518
	(A1 * !B1 * !C1 * D1 * !X)	-0.00260	-0.00264	-0.00260
	(!A1 * B1 * C1 * !D1 * !X)	0.00495	0.00495	0.00497
	(!A1 * B1 * C1 * !D1 * !X)	-0.00258	-0.00259	-0.00259
	(!A1 * B1 * !C1 * D1 * !X)	0.00499	0.00503	0.00500
	(!A1 * B1 * !C1 * D1 * !X)	-0.00260	-0.00262	-0.00260
	(!A1 * B1 * !C1 * !D1 * !X)	0.00496	0.00499	0.00497
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00261	-0.00263	-0.00261
	(!A1 * !B1 * C1 * D1 * !X)	0.00507	0.00509	0.00506
	(!A1 * !B1 * C1 * D1 * !X)	-0.00262	-0.00262	-0.00260
	(!A1 * !B1 * !D1 * !X)	0.00502	0.00505	0.00504
	(!A1 * !B1 * !D1 * !X)	-0.00259	-0.00262	-0.00261
	(!A1 * !B1 * !C1 * D1 * !X)	0.00502	0.00506	0.00504
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00259	-0.00262	-0.00261

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	0.00123	0.00108
	(A1 * B1 * C1 * D1 * X)	0.00397	0.00397	0.00381
	(A1 * B1 * C1 * !D1 * !X)	-0.00123	-0.00124	-0.00124
	(A1 * B1 * C1 * !D1 * !X)	0.00249	0.00249	0.00249
	(A1 * B1 * !C1 * D1 * !X)	-0.00123	-0.00124	-0.00124
	(A1 * B1 * !C1 * D1 * !X)	0.00249	0.00249	0.00249
	(A1 * B1 * !C1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * B1 * !C1 * !D1 * !X)	0.00248	0.00248	0.00248
	(A1 * !B1 * C1 * D1 * !X)	-0.00123	-0.00125	-0.00124
	(A1 * !B1 * C1 * D1 * !X)	0.00249	0.00250	0.00249
	(A1 * !B1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * !D1 * !X)	0.00248	0.00248	0.00248
	(A1 * !B1 * !C1 * D1 * !X)	-0.00124	-0.00126	-0.00125
	(A1 * !B1 * !C1 * D1 * !X)	0.00248	0.00250	0.00248
	(!A1 * B1 * C1 * !D1 * !X)	-0.00095	-0.00114	-0.00117
	(!A1 * B1 * C1 * !D1 * !X)	0.00257	0.00253	0.00249
	(!A1 * B1 * !C1 * D1 * !X)	-0.00100	-0.00116	-0.00118
	(!A1 * B1 * !C1 * D1 * !X)	0.00253	0.00252	0.00249
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00105	-0.00117	-0.00119
	(!A1 * B1 * !C1 * !D1 * !X)	0.00248	0.00250	0.00248
	(!A1 * !B1 * C1 * D1 * !X)	-0.00108	-0.00117	-0.00119
	(!A1 * !B1 * C1 * D1 * !X)	0.00253	0.00249	0.00249
	(!A1 * !B1 * !D1 * !X)	-0.00114	-0.00119	-0.00120
	(!A1 * !B1 * !D1 * !X)	0.00249	0.00248	0.00248
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00114	-0.00119	-0.00120
	(!A1 * !B1 * !C1 * D1 * !X)	0.00249	0.00248	0.00248

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00040	0.00038	0.00023
	(A1 * B1 * C1 * D1 * X)	0.00310	0.00309	0.00293
	(A1 * B1 * C1 * !D1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * B1 * C1 * !D1 * !X)	0.00288	0.00289	0.00288
	(A1 * B1 * !C1 * D1 * !X)	-0.00081	-0.00083	-0.00081
	(A1 * B1 * !C1 * D1 * !X)	0.00288	0.00290	0.00288
	(A1 * B1 * !C1 * !D1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * B1 * !C1 * !D1 * !X)	0.00287	0.00287	0.00287
	(A1 * !B1 * C1 * D1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * !B1 * C1 * D1 * !X)	0.00288	0.00289	0.00288
	(A1 * !B1 * !D1 * !X)	-0.00082	-0.00084	-0.00082
	(A1 * !B1 * !D1 * !X)	0.00287	0.00289	0.00287
	(A1 * !B1 * !C1 * D1 * !X)	-0.00082	-0.00084	-0.00082
	(A1 * !B1 * !C1 * D1 * !X)	0.00287	0.00289	0.00287
	(!A1 * B1 * C1 * !D1 * !X)	-0.00054	-0.00073	-0.00075
	(!A1 * B1 * C1 * !D1 * !X)	0.00295	0.00292	0.00289
	(!A1 * B1 * !C1 * D1 * !X)	-0.00059	-0.00074	-0.00076
	(!A1 * B1 * !C1 * D1 * !X)	0.00291	0.00291	0.00289
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00064	-0.00075	-0.00077
	(!A1 * B1 * !C1 * !D1 * !X)	0.00287	0.00289	0.00287
	(!A1 * !B1 * C1 * D1 * !X)	-0.00066	-0.00075	-0.00077
	(!A1 * !B1 * C1 * D1 * !X)	0.00290	0.00288	0.00289
	(!A1 * !B1 * !D1 * !X)	-0.00071	-0.00077	-0.00078
	(!A1 * !B1 * !D1 * !X)	0.00287	0.00287	0.00287
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00072	-0.00077	-0.00078
	(!A1 * !B1 * !C1 * D1 * !X)	0.00287	0.00287	0.00287

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00217	0.00214	0.00183
	(A1 * B1 * C1 * D1 * X)	0.00797	0.00796	0.00763
	(A1 * B1 * C1 * !D1 * !X)	-0.00165	-0.00169	-0.00168
	(A1 * B1 * C1 * !D1 * !X)	0.00608	0.00610	0.00610
	(A1 * B1 * !C1 * D1 * !X)	-0.00165	-0.00168	-0.00168
	(A1 * B1 * !C1 * D1 * !X)	0.00608	0.00609	0.00610
	(A1 * B1 * !C1 * !D1 * !X)	-0.00170	-0.00172	-0.00171
	(A1 * B1 * !C1 * !D1 * !X)	0.00608	0.00609	0.00608
	(A1 * !B1 * C1 * D1 * !X)	-0.00165	-0.00167	-0.00168
	(A1 * !B1 * C1 * D1 * !X)	0.00608	0.00608	0.00610
	(A1 * !B1 * !D1 * !X)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * !D1 * !X)	0.00608	0.00609	0.00608
	(A1 * !B1 * !C1 * D1 * !X)	-0.00170	-0.00172	-0.00171
	(A1 * !B1 * !C1 * D1 * !X)	0.00608	0.00609	0.00608
	(!A1 * B1 * C1 * !D1 * !X)	-0.00110	-0.00149	-0.00154
	(!A1 * B1 * C1 * !D1 * !X)	0.00629	0.00618	0.00611
	(!A1 * B1 * !C1 * D1 * !X)	-0.00120	-0.00153	-0.00155
	(!A1 * B1 * !C1 * D1 * !X)	0.00618	0.00616	0.00611
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00129	-0.00155	-0.00157
	(!A1 * B1 * !C1 * !D1 * !X)	0.00608	0.00613	0.00608
	(!A1 * !B1 * C1 * D1 * !X)	-0.00136	-0.00157	-0.00159
	(!A1 * !B1 * C1 * D1 * !X)	0.00617	0.00612	0.00611
	(!A1 * !B1 * !D1 * !X)	-0.00147	-0.00160	-0.00161
	(!A1 * !B1 * !D1 * !X)	0.00610	0.00610	0.00608
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00148	-0.00160	-0.00161
	(!A1 * !B1 * !C1 * D1 * !X)	0.00610	0.00610	0.00608

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)**	0.00199	0.00201	0.00200
	(A2 * C1 * !D1 * !X)	-0.00133	-0.00134	-0.00133
	(A2 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(A2 * !C1 * D1 * !X)	-0.00133	-0.00134	-0.00133
	(A2 * !C1 * !D1 * !X)	0.00201	0.00203	0.00202
	(A2 * !C1 * !D1 * !X)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * C1 * !D1 * !X)	0.00199	0.00200	0.00200
	(A1 * !A2 * C1 * !D1 * !X)	-0.00133	-0.00134	-0.00133
	(A1 * !A2 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(A1 * !A2 * !C1 * D1 * !X)	-0.00133	-0.00134	-0.00133
	(A1 * !A2 * !C1 * !D1 * !X)	0.00201	0.00202	0.00202
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00134	-0.00135	-0.00135
	(!A1 * !A2 * C1 * D1 * !X)	0.00115	0.00116	0.00114
	(!A1 * !A2 * C1 * D1 * !X)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * C1 * !D1 * !X)	0.00131	0.00131	0.00130
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * !C1 * D1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00134	-0.00136	-0.00135
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00135	-0.00136	-0.00135

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00246	0.00247	0.00246
	(A2 * C1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(A2 * !C1 * D1 * !X)	0.00250	0.00251	0.00251
	(A2 * !C1 * D1 * !X)	-0.00116	-0.00117	-0.00117
	(A2 * !C1 * !D1 * !X)	0.00248	0.00250	0.00248
	(A2 * !C1 * !D1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * !X)	0.00246	0.00246	0.00246
	(A1 * !A2 * C1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !C1 * D1 * !X)	0.00249	0.00251	0.00251
	(A1 * !A2 * !C1 * D1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !C1 * !D1 * !X)	0.00248	0.00247	0.00248
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00118	-0.00117	-0.00118
	(!A1 * !A2 * C1 * D1 * !X)	0.00163	0.00163	0.00162
	(!A1 * !A2 * C1 * D1 * !X)	-0.00113	-0.00114	-0.00112
	(!A1 * !A2 * C1 * !D1 * !X)	0.00181	0.00180	0.00180
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00118	-0.00117	-0.00118
	(!A1 * !A2 * !C1 * D1 * !X)	0.00183	0.00183	0.00182
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00488	0.00490	0.00489
	(A2 * C1 * !D1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * !C1 * D1 * !X)	0.00495	0.00499	0.00495
	(A2 * !C1 * D1 * !X)	-0.00177	-0.00179	-0.00177
	(A2 * !C1 * !D1 * !X)	0.00489	0.00492	0.00491
	(A2 * !C1 * !D1 * !X)	-0.00178	-0.00180	-0.00179
	(A1 * !A2 * C1 * !D1 * !X)	0.00488	0.00490	0.00489
	(A1 * !A2 * C1 * !D1 * !X)	-0.00177	-0.00178	-0.00176
	(A1 * !A2 * !C1 * D1 * !X)	0.00495	0.00496	0.00495
	(A1 * !A2 * !C1 * D1 * !X)	-0.00178	-0.00178	-0.00177
	(A1 * !A2 * !C1 * !D1 * !X)	0.00490	0.00492	0.00491
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00180	-0.00180	-0.00179
	(!A1 * !A2 * C1 * D1 * !X)	0.00313	0.00315	0.00313
	(!A1 * !A2 * C1 * D1 * !X)	-0.00168	-0.00170	-0.00166
	(!A1 * !A2 * C1 * !D1 * !X)	0.00351	0.00353	0.00351
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00181	-0.00183	-0.00181
	(!A1 * !A2 * !C1 * D1 * !X)	0.00350	0.00351	0.00349
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00180	-0.00182	-0.00180
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00352	0.00353	0.00351
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00180	-0.00182	-0.00180

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)**	-0.00088	-0.00110	-0.00112
	(A2 * C1 * !D1 * !X)	0.00241	0.00226	0.00224
	(A2 * !C1 * D1 * !X)	-0.00097	-0.00113	-0.00114
	(A2 * !C1 * D1 * !X)	0.00238	0.00227	0.00224
	(A2 * !C1 * !D1 * !X)	-0.00108	-0.00115	-0.00115
	(A2 * !C1 * !D1 * !X)	0.00223	0.00223	0.00223
	(A1 * !A2 * C1 * !D1 * !X)	-0.00084	-0.00110	-0.00112
	(A1 * !A2 * C1 * !D1 * !X)	0.00244	0.00226	0.00224
	(A1 * !A2 * !C1 * D1 * !X)	-0.00096	-0.00113	-0.00114
	(A1 * !A2 * !C1 * D1 * !X)	0.00241	0.00227	0.00225
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00108	-0.00115	-0.00115
	(A1 * !A2 * !C1 * !D1 * !X)	0.00225	0.00223	0.00223
	(!A1 * !A2 * C1 * D1 * !X)	-0.00016	-0.00017	-0.00019
	(!A1 * !A2 * C1 * D1 * !X)	0.00232	0.00234	0.00226
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00049	-0.00047	-0.00047
	(!A1 * !A2 * C1 * !D1 * !X)	0.00239	0.00241	0.00229
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00048	-0.00052	-0.00051
	(!A1 * !A2 * !C1 * D1 * !X)	0.00237	0.00235	0.00225
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00057	-0.00059	-0.00054
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00230	0.00230	0.00225

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00049	-0.00070	-0.00073
	(A2 * C1 * !D1 * !X)	0.00308	0.00295	0.00293
	(A2 * !C1 * D1 * !X)	-0.00059	-0.00074	-0.00074
	(A2 * !C1 * D1 * !X)	0.00307	0.00296	0.00294
	(A2 * !C1 * !D1 * !X)	-0.00071	-0.00076	-0.00075
	(A2 * !C1 * !D1 * !X)	0.00293	0.00293	0.00292
	(A1 * !A2 * C1 * !D1 * !X)	-0.00046	-0.00071	-0.00073
	(A1 * !A2 * C1 * !D1 * !X)	0.00314	0.00295	0.00293
	(A1 * !A2 * !C1 * D1 * !X)	-0.00057	-0.00074	-0.00074
	(A1 * !A2 * !C1 * D1 * !X)	0.00308	0.00295	0.00294
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00069	-0.00076	-0.00075
	(A1 * !A2 * !C1 * !D1 * !X)	0.00293	0.00292	0.00292
	(!A1 * !A2 * C1 * D1 * !X)	0.00023	0.00022	0.00020
	(!A1 * !A2 * C1 * D1 * !X)	0.00302	0.00305	0.00296
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00012	-0.00011	-0.00011
	(!A1 * !A2 * C1 * !D1 * !X)	0.00306	0.00310	0.00298
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00011	-0.00014	-0.00013
	(!A1 * !A2 * !C1 * D1 * !X)	0.00306	0.00305	0.00295
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00020	-0.00022	-0.00016
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00298	0.00299	0.00295

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00096	-0.00139	-0.00142
	(A2 * C1 * !D1 * !X)	0.00560	0.00534	0.00529
	(A2 * !C1 * D1 * !X)	-0.00112	-0.00143	-0.00144
	(A2 * !C1 * D1 * !X)	0.00553	0.00533	0.00530
	(A2 * !C1 * !D1 * !X)	-0.00134	-0.00147	-0.00146
	(A2 * !C1 * !D1 * !X)	0.00527	0.00528	0.00527
	(A1 * !A2 * C1 * !D1 * !X)	-0.00086	-0.00139	-0.00142
	(A1 * !A2 * C1 * !D1 * !X)	0.00566	0.00534	0.00529
	(A1 * !A2 * !C1 * D1 * !X)	-0.00108	-0.00142	-0.00144
	(A1 * !A2 * !C1 * D1 * !X)	0.00560	0.00534	0.00530
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00134	-0.00147	-0.00146
	(A1 * !A2 * !C1 * !D1 * !X)	0.00530	0.00529	0.00526
	(!A1 * !A2 * C1 * D1 * !X)	0.00058	0.00055	0.00051
	(!A1 * !A2 * C1 * D1 * !X)	0.00548	0.00553	0.00537
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00019	-0.00014	-0.00012
	(!A1 * !A2 * C1 * !D1 * !X)	0.00555	0.00567	0.00541
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00007	-0.00011	-0.00009
	(!A1 * !A2 * !C1 * D1 * !X)	0.00560	0.00556	0.00538
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00026	-0.00029	-0.00017
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00540	0.00541	0.00533

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)**	0.00204	0.00205	0.00205
	(A2 * B1 * !D1 * !X)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * D1 * !X)	0.00107	0.00107	0.00107
	(A2 * !B1 * D1 * !X)	-0.00145	-0.00145	-0.00144
	(A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00123
	(A2 * !B1 * !D1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * B1 * !D1 * !X)	0.00204	0.00206	0.00205
	(A1 * !A2 * B1 * !D1 * !X)	-0.00143	-0.00144	-0.00143
	(!A2 * !B1 * D1 * !X)	0.00107	0.00107	0.00107
	(!A2 * !B1 * D1 * !X)	-0.00145	-0.00145	-0.00144
	(!A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !D1 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * !A2 * B1 * D1 * !X)	0.00110	0.00110	0.00109
	(!A1 * !A2 * B1 * D1 * !X)	-0.00145	-0.00145	-0.00144
	(!A1 * !A2 * B1 * !D1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00247	0.00249	0.00248
	(A2 * B1 * !D1 * !X)	-0.00123	-0.00125	-0.00123
	(A2 * !B1 * D1 * !X)	0.00154	0.00154	0.00155
	(A2 * !B1 * D1 * !X)	-0.00125	-0.00124	-0.00123
	(A2 * !B1 * !D1 * !X)	0.00175	0.00175	0.00174
	(A2 * !B1 * !D1 * !X)	-0.00125	-0.00126	-0.00124
	(A1 * !A2 * B1 * !D1 * !X)	0.00247	0.00248	0.00248
	(A1 * !A2 * B1 * !D1 * !X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * D1 * !X)	0.00154	0.00155	0.00155
	(!A2 * !B1 * D1 * !X)	-0.00124	-0.00126	-0.00123
	(!A2 * !B1 * !D1 * !X)	0.00175	0.00175	0.00174
	(!A2 * !B1 * !D1 * !X)	-0.00125	-0.00126	-0.00124
	(!A1 * !A2 * B1 * D1 * !X)	0.00155	0.00155	0.00155
	(!A1 * !A2 * B1 * D1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * B1 * !D1 * !X)	0.00179	0.00180	0.00180
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00503	0.00504	0.00503
	(A2 * B1 * !D1 * !X)	-0.00186	-0.00186	-0.00184
	(A2 * !B1 * D1 * !X)	0.00313	0.00313	0.00315
	(A2 * !B1 * D1 * !X)	-0.00188	-0.00188	-0.00185
	(A2 * !B1 * !D1 * !X)	0.00358	0.00358	0.00357
	(A2 * !B1 * !D1 * !X)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * B1 * !D1 * !X)	0.00503	0.00503	0.00503
	(A1 * !A2 * B1 * !D1 * !X)	-0.00186	-0.00186	-0.00184
	(!A2 * !B1 * D1 * !X)	0.00313	0.00313	0.00315
	(!A2 * !B1 * D1 * !X)	-0.00189	-0.00188	-0.00185
	(!A2 * !B1 * !D1 * !X)	0.00358	0.00358	0.00357
	(!A2 * !B1 * !D1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * B1 * D1 * !X)	0.00306	0.00307	0.00311
	(!A1 * !A2 * B1 * D1 * !X)	-0.00185	-0.00187	-0.00185
	(!A1 * !A2 * B1 * !D1 * !X)	0.00359	0.00360	0.00359
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00189	-0.00190	-0.00188

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)**	-0.00092	-0.00112	-0.00114
	(A2 * B1 * !D1 * !X)	0.00256	0.00239	0.00234
	(A2 * !B1 * D1 * !X)	-0.00016	-0.00017	-0.00017
	(A2 * !B1 * D1 * !X)	0.00238	0.00241	0.00234
	(A2 * !B1 * !D1 * !X)	-0.00038	-0.00039	-0.00040
	(A2 * !B1 * !D1 * !X)	0.00243	0.00244	0.00235
	(A1 * !A2 * B1 * !D1 * !X)	-0.00091	-0.00111	-0.00114
	(A1 * !A2 * B1 * !D1 * !X)	0.00259	0.00241	0.00234
	(!A2 * !B1 * D1 * !X)	-0.00016	-0.00017	-0.00017
	(!A2 * !B1 * D1 * !X)	0.00238	0.00241	0.00234
	(!A2 * !B1 * !D1 * !X)	-0.00038	-0.00039	-0.00040
	(!A2 * !B1 * !D1 * !X)	0.00243	0.00244	0.00235
	(!A1 * !A2 * B1 * D1 * !X)	-0.00016	-0.00016	-0.00017
	(!A1 * !A2 * B1 * D1 * !X)	0.00237	0.00239	0.00233
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00042	-0.00048	-0.00047
	(!A1 * !A2 * B1 * !D1 * !X)	0.00256	0.00251	0.00240

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00049	-0.00069	-0.00071
	(A2 * B1 * !D1 * !X)	0.00324	0.00304	0.00300
	(A2 * !B1 * D1 * !X)	0.00024	0.00023	0.00022
	(A2 * !B1 * D1 * !X)	0.00304	0.00306	0.00300
	(A2 * !B1 * !D1 * !X)	-0.00004	-0.00004	-0.00006
	(A2 * !B1 * !D1 * !X)	0.00309	0.00311	0.00301
	(A1 * !A2 * B1 * !D1 * !X)	-0.00047	-0.00069	-0.00071
	(A1 * !A2 * B1 * !D1 * !X)	0.00325	0.00306	0.00300
	(!A2 * !B1 * D1 * !X)	0.00024	0.00023	0.00022
	(!A2 * !B1 * D1 * !X)	0.00304	0.00306	0.00300
	(!A2 * !B1 * !D1 * !X)	-0.00004	-0.00004	-0.00006
	(!A2 * !B1 * !D1 * !X)	0.00309	0.00311	0.00301
	(!A1 * !A2 * B1 * D1 * !X)	0.00025	0.00024	0.00023
	(!A1 * !A2 * B1 * D1 * !X)	0.00305	0.00305	0.00300
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00003	-0.00009	-0.00009
	(!A1 * !A2 * B1 * !D1 * !X)	0.00321	0.00317	0.00306

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00094	-0.00146	-0.00152
	(A2 * B1 * !D1 * !X)	0.00594	0.00549	0.00537
	(A2 * !B1 * D1 * !X)	0.00045	0.00043	0.00039
	(A2 * !B1 * D1 * !X)	0.00551	0.00557	0.00540
	(A2 * !B1 * !D1 * !X)	-0.00017	-0.00016	-0.00020
	(A2 * !B1 * !D1 * !X)	0.00559	0.00564	0.00543
	(A1 * !A2 * B1 * !D1 * !X)	-0.00091	-0.00145	-0.00152
	(A1 * !A2 * B1 * !D1 * !X)	0.00596	0.00550	0.00537
	(!A2 * !B1 * D1 * !X)	0.00045	0.00043	0.00039
	(!A2 * !B1 * D1 * !X)	0.00552	0.00557	0.00540
	(!A2 * !B1 * !D1 * !X)	-0.00017	-0.00016	-0.00020
	(!A2 * !B1 * !D1 * !X)	0.00559	0.00564	0.00543
	(!A1 * !A2 * B1 * D1 * !X)	0.00050	0.00049	0.00044
	(!A1 * !A2 * B1 * D1 * !X)	0.00551	0.00552	0.00540
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00004	-0.00019	-0.00017
	(!A1 * !A2 * B1 * !D1 * !X)	0.00585	0.00575	0.00551

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00099	0.00099	0.00097
	(A2 * !C1 * !X)	-0.00178	-0.00178	-0.00183
	(A2 * !B1 * C1 * !X)	0.00100	0.00100	0.00096
	(A2 * !B1 * C1 * !X)	-0.00171	-0.00172	-0.00182
	(!A2 * !C1 * !X)	0.00099	0.00099	0.00097
	(!A2 * !C1 * !X)	-0.00178	-0.00178	-0.00183
	(!A2 * !B1 * C1 * !X)	0.00100	0.00100	0.00096
	(!A2 * !B1 * C1 * !X)	-0.00171	-0.00172	-0.00182
	(!A1 * !A2 * B1 * C1 * !X)	0.00109	0.00109	0.00099
	(!A1 * !A2 * B1 * C1 * !X)	-0.00156	-0.00157	-0.00179

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00146	0.00145	0.00142
	(A2 * !C1 * !X)	-0.00162	-0.00162	-0.00168
	(A2 * !B1 * C1 * !X)	0.00146	0.00145	0.00140
	(A2 * !B1 * C1 * !X)	-0.00155	-0.00156	-0.00167
	(!A2 * !C1 * !X)	0.00146	0.00145	0.00142
	(!A2 * !C1 * !X)	-0.00162	-0.00162	-0.00168
	(!A2 * !B1 * C1 * !X)	0.00146	0.00145	0.00140
	(!A2 * !B1 * C1 * !X)	-0.00155	-0.00155	-0.00167
	(!A1 * !A2 * B1 * C1 * !X)	0.00154	0.00154	0.00143
	(!A1 * !A2 * B1 * C1 * !X)	-0.00139	-0.00140	-0.00163
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00297	0.00297	0.00288
	(A2 * !C1 * !X)	-0.00237	-0.00240	-0.00253
	(A2 * !B1 * C1 * !X)	0.00295	0.00295	0.00281
	(A2 * !B1 * C1 * !X)	-0.00221	-0.00225	-0.00250
	(!A2 * !C1 * !X)	0.00297	0.00297	0.00288
	(!A2 * !C1 * !X)	-0.00237	-0.00240	-0.00253
	(!A2 * !B1 * C1 * !X)	0.00295	0.00295	0.00281
	(!A2 * !B1 * C1 * !X)	-0.00221	-0.00225	-0.00251
	(!A1 * !A2 * B1 * C1 * !X)	0.00308	0.00308	0.00284
	(!A1 * !A2 * B1 * C1 * !X)	-0.00192	-0.00196	-0.00244

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00008	-0.00008	-0.00008
	(A2 * !C1 * !X)	0.00270	0.00270	0.00270
	(A2 * !B1 * C1 * !X)	-0.00007	-0.00007	-0.00007
	(A2 * !B1 * C1 * !X)	0.00270	0.00271	0.00270
	(!A2 * !C1 * !X)	-0.00008	-0.00008	-0.00008
	(!A2 * !C1 * !X)	0.00270	0.00269	0.00270
	(!A2 * !B1 * C1 * !X)	-0.00007	-0.00007	-0.00007
	(!A2 * !B1 * C1 * !X)	0.00270	0.00270	0.00270
	(!A1 * !A2 * B1 * C1 * !X)	-0.00007	-0.00007	-0.00006
	(!A1 * !A2 * B1 * C1 * !X)	0.00270	0.00271	0.00270
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00033	0.00031	0.00033
	(A2 * !C1 * !X)	0.00341	0.00346	0.00342
	(A2 * !B1 * C1 * !X)	0.00035	0.00034	0.00035
	(A2 * !B1 * C1 * !X)	0.00341	0.00343	0.00342
	(!A2 * !C1 * !X)	0.00033	0.00031	0.00033
	(!A2 * !C1 * !X)	0.00341	0.00346	0.00342
	(!A2 * !B1 * C1 * !X)	0.00035	0.00034	0.00035
	(!A2 * !B1 * C1 * !X)	0.00341	0.00343	0.00342
	(!A1 * !A2 * B1 * C1 * !X)	0.00035	0.00034	0.00036
	(!A1 * !A2 * B1 * C1 * !X)	0.00341	0.00345	0.00342
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00062	0.00062	0.00062
	(A2 * !C1 * !X)	0.00602	0.00602	0.00602
	(A2 * !B1 * C1 * !X)	0.00069	0.00068	0.00069
	(A2 * !B1 * C1 * !X)	0.00599	0.00601	0.00601
	(!A2 * !C1 * !X)	0.00062	0.00062	0.00062
	(!A2 * !C1 * !X)	0.00602	0.00602	0.00602
	(!A2 * !B1 * C1 * !X)	0.00069	0.00068	0.00069
	(!A2 * !B1 * C1 * !X)	0.00599	0.00601	0.00601
	(!A1 * !A2 * B1 * C1 * !X)	0.00071	0.00070	0.00071
	(!A1 * !A2 * B1 * C1 * !X)	0.00599	0.00602	0.00601

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00288	0.00298	0.00303	0.00295	0.66067
sky130_fd_sc_hs__o211ai_2	0.00563	0.00573	0.00572	0.00558	1.16904
sky130_fd_sc_hs__o211ai_4	0.01111	0.01131	0.00807	0.00828	2.10729

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	24.92510	148.54400
sky130_fd_sc_hs__o211ai_2	0.00000	49.59870	296.73300
sky130_fd_sc_hs__o211ai_4	0.00000	61.98860	395.52300

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)	0.10033	0.79251	8.79581
	A2->Y (FR)	0.08850	0.82470	9.38802
	B1->Y (FR)	0.04127	0.57031	6.72482
	C1->Y (FR)	0.03398	0.56137	6.70376
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.09515	0.67602	8.60787
	A2->Y (FR)	0.07800	0.70778	9.22492
	B1->Y (FR)	0.03407	0.47078	6.26213
	C1->Y (FR)	0.02514	0.45425	6.18302
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.09109	0.56759	8.26771
	A2->Y (FR)	0.07475	0.61414	9.03791
	B1->Y (FR)	0.04963	0.59392	8.93904
	C1->Y (FR)	0.03253	0.56869	8.78178

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.06808	0.51024	5.52842
	A2->Y (RF)	0.05529	0.48602	5.38415
	B1->Y (RF)	0.06246	0.56479	6.35971
	C1->Y (RF)	0.05292	0.59787	6.89889
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.06474	0.41467	5.21781
	A2->Y (RF)	0.05031	0.39791	5.18971
	B1->Y (RF)	0.05937	0.48906	6.29834
	C1->Y (RF)	0.04636	0.51956	6.84781
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.06487	0.35760	5.28397
	A2->Y (RF)	0.04667	0.32801	5.07572
	B1->Y (RF)	0.05416	0.41192	6.18552
	C1->Y (RF)	0.04227	0.45978	7.01046

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00218	0.00349	0.03109
	A1	0.01120	0.01250	0.03999
	A2	0.00220	0.00436	0.03610
	A2	0.00988	0.01201	0.04364
	B1	0.00084	0.00376	0.04443
	B1	0.00708	0.01009	0.05055
	C1	0.00008	0.00301	0.04229
	C1	0.00511	0.00806	0.04721
sky130_fd_sc_hs__o211ai_2	A1	0.00282	0.00564	0.06005
	A1	0.02107	0.02386	0.07783
	A2	0.00285	0.00737	0.06743
	A2	0.01818	0.02273	0.08261
	B1	0.00088	0.00734	0.08668
	B1	0.01330	0.01984	0.09993
	C1	-0.00156	0.00522	0.08196
	C1	0.00827	0.01508	0.09299
sky130_fd_sc_hs__o211ai_4	A1	0.00543	0.01150	0.11464
	A1	0.04111	0.04708	0.14979
	A2	0.00542	0.01481	0.12790
	A2	0.03542	0.04491	0.15790
	B1	0.00092	0.00928	0.09792
	B1	0.02037	0.02873	0.11715
	C1	-0.00311	0.00613	0.09252
	C1	0.01155	0.02101	0.10727

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01408	0.01503	0.03892
	A1	0.00502	0.00596	0.02939
	A2	0.01191	0.01293	0.03499
	A2	0.00421	0.00523	0.02705
	B1	0.00946	0.01089	0.03628
	B1	0.00318	0.00459	0.03001
	C1	0.00830	0.01006	0.03638
	C1	0.00325	0.00498	0.03056
sky130_fd_sc_hs__o211ai_2	A1	0.02785	0.02995	0.07855
	A1	0.00953	0.01161	0.05973
	A2	0.02224	0.02469	0.06931
	A2	0.00680	0.00926	0.05339
	B1	0.01708	0.02032	0.07253
	B1	0.00460	0.00782	0.05855
	C1	0.01454	0.01865	0.07070
	C1	0.00471	0.00873	0.05984
sky130_fd_sc_hs__o211ai_4	A1	0.04847	0.05321	0.14782
	A1	0.01265	0.01733	0.11159
	A2	0.03740	0.04320	0.13047
	A2	0.00722	0.01288	0.09943
	B1	0.02599	0.03032	0.08585
	B1	0.00655	0.01087	0.06643
	C1	0.02127	0.02646	0.08068
	C1	0.00665	0.01183	0.06483

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)**	0.00328	0.00291	0.00307
	(A2 * B1 * C1 * !Y)	-0.00079	-0.00117	-0.00097
	(A2 * B1 * !C1 * Y)	0.00179	0.00180	0.00179
	(A2 * B1 * !C1 * Y)	-0.00225	-0.00225	-0.00224
	(A2 * !B1 * Y)	0.00179	0.00180	0.00179
	(A2 * !B1 * Y)	-0.00225	-0.00225	-0.00224
	(!A2 * B1 * !C1 * Y)	0.00170	0.00172	0.00171
	(!A2 * B1 * !C1 * Y)	-0.00224	-0.00225	-0.00224
	(!A2 * !B1 * C1 * Y)	0.00172	0.00175	0.00173
	(!A2 * !B1 * C1 * Y)	-0.00223	-0.00226	-0.00224
	(!A2 * !B1 * !C1 * Y)	0.00172	0.00173	0.00171
	(!A2 * !B1 * !C1 * Y)	-0.00226	-0.00227	-0.00226
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00682	0.00589	0.00607
	(A2 * B1 * C1 * !Y)	-0.00133	-0.00232	-0.00203
	(A2 * B1 * !C1 * Y)	0.00348	0.00352	0.00349
	(A2 * B1 * !C1 * Y)	-0.00459	-0.00462	-0.00459
	(A2 * !B1 * Y)	0.00348	0.00352	0.00349
	(A2 * !B1 * Y)	-0.00460	-0.00462	-0.00459
	(!A2 * B1 * !C1 * Y)	0.00331	0.00333	0.00333
	(!A2 * B1 * !C1 * Y)	-0.00460	-0.00461	-0.00460
	(!A2 * !B1 * C1 * Y)	0.00337	0.00342	0.00338
	(!A2 * !B1 * C1 * Y)	-0.00460	-0.00463	-0.00461
	(!A2 * !B1 * !C1 * Y)	0.00336	0.00338	0.00335
	(!A2 * !B1 * !C1 * Y)	-0.00464	-0.00465	-0.00463

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.01166	0.00987	0.01028
	(A2 * B1 * C1 * !Y)	-0.00450	-0.00634	-0.00572
	(A2 * B1 * !C1 * Y)	0.00686	0.00690	0.00684
	(A2 * B1 * !C1 * Y)	-0.00915	-0.00917	-0.00910
	(A2 * !B1 * Y)	0.00685	0.00690	0.00684
	(A2 * !B1 * Y)	-0.00915	-0.00917	-0.00911
	(!A2 * B1 * !C1 * Y)	0.00648	0.00654	0.00650
	(!A2 * B1 * !C1 * Y)	-0.00913	-0.00917	-0.00912
	(!A2 * !B1 * C1 * Y)	0.00659	0.00668	0.00662
	(!A2 * !B1 * C1 * Y)	-0.00913	-0.00919	-0.00913
	(!A2 * !B1 * !C1 * Y)	0.00651	0.00656	0.00653
	(!A2 * !B1 * !C1 * Y)	-0.00917	-0.00920	-0.00918

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)**	-0.00048	-0.00050	-0.00056
	(A2 * B1 * C1 * !Y)	0.00358	0.00358	0.00350
	(A2 * B1 * !C1 * Y)	-0.00176	-0.00176	-0.00175
	(A2 * B1 * !C1 * Y)	0.00228	0.00229	0.00228
	(A2 * !B1 * Y)	-0.00176	-0.00176	-0.00175
	(A2 * !B1 * Y)	0.00228	0.00228	0.00228
	(!A2 * B1 * !C1 * Y)	-0.00149	-0.00167	-0.00169
	(!A2 * B1 * !C1 * Y)	0.00239	0.00233	0.00228
	(!A2 * !B1 * C1 * Y)	-0.00157	-0.00169	-0.00171
	(!A2 * !B1 * C1 * Y)	0.00237	0.00229	0.00228
	(!A2 * !B1 * !C1 * Y)	-0.00166	-0.00171	-0.00171
	(!A2 * !B1 * !C1 * Y)	0.00228	0.00227	0.00227

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00086	-0.00092	-0.00102
	(A2 * B1 * C1 * !Y)	0.00724	0.00728	0.00712
	(A2 * B1 * !C1 * Y)	-0.00343	-0.00344	-0.00343
	(A2 * B1 * !C1 * Y)	0.00464	0.00468	0.00465
	(A2 * !B1 * Y)	-0.00343	-0.00345	-0.00343
	(A2 * !B1 * Y)	0.00464	0.00470	0.00465
	(!A2 * B1 * !C1 * Y)	-0.00296	-0.00327	-0.00332
	(!A2 * B1 * !C1 * Y)	0.00486	0.00477	0.00467
	(!A2 * !B1 * C1 * Y)	-0.00312	-0.00332	-0.00334
	(!A2 * !B1 * C1 * Y)	0.00480	0.00470	0.00468
	(!A2 * !B1 * !C1 * Y)	-0.00325	-0.00334	-0.00335
	(!A2 * !B1 * !C1 * Y)	0.00467	0.00466	0.00465
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00334	-0.00342	-0.00365
	(A2 * B1 * C1 * !Y)	0.01269	0.01273	0.01244
	(A2 * B1 * !C1 * Y)	-0.00672	-0.00676	-0.00672
	(A2 * B1 * !C1 * Y)	0.00921	0.00931	0.00923
	(A2 * !B1 * Y)	-0.00672	-0.00677	-0.00673
	(A2 * !B1 * Y)	0.00921	0.00931	0.00922
	(!A2 * B1 * !C1 * Y)	-0.00566	-0.00637	-0.00647
	(!A2 * B1 * !C1 * Y)	0.00977	0.00937	0.00927
	(!A2 * !B1 * C1 * Y)	-0.00598	-0.00650	-0.00652
	(!A2 * !B1 * C1 * Y)	0.00963	0.00932	0.00928
	(!A2 * !B1 * !C1 * Y)	-0.00631	-0.00656	-0.00653
	(!A2 * !B1 * !C1 * Y)	0.00927	0.00928	0.00923

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)**	0.00277	0.00280	0.00279
	(A1 * B1 * C1 * !Y)	-0.00008	-0.00009	-0.00006
	(A1 * B1 * !C1 * Y)	0.00174	0.00176	0.00174
	(A1 * B1 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(A1 * !B1 * C1 * Y)	0.00174	0.00176	0.00174
	(A1 * !B1 * C1 * Y)	-0.00226	-0.00228	-0.00226
	(A1 * !B1 * !C1 * Y)	0.00173	0.00175	0.00173
	(A1 * !B1 * !C1 * Y)	-0.00227	-0.00228	-0.00226
	(!A1 * B1 * !C1 * Y)	0.00165	0.00167	0.00166
	(!A1 * B1 * !C1 * Y)	-0.00226	-0.00227	-0.00225
	(!A1 * !B1 * C1 * Y)	0.00169	0.00170	0.00169
	(!A1 * !B1 * C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A1 * !B1 * !C1 * Y)	0.00165	0.00167	0.00166
	(!A1 * !B1 * !C1 * Y)	-0.00226	-0.00228	-0.00227
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00567	0.00575	0.00571
	(A1 * B1 * C1 * !Y)	-0.00007	-0.00010	-0.00004
	(A1 * B1 * !C1 * Y)	0.00352	0.00355	0.00350
	(A1 * B1 * !C1 * Y)	-0.00457	-0.00458	-0.00454
	(A1 * !B1 * C1 * Y)	0.00352	0.00354	0.00350
	(A1 * !B1 * C1 * Y)	-0.00457	-0.00458	-0.00454
	(A1 * !B1 * !C1 * Y)	0.00350	0.00352	0.00348
	(A1 * !B1 * !C1 * Y)	-0.00456	-0.00460	-0.00456
	(!A1 * B1 * !C1 * Y)	0.00334	0.00334	0.00332
	(!A1 * B1 * !C1 * Y)	-0.00458	-0.00457	-0.00455
	(!A1 * !B1 * C1 * Y)	0.00339	0.00341	0.00338
	(!A1 * !B1 * C1 * Y)	-0.00457	-0.00458	-0.00456
	(!A1 * !B1 * !C1 * Y)	0.00335	0.00338	0.00334
	(!A1 * !B1 * !C1 * Y)	-0.00459	-0.00460	-0.00458

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00947	0.00946	0.00950
	(A1 * B1 * C1 * !Y)	-0.00197	-0.00193	-0.00186
	(A1 * B1 * !C1 * Y)	0.00688	0.00687	0.00684
	(A1 * B1 * !C1 * Y)	-0.00920	-0.00918	-0.00914
	(A1 * !B1 * C1 * Y)	0.00688	0.00687	0.00684
	(A1 * !B1 * C1 * Y)	-0.00920	-0.00918	-0.00914
	(A1 * !B1 * !C1 * Y)	0.00684	0.00680	0.00680
	(A1 * !B1 * !C1 * Y)	-0.00918	-0.00919	-0.00918
	(!A1 * B1 * !C1 * Y)	0.00648	0.00655	0.00652
	(!A1 * B1 * !C1 * Y)	-0.00914	-0.00919	-0.00915
	(!A1 * !B1 * C1 * Y)	0.00663	0.00665	0.00662
	(!A1 * !B1 * C1 * Y)	-0.00920	-0.00919	-0.00916
	(!A1 * !B1 * !C1 * Y)	0.00646	0.00656	0.00650
	(!A1 * !B1 * !C1 * Y)	-0.00917	-0.00925	-0.00920

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)**	-0.00068	-0.00069	-0.00081
	(A1 * B1 * C1 * !Y)	0.00219	0.00218	0.00206
	(A1 * B1 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * !C1 * Y)	0.00229	0.00231	0.00229
	(A1 * !B1 * C1 * Y)	-0.00172	-0.00171	-0.00171
	(A1 * !B1 * C1 * Y)	0.00229	0.00228	0.00229
	(A1 * !B1 * !C1 * Y)	-0.00172	-0.00172	-0.00172
	(A1 * !B1 * !C1 * Y)	0.00228	0.00228	0.00228
	(!A1 * B1 * !C1 * Y)	-0.00144	-0.00163	-0.00165
	(!A1 * B1 * !C1 * Y)	0.00241	0.00234	0.00230
	(!A1 * !B1 * C1 * Y)	-0.00153	-0.00164	-0.00166
	(!A1 * !B1 * C1 * Y)	0.00238	0.00231	0.00230
	(!A1 * !B1 * !C1 * Y)	-0.00162	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * Y)	0.00229	0.00229	0.00229
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00140	-0.00143	-0.00175
	(A1 * B1 * C1 * !Y)	0.00437	0.00437	0.00407
	(A1 * B1 * !C1 * Y)	-0.00344	-0.00346	-0.00344
	(A1 * B1 * !C1 * Y)	0.00459	0.00462	0.00460
	(A1 * !B1 * C1 * Y)	-0.00344	-0.00346	-0.00344
	(A1 * !B1 * C1 * Y)	0.00460	0.00463	0.00460
	(A1 * !B1 * !C1 * Y)	-0.00345	-0.00348	-0.00346
	(A1 * !B1 * !C1 * Y)	0.00456	0.00462	0.00458
	(!A1 * B1 * !C1 * Y)	-0.00292	-0.00327	-0.00332
	(!A1 * B1 * !C1 * Y)	0.00483	0.00471	0.00462
	(!A1 * !B1 * C1 * Y)	-0.00310	-0.00331	-0.00334
	(!A1 * !B1 * C1 * Y)	0.00478	0.00465	0.00463
	(!A1 * !B1 * !C1 * Y)	-0.00325	-0.00334	-0.00334
	(!A1 * !B1 * !C1 * Y)	0.00462	0.00461	0.00460

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00438	-0.00445	-0.00504
	(A1 * B1 * C1 * !Y)	0.00704	0.00704	0.00646
	(A1 * B1 * !C1 * Y)	-0.00672	-0.00677	-0.00672
	(A1 * B1 * !C1 * Y)	0.00925	0.00933	0.00925
	(A1 * !B1 * C1 * Y)	-0.00671	-0.00677	-0.00672
	(A1 * !B1 * C1 * Y)	0.00921	0.00932	0.00924
	(A1 * !B1 * !C1 * Y)	-0.00674	-0.00680	-0.00676
	(A1 * !B1 * !C1 * Y)	0.00918	0.00928	0.00921
	(!A1 * B1 * !C1 * Y)	-0.00562	-0.00634	-0.00647
	(!A1 * B1 * !C1 * Y)	0.00981	0.00937	0.00930
	(!A1 * !B1 * C1 * Y)	-0.00597	-0.00650	-0.00651
	(!A1 * !B1 * C1 * Y)	0.00965	0.00936	0.00931
	(!A1 * !B1 * !C1 * Y)	-0.00631	-0.00655	-0.00650
	(!A1 * !B1 * !C1 * Y)	0.00928	0.00928	0.00925

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00165	0.00168	0.00166
	(A2 * !C1 * Y)	-0.00235	-0.00237	-0.00235
	(A1 * !A2 * !C1 * Y)	0.00165	0.00166	0.00166
	(A1 * !A2 * !C1 * Y)	-0.00235	-0.00236	-0.00235
	(!A1 * !A2 * C1 * Y)	0.00073	0.00074	0.00074
	(!A1 * !A2 * C1 * Y)	-0.00236	-0.00238	-0.00236
	(!A1 * !A2 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !C1 * Y)	-0.00237	-0.00238	-0.00237
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00331	0.00334	0.00332
	(A2 * !C1 * Y)	-0.00462	-0.00465	-0.00462
	(A1 * !A2 * !C1 * Y)	0.00329	0.00332	0.00332
	(A1 * !A2 * !C1 * Y)	-0.00461	-0.00464	-0.00462
	(!A1 * !A2 * C1 * Y)	0.00137	0.00138	0.00141
	(!A1 * !A2 * C1 * Y)	-0.00464	-0.00466	-0.00463
	(!A1 * !A2 * !C1 * Y)	0.00187	0.00190	0.00188
	(!A1 * !A2 * !C1 * Y)	-0.00466	-0.00470	-0.00467
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00654	0.00662	0.00657
	(A2 * !C1 * Y)	-0.00460	-0.00463	-0.00460
	(A1 * !A2 * !C1 * Y)	0.00654	0.00662	0.00657
	(A1 * !A2 * !C1 * Y)	-0.00460	-0.00464	-0.00460
	(!A1 * !A2 * C1 * Y)	0.00270	0.00271	0.00273
	(!A1 * !A2 * C1 * Y)	-0.00466	-0.00468	-0.00462
	(!A1 * !A2 * !C1 * Y)	0.00361	0.00366	0.00362
	(!A1 * !A2 * !C1 * Y)	-0.00467	-0.00471	-0.00468

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	-0.00160	-0.00162
	(A2 * !C1 * Y)	0.00261	0.00245	0.00240
	(A1 * !A2 * !C1 * Y)	-0.00139	-0.00160	-0.00162
	(A1 * !A2 * !C1 * Y)	0.00264	0.00244	0.00240
	(!A1 * !A2 * C1 * Y)	-0.00066	-0.00066	-0.00068
	(!A1 * !A2 * C1 * Y)	0.00247	0.00247	0.00241
	(!A1 * !A2 * !C1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !A2 * !C1 * Y)	0.00255	0.00255	0.00243
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00276	-0.00321	-0.00325
	(A2 * !C1 * Y)	0.00521	0.00479	0.00471
	(A1 * !A2 * !C1 * Y)	-0.00269	-0.00320	-0.00325
	(A1 * !A2 * !C1 * Y)	0.00525	0.00482	0.00471
	(!A1 * !A2 * C1 * Y)	-0.00123	-0.00125	-0.00129
	(!A1 * !A2 * C1 * Y)	0.00489	0.00496	0.00476
	(!A1 * !A2 * !C1 * Y)	-0.00186	-0.00190	-0.00188
	(!A1 * !A2 * !C1 * Y)	0.00498	0.00502	0.00479
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00553	-0.00635	-0.00644
	(A2 * !C1 * Y)	0.00570	0.00492	0.00475
	(A1 * !A2 * !C1 * Y)	-0.00535	-0.00632	-0.00643
	(A1 * !A2 * !C1 * Y)	0.00582	0.00497	0.00475
	(!A1 * !A2 * C1 * Y)	-0.00239	-0.00243	-0.00250
	(!A1 * !A2 * C1 * Y)	0.00506	0.00513	0.00483
	(!A1 * !A2 * !C1 * Y)	-0.00361	-0.00366	-0.00362
	(!A1 * !A2 * !C1 * Y)	0.00537	0.00531	0.00490

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00058	0.00058	0.00055
	(A2 * !B1 * Y)	-0.00261	-0.00262	-0.00267
	(!A2 * !B1 * Y)	0.00058	0.00058	0.00055
	(!A2 * !B1 * Y)	-0.00261	-0.00262	-0.00267
	(!A1 * !A2 * B1 * Y)	0.00063	0.00064	0.00055
	(!A1 * !A2 * B1 * Y)	-0.00247	-0.00249	-0.00265
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00123	0.00123	0.00114
	(A2 * !B1 * Y)	-0.00506	-0.00509	-0.00522
	(!A2 * !B1 * Y)	0.00123	0.00123	0.00114
	(!A2 * !B1 * Y)	-0.00506	-0.00509	-0.00522
	(!A1 * !A2 * B1 * Y)	0.00127	0.00127	0.00110
	(!A1 * !A2 * B1 * Y)	-0.00481	-0.00485	-0.00517
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00232	0.00233	0.00218
	(A2 * !B1 * Y)	-0.00576	-0.00581	-0.00606
	(!A2 * !B1 * Y)	0.00233	0.00233	0.00218
	(!A2 * !B1 * Y)	-0.00577	-0.00580	-0.00606
	(!A1 * !A2 * B1 * Y)	0.00242	0.00243	0.00210
	(!A1 * !A2 * B1 * Y)	-0.00524	-0.00530	-0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(A2 * !B1 * Y)	0.00268	0.00268	0.00269
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00268	0.00273	0.00269
	(!A1 * !A2 * B1 * Y)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B1 * Y)	0.00268	0.00270	0.00269
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * Y)	0.00524	0.00527	0.00526
	(!A2 * !B1 * Y)	-0.00109	-0.00109	-0.00108
	(!A2 * !B1 * Y)	0.00526	0.00527	0.00526
	(!A1 * !A2 * B1 * Y)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * B1 * Y)	0.00524	0.00527	0.00526
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00207	-0.00209	-0.00207
	(A2 * !B1 * Y)	0.00609	0.00614	0.00612
	(!A2 * !B1 * Y)	-0.00206	-0.00208	-0.00207
	(!A2 * !B1 * Y)	0.00608	0.00613	0.00612
	(!A1 * !A2 * B1 * Y)	-0.00194	-0.00195	-0.00193
	(!A1 * !A2 * B1 * Y)	0.00609	0.00613	0.00610

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00276	0.00295	0.00272	0.00268	1.34767
sky130_fd_sc_hs__o211a_2	0.00292	0.00291	0.00290	0.00283	2.60756
sky130_fd_sc_hs__o211a_4	0.00532	0.00506	0.00519	0.00460	4.70961

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	74.16070	204.23700
sky130_fd_sc_hs__o211a_2	0.00000	114.36400	205.70900
sky130_fd_sc_hs__o211a_4	0.00000	253.84000	543.83000

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)	0.12111	0.58768	6.51605
	A2->X (RR)	0.10448	0.56279	6.37915
	B1->X (RR)	0.11372	0.62134	7.07185
	C1->X (RR)	0.10486	0.63045	7.20479
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.12327	0.50835	6.39314
	A2->X (RR)	0.10467	0.48279	6.24362
	B1->X (RR)	0.11700	0.54892	6.97942
	C1->X (RR)	0.10799	0.55997	7.11029
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.12543	0.45184	6.47207
	A2->X (RR)	0.11122	0.42764	6.37089
	B1->X (RR)	0.10400	0.46058	6.81972
	C1->X (RR)	0.09281	0.46314	6.90833

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.14394	0.55927	5.26227
	A2->X (FF)	0.13259	0.58167	5.44217
	B1->X (FF)	0.07092	0.46285	4.87734
	C1->X (FF)	0.06414	0.44065	4.74078
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.16658	0.55627	5.38605
	A2->X (FF)	0.15370	0.58349	5.57590
	B1->X (FF)	0.08291	0.45567	5.01582
	C1->X (FF)	0.07541	0.43512	4.87661
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.15765	0.49455	5.10960
	A2->X (FF)	0.14192	0.51278	5.28374
	B1->X (FF)	0.08667	0.41528	4.83220
	C1->X (FF)	0.08577	0.41285	4.83593

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01940	0.02218	0.09790
	A1	0.01085	0.01363	0.08954
	A2	0.01821	0.02138	0.10086
	A2	0.01054	0.01372	0.09349
	B1	0.01473	0.01985	0.12195
	B1	0.00874	0.01386	0.11946
	C1	0.01369	0.01943	0.12193
	C1	0.00871	0.01446	0.11702
sky130_fd_sc_hs__o211a_2	A1	0.02359	0.02601	0.10032
	A1	0.01458	0.01704	0.09192
	A2	0.02164	0.02461	0.10241
	A2	0.01391	0.01688	0.09563
	B1	0.01843	0.02331	0.12754
	B1	0.01383	0.01832	0.12544
	C1	0.01729	0.02279	0.12691
	C1	0.01206	0.01757	0.12167
sky130_fd_sc_hs__o211a_4	A1	0.04823	0.05346	0.21293
	A1	0.03188	0.03720	0.19750
	A2	0.04420	0.05026	0.21680
	A2	0.03070	0.03674	0.20440
	B1	0.03812	0.04698	0.22592
	B1	0.02712	0.03599	0.21532
	C1	0.03544	0.04571	0.23310
	C1	0.02727	0.03768	0.22506

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00726	0.01043	0.09148
	A1	0.01578	0.01891	0.09923
	A2	0.00686	0.01129	0.09646
	A2	0.01448	0.01890	0.10336
	B1	0.00542	0.01205	0.11518
	B1	0.01140	0.01801	0.12076
	C1	0.00486	0.01160	0.11503
	C1	0.00983	0.01646	0.11880
sky130_fd_sc_hs__o211a_2	A1	0.01284	0.01423	0.09617
	A1	0.02179	0.02317	0.10367
	A2	0.01284	0.01565	0.10103
	A2	0.02052	0.02331	0.10805
	B1	0.00965	0.01605	0.12326
	B1	0.01600	0.02230	0.12680
	C1	0.00894	0.01522	0.12118
	C1	0.01416	0.02042	0.12391
sky130_fd_sc_hs__o211a_4	A1	0.02480	0.02866	0.19313
	A1	0.04106	0.04470	0.20471
	A2	0.02525	0.03162	0.20206
	A2	0.03866	0.04474	0.21305
	B1	0.01899	0.02967	0.21899
	B1	0.03229	0.04279	0.22905
	C1	0.01920	0.02918	0.21526
	C1	0.02965	0.03946	0.22099

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)**	0.00351	0.00319	0.00347
	(A2 * B1 * C1 * X)	-0.00028	-0.00062	-0.00030
	(A2 * B1 * !C1 * !X)	0.00196	0.00197	0.00196
	(A2 * B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * !X)	0.00196	0.00197	0.00196
	(A2 * !B1 * !X)	-0.00180	-0.00181	-0.00180
	(!A2 * B1 * !C1 * !X)	0.00188	0.00189	0.00189
	(!A2 * B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * C1 * !X)	0.00191	0.00192	0.00191
	(!A2 * !B1 * C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * !C1 * !X)	0.00189	0.00190	0.00189
	(!A2 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00374	0.00341	0.00369
	(A2 * B1 * C1 * X)	-0.00020	-0.00055	-0.00024
	(A2 * B1 * !C1 * !X)	0.00253	0.00254	0.00253
	(A2 * B1 * !C1 * !X)	-0.00139	-0.00139	-0.00138
	(A2 * !B1 * !X)	0.00252	0.00254	0.00253
	(A2 * !B1 * !X)	-0.00139	-0.00139	-0.00138
	(!A2 * B1 * !C1 * !X)	0.00244	0.00245	0.00244
	(!A2 * B1 * !C1 * !X)	-0.00139	-0.00140	-0.00138
	(!A2 * !B1 * C1 * !X)	0.00249	0.00250	0.00248
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * !X)	0.00247	0.00247	0.00246
	(!A2 * !B1 * !C1 * !X)	-0.00141	-0.00141	-0.00140

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00824	0.00761	0.00809
	(A2 * B1 * C1 * X)	0.00070	-0.00001	0.00058
	(A2 * B1 * !C1 * !X)	0.00508	0.00512	0.00509
	(A2 * B1 * !C1 * !X)	-0.00239	-0.00242	-0.00238
	(A2 * !B1 * !X)	0.00507	0.00512	0.00509
	(A2 * !B1 * !X)	-0.00239	-0.00242	-0.00239
	(!A2 * B1 * !C1 * !X)	0.00493	0.00497	0.00495
	(!A2 * B1 * !C1 * !X)	-0.00239	-0.00241	-0.00239
	(!A2 * !B1 * C1 * !X)	0.00498	0.00503	0.00500
	(!A2 * !B1 * C1 * !X)	-0.00239	-0.00242	-0.00239
	(!A2 * !B1 * !C1 * !X)	0.00494	0.00497	0.00495
	(!A2 * !B1 * !C1 * !X)	-0.00242	-0.00244	-0.00243

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)**	0.00007	0.00004	-0.00004
	(A2 * B1 * C1 * X)	0.00386	0.00387	0.00375
	(A2 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * !C1 * !X)	0.00270	0.00272	0.00270
	(A2 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A2 * !B1 * !X)	0.00270	0.00272	0.00270
	(!A2 * B1 * !C1 * !X)	-0.00081	-0.00098	-0.00101
	(!A2 * B1 * !C1 * !X)	0.00283	0.00276	0.00271
	(!A2 * !B1 * C1 * !X)	-0.00087	-0.00101	-0.00102
	(!A2 * !B1 * C1 * !X)	0.00280	0.00275	0.00271
	(!A2 * !B1 * !C1 * !X)	-0.00097	-0.00103	-0.00104
	(!A2 * !B1 * !C1 * !X)	0.00270	0.00272	0.00269

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00013	-0.00015	-0.00023
	(A2 * B1 * C1 * X)	0.00382	0.00383	0.00371
	(A2 * B1 * !C1 * !X)	-0.00078	-0.00078	-0.00077
	(A2 * B1 * !C1 * !X)	0.00315	0.00316	0.00314
	(A2 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(A2 * !B1 * !X)	0.00314	0.00316	0.00314
	(!A2 * B1 * !C1 * !X)	-0.00053	-0.00069	-0.00072
	(!A2 * B1 * !C1 * !X)	0.00325	0.00319	0.00315
	(!A2 * !B1 * C1 * !X)	-0.00060	-0.00071	-0.00073
	(!A2 * !B1 * C1 * !X)	0.00323	0.00316	0.00315
	(!A2 * !B1 * !C1 * !X)	-0.00068	-0.00073	-0.00074
	(!A2 * !B1 * !C1 * !X)	0.00315	0.00314	0.00314
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00136	0.00132	0.00114
	(A2 * B1 * C1 * X)	0.00889	0.00888	0.00869
	(A2 * B1 * !C1 * !X)	-0.00156	-0.00159	-0.00157
	(A2 * B1 * !C1 * !X)	0.00590	0.00595	0.00591
	(A2 * !B1 * !X)	-0.00156	-0.00159	-0.00157
	(A2 * !B1 * !X)	0.00589	0.00595	0.00591
	(!A2 * B1 * !C1 * !X)	-0.00110	-0.00143	-0.00146
	(!A2 * B1 * !C1 * !X)	0.00615	0.00601	0.00593
	(!A2 * !B1 * C1 * !X)	-0.00121	-0.00147	-0.00149
	(!A2 * !B1 * C1 * !X)	0.00610	0.00599	0.00593
	(!A2 * !B1 * !C1 * !X)	-0.00139	-0.00151	-0.00152
	(!A2 * !B1 * !C1 * !X)	0.00589	0.00594	0.00590

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)**	0.00336	0.00338	0.00339
	(A1 * B1 * C1 * X)	0.00036	0.00036	0.00039
	(A1 * B1 * !C1 * !X)	0.00240	0.00240	0.00240
	(A1 * B1 * !C1 * !X)	-0.00163	-0.00163	-0.00162
	(A1 * !B1 * C1 * !X)	0.00240	0.00240	0.00240
	(A1 * !B1 * C1 * !X)	-0.00163	-0.00163	-0.00163
	(A1 * !B1 * !C1 * !X)	0.00239	0.00241	0.00239
	(A1 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !C1 * !X)	0.00233	0.00233	0.00232
	(!A1 * B1 * !C1 * !X)	-0.00163	-0.00164	-0.00162
	(!A1 * !B1 * C1 * !X)	0.00235	0.00236	0.00235
	(!A1 * !B1 * C1 * !X)	-0.00162	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00232	0.00234	0.00232
	(!A1 * !B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00314	0.00317	0.00317
	(A1 * B1 * C1 * X)	0.00037	0.00036	0.00040
	(A1 * B1 * !C1 * !X)	0.00250	0.00252	0.00250
	(A1 * B1 * !C1 * !X)	-0.00128	-0.00130	-0.00128
	(A1 * !B1 * C1 * !X)	0.00250	0.00252	0.00250
	(A1 * !B1 * C1 * !X)	-0.00128	-0.00130	-0.00128
	(A1 * !B1 * !C1 * !X)	0.00249	0.00251	0.00249
	(A1 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !C1 * !X)	0.00242	0.00244	0.00243
	(!A1 * B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * C1 * !X)	0.00246	0.00246	0.00246
	(!A1 * !B1 * C1 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * !X)	0.00245	0.00246	0.00244
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00687	0.00693	0.00692
	(A1 * B1 * C1 * X)	0.00188	0.00186	0.00194
	(A1 * B1 * !C1 * !X)	0.00461	0.00461	0.00461
	(A1 * B1 * !C1 * !X)	-0.00242	-0.00242	-0.00242
	(A1 * !B1 * C1 * !X)	0.00460	0.00460	0.00461
	(A1 * !B1 * C1 * !X)	-0.00242	-0.00242	-0.00242
	(A1 * !B1 * !C1 * !X)	0.00459	0.00462	0.00459
	(A1 * !B1 * !C1 * !X)	-0.00244	-0.00247	-0.00244
	(!A1 * B1 * !C1 * !X)	0.00446	0.00449	0.00447
	(!A1 * B1 * !C1 * !X)	-0.00241	-0.00244	-0.00241
	(!A1 * !B1 * C1 * !X)	0.00454	0.00452	0.00453
	(!A1 * !B1 * C1 * !X)	-0.00243	-0.00242	-0.00242
	(!A1 * !B1 * !C1 * !X)	0.00448	0.00450	0.00447
	(!A1 * !B1 * !C1 * !X)	-0.00246	-0.00247	-0.00245

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)**	-0.00052	-0.00054	-0.00069
	(A1 * B1 * C1 * X)	0.00250	0.00250	0.00234
	(A1 * B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * !C1 * !X)	0.00253	0.00254	0.00253
	(A1 * !B1 * C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !B1 * C1 * !X)	0.00252	0.00253	0.00253
	(A1 * !B1 * !C1 * !X)	-0.00152	-0.00152	-0.00151
	(A1 * !B1 * !C1 * !X)	0.00251	0.00252	0.00252
	(!A1 * B1 * !C1 * !X)	-0.00124	-0.00142	-0.00144
	(!A1 * B1 * !C1 * !X)	0.00267	0.00256	0.00254
	(!A1 * !B1 * C1 * !X)	-0.00131	-0.00144	-0.00146
	(!A1 * !B1 * C1 * !X)	0.00265	0.00256	0.00254
	(!A1 * !B1 * !C1 * !X)	-0.00141	-0.00147	-0.00147
	(!A1 * !B1 * !C1 * !X)	0.00253	0.00253	0.00252
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00026	-0.00028	-0.00044
	(A1 * B1 * C1 * X)	0.00251	0.00251	0.00235
	(A1 * B1 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * B1 * !C1 * !X)	0.00304	0.00305	0.00304
	(A1 * !B1 * C1 * !X)	-0.00074	-0.00075	-0.00075
	(A1 * !B1 * C1 * !X)	0.00304	0.00304	0.00304
	(A1 * !B1 * !C1 * !X)	-0.00075	-0.00077	-0.00076
	(A1 * !B1 * !C1 * !X)	0.00302	0.00304	0.00303
	(!A1 * B1 * !C1 * !X)	-0.00050	-0.00067	-0.00069
	(!A1 * B1 * !C1 * !X)	0.00315	0.00308	0.00304
	(!A1 * !B1 * C1 * !X)	-0.00058	-0.00069	-0.00071
	(!A1 * !B1 * C1 * !X)	0.00313	0.00305	0.00305
	(!A1 * !B1 * !C1 * !X)	-0.00066	-0.00070	-0.00072
	(!A1 * !B1 * !C1 * !X)	0.00304	0.00303	0.00303

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00121	0.00118	0.00085
	(A1 * B1 * C1 * X)	0.00623	0.00622	0.00589
	(A1 * B1 * !C1 * !X)	-0.00107	-0.00111	-0.00109
	(A1 * B1 * !C1 * !X)	0.00594	0.00597	0.00594
	(A1 * !B1 * C1 * !X)	-0.00108	-0.00111	-0.00109
	(A1 * !B1 * C1 * !X)	0.00593	0.00596	0.00594
	(A1 * !B1 * !C1 * !X)	-0.00111	-0.00114	-0.00112
	(A1 * !B1 * !C1 * !X)	0.00590	0.00594	0.00591
	(!A1 * B1 * !C1 * !X)	-0.00061	-0.00095	-0.00099
	(!A1 * B1 * !C1 * !X)	0.00618	0.00604	0.00595
	(!A1 * !B1 * C1 * !X)	-0.00075	-0.00097	-0.00102
	(!A1 * !B1 * C1 * !X)	0.00615	0.00597	0.00595
	(!A1 * !B1 * !C1 * !X)	-0.00093	-0.00101	-0.00105
	(!A1 * !B1 * !C1 * !X)	0.00594	0.00590	0.00592

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00180	0.00181	0.00181
	(A2 * !C1 * !X)	-0.00185	-0.00186	-0.00185
	(A1 * !A2 * !C1 * !X)	0.00180	0.00181	0.00181
	(A1 * !A2 * !C1 * !X)	-0.00184	-0.00186	-0.00185
	(!A1 * !A2 * C1 * !X)	0.00104	0.00104	0.00102
	(!A1 * !A2 * C1 * !X)	-0.00189	-0.00189	-0.00188
	(!A1 * !A2 * !C1 * !X)	0.00126	0.00125	0.00125
	(!A1 * !A2 * !C1 * !X)	-0.00189	-0.00188	-0.00189
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00245	0.00246	0.00245
	(A2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !C1 * !X)	0.00245	0.00246	0.00245
	(A1 * !A2 * !C1 * !X)	-0.00130	-0.00132	-0.00130
	(!A1 * !A2 * C1 * !X)	0.00154	0.00154	0.00153
	(!A1 * !A2 * C1 * !X)	-0.00135	-0.00134	-0.00133
	(!A1 * !A2 * !C1 * !X)	0.00175	0.00177	0.00176
	(!A1 * !A2 * !C1 * !X)	-0.00134	-0.00136	-0.00135
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00513	0.00514	0.00513
	(A2 * !C1 * !X)	-0.00196	-0.00197	-0.00195
	(A1 * !A2 * !C1 * !X)	0.00513	0.00514	0.00513
	(A1 * !A2 * !C1 * !X)	-0.00196	-0.00196	-0.00195
	(!A1 * !A2 * C1 * !X)	0.00351	0.00354	0.00349
	(!A1 * !A2 * C1 * !X)	-0.00199	-0.00202	-0.00199
	(!A1 * !A2 * !C1 * !X)	0.00389	0.00392	0.00390
	(!A1 * !A2 * !C1 * !X)	-0.00201	-0.00204	-0.00201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00072	-0.00087	-0.00089
	(A2 * !C1 * !X)	0.00295	0.00281	0.00276
	(A1 * !A2 * !C1 * !X)	-0.00069	-0.00087	-0.00089
	(A1 * !A2 * !C1 * !X)	0.00297	0.00280	0.00276
	(!A1 * !A2 * C1 * !X)	-0.00008	-0.00008	-0.00009
	(!A1 * !A2 * C1 * !X)	0.00284	0.00284	0.00279
	(!A1 * !A2 * !C1 * !X)	-0.00035	-0.00039	-0.00039
	(!A1 * !A2 * !C1 * !X)	0.00295	0.00293	0.00283
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00049	-0.00067	-0.00068
	(A2 * !C1 * !X)	0.00326	0.00312	0.00307
	(A1 * !A2 * !C1 * !X)	-0.00047	-0.00066	-0.00068
	(A1 * !A2 * !C1 * !X)	0.00331	0.00312	0.00307
	(!A1 * !A2 * C1 * !X)	0.00027	0.00027	0.00026
	(!A1 * !A2 * C1 * !X)	0.00315	0.00315	0.00310
	(!A1 * !A2 * !C1 * !X)	-0.00002	-0.00005	-0.00006
	(!A1 * !A2 * !C1 * !X)	0.00327	0.00324	0.00314
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00123	-0.00153	-0.00159
	(A2 * !C1 * !X)	0.00586	0.00563	0.00550
	(A1 * !A2 * !C1 * !X)	-0.00120	-0.00153	-0.00159
	(A1 * !A2 * !C1 * !X)	0.00589	0.00563	0.00550
	(!A1 * !A2 * C1 * !X)	0.00012	0.00010	0.00008
	(!A1 * !A2 * C1 * !X)	0.00562	0.00564	0.00554
	(!A1 * !A2 * !C1 * !X)	-0.00039	-0.00046	-0.00047
	(!A1 * !A2 * !C1 * !X)	0.00580	0.00578	0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00091	0.00091	0.00088
	(A2 * !B1 * !X)	-0.00204	-0.00204	-0.00208
	(!A2 * !B1 * !X)	0.00091	0.00091	0.00088
	(!A2 * !B1 * !X)	-0.00204	-0.00204	-0.00208
	(!A1 * !A2 * B1 * !X)	0.00100	0.00100	0.00091
	(!A1 * !A2 * B1 * !X)	-0.00190	-0.00191	-0.00206
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00145	0.00145	0.00142
	(A2 * !B1 * !X)	-0.00153	-0.00153	-0.00158
	(!A2 * !B1 * !X)	0.00145	0.00145	0.00142
	(!A2 * !B1 * !X)	-0.00153	-0.00153	-0.00158
	(!A1 * !A2 * B1 * !X)	0.00152	0.00152	0.00144
	(!A1 * !A2 * B1 * !X)	-0.00141	-0.00142	-0.00157
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00260	0.00260	0.00255
	(A2 * !B1 * !X)	-0.00229	-0.00231	-0.00241
	(!A2 * !B1 * !X)	0.00261	0.00260	0.00255
	(!A2 * !B1 * !X)	-0.00231	-0.00231	-0.00241
	(!A1 * !A2 * B1 * !X)	0.00274	0.00274	0.00258
	(!A1 * !A2 * B1 * !X)	-0.00204	-0.00205	-0.00235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00000	-0.00000	0.00001
	(A2 * !B1 * !X)	0.00296	0.00301	0.00297
	(!A2 * !B1 * !X)	0.00001	-0.00000	0.00001
	(!A2 * !B1 * !X)	0.00296	0.00301	0.00297
	(!A1 * !A2 * B1 * !X)	0.00002	0.00001	0.00002
	(!A1 * !A2 * B1 * !X)	0.00295	0.00299	0.00297
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00033	0.00031	0.00033
	(A2 * !B1 * !X)	0.00331	0.00335	0.00332
	(!A2 * !B1 * !X)	0.00033	0.00031	0.00033
	(!A2 * !B1 * !X)	0.00331	0.00335	0.00332
	(!A1 * !A2 * B1 * !X)	0.00034	0.00033	0.00033
	(!A1 * !A2 * B1 * !X)	0.00331	0.00334	0.00332
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00094	0.00093	0.00095
	(A2 * !B1 * !X)	0.00588	0.00595	0.00589
	(!A2 * !B1 * !X)	0.00094	0.00093	0.00095
	(!A2 * !B1 * !X)	0.00588	0.00595	0.00589
	(!A1 * !A2 * B1 * !X)	0.00098	0.00098	0.00098
	(!A1 * !A2 * B1 * !X)	0.00587	0.00589	0.00588

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00301	0.00308	0.00300	0.66317
sky130_fd_sc_hs__o21ai_2	0.00610	0.00565	0.00557	1.20429
sky130_fd_sc_hs__o21ai_4	0.01091	0.01117	0.00819	2.07795

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ai_1	0.00000	30.23940	98.97140
sky130_fd_sc_hs__o21ai_2	0.00000	60.34870	197.82800
sky130_fd_sc_hs__o21ai_4	0.00000	83.55830	296.52500

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)	0.08097	0.77453	8.83000
	A2->Y (FR)	0.06861	0.80704	9.42107
	B1->Y (FR)	0.02888	0.55043	6.63616
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.07228	0.64546	8.54982
	A2->Y (FR)	0.05583	0.67462	9.11805
	B1->Y (FR)	0.02228	0.46659	6.44421
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.07236	0.54735	8.26559
	A2->Y (FR)	0.05630	0.60435	9.15423
	B1->Y (FR)	0.03079	0.60248	9.39672

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.04442	0.43466	4.89462
	A2->Y (RF)	0.03558	0.41691	4.79843
	B1->Y (RF)	0.03765	0.49896	5.80216
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.03681	0.34874	4.58051
	A2->Y (RF)	0.03013	0.34006	4.61344
	B1->Y (RF)	0.02201	0.40170	5.59339
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.03641	0.29035	4.35234
	A2->Y (RF)	0.02843	0.27523	4.32767
	B1->Y (RF)	0.01790	0.31815	5.20372

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00095	0.00246	0.03239
	A1	0.00897	0.01048	0.04041
	A2	0.00100	0.00347	0.03813
	A2	0.00760	0.01007	0.04471
	B1	-0.00033	0.00311	0.04801
	B1	0.00486	0.00833	0.05316
sky130_fd_sc_hs__o21ai_2	A1	0.00125	0.00478	0.06499
	A1	0.01667	0.02018	0.08028
	A2	0.00123	0.00677	0.07343
	A2	0.01351	0.01908	0.08585
	B1	-0.00193	0.00595	0.09357
	B1	0.00745	0.01543	0.10327
sky130_fd_sc_hs__o21ai_4	A1	0.00195	0.00980	0.13150
	A1	0.03198	0.03981	0.16138
	A2	0.00160	0.01271	0.13831
	A2	0.02615	0.03738	0.16313
	B1	-0.00356	0.00686	0.10944
	B1	0.01041	0.02090	0.12371

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.01087	0.01215	0.03797
	A1	0.00284	0.00410	0.02935
	A2	0.00859	0.00999	0.03392
	A2	0.00198	0.00336	0.02688
	B1	0.00619	0.00845	0.03928
	B1	0.00100	0.00320	0.03409
sky130_fd_sc_hs__o21ai_2	A1	0.02049	0.02333	0.07490
	A1	0.00506	0.00786	0.05832
	A2	0.01519	0.01851	0.06601
	A2	0.00288	0.00618	0.05278
	B1	0.01048	0.01573	0.07744
	B1	0.00110	0.00628	0.06780
sky130_fd_sc_hs__o21ai_4	A1	0.03770	0.04455	0.14873
	A1	0.00764	0.01445	0.11800
	A2	0.02723	0.03488	0.12794
	A2	0.00257	0.01019	0.10283
	B1	0.01624	0.02290	0.08956
	B1	0.00231	0.00892	0.07444

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00302	0.00266	0.00282
	(A2 * B1 * !Y)	-0.00120	-0.00157	-0.00137
	(A2 * !B1 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * Y)	-0.00237	-0.00237	-0.00236
	(!A2 * !B1 * Y)	0.00175	0.00178	0.00177
	(!A2 * !B1 * Y)	-0.00236	-0.00238	-0.00236
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00595	0.00513	0.00538
	(A2 * B1 * !Y)	-0.00232	-0.00316	-0.00281
	(A2 * !B1 * Y)	0.00348	0.00349	0.00347
	(A2 * !B1 * Y)	-0.00473	-0.00472	-0.00469
	(!A2 * !B1 * Y)	0.00338	0.00338	0.00338
	(!A2 * !B1 * Y)	-0.00472	-0.00471	-0.00470
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.01057	0.00887	0.00929
	(A2 * B1 * !Y)	-0.00536	-0.00713	-0.00649
	(A2 * !B1 * Y)	0.00674	0.00678	0.00672
	(A2 * !B1 * Y)	-0.00905	-0.00907	-0.00901
	(!A2 * !B1 * Y)	0.00651	0.00660	0.00654
	(!A2 * !B1 * Y)	-0.00902	-0.00908	-0.00902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00109	-0.00111	-0.00117
	(A2 * B1 * !Y)	0.00311	0.00312	0.00304
	(A2 * !B1 * Y)	-0.00178	-0.00179	-0.00178
	(A2 * !B1 * Y)	0.00239	0.00240	0.00240
	(!A2 * !B1 * Y)	-0.00156	-0.00170	-0.00174
	(!A2 * !B1 * Y)	0.00258	0.00244	0.00241
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00192	-0.00197	-0.00207
	(A2 * B1 * !Y)	0.00629	0.00632	0.00616
	(A2 * !B1 * Y)	-0.00339	-0.00342	-0.00341
	(A2 * !B1 * Y)	0.00473	0.00478	0.00476
	(!A2 * !B1 * Y)	-0.00296	-0.00328	-0.00332
	(!A2 * !B1 * Y)	0.00513	0.00486	0.00478
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00407	-0.00417	-0.00438
	(A2 * B1 * !Y)	0.01174	0.01181	0.01149
	(A2 * !B1 * Y)	-0.00660	-0.00664	-0.00660
	(A2 * !B1 * Y)	0.00912	0.00920	0.00913
	(!A2 * !B1 * Y)	-0.00570	-0.00636	-0.00642
	(!A2 * !B1 * Y)	0.00989	0.00932	0.00918

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00245	0.00248	0.00246
	(A1 * B1 * !Y)	-0.00048	-0.00048	-0.00045
	(A1 * !B1 * Y)	0.00167	0.00167	0.00165
	(A1 * !B1 * Y)	-0.00242	-0.00242	-0.00240
	(!A1 * !B1 * Y)	0.00161	0.00161	0.00161
	(!A1 * !B1 * Y)	-0.00241	-0.00241	-0.00240
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00454	0.00459	0.00456
	(A1 * B1 * !Y)	-0.00096	-0.00097	-0.00090
	(A1 * !B1 * Y)	0.00340	0.00338	0.00337
	(A1 * !B1 * Y)	-0.00443	-0.00441	-0.00440
	(!A1 * !B1 * Y)	0.00328	0.00330	0.00328
	(!A1 * !B1 * Y)	-0.00442	-0.00442	-0.00440
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00864	0.00859	0.00868
	(A1 * B1 * !Y)	-0.00278	-0.00273	-0.00268
	(A1 * !B1 * Y)	0.00687	0.00685	0.00682
	(A1 * !B1 * Y)	-0.00922	-0.00919	-0.00915
	(!A1 * !B1 * Y)	0.00665	0.00667	0.00663
	(!A1 * !B1 * Y)	-0.00921	-0.00921	-0.00916

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00119	-0.00123	-0.00135
	(A1 * B1 * !Y)	0.00171	0.00172	0.00159
	(A1 * !B1 * Y)	-0.00162	-0.00163	-0.00162
	(A1 * !B1 * Y)	0.00243	0.00245	0.00244
	(!A1 * !B1 * Y)	-0.00142	-0.00156	-0.00158
	(!A1 * !B1 * Y)	0.00259	0.00251	0.00245
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00201	-0.00206	-0.00233
	(A1 * B1 * !Y)	0.00345	0.00346	0.00320
	(A1 * !B1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * !B1 * Y)	0.00445	0.00450	0.00446
	(!A1 * !B1 * Y)	-0.00288	-0.00316	-0.00322
	(!A1 * !B1 * Y)	0.00481	0.00456	0.00448
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00524	-0.00534	-0.00592
	(A1 * B1 * !Y)	0.00612	0.00614	0.00558
	(A1 * !B1 * Y)	-0.00668	-0.00674	-0.00670
	(A1 * !B1 * Y)	0.00923	0.00932	0.00926
	(!A1 * !B1 * Y)	-0.00578	-0.00645	-0.00651
	(!A1 * !B1 * Y)	0.01003	0.00947	0.00932

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00064	0.00064	0.00058
	(!A1 * !A2 * Y)	-0.00264	-0.00266	-0.00276
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00130	0.00130	0.00119
	(!A1 * !A2 * Y)	-0.00491	-0.00493	-0.00513
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00227	0.00227	0.00207
	(!A1 * !A2 * Y)	-0.00556	-0.00560	-0.00597

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * Y)	0.00278	0.00279	0.00279
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00110	-0.00111	-0.00110
	(!A1 * !A2 * Y)	0.00516	0.00520	0.00518
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00193	-0.00192	-0.00191
	(!A1 * !A2 * Y)	0.00606	0.00608	0.00607

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00258	0.00260	0.00255	1.31561
sky130_fd_sc_hs__o21a_2	0.00280	0.00276	0.00285	2.53690
sky130_fd_sc_hs__o21a_4	0.00537	0.00497	0.00474	4.88608

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	84.79460	169.91000
sky130_fd_sc_hs__o21a_2	0.00000	103.51600	138.14200
sky130_fd_sc_hs__o21a_4	0.00000	232.31900	342.59100

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)	0.08254	0.54424	6.40162
	A2->X (RR)	0.07047	0.51766	6.23872
	B1->X (RR)	0.07592	0.56439	6.67576
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.08567	0.46789	6.25164
	A2->X (RR)	0.07509	0.44648	6.10092
	B1->X (RR)	0.07927	0.49422	6.61434
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.09133	0.41442	6.42501
	A2->X (RR)	0.08009	0.39048	6.30860
	B1->X (RR)	0.07138	0.41254	6.66118

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.11727	0.51360	5.14005
	A2->X (FF)	0.10376	0.52809	5.30473
	B1->X (FF)	0.06062	0.44027	4.96166
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.14620	0.52324	5.22962
	A2->X (FF)	0.13400	0.54653	5.40458
	B1->X (FF)	0.06813	0.41908	4.87594
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.14305	0.47706	5.23588
	A2->X (FF)	0.12572	0.49184	5.39377
	B1->X (FF)	0.07504	0.39915	5.03283

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01547	0.01948	0.10198
	A1	0.00868	0.01279	0.09549
	A2	0.01372	0.01829	0.10482
	A2	0.00821	0.01280	0.09977
	B1	0.01084	0.01698	0.11275
	B1	0.00674	0.01289	0.10891
sky130_fd_sc_hs__o21a_2	A1	0.01867	0.02261	0.10727
	A1	0.01130	0.01527	0.10084
	A2	0.01690	0.02132	0.10983
	A2	0.01091	0.01539	0.10488
	B1	0.01372	0.01993	0.11969
	B1	0.00908	0.01531	0.11565
sky130_fd_sc_hs__o21a_4	A1	0.03845	0.04600	0.20961
	A1	0.02455	0.03211	0.19673
	A2	0.03442	0.04288	0.21388
	A2	0.02343	0.03193	0.20433
	B1	0.03533	0.04485	0.22007
	B1	0.01994	0.03174	0.21505

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00594	0.01011	0.09318
	A1	0.01271	0.01680	0.09961
	A2	0.00597	0.01139	0.09957
	A2	0.01148	0.01686	0.10415
	B1	0.00437	0.01159	0.11773
	B1	0.00849	0.01557	0.12045
sky130_fd_sc_hs__o21a_2	A1	0.01183	0.01454	0.09910
	A1	0.01917	0.02172	0.10538
	A2	0.01195	0.01604	0.10518
	A2	0.01791	0.02184	0.11015
	B1	0.00855	0.01567	0.12709
	B1	0.01318	0.02022	0.12947
sky130_fd_sc_hs__o21a_4	A1	0.02275	0.02774	0.19168
	A1	0.03661	0.04149	0.20351
	A2	0.02324	0.03092	0.20316
	A2	0.03420	0.04166	0.21245
	B1	0.01821	0.02978	0.22608
	B1	0.02845	0.03990	0.23277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00311	0.00276	0.00303
	(A2 * B1 * X)	-0.00056	-0.00093	-0.00062
	(A2 * !B1 * !X)	0.00201	0.00202	0.00201
	(A2 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(!A2 * !B1 * !X)	0.00198	0.00197	0.00197
	(!A2 * !B1 * !X)	-0.00164	-0.00163	-0.00163
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00310	0.00278	0.00305
	(A2 * B1 * X)	-0.00084	-0.00119	-0.00087
	(A2 * !B1 * !X)	0.00274	0.00276	0.00274
	(A2 * !B1 * !X)	-0.00118	-0.00119	-0.00117
	(!A2 * !B1 * !X)	0.00269	0.00270	0.00268
	(!A2 * !B1 * !X)	-0.00118	-0.00119	-0.00117
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00657	0.00593	0.00641
	(A2 * B1 * X)	-0.00095	-0.00166	-0.00108
	(A2 * !B1 * !X)	0.00510	0.00515	0.00512
	(A2 * !B1 * !X)	-0.00234	-0.00237	-0.00234
	(!A2 * !B1 * !X)	0.00503	0.00507	0.00504
	(!A2 * !B1 * !X)	-0.00235	-0.00237	-0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00008	-0.00011	-0.00019
	(A2 * B1 * X)	0.00358	0.00358	0.00348
	(A2 * !B1 * !X)	-0.00110	-0.00111	-0.00111
	(A2 * !B1 * !X)	0.00253	0.00255	0.00253
	(!A2 * !B1 * !X)	-0.00089	-0.00102	-0.00106
	(!A2 * !B1 * !X)	0.00272	0.00258	0.00254
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00066	-0.00069	-0.00077
	(A2 * B1 * X)	0.00327	0.00329	0.00317
	(A2 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A2 * !B1 * !X)	-0.00074	-0.00090	-0.00093
	(!A2 * !B1 * !X)	0.00311	0.00300	0.00294
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00046	-0.00050	-0.00068
	(A2 * B1 * X)	0.00704	0.00703	0.00685
	(A2 * !B1 * !X)	-0.00158	-0.00161	-0.00159
	(A2 * !B1 * !X)	0.00585	0.00589	0.00587
	(!A2 * !B1 * !X)	-0.00116	-0.00146	-0.00151
	(!A2 * !B1 * !X)	0.00620	0.00601	0.00589

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00250	0.00253	0.00252
	(A1 * B1 * X)	-0.00000	-0.00001	0.00003
	(A1 * !B1 * !X)	0.00192	0.00195	0.00193
	(A1 * !B1 * !X)	-0.00157	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00190	0.00191	0.00190
	(!A1 * !B1 * !X)	-0.00158	-0.00159	-0.00157
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00246	0.00249	0.00249
	(A1 * B1 * X)	-0.00021	-0.00022	-0.00018
	(A1 * !B1 * !X)	0.00255	0.00257	0.00255
	(A1 * !B1 * !X)	-0.00113	-0.00115	-0.00113
	(!A1 * !B1 * !X)	0.00251	0.00251	0.00251
	(!A1 * !B1 * !X)	-0.00114	-0.00114	-0.00113
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00505	0.00510	0.00509
	(A1 * B1 * X)	0.00016	0.00013	0.00021
	(A1 * !B1 * !X)	0.00458	0.00458	0.00458
	(A1 * !B1 * !X)	-0.00232	-0.00233	-0.00233
	(!A1 * !B1 * !X)	0.00452	0.00454	0.00451
	(!A1 * !B1 * !X)	-0.00234	-0.00236	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00025	-0.00026	-0.00042
	(A1 * B1 * X)	0.00227	0.00226	0.00210
	(A1 * !B1 * !X)	-0.00102	-0.00104	-0.00103
	(A1 * !B1 * !X)	0.00248	0.00249	0.00248
	(!A1 * !B1 * !X)	-0.00082	-0.00095	-0.00099
	(!A1 * !B1 * !X)	0.00266	0.00252	0.00249
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00076	-0.00078	-0.00094
	(A1 * B1 * X)	0.00192	0.00191	0.00175
	(A1 * !B1 * !X)	-0.00079	-0.00081	-0.00080
	(A1 * !B1 * !X)	0.00289	0.00290	0.00289
	(!A1 * !B1 * !X)	-0.00058	-0.00073	-0.00076
	(!A1 * !B1 * !X)	0.00305	0.00295	0.00289
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00047	-0.00050	-0.00082
	(A1 * B1 * X)	0.00445	0.00444	0.00412
	(A1 * !B1 * !X)	-0.00105	-0.00107	-0.00106
	(A1 * !B1 * !X)	0.00585	0.00586	0.00586
	(!A1 * !B1 * !X)	-0.00065	-0.00092	-0.00099
	(!A1 * !B1 * !X)	0.00621	0.00595	0.00587

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00103	0.00103	0.00098
	(!A1 * !A2 * !X)	-0.00165	-0.00166	-0.00175
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00151	0.00151	0.00145
	(!A1 * !A2 * !X)	-0.00152	-0.00152	-0.00163
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00275	0.00274	0.00262
	(!A1 * !A2 * !X)	-0.00232	-0.00233	-0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00007	-0.00007	-0.00007
	(!A1 * !A2 * !X)	0.00263	0.00265	0.00264
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00032	0.00031	0.00032
	(!A1 * !A2 * !X)	0.00337	0.00342	0.00338
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00091	0.00089	0.00091
	(!A1 * !A2 * !X)	0.00602	0.00609	0.00603

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00287	0.00315	0.00245	0.65639
sky130_fd_sc_hs__o21bai_2	0.00606	0.00558	0.00272	1.20984
sky130_fd_sc_hs__o21bai_4	0.01103	0.01111	0.00372	2.18208

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	81.19280	102.58000
sky130_fd_sc_hs__o21bai_2	0.00000	95.22240	199.90000
sky130_fd_sc_hs__o21bai_4	0.00000	185.33400	298.43100

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)	0.07591	0.76720	8.77976
	A2->Y (FR)	0.06453	0.80262	9.37747
	B1_N->Y (RR)	0.05866	0.37761	3.23702
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.07004	0.64438	8.53081
	A2->Y (FR)	0.05439	0.67321	9.10306
	B1_N->Y (RR)	0.05963	0.32903	3.08506
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.07194	0.55313	8.42672
	A2->Y (FR)	0.05518	0.60219	9.21123
	B1_N->Y (RR)	0.08002	0.49633	6.64140

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.04397	0.43364	4.88208
	A2->Y (RF)	0.03545	0.41774	4.80227
	B1_N->Y (FF)	0.08057	0.46720	4.23611
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.03992	0.35066	4.60383
	A2->Y (RF)	0.03261	0.34262	4.63838
	B1_N->Y (FF)	0.07655	0.43492	4.30388
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.04672	0.30646	4.64498
	A2->Y (RF)	0.03304	0.28499	4.50614
	B1_N->Y (FF)	0.08064	0.37065	4.06600

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00091	0.00246	0.03283
	A1	0.00720	0.00858	0.03914
	A2	0.00088	0.00338	0.03832
	A2	0.00604	0.00855	0.04348
	B1_N	0.00942	0.01537	0.10969
	B1_N	0.00712	0.01319	0.10727
sky130_fd_sc_hs__o21bai_2	A1	0.00125	0.00486	0.06525
	A1	0.01390	0.01762	0.07770
	A2	0.00127	0.00675	0.07333
	A2	0.01060	0.01611	0.08283
	B1_N	0.01218	0.01879	0.12235
	B1_N	0.01089	0.01754	0.12136
sky130_fd_sc_hs__o21bai_4	A1	0.00224	0.00965	0.12316
	A1	0.02695	0.03431	0.14764
	A2	0.00200	0.01341	0.13907
	A2	0.02108	0.03255	0.15838
	B1_N	0.01976	0.03132	0.21206
	B1_N	0.02038	0.03205	0.21273

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.01027	0.01159	0.03714
	A1	0.00398	0.00525	0.03035
	A2	0.00807	0.00951	0.03412
	A2	0.00290	0.00429	0.02765
	B1_N	0.00810	0.01500	0.11629
	B1_N	0.01050	0.01735	0.11841
sky130_fd_sc_hs__o21bai_2	A1	0.02043	0.02327	0.07505
	A1	0.00780	0.01060	0.06097
	A2	0.01523	0.01852	0.06611
	A2	0.00585	0.00915	0.05582
	B1_N	0.01611	0.02340	0.13591
	B1_N	0.01747	0.02467	0.13725
sky130_fd_sc_hs__o21bai_4	A1	0.03955	0.04607	0.14687
	A1	0.01480	0.02124	0.12126
	A2	0.02865	0.03609	0.12742
	A2	0.00954	0.01693	0.10835
	B1_N	0.03090	0.04279	0.22224
	B1_N	0.03057	0.04242	0.22137

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)	0.00265	0.00266	0.00265
	(A2 * B1_N * Y)	-0.00137	-0.00138	-0.00136
	(A2 * !B1_N * !Y)	0.00286	0.00248	0.00264
	(A2 * !B1_N * !Y)	-0.00120	-0.00159	-0.00139
	(!A2 * B1_N * Y)	0.00263	0.00264	0.00262
	(!A2 * B1_N * Y)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00423	0.00424	0.00422
	(A2 * B1_N * Y)	-0.00410	-0.00410	-0.00407
	(A2 * !B1_N * !Y)	0.00595	0.00515	0.00540
	(A2 * !B1_N * !Y)	-0.00245	-0.00327	-0.00291
	(!A2 * B1_N * Y)	0.00417	0.00420	0.00417
	(!A2 * B1_N * Y)	-0.00409	-0.00410	-0.00407
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00860	0.00864	0.00857
	(A2 * B1_N * Y)	-0.00739	-0.00741	-0.00733
	(A2 * !B1_N * !Y)	0.01074	0.00900	0.00940
	(A2 * !B1_N * !Y)	-0.00539	-0.00718	-0.00656
	(!A2 * B1_N * Y)	0.00841	0.00848	0.00845
	(!A2 * B1_N * Y)	-0.00734	-0.00739	-0.00734

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)	-0.00086	-0.00087	-0.00087
	(A2 * B1_N * Y)	0.00315	0.00316	0.00316
	(A2 * !B1_N * !Y)	-0.00089	-0.00091	-0.00097
	(A2 * !B1_N * !Y)	0.00315	0.00314	0.00308
	(!A2 * B1_N * Y)	-0.00066	-0.00080	-0.00083
	(!A2 * B1_N * Y)	0.00334	0.00320	0.00317
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00297	-0.00299	-0.00298
	(A2 * B1_N * Y)	0.00530	0.00534	0.00531
	(A2 * !B1_N * !Y)	-0.00190	-0.00196	-0.00206
	(A2 * !B1_N * !Y)	0.00643	0.00646	0.00630
	(!A2 * B1_N * Y)	-0.00258	-0.00288	-0.00292
	(!A2 * B1_N * Y)	0.00568	0.00542	0.00533
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00493	-0.00495	-0.00494
	(A2 * B1_N * Y)	0.01097	0.01099	0.01097
	(A2 * !B1_N * !Y)	-0.00415	-0.00424	-0.00445
	(A2 * !B1_N * !Y)	0.01185	0.01190	0.01159
	(!A2 * B1_N * Y)	-0.00407	-0.00474	-0.00482
	(!A2 * B1_N * Y)	0.01168	0.01117	0.01102

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)	0.00271	0.00272	0.00269
	(A1 * B1_N * Y)	-0.00157	-0.00156	-0.00154
	(A1 * !B1_N * !Y)	0.00248	0.00252	0.00250
	(A1 * !B1_N * !Y)	-0.00060	-0.00061	-0.00058
	(!A1 * B1_N * Y)	0.00267	0.00267	0.00266
	(!A1 * B1_N * Y)	-0.00156	-0.00156	-0.00155
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00394	0.00393	0.00392
	(A1 * B1_N * Y)	-0.00384	-0.00383	-0.00381
	(A1 * !B1_N * !Y)	0.00453	0.00457	0.00455
	(A1 * !B1_N * !Y)	-0.00093	-0.00094	-0.00087
	(!A1 * B1_N * Y)	0.00386	0.00388	0.00386
	(!A1 * B1_N * Y)	-0.00383	-0.00383	-0.00381
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00857	0.00856	0.00851
	(A1 * B1_N * Y)	-0.00744	-0.00742	-0.00737
	(A1 * !B1_N * !Y)	0.00853	0.00851	0.00856
	(A1 * !B1_N * !Y)	-0.00281	-0.00277	-0.00270
	(!A1 * B1_N * Y)	0.00835	0.00842	0.00839
	(!A1 * B1_N * Y)	-0.00735	-0.00740	-0.00737

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)	-0.00090	-0.00092	-0.00090
	(A1 * B1_N * Y)	0.00333	0.00336	0.00334
	(A1 * !B1_N * !Y)	-0.00122	-0.00125	-0.00138
	(A1 * !B1_N * !Y)	0.00185	0.00186	0.00173
	(!A1 * B1_N * Y)	-0.00070	-0.00084	-0.00087
	(!A1 * B1_N * Y)	0.00352	0.00339	0.00335
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00267	-0.00270	-0.00268
	(A1 * B1_N * Y)	0.00504	0.00509	0.00505
	(A1 * !B1_N * !Y)	-0.00196	-0.00201	-0.00228
	(A1 * !B1_N * !Y)	0.00346	0.00347	0.00320
	(!A1 * B1_N * Y)	-0.00230	-0.00257	-0.00262
	(!A1 * B1_N * Y)	0.00538	0.00514	0.00507
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00487	-0.00490	-0.00487
	(A1 * B1_N * Y)	0.01097	0.01101	0.01099
	(A1 * !B1_N * !Y)	-0.00511	-0.00520	-0.00578
	(A1 * !B1_N * !Y)	0.00618	0.00619	0.00562
	(!A1 * B1_N * Y)	-0.00402	-0.00470	-0.00476
	(!A1 * B1_N * Y)	0.01167	0.01120	0.01104

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)	0.00738	0.01378	0.11544
	(!A1 * !A2 * Y)	0.00324	0.00961	0.11129
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.01021	0.01687	0.13145
	(!A1 * !A2 * Y)	0.00547	0.01211	0.12670
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01327	0.02380	0.20102
	(!A1 * !A2 * Y)	0.00674	0.01724	0.19448

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00021	0.00716	0.10978
	(!A1 * !A2 * Y)	0.00439	0.01134	0.11395
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00085	0.00804	0.12295
	(!A1 * !A2 * Y)	0.00565	0.01284	0.12773
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00166	0.01354	0.19252
	(!A1 * !A2 * Y)	0.00831	0.02022	0.19913

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00262	0.00276	0.00225	1.19629
sky130_fd_sc_hs__o21ba_2	0.00272	0.00283	0.00238	2.23987
sky130_fd_sc_hs__o21ba_4	0.00544	0.00516	0.00292	4.23843

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	123.25800	152.56300
sky130_fd_sc_hs__o21ba_2	0.00000	154.40900	201.50200
sky130_fd_sc_hs__o21ba_4	0.00000	257.89700	344.22500

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)	0.09093	0.57227	6.48747
	A2->X (RR)	0.07902	0.54740	6.33049
	B1_N->X (FR)	0.13228	0.69244	7.61495
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.09037	0.47123	6.02728
	A2->X (RR)	0.07826	0.44847	5.86368
	B1_N->X (FR)	0.13454	0.59347	7.21869
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.09738	0.42400	6.27461
	A2->X (RR)	0.08666	0.40004	6.15860
	B1_N->X (FR)	0.14276	0.55712	7.50683

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.12131	0.51148	4.83723
	A2->X (FF)	0.10980	0.52799	5.00653
	B1_N->X (RF)	0.09561	0.37243	3.07257
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.14355	0.51182	4.91876
	A2->X (FF)	0.13152	0.53544	5.09339
	B1_N->X (RF)	0.10396	0.34697	3.08982
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.14170	0.46468	4.75204
	A2->X (FF)	0.12465	0.47930	4.91137
	B1_N->X (RF)	0.10956	0.31626	2.85147

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01528	0.01929	0.10280
	A1	0.00956	0.01358	0.09727
	A2	0.01381	0.01828	0.10598
	A2	0.00916	0.01363	0.10160
	B1_N	0.01403	0.02117	0.13246
	B1_N	0.01570	0.02303	0.13580
sky130_fd_sc_hs__o21ba_2	A1	0.01867	0.02262	0.10760
	A1	0.01279	0.01675	0.10274
	A2	0.01696	0.02142	0.11017
	A2	0.01216	0.01665	0.10548
	B1_N	0.01714	0.02404	0.12963
	B1_N	0.01885	0.02597	0.13318
sky130_fd_sc_hs__o21ba_4	A1	0.03852	0.04589	0.21052
	A1	0.02685	0.03427	0.20029
	A2	0.03455	0.04287	0.21458
	A2	0.02578	0.03411	0.20751
	B1_N	0.03514	0.04321	0.17762
	B1_N	0.03704	0.04517	0.18067

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00601	0.01009	0.09314
	A1	0.01172	0.01576	0.09832
	A2	0.00602	0.01134	0.09942
	A2	0.01065	0.01592	0.10307
	B1_N	0.01381	0.02019	0.12553
	B1_N	0.01170	0.01789	0.12190
sky130_fd_sc_hs__o21ba_2	A1	0.01121	0.01388	0.10136
	A1	0.01707	0.01972	0.10332
	A2	0.01119	0.01528	0.10560
	A2	0.01597	0.01995	0.10824
	B1_N	0.01836	0.02386	0.12799
	B1_N	0.01587	0.02130	0.12517
sky130_fd_sc_hs__o21ba_4	A1	0.02199	0.02686	0.19005
	A1	0.03363	0.03842	0.19985
	A2	0.02240	0.02976	0.20284
	A2	0.03115	0.03847	0.20859
	B1_N	0.03080	0.03695	0.16450
	B1_N	0.02889	0.03500	0.16171

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)	0.00287	0.00289	0.00287
	(A2 * B1_N * !X)	-0.00077	-0.00078	-0.00076
	(A2 * !B1_N * X)	0.00279	0.00246	0.00273
	(A2 * !B1_N * X)	-0.00089	-0.00124	-0.00092
	(!A2 * B1_N * !X)	0.00286	0.00287	0.00285
	(!A2 * B1_N * !X)	-0.00077	-0.00078	-0.00076
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00351	0.00352	0.00351
	(A2 * B1_N * !X)	-0.00030	-0.00031	-0.00030
	(A2 * !B1_N * X)	0.00304	0.00270	0.00297
	(A2 * !B1_N * X)	-0.00081	-0.00117	-0.00086
	(!A2 * B1_N * !X)	0.00349	0.00350	0.00348
	(!A2 * B1_N * !X)	-0.00030	-0.00031	-0.00029
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00560	0.00565	0.00562
	(A2 * B1_N * !X)	-0.00198	-0.00201	-0.00198
	(A2 * !B1_N * X)	0.00659	0.00594	0.00642
	(A2 * !B1_N * X)	-0.00107	-0.00179	-0.00121
	(!A2 * B1_N * !X)	0.00556	0.00557	0.00557
	(!A2 * B1_N * !X)	-0.00199	-0.00200	-0.00198

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)	-0.00022	-0.00023	-0.00022
	(A2 * B1_N * !X)	0.00343	0.00345	0.00343
	(A2 * !B1_N * X)	-0.00035	-0.00038	-0.00047
	(A2 * !B1_N * X)	0.00331	0.00333	0.00321
	(!A2 * B1_N * !X)	-0.00001	-0.00016	-0.00019
	(!A2 * B1_N * !X)	0.00361	0.00350	0.00343
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00000	-0.00001	-0.00000
	(A2 * B1_N * !X)	0.00381	0.00382	0.00381
	(A2 * !B1_N * X)	-0.00056	-0.00059	-0.00067
	(A2 * !B1_N * X)	0.00328	0.00328	0.00317
	(!A2 * B1_N * !X)	0.00020	0.00007	0.00003
	(!A2 * B1_N * !X)	0.00399	0.00386	0.00382
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00122	-0.00125	-0.00123
	(A2 * B1_N * !X)	0.00635	0.00640	0.00637
	(A2 * !B1_N * X)	-0.00044	-0.00048	-0.00067
	(A2 * !B1_N * X)	0.00720	0.00719	0.00700
	(!A2 * B1_N * !X)	-0.00084	-0.00112	-0.00117
	(!A2 * B1_N * !X)	0.00670	0.00651	0.00639

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)	0.00297	0.00297	0.00295
	(A1 * B1_N * !X)	-0.00080	-0.00080	-0.00078
	(A1 * !B1_N * X)	0.00233	0.00236	0.00236
	(A1 * !B1_N * X)	-0.00039	-0.00040	-0.00036
	(!A1 * B1_N * !X)	0.00294	0.00294	0.00293
	(!A1 * B1_N * !X)	-0.00079	-0.00079	-0.00078
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00355	0.00357	0.00355
	(A1 * B1_N * !X)	-0.00032	-0.00034	-0.00032
	(A1 * !B1_N * X)	0.00256	0.00259	0.00258
	(A1 * !B1_N * X)	-0.00031	-0.00032	-0.00028
	(!A1 * B1_N * !X)	0.00353	0.00352	0.00352
	(!A1 * B1_N * !X)	-0.00033	-0.00032	-0.00032
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00510	0.00511	0.00510
	(A1 * B1_N * !X)	-0.00201	-0.00202	-0.00201
	(A1 * !B1_N * X)	0.00516	0.00519	0.00519
	(A1 * !B1_N * X)	0.00006	0.00005	0.00013
	(!A1 * B1_N * !X)	0.00506	0.00507	0.00506
	(!A1 * B1_N * !X)	-0.00202	-0.00203	-0.00201

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)	-0.00029	-0.00031	-0.00029
	(A1 * B1_N * !X)	0.00344	0.00346	0.00344
	(A1 * !B1_N * X)	-0.00065	-0.00066	-0.00082
	(A1 * !B1_N * X)	0.00209	0.00208	0.00192
	(!A1 * B1_N * !X)	-0.00009	-0.00024	-0.00027
	(!A1 * B1_N * !X)	0.00362	0.00351	0.00345
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00003	-0.00005	-0.00004
	(A1 * B1_N * !X)	0.00383	0.00385	0.00384
	(A1 * !B1_N * X)	-0.00084	-0.00086	-0.00101
	(A1 * !B1_N * X)	0.00204	0.00203	0.00187
	(!A1 * B1_N * !X)	0.00016	0.00003	-0.00001
	(!A1 * B1_N * !X)	0.00401	0.00388	0.00384
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00070	-0.00074	-0.00072
	(A1 * B1_N * !X)	0.00640	0.00642	0.00640
	(A1 * !B1_N * X)	-0.00055	-0.00058	-0.00090
	(A1 * !B1_N * X)	0.00457	0.00455	0.00421
	(!A1 * B1_N * !X)	-0.00031	-0.00059	-0.00066
	(!A1 * B1_N * !X)	0.00678	0.00651	0.00642

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)	0.00734	0.01367	0.11273
	(!A1 * !A2 * !X)	0.00348	0.00979	0.10886
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00830	0.01448	0.11325
	(!A1 * !A2 * !X)	0.00424	0.01040	0.10918
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.01146	0.01843	0.13466
	(!A1 * !A2 * !X)	0.00640	0.01337	0.12960

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)	0.00078	0.00757	0.10754
	(!A1 * !A2 * !X)	0.00466	0.01147	0.11143
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00111	0.00782	0.10753
	(!A1 * !A2 * !X)	0.00521	0.01191	0.11162
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00227	0.00979	0.12621
	(!A1 * !A2 * !X)	0.00736	0.01491	0.13129

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00297	0.00311	0.00308	0.00299	0.00303	0.65255
sky130_fd_sc_hs__o221ai_2	0.00607	0.00556	0.00634	0.00555	0.00560	1.20343
sky130_fd_sc_hs__o221ai_4	0.01160	0.01102	0.01171	0.01099	0.01116	2.19142

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	31.07160	148.46000
sky130_fd_sc_hs__o221ai_2	0.00000	61.92840	296.57300
sky130_fd_sc_hs__o221ai_4	0.00000	123.75200	592.95000

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)	0.11489	0.80824	8.76080
	A2->Y (FR)	0.10262	0.83956	9.35857
	B1->Y (FR)	0.08625	0.76678	8.64791
	B2->Y (FR)	0.07305	0.80018	9.24876
	C1->Y (FR)	0.03144	0.54478	6.50170
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.10540	0.68258	8.58929
	A2->Y (FR)	0.08996	0.71102	9.15726
	B1->Y (FR)	0.07944	0.65006	8.51132
	B2->Y (FR)	0.06334	0.67658	9.07269
	C1->Y (FR)	0.02477	0.45842	6.28503
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.09612	0.56777	8.14051
	A2->Y (FR)	0.08126	0.61039	8.84299
	B1->Y (FR)	0.07861	0.55736	8.40808
	B2->Y (FR)	0.06154	0.59696	9.08053
	C1->Y (FR)	0.02484	0.40155	6.28553

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.08896	0.53881	5.55933
	A2->Y (RF)	0.07631	0.52178	5.50113
	B1->Y (RF)	0.08039	0.58919	6.40337
	B2->Y (RF)	0.06637	0.56598	6.27051
	C1->Y (RF)	0.06787	0.63391	7.14413
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.06792	0.42896	5.40258
	A2->Y (RF)	0.05593	0.41839	5.45348
	B1->Y (RF)	0.05920	0.47916	6.24128
	B2->Y (RF)	0.04734	0.48050	6.46608
	C1->Y (RF)	0.03078	0.51819	7.17602
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.07456	0.37729	5.54156
	A2->Y (RF)	0.05820	0.36010	5.55191
	B1->Y (RF)	0.06622	0.43900	6.54952
	B2->Y (RF)	0.04974	0.42223	6.60872
	C1->Y (RF)	0.03305	0.47405	7.54169

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00304	0.00427	0.03249
	A1	0.01424	0.01542	0.04249
	A2	0.00314	0.00519	0.03752
	A2	0.01257	0.01461	0.04690
	B1	0.00111	0.00246	0.03025
	B1	0.00937	0.01054	0.03844
	B2	0.00112	0.00338	0.03546
	B2	0.00786	0.01012	0.04220
	C1	-0.00049	0.00261	0.04364
	C1	0.00506	0.00821	0.04912
sky130_fd_sc_hs__o221ai_2	A1	0.00496	0.00774	0.06378
	A1	0.02671	0.02944	0.08397
	A2	0.00501	0.00941	0.07153
	A2	0.02267	0.02710	0.08919
	B1	0.00146	0.00447	0.05965
	B1	0.01760	0.02073	0.07551
	B2	0.00160	0.00621	0.06653
	B2	0.01449	0.01908	0.07944
	C1	-0.00179	0.00532	0.08472
	C1	0.00834	0.01549	0.09583

sky130_fd_sc_hs__o221ai_4	**A1**	0.00836	0.01413	0.11606
	A1	0.05138	0.05701	0.15520
	A2	0.00855	0.01733	0.12662
	A2	0.04548	0.05404	0.15904
	B1	0.00226	0.00901	0.11924
	B1	0.03388	0.04059	0.15030
	B2	0.00223	0.01217	0.12894
	B2	0.02790	0.03786	0.15407
	C1	-0.00326	0.01315	0.19235
	C1	0.01675	0.03328	0.21305

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01733	0.01811	0.04254
	A1	0.00485	0.00566	0.02933
	A2	0.01505	0.01587	0.03830
	A2	0.00380	0.00470	0.02673
	B1	0.01209	0.01313	0.03583
	B1	0.00382	0.00485	0.02725
	B2	0.00981	0.01099	0.03244
	B2	0.00306	0.00422	0.02570
	C1	0.00758	0.00947	0.03678
	C1	0.00203	0.00388	0.03123

sky130_fd_sc_hs__o221ai_2	**A1**	0.03304	0.03482	0.08210
	A1	0.00869	0.01046	0.05677
	A2	0.02819	0.03031	0.07406
	A2	0.00692	0.00907	0.05186
	B1	0.02303	0.02526	0.06951
	B1	0.00686	0.00911	0.05307
	B2	0.01788	0.02038	0.06053
	B2	0.00499	0.00745	0.04674
	C1	0.01291	0.01730	0.07162
	C1	0.00278	0.00715	0.06117
sky130_fd_sc_hs__o221ai_4	**A1**	0.06643	0.07074	0.16962
	A1	0.01849	0.02306	0.11973
	A2	0.05704	0.06166	0.15163
	A2	0.01491	0.01999	0.10763
	B1	0.04579	0.05158	0.14940
	B1	0.01412	0.01983	0.11711
	B2	0.03642	0.04272	0.13181
	B2	0.01071	0.01695	0.10598
	C1	0.02576	0.03717	0.16717
	C1	0.00574	0.01700	0.14639

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

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

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	0.00301	0.00263	0.00278
	(A2 * B2 * C1 * !Y)	-0.00119	-0.00159	-0.00140
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00188	0.00189	0.00188
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00228	-0.00229	-0.00228
	(A2 * B1 * !B2 * C1 * !Y)	0.00324	0.00286	0.00301
	(A2 * B1 * !B2 * C1 * !Y)	-0.00096	-0.00136	-0.00117
	(A2 * !B1 * !B2 * Y)	0.00189	0.00191	0.00189
	(A2 * !B1 * !B2 * Y)	-0.00227	-0.00228	-0.00227
	(!A2 * B2 * !C1 * Y)	0.00175	0.00177	0.00176
	(!A2 * B2 * !C1 * Y)	-0.00228	-0.00229	-0.00228
	(!A2 * B1 * !B2 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00228	-0.00229	-0.00228
	(!A2 * !B1 * !B2 * C1 * Y)	0.00182	0.00183	0.00182
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00228	-0.00228	-0.00228
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00179	0.00180	0.00179
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00229	-0.00230	-0.00229

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00596	0.00514	0.00540
	(A2 * B2 * C1 * !Y)	-0.00231	-0.00314	-0.00279
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00347	0.00351	0.00348
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00467	-0.00470	-0.00467
	(A2 * B1 * !B2 * C1 * !Y)	0.00642	0.00560	0.00586
	(A2 * B1 * !B2 * C1 * !Y)	-0.00185	-0.00268	-0.00233
	(A2 * !B1 * !B2 * Y)	0.00352	0.00353	0.00351
	(A2 * !B1 * !B2 * Y)	-0.00468	-0.00468	-0.00465
	(!A2 * B2 * !C1 * Y)	0.00327	0.00331	0.00328
	(!A2 * B2 * !C1 * Y)	-0.00468	-0.00471	-0.00468
	(!A2 * B1 * !B2 * !C1 * Y)	0.00330	0.00331	0.00331
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00468	-0.00469	-0.00468
	(!A2 * !B1 * !B2 * C1 * Y)	0.00340	0.00342	0.00339
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00469	-0.00470	-0.00468
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00334	0.00336	0.00333
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00472	-0.00473	-0.00470

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.01182	0.01020	0.01068
	(A2 * B2 * C1 * !Y)	-0.00449	-0.00615	-0.00546
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00707	0.00711	0.00705
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00910	-0.00911	-0.00904
	(A2 * B1 * !B2 * C1 * !Y)	0.01275	0.01112	0.01160
	(A2 * B1 * !B2 * C1 * !Y)	-0.00357	-0.00523	-0.00454
	(A2 * !B1 * !B2 * Y)	0.00712	0.00715	0.00709
	(A2 * !B1 * !B2 * Y)	-0.00906	-0.00906	-0.00900
	(!A2 * B2 * !C1 * Y)	0.00663	0.00668	0.00661
	(!A2 * B2 * !C1 * Y)	-0.00909	-0.00911	-0.00905
	(!A2 * B1 * !B2 * !C1 * Y)	0.00668	0.00668	0.00666
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00909	-0.00908	-0.00905
	(!A2 * !B1 * !B2 * C1 * Y)	0.00682	0.00687	0.00686
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00902	-0.00906	-0.00904
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00670	0.00679	0.00672
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00909	-0.00915	-0.00910

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)**	-0.00097	-0.00100	-0.00105
	(A2 * B2 * C1 * !Y)	0.00321	0.00323	0.00315
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00186	-0.00186	-0.00185
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00232	0.00233	0.00231
	(A2 * B1 * !B2 * C1 * !Y)	-0.00074	-0.00077	-0.00082
	(A2 * B1 * !B2 * C1 * !Y)	0.00345	0.00346	0.00338
	(A2 * !B1 * !B2 * Y)	-0.00185	-0.00185	-0.00184
	(A2 * !B1 * !B2 * Y)	0.00233	0.00234	0.00232
	(!A2 * B2 * !C1 * Y)	-0.00156	-0.00175	-0.00176
	(!A2 * B2 * !C1 * Y)	0.00239	0.00236	0.00232
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00158	-0.00176	-0.00178
	(!A2 * B1 * !B2 * !C1 * Y)	0.00240	0.00236	0.00232
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00160	-0.00177	-0.00178
	(!A2 * !B1 * !B2 * C1 * Y)	0.00243	0.00237	0.00234
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00171	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00231	0.00234	0.00231

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00178	-0.00183	-0.00193
	(A2 * B2 * C1 * !Y)	0.00643	0.00646	0.00630
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00341	-0.00343	-0.00342
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00472	0.00475	0.00474
	(A2 * B1 * !B2 * C1 * !Y)	-0.00132	-0.00137	-0.00147
	(A2 * B1 * !B2 * C1 * !Y)	0.00689	0.00692	0.00676
	(A2 * !B1 * !B2 * Y)	-0.00339	-0.00341	-0.00340
	(A2 * !B1 * !B2 * Y)	0.00474	0.00477	0.00476
	(!A2 * B2 * !C1 * Y)	-0.00284	-0.00323	-0.00328
	(!A2 * B2 * !C1 * Y)	0.00490	0.00484	0.00475
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00289	-0.00325	-0.00330
	(!A2 * B1 * !B2 * !C1 * Y)	0.00491	0.00484	0.00475
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00296	-0.00326	-0.00330
	(!A2 * !B1 * !B2 * C1 * Y)	0.00499	0.00481	0.00478
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00316	-0.00331	-0.00333
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00476	0.00474	0.00474

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00344	-0.00354	-0.00374
	(A2 * B2 * C1 * !Y)	0.01276	0.01281	0.01248
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00691	-0.00694	-0.00693
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00913	0.00920	0.00917
	(A2 * B1 * !B2 * C1 * !Y)	-0.00252	-0.00262	-0.00282
	(A2 * B1 * !B2 * C1 * !Y)	0.01368	0.01374	0.01340
	(A2 * !B1 * !B2 * Y)	-0.00687	-0.00691	-0.00689
	(A2 * !B1 * !B2 * Y)	0.00917	0.00925	0.00921
	(!A2 * B2 * !C1 * Y)	-0.00575	-0.00647	-0.00661
	(!A2 * B2 * !C1 * Y)	0.00956	0.00925	0.00920
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00584	-0.00655	-0.00666
	(!A2 * B1 * !B2 * !C1 * Y)	0.00960	0.00938	0.00920
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00591	-0.00659	-0.00666
	(!A2 * !B1 * !B2 * C1 * Y)	0.00978	0.00934	0.00927
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00638	-0.00671	-0.00672
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00921	0.00920	0.00917

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)**	0.00244	0.00248	0.00246
	(A1 * B2 * C1 * !Y)	-0.00054	-0.00056	-0.00052
	(A1 * B2 * !C1 * Y)	0.00173	0.00174	0.00172
	(A1 * B2 * !C1 * Y)	-0.00244	-0.00244	-0.00242
	(A1 * B1 * !B2 * C1 * !Y)	0.00268	0.00271	0.00269
	(A1 * B1 * !B2 * C1 * !Y)	-0.00031	-0.00033	-0.00029
	(A1 * B1 * !B2 * !C1 * Y)	0.00171	0.00174	0.00172
	(A1 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * !B1 * !B2 * C1 * Y)	0.00174	0.00173	0.00173
	(A1 * !B1 * !B2 * C1 * Y)	-0.00243	-0.00241	-0.00241
	(A1 * !B1 * !B2 * !C1 * Y)	0.00170	0.00173	0.00171
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(!A1 * B2 * !C1 * Y)	0.00160	0.00162	0.00161
	(!A1 * B2 * !C1 * Y)	-0.00241	-0.00243	-0.00242
	(!A1 * B1 * !B2 * !C1 * Y)	0.00161	0.00163	0.00162
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00243	-0.00242
	(!A1 * !B1 * !B2 * C1 * Y)	0.00166	0.00169	0.00167
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00242	-0.00244	-0.00242
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00243	-0.00244	-0.00243

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00457	0.00462	0.00459
	(A1 * B2 * C1 * !Y)	-0.00086	-0.00087	-0.00081
	(A1 * B2 * !C1 * Y)	0.00329	0.00333	0.00331
	(A1 * B2 * !C1 * Y)	-0.00439	-0.00442	-0.00439
	(A1 * B1 * !B2 * C1 * !Y)	0.00504	0.00508	0.00505
	(A1 * B1 * !B2 * C1 * !Y)	-0.00040	-0.00041	-0.00035
	(A1 * B1 * !B2 * !C1 * Y)	0.00330	0.00333	0.00331
	(A1 * B1 * !B2 * !C1 * Y)	-0.00440	-0.00442	-0.00439
	(A1 * !B1 * !B2 * C1 * Y)	0.00331	0.00335	0.00333
	(A1 * !B1 * !B2 * C1 * Y)	-0.00437	-0.00439	-0.00437
	(A1 * !B1 * !B2 * !C1 * Y)	0.00329	0.00330	0.00329
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00442	-0.00442	-0.00441
	(!A1 * B2 * !C1 * Y)	0.00310	0.00314	0.00311
	(!A1 * B2 * !C1 * Y)	-0.00439	-0.00442	-0.00440
	(!A1 * B1 * !B2 * !C1 * Y)	0.00313	0.00313	0.00314
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00439	-0.00440	-0.00440
	(!A1 * !B1 * !B2 * C1 * Y)	0.00322	0.00324	0.00322
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00441	-0.00441	-0.00439
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00317	0.00315	0.00317
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00443	-0.00441	-0.00442

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00923	0.00932	0.00926
	(A1 * B2 * C1 * !Y)	-0.00171	-0.00173	-0.00160
	(A1 * B2 * !C1 * Y)	0.00650	0.00651	0.00647
	(A1 * B2 * !C1 * Y)	-0.00907	-0.00905	-0.00900
	(A1 * B1 * !B2 * C1 * !Y)	0.01015	0.01025	0.01019
	(A1 * B1 * !B2 * C1 * !Y)	-0.00079	-0.00081	-0.00067
	(A1 * B1 * !B2 * !C1 * Y)	0.00645	0.00650	0.00647
	(A1 * B1 * !B2 * !C1 * Y)	-0.00901	-0.00905	-0.00900
	(A1 * !B1 * !B2 * C1 * Y)	0.00649	0.00654	0.00651
	(A1 * !B1 * !B2 * C1 * Y)	-0.00897	-0.00901	-0.00896
	(A1 * !B1 * !B2 * !C1 * Y)	0.00642	0.00644	0.00644
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00904	-0.00906	-0.00904
	(!A1 * B2 * !C1 * Y)	0.00607	0.00615	0.00610
	(!A1 * B2 * !C1 * Y)	-0.00900	-0.00907	-0.00901
	(!A1 * B1 * !B2 * !C1 * Y)	0.00612	0.00617	0.00615
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00901	-0.00905	-0.00901
	(!A1 * !B1 * !B2 * C1 * Y)	0.00632	0.00636	0.00631
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00904	-0.00906	-0.00901
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00621	0.00621	0.00619
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00909	-0.00908	-0.00906

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)**	-0.00113	-0.00114	-0.00127
	(A1 * B2 * C1 * !Y)	0.00188	0.00188	0.00174
	(A1 * B2 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * B2 * !C1 * Y)	0.00244	0.00246	0.00245
	(A1 * B1 * !B2 * C1 * !Y)	-0.00090	-0.00091	-0.00104
	(A1 * B1 * !B2 * C1 * !Y)	0.00211	0.00211	0.00197
	(A1 * B1 * !B2 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * B1 * !B2 * !C1 * Y)	0.00244	0.00246	0.00245
	(A1 * !B1 * !B2 * C1 * Y)	-0.00167	-0.00169	-0.00167
	(A1 * !B1 * !B2 * C1 * Y)	0.00245	0.00248	0.00246
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * !B2 * !C1 * Y)	0.00243	0.00245	0.00244
	(!A1 * B2 * !C1 * Y)	-0.00140	-0.00160	-0.00161
	(!A1 * B2 * !C1 * Y)	0.00251	0.00249	0.00246
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00144	-0.00160	-0.00162
	(!A1 * B1 * !B2 * !C1 * Y)	0.00252	0.00249	0.00246
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00146	-0.00161	-0.00162
	(!A1 * !B1 * !B2 * C1 * Y)	0.00254	0.00251	0.00247
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00155	-0.00163	-0.00164
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00245	0.00247	0.00245

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00190	-0.00194	-0.00220
	(A1 * B2 * C1 * !Y)	0.00353	0.00352	0.00326
	(A1 * B2 * !C1 * Y)	-0.00325	-0.00327	-0.00325
	(A1 * B2 * !C1 * Y)	0.00445	0.00449	0.00445
	(A1 * B1 * !B2 * C1 * !Y)	-0.00144	-0.00147	-0.00174
	(A1 * B1 * !B2 * C1 * !Y)	0.00399	0.00399	0.00372
	(A1 * B1 * !B2 * !C1 * Y)	-0.00324	-0.00327	-0.00325
	(A1 * B1 * !B2 * !C1 * Y)	0.00444	0.00449	0.00445
	(A1 * !B1 * !B2 * C1 * Y)	-0.00323	-0.00322	-0.00323
	(A1 * !B1 * !B2 * C1 * Y)	0.00446	0.00446	0.00447
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00326	-0.00328	-0.00327
	(A1 * !B1 * !B2 * !C1 * Y)	0.00442	0.00446	0.00444
	(!A1 * B2 * !C1 * Y)	-0.00271	-0.00307	-0.00311
	(!A1 * B2 * !C1 * Y)	0.00458	0.00455	0.00447
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00276	-0.00309	-0.00313
	(!A1 * B1 * !B2 * !C1 * Y)	0.00460	0.00455	0.00447
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00281	-0.00310	-0.00313
	(!A1 * !B1 * !B2 * C1 * Y)	0.00466	0.00452	0.00450
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00299	-0.00314	-0.00317
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00445	0.00445	0.00445

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00387	-0.00394	-0.00448
	(A1 * B2 * C1 * !Y)	0.00706	0.00705	0.00651
	(A1 * B2 * !C1 * Y)	-0.00634	-0.00639	-0.00635
	(A1 * B2 * !C1 * Y)	0.00910	0.00920	0.00912
	(A1 * B1 * !B2 * C1 * !Y)	-0.00290	-0.00302	-0.00355
	(A1 * B1 * !B2 * C1 * !Y)	0.00793	0.00798	0.00744
	(A1 * B1 * !B2 * !C1 * Y)	-0.00633	-0.00639	-0.00635
	(A1 * B1 * !B2 * !C1 * Y)	0.00909	0.00919	0.00912
	(A1 * !B1 * !B2 * C1 * Y)	-0.00630	-0.00635	-0.00631
	(A1 * !B1 * !B2 * C1 * Y)	0.00915	0.00923	0.00916
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00637	-0.00639	-0.00638
	(A1 * !B1 * !B2 * !C1 * Y)	0.00906	0.00910	0.00909
	(!A1 * B2 * !C1 * Y)	-0.00531	-0.00599	-0.00610
	(!A1 * B2 * !C1 * Y)	0.00939	0.00931	0.00916
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00539	-0.00603	-0.00612
	(!A1 * B1 * !B2 * !C1 * Y)	0.00942	0.00931	0.00916
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00549	-0.00608	-0.00612
	(!A1 * !B1 * !B2 * C1 * Y)	0.00957	0.00926	0.00922
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00585	-0.00615	-0.00619
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00914	0.00912	0.00912

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)**	0.00305	0.00270	0.00286
	(A2 * B2 * C1 * !Y)	-0.00117	-0.00155	-0.00135
	(A2 * !B2 * !C1 * Y)	0.00175	0.00176	0.00175
	(A2 * !B2 * !C1 * Y)	-0.00241	-0.00242	-0.00240
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00179	0.00180	0.00179
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00241	-0.00241	-0.00240
	(A1 * !A2 * B2 * C1 * !Y)	0.00328	0.00293	0.00309
	(A1 * !A2 * B2 * C1 * !Y)	-0.00094	-0.00132	-0.00112
	(A1 * !A2 * !B2 * !C1 * Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00241	-0.00241	-0.00240
	(!A1 * !A2 * B2 * C1 * Y)	0.00078	0.00079	0.00079
	(!A1 * !A2 * B2 * C1 * Y)	-0.00242	-0.00243	-0.00241
	(!A1 * !A2 * B2 * !C1 * Y)	0.00104	0.00105	0.00104
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00242	-0.00243	-0.00242
	(!A1 * !A2 * !B2 * C1 * Y)	0.00082	0.00082	0.00083
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00240	-0.00241	-0.00240
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00110	0.00112	0.00111
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00242	-0.00244	-0.00242

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00617	0.00537	0.00563
	(A2 * B2 * C1 * !Y)	-0.00221	-0.00303	-0.00266
	(A2 * !B2 * !C1 * Y)	0.00339	0.00344	0.00341
	(A2 * !B2 * !C1 * Y)	-0.00476	-0.00480	-0.00477
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00349	0.00353	0.00350
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00477	-0.00480	-0.00477
	(A1 * !A2 * B2 * C1 * !Y)	0.00663	0.00583	0.00609
	(A1 * !A2 * B2 * C1 * !Y)	-0.00175	-0.00256	-0.00220
	(A1 * !A2 * !B2 * !C1 * Y)	0.00338	0.00341	0.00341
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00476	-0.00478	-0.00477
	(!A1 * !A2 * B2 * C1 * Y)	0.00143	0.00143	0.00143
	(!A1 * !A2 * B2 * C1 * Y)	-0.00482	-0.00482	-0.00478
	(!A1 * !A2 * B2 * !C1 * Y)	0.00193	0.00193	0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00482	-0.00482	-0.00479
	(!A1 * !A2 * !B2 * C1 * Y)	0.00150	0.00151	0.00151
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00479	-0.00480	-0.00475
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00204	0.00205	0.00204
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00480	-0.00481	-0.00480

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.01190	0.01030	0.01080
	(A2 * B2 * C1 * !Y)	-0.00436	-0.00600	-0.00530
	(A2 * !B2 * !C1 * Y)	0.00656	0.00663	0.00660
	(A2 * !B2 * !C1 * Y)	-0.00924	-0.00929	-0.00924
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00682	0.00686	0.00680
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00931	-0.00931	-0.00924
	(A1 * !A2 * B2 * C1 * !Y)	0.01282	0.01122	0.01172
	(A1 * !A2 * B2 * C1 * !Y)	-0.00344	-0.00509	-0.00437
	(A1 * !A2 * !B2 * !C1 * Y)	0.00656	0.00663	0.00660
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00924	-0.00929	-0.00924
	(!A1 * !A2 * B2 * C1 * Y)	0.00267	0.00268	0.00266
	(!A1 * !A2 * B2 * C1 * Y)	-0.00936	-0.00936	-0.00928
	(!A1 * !A2 * B2 * !C1 * Y)	0.00360	0.00361	0.00357
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00936	-0.00936	-0.00929
	(!A1 * !A2 * !B2 * C1 * Y)	0.00282	0.00283	0.00282
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00930	-0.00932	-0.00923
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00383	0.00383	0.00380
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00935	-0.00936	-0.00931

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)**	-0.00105	-0.00107	-0.00113
	(A2 * B2 * C1 * !Y)	0.00316	0.00316	0.00310
	(A2 * !B2 * !C1 * Y)	-0.00151	-0.00171	-0.00172
	(A2 * !B2 * !C1 * Y)	0.00263	0.00248	0.00244
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00177	-0.00176	-0.00176
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00244	0.00244	0.00244
	(A1 * !A2 * B2 * C1 * !Y)	-0.00083	-0.00084	-0.00090
	(A1 * !A2 * B2 * C1 * !Y)	0.00341	0.00340	0.00333
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00149	-0.00171	-0.00172
	(A1 * !A2 * !B2 * !C1 * Y)	0.00265	0.00248	0.00244
	(!A1 * !A2 * B2 * C1 * Y)	-0.00064	-0.00064	-0.00070
	(!A1 * !A2 * B2 * C1 * Y)	0.00268	0.00267	0.00253
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00104	-0.00105	-0.00104
	(!A1 * !A2 * B2 * !C1 * Y)	0.00264	0.00264	0.00251
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00071	-0.00072	-0.00075
	(!A1 * !A2 * !B2 * C1 * Y)	0.00256	0.00259	0.00248
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00108	-0.00111	-0.00111
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00262	0.00264	0.00251

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00202	-0.00207	-0.00217
	(A2 * B2 * C1 * !Y)	0.00629	0.00633	0.00617
	(A2 * !B2 * !C1 * Y)	-0.00288	-0.00331	-0.00335
	(A2 * !B2 * !C1 * Y)	0.00528	0.00493	0.00485
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00345	-0.00347	-0.00344
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00485	0.00488	0.00483
	(A1 * !A2 * B2 * C1 * !Y)	-0.00156	-0.00161	-0.00171
	(A1 * !A2 * B2 * C1 * !Y)	0.00675	0.00680	0.00663
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00284	-0.00331	-0.00335
	(A1 * !A2 * !B2 * !C1 * Y)	0.00531	0.00493	0.00485
	(!A1 * !A2 * B2 * C1 * Y)	-0.00114	-0.00115	-0.00126
	(!A1 * !A2 * B2 * C1 * Y)	0.00529	0.00531	0.00501
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00191	-0.00193	-0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	0.00520	0.00523	0.00496
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00128	-0.00131	-0.00136
	(!A1 * !A2 * !B2 * C1 * Y)	0.00506	0.00514	0.00491
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00200	-0.00205	-0.00204
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00522	0.00527	0.00497

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00359	-0.00368	-0.00388
	(A2 * B2 * C1 * !Y)	0.01260	0.01264	0.01230
	(A2 * !B2 * !C1 * Y)	-0.00552	-0.00641	-0.00650
	(A2 * !B2 * !C1 * Y)	0.01029	0.00962	0.00941
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00667	-0.00671	-0.00668
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00934	0.00945	0.00938
	(A1 * !A2 * B2 * C1 * !Y)	-0.00267	-0.00275	-0.00295
	(A1 * !A2 * B2 * C1 * !Y)	0.01353	0.01357	0.01323
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00544	-0.00639	-0.00650
	(A1 * !A2 * !B2 * !C1 * Y)	0.01037	0.00965	0.00941
	(!A1 * !A2 * B2 * C1 * Y)	-0.00212	-0.00216	-0.00236
	(!A1 * !A2 * B2 * C1 * Y)	0.01019	0.01025	0.00971
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00359	-0.00361	-0.00357
	(!A1 * !A2 * B2 * !C1 * Y)	0.01013	0.01016	0.00963
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00242	-0.00242	-0.00254
	(!A1 * !A2 * !B2 * C1 * Y)	0.00980	0.00981	0.00952
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00374	-0.00383	-0.00380
	(!A1 * !A2 * !B2 * !C1 * Y)	0.01014	0.01012	0.00963

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)**	0.00240	0.00241	0.00242
	(A2 * B1 * C1 * !Y)	-0.00044	-0.00044	-0.00042
	(A2 * B1 * !C1 * Y)	0.00170	0.00173	0.00171
	(A2 * B1 * !C1 * Y)	-0.00227	-0.00229	-0.00227
	(A2 * !B1 * !C1 * Y)	0.00168	0.00168	0.00168
	(A2 * !B1 * !C1 * Y)	-0.00228	-0.00228	-0.00227
	(A1 * !A2 * B1 * C1 * !Y)	0.00263	0.00264	0.00265
	(A1 * !A2 * B1 * C1 * !Y)	-0.00021	-0.00021	-0.00019
	(A1 * !A2 * B1 * !C1 * Y)	0.00171	0.00173	0.00171
	(A1 * !A2 * B1 * !C1 * Y)	-0.00228	-0.00229	-0.00227
	(A1 * !A2 * !B1 * !C1 * Y)	0.00167	0.00169	0.00168
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00228	-0.00229	-0.00227
	(!A1 * !A2 * B1 * C1 * Y)	0.00072	0.00072	0.00072
	(!A1 * !A2 * B1 * C1 * Y)	-0.00229	-0.00229	-0.00228
	(!A1 * !A2 * B1 * !C1 * Y)	0.00097	0.00099	0.00098
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00231	-0.00229
	(!A1 * !A2 * !B1 * C1 * Y)	0.00075	0.00076	0.00076
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00227	-0.00228	-0.00227
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00104	0.00104	0.00104
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00230	-0.00230	-0.00230

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00454	0.00455	0.00457
	(A2 * B1 * C1 * !Y)	-0.00085	-0.00085	-0.00081
	(A2 * B1 * !C1 * Y)	0.00326	0.00329	0.00328
	(A2 * B1 * !C1 * Y)	-0.00439	-0.00441	-0.00439
	(A2 * !B1 * !C1 * Y)	0.00318	0.00320	0.00318
	(A2 * !B1 * !C1 * Y)	-0.00441	-0.00441	-0.00439
	(A1 * !A2 * B1 * C1 * !Y)	0.00500	0.00501	0.00504
	(A1 * !A2 * B1 * C1 * !Y)	-0.00039	-0.00039	-0.00035
	(A1 * !A2 * B1 * !C1 * Y)	0.00327	0.00329	0.00328
	(A1 * !A2 * B1 * !C1 * Y)	-0.00440	-0.00441	-0.00439
	(A1 * !A2 * !B1 * !C1 * Y)	0.00317	0.00317	0.00318
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00441	-0.00439	-0.00439
	(!A1 * !A2 * B1 * C1 * Y)	0.00127	0.00129	0.00128
	(!A1 * !A2 * B1 * C1 * Y)	-0.00441	-0.00443	-0.00440
	(!A1 * !A2 * B1 * !C1 * Y)	0.00177	0.00177	0.00177
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00442	-0.00442	-0.00441
	(!A1 * !A2 * !B1 * C1 * Y)	0.00135	0.00137	0.00137
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00439	-0.00442	-0.00437
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00188	0.00190	0.00189
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00441	-0.00444	-0.00442

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00922	0.00924	0.00929
	(A2 * B1 * C1 * !Y)	-0.00168	-0.00167	-0.00159
	(A2 * B1 * !C1 * Y)	0.00668	0.00666	0.00665
	(A2 * B1 * !C1 * Y)	-0.00891	-0.00887	-0.00884
	(A2 * !B1 * !C1 * Y)	0.00643	0.00651	0.00647
	(A2 * !B1 * !C1 * Y)	-0.00884	-0.00890	-0.00884
	(A1 * !A2 * B1 * C1 * !Y)	0.01014	0.01017	0.01021
	(A1 * !A2 * B1 * C1 * !Y)	-0.00075	-0.00076	-0.00067
	(A1 * !A2 * B1 * !C1 * Y)	0.00664	0.00666	0.00665
	(A1 * !A2 * B1 * !C1 * Y)	-0.00886	-0.00888	-0.00884
	(A1 * !A2 * !B1 * !C1 * Y)	0.00646	0.00648	0.00646
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00888	-0.00887	-0.00884
	(!A1 * !A2 * B1 * C1 * Y)	0.00254	0.00257	0.00257
	(!A1 * !A2 * B1 * C1 * Y)	-0.00886	-0.00892	-0.00887
	(!A1 * !A2 * B1 * !C1 * Y)	0.00348	0.00352	0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00891	-0.00896	-0.00888
	(!A1 * !A2 * !B1 * C1 * Y)	0.00271	0.00274	0.00272
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00886	-0.00892	-0.00882
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00370	0.00374	0.00370
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00890	-0.00896	-0.00891

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)**	-0.00109	-0.00109	-0.00123
	(A2 * B1 * C1 * !Y)	0.00177	0.00175	0.00164
	(A2 * B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * B1 * !C1 * Y)	0.00230	0.00232	0.00231
	(A2 * !B1 * !C1 * Y)	-0.00146	-0.00162	-0.00165
	(A2 * !B1 * !C1 * Y)	0.00248	0.00234	0.00231
	(A1 * !A2 * B1 * C1 * !Y)	-0.00086	-0.00086	-0.00100
	(A1 * !A2 * B1 * C1 * !Y)	0.00200	0.00199	0.00187
	(A1 * !A2 * B1 * !C1 * Y)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00230	0.00231	0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00142	-0.00163	-0.00165
	(A1 * !A2 * !B1 * !C1 * Y)	0.00251	0.00234	0.00231
	(!A1 * !A2 * B1 * C1 * Y)	-0.00057	-0.00058	-0.00063
	(!A1 * !A2 * B1 * C1 * Y)	0.00252	0.00254	0.00240
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00097	-0.00099	-0.00098
	(!A1 * !A2 * B1 * !C1 * Y)	0.00249	0.00251	0.00238
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00064	-0.00066	-0.00068
	(!A1 * !A2 * !B1 * C1 * Y)	0.00242	0.00245	0.00236
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00102	-0.00104	-0.00104
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00248	0.00250	0.00238

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00189	-0.00190	-0.00218
	(A2 * B1 * C1 * !Y)	0.00354	0.00352	0.00326
	(A2 * B1 * !C1 * Y)	-0.00322	-0.00324	-0.00322
	(A2 * B1 * !C1 * Y)	0.00444	0.00448	0.00445
	(A2 * !B1 * !C1 * Y)	-0.00267	-0.00311	-0.00314
	(A2 * !B1 * !C1 * Y)	0.00488	0.00455	0.00447
	(A1 * !A2 * B1 * C1 * !Y)	-0.00143	-0.00144	-0.00172
	(A1 * !A2 * B1 * C1 * !Y)	0.00400	0.00398	0.00372
	(A1 * !A2 * B1 * !C1 * Y)	-0.00321	-0.00324	-0.00322
	(A1 * !A2 * B1 * !C1 * Y)	0.00443	0.00448	0.00445
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00264	-0.00310	-0.00314
	(A1 * !A2 * !B1 * !C1 * Y)	0.00491	0.00455	0.00447
	(!A1 * !A2 * B1 * C1 * Y)	-0.00100	-0.00102	-0.00112
	(!A1 * !A2 * B1 * C1 * Y)	0.00486	0.00489	0.00462
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00177	-0.00177	-0.00177
	(!A1 * !A2 * B1 * !C1 * Y)	0.00482	0.00483	0.00458
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00114	-0.00117	-0.00121
	(!A1 * !A2 * !B1 * C1 * Y)	0.00466	0.00474	0.00454
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00185	-0.00190	-0.00189
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00482	0.00487	0.00458

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00392	-0.00395	-0.00451
	(A2 * B1 * C1 * !Y)	0.00705	0.00701	0.00649
	(A2 * B1 * !C1 * Y)	-0.00652	-0.00657	-0.00653
	(A2 * B1 * !C1 * Y)	0.00894	0.00902	0.00896
	(A2 * !B1 * !C1 * Y)	-0.00539	-0.00628	-0.00635
	(A2 * !B1 * !C1 * Y)	0.00987	0.00916	0.00900
	(A1 * !A2 * B1 * C1 * !Y)	-0.00300	-0.00303	-0.00359
	(A1 * !A2 * B1 * C1 * !Y)	0.00797	0.00793	0.00742
	(A1 * !A2 * B1 * !C1 * Y)	-0.00654	-0.00657	-0.00653
	(A1 * !A2 * B1 * !C1 * Y)	0.00898	0.00903	0.00896
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00530	-0.00626	-0.00635
	(A1 * !A2 * !B1 * !C1 * Y)	0.00994	0.00920	0.00900
	(!A1 * !A2 * B1 * C1 * Y)	-0.00204	-0.00208	-0.00227
	(!A1 * !A2 * B1 * C1 * Y)	0.00977	0.00982	0.00929
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00348	-0.00351	-0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	0.00969	0.00973	0.00922
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00233	-0.00237	-0.00244
	(!A1 * !A2 * !B1 * C1 * Y)	0.00938	0.00951	0.00912
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00363	-0.00374	-0.00370
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00969	0.00973	0.00923

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)	0.00072	0.00072	0.00066
	(A2 * !B1 * !B2 * Y)	-0.00266	-0.00268	-0.00278
	(!A2 * !B1 * !B2 * Y)	0.00072	0.00072	0.00066
	(!A2 * !B1 * !B2 * Y)	-0.00266	-0.00268	-0.00278
	(!A1 * !A2 * B2 * Y)	0.00078	0.00078	0.00064
	(!A1 * !A2 * B2 * Y)	-0.00245	-0.00247	-0.00274
	(!A1 * !A2 * B1 * !B2 * Y)	0.00078	0.00078	0.00065
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00248	-0.00250	-0.00274
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00131	0.00131	0.00120
	(A2 * !B1 * !B2 * Y)	-0.00498	-0.00501	-0.00521
	(!A2 * !B1 * !B2 * Y)	0.00131	0.00131	0.00120
	(!A2 * !B1 * !B2 * Y)	-0.00498	-0.00501	-0.00521
	(!A1 * !A2 * B2 * Y)	0.00142	0.00142	0.00117
	(!A1 * !A2 * B2 * Y)	-0.00460	-0.00464	-0.00514
	(!A1 * !A2 * B1 * !B2 * Y)	0.00143	0.00143	0.00119
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00467	-0.00470	-0.00515
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00227	0.00226	0.00207
	(A2 * !B1 * !B2 * Y)	-0.01018	-0.01019	-0.01054
	(!A2 * !B1 * !B2 * Y)	0.00226	0.00226	0.00207
	(!A2 * !B1 * !B2 * Y)	-0.01015	-0.01020	-0.01054
	(!A1 * !A2 * B2 * Y)	0.00247	0.00246	0.00203
	(!A1 * !A2 * B2 * Y)	-0.00946	-0.00950	-0.01042
	(!A1 * !A2 * B1 * !B2 * Y)	0.00248	0.00247	0.00206
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00959	-0.00962	-0.01044

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	-0.00062	-0.00061
	(A2 * !B1 * !B2 * Y)	0.00280	0.00282	0.00281
	(!A2 * !B1 * !B2 * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * !B1 * !B2 * Y)	0.00280	0.00281	0.00281
	(!A1 * !A2 * B2 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * B2 * Y)	0.00280	0.00281	0.00280
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !B2 * Y)	0.00280	0.00280	0.00281
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00111	-0.00112	-0.00111
	(A2 * !B1 * !B2 * Y)	0.00524	0.00528	0.00527
	(!A2 * !B1 * !B2 * Y)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !B2 * Y)	0.00523	0.00527	0.00527
	(!A1 * !A2 * B2 * Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A2 * B2 * Y)	0.00524	0.00529	0.00526
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * B1 * !B2 * Y)	0.00523	0.00526	0.00526
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00190	-0.00191	-0.00190
	(A2 * !B1 * !B2 * Y)	0.01060	0.01067	0.01065
	(!A2 * !B1 * !B2 * Y)	-0.00190	-0.00194	-0.00190
	(!A2 * !B1 * !B2 * Y)	0.01060	0.01082	0.01065
	(!A1 * !A2 * B2 * Y)	-0.00182	-0.00183	-0.00181
	(!A1 * !A2 * B2 * Y)	0.01061	0.01070	0.01064
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !A2 * B1 * !B2 * Y)	0.01058	0.01063	0.01064

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00272	0.00269	0.00265	0.00280	0.00275	1.27999
sky130_fd_sc_hs__o221a_2	0.00289	0.00283	0.00283	0.00293	0.00288	2.56232
sky130_fd_sc_hs__o221a_4	0.00542	0.00492	0.00573	0.00493	0.00500	4.79101

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	77.68230	204.08800
sky130_fd_sc_hs__o221a_2	0.00000	113.33500	205.59500
sky130_fd_sc_hs__o221a_4	0.00000	226.98900	410.87600

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)	0.14356	0.62638	6.50497
	A2->X (RR)	0.13093	0.60994	6.42093
	B1->X (RR)	0.13437	0.65677	6.90199
	B2->X (RR)	0.12234	0.63195	6.77155
	C1->X (RR)	0.12117	0.67011	7.28924
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.14126	0.53681	6.38939
	A2->X (RR)	0.12988	0.52210	6.30682
	B1->X (RR)	0.13244	0.57016	6.79703
	B2->X (RR)	0.12410	0.55072	6.67862
	C1->X (RR)	0.10967	0.57090	7.20377
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.15341	0.48842	6.55074
	A2->X (RR)	0.13991	0.47396	6.49398
	B1->X (RR)	0.14579	0.52149	6.87525
	B2->X (RR)	0.13155	0.49568	6.76094
	C1->X (RR)	0.11596	0.52008	7.31643

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.16084	0.59714	5.10796
	A2->X (FF)	0.14747	0.62131	5.36434
	B1->X (FF)	0.13317	0.53405	4.91089
	B2->X (FF)	0.12087	0.55130	5.08941
	C1->X (FF)	0.06395	0.43400	4.55349
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.18701	0.59847	5.33530
	A2->X (FF)	0.17246	0.62551	5.59176
	B1->X (FF)	0.15461	0.53486	5.13196
	B2->X (FF)	0.14238	0.55772	5.31757
	C1->X (FF)	0.07351	0.42848	4.75109
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.16858	0.52702	5.18241
	A2->X (FF)	0.15217	0.54849	5.38506
	B1->X (FF)	0.14877	0.47812	4.99802
	B2->X (FF)	0.13135	0.49363	5.17288
	C1->X (FF)	0.06946	0.37424	4.61293

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.02178	0.02337	0.08664
	A1	0.01087	0.01279	0.07683
	A2	0.02026	0.02243	0.09032
	A2	0.01058	0.01309	0.08197
	B1	0.01670	0.01992	0.09808
	B1	0.00937	0.01260	0.09084
	B2	0.01529	0.01889	0.10106
	B2	0.00894	0.01255	0.09485
	C1	0.01223	0.01819	0.12295
	C1	0.00711	0.01309	0.11790
sky130_fd_sc_hs__o221a_2	A1	0.02644	0.02771	0.09268
	A1	0.01490	0.01650	0.08270
	A2	0.02465	0.02659	0.09608
	A2	0.01436	0.01664	0.08754
	B1	0.02452	0.02661	0.10240
	B1	0.01557	0.01766	0.09338
	B2	0.02311	0.02538	0.10538
	B2	0.01252	0.01599	0.10060
	C1	0.01594	0.02177	0.12889
	C1	0.01051	0.01637	0.12341

sky130_fd_sc_hs__o221a_4	**A1**	0.05085	0.05385	0.19807
	A1	0.02935	0.03311	0.17941
	A2	0.04666	0.05049	0.20026
	A2	0.02802	0.03280	0.18467
	B1	0.04009	0.04618	0.20315
	B1	0.02517	0.03131	0.18845
	B2	0.04376	0.04836	0.20464
	B2	0.02415	0.03129	0.19586
	C1	0.02921	0.04133	0.24682
	C1	0.01990	0.03219	0.23765

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00806	0.01037	0.08209
	A1	0.01815	0.02046	0.09144
	A2	0.00806	0.01168	0.09214
	A2	0.01690	0.02051	0.10081
	B1	0.00670	0.01010	0.08684
	B1	0.01400	0.01740	0.09291
	B2	0.00648	0.01110	0.09243
	B2	0.01426	0.01839	0.09448
	C1	0.00468	0.01147	0.11284
	C1	0.00978	0.01651	0.11711

sky130_fd_sc_hs__o221a_2	**A1**	0.01447	0.01454	0.08791
	A1	0.02525	0.02530	0.09757
	A2	0.01445	0.01594	0.09747
	A2	0.02394	0.02541	0.10676
	B1	0.01279	0.01402	0.08630
	B1	0.02170	0.02294	0.09495
	B2	0.01267	0.01512	0.09436
	B2	0.02053	0.02292	0.10070
	C1	0.00886	0.01506	0.11560
	C1	0.01539	0.02150	0.12064
sky130_fd_sc_hs__o221a_4	**A1**	0.02740	0.02876	0.18012
	A1	0.04723	0.04857	0.19877
	A2	0.02793	0.03204	0.19603
	A2	0.04478	0.04867	0.21099
	B1	0.02460	0.02733	0.17278
	B1	0.04175	0.04422	0.18805
	B2	0.02519	0.03050	0.18690
	B2	0.03913	0.04420	0.19844
	C1	0.01729	0.02997	0.23047
	C1	0.03253	0.04367	0.22542

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)**	0.00293	0.00260	0.00287
	(A2 * B2 * C1 * X)	-0.00077	-0.00112	-0.00081
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00189	0.00190	0.00189
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(A2 * B1 * !B2 * C1 * X)	0.00323	0.00290	0.00318
	(A2 * B1 * !B2 * C1 * X)	-0.00047	-0.00082	-0.00051
	(A2 * !B1 * !B2 * !X)	0.00190	0.00191	0.00190
	(A2 * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00176
	(!A2 * B2 * !C1 * !X)	0.00180	0.00181	0.00180
	(!A2 * B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * !B2 * !C1 * !X)	0.00181	0.00183	0.00181
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * !B1 * !B2 * C1 * !X)	0.00185	0.00186	0.00185
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00181	0.00182	0.00181
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00322	0.00287	0.00314
	(A2 * B2 * C1 * X)	-0.00071	-0.00108	-0.00078
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00254	0.00255	0.00254
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00137	-0.00137	-0.00136
	(A2 * B1 * !B2 * C1 * X)	0.00352	0.00318	0.00344
	(A2 * B1 * !B2 * C1 * X)	-0.00041	-0.00078	-0.00048
	(A2 * !B1 * !B2 * !X)	0.00255	0.00256	0.00255
	(A2 * !B1 * !B2 * !X)	-0.00136	-0.00136	-0.00135
	(!A2 * B2 * !C1 * !X)	0.00243	0.00245	0.00244
	(!A2 * B2 * !C1 * !X)	-0.00136	-0.00138	-0.00136
	(!A2 * B1 * !B2 * !C1 * !X)	0.00244	0.00246	0.00245
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00136	-0.00138	-0.00136
	(!A2 * !B1 * !B2 * C1 * !X)	0.00250	0.00250	0.00249
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00137	-0.00137	-0.00136
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00247	0.00247	0.00246
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00138

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00610	0.00547	0.00595
	(A2 * B2 * C1 * X)	-0.00143	-0.00213	-0.00155
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00495	0.00499	0.00496
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00250	-0.00253	-0.00250
	(A2 * B1 * !B2 * C1 * X)	0.00670	0.00607	0.00655
	(A2 * B1 * !B2 * C1 * X)	-0.00082	-0.00152	-0.00094
	(A2 * !B1 * !B2 * !X)	0.00497	0.00501	0.00498
	(A2 * !B1 * !B2 * !X)	-0.00248	-0.00251	-0.00248
	(!A2 * B2 * !C1 * !X)	0.00478	0.00479	0.00480
	(!A2 * B2 * !C1 * !X)	-0.00251	-0.00252	-0.00251
	(!A2 * B1 * !B2 * !C1 * !X)	0.00480	0.00482	0.00482
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00251	-0.00252	-0.00251
	(!A2 * !B1 * !B2 * C1 * !X)	0.00488	0.00491	0.00489
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00251	-0.00253	-0.00251
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00479	0.00480	0.00480
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00253	-0.00254	-0.00254

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)**	-0.00042	-0.00045	-0.00053
	(A2 * B2 * C1 * X)	0.00327	0.00329	0.00317
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00268	0.00271	0.00268
	(A2 * B1 * !B2 * C1 * X)	-0.00012	-0.00015	-0.00023
	(A2 * B1 * !B2 * C1 * X)	0.00358	0.00359	0.00347
	(A2 * !B1 * !B2 * !X)	-0.00097	-0.00098	-0.00097
	(A2 * !B1 * !B2 * !X)	0.00270	0.00272	0.00270
	(!A2 * B2 * !C1 * !X)	-0.00075	-0.00091	-0.00093
	(!A2 * B2 * !C1 * !X)	0.00276	0.00272	0.00269
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00092	-0.00094
	(!A2 * B1 * !B2 * !C1 * !X)	0.00276	0.00273	0.00269
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00078	-0.00092	-0.00093
	(!A2 * !B1 * !B2 * C1 * !X)	0.00281	0.00275	0.00271
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00088	-0.00095	-0.00095
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00268	0.00270	0.00268

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00065	-0.00068	-0.00076
	(A2 * B2 * C1 * X)	0.00327	0.00327	0.00317
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00312	0.00314	0.00312
	(A2 * B1 * !B2 * C1 * X)	-0.00035	-0.00037	-0.00046
	(A2 * B1 * !B2 * C1 * X)	0.00357	0.00357	0.00347
	(A2 * !B1 * !B2 * !X)	-0.00077	-0.00079	-0.00077
	(A2 * !B1 * !B2 * !X)	0.00313	0.00315	0.00313
	(!A2 * B2 * !C1 * !X)	-0.00052	-0.00070	-0.00072
	(!A2 * B2 * !C1 * !X)	0.00319	0.00316	0.00313
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00054	-0.00071	-0.00073
	(!A2 * B1 * !B2 * !C1 * !X)	0.00319	0.00316	0.00313
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00057	-0.00071	-0.00072
	(!A2 * !B1 * !B2 * C1 * !X)	0.00322	0.00318	0.00314
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00066	-0.00074	-0.00075
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00313	0.00314	0.00312

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00098	-0.00103	-0.00120
	(A2 * B2 * C1 * X)	0.00653	0.00653	0.00633
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00143	-0.00145	-0.00144
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00602	0.00607	0.00603
	(A2 * B1 * !B2 * C1 * X)	-0.00038	-0.00043	-0.00060
	(A2 * B1 * !B2 * C1 * X)	0.00713	0.00713	0.00693
	(A2 * !B1 * !B2 * !X)	-0.00140	-0.00143	-0.00141
	(A2 * !B1 * !B2 * !X)	0.00605	0.00609	0.00606
	(!A2 * B2 * !C1 * !X)	-0.00097	-0.00130	-0.00133
	(!A2 * B2 * !C1 * !X)	0.00618	0.00611	0.00605
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00101	-0.00131	-0.00134
	(!A2 * B1 * !B2 * !C1 * !X)	0.00619	0.00611	0.00605
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00103	-0.00131	-0.00132
	(!A2 * !B1 * !B2 * C1 * !X)	0.00627	0.00615	0.00609
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00122	-0.00137	-0.00137
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00602	0.00606	0.00602

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)**	0.00235	0.00238	0.00238
	(A1 * B2 * C1 * X)	-0.00020	-0.00021	-0.00017
	(A1 * B2 * !C1 * !X)	0.00192	0.00194	0.00192
	(A1 * B2 * !C1 * !X)	-0.00164	-0.00165	-0.00163
	(A1 * B1 * !B2 * C1 * X)	0.00265	0.00268	0.00268
	(A1 * B1 * !B2 * C1 * X)	0.00010	0.00009	0.00013
	(A1 * B1 * !B2 * !C1 * !X)	0.00192	0.00194	0.00192
	(A1 * B1 * !B2 * !C1 * !X)	-0.00163	-0.00165	-0.00163
	(A1 * !B1 * !B2 * C1 * !X)	0.00193	0.00195	0.00193
	(A1 * !B1 * !B2 * C1 * !X)	-0.00163	-0.00164	-0.00162
	(A1 * !B1 * !B2 * !C1 * !X)	0.00191	0.00193	0.00191
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00165	-0.00166	-0.00164
	(!A1 * B2 * !C1 * !X)	0.00183	0.00184	0.00184
	(!A1 * B2 * !C1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	0.00184	0.00185	0.00185
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * !B2 * C1 * !X)	0.00189	0.00189	0.00188
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00164	-0.00164	-0.00163
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00185	0.00186	0.00184
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00165

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00259	0.00262	0.00261
	(A1 * B2 * C1 * X)	-0.00017	-0.00018	-0.00014
	(A1 * B2 * !C1 * !X)	0.00256	0.00258	0.00257
	(A1 * B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * B1 * !B2 * C1 * X)	0.00289	0.00292	0.00291
	(A1 * B1 * !B2 * C1 * X)	0.00013	0.00012	0.00016
	(A1 * B1 * !B2 * !C1 * !X)	0.00256	0.00258	0.00257
	(A1 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !B1 * !B2 * C1 * !X)	0.00257	0.00259	0.00257
	(A1 * !B1 * !B2 * C1 * !X)	-0.00119	-0.00121	-0.00119
	(A1 * !B1 * !B2 * !C1 * !X)	0.00256	0.00257	0.00256
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00121	-0.00122	-0.00120
	(!A1 * B2 * !C1 * !X)	0.00245	0.00248	0.00246
	(!A1 * B2 * !C1 * !X)	-0.00119	-0.00121	-0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	0.00247	0.00249	0.00248
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !B1 * !B2 * C1 * !X)	0.00252	0.00252	0.00252
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00120	-0.00120	-0.00119
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00249	0.00250	0.00248
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00448	0.00453	0.00453
	(A1 * B2 * C1 * X)	-0.00033	-0.00035	-0.00028
	(A1 * B2 * !C1 * !X)	0.00451	0.00451	0.00451
	(A1 * B2 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(A1 * B1 * !B2 * C1 * X)	0.00508	0.00513	0.00513
	(A1 * B1 * !B2 * C1 * X)	0.00027	0.00025	0.00033
	(A1 * B1 * !B2 * !C1 * !X)	0.00451	0.00455	0.00451
	(A1 * B1 * !B2 * !C1 * !X)	-0.00232	-0.00236	-0.00232
	(A1 * !B1 * !B2 * C1 * !X)	0.00453	0.00453	0.00453
	(A1 * !B1 * !B2 * C1 * !X)	-0.00230	-0.00231	-0.00231
	(A1 * !B1 * !B2 * !C1 * !X)	0.00449	0.00453	0.00449
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00234	-0.00238	-0.00234
	(!A1 * B2 * !C1 * !X)	0.00435	0.00437	0.00436
	(!A1 * B2 * !C1 * !X)	-0.00232	-0.00234	-0.00232
	(!A1 * B1 * !B2 * !C1 * !X)	0.00437	0.00439	0.00438
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !B1 * !B2 * C1 * !X)	0.00446	0.00446	0.00445
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00234	-0.00233	-0.00232
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00439	0.00441	0.00438
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00236	-0.00238	-0.00235

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)**	-0.00059	-0.00061	-0.00076
	(A1 * B2 * C1 * X)	0.00197	0.00196	0.00180
	(A1 * B2 * !C1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * B2 * !C1 * !X)	0.00254	0.00255	0.00254
	(A1 * B1 * !B2 * C1 * X)	-0.00029	-0.00030	-0.00046
	(A1 * B1 * !B2 * C1 * X)	0.00227	0.00227	0.00210
	(A1 * B1 * !B2 * !C1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * !B2 * !C1 * !X)	0.00254	0.00255	0.00254
	(A1 * !B1 * !B2 * C1 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * !B1 * !B2 * C1 * !X)	0.00255	0.00256	0.00255
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !B1 * !B2 * !C1 * !X)	0.00252	0.00254	0.00253
	(!A1 * B2 * !C1 * !X)	-0.00076	-0.00094	-0.00096
	(!A1 * B2 * !C1 * !X)	0.00262	0.00258	0.00254
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00095	-0.00097
	(!A1 * B1 * !B2 * !C1 * !X)	0.00263	0.00258	0.00254
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00079	-0.00095	-0.00096
	(!A1 * !B1 * !B2 * C1 * !X)	0.00268	0.00260	0.00256
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00091	-0.00098	-0.00098
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00253	0.00255	0.00253

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00079	-0.00080	-0.00096
	(A1 * B2 * C1 * X)	0.00198	0.00198	0.00182
	(A1 * B2 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * B2 * !C1 * !X)	0.00295	0.00296	0.00295
	(A1 * B1 * !B2 * C1 * X)	-0.00049	-0.00050	-0.00066
	(A1 * B1 * !B2 * C1 * X)	0.00228	0.00228	0.00212
	(A1 * B1 * !B2 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * B1 * !B2 * !C1 * !X)	0.00295	0.00296	0.00295
	(A1 * !B1 * !B2 * C1 * !X)	-0.00078	-0.00080	-0.00079
	(A1 * !B1 * !B2 * C1 * !X)	0.00297	0.00297	0.00297
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * !B1 * !B2 * !C1 * !X)	0.00294	0.00296	0.00295
	(!A1 * B2 * !C1 * !X)	-0.00052	-0.00072	-0.00074
	(!A1 * B2 * !C1 * !X)	0.00303	0.00299	0.00296
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00055	-0.00073	-0.00075
	(!A1 * B1 * !B2 * !C1 * !X)	0.00303	0.00299	0.00296
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00058	-0.00074	-0.00075
	(!A1 * !B1 * !B2 * C1 * !X)	0.00307	0.00300	0.00297
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00068	-0.00076	-0.00077
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00295	0.00297	0.00295

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00088	-0.00092	-0.00124
	(A1 * B2 * C1 * X)	0.00396	0.00395	0.00362
	(A1 * B2 * !C1 * !X)	-0.00097	-0.00100	-0.00099
	(A1 * B2 * !C1 * !X)	0.00584	0.00586	0.00585
	(A1 * B1 * !B2 * C1 * X)	-0.00028	-0.00032	-0.00064
	(A1 * B1 * !B2 * C1 * X)	0.00456	0.00455	0.00422
	(A1 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00100	-0.00099
	(A1 * B1 * !B2 * !C1 * !X)	0.00584	0.00586	0.00585
	(A1 * !B1 * !B2 * C1 * !X)	-0.00094	-0.00097	-0.00096
	(A1 * !B1 * !B2 * C1 * !X)	0.00588	0.00589	0.00588
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00101	-0.00103	-0.00102
	(A1 * !B1 * !B2 * !C1 * !X)	0.00581	0.00584	0.00582
	(!A1 * B2 * !C1 * !X)	-0.00048	-0.00084	-0.00089
	(!A1 * B2 * !C1 * !X)	0.00602	0.00593	0.00586
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00053	-0.00086	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00603	0.00593	0.00586
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00057	-0.00086	-0.00088
	(!A1 * !B1 * !B2 * C1 * !X)	0.00613	0.00592	0.00590
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00078	-0.00092	-0.00093
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00585	0.00583	0.00583

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)**	0.00285	0.00250	0.00277
	(A2 * B2 * C1 * X)	-0.00078	-0.00114	-0.00084
	(A2 * !B2 * !C1 * !X)	0.00189	0.00190	0.00189
	(A2 * !B2 * !C1 * !X)	-0.00168	-0.00169	-0.00167
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00192	0.00193	0.00192
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(A1 * !A2 * B2 * C1 * X)	0.00315	0.00280	0.00307
	(A1 * !A2 * B2 * C1 * X)	-0.00048	-0.00084	-0.00054
	(A1 * !A2 * !B2 * !C1 * !X)	0.00189	0.00190	0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00168	-0.00169	-0.00167
	(!A1 * !A2 * B2 * C1 * !X)	0.00106	0.00106	0.00106
	(!A1 * !A2 * B2 * C1 * !X)	-0.00169	-0.00170	-0.00168
	(!A1 * !A2 * B2 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * !B2 * C1 * !X)	0.00106	0.00106	0.00109
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00130	0.00132	0.00131
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00169	-0.00171	-0.00169

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00309	0.00276	0.00304
	(A2 * B2 * C1 * X)	-0.00077	-0.00111	-0.00079
	(A2 * !B2 * !C1 * !X)	0.00251	0.00253	0.00251
	(A2 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00126
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00255	0.00256	0.00255
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00127	-0.00127	-0.00126
	(A1 * !A2 * B2 * C1 * X)	0.00339	0.00306	0.00334
	(A1 * !A2 * B2 * C1 * X)	-0.00047	-0.00081	-0.00049
	(A1 * !A2 * !B2 * !C1 * !X)	0.00251	0.00252	0.00251
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00126
	(!A1 * !A2 * B2 * C1 * !X)	0.00155	0.00155	0.00155
	(!A1 * !A2 * B2 * C1 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * B2 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * !B2 * C1 * !X)	0.00157	0.00157	0.00158
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00127	-0.00128	-0.00126
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00129	-0.00131	-0.00129

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00643	0.00581	0.00629
	(A2 * B2 * C1 * X)	-0.00146	-0.00217	-0.00157
	(A2 * !B2 * !C1 * !X)	0.00525	0.00529	0.00527
	(A2 * !B2 * !C1 * !X)	-0.00250	-0.00252	-0.00249
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00533	0.00538	0.00534
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00249	-0.00252	-0.00249
	(A1 * !A2 * B2 * C1 * X)	0.00704	0.00640	0.00690
	(A1 * !A2 * B2 * C1 * X)	-0.00086	-0.00158	-0.00097
	(A1 * !A2 * !B2 * !C1 * !X)	0.00525	0.00528	0.00527
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00250	-0.00252	-0.00249
	(!A1 * !A2 * B2 * C1 * !X)	0.00349	0.00351	0.00349
	(!A1 * !A2 * B2 * C1 * !X)	-0.00254	-0.00257	-0.00253
	(!A1 * !A2 * B2 * !C1 * !X)	0.00388	0.00390	0.00388
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00255	-0.00258	-0.00255
	(!A1 * !A2 * !B2 * C1 * !X)	0.00350	0.00353	0.00355
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00253	-0.00256	-0.00251
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00398	0.00400	0.00398
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00256	-0.00259	-0.00256

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)**	-0.00031	-0.00034	-0.00043
	(A2 * B2 * C1 * X)	0.00330	0.00332	0.00320
	(A2 * !B2 * !C1 * !X)	-0.00079	-0.00097	-0.00099
	(A2 * !B2 * !C1 * !X)	0.00277	0.00262	0.00259
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00258	0.00260	0.00258
	(A1 * !A2 * B2 * C1 * X)	-0.00001	-0.00003	-0.00012
	(A1 * !A2 * B2 * C1 * X)	0.00360	0.00359	0.00350
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00076	-0.00097	-0.00099
	(A1 * !A2 * !B2 * !C1 * !X)	0.00279	0.00262	0.00259
	(!A1 * !A2 * B2 * C1 * !X)	-0.00005	-0.00006	-0.00011
	(!A1 * !A2 * B2 * C1 * !X)	0.00278	0.00279	0.00266
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00037	-0.00037	-0.00040
	(!A1 * !A2 * B2 * !C1 * !X)	0.00277	0.00278	0.00264
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00011	-0.00012	-0.00014
	(!A1 * !A2 * !B2 * C1 * !X)	0.00268	0.00271	0.00262
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00043	-0.00044
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00274	0.00276	0.00264

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00056	-0.00059	-0.00067
	(A2 * B2 * C1 * X)	0.00329	0.00330	0.00318
	(A2 * !B2 * !C1 * !X)	-0.00055	-0.00074	-0.00076
	(A2 * !B2 * !C1 * !X)	0.00322	0.00306	0.00303
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00080	-0.00081	-0.00080
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00303	0.00304	0.00302
	(A1 * !A2 * B2 * C1 * X)	-0.00026	-0.00028	-0.00037
	(A1 * !A2 * B2 * C1 * X)	0.00359	0.00359	0.00348
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00052	-0.00075	-0.00076
	(A1 * !A2 * !B2 * !C1 * !X)	0.00324	0.00306	0.00303
	(!A1 * !A2 * B2 * C1 * !X)	0.00031	0.00030	0.00025
	(!A1 * !A2 * B2 * C1 * !X)	0.00324	0.00327	0.00312
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00006	-0.00007	-0.00008
	(!A1 * !A2 * B2 * !C1 * !X)	0.00323	0.00324	0.00310
	(!A1 * !A2 * !B2 * C1 * !X)	0.00025	0.00024	0.00022
	(!A1 * !A2 * !B2 * C1 * !X)	0.00314	0.00317	0.00307
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00010	-0.00012	-0.00013
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00321	0.00322	0.00310

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00132	-0.00137	-0.00155
	(A2 * B2 * C1 * X)	0.00655	0.00655	0.00636
	(A2 * !B2 * !C1 * !X)	-0.00133	-0.00170	-0.00175
	(A2 * !B2 * !C1 * !X)	0.00642	0.00615	0.00604
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00181	-0.00183	-0.00182
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00600	0.00605	0.00602
	(A1 * !A2 * B2 * C1 * X)	-0.00072	-0.00077	-0.00095
	(A1 * !A2 * B2 * C1 * X)	0.00715	0.00715	0.00696
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00128	-0.00170	-0.00175
	(A1 * !A2 * !B2 * !C1 * !X)	0.00647	0.00616	0.00604
	(!A1 * !A2 * B2 * C1 * !X)	0.00025	0.00023	0.00012
	(!A1 * !A2 * B2 * C1 * !X)	0.00644	0.00648	0.00620
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00038	-0.00040	-0.00046
	(!A1 * !A2 * B2 * !C1 * !X)	0.00642	0.00645	0.00616
	(!A1 * !A2 * !B2 * C1 * !X)	0.00012	0.00010	0.00005
	(!A1 * !A2 * !B2 * C1 * !X)	0.00624	0.00628	0.00612
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00049	-0.00052	-0.00055
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00637	0.00640	0.00616

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)**	0.00255	0.00255	0.00257
	(A2 * B1 * C1 * X)	-0.00021	-0.00021	-0.00019
	(A2 * B1 * !C1 * !X)	0.00207	0.00210	0.00208
	(A2 * B1 * !C1 * !X)	-0.00168	-0.00170	-0.00168
	(A2 * !B1 * !C1 * !X)	0.00206	0.00206	0.00205
	(A2 * !B1 * !C1 * !X)	-0.00169	-0.00169	-0.00168
	(A1 * !A2 * B1 * C1 * X)	0.00285	0.00285	0.00287
	(A1 * !A2 * B1 * C1 * X)	0.00009	0.00009	0.00012
	(A1 * !A2 * B1 * !C1 * !X)	0.00208	0.00210	0.00208
	(A1 * !A2 * B1 * !C1 * !X)	-0.00169	-0.00170	-0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	0.00205	0.00205	0.00205
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * B1 * C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * C1 * !X)	-0.00170	-0.00172	-0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	0.00136	0.00137	0.00136
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00170	-0.00172	-0.00170
	(!A1 * !A2 * !B1 * C1 * !X)	0.00116	0.00117	0.00119
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00169	-0.00170	-0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00271	0.00274	0.00274
	(A2 * B1 * C1 * X)	-0.00017	-0.00019	-0.00014
	(A2 * B1 * !C1 * !X)	0.00266	0.00269	0.00267
	(A2 * B1 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(A2 * !B1 * !C1 * !X)	0.00263	0.00263	0.00263
	(A2 * !B1 * !C1 * !X)	-0.00124	-0.00123	-0.00123
	(A1 * !A2 * B1 * C1 * X)	0.00301	0.00301	0.00304
	(A1 * !A2 * B1 * C1 * X)	0.00013	0.00013	0.00016
	(A1 * !A2 * B1 * !C1 * !X)	0.00267	0.00269	0.00267
	(A1 * !A2 * B1 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00263	0.00263	0.00263
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00123	-0.00123
	(!A1 * !A2 * B1 * C1 * !X)	0.00161	0.00161	0.00160
	(!A1 * !A2 * B1 * C1 * !X)	-0.00125	-0.00127	-0.00125
	(!A1 * !A2 * B1 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00127	-0.00125
	(!A1 * !A2 * !B1 * C1 * !X)	0.00163	0.00164	0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00123	-0.00124	-0.00122
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00191	0.00191
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00126

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00460	0.00465	0.00465
	(A2 * B1 * C1 * X)	-0.00033	-0.00036	-0.00027
	(A2 * B1 * !C1 * !X)	0.00457	0.00457	0.00458
	(A2 * B1 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(A2 * !B1 * !C1 * !X)	0.00453	0.00452	0.00452
	(A2 * !B1 * !C1 * !X)	-0.00240	-0.00239	-0.00238
	(A1 * !A2 * B1 * C1 * X)	0.00520	0.00525	0.00525
	(A1 * !A2 * B1 * C1 * X)	0.00027	0.00024	0.00033
	(A1 * !A2 * B1 * !C1 * !X)	0.00457	0.00461	0.00457
	(A1 * !A2 * B1 * !C1 * !X)	-0.00238	-0.00242	-0.00238
	(A1 * !A2 * !B1 * !C1 * !X)	0.00452	0.00452	0.00452
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00240	-0.00239	-0.00238
	(!A1 * !A2 * B1 * C1 * !X)	0.00281	0.00281	0.00281
	(!A1 * !A2 * B1 * C1 * !X)	-0.00243	-0.00244	-0.00242
	(!A1 * !A2 * B1 * !C1 * !X)	0.00321	0.00322	0.00320
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00244	-0.00247	-0.00243
	(!A1 * !A2 * !B1 * C1 * !X)	0.00284	0.00285	0.00288
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00240	-0.00242	-0.00238
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00330	0.00331	0.00330
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00244	-0.00246	-0.00244

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)**	-0.00078	-0.00078	-0.00095
	(A2 * B1 * C1 * X)	0.00200	0.00198	0.00183
	(A2 * B1 * !C1 * !X)	-0.00117	-0.00119	-0.00118
	(A2 * B1 * !C1 * !X)	0.00258	0.00260	0.00259
	(A2 * !B1 * !C1 * !X)	-0.00094	-0.00113	-0.00115
	(A2 * !B1 * !C1 * !X)	0.00279	0.00263	0.00259
	(A1 * !A2 * B1 * C1 * X)	-0.00048	-0.00048	-0.00065
	(A1 * !A2 * B1 * C1 * X)	0.00230	0.00229	0.00213
	(A1 * !A2 * B1 * !C1 * !X)	-0.00117	-0.00119	-0.00118
	(A1 * !A2 * B1 * !C1 * !X)	0.00259	0.00260	0.00259
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00091	-0.00113	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00281	0.00263	0.00259
	(!A1 * !A2 * B1 * C1 * !X)	-0.00013	-0.00014	-0.00020
	(!A1 * !A2 * B1 * C1 * !X)	0.00281	0.00281	0.00267
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00047	-0.00048	-0.00051
	(!A1 * !A2 * B1 * !C1 * !X)	0.00278	0.00279	0.00265
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00021	-0.00023	-0.00024
	(!A1 * !A2 * !B1 * C1 * !X)	0.00269	0.00272	0.00263
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00054	-0.00054	-0.00055
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00276	0.00277	0.00265

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00091	-0.00094	-0.00110
	(A2 * B1 * C1 * X)	0.00197	0.00197	0.00181
	(A2 * B1 * !C1 * !X)	-0.00091	-0.00092	-0.00091
	(A2 * B1 * !C1 * !X)	0.00298	0.00299	0.00299
	(A2 * !B1 * !C1 * !X)	-0.00066	-0.00086	-0.00088
	(A2 * !B1 * !C1 * !X)	0.00318	0.00302	0.00299
	(A1 * !A2 * B1 * C1 * X)	-0.00061	-0.00064	-0.00080
	(A1 * !A2 * B1 * C1 * X)	0.00226	0.00227	0.00211
	(A1 * !A2 * B1 * !C1 * !X)	-0.00091	-0.00093	-0.00091
	(A1 * !A2 * B1 * !C1 * !X)	0.00298	0.00300	0.00298
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00064	-0.00086	-0.00088
	(A1 * !A2 * !B1 * !C1 * !X)	0.00320	0.00302	0.00299
	(!A1 * !A2 * B1 * C1 * !X)	0.00027	0.00026	0.00020
	(!A1 * !A2 * B1 * C1 * !X)	0.00323	0.00322	0.00308
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00012	-0.00013	-0.00015
	(!A1 * !A2 * B1 * !C1 * !X)	0.00319	0.00320	0.00306
	(!A1 * !A2 * !B1 * C1 * !X)	0.00018	0.00017	0.00015
	(!A1 * !A2 * !B1 * C1 * !X)	0.00310	0.00313	0.00303
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00018	-0.00020	-0.00020
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00316	0.00318	0.00306

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00099	-0.00101	-0.00135
	(A2 * B1 * C1 * X)	0.00394	0.00393	0.00362
	(A2 * B1 * !C1 * !X)	-0.00104	-0.00106	-0.00105
	(A2 * B1 * !C1 * !X)	0.00590	0.00592	0.00591
	(A2 * !B1 * !C1 * !X)	-0.00060	-0.00096	-0.00099
	(A2 * !B1 * !C1 * !X)	0.00628	0.00598	0.00592
	(A1 * !A2 * B1 * C1 * X)	-0.00038	-0.00042	-0.00075
	(A1 * !A2 * B1 * C1 * X)	0.00454	0.00454	0.00422
	(A1 * !A2 * B1 * !C1 * !X)	-0.00104	-0.00107	-0.00105
	(A1 * !A2 * B1 * !C1 * !X)	0.00590	0.00594	0.00591
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00055	-0.00097	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00632	0.00599	0.00592
	(!A1 * !A2 * B1 * C1 * !X)	0.00093	0.00092	0.00081
	(!A1 * !A2 * B1 * C1 * !X)	0.00633	0.00630	0.00609
	(!A1 * !A2 * B1 * !C1 * !X)	0.00030	0.00027	0.00022
	(!A1 * !A2 * B1 * !C1 * !X)	0.00629	0.00631	0.00605
	(!A1 * !A2 * !B1 * C1 * !X)	0.00078	0.00076	0.00072
	(!A1 * !A2 * !B1 * C1 * !X)	0.00612	0.00617	0.00601
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00016	0.00015	0.00013
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00626	0.00630	0.00605

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)	0.00108	0.00108	0.00102
	(A2 * !B1 * !B2 * !X)	-0.00197	-0.00198	-0.00207
	(!A2 * !B1 * !B2 * !X)	0.00108	0.00108	0.00102
	(!A2 * !B1 * !B2 * !X)	-0.00197	-0.00198	-0.00207
	(!A1 * !A2 * B2 * !X)	0.00109	0.00109	0.00098
	(!A1 * !A2 * B2 * !X)	-0.00182	-0.00183	-0.00205
	(!A1 * !A2 * B1 * !B2 * !X)	0.00109	0.00109	0.00099
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00184	-0.00185	-0.00205
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00160	0.00159	0.00153
	(A2 * !B1 * !B2 * !X)	-0.00156	-0.00157	-0.00166
	(!A2 * !B1 * !B2 * !X)	0.00160	0.00159	0.00153
	(!A2 * !B1 * !B2 * !X)	-0.00156	-0.00156	-0.00166
	(!A1 * !A2 * B2 * !X)	0.00163	0.00162	0.00151
	(!A1 * !A2 * B2 * !X)	-0.00138	-0.00138	-0.00163
	(!A1 * !A2 * B1 * !B2 * !X)	0.00163	0.00163	0.00152
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00141	-0.00163
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00283	0.00282	0.00270
	(A2 * !B1 * !B2 * !X)	-0.00285	-0.00285	-0.00304
	(!A2 * !B1 * !B2 * !X)	0.00283	0.00282	0.00270
	(!A2 * !B1 * !B2 * !X)	-0.00285	-0.00285	-0.00304
	(!A1 * !A2 * B2 * !X)	0.00285	0.00284	0.00264
	(!A1 * !A2 * B2 * !X)	-0.00255	-0.00255	-0.00299
	(!A1 * !A2 * B1 * !B2 * !X)	0.00285	0.00285	0.00265
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00258	-0.00261	-0.00300

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)	-0.00011	-0.00011	-0.00011
	(A2 * !B1 * !B2 * !X)	0.00296	0.00297	0.00297
	(!A2 * !B1 * !B2 * !X)	-0.00011	-0.00012	-0.00010
	(!A2 * !B1 * !B2 * !X)	0.00296	0.00301	0.00297
	(!A1 * !A2 * B2 * !X)	-0.00006	-0.00006	-0.00006
	(!A1 * !A2 * B2 * !X)	0.00297	0.00298	0.00297
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00007	-0.00008	-0.00007
	(!A1 * !A2 * B1 * !B2 * !X)	0.00296	0.00301	0.00297
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00023	0.00022	0.00023
	(A2 * !B1 * !B2 * !X)	0.00341	0.00346	0.00342
	(!A2 * !B1 * !B2 * !X)	0.00023	0.00022	0.00024
	(!A2 * !B1 * !B2 * !X)	0.00341	0.00345	0.00342
	(!A1 * !A2 * B2 * !X)	0.00026	0.00026	0.00027
	(!A1 * !A2 * B2 * !X)	0.00341	0.00342	0.00341
	(!A1 * !A2 * B1 * !B2 * !X)	0.00026	0.00025	0.00026
	(!A1 * !A2 * B1 * !B2 * !X)	0.00340	0.00345	0.00341
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00083	0.00082	0.00084
	(A2 * !B1 * !B2 * !X)	0.00655	0.00662	0.00655
	(!A2 * !B1 * !B2 * !X)	0.00083	0.00082	0.00084
	(!A2 * !B1 * !B2 * !X)	0.00655	0.00662	0.00655
	(!A1 * !A2 * B2 * !X)	0.00091	0.00091	0.00092
	(!A1 * !A2 * B2 * !X)	0.00654	0.00656	0.00654
	(!A1 * !A2 * B1 * !B2 * !X)	0.00089	0.00088	0.00090
	(!A1 * !A2 * B1 * !B2 * !X)	0.00654	0.00661	0.00655

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00297	0.00292	0.00300	0.00306	0.66190
sky130_fd_sc_hs__o22ai_2	0.00563	0.00575	0.00573	0.00565	1.15500
sky130_fd_sc_hs__o22ai_4	0.01157	0.01100	0.01189	0.01118	1.99234

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	33.05770	98.88620
sky130_fd_sc_hs__o22ai_2	0.00000	66.15630	197.65700
sky130_fd_sc_hs__o22ai_4	0.00000	131.92000	395.16000

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)	0.09737	0.79108	8.85092
	A2->Y (FR)	0.08364	0.82278	9.44709
	B1->Y (FR)	0.06266	0.75570	8.81715
	B2->Y (FR)	0.04989	0.78952	9.40742
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.09807	0.67656	8.59783
	A2->Y (FR)	0.08055	0.70938	9.22638
	B1->Y (FR)	0.05989	0.63631	8.51034
	B2->Y (FR)	0.04118	0.66997	9.14752
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.09694	0.56719	8.07425
	A2->Y (FR)	0.08086	0.61404	8.84652
	B1->Y (FR)	0.05796	0.52877	8.04466
	B2->Y (FR)	0.04106	0.57017	8.72970

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.05775	0.45668	4.97041
	A2->Y (RF)	0.04832	0.44377	4.92846
	B1->Y (RF)	0.04736	0.51301	5.83174
	B2->Y (RF)	0.03871	0.49794	5.75777
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.05908	0.38805	4.73519
	A2->Y (RF)	0.04684	0.37089	4.67315
	B1->Y (RF)	0.04792	0.44556	5.66036
	B2->Y (RF)	0.03536	0.42292	5.54205
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.04181	0.29324	4.25304
	A2->Y (RF)	0.03422	0.27644	4.20006
	B1->Y (RF)	0.03219	0.34990	5.21353
	B2->Y (RF)	0.03286	0.36709	5.42547

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00217	0.00365	0.03489
	A1	0.01139	0.01290	0.04415
	A2	0.00224	0.00474	0.04054
	A2	0.00992	0.01242	0.04823
	B1	-0.00010	0.00154	0.03221
	B1	0.00656	0.00814	0.03895
	B2	-0.00007	0.00261	0.03787
	B2	0.00511	0.00780	0.04310
sky130_fd_sc_hs__o22ai_2	A1	0.00393	0.00707	0.06904
	A1	0.02300	0.02598	0.08375
	A2	0.00383	0.00910	0.07930
	A2	0.01922	0.02451	0.09484
	B1	-0.00053	0.00297	0.06292
	B1	0.01265	0.01614	0.07616
	B2	-0.00071	0.00521	0.07466
	B2	0.00946	0.01543	0.08503
sky130_fd_sc_hs__o22ai_4	A1	0.00606	0.01446	0.15188
	A1	0.04215	0.05062	0.18835
	A2	0.00597	0.01809	0.16564
	A2	0.03607	0.04825	0.19599
	B1	-0.00139	0.00763	0.14000
	B1	0.02486	0.03394	0.16667
	B2	-0.00134	0.01153	0.15236
	B2	0.01892	0.03176	0.17281

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01364	0.01480	0.04012
	A1	0.00204	0.00323	0.02903
	A2	0.01122	0.01246	0.03622
	A2	0.00182	0.00311	0.02632
	B1	0.00858	0.01025	0.03723
	B1	0.00194	0.00358	0.02998
	B2	0.00635	0.00822	0.03349
	B2	0.00116	0.00293	0.02802
sky130_fd_sc_hs__o22ai_2	A1	0.02826	0.03071	0.08127
	A1	0.00421	0.00681	0.05799
	A2	0.02290	0.02567	0.07241
	A2	0.00138	0.00447	0.05200
	B1	0.01737	0.02094	0.07436
	B1	0.00422	0.00779	0.06048
	B2	0.01149	0.01573	0.06612
	B2	0.00137	0.00553	0.05524
sky130_fd_sc_hs__o22ai_4	A1	0.05288	0.05856	0.16572
	A1	0.00993	0.01619	0.12531
	A2	0.04295	0.04937	0.14608
	A2	0.00583	0.01295	0.11235
	B1	0.03331	0.04203	0.15175
	B1	0.00709	0.01573	0.12416
	B2	0.02339	0.03268	0.13272
	B2	0.00318	0.01240	0.11179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00256	0.00218	0.00233
	(A2 * B2 * !Y)	-0.00163	-0.00203	-0.00184
	(A2 * B1 * !B2 * !Y)	0.00279	0.00241	0.00256
	(A2 * B1 * !B2 * !Y)	-0.00140	-0.00180	-0.00161
	(A2 * !B1 * !B2 * Y)	0.00188	0.00189	0.00188
	(A2 * !B1 * !B2 * Y)	-0.00228	-0.00229	-0.00227
	(!A2 * !B1 * !B2 * Y)	0.00182	0.00183	0.00183
	(!A2 * !B1 * !B2 * Y)	-0.00228	-0.00228	-0.00227
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00512	0.00421	0.00440
	(A2 * B2 * !Y)	-0.00297	-0.00395	-0.00365
	(A2 * B1 * !B2 * !Y)	0.00558	0.00467	0.00486
	(A2 * B1 * !B2 * !Y)	-0.00251	-0.00349	-0.00318
	(A2 * !B1 * !B2 * Y)	0.00350	0.00352	0.00349
	(A2 * !B1 * !B2 * Y)	-0.00455	-0.00456	-0.00453
	(!A2 * !B1 * !B2 * Y)	0.00339	0.00341	0.00340
	(!A2 * !B1 * !B2 * Y)	-0.00454	-0.00455	-0.00453
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00996	0.00837	0.00884
	(A2 * B2 * !Y)	-0.00624	-0.00788	-0.00719
	(A2 * B1 * !B2 * !Y)	0.01089	0.00930	0.00976
	(A2 * B1 * !B2 * !Y)	-0.00532	-0.00696	-0.00627
	(A2 * !B1 * !B2 * Y)	0.00687	0.00691	0.00684
	(A2 * !B1 * !B2 * Y)	-0.00920	-0.00921	-0.00913
	(!A2 * !B1 * !B2 * Y)	0.00660	0.00670	0.00664
	(!A2 * !B1 * !B2 * Y)	-0.00913	-0.00921	-0.00913

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00138	-0.00141	-0.00146
	(A2 * B2 * !Y)	0.00279	0.00281	0.00273
	(A2 * B1 * !B2 * !Y)	-0.00115	-0.00118	-0.00123
	(A2 * B1 * !B2 * !Y)	0.00302	0.00304	0.00296
	(A2 * !B1 * !B2 * Y)	-0.00182	-0.00183	-0.00182
	(A2 * !B1 * !B2 * Y)	0.00233	0.00236	0.00234
	(!A2 * !B1 * !B2 * Y)	-0.00151	-0.00173	-0.00177
	(!A2 * !B1 * !B2 * Y)	0.00257	0.00242	0.00234
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00248	-0.00253	-0.00264
	(A2 * B2 * !Y)	0.00556	0.00559	0.00545
	(A2 * B1 * !B2 * !Y)	-0.00202	-0.00207	-0.00218
	(A2 * B1 * !B2 * !Y)	0.00602	0.00605	0.00591
	(A2 * !B1 * !B2 * Y)	-0.00338	-0.00339	-0.00338
	(A2 * !B1 * !B2 * Y)	0.00464	0.00468	0.00465
	(!A2 * !B1 * !B2 * Y)	-0.00277	-0.00321	-0.00328
	(!A2 * !B1 * !B2 * Y)	0.00512	0.00476	0.00467
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00507	-0.00515	-0.00536
	(A2 * B2 * !Y)	0.01107	0.01110	0.01076
	(A2 * B1 * !B2 * !Y)	-0.00414	-0.00423	-0.00444
	(A2 * B1 * !B2 * !Y)	0.01199	0.01202	0.01169
	(A2 * !B1 * !B2 * Y)	-0.00659	-0.00661	-0.00661
	(A2 * !B1 * !B2 * Y)	0.00934	0.00936	0.00938
	(!A2 * !B1 * !B2 * Y)	-0.00545	-0.00633	-0.00642
	(!A2 * !B1 * !B2 * Y)	0.01026	0.00962	0.00942

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00188	0.00191	0.00189
	(A1 * B2 * !Y)	-0.00090	-0.00091	-0.00088
	(A1 * B1 * !B2 * !Y)	0.00211	0.00214	0.00212
	(A1 * B1 * !B2 * !Y)	-0.00067	-0.00068	-0.00064
	(A1 * !B1 * !B2 * Y)	0.00173	0.00172	0.00172
	(A1 * !B1 * !B2 * Y)	-0.00221	-0.00220	-0.00219
	(!A1 * !B1 * !B2 * Y)	0.00166	0.00169	0.00167
	(!A1 * !B1 * !B2 * Y)	-0.00219	-0.00221	-0.00219
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00403	0.00410	0.00406
	(A1 * B2 * !Y)	-0.00173	-0.00176	-0.00170
	(A1 * B1 * !B2 * !Y)	0.00450	0.00457	0.00453
	(A1 * B1 * !B2 * !Y)	-0.00126	-0.00129	-0.00123
	(A1 * !B1 * !B2 * Y)	0.00351	0.00350	0.00348
	(A1 * !B1 * !B2 * Y)	-0.00460	-0.00460	-0.00458
	(!A1 * !B1 * !B2 * Y)	0.00337	0.00340	0.00339
	(!A1 * !B1 * !B2 * Y)	-0.00458	-0.00460	-0.00458
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00748	0.00756	0.00750
	(A1 * B2 * !Y)	-0.00342	-0.00343	-0.00330
	(A1 * B1 * !B2 * !Y)	0.00840	0.00849	0.00842
	(A1 * B1 * !B2 * !Y)	-0.00249	-0.00251	-0.00238
	(A1 * !B1 * !B2 * Y)	0.00671	0.00678	0.00674
	(A1 * !B1 * !B2 * Y)	-0.00870	-0.00875	-0.00870
	(!A1 * !B1 * !B2 * Y)	0.00655	0.00659	0.00654
	(!A1 * !B1 * !B2 * Y)	-0.00874	-0.00876	-0.00870

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00142	-0.00143	-0.00156
	(A1 * B2 * !Y)	0.00137	0.00136	0.00123
	(A1 * B1 * !B2 * !Y)	-0.00119	-0.00120	-0.00133
	(A1 * B1 * !B2 * !Y)	0.00160	0.00160	0.00146
	(A1 * !B1 * !B2 * Y)	-0.00165	-0.00167	-0.00166
	(A1 * !B1 * !B2 * Y)	0.00225	0.00227	0.00225
	(!A1 * !B1 * !B2 * Y)	-0.00138	-0.00158	-0.00161
	(!A1 * !B1 * !B2 * Y)	0.00246	0.00233	0.00226
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00306	-0.00309	-0.00340
	(A1 * B2 * !Y)	0.00273	0.00273	0.00243
	(A1 * B1 * !B2 * !Y)	-0.00260	-0.00263	-0.00293
	(A1 * B1 * !B2 * !Y)	0.00319	0.00319	0.00290
	(A1 * !B1 * !B2 * Y)	-0.00335	-0.00339	-0.00337
	(A1 * !B1 * !B2 * Y)	0.00466	0.00472	0.00469
	(!A1 * !B1 * !B2 * Y)	-0.00276	-0.00321	-0.00327
	(!A1 * !B1 * !B2 * Y)	0.00516	0.00480	0.00472
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00557	-0.00564	-0.00618
	(A1 * B2 * !Y)	0.00528	0.00528	0.00475
	(A1 * B1 * !B2 * !Y)	-0.00465	-0.00472	-0.00526
	(A1 * B1 * !B2 * !Y)	0.00621	0.00621	0.00568
	(A1 * !B1 * !B2 * Y)	-0.00650	-0.00651	-0.00651
	(A1 * !B1 * !B2 * Y)	0.00892	0.00893	0.00893
	(!A1 * !B1 * !B2 * Y)	-0.00539	-0.00616	-0.00632
	(!A1 * !B1 * !B2 * Y)	0.00981	0.00916	0.00899

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00259	0.00223	0.00239
	(A2 * B2 * !Y)	-0.00162	-0.00200	-0.00180
	(A1 * !A2 * B2 * !Y)	0.00282	0.00246	0.00262
	(A1 * !A2 * B2 * !Y)	-0.00139	-0.00177	-0.00157
	(!A1 * !A2 * B2 * Y)	0.00066	0.00066	0.00066
	(!A1 * !A2 * B2 * Y)	-0.00269	-0.00270	-0.00268
	(!A1 * !A2 * !B2 * Y)	0.00078	0.00077	0.00069
	(!A1 * !A2 * !B2 * Y)	-0.00252	-0.00253	-0.00268
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00512	0.00420	0.00439
	(A2 * B2 * !Y)	-0.00302	-0.00400	-0.00370
	(A1 * !A2 * B2 * !Y)	0.00558	0.00466	0.00485
	(A1 * !A2 * B2 * !Y)	-0.00256	-0.00354	-0.00324
	(!A1 * !A2 * B2 * Y)	0.00109	0.00110	0.00109
	(!A1 * !A2 * B2 * Y)	-0.00534	-0.00537	-0.00532
	(!A1 * !A2 * !B2 * Y)	0.00132	0.00132	0.00116
	(!A1 * !A2 * !B2 * Y)	-0.00502	-0.00506	-0.00533
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01031	0.00869	0.00919
	(A2 * B2 * !Y)	-0.00603	-0.00771	-0.00700
	(A1 * !A2 * B2 * !Y)	0.01123	0.00961	0.01011
	(A1 * !A2 * B2 * !Y)	-0.00512	-0.00679	-0.00608
	(!A1 * !A2 * B2 * Y)	0.00208	0.00208	0.00207
	(!A1 * !A2 * B2 * Y)	-0.01085	-0.01088	-0.01077
	(!A1 * !A2 * !B2 * Y)	0.00245	0.00245	0.00218
	(!A1 * !A2 * !B2 * Y)	-0.01026	-0.01033	-0.01078

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00145	-0.00146	-0.00152
	(A2 * B2 * !Y)	0.00277	0.00275	0.00268
	(A1 * !A2 * B2 * !Y)	-0.00122	-0.00123	-0.00129
	(A1 * !A2 * B2 * !Y)	0.00299	0.00298	0.00292
	(!A1 * !A2 * B2 * Y)	-0.00056	-0.00057	-0.00059
	(!A1 * !A2 * B2 * Y)	0.00284	0.00287	0.00276
	(!A1 * !A2 * !B2 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !B2 * Y)	0.00271	0.00271	0.00271
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00249	-0.00252	-0.00263
	(A2 * B2 * !Y)	0.00566	0.00565	0.00550
	(A1 * !A2 * B2 * !Y)	-0.00203	-0.00207	-0.00217
	(A1 * !A2 * B2 * !Y)	0.00612	0.00613	0.00596
	(!A1 * !A2 * B2 * Y)	-0.00091	-0.00093	-0.00098
	(!A1 * !A2 * B2 * Y)	0.00557	0.00568	0.00547
	(!A1 * !A2 * !B2 * Y)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * !B2 * Y)	0.00538	0.00539	0.00540
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00539	-0.00551	-0.00570
	(A2 * B2 * !Y)	0.01082	0.01091	0.01057
	(A1 * !A2 * B2 * !Y)	-0.00447	-0.00458	-0.00478
	(A1 * !A2 * B2 * !Y)	0.01174	0.01182	0.01149
	(!A1 * !A2 * B2 * Y)	-0.00171	-0.00173	-0.00184
	(!A1 * !A2 * B2 * Y)	0.01126	0.01132	0.01107
	(!A1 * !A2 * !B2 * Y)	-0.00201	-0.00201	-0.00200
	(!A1 * !A2 * !B2 * Y)	0.01089	0.01094	0.01091

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00201	0.00202	0.00203
	(A2 * B1 * !Y)	-0.00086	-0.00085	-0.00083
	(A1 * !A2 * B1 * !Y)	0.00224	0.00226	0.00226
	(A1 * !A2 * B1 * !Y)	-0.00063	-0.00063	-0.00060
	(!A1 * !A2 * B1 * Y)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B1 * Y)	-0.00268	-0.00268	-0.00266
	(!A1 * !A2 * !B1 * Y)	0.00066	0.00066	0.00057
	(!A1 * !A2 * !B1 * Y)	-0.00251	-0.00252	-0.00266
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00386	0.00387	0.00389
	(A2 * B1 * !Y)	-0.00176	-0.00174	-0.00171
	(A1 * !A2 * B1 * !Y)	0.00434	0.00435	0.00436
	(A1 * !A2 * B1 * !Y)	-0.00129	-0.00128	-0.00124
	(!A1 * !A2 * B1 * Y)	0.00104	0.00104	0.00104
	(!A1 * !A2 * B1 * Y)	-0.00528	-0.00528	-0.00525
	(!A1 * !A2 * !B1 * Y)	0.00126	0.00127	0.00110
	(!A1 * !A2 * !B1 * Y)	-0.00492	-0.00499	-0.00524
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00757	0.00758	0.00762
	(A2 * B1 * !Y)	-0.00344	-0.00340	-0.00332
	(A1 * !A2 * B1 * !Y)	0.00847	0.00851	0.00855
	(A1 * !A2 * B1 * !Y)	-0.00249	-0.00249	-0.00240
	(!A1 * !A2 * B1 * Y)	0.00196	0.00195	0.00195
	(!A1 * !A2 * B1 * Y)	-0.01038	-0.01037	-0.01030
	(!A1 * !A2 * !B1 * Y)	0.00232	0.00233	0.00206
	(!A1 * !A2 * !B1 * Y)	-0.00977	-0.00986	-0.01031

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00155	-0.00158	-0.00170
	(A2 * B1 * !Y)	0.00131	0.00132	0.00119
	(A1 * !A2 * B1 * !Y)	-0.00134	-0.00134	-0.00147
	(A1 * !A2 * B1 * !Y)	0.00155	0.00154	0.00142
	(!A1 * !A2 * B1 * Y)	-0.00045	-0.00046	-0.00048
	(!A1 * !A2 * B1 * Y)	0.00279	0.00280	0.00274
	(!A1 * !A2 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !B1 * Y)	0.00269	0.00270	0.00270
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00288	-0.00290	-0.00323
	(A2 * B1 * !Y)	0.00272	0.00272	0.00244
	(A1 * !A2 * B1 * !Y)	-0.00241	-0.00245	-0.00277
	(A1 * !A2 * B1 * !Y)	0.00318	0.00319	0.00291
	(!A1 * !A2 * B1 * Y)	-0.00086	-0.00088	-0.00092
	(!A1 * !A2 * B1 * Y)	0.00548	0.00555	0.00538
	(!A1 * !A2 * !B1 * Y)	-0.00102	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * Y)	0.00532	0.00532	0.00532
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00565	-0.00572	-0.00628
	(A2 * B1 * !Y)	0.00529	0.00530	0.00479
	(A1 * !A2 * B1 * !Y)	-0.00477	-0.00481	-0.00535
	(A1 * !A2 * B1 * !Y)	0.00627	0.00623	0.00571
	(!A1 * !A2 * B1 * Y)	-0.00160	-0.00161	-0.00172
	(!A1 * !A2 * B1 * Y)	0.01078	0.01076	0.01058
	(!A1 * !A2 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * !B1 * Y)	0.01039	0.01046	0.01044

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00256	0.00265	0.00273	0.00291	1.34943
sky130_fd_sc_hs__o22a_2	0.00274	0.00278	0.00289	0.00287	2.56677
sky130_fd_sc_hs__o22a_4	0.00534	0.00496	0.00545	0.00517	4.77877

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	66.24890	136.49800
sky130_fd_sc_hs__o22a_2	0.00000	88.41930	137.99100
sky130_fd_sc_hs__o22a_4	0.00000	177.36400	275.91500

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)	0.09911	0.57059	6.42537
	A2->X (RR)	0.08877	0.54862	6.29068
	B1->X (RR)	0.09001	0.58689	6.61768
	B2->X (RR)	0.07938	0.55936	6.44916
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.10070	0.49407	6.30768
	A2->X (RR)	0.09056	0.47478	6.17899
	B1->X (RR)	0.09161	0.51487	6.48091
	B2->X (RR)	0.08040	0.48662	6.29528
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.10795	0.44631	6.43041
	A2->X (RR)	0.09907	0.42597	6.33557
	B1->X (RR)	0.09073	0.45303	6.65194
	B2->X (RR)	0.09020	0.45105	6.52871

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.13195	0.55914	5.32075
	A2->X (FF)	0.11964	0.57947	5.49810
	B1->X (FF)	0.09940	0.48612	5.13617
	B2->X (FF)	0.08714	0.49957	5.33701
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.15873	0.56099	5.39525
	A2->X (FF)	0.14581	0.58747	5.58303
	B1->X (FF)	0.12509	0.49109	5.21358
	B2->X (FF)	0.11124	0.50996	5.41223
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.15383	0.51000	5.24814
	A2->X (FF)	0.13690	0.52880	5.42404
	B1->X (FF)	0.12559	0.44713	5.08358
	B2->X (FF)	0.10987	0.45851	5.19967

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01693	0.02035	0.10210
	A1	0.00768	0.01177	0.09424
	A2	0.01270	0.01703	0.10470
	A2	0.00727	0.01158	0.09870
	B1	0.01191	0.01669	0.09849
	B1	0.00591	0.01069	0.09280
	B2	0.01088	0.01620	0.10275
	B2	0.00577	0.01111	0.09815
sky130_fd_sc_hs__o22a_2	A1	0.02108	0.02440	0.10815
	A1	0.00956	0.01354	0.10003
	A2	0.01649	0.02085	0.10983
	A2	0.00910	0.01352	0.10352
	B1	0.01931	0.02330	0.09928
	B1	0.01120	0.01582	0.09323
	B2	0.01397	0.01918	0.10288
	B2	0.00909	0.01438	0.09909
sky130_fd_sc_hs__o22a_4	A1	0.04233	0.04874	0.21229
	A1	0.01970	0.02752	0.19606
	A2	0.03197	0.04054	0.21488
	A2	0.01853	0.02716	0.20323
	B1	0.03161	0.04117	0.20384
	B1	0.01964	0.02919	0.19296
	B2	0.03530	0.04341	0.20374
	B2	0.02385	0.03205	0.19292

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00673	0.01031	0.09241
	A1	0.01537	0.01893	0.10098
	A2	0.00671	0.01155	0.09798
	A2	0.01415	0.01898	0.10538
	B1	0.00487	0.00925	0.09360
	B1	0.01086	0.01513	0.09955
	B2	0.00429	0.01005	0.09946
	B2	0.00941	0.01509	0.10457
sky130_fd_sc_hs__o22a_2	A1	0.01310	0.01470	0.09785
	A1	0.02214	0.02373	0.10685
	A2	0.01318	0.01622	0.10441
	A2	0.02095	0.02398	0.11132
	B1	0.01060	0.01281	0.09481
	B1	0.01788	0.02001	0.10021
	B2	0.01058	0.01426	0.10147
	B2	0.01657	0.02008	0.10516
sky130_fd_sc_hs__o22a_4	A1	0.02540	0.02899	0.19379
	A1	0.04272	0.04590	0.20783
	A2	0.02582	0.03185	0.20442
	A2	0.04028	0.04629	0.21644
	B1	0.02162	0.02589	0.18754
	B1	0.03591	0.04002	0.19947
	B2	0.02215	0.02891	0.19454
	B2	0.03361	0.04018	0.20560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00222	0.00187	0.00214
	(A2 * B2 * X)	-0.00142	-0.00178	-0.00147
	(A2 * B1 * !B2 * X)	0.00252	0.00218	0.00244
	(A2 * B1 * !B2 * X)	-0.00112	-0.00148	-0.00117
	(A2 * !B1 * !B2 * !X)	0.00197	0.00198	0.00197
	(A2 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00163
	(!A2 * !B1 * !B2 * !X)	0.00192	0.00193	0.00193
	(!A2 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00163
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00249	0.00215	0.00242
	(A2 * B2 * X)	-0.00139	-0.00175	-0.00144
	(A2 * B1 * !B2 * X)	0.00279	0.00245	0.00272
	(A2 * B1 * !B2 * X)	-0.00109	-0.00144	-0.00114
	(A2 * !B1 * !B2 * !X)	0.00266	0.00267	0.00266
	(A2 * !B1 * !B2 * !X)	-0.00119	-0.00119	-0.00118
	(!A2 * !B1 * !B2 * !X)	0.00261	0.00262	0.00261
	(!A2 * !B1 * !B2 * !X)	-0.00119	-0.00119	-0.00118
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00483	0.00419	0.00466
	(A2 * B2 * X)	-0.00263	-0.00334	-0.00276
	(A2 * B1 * !B2 * X)	0.00543	0.00479	0.00527
	(A2 * B1 * !B2 * X)	-0.00203	-0.00274	-0.00216
	(A2 * !B1 * !B2 * !X)	0.00505	0.00510	0.00507
	(A2 * !B1 * !B2 * !X)	-0.00233	-0.00235	-0.00232
	(!A2 * !B1 * !B2 * !X)	0.00497	0.00501	0.00499
	(!A2 * !B1 * !B2 * !X)	-0.00233	-0.00236	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00087	-0.00089	-0.00098
	(A2 * B2 * X)	0.00276	0.00277	0.00266
	(A2 * B1 * !B2 * X)	-0.00056	-0.00059	-0.00068
	(A2 * B1 * !B2 * X)	0.00306	0.00307	0.00296
	(A2 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !B2 * !X)	0.00257	0.00256	0.00257
	(!A2 * !B1 * !B2 * !X)	-0.00075	-0.00095	-0.00098
	(!A2 * !B1 * !B2 * !X)	0.00281	0.00266	0.00258
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00111	-0.00114	-0.00122
	(A2 * B2 * X)	0.00275	0.00276	0.00265
	(A2 * B1 * !B2 * X)	-0.00081	-0.00084	-0.00092
	(A2 * B1 * !B2 * X)	0.00305	0.00306	0.00295
	(A2 * !B1 * !B2 * !X)	-0.00088	-0.00087	-0.00088
	(A2 * !B1 * !B2 * !X)	0.00297	0.00297	0.00297
	(!A2 * !B1 * !B2 * !X)	-0.00059	-0.00080	-0.00083
	(!A2 * !B1 * !B2 * !X)	0.00319	0.00305	0.00298
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00205	-0.00209	-0.00227
	(A2 * B2 * X)	0.00540	0.00539	0.00520
	(A2 * B1 * !B2 * X)	-0.00145	-0.00149	-0.00167
	(A2 * B1 * !B2 * X)	0.00600	0.00599	0.00580
	(A2 * !B1 * !B2 * !X)	-0.00147	-0.00149	-0.00148
	(A2 * !B1 * !B2 * !X)	0.00591	0.00596	0.00592
	(!A2 * !B1 * !B2 * !X)	-0.00097	-0.00134	-0.00138
	(!A2 * !B1 * !B2 * !X)	0.00634	0.00608	0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00174	0.00177	0.00176
	(A1 * B2 * X)	-0.00081	-0.00082	-0.00078
	(A1 * B1 * !B2 * X)	0.00204	0.00207	0.00206
	(A1 * B1 * !B2 * X)	-0.00051	-0.00052	-0.00048
	(A1 * !B1 * !B2 * !X)	0.00191	0.00194	0.00192
	(A1 * !B1 * !B2 * !X)	-0.00163	-0.00165	-0.00163
	(!A1 * !B1 * !B2 * !X)	0.00187	0.00189	0.00188
	(!A1 * !B1 * !B2 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00190	0.00193	0.00193
	(A1 * B2 * X)	-0.00081	-0.00082	-0.00078
	(A1 * B1 * !B2 * X)	0.00220	0.00223	0.00223
	(A1 * B1 * !B2 * X)	-0.00050	-0.00051	-0.00047
	(A1 * !B1 * !B2 * !X)	0.00258	0.00260	0.00258
	(A1 * !B1 * !B2 * !X)	-0.00113	-0.00115	-0.00113
	(!A1 * !B1 * !B2 * !X)	0.00253	0.00255	0.00254
	(!A1 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00333	0.00339	0.00338
	(A1 * B2 * X)	-0.00156	-0.00158	-0.00150
	(A1 * B1 * !B2 * X)	0.00394	0.00399	0.00398
	(A1 * B1 * !B2 * X)	-0.00096	-0.00098	-0.00090
	(A1 * !B1 * !B2 * !X)	0.00460	0.00459	0.00459
	(A1 * !B1 * !B2 * !X)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * !B2 * !X)	0.00453	0.00451	0.00452
	(!A1 * !B1 * !B2 * !X)	-0.00235	-0.00234	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00115	-0.00117	-0.00132
	(A1 * B2 * X)	0.00141	0.00140	0.00124
	(A1 * B1 * !B2 * X)	-0.00085	-0.00087	-0.00102
	(A1 * B1 * !B2 * X)	0.00171	0.00170	0.00154
	(A1 * !B1 * !B2 * !X)	-0.00097	-0.00099	-0.00098
	(A1 * !B1 * !B2 * !X)	0.00256	0.00258	0.00257
	(!A1 * !B1 * !B2 * !X)	-0.00071	-0.00091	-0.00094
	(!A1 * !B1 * !B2 * !X)	0.00279	0.00265	0.00258
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00129	-0.00130	-0.00146
	(A1 * B2 * X)	0.00143	0.00143	0.00126
	(A1 * B1 * !B2 * X)	-0.00098	-0.00100	-0.00116
	(A1 * B1 * !B2 * X)	0.00172	0.00173	0.00157
	(A1 * !B1 * !B2 * !X)	-0.00079	-0.00081	-0.00080
	(A1 * !B1 * !B2 * !X)	0.00292	0.00293	0.00292
	(!A1 * !B1 * !B2 * !X)	-0.00052	-0.00072	-0.00075
	(!A1 * !B1 * !B2 * !X)	0.00313	0.00299	0.00292
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00209	-0.00212	-0.00245
	(A1 * B2 * X)	0.00283	0.00282	0.00249
	(A1 * B1 * !B2 * X)	-0.00149	-0.00152	-0.00185
	(A1 * B1 * !B2 * X)	0.00344	0.00342	0.00310
	(A1 * !B1 * !B2 * !X)	-0.00098	-0.00102	-0.00100
	(A1 * !B1 * !B2 * !X)	0.00594	0.00596	0.00593
	(!A1 * !B1 * !B2 * !X)	-0.00049	-0.00086	-0.00092
	(!A1 * !B1 * !B2 * !X)	0.00635	0.00609	0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00227	0.00195	0.00223
	(A2 * B2 * X)	-0.00149	-0.00183	-0.00151
	(A1 * !A2 * B2 * X)	0.00257	0.00225	0.00254
	(A1 * !A2 * B2 * X)	-0.00119	-0.00153	-0.00121
	(!A1 * !A2 * B2 * !X)	0.00089	0.00089	0.00089
	(!A1 * !A2 * B2 * !X)	-0.00215	-0.00216	-0.00214
	(!A1 * !A2 * !B2 * !X)	0.00097	0.00097	0.00091
	(!A1 * !A2 * !B2 * !X)	-0.00201	-0.00202	-0.00214
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00256	0.00223	0.00250
	(A2 * B2 * X)	-0.00135	-0.00170	-0.00138
	(A1 * !A2 * B2 * X)	0.00286	0.00253	0.00280
	(A1 * !A2 * B2 * X)	-0.00105	-0.00140	-0.00108
	(!A1 * !A2 * B2 * !X)	0.00140	0.00141	0.00140
	(!A1 * !A2 * B2 * !X)	-0.00166	-0.00167	-0.00165
	(!A1 * !A2 * !B2 * !X)	0.00151	0.00151	0.00143
	(!A1 * !A2 * !B2 * !X)	-0.00150	-0.00151	-0.00165
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00500	0.00435	0.00483
	(A2 * B2 * X)	-0.00260	-0.00333	-0.00275
	(A1 * !A2 * B2 * X)	0.00561	0.00495	0.00543
	(A1 * !A2 * B2 * X)	-0.00200	-0.00273	-0.00215
	(!A1 * !A2 * B2 * !X)	0.00313	0.00315	0.00314
	(!A1 * !A2 * B2 * !X)	-0.00298	-0.00302	-0.00297
	(!A1 * !A2 * !B2 * !X)	0.00329	0.00331	0.00318
	(!A1 * !A2 * !B2 * !X)	-0.00273	-0.00278	-0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00096	-0.00098	-0.00107
	(A2 * B2 * X)	0.00280	0.00280	0.00270
	(A1 * !A2 * B2 * X)	-0.00066	-0.00068	-0.00077
	(A1 * !A2 * B2 * X)	0.00311	0.00310	0.00300
	(!A1 * !A2 * B2 * !X)	0.00006	0.00006	0.00004
	(!A1 * !A2 * B2 * !X)	0.00314	0.00316	0.00308
	(!A1 * !A2 * !B2 * !X)	-0.00000	-0.00001	0.00000
	(!A1 * !A2 * !B2 * !X)	0.00304	0.00308	0.00304
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00120	-0.00122	-0.00131
	(A2 * B2 * X)	0.00270	0.00270	0.00259
	(A1 * !A2 * B2 * X)	-0.00090	-0.00092	-0.00101
	(A1 * !A2 * B2 * X)	0.00300	0.00300	0.00289
	(!A1 * !A2 * B2 * !X)	0.00041	0.00040	0.00038
	(!A1 * !A2 * B2 * !X)	0.00351	0.00354	0.00345
	(!A1 * !A2 * !B2 * !X)	0.00034	0.00033	0.00034
	(!A1 * !A2 * !B2 * !X)	0.00340	0.00345	0.00341
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00221	-0.00226	-0.00243
	(A2 * B2 * X)	0.00538	0.00538	0.00518
	(A1 * !A2 * B2 * X)	-0.00161	-0.00166	-0.00183
	(A1 * !A2 * B2 * X)	0.00598	0.00599	0.00578
	(!A1 * !A2 * B2 * !X)	0.00050	0.00048	0.00044
	(!A1 * !A2 * B2 * !X)	0.00667	0.00672	0.00658
	(!A1 * !A2 * !B2 * !X)	0.00036	0.00035	0.00037
	(!A1 * !A2 * !B2 * !X)	0.00647	0.00651	0.00649

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00221	0.00222	0.00224
	(A2 * B1 * X)	-0.00077	-0.00078	-0.00075
	(A1 * !A2 * B1 * X)	0.00251	0.00252	0.00254
	(A1 * !A2 * B1 * X)	-0.00047	-0.00048	-0.00045
	(!A1 * !A2 * B1 * !X)	0.00135	0.00135	0.00134
	(!A1 * !A2 * B1 * !X)	-0.00190	-0.00191	-0.00190
	(!A1 * !A2 * !B1 * !X)	0.00145	0.00144	0.00137
	(!A1 * !A2 * !B1 * !X)	-0.00177	-0.00178	-0.00189
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00195	0.00198	0.00198
	(A2 * B1 * X)	-0.00077	-0.00078	-0.00074
	(A1 * !A2 * B1 * X)	0.00225	0.00225	0.00228
	(A1 * !A2 * B1 * X)	-0.00047	-0.00046	-0.00044
	(!A1 * !A2 * B1 * !X)	0.00138	0.00138	0.00138
	(!A1 * !A2 * B1 * !X)	-0.00154	-0.00154	-0.00154
	(!A1 * !A2 * !B1 * !X)	0.00150	0.00150	0.00142
	(!A1 * !A2 * !B1 * !X)	-0.00139	-0.00140	-0.00153
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00351	0.00356	0.00356
	(A2 * B1 * X)	-0.00155	-0.00157	-0.00149
	(A1 * !A2 * B1 * X)	0.00411	0.00416	0.00416
	(A1 * !A2 * B1 * X)	-0.00095	-0.00097	-0.00089
	(!A1 * !A2 * B1 * !X)	0.00256	0.00256	0.00255
	(!A1 * !A2 * B1 * !X)	-0.00307	-0.00310	-0.00307
	(!A1 * !A2 * !B1 * !X)	0.00273	0.00273	0.00261
	(!A1 * !A2 * !B1 * !X)	-0.00283	-0.00286	-0.00307

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00163	-0.00165	-0.00180
	(A2 * B1 * X)	0.00136	0.00136	0.00120
	(A1 * !A2 * B1 * X)	-0.00132	-0.00135	-0.00150
	(A1 * !A2 * B1 * X)	0.00166	0.00166	0.00150
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00039	-0.00041
	(!A1 * !A2 * B1 * !X)	0.00292	0.00292	0.00284
	(!A1 * !A2 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !B1 * !X)	0.00278	0.00279	0.00279
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00134	-0.00136	-0.00152
	(A2 * B1 * X)	0.00140	0.00139	0.00123
	(A1 * !A2 * B1 * X)	-0.00104	-0.00105	-0.00121
	(A1 * !A2 * B1 * X)	0.00170	0.00169	0.00153
	(!A1 * !A2 * B1 * !X)	0.00044	0.00042	0.00040
	(!A1 * !A2 * B1 * !X)	0.00341	0.00340	0.00334
	(!A1 * !A2 * !B1 * !X)	0.00035	0.00034	0.00035
	(!A1 * !A2 * !B1 * !X)	0.00329	0.00332	0.00329
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00227	-0.00231	-0.00262
	(A2 * B1 * X)	0.00283	0.00281	0.00248
	(A1 * !A2 * B1 * X)	-0.00167	-0.00168	-0.00202
	(A1 * !A2 * B1 * X)	0.00343	0.00340	0.00308
	(!A1 * !A2 * B1 * !X)	0.00111	0.00106	0.00103
	(!A1 * !A2 * B1 * !X)	0.00681	0.00686	0.00668
	(!A1 * !A2 * !B1 * !X)	0.00093	0.00091	0.00094
	(!A1 * !A2 * !B1 * !X)	0.00657	0.00664	0.00658

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00237	0.00257	0.00291	0.00305	0.66401
sky130_fd_sc_hs__o2bb2ai_2	0.00535	0.00473	0.00591	0.00549	1.28191
sky130_fd_sc_hs__o2bb2ai_4	0.01121	0.01128	0.01110	0.01131	2.17344

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	96.12660	203.27400
sky130_fd_sc_hs__o2bb2ai_2	0.00000	192.05000	406.18400
sky130_fd_sc_hs__o2bb2ai_4	0.00000	280.79700	402.15400

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)	0.07026	0.38631	3.25835
	A2_N->Y (RR)	0.06700	0.39587	3.36808
	B1->Y (FR)	0.07538	0.76867	8.82914
	B2->Y (FR)	0.06334	0.80327	9.42370
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.06367	0.31377	3.16879
	A2_N->Y (RR)	0.05867	0.32055	3.28646
	B1->Y (FR)	0.06726	0.64167	8.69661
	B2->Y (FR)	0.05238	0.67335	9.26740
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.06834	0.27055	3.03738
	A2_N->Y (RR)	0.06296	0.29150	3.27896
	B1->Y (FR)	0.07322	0.55299	8.40969
	B2->Y (FR)	0.05688	0.60123	9.18836

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)	0.09352	0.50808	4.51564
	A2_N->Y (FF)	0.08415	0.48036	4.34221
	B1->Y (RF)	0.04472	0.43955	4.96897
	B2->Y (RF)	0.03517	0.42214	4.87365
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.07554	0.43041	4.46389
	A2_N->Y (FF)	0.07153	0.41798	4.42521
	B1->Y (RF)	0.03913	0.35800	4.79658
	B2->Y (RF)	0.03136	0.34873	4.82224
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.08744	0.39692	4.40281
	A2_N->Y (FF)	0.07662	0.36289	4.12328
	B1->Y (RF)	0.04435	0.30647	4.64472
	B2->Y (RF)	0.03175	0.28428	4.49400

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	0.01226	0.01823	0.12204
	A1_N	0.00879	0.01475	0.11850
	A2_N	0.01132	0.01714	0.11107
	A2_N	0.00878	0.01461	0.10866
	B1	0.00088	0.00241	0.03231
	B1	0.00712	0.00848	0.03854
	B2	0.00086	0.00335	0.03794
	B2	0.00588	0.00837	0.04293
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.02325	0.03431	0.22753
	A1_N	0.01553	0.02661	0.21978
	A2_N	0.02085	0.03348	0.23042
	A2_N	0.01600	0.02862	0.22570
	B1	0.00139	0.00497	0.06502
	B1	0.01385	0.01740	0.07747
	B2	0.00138	0.00704	0.07274
	B2	0.01060	0.01628	0.08205
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.04314	0.06687	0.49503
	A1_N	0.02592	0.04961	0.47768
	A2_N	0.03797	0.06329	0.46094
	A2_N	0.02012	0.04544	0.44296
	B1	0.00212	0.00952	0.12312
	B1	0.02702	0.03436	0.14763
	B2	0.00185	0.01317	0.13946
	B2	0.02127	0.03257	0.15897

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00870	0.01574	0.12058
	A1_N	0.01225	0.01929	0.12394
	A2_N	0.00816	0.01508	0.11788
	A2_N	0.00890	0.01580	0.11886
	B1	0.01034	0.01171	0.03701
	B1	0.00410	0.00535	0.03038
	B2	0.00809	0.00952	0.03321
	B2	0.00307	0.00447	0.02772
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01627	0.03001	0.23440
	A1_N	0.02404	0.03775	0.24168
	A2_N	0.01544	0.02882	0.22690
	A2_N	0.02041	0.03373	0.23149
	B1	0.02023	0.02319	0.07415
	B1	0.00777	0.01070	0.06054
	B2	0.01509	0.01842	0.06534
	B2	0.00584	0.00918	0.05532
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03515	0.06335	0.49302
	A1_N	0.05259	0.08080	0.50910
	A2_N	0.03180	0.05906	0.46822
	A2_N	0.04427	0.07148	0.48004
	B1	0.04191	0.04846	0.15035
	B1	0.01704	0.02341	0.12352
	B2	0.03105	0.03845	0.13127
	B2	0.01163	0.01898	0.11028

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)	0.00962	0.01544	0.11829
	(A2_N * !B1 * !B2 * Y)	0.00445	0.01024	0.11310
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00199	0.00201	0.00200
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01888	0.03028	0.23329
	(A2_N * !B1 * !B2 * Y)	0.00779	0.01916	0.22218
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00391	0.00395	0.00392
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00322	-0.00325	-0.00323
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.03729	0.06040	0.48483
	(A2_N * !B1 * !B2 * Y)	0.01297	0.03606	0.46045
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00853	0.00864	0.00857
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00720	-0.00728	-0.00722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A2_N * !B1 * !B2 * Y)	0.00064	0.00758	0.11216
	(A2_N * !B1 * !B2 * Y)	0.00586	0.01282	0.11733
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00086	-0.00097	-0.00100
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00245	0.00234	0.00228
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00107	0.01473	0.22099
	(A2_N * !B1 * !B2 * Y)	0.01222	0.02595	0.23205
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00162	-0.00190	-0.00194
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00553	0.00531	0.00520
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00273	0.03058	0.45822
	(A2_N * !B1 * !B2 * Y)	0.02718	0.05522	0.48248
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00383	-0.00455	-0.00465
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01196	0.01138	0.01115

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)	0.00871	0.01499	0.11815
	(A1_N * !B1 * !B2 * Y)	0.00445	0.01071	0.11387
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00098	0.00098	0.00096
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00167	-0.00167	-0.00171
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01654	0.02863	0.22280
	(A1_N * !B1 * !B2 * Y)	0.00823	0.02029	0.21449
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00190	0.00191	0.00185
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00307	-0.00310	-0.00319
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.03224	0.05686	0.46295
	(A1_N * !B1 * !B2 * Y)	0.01286	0.03738	0.44358
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00408	0.00408	0.00393
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00845	-0.00850	-0.00874

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)	0.00021	0.00715	0.11196
	(A1_N * !B1 * !B2 * Y)	0.00453	0.01146	0.11624
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00001	0.00001	0.00001
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00266	0.00266	0.00266
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00012	0.01326	0.21072
	(A1_N * !B1 * !B2 * Y)	0.00846	0.02163	0.21906
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00008	0.00008	0.00008
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00510	0.00508	0.00510
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00045	0.02703	0.43694
	(A1_N * !B1 * !B2 * Y)	0.01900	0.04656	0.45638
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00006	-0.00008	-0.00006
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01253	0.01262	0.01258

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)	0.00353	0.00354	0.00353
	(A1_N * A2_N * B2 * Y)	-0.00053	-0.00053	-0.00052
	(A1_N * A2_N * !B2 * Y)	0.00351	0.00352	0.00351
	(A1_N * A2_N * !B2 * Y)	-0.00053	-0.00053	-0.00052
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00287	0.00250	0.00266
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00122	-0.00161	-0.00141
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00704	0.00706	0.00704
	(A1_N * A2_N * B2 * Y)	-0.00116	-0.00117	-0.00114
	(A1_N * A2_N * !B2 * Y)	0.00697	0.00702	0.00700
	(A1_N * A2_N * !B2 * Y)	-0.00113	-0.00117	-0.00114
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00584	0.00506	0.00533
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00243	-0.00325	-0.00288
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.01032	0.01036	0.01030
	(A1_N * A2_N * B2 * Y)	-0.00570	-0.00572	-0.00565
	(A1_N * A2_N * !B2 * Y)	0.01015	0.01025	0.01018
	(A1_N * A2_N * !B2 * Y)	-0.00565	-0.00573	-0.00566
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01166	0.00992	0.01034
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00450	-0.00630	-0.00566

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)	0.00001	-0.00000	0.00001
	(A1_N * A2_N * B2 * Y)	0.00407	0.00408	0.00407
	(A1_N * A2_N * !B2 * Y)	0.00021	0.00007	0.00004
	(A1_N * A2_N * !B2 * Y)	0.00425	0.00412	0.00407
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00089	-0.00091	-0.00097
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00318	0.00318	0.00312
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00004	0.00003	0.00003
	(A1_N * A2_N * B2 * Y)	0.00821	0.00824	0.00823
	(A1_N * A2_N * !B2 * Y)	0.00042	0.00014	0.00009
	(A1_N * A2_N * !B2 * Y)	0.00858	0.00832	0.00824
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00180	-0.00185	-0.00195
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00643	0.00647	0.00630
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00328	-0.00330	-0.00328
	(A1_N * A2_N * B2 * Y)	0.01267	0.01270	0.01268
	(A1_N * A2_N * !B2 * Y)	-0.00242	-0.00307	-0.00316
	(A1_N * A2_N * !B2 * Y)	0.01346	0.01286	0.01272
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00330	-0.00340	-0.00360
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01275	0.01282	0.01249

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)	0.00362	0.00362	0.00360
	(A1_N * A2_N * B1 * Y)	-0.00056	-0.00056	-0.00054
	(A1_N * A2_N * !B1 * Y)	0.00357	0.00357	0.00357
	(A1_N * A2_N * !B1 * Y)	-0.00055	-0.00054	-0.00054
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00242	0.00246	0.00244
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00058	-0.00059	-0.00056
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00684	0.00683	0.00682
	(A1_N * A2_N * B1 * Y)	-0.00090	-0.00089	-0.00087
	(A1_N * A2_N * !B1 * Y)	0.00678	0.00679	0.00677
	(A1_N * A2_N * !B1 * Y)	-0.00088	-0.00089	-0.00087
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00450	0.00455	0.00452
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00090	-0.00092	-0.00085
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.01034	0.01030	0.01030
	(A1_N * A2_N * B1 * Y)	-0.00579	-0.00574	-0.00572
	(A1_N * A2_N * !B1 * Y)	0.01014	0.01023	0.01018
	(A1_N * A2_N * !B1 * Y)	-0.00571	-0.00578	-0.00572
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00954	0.00952	0.00958
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00193	-0.00189	-0.00182

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)	-0.00006	-0.00007	-0.00006
	(A1_N * A2_N * B1 * Y)	0.00407	0.00410	0.00408
	(A1_N * A2_N * !B1 * Y)	0.00015	0.00001	-0.00003
	(A1_N * A2_N * !B1 * Y)	0.00427	0.00413	0.00409
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00114	-0.00116	-0.00129
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00186	0.00187	0.00173
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00026	0.00025	0.00026
	(A1_N * A2_N * B1 * Y)	0.00794	0.00796	0.00795
	(A1_N * A2_N * !B1 * Y)	0.00063	0.00037	0.00031
	(A1_N * A2_N * !B1 * Y)	0.00827	0.00804	0.00797
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00191	-0.00196	-0.00222
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00346	0.00348	0.00321
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00327	-0.00333	-0.00328
	(A1_N * A2_N * B1 * Y)	0.01270	0.01281	0.01273
	(A1_N * A2_N * !B1 * Y)	-0.00243	-0.00306	-0.00316
	(A1_N * A2_N * !B1 * Y)	0.01352	0.01295	0.01278
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00434	-0.00444	-0.00500
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00707	0.00710	0.00654

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00238	0.00251	0.00257	0.00276	1.30809
sky130_fd_sc_hs__o2bb2a_2	0.00239	0.00259	0.00274	0.00282	2.37164
sky130_fd_sc_hs__o2bb2a_4	0.00237	0.00252	0.00515	0.00505	4.82150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	153.00100	253.33700
sky130_fd_sc_hs__o2bb2a_2	0.00000	156.49800	302.20800
sky130_fd_sc_hs__o2bb2a_4	0.00000	299.35800	403.64100

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)	0.13193	0.68317	7.58546
	A2_N->X (FR)	0.12299	0.65455	7.32200
	B1->X (RR)	0.08767	0.55075	6.40884
	B2->X (RR)	0.07620	0.52635	6.24985
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.14373	0.61861	7.54245
	A2_N->X (FR)	0.13235	0.58889	7.27563
	B1->X (RR)	0.09125	0.47229	6.13981
	B2->X (RR)	0.07961	0.45118	5.99026
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.16712	0.58911	7.69240
	A2_N->X (FR)	0.15672	0.56270	7.43913
	B1->X (RR)	0.10401	0.42795	6.42150
	B2->X (RR)	0.08785	0.39933	6.25477

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)	0.10986	0.39106	3.31295
	A2_N->X (RF)	0.10683	0.40451	3.53161
	B1->X (FF)	0.12129	0.52365	5.16326
	B2->X (FF)	0.11001	0.54003	5.32952
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.12202	0.35464	3.00373
	A2_N->X (RF)	0.11931	0.36549	3.18122
	B1->X (FF)	0.14873	0.52379	5.05363
	B2->X (FF)	0.13680	0.54859	5.22720
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.13881	0.36804	3.36513
	A2_N->X (RF)	0.13586	0.38186	3.53508
	B1->X (FF)	0.15272	0.48852	5.21728
	B2->X (FF)	0.13444	0.50793	5.39676

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	0.01457	0.02199	0.13405
	A1_N	0.01750	0.02512	0.13846
	A2_N	0.01402	0.02141	0.13269
	A2_N	0.01591	0.02351	0.13570
	B1	0.01574	0.01970	0.10249
	B1	0.01000	0.01397	0.09704
	B2	0.01431	0.01873	0.10549
	B2	0.00958	0.01401	0.10121
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01795	0.02511	0.13854
	A1_N	0.02084	0.02829	0.14360
	A2_N	0.01710	0.02425	0.13297
	A2_N	0.01907	0.02645	0.13583
	B1	0.01917	0.02305	0.10825
	B1	0.01307	0.01744	0.10312
	B2	0.01754	0.02187	0.11088
	B2	0.01252	0.01689	0.10689
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.03768	0.04446	0.16604
	A1_N	0.03958	0.04635	0.16955
	A2_N	0.03689	0.04349	0.15721
	A2_N	0.03780	0.04452	0.15851
	B1	0.04038	0.04689	0.20555
	B1	0.02877	0.03534	0.19504
	B2	0.03535	0.04319	0.20774
	B2	0.02639	0.03429	0.20053

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01691	0.02309	0.13303
	A1_N	0.01343	0.01950	0.12897
	A2_N	0.01590	0.02267	0.13523
	A2_N	0.01346	0.02015	0.13278
	B1	0.00628	0.01037	0.09403
	B1	0.01201	0.01604	0.09876
	B2	0.00626	0.01153	0.09922
	B2	0.01097	0.01623	0.10350
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.02170	0.02689	0.13080
	A1_N	0.01814	0.02327	0.12706
	A2_N	0.02078	0.02607	0.13447
	A2_N	0.01818	0.02347	0.13066
	B1	0.01198	0.01464	0.10064
	B1	0.01805	0.02058	0.10454
	B2	0.01198	0.01596	0.10517
	B2	0.01699	0.02081	0.10937
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.03458	0.03868	0.15066
	A1_N	0.03268	0.03667	0.14780
	A2_N	0.03361	0.03815	0.15476
	A2_N	0.03272	0.03713	0.15363
	B1	0.02397	0.02746	0.18653
	B1	0.03556	0.03889	0.19545
	B2	0.02407	0.03060	0.19706
	B2	0.03301	0.03920	0.20301

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)	0.00926	0.01525	0.11862
	(A2_N * !B1 * !B2 * !X)	0.00412	0.01009	0.11347
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00253	0.00255	0.00254
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.01012	0.01584	0.11663
	(A2_N * !B1 * !B2 * !X)	0.00484	0.01055	0.11134
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00233	0.00235	0.00234
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.01248	0.01777	0.11754
	(A2_N * !B1 * !B2 * !X)	0.00719	0.01246	0.11225
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00356	0.00358	0.00357
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00025	0.00024	0.00025

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)	0.00108	0.00820	0.11322
	(A2_N * !B1 * !B2 * !X)	0.00626	0.01337	0.11833
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00045	-0.00058	-0.00060
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00285	0.00276	0.00270
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00151	0.00837	0.11083
	(A2_N * !B1 * !B2 * !X)	0.00684	0.01368	0.11609
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00081	-0.00093	-0.00096
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00255	0.00245	0.00239
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00301	0.00950	0.11110
	(A2_N * !B1 * !B2 * !X)	0.00835	0.01485	0.11639
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00045	0.00032	0.00029
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00377	0.00366	0.00361

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)	0.00840	0.01481	0.11814
	(A1_N * !B1 * !B2 * !X)	0.00427	0.01066	0.11400
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00141	0.00141	0.00139
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00117	-0.00118	-0.00122
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00934	0.01548	0.11628
	(A1_N * !B1 * !B2 * !X)	0.00501	0.01113	0.11193
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00122	0.00122	0.00120
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00148	-0.00148	-0.00152
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.01166	0.01731	0.11725
	(A1_N * !B1 * !B2 * !X)	0.00738	0.01300	0.11296
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00240	0.00240	0.00238
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00020	-0.00020	-0.00024

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)	0.00058	0.00769	0.11262
	(A1_N * !B1 * !B2 * !X)	0.00473	0.01186	0.11677
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00051	0.00051	0.00051
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00310	0.00311	0.00311
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00096	0.00778	0.11026
	(A1_N * !B1 * !B2 * !X)	0.00535	0.01217	0.11463
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00015	0.00015	0.00015
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00285	0.00286	0.00286
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00254	0.00892	0.11052
	(A1_N * !B1 * !B2 * !X)	0.00690	0.01325	0.11484
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00145	0.00144	0.00145
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00405	0.00409	0.00406

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)	0.00375	0.00375	0.00374
	(A1_N * A2_N * B2 * !X)	0.00015	0.00015	0.00016
	(A1_N * A2_N * !B2 * !X)	0.00372	0.00373	0.00372
	(A1_N * A2_N * !B2 * !X)	0.00016	0.00015	0.00016
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00308	0.00275	0.00303
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00054	-0.00089	-0.00057
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00437	0.00438	0.00437
	(A1_N * A2_N * B2 * !X)	0.00053	0.00052	0.00054
	(A1_N * A2_N * !B2 * !X)	0.00435	0.00436	0.00434
	(A1_N * A2_N * !B2 * !X)	0.00053	0.00052	0.00054
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00300	0.00267	0.00295
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00087	-0.00122	-0.00090
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00661	0.00664	0.00662
	(A1_N * A2_N * B2 * !X)	-0.00069	-0.00071	-0.00068
	(A1_N * A2_N * !B2 * !X)	0.00655	0.00659	0.00657
	(A1_N * A2_N * !B2 * !X)	-0.00068	-0.00072	-0.00069
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00656	0.00569	0.00611
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00083	-0.00174	-0.00123

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)	0.00067	0.00066	0.00067
	(A1_N * A2_N * B2 * !X)	0.00426	0.00427	0.00426
	(A1_N * A2_N * !B2 * !X)	0.00086	0.00074	0.00070
	(A1_N * A2_N * !B2 * !X)	0.00444	0.00430	0.00426
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00006	-0.00008	-0.00016
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00357	0.00357	0.00346
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00089	0.00088	0.00089
	(A1_N * A2_N * B2 * !X)	0.00474	0.00476	0.00473
	(A1_N * A2_N * !B2 * !X)	0.00109	0.00095	0.00092
	(A1_N * A2_N * !B2 * !X)	0.00491	0.00480	0.00474
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00053	-0.00056	-0.00064
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00335	0.00335	0.00324
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00042	0.00040	0.00041
	(A1_N * A2_N * B2 * !X)	0.00771	0.00775	0.00772
	(A1_N * A2_N * !B2 * !X)	0.00085	0.00054	0.00047
	(A1_N * A2_N * !B2 * !X)	0.00814	0.00785	0.00775
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00011	-0.00016	-0.00033
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00727	0.00728	0.00706

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)	0.00384	0.00387	0.00385
	(A1_N * A2_N * B1 * !X)	0.00012	0.00010	0.00012
	(A1_N * A2_N * !B1 * !X)	0.00382	0.00383	0.00383
	(A1_N * A2_N * !B1 * !X)	0.00012	0.00011	0.00012
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00268	0.00271	0.00270
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00004	-0.00005	-0.00001
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00449	0.00451	0.00449
	(A1_N * A2_N * B1 * !X)	0.00058	0.00057	0.00059
	(A1_N * A2_N * !B1 * !X)	0.00447	0.00449	0.00446
	(A1_N * A2_N * !B1 * !X)	0.00058	0.00057	0.00059
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00251	0.00254	0.00253
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00039	-0.00040	-0.00036
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00651	0.00655	0.00651
	(A1_N * A2_N * B1 * !X)	-0.00067	-0.00071	-0.00067
	(A1_N * A2_N * !B1 * !X)	0.00648	0.00650	0.00648
	(A1_N * A2_N * !B1 * !X)	-0.00068	-0.00070	-0.00067
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00517	0.00522	0.00521
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00003	0.00000	0.00008

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)	0.00057	0.00055	0.00057
	(A1_N * A2_N * B1 * !X)	0.00430	0.00431	0.00430
	(A1_N * A2_N * !B1 * !X)	0.00077	0.00064	0.00060
	(A1_N * A2_N * !B1 * !X)	0.00449	0.00435	0.00430
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00039	-0.00041	-0.00057
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00234	0.00233	0.00217
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00077	0.00076	0.00077
	(A1_N * A2_N * B1 * !X)	0.00469	0.00470	0.00468
	(A1_N * A2_N * !B1 * !X)	0.00097	0.00083	0.00080
	(A1_N * A2_N * !B1 * !X)	0.00485	0.00475	0.00468
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00077	-0.00079	-0.00095
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00212	0.00213	0.00196
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00054	0.00050	0.00052
	(A1_N * A2_N * B1 * !X)	0.00770	0.00772	0.00770
	(A1_N * A2_N * !B1 * !X)	0.00091	0.00063	0.00057
	(A1_N * A2_N * !B1 * !X)	0.00808	0.00780	0.00772
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00050	-0.00053	-0.00089
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00467	0.00466	0.00432

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00283	0.00298	0.00289	0.00299	0.00305	0.44594
sky130_fd_sc_hs__o311ai_2	0.00555	0.00567	0.00572	0.00572	0.00580	0.75742
sky130_fd_sc_hs__o311ai_4	0.01094	0.01097	0.01140	0.00857	0.00812	1.44095

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	26.56160	148.45900
sky130_fd_sc_hs__o311ai_2	0.00000	53.13150	296.72300
sky130_fd_sc_hs__o311ai_4	0.00000	62.68850	395.14700

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)	0.15946	0.88725	8.29031
	A2->Y (FR)	0.14963	0.92324	8.91079
	A3->Y (FR)	0.12052	0.92304	9.28691
	B1->Y (FR)	0.03780	0.49434	5.29860
	C1->Y (FR)	0.03148	0.48523	5.26864
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.17650	0.77428	8.01260
	A2->Y (FR)	0.16037	0.80149	8.62506
	A3->Y (FR)	0.12940	0.82162	9.20917
	B1->Y (FR)	0.03750	0.42836	5.06190
	C1->Y (FR)	0.03010	0.41734	5.03962
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.15762	0.64053	7.80173
	A2->Y (FR)	0.14567	0.68746	8.62805
	A3->Y (FR)	0.10957	0.69655	9.10630
	B1->Y (FR)	0.05126	0.52600	7.12890
	C1->Y (FR)	0.03596	0.51427	7.20092

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.07168	0.43722	3.97377
	A2->Y (RF)	0.06904	0.43501	4.02547
	A3->Y (RF)	0.05374	0.41194	3.93539
	B1->Y (RF)	0.06013	0.48631	4.85703
	C1->Y (RF)	0.05197	0.51950	5.33369
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.08121	0.38997	3.87827
	A2->Y (RF)	0.07293	0.37047	3.81082
	A3->Y (RF)	0.05770	0.34853	3.72409
	B1->Y (RF)	0.07249	0.44280	4.73127
	C1->Y (RF)	0.06198	0.49762	5.51176
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.08276	0.33402	3.91918
	A2->Y (RF)	0.07260	0.31334	3.81928
	A3->Y (RF)	0.05201	0.28654	3.71270
	B1->Y (RF)	0.07341	0.41821	5.15847
	C1->Y (RF)	0.05903	0.44850	5.73634

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00178	0.00271	0.03515
	A1	0.01244	0.01337	0.04567
	A2	0.00189	0.00297	0.03135
	A2	0.01120	0.01228	0.04054
	A3	0.00186	0.00379	0.03711
	A3	0.00978	0.01151	0.04496
	B1	0.00026	0.00372	0.05514
	B1	0.00660	0.01008	0.06196
	C1	-0.00046	0.00298	0.05228
	C1	0.00485	0.00830	0.05806
sky130_fd_sc_hs__o311ai_2	A1	0.00416	0.00572	0.06711
	A1	0.02579	0.02723	0.08857
	A2	0.00420	0.00644	0.06136
	A2	0.02306	0.02527	0.07994
	A3	0.00416	0.00795	0.06864
	A3	0.02027	0.02403	0.08455
	B1	0.00068	0.00795	0.10660
	B1	0.01326	0.02059	0.11916
	C1	-0.00092	0.00612	0.09777
	C1	0.00935	0.01650	0.10873

sky130_fd_sc_hs__o311ai_4	**A1**	0.00621	0.00998	0.12243
	A1	0.04861	0.05233	0.16485
	A2	0.00645	0.01087	0.10743
	A2	0.04326	0.04768	0.14364
	A3	0.00648	0.01411	0.12297
	A3	0.03801	0.04572	0.15430
	B1	0.00097	0.00956	0.11497
	B1	0.02152	0.03013	0.13590
	C1	-0.00257	0.00664	0.10766
	C1	0.01280	0.02194	0.12312

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01635	0.01722	0.04530
	A1	0.00566	0.00651	0.03432
	A2	0.01399	0.01493	0.04055
	A2	0.00465	0.00554	0.03103
	A3	0.01142	0.01254	0.03652
	A3	0.00347	0.00459	0.02858
	B1	0.00892	0.01076	0.04500
	B1	0.00255	0.00431	0.03855
	C1	0.00792	0.01004	0.04440
	C1	0.00259	0.00469	0.03868

sky130_fd_sc_hs__o311ai_2	**A1**	0.03373	0.03525	0.08939
	A1	0.01203	0.01350	0.06742
	A2	0.02767	0.02962	0.07994
	A2	0.00874	0.01065	0.06088
	A3	0.02275	0.02505	0.07103
	A3	0.00658	0.00881	0.05468
	B1	0.01726	0.02131	0.09121
	B1	0.00461	0.00863	0.07848
	C1	0.01508	0.01952	0.08391
	C1	0.00478	0.00919	0.07321
sky130_fd_sc_hs__o311ai_4	**A1**	0.05997	0.06429	0.17692
	A1	0.01744	0.02160	0.13338
	A2	0.04964	0.05410	0.15495
	A2	0.01274	0.01703	0.11749
	A3	0.03827	0.04404	0.13790
	A3	0.00652	0.01225	0.10471
	B1	0.02662	0.03136	0.10068
	B1	0.00604	0.01069	0.07983
	C1	0.02159	0.02724	0.09417
	C1	0.00625	0.01185	0.07841

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)**	0.00176	0.00176	0.00176
	(A2 * B1 * !C1 * Y)	-0.00226	-0.00228	-0.00227
	(A2 * A3 * B1 * C1 * !Y)	0.00286	0.00268	0.00266
	(A2 * A3 * B1 * C1 * !Y)	-0.00117	-0.00137	-0.00137
	(A2 * !B1 * Y)	0.00176	0.00176	0.00176
	(A2 * !B1 * Y)	-0.00227	-0.00228	-0.00227
	(A2 * !A3 * B1 * C1 * !Y)	0.00321	0.00287	0.00288
	(A2 * !A3 * B1 * C1 * !Y)	-0.00086	-0.00121	-0.00115
	(!A2 * A3 * B1 * C1 * !Y)	0.00342	0.00300	0.00304
	(!A2 * A3 * B1 * C1 * !Y)	-0.00067	-0.00112	-0.00100
	(!A2 * A3 * B1 * !C1 * Y)	0.00175	0.00177	0.00176
	(!A2 * A3 * B1 * !C1 * Y)	-0.00220	-0.00225	-0.00225
	(!A2 * A3 * !B1 * Y)	0.00175	0.00177	0.00176
	(!A2 * A3 * !B1 * Y)	-0.00220	-0.00226	-0.00225
	(!A2 * !A3 * B1 * !C1 * Y)	0.00167	0.00169	0.00167
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00228	-0.00229	-0.00227
	(!A2 * !A3 * !B1 * C1 * Y)	0.00170	0.00171	0.00170
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00228	-0.00229	-0.00228
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00168	0.00169	0.00168
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00229	-0.00230	-0.00229

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00343	0.00346	0.00343
	(A2 * B1 * !C1 * Y)	-0.00452	-0.00456	-0.00454
	(A2 * A3 * B1 * C1 * !Y)	0.00573	0.00531	0.00523
	(A2 * A3 * B1 * C1 * !Y)	-0.00224	-0.00272	-0.00273
	(A2 * !B1 * Y)	0.00343	0.00346	0.00343
	(A2 * !B1 * Y)	-0.00452	-0.00456	-0.00454
	(A2 * !A3 * B1 * C1 * !Y)	0.00658	0.00576	0.00568
	(A2 * !A3 * B1 * C1 * !Y)	-0.00146	-0.00235	-0.00230
	(!A2 * A3 * B1 * C1 * !Y)	0.00695	0.00600	0.00600
	(!A2 * A3 * B1 * C1 * !Y)	-0.00112	-0.00217	-0.00199
	(!A2 * A3 * B1 * !C1 * Y)	0.00342	0.00346	0.00343
	(!A2 * A3 * B1 * !C1 * Y)	-0.00437	-0.00450	-0.00448
	(!A2 * A3 * !B1 * Y)	0.00342	0.00346	0.00343
	(!A2 * A3 * !B1 * Y)	-0.00437	-0.00450	-0.00448
	(!A2 * !A3 * B1 * !C1 * Y)	0.00323	0.00325	0.00325
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00455	-0.00457	-0.00455
	(!A2 * !A3 * !B1 * C1 * Y)	0.00328	0.00332	0.00329
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00456	-0.00458	-0.00456
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00325	0.00329	0.00326
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00458	-0.00460	-0.00458

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00690	0.00692	0.00686
	(A2 * B1 * !C1 * Y)	-0.00906	-0.00911	-0.00906
	(A2 * A3 * B1 * C1 * !Y)	0.00964	0.00890	0.00875
	(A2 * A3 * B1 * C1 * !Y)	-0.00634	-0.00715	-0.00717
	(A2 * !B1 * Y)	0.00690	0.00691	0.00685
	(A2 * !B1 * Y)	-0.00906	-0.00911	-0.00906
	(A2 * !A3 * B1 * C1 * !Y)	0.01124	0.00975	0.00964
	(A2 * !A3 * B1 * C1 * !Y)	-0.00494	-0.00646	-0.00631
	(!A2 * A3 * B1 * C1 * !Y)	0.01194	0.01023	0.01028
	(!A2 * A3 * B1 * C1 * !Y)	-0.00431	-0.00609	-0.00569
	(!A2 * A3 * B1 * !C1 * Y)	0.00690	0.00691	0.00686
	(!A2 * A3 * B1 * !C1 * Y)	-0.00879	-0.00899	-0.00895
	(!A2 * A3 * !B1 * Y)	0.00681	0.00691	0.00685
	(!A2 * A3 * !B1 * Y)	-0.00871	-0.00899	-0.00895
	(!A2 * !A3 * B1 * !C1 * Y)	0.00644	0.00651	0.00649
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00908	-0.00913	-0.00910
	(!A2 * !A3 * !B1 * C1 * Y)	0.00657	0.00664	0.00659
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00911	-0.00915	-0.00911
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00647	0.00656	0.00650
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00913	-0.00920	-0.00915

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)	0.00229	0.00231	0.00230
	(A2 * A3 * B1 * C1 * !Y)	-0.00082	-0.00083	-0.00082
	(A2 * A3 * B1 * C1 * !Y)	0.00321	0.00322	0.00321
	(A2 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(A2 * !B1 * Y)	0.00229	0.00231	0.00230
	(A2 * !A3 * B1 * C1 * !Y)	-0.00062	-0.00064	-0.00066
	(A2 * !A3 * B1 * C1 * !Y)	0.00343	0.00345	0.00340
	(!A2 * A3 * B1 * C1 * !Y)	-0.00045	-0.00046	-0.00050
	(!A2 * A3 * B1 * C1 * !Y)	0.00361	0.00362	0.00357
	(!A2 * A3 * B1 * !C1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * B1 * !C1 * Y)	0.00225	0.00226	0.00226
	(!A2 * A3 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00225	0.00226	0.00225
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00149	-0.00165	-0.00167
	(!A2 * !A3 * B1 * !C1 * Y)	0.00240	0.00235	0.00231
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00156	-0.00167	-0.00168
	(!A2 * !A3 * !B1 * C1 * Y)	0.00236	0.00235	0.00231
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00162	-0.00169	-0.00168
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00230	0.00233	0.00230

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00336	-0.00338	-0.00337
	(A2 * B1 * !C1 * Y)	0.00456	0.00460	0.00458
	(A2 * A3 * B1 * C1 * !Y)	-0.00155	-0.00157	-0.00155
	(A2 * A3 * B1 * C1 * !Y)	0.00639	0.00644	0.00641
	(A2 * !B1 * Y)	-0.00336	-0.00338	-0.00337
	(A2 * !B1 * Y)	0.00456	0.00459	0.00458
	(A2 * !A3 * B1 * C1 * !Y)	-0.00112	-0.00115	-0.00120
	(A2 * !A3 * B1 * C1 * !Y)	0.00686	0.00688	0.00682
	(!A2 * A3 * B1 * C1 * !Y)	-0.00081	-0.00085	-0.00090
	(!A2 * A3 * B1 * C1 * !Y)	0.00721	0.00724	0.00713
	(!A2 * A3 * B1 * !C1 * Y)	-0.00336	-0.00339	-0.00337
	(!A2 * A3 * B1 * !C1 * Y)	0.00447	0.00453	0.00448
	(!A2 * A3 * !B1 * Y)	-0.00337	-0.00339	-0.00337
	(!A2 * A3 * !B1 * Y)	0.00447	0.00452	0.00448
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00283	-0.00320	-0.00325
	(!A2 * !A3 * B1 * !C1 * Y)	0.00482	0.00468	0.00463
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00300	-0.00325	-0.00327
	(!A2 * !A3 * !B1 * C1 * Y)	0.00475	0.00465	0.00463
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00313	-0.00329	-0.00326
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00462	0.00463	0.00461

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00672	-0.00678	-0.00674
	(A2 * B1 * !C1 * Y)	0.00912	0.00924	0.00916
	(A2 * A3 * B1 * C1 * !Y)	-0.00484	-0.00486	-0.00484
	(A2 * A3 * B1 * C1 * !Y)	0.01107	0.01112	0.01108
	(A2 * !B1 * Y)	-0.00672	-0.00678	-0.00674
	(A2 * !B1 * Y)	0.00911	0.00923	0.00915
	(A2 * !A3 * B1 * C1 * !Y)	-0.00402	-0.00409	-0.00417
	(A2 * !A3 * B1 * C1 * !Y)	0.01200	0.01207	0.01187
	(!A2 * A3 * B1 * C1 * !Y)	-0.00336	-0.00341	-0.00353
	(!A2 * A3 * B1 * C1 * !Y)	0.01270	0.01272	0.01253
	(!A2 * A3 * B1 * !C1 * Y)	-0.00673	-0.00677	-0.00674
	(!A2 * A3 * B1 * !C1 * Y)	0.00893	0.00901	0.00895
	(!A2 * A3 * !B1 * Y)	-0.00673	-0.00677	-0.00674
	(!A2 * A3 * !B1 * Y)	0.00893	0.00901	0.00895
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00583	-0.00641	-0.00649
	(!A2 * !A3 * B1 * !C1 * Y)	0.00961	0.00943	0.00924
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00607	-0.00647	-0.00654
	(!A2 * !A3 * !B1 * C1 * Y)	0.00949	0.00928	0.00925
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00630	-0.00655	-0.00650
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00925	0.00922	0.00920

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)**	0.00280	0.00283	0.00273
	(A1 * A3 * B1 * C1 * !Y)	-0.00049	-0.00049	-0.00053
	(A1 * A3 * B1 * !C1 * Y)	0.00167	0.00169	0.00167
	(A1 * A3 * B1 * !C1 * Y)	-0.00164	-0.00166	-0.00162
	(A1 * A3 * !B1 * Y)	0.00167	0.00169	0.00167
	(A1 * A3 * !B1 * Y)	-0.00165	-0.00166	-0.00162
	(A1 * !A3 * B1 * C1 * !Y)	0.00283	0.00282	0.00279
	(A1 * !A3 * B1 * C1 * !Y)	-0.00004	-0.00003	-0.00005
	(A1 * !A3 * B1 * !C1 * Y)	0.00169	0.00168	0.00167
	(A1 * !A3 * B1 * !C1 * Y)	-0.00232	-0.00232	-0.00231
	(A1 * !A3 * !B1 * C1 * Y)	0.00169	0.00168	0.00167
	(A1 * !A3 * !B1 * C1 * Y)	-0.00232	-0.00232	-0.00231
	(A1 * !A3 * !B1 * !C1 * Y)	0.00168	0.00166	0.00166
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00232	-0.00232	-0.00232
	(!A1 * A3 * B1 * C1 * !Y)	0.00343	0.00292	0.00304
	(!A1 * A3 * B1 * C1 * !Y)	-0.00061	-0.00113	-0.00096
	(!A1 * A3 * B1 * !C1 * Y)	0.00168	0.00169	0.00167
	(!A1 * A3 * B1 * !C1 * Y)	-0.00232	-0.00232	-0.00230
	(!A1 * A3 * !B1 * Y)	0.00168	0.00169	0.00167
	(!A1 * A3 * !B1 * Y)	-0.00232	-0.00233	-0.00231
	(!A1 * !A3 * B1 * !C1 * Y)	0.00158	0.00160	0.00160
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00230	-0.00232	-0.00231
	(!A1 * !A3 * !B1 * C1 * Y)	0.00162	0.00164	0.00162
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00231	-0.00233	-0.00231
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00160	0.00162	0.00160
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00232	-0.00234	-0.00232

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00574	0.00577	0.00555
	(A1 * A3 * B1 * C1 * !Y)	-0.00104	-0.00107	-0.00115
	(A1 * A3 * B1 * !C1 * Y)	0.00345	0.00349	0.00346
	(A1 * A3 * B1 * !C1 * Y)	-0.00332	-0.00335	-0.00328
	(A1 * A3 * !B1 * Y)	0.00345	0.00349	0.00345
	(A1 * A3 * !B1 * Y)	-0.00332	-0.00335	-0.00328
	(A1 * !A3 * B1 * C1 * !Y)	0.00565	0.00570	0.00557
	(A1 * !A3 * B1 * C1 * !Y)	-0.00013	-0.00016	-0.00016
	(A1 * !A3 * B1 * !C1 * Y)	0.00348	0.00347	0.00346
	(A1 * !A3 * B1 * !C1 * Y)	-0.00465	-0.00463	-0.00461
	(A1 * !A3 * !B1 * C1 * Y)	0.00348	0.00347	0.00346
	(A1 * !A3 * !B1 * C1 * Y)	-0.00465	-0.00463	-0.00461
	(A1 * !A3 * !B1 * !C1 * Y)	0.00346	0.00345	0.00344
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00465	-0.00465	-0.00463
	(!A1 * A3 * B1 * C1 * !Y)	0.00684	0.00578	0.00603
	(!A1 * A3 * B1 * C1 * !Y)	-0.00136	-0.00244	-0.00207
	(!A1 * A3 * B1 * !C1 * Y)	0.00348	0.00350	0.00346
	(!A1 * A3 * B1 * !C1 * Y)	-0.00465	-0.00466	-0.00462
	(!A1 * A3 * !B1 * Y)	0.00348	0.00350	0.00345
	(!A1 * A3 * !B1 * Y)	-0.00466	-0.00466	-0.00462
	(!A1 * !A3 * B1 * !C1 * Y)	0.00326	0.00330	0.00328
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00462	-0.00465	-0.00462
	(!A1 * !A3 * !B1 * C1 * Y)	0.00332	0.00335	0.00333
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00463	-0.00465	-0.00463
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00329	0.00331	0.00329
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00465	-0.00467	-0.00465

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00952	0.00966	0.00919
	(A1 * A3 * B1 * C1 * !Y)	-0.00373	-0.00369	-0.00389
	(A1 * A3 * B1 * !C1 * Y)	0.00682	0.00686	0.00679
	(A1 * A3 * B1 * !C1 * Y)	-0.00649	-0.00645	-0.00639
	(A1 * A3 * !B1 * Y)	0.00682	0.00686	0.00679
	(A1 * A3 * !B1 * Y)	-0.00649	-0.00645	-0.00639
	(A1 * !A3 * B1 * C1 * !Y)	0.00954	0.00961	0.00934
	(A1 * !A3 * B1 * C1 * !Y)	-0.00180	-0.00184	-0.00185
	(A1 * !A3 * B1 * !C1 * Y)	0.00683	0.00681	0.00678
	(A1 * !A3 * B1 * !C1 * Y)	-0.00916	-0.00913	-0.00908
	(A1 * !A3 * !B1 * C1 * Y)	0.00682	0.00681	0.00678
	(A1 * !A3 * !B1 * C1 * Y)	-0.00917	-0.00914	-0.00909
	(A1 * !A3 * !B1 * !C1 * Y)	0.00679	0.00677	0.00674
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00915	-0.00917	-0.00912
	(!A1 * A3 * B1 * C1 * !Y)	0.01222	0.00976	0.01029
	(!A1 * A3 * B1 * C1 * !Y)	-0.00390	-0.00627	-0.00563
	(!A1 * A3 * B1 * !C1 * Y)	0.00673	0.00679	0.00678
	(!A1 * A3 * B1 * !C1 * Y)	-0.00906	-0.00913	-0.00910
	(!A1 * A3 * !B1 * Y)	0.00673	0.00679	0.00677
	(!A1 * A3 * !B1 * Y)	-0.00907	-0.00913	-0.00910
	(!A1 * !A3 * B1 * !C1 * Y)	0.00640	0.00647	0.00643
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00912	-0.00916	-0.00911
	(!A1 * !A3 * !B1 * C1 * Y)	0.00654	0.00652	0.00653
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00916	-0.00913	-0.00913
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00648	0.00650	0.00646
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00920	-0.00921	-0.00917

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)**	-0.00086	-0.00087	-0.00085
	(A1 * A3 * B1 * C1 * !Y)	0.00234	0.00236	0.00234
	(A1 * A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * A3 * B1 * !C1 * Y)	0.00164	0.00166	0.00162
	(A1 * A3 * !B1 * Y)	-0.00164	-0.00166	-0.00164
	(A1 * A3 * !B1 * Y)	0.00165	0.00166	0.00162
	(A1 * !A3 * B1 * C1 * !Y)	-0.00072	-0.00073	-0.00084
	(A1 * !A3 * B1 * C1 * !Y)	0.00215	0.00215	0.00203
	(A1 * !A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * B1 * !C1 * Y)	0.00233	0.00234	0.00234
	(A1 * !A3 * !B1 * C1 * Y)	-0.00164	-0.00166	-0.00164
	(A1 * !A3 * !B1 * C1 * Y)	0.00233	0.00236	0.00234
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A3 * !B1 * !C1 * Y)	0.00232	0.00235	0.00233
	(!A1 * A3 * B1 * C1 * !Y)	-0.00045	-0.00047	-0.00052
	(!A1 * A3 * B1 * C1 * !Y)	0.00356	0.00357	0.00349
	(!A1 * A3 * B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * A3 * B1 * !C1 * Y)	0.00233	0.00234	0.00234
	(!A1 * A3 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * A3 * !B1 * Y)	0.00233	0.00234	0.00234
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00139	-0.00156	-0.00159
	(!A1 * !A3 * B1 * !C1 * Y)	0.00244	0.00239	0.00235
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00147	-0.00159	-0.00160
	(!A1 * !A3 * !B1 * C1 * Y)	0.00240	0.00238	0.00235
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00153	-0.00160	-0.00160
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00234	0.00236	0.00234

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00174	-0.00177	-0.00173
	(A1 * A3 * B1 * C1 * !Y)	0.00480	0.00483	0.00480
	(A1 * A3 * B1 * !C1 * Y)	-0.00339	-0.00341	-0.00339
	(A1 * A3 * B1 * !C1 * Y)	0.00332	0.00335	0.00328
	(A1 * A3 * !B1 * Y)	-0.00339	-0.00342	-0.00340
	(A1 * A3 * !B1 * Y)	0.00332	0.00335	0.00328
	(A1 * !A3 * B1 * C1 * !Y)	-0.00137	-0.00139	-0.00165
	(A1 * !A3 * B1 * C1 * !Y)	0.00442	0.00442	0.00416
	(A1 * !A3 * B1 * !C1 * Y)	-0.00339	-0.00342	-0.00339
	(A1 * !A3 * B1 * !C1 * Y)	0.00466	0.00470	0.00467
	(A1 * !A3 * !B1 * C1 * Y)	-0.00340	-0.00342	-0.00340
	(A1 * !A3 * !B1 * C1 * Y)	0.00466	0.00470	0.00466
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00342	-0.00344	-0.00341
	(A1 * !A3 * !B1 * !C1 * Y)	0.00465	0.00468	0.00465
	(!A1 * A3 * B1 * C1 * !Y)	-0.00085	-0.00088	-0.00100
	(!A1 * A3 * B1 * C1 * !Y)	0.00728	0.00727	0.00714
	(!A1 * A3 * B1 * !C1 * Y)	-0.00338	-0.00341	-0.00339
	(!A1 * A3 * B1 * !C1 * Y)	0.00466	0.00472	0.00468
	(!A1 * A3 * !B1 * Y)	-0.00338	-0.00342	-0.00340
	(!A1 * A3 * !B1 * Y)	0.00466	0.00472	0.00468
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00284	-0.00322	-0.00327
	(!A1 * !A3 * B1 * !C1 * Y)	0.00491	0.00479	0.00470
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00301	-0.00326	-0.00329
	(!A1 * !A3 * !B1 * C1 * Y)	0.00481	0.00471	0.00470
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00314	-0.00329	-0.00329
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00468	0.00468	0.00468

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00510	-0.00516	-0.00508
	(A1 * A3 * B1 * C1 * !Y)	0.00769	0.00776	0.00767
	(A1 * A3 * B1 * !C1 * Y)	-0.00667	-0.00665	-0.00667
	(A1 * A3 * B1 * !C1 * Y)	0.00649	0.00645	0.00639
	(A1 * A3 * !B1 * Y)	-0.00667	-0.00665	-0.00667
	(A1 * A3 * !B1 * Y)	0.00649	0.00645	0.00639
	(A1 * !A3 * B1 * C1 * !Y)	-0.00446	-0.00450	-0.00492
	(A1 * !A3 * B1 * C1 * !Y)	0.00685	0.00685	0.00640
	(A1 * !A3 * B1 * !C1 * Y)	-0.00665	-0.00670	-0.00666
	(A1 * !A3 * B1 * !C1 * Y)	0.00919	0.00927	0.00920
	(A1 * !A3 * !B1 * C1 * Y)	-0.00665	-0.00670	-0.00666
	(A1 * !A3 * !B1 * C1 * Y)	0.00919	0.00927	0.00920
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00669	-0.00672	-0.00670
	(A1 * !A3 * !B1 * !C1 * Y)	0.00915	0.00920	0.00917
	(!A1 * A3 * B1 * C1 * !Y)	-0.00338	-0.00347	-0.00366
	(!A1 * A3 * B1 * C1 * !Y)	0.01260	0.01263	0.01232
	(!A1 * A3 * B1 * !C1 * Y)	-0.00665	-0.00669	-0.00665
	(!A1 * A3 * B1 * !C1 * Y)	0.00920	0.00929	0.00921
	(!A1 * A3 * !B1 * Y)	-0.00665	-0.00670	-0.00666
	(!A1 * A3 * !B1 * Y)	0.00919	0.00928	0.00921
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00566	-0.00633	-0.00641
	(!A1 * !A3 * B1 * !C1 * Y)	0.00962	0.00943	0.00926
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00595	-0.00642	-0.00646
	(!A1 * !A3 * !B1 * C1 * Y)	0.00950	0.00930	0.00926
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00620	-0.00647	-0.00646
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00924	0.00923	0.00922

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)**	0.00272	0.00275	0.00273
	(A2 * B1 * C1 * !Y)	-0.00006	-0.00007	-0.00006
	(A2 * B1 * !C1 * Y)	0.00170	0.00173	0.00171
	(A2 * B1 * !C1 * Y)	-0.00219	-0.00222	-0.00221
	(A2 * !B1 * C1 * Y)	0.00170	0.00173	0.00171
	(A2 * !B1 * C1 * Y)	-0.00219	-0.00222	-0.00221
	(A2 * !B1 * !C1 * Y)	0.00169	0.00171	0.00170
	(A2 * !B1 * !C1 * Y)	-0.00220	-0.00223	-0.00222
	(A1 * !A2 * B1 * C1 * !Y)	0.00272	0.00275	0.00275
	(A1 * !A2 * B1 * C1 * !Y)	0.00002	0.00001	0.00003
	(A1 * !A2 * B1 * !C1 * Y)	0.00172	0.00173	0.00171
	(A1 * !A2 * B1 * !C1 * Y)	-0.00215	-0.00218	-0.00217
	(A1 * !A2 * !B1 * C1 * Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * !B1 * C1 * Y)	-0.00213	-0.00218	-0.00217
	(A1 * !A2 * !B1 * !C1 * Y)	0.00169	0.00171	0.00170
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00214	-0.00217	-0.00217
	(!A1 * !A2 * B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00221	-0.00221	-0.00221
	(!A1 * !A2 * !B1 * C1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00221	-0.00223	-0.00221
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00163	0.00164	0.00162
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00224	-0.00222

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00556	0.00562	0.00556
	(A2 * B1 * C1 * !Y)	-0.00018	-0.00020	-0.00017
	(A2 * B1 * !C1 * Y)	0.00340	0.00343	0.00341
	(A2 * B1 * !C1 * Y)	-0.00453	-0.00459	-0.00458
	(A2 * !B1 * C1 * Y)	0.00340	0.00342	0.00341
	(A2 * !B1 * C1 * Y)	-0.00453	-0.00459	-0.00458
	(A2 * !B1 * !C1 * Y)	0.00338	0.00343	0.00339
	(A2 * !B1 * !C1 * Y)	-0.00456	-0.00462	-0.00460
	(A1 * !A2 * B1 * C1 * !Y)	0.00557	0.00561	0.00561
	(A1 * !A2 * B1 * C1 * !Y)	-0.00002	-0.00003	0.00001
	(A1 * !A2 * B1 * !C1 * Y)	0.00340	0.00341	0.00341
	(A1 * !A2 * B1 * !C1 * Y)	-0.00440	-0.00451	-0.00450
	(A1 * !A2 * !B1 * C1 * Y)	0.00340	0.00340	0.00341
	(A1 * !A2 * !B1 * C1 * Y)	-0.00440	-0.00451	-0.00450
	(A1 * !A2 * !B1 * !C1 * Y)	0.00338	0.00343	0.00339
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00442	-0.00453	-0.00449
	(!A1 * !A2 * B1 * !C1 * Y)	0.00322	0.00325	0.00323
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00458	-0.00460	-0.00458
	(!A1 * !A2 * !B1 * C1 * Y)	0.00325	0.00329	0.00328
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00458	-0.00460	-0.00459
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00325	0.00328	0.00324
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00462	-0.00464	-0.00461

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00954	0.00950	0.00951
	(A2 * B1 * C1 * !Y)	-0.00210	-0.00205	-0.00205
	(A2 * B1 * !C1 * Y)	0.00662	0.00658	0.00656
	(A2 * B1 * !C1 * Y)	-0.00952	-0.00953	-0.00952
	(A2 * !B1 * C1 * Y)	0.00662	0.00658	0.00655
	(A2 * !B1 * C1 * Y)	-0.00952	-0.00953	-0.00953
	(A2 * !B1 * !C1 * Y)	0.00649	0.00653	0.00652
	(A2 * !B1 * !C1 * Y)	-0.00947	-0.00955	-0.00955
	(A1 * !A2 * B1 * C1 * !Y)	0.00952	0.00966	0.00959
	(A1 * !A2 * B1 * C1 * !Y)	-0.00174	-0.00179	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00653	0.00658	0.00656
	(A1 * !A2 * B1 * !C1 * Y)	-0.00914	-0.00932	-0.00928
	(A1 * !A2 * !B1 * C1 * Y)	0.00653	0.00658	0.00655
	(A1 * !A2 * !B1 * C1 * Y)	-0.00915	-0.00932	-0.00928
	(A1 * !A2 * !B1 * !C1 * Y)	0.00650	0.00660	0.00652
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00919	-0.00933	-0.00930
	(!A1 * !A2 * B1 * !C1 * Y)	0.00618	0.00627	0.00623
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00952	-0.00960	-0.00954
	(!A1 * !A2 * !B1 * C1 * Y)	0.00630	0.00637	0.00632
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00956	-0.00961	-0.00956
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00624	0.00627	0.00625
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00960	-0.00962	-0.00960

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)**	-0.00085	-0.00086	-0.00094
	(A2 * B1 * C1 * !Y)	0.00192	0.00193	0.00185
	(A2 * B1 * !C1 * Y)	-0.00167	-0.00169	-0.00168
	(A2 * B1 * !C1 * Y)	0.00222	0.00224	0.00223
	(A2 * !B1 * C1 * Y)	-0.00167	-0.00168	-0.00168
	(A2 * !B1 * C1 * Y)	0.00222	0.00224	0.00223
	(A2 * !B1 * !C1 * Y)	-0.00168	-0.00170	-0.00169
	(A2 * !B1 * !C1 * Y)	0.00221	0.00224	0.00222
	(A1 * !A2 * B1 * C1 * !Y)	-0.00056	-0.00057	-0.00077
	(A1 * !A2 * B1 * C1 * !Y)	0.00216	0.00216	0.00200
	(A1 * !A2 * B1 * !C1 * Y)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * B1 * !C1 * Y)	0.00217	0.00218	0.00217
	(A1 * !A2 * !B1 * C1 * Y)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * !B1 * C1 * Y)	0.00216	0.00218	0.00217
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00168	-0.00169	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00216	0.00217	0.00217
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00141	-0.00159	-0.00161
	(!A1 * !A2 * B1 * !C1 * Y)	0.00234	0.00229	0.00225
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00150	-0.00162	-0.00163
	(!A1 * !A2 * !B1 * C1 * Y)	0.00231	0.00228	0.00225
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00156	-0.00163	-0.00162
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00223	0.00226	0.00224

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00181	-0.00184	-0.00200
	(A2 * B1 * C1 * !Y)	0.00390	0.00391	0.00375
	(A2 * B1 * !C1 * Y)	-0.00334	-0.00336	-0.00335
	(A2 * B1 * !C1 * Y)	0.00460	0.00464	0.00462
	(A2 * !B1 * C1 * Y)	-0.00334	-0.00336	-0.00335
	(A2 * !B1 * C1 * Y)	0.00460	0.00464	0.00462
	(A2 * !B1 * !C1 * Y)	-0.00337	-0.00339	-0.00337
	(A2 * !B1 * !C1 * Y)	0.00459	0.00464	0.00460
	(A1 * !A2 * B1 * C1 * !Y)	-0.00112	-0.00114	-0.00166
	(A1 * !A2 * B1 * C1 * !Y)	0.00443	0.00443	0.00407
	(A1 * !A2 * B1 * !C1 * Y)	-0.00334	-0.00337	-0.00335
	(A1 * !A2 * B1 * !C1 * Y)	0.00448	0.00454	0.00450
	(A1 * !A2 * !B1 * C1 * Y)	-0.00335	-0.00337	-0.00335
	(A1 * !A2 * !B1 * C1 * Y)	0.00449	0.00454	0.00450
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00336	-0.00339	-0.00337
	(A1 * !A2 * !B1 * !C1 * Y)	0.00448	0.00453	0.00449
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00281	-0.00318	-0.00323
	(!A1 * !A2 * B1 * !C1 * Y)	0.00485	0.00470	0.00466
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00299	-0.00323	-0.00325
	(!A1 * !A2 * !B1 * C1 * Y)	0.00477	0.00467	0.00466
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00311	-0.00325	-0.00324
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00464	0.00464	0.00464

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00540	-0.00540	-0.00585
	(A2 * B1 * C1 * !Y)	0.00611	0.00608	0.00577
	(A2 * B1 * !C1 * Y)	-0.00643	-0.00648	-0.00644
	(A2 * B1 * !C1 * Y)	0.00956	0.00964	0.00958
	(A2 * !B1 * C1 * Y)	-0.00644	-0.00648	-0.00644
	(A2 * !B1 * C1 * Y)	0.00957	0.00964	0.00957
	(A2 * !B1 * !C1 * Y)	-0.00648	-0.00649	-0.00648
	(A2 * !B1 * !C1 * Y)	0.00954	0.00955	0.00955
	(A1 * !A2 * B1 * C1 * !Y)	-0.00416	-0.00418	-0.00518
	(A1 * !A2 * B1 * C1 * !Y)	0.00710	0.00707	0.00637
	(A1 * !A2 * B1 * !C1 * Y)	-0.00642	-0.00646	-0.00644
	(A1 * !A2 * B1 * !C1 * Y)	0.00925	0.00932	0.00928
	(A1 * !A2 * !B1 * C1 * Y)	-0.00644	-0.00647	-0.00644
	(A1 * !A2 * !B1 * C1 * Y)	0.00927	0.00932	0.00928
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00647	-0.00650	-0.00648
	(A1 * !A2 * !B1 * !C1 * Y)	0.00929	0.00933	0.00930
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00550	-0.00614	-0.00621
	(!A1 * !A2 * B1 * !C1 * Y)	0.01000	0.00977	0.00969
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00577	-0.00624	-0.00626
	(!A1 * !A2 * !B1 * C1 * Y)	0.00985	0.00971	0.00969
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00599	-0.00626	-0.00625
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00964	0.00965	0.00964

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00164	0.00165	0.00165
	(A3 * !C1 * Y)	-0.00234	-0.00235	-0.00234
	(A2 * !A3 * !C1 * Y)	0.00164	0.00166	0.00165
	(A2 * !A3 * !C1 * Y)	-0.00234	-0.00236	-0.00234
	(A1 * !A2 * !A3 * !C1 * Y)	0.00164	0.00165	0.00165
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * !A3 * C1 * Y)	0.00071	0.00071	0.00070
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00237	-0.00237	-0.00236
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00236	-0.00238	-0.00237
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00339	0.00342	0.00340
	(A3 * !C1 * Y)	-0.00461	-0.00463	-0.00461
	(A2 * !A3 * !C1 * Y)	0.00339	0.00342	0.00340
	(A2 * !A3 * !C1 * Y)	-0.00462	-0.00464	-0.00461
	(A1 * !A2 * !A3 * !C1 * Y)	0.00340	0.00343	0.00340
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00462	-0.00464	-0.00461
	(!A1 * !A2 * !A3 * C1 * Y)	0.00146	0.00147	0.00148
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00464	-0.00466	-0.00463
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00197	0.00198	0.00196
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00467	-0.00469	-0.00467
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00636	0.00643	0.00640
	(A3 * !C1 * Y)	-0.00516	-0.00519	-0.00516
	(A2 * !A3 * !C1 * Y)	0.00635	0.00645	0.00640
	(A2 * !A3 * !C1 * Y)	-0.00515	-0.00520	-0.00516
	(A1 * !A2 * !A3 * !C1 * Y)	0.00637	0.00644	0.00640
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00517	-0.00520	-0.00516
	(!A1 * !A2 * !A3 * C1 * Y)	0.00265	0.00267	0.00266
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00527	-0.00529	-0.00525
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00360	0.00361	0.00358
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00535	-0.00537	-0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00141	-0.00158	-0.00160
	(A3 * !C1 * Y)	0.00256	0.00244	0.00239
	(A2 * !A3 * !C1 * Y)	-0.00141	-0.00159	-0.00160
	(A2 * !A3 * !C1 * Y)	0.00260	0.00244	0.00239
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00139	-0.00158	-0.00160
	(A1 * !A2 * !A3 * !C1 * Y)	0.00261	0.00243	0.00239
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00061	-0.00062	-0.00063
	(!A1 * !A2 * !A3 * C1 * Y)	0.00246	0.00250	0.00241
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00093	-0.00095	-0.00094
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00257	0.00255	0.00244
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00292	-0.00329	-0.00333
	(A3 * !C1 * Y)	0.00509	0.00478	0.00470
	(A2 * !A3 * !C1 * Y)	-0.00288	-0.00329	-0.00333
	(A2 * !A3 * !C1 * Y)	0.00511	0.00478	0.00470
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00283	-0.00328	-0.00333
	(A1 * !A2 * !A3 * !C1 * Y)	0.00519	0.00481	0.00470
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00127	-0.00130	-0.00133
	(!A1 * !A2 * !A3 * C1 * Y)	0.00486	0.00495	0.00476
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00193	-0.00198	-0.00196
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00504	0.00504	0.00480

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00529	-0.00617	-0.00625
	(A3 * !C1 * Y)	0.00624	0.00550	0.00532
	(A2 * !A3 * !C1 * Y)	-0.00525	-0.00615	-0.00625
	(A2 * !A3 * !C1 * Y)	0.00637	0.00552	0.00532
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00512	-0.00611	-0.00625
	(A1 * !A2 * !A3 * !C1 * Y)	0.00645	0.00557	0.00532
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00226	-0.00232	-0.00238
	(!A1 * !A2 * !A3 * C1 * Y)	0.00569	0.00579	0.00548
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00349	-0.00361	-0.00358
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00612	0.00599	0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00062	0.00062	0.00059
	(A3 * !B1 * Y)	-0.00268	-0.00270	-0.00274
	(A2 * !A3 * !B1 * Y)	0.00062	0.00062	0.00059
	(A2 * !A3 * !B1 * Y)	-0.00268	-0.00270	-0.00275
	(!A2 * !A3 * !B1 * Y)	0.00062	0.00062	0.00059
	(!A2 * !A3 * !B1 * Y)	-0.00269	-0.00270	-0.00275
	(!A1 * !A2 * !A3 * B1 * Y)	0.00070	0.00070	0.00061
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00252	-0.00254	-0.00271
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00121	0.00122	0.00115
	(A3 * !B1 * Y)	-0.00526	-0.00530	-0.00541
	(A2 * !A3 * !B1 * Y)	0.00122	0.00122	0.00115
	(A2 * !A3 * !B1 * Y)	-0.00527	-0.00530	-0.00541
	(!A2 * !A3 * !B1 * Y)	0.00122	0.00122	0.00115
	(!A2 * !A3 * !B1 * Y)	-0.00526	-0.00529	-0.00541
	(!A1 * !A2 * !A3 * B1 * Y)	0.00134	0.00135	0.00115
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00490	-0.00495	-0.00533
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00224	0.00226	0.00212
	(A3 * !B1 * Y)	-0.00573	-0.00578	-0.00601
	(A2 * !A3 * !B1 * Y)	0.00224	0.00225	0.00212
	(A2 * !A3 * !B1 * Y)	-0.00573	-0.00577	-0.00601
	(!A2 * !A3 * !B1 * Y)	0.00224	0.00225	0.00212
	(!A2 * !A3 * !B1 * Y)	-0.00573	-0.00576	-0.00601
	(!A1 * !A2 * !A3 * B1 * Y)	0.00250	0.00251	0.00215
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00506	-0.00511	-0.00586

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00057	-0.00057	-0.00057
	(A3 * !B1 * Y)	0.00275	0.00276	0.00276
	(A2 * !A3 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(A2 * !A3 * !B1 * Y)	0.00275	0.00281	0.00276
	(!A2 * !A3 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(!A2 * !A3 * !B1 * Y)	0.00275	0.00281	0.00276
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * B1 * Y)	0.00275	0.00281	0.00276
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00110	-0.00110	-0.00109
	(A3 * !B1 * Y)	0.00544	0.00545	0.00545
	(A2 * !A3 * !B1 * Y)	-0.00110	-0.00109	-0.00109
	(A2 * !A3 * !B1 * Y)	0.00543	0.00544	0.00545
	(!A2 * !A3 * !B1 * Y)	-0.00110	-0.00111	-0.00109
	(!A2 * !A3 * !B1 * Y)	0.00544	0.00553	0.00545
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00102	-0.00103	-0.00102
	(!A1 * !A2 * !A3 * B1 * Y)	0.00541	0.00546	0.00544
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00202	-0.00203	-0.00202
	(A3 * !B1 * Y)	0.00604	0.00608	0.00607
	(A2 * !A3 * !B1 * Y)	-0.00201	-0.00203	-0.00202
	(A2 * !A3 * !B1 * Y)	0.00603	0.00606	0.00607
	(!A2 * !A3 * !B1 * Y)	-0.00204	-0.00206	-0.00202
	(!A2 * !A3 * !B1 * Y)	0.00608	0.00616	0.00607
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00191	-0.00192	-0.00190
	(!A1 * !A2 * !A3 * B1 * Y)	0.00604	0.00607	0.00605

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00270	0.00318	0.00275	0.00270	0.00276	1.31947
sky130_fd_sc_hs__o311a_2	0.00300	0.00301	0.00299	0.00293	0.00291	2.59174
sky130_fd_sc_hs__o311a_4	0.00499	0.00543	0.00501	0.00602	0.00523	4.94342

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	74.95300	204.06800
sky130_fd_sc_hs__o311a_2	0.00000	112.51300	187.67200
sky130_fd_sc_hs__o311a_4	0.00000	227.74100	410.82900

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)	0.13478	0.61227	6.39883
	A2->X (RR)	0.12881	0.60213	6.25738
	A3->X (RR)	0.11045	0.57355	6.16916
	B1->X (RR)	0.12416	0.65039	7.12145
	C1->X (RR)	0.11697	0.66300	7.25518
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.13788	0.53090	6.39188
	A2->X (RR)	0.12823	0.51410	6.21675
	A3->X (RR)	0.10765	0.48678	6.09924
	B1->X (RR)	0.13099	0.57711	7.04711
	C1->X (RR)	0.12221	0.59115	7.18326
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.15016	0.48193	6.38501
	A2->X (RR)	0.13744	0.46091	6.19853
	A3->X (RR)	0.11810	0.43833	6.13764
	B1->X (RR)	0.14350	0.53355	7.16171
	C1->X (RR)	0.13064	0.54241	7.33155

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.23510	0.64918	5.35638
	A2->X (FF)	0.22515	0.67857	5.61278
	A3->X (FF)	0.18490	0.67651	5.70702
	B1->X (FF)	0.07524	0.49112	4.84516
	C1->X (FF)	0.06914	0.47224	4.70795
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.24104	0.62271	5.43027
	A2->X (FF)	0.22660	0.65232	5.78480
	A3->X (FF)	0.20098	0.66381	5.90640
	B1->X (FF)	0.08475	0.46242	5.05906
	C1->X (FF)	0.07739	0.44084	4.91112
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.28800	0.63777	5.66698
	A2->X (FF)	0.27301	0.66179	5.85703
	A3->X (FF)	0.23057	0.66099	5.94530
	B1->X (FF)	0.08062	0.42301	4.87309
	C1->X (FF)	0.07254	0.40305	4.75322

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.02296	0.02435	0.08742
	A1	0.01290	0.01431	0.07765
	A2	0.02078	0.02245	0.07952
	A2	0.01174	0.01342	0.07093
	A3	0.01807	0.02041	0.08189
	A3	0.01050	0.01286	0.07481
	B1	0.01824	0.02254	0.12264
	B1	0.00881	0.01400	0.11646
	C1	0.01732	0.02216	0.12281
	C1	0.00877	0.01456	0.11734
sky130_fd_sc_hs__o311a_2	A1	0.02693	0.02791	0.09402
	A1	0.01596	0.01699	0.08364
	A2	0.02410	0.02592	0.08699
	A2	0.01455	0.01638	0.07837
	A3	0.02165	0.02410	0.08876
	A3	0.01346	0.01590	0.08158
	B1	0.01854	0.02342	0.12797
	B1	0.01204	0.01692	0.12156
	C1	0.01744	0.02297	0.12734
	C1	0.01203	0.01758	0.12849

sky130_fd_sc_hs__o311a_4	**A1**	0.05350	0.05540	0.19314
	A1	0.03446	0.03639	0.17524
	A2	0.04829	0.05116	0.17592
	A2	0.03121	0.03416	0.16070
	A3	0.04229	0.04669	0.17855
	A3	0.02789	0.03244	0.16611
	B1	0.03612	0.04501	0.23460
	B1	0.02393	0.03281	0.22218
	C1	0.03338	0.04450	0.24717
	C1	0.02401	0.03534	0.23844

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00843	0.00914	0.07756
	A1	0.01844	0.01915	0.08703
	A2	0.00849	0.00954	0.07356
	A2	0.01749	0.01856	0.08192
	A3	0.00847	0.01110	0.07964
	A3	0.01600	0.01862	0.08713
	B1	0.00511	0.01168	0.11133
	B1	0.01249	0.01903	0.11749
	C1	0.00458	0.01102	0.10947
	C1	0.01109	0.01752	0.11507

sky130_fd_sc_hs__o311a_2	**A1**	0.01483	0.01341	0.08246
	A1	0.02573	0.02431	0.09250
	A2	0.01486	0.01408	0.08241
	A2	0.02437	0.02359	0.09113
	A3	0.01485	0.01528	0.08885
	A3	0.02301	0.02343	0.09543
	B1	0.00977	0.01626	0.11906
	B1	0.01938	0.02477	0.11297
	C1	0.00903	0.01556	0.11660
	C1	0.01747	0.02292	0.10926
sky130_fd_sc_hs__o311a_4	**A1**	0.03450	0.02853	0.16504
	A1	0.05342	0.04748	0.18393
	A2	0.03446	0.02941	0.15663
	A2	0.05146	0.04647	0.16923
	A3	0.03454	0.03227	0.16670
	A3	0.04885	0.04661	0.17778
	B1	0.01984	0.03122	0.22881
	B1	0.03685	0.04756	0.23374
	C1	0.01830	0.03011	0.23086
	C1	0.03242	0.04374	0.23184

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)**	0.00198	0.00199	0.00198
	(A2 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178
	(A2 * A3 * B1 * C1 * X)	0.00319	0.00304	0.00302
	(A2 * A3 * B1 * C1 * X)	-0.00056	-0.00073	-0.00074
	(A2 * !B1 * !X)	0.00198	0.00199	0.00198
	(A2 * !B1 * !X)	-0.00177	-0.00178	-0.00178
	(A2 * !A3 * B1 * C1 * X)	0.00360	0.00327	0.00331
	(A2 * !A3 * B1 * C1 * X)	-0.00020	-0.00054	-0.00045
	(!A2 * A3 * B1 * C1 * X)	0.00382	0.00343	0.00354
	(!A2 * A3 * B1 * C1 * X)	-0.00002	-0.00043	-0.00024
	(!A2 * A3 * B1 * !C1 * !X)	0.00198	0.00199	0.00198
	(!A2 * A3 * B1 * !C1 * !X)	-0.00171	-0.00176	-0.00176
	(!A2 * A3 * !B1 * !X)	0.00198	0.00199	0.00198
	(!A2 * A3 * !B1 * !X)	-0.00172	-0.00176	-0.00176
	(!A2 * !A3 * B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * !A3 * !B1 * C1 * !X)	0.00194	0.00195	0.00194
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00192	0.00194	0.00192
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00251	0.00252	0.00251
	(A2 * B1 * !C1 * !X)	-0.00158	-0.00159	-0.00158
	(A2 * A3 * B1 * C1 * X)	0.00330	0.00312	0.00309
	(A2 * A3 * B1 * C1 * X)	-0.00079	-0.00099	-0.00100
	(A2 * !B1 * !X)	0.00251	0.00251	0.00251
	(A2 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(A2 * !A3 * B1 * C1 * X)	0.00366	0.00331	0.00332
	(A2 * !A3 * B1 * C1 * X)	-0.00047	-0.00084	-0.00078
	(!A2 * A3 * B1 * C1 * X)	0.00386	0.00343	0.00348
	(!A2 * A3 * B1 * C1 * X)	-0.00029	-0.00075	-0.00063
	(!A2 * A3 * B1 * !C1 * !X)	0.00250	0.00252	0.00251
	(!A2 * A3 * B1 * !C1 * !X)	-0.00151	-0.00157	-0.00157
	(!A2 * A3 * !B1 * !X)	0.00250	0.00252	0.00251
	(!A2 * A3 * !B1 * !X)	-0.00151	-0.00157	-0.00157
	(!A2 * !A3 * B1 * !C1 * !X)	0.00242	0.00244	0.00243
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00159	-0.00160	-0.00159
	(!A2 * !A3 * !B1 * C1 * !X)	0.00245	0.00246	0.00245
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00243	0.00244	0.00243
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00161	-0.00161	-0.00161

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00456	0.00458	0.00455
	(A2 * B1 * !C1 * !X)	-0.00238	-0.00240	-0.00238
	(A2 * A3 * B1 * C1 * X)	0.00580	0.00541	0.00533
	(A2 * A3 * B1 * C1 * X)	-0.00115	-0.00159	-0.00160
	(A2 * !B1 * !X)	0.00455	0.00458	0.00455
	(A2 * !B1 * !X)	-0.00238	-0.00241	-0.00238
	(A2 * !A3 * B1 * C1 * X)	0.00670	0.00591	0.00593
	(A2 * !A3 * B1 * C1 * X)	-0.00035	-0.00117	-0.00102
	(!A2 * A3 * B1 * C1 * X)	0.00716	0.00621	0.00637
	(!A2 * A3 * B1 * C1 * X)	0.00007	-0.00096	-0.00060
	(!A2 * A3 * B1 * !C1 * !X)	0.00455	0.00458	0.00455
	(!A2 * A3 * B1 * !C1 * !X)	-0.00225	-0.00236	-0.00235
	(!A2 * A3 * !B1 * !X)	0.00454	0.00458	0.00455
	(!A2 * A3 * !B1 * !X)	-0.00225	-0.00236	-0.00235
	(!A2 * !A3 * B1 * !C1 * !X)	0.00442	0.00444	0.00443
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00240	-0.00241	-0.00239
	(!A2 * !A3 * !B1 * C1 * !X)	0.00445	0.00448	0.00446
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00240	-0.00243	-0.00240
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00442	0.00445	0.00442
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00243	-0.00245	-0.00243

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)**	-0.00107	-0.00108	-0.00108
	(A2 * B1 * !C1 * !X)	0.00267	0.00269	0.00268
	(A2 * A3 * B1 * C1 * X)	-0.00052	-0.00052	-0.00052
	(A2 * A3 * B1 * C1 * X)	0.00324	0.00325	0.00324
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * !X)	0.00267	0.00269	0.00267
	(A2 * !A3 * B1 * C1 * X)	-0.00025	-0.00027	-0.00030
	(A2 * !A3 * B1 * C1 * X)	0.00352	0.00354	0.00348
	(!A2 * A3 * B1 * C1 * X)	0.00001	-0.00001	-0.00007
	(!A2 * A3 * B1 * C1 * X)	0.00381	0.00381	0.00374
	(!A2 * A3 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(!A2 * A3 * B1 * !C1 * !X)	0.00264	0.00263	0.00264
	(!A2 * A3 * !B1 * !X)	-0.00107	-0.00108	-0.00108
	(!A2 * A3 * !B1 * !X)	0.00262	0.00263	0.00264
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00089	-0.00103	-0.00104
	(!A2 * !A3 * B1 * !C1 * !X)	0.00276	0.00272	0.00269
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00094	-0.00104	-0.00105
	(!A2 * !A3 * !B1 * C1 * !X)	0.00273	0.00271	0.00269
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00100	-0.00106	-0.00107
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00267	0.00269	0.00267

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00075	-0.00076	-0.00075
	(A2 * B1 * !C1 * !X)	0.00333	0.00336	0.00333
	(A2 * A3 * B1 * C1 * X)	-0.00057	-0.00057	-0.00057
	(A2 * A3 * B1 * C1 * X)	0.00351	0.00351	0.00352
	(A2 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(A2 * !B1 * !X)	0.00333	0.00336	0.00333
	(A2 * !A3 * B1 * C1 * X)	-0.00037	-0.00039	-0.00041
	(A2 * !A3 * B1 * C1 * X)	0.00374	0.00376	0.00371
	(!A2 * A3 * B1 * C1 * X)	-0.00020	-0.00021	-0.00025
	(!A2 * A3 * B1 * C1 * X)	0.00392	0.00393	0.00388
	(!A2 * A3 * B1 * !C1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * B1 * !C1 * !X)	0.00328	0.00330	0.00329
	(!A2 * A3 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * !B1 * !X)	0.00328	0.00330	0.00329
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00051	-0.00068	-0.00070
	(!A2 * !A3 * B1 * !C1 * !X)	0.00344	0.00340	0.00335
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00059	-0.00070	-0.00071
	(!A2 * !A3 * !B1 * C1 * !X)	0.00341	0.00339	0.00336
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00071	-0.00072
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00336	0.00337	0.00334

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00101	-0.00105	-0.00103
	(A2 * B1 * !C1 * !X)	0.00587	0.00594	0.00590
	(A2 * A3 * B1 * C1 * X)	-0.00027	-0.00029	-0.00027
	(A2 * A3 * B1 * C1 * X)	0.00665	0.00670	0.00667
	(A2 * !B1 * !X)	-0.00102	-0.00105	-0.00103
	(A2 * !B1 * !X)	0.00587	0.00594	0.00590
	(A2 * !A3 * B1 * C1 * X)	0.00024	0.00020	0.00014
	(A2 * !A3 * B1 * C1 * X)	0.00722	0.00726	0.00714
	(!A2 * A3 * B1 * C1 * X)	0.00078	0.00075	0.00062
	(!A2 * A3 * B1 * C1 * X)	0.00780	0.00780	0.00766
	(!A2 * A3 * B1 * !C1 * !X)	-0.00102	-0.00103	-0.00103
	(!A2 * A3 * B1 * !C1 * !X)	0.00580	0.00582	0.00581
	(!A2 * A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(!A2 * A3 * !B1 * !X)	0.00580	0.00582	0.00581
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00063	-0.00091	-0.00094
	(!A2 * !A3 * B1 * !C1 * !X)	0.00609	0.00601	0.00593
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00075	-0.00094	-0.00096
	(!A2 * !A3 * !B1 * C1 * !X)	0.00604	0.00599	0.00593
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00098	-0.00099
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00592	0.00595	0.00590

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)**	0.00326	0.00330	0.00319
	(A1 * A3 * B1 * C1 * X)	-0.00010	-0.00008	-0.00014
	(A1 * A3 * B1 * !C1 * !X)	0.00199	0.00199	0.00198
	(A1 * A3 * B1 * !C1 * !X)	-0.00147	-0.00147	-0.00141
	(A1 * A3 * !B1 * !X)	0.00199	0.00199	0.00198
	(A1 * A3 * !B1 * !X)	-0.00147	-0.00148	-0.00141
	(A1 * !A3 * B1 * C1 * X)	0.00330	0.00332	0.00325
	(A1 * !A3 * B1 * C1 * X)	0.00039	0.00038	0.00037
	(A1 * !A3 * B1 * !C1 * !X)	0.00199	0.00198	0.00198
	(A1 * !A3 * B1 * !C1 * !X)	-0.00193	-0.00191	-0.00191
	(A1 * !A3 * !B1 * C1 * !X)	0.00199	0.00198	0.00197
	(A1 * !A3 * !B1 * C1 * !X)	-0.00193	-0.00191	-0.00191
	(A1 * !A3 * !B1 * !C1 * !X)	0.00198	0.00196	0.00196
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00194	-0.00192	-0.00192
	(!A1 * A3 * B1 * C1 * X)	0.00394	0.00341	0.00360
	(!A1 * A3 * B1 * C1 * X)	-0.00001	-0.00054	-0.00030
	(!A1 * A3 * B1 * !C1 * !X)	0.00199	0.00200	0.00198
	(!A1 * A3 * B1 * !C1 * !X)	-0.00192	-0.00192	-0.00190
	(!A1 * A3 * !B1 * !X)	0.00199	0.00199	0.00198
	(!A1 * A3 * !B1 * !X)	-0.00192	-0.00192	-0.00190
	(!A1 * !A3 * B1 * !C1 * !X)	0.00191	0.00192	0.00192
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00190	-0.00192	-0.00190
	(!A1 * !A3 * !B1 * C1 * !X)	0.00193	0.00195	0.00194
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00190	-0.00192	-0.00191
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00191	0.00192	0.00192
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00312	0.00313	0.00304
	(A1 * A3 * B1 * C1 * X)	-0.00019	-0.00020	-0.00024
	(A1 * A3 * B1 * !C1 * !X)	0.00251	0.00253	0.00251
	(A1 * A3 * B1 * !C1 * !X)	-0.00087	-0.00088	-0.00081
	(A1 * A3 * !B1 * !X)	0.00251	0.00253	0.00251
	(A1 * A3 * !B1 * !X)	-0.00087	-0.00088	-0.00081
	(A1 * !A3 * B1 * C1 * X)	0.00311	0.00311	0.00308
	(A1 * !A3 * B1 * C1 * X)	0.00023	0.00023	0.00022
	(A1 * !A3 * B1 * !C1 * !X)	0.00252	0.00251	0.00251
	(A1 * !A3 * B1 * !C1 * !X)	-0.00151	-0.00150	-0.00149
	(A1 * !A3 * !B1 * C1 * !X)	0.00252	0.00251	0.00251
	(A1 * !A3 * !B1 * C1 * !X)	-0.00151	-0.00150	-0.00149
	(A1 * !A3 * !B1 * !C1 * !X)	0.00251	0.00250	0.00250
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00151	-0.00150	-0.00150
	(!A1 * A3 * B1 * C1 * X)	0.00369	0.00320	0.00334
	(!A1 * A3 * B1 * C1 * X)	-0.00037	-0.00086	-0.00067
	(!A1 * A3 * B1 * !C1 * !X)	0.00252	0.00253	0.00251
	(!A1 * A3 * B1 * !C1 * !X)	-0.00151	-0.00150	-0.00148
	(!A1 * A3 * !B1 * !X)	0.00252	0.00253	0.00251
	(!A1 * A3 * !B1 * !X)	-0.00151	-0.00151	-0.00149
	(!A1 * !A3 * B1 * !C1 * !X)	0.00242	0.00243	0.00243
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(!A1 * !A3 * !B1 * C1 * !X)	0.00245	0.00247	0.00246
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00150	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00243	0.00245	0.00244
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00606	0.00616	0.00593
	(A1 * A3 * B1 * C1 * X)	-0.00018	-0.00016	-0.00027
	(A1 * A3 * B1 * !C1 * !X)	0.00493	0.00499	0.00495
	(A1 * A3 * B1 * !C1 * !X)	-0.00145	-0.00149	-0.00136
	(A1 * A3 * !B1 * !X)	0.00492	0.00498	0.00495
	(A1 * A3 * !B1 * !X)	-0.00145	-0.00149	-0.00136
	(A1 * !A3 * B1 * C1 * X)	0.00618	0.00620	0.00608
	(A1 * !A3 * B1 * C1 * X)	0.00079	0.00077	0.00077
	(A1 * !A3 * B1 * !C1 * !X)	0.00493	0.00495	0.00494
	(A1 * !A3 * B1 * !C1 * !X)	-0.00236	-0.00239	-0.00237
	(A1 * !A3 * !B1 * C1 * !X)	0.00493	0.00495	0.00494
	(A1 * !A3 * !B1 * C1 * !X)	-0.00237	-0.00239	-0.00238
	(A1 * !A3 * !B1 * !C1 * !X)	0.00491	0.00493	0.00492
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00239	-0.00241	-0.00240
	(!A1 * A3 * B1 * C1 * X)	0.00744	0.00637	0.00677
	(!A1 * A3 * B1 * C1 * X)	-0.00000	-0.00109	-0.00057
	(!A1 * A3 * B1 * !C1 * !X)	0.00498	0.00494	0.00495
	(!A1 * A3 * B1 * !C1 * !X)	-0.00239	-0.00236	-0.00236
	(!A1 * A3 * !B1 * !X)	0.00497	0.00493	0.00495
	(!A1 * A3 * !B1 * !X)	-0.00240	-0.00236	-0.00237
	(!A1 * !A3 * B1 * !C1 * !X)	0.00478	0.00482	0.00480
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00237	-0.00240	-0.00237
	(!A1 * !A3 * !B1 * C1 * !X)	0.00484	0.00486	0.00484
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00480	0.00482	0.00480
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00240	-0.00242	-0.00240

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)**	-0.00063	-0.00062	-0.00062
	(A1 * A3 * B1 * C1 * X)	0.00265	0.00264	0.00264
	(A1 * A3 * B1 * !C1 * !X)	-0.00107	-0.00109	-0.00108
	(A1 * A3 * B1 * !C1 * !X)	0.00228	0.00230	0.00226
	(A1 * A3 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(A1 * A3 * !B1 * !X)	0.00228	0.00230	0.00226
	(A1 * !A3 * B1 * C1 * X)	-0.00043	-0.00045	-0.00058
	(A1 * !A3 * B1 * C1 * X)	0.00248	0.00248	0.00233
	(A1 * !A3 * B1 * !C1 * !X)	-0.00107	-0.00108	-0.00107
	(A1 * !A3 * B1 * !C1 * !X)	0.00281	0.00283	0.00281
	(A1 * !A3 * !B1 * C1 * !X)	-0.00107	-0.00108	-0.00108
	(A1 * !A3 * !B1 * C1 * !X)	0.00281	0.00282	0.00281
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * !A3 * !B1 * !C1 * !X)	0.00279	0.00281	0.00279
	(!A1 * A3 * B1 * C1 * X)	-0.00004	-0.00007	-0.00015
	(!A1 * A3 * B1 * C1 * X)	0.00386	0.00386	0.00376
	(!A1 * A3 * B1 * !C1 * !X)	-0.00107	-0.00108	-0.00108
	(!A1 * A3 * B1 * !C1 * !X)	0.00279	0.00282	0.00280
	(!A1 * A3 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1 * A3 * !B1 * !X)	0.00280	0.00282	0.00280
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00087	-0.00102	-0.00104
	(!A1 * !A3 * B1 * !C1 * !X)	0.00291	0.00286	0.00281
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00093	-0.00104	-0.00105
	(!A1 * !A3 * !B1 * C1 * !X)	0.00288	0.00284	0.00281
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00099	-0.00106	-0.00106
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00278	0.00282	0.00280

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00048	-0.00049	-0.00047
	(A1 * A3 * B1 * C1 * X)	0.00274	0.00275	0.00273
	(A1 * A3 * B1 * !C1 * !X)	-0.00075	-0.00077	-0.00075
	(A1 * A3 * B1 * !C1 * !X)	0.00255	0.00257	0.00252
	(A1 * A3 * !B1 * !X)	-0.00075	-0.00077	-0.00076
	(A1 * A3 * !B1 * !X)	0.00255	0.00256	0.00252
	(A1 * !A3 * B1 * C1 * X)	-0.00031	-0.00033	-0.00046
	(A1 * !A3 * B1 * C1 * X)	0.00257	0.00257	0.00244
	(A1 * !A3 * B1 * !C1 * !X)	-0.00074	-0.00076	-0.00075
	(A1 * !A3 * B1 * !C1 * !X)	0.00324	0.00327	0.00325
	(A1 * !A3 * !B1 * C1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * !B1 * C1 * !X)	0.00324	0.00324	0.00325
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00076	-0.00077	-0.00076
	(A1 * !A3 * !B1 * !C1 * !X)	0.00323	0.00324	0.00324
	(!A1 * A3 * B1 * C1 * X)	-0.00007	-0.00009	-0.00015
	(!A1 * A3 * B1 * C1 * X)	0.00394	0.00397	0.00388
	(!A1 * A3 * B1 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * A3 * B1 * !C1 * !X)	0.00324	0.00326	0.00324
	(!A1 * A3 * !B1 * !X)	-0.00075	-0.00077	-0.00076
	(!A1 * A3 * !B1 * !X)	0.00323	0.00326	0.00324
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00051	-0.00068	-0.00070
	(!A1 * !A3 * B1 * !C1 * !X)	0.00334	0.00329	0.00325
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00058	-0.00070	-0.00071
	(!A1 * !A3 * !B1 * C1 * !X)	0.00331	0.00329	0.00326
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00064	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00325	0.00327	0.00324

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00076	-0.00076	-0.00074
	(A1 * A3 * B1 * C1 * X)	0.00531	0.00532	0.00532
	(A1 * A3 * B1 * !C1 * !X)	-0.00142	-0.00145	-0.00143
	(A1 * A3 * B1 * !C1 * !X)	0.00484	0.00487	0.00479
	(A1 * A3 * !B1 * !X)	-0.00143	-0.00145	-0.00143
	(A1 * A3 * !B1 * !X)	0.00484	0.00486	0.00479
	(A1 * !A3 * B1 * C1 * X)	-0.00036	-0.00038	-0.00066
	(A1 * !A3 * B1 * C1 * X)	0.00501	0.00501	0.00471
	(A1 * !A3 * B1 * !C1 * !X)	-0.00141	-0.00144	-0.00142
	(A1 * !A3 * B1 * !C1 * !X)	0.00590	0.00593	0.00590
	(A1 * !A3 * !B1 * C1 * !X)	-0.00142	-0.00145	-0.00142
	(A1 * !A3 * !B1 * C1 * !X)	0.00589	0.00592	0.00589
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00145	-0.00147	-0.00145
	(A1 * !A3 * !B1 * !C1 * !X)	0.00586	0.00590	0.00587
	(!A1 * A3 * B1 * C1 * X)	0.00037	0.00032	0.00016
	(!A1 * A3 * B1 * C1 * X)	0.00774	0.00775	0.00754
	(!A1 * A3 * B1 * !C1 * !X)	-0.00142	-0.00144	-0.00143
	(!A1 * A3 * B1 * !C1 * !X)	0.00587	0.00591	0.00589
	(!A1 * A3 * !B1 * !X)	-0.00142	-0.00145	-0.00143
	(!A1 * A3 * !B1 * !X)	0.00587	0.00591	0.00588
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00093	-0.00127	-0.00131
	(!A1 * !A3 * B1 * !C1 * !X)	0.00612	0.00599	0.00591
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00107	-0.00132	-0.00134
	(!A1 * !A3 * !B1 * C1 * !X)	0.00605	0.00597	0.00591
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00123	-0.00136	-0.00137
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00588	0.00592	0.00588

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)**	0.00289	0.00291	0.00289
	(A2 * B1 * C1 * X)	0.00026	0.00024	0.00026
	(A2 * B1 * !C1 * !X)	0.00196	0.00198	0.00196
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00167	-0.00166
	(A2 * !B1 * C1 * !X)	0.00196	0.00198	0.00196
	(A2 * !B1 * C1 * !X)	-0.00165	-0.00168	-0.00166
	(A2 * !B1 * !C1 * !X)	0.00195	0.00197	0.00195
	(A2 * !B1 * !C1 * !X)	-0.00166	-0.00168	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00290	0.00291	0.00292
	(A1 * !A2 * B1 * C1 * X)	0.00034	0.00034	0.00036
	(A1 * !A2 * B1 * !C1 * !X)	0.00196	0.00198	0.00196
	(A1 * !A2 * B1 * !C1 * !X)	-0.00159	-0.00165	-0.00165
	(A1 * !A2 * !B1 * C1 * !X)	0.00196	0.00198	0.00196
	(A1 * !A2 * !B1 * C1 * !X)	-0.00159	-0.00165	-0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	0.00195	0.00197	0.00195
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00160	-0.00166	-0.00166
	(!A1 * !A2 * B1 * !C1 * !X)	0.00191	0.00191	0.00191
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * !A2 * !B1 * C1 * !X)	0.00193	0.00194	0.00193
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00191	0.00192	0.00191
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00169	-0.00168

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00308	0.00311	0.00308
	(A2 * B1 * C1 * X)	0.00027	0.00026	0.00028
	(A2 * B1 * !C1 * !X)	0.00251	0.00250	0.00251
	(A2 * B1 * !C1 * !X)	-0.00142	-0.00143	-0.00143
	(A2 * !B1 * C1 * !X)	0.00251	0.00253	0.00251
	(A2 * !B1 * C1 * !X)	-0.00142	-0.00145	-0.00143
	(A2 * !B1 * !C1 * !X)	0.00250	0.00252	0.00250
	(A2 * !B1 * !C1 * !X)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * B1 * C1 * X)	0.00309	0.00311	0.00310
	(A1 * !A2 * B1 * C1 * X)	0.00035	0.00034	0.00037
	(A1 * !A2 * B1 * !C1 * !X)	0.00250	0.00252	0.00251
	(A1 * !A2 * B1 * !C1 * !X)	-0.00135	-0.00141	-0.00141
	(A1 * !A2 * !B1 * C1 * !X)	0.00250	0.00252	0.00251
	(A1 * !A2 * !B1 * C1 * !X)	-0.00135	-0.00141	-0.00141
	(A1 * !A2 * !B1 * !C1 * !X)	0.00250	0.00251	0.00250
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00136	-0.00142	-0.00142
	(!A1 * !A2 * B1 * !C1 * !X)	0.00242	0.00243	0.00243
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * C1 * !X)	0.00245	0.00246	0.00245
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00144	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00244	0.00246	0.00244
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00146	-0.00145

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00564	0.00569	0.00565
	(A2 * B1 * C1 * X)	0.00057	0.00054	0.00057
	(A2 * B1 * !C1 * !X)	0.00458	0.00463	0.00459
	(A2 * B1 * !C1 * !X)	-0.00243	-0.00250	-0.00247
	(A2 * !B1 * C1 * !X)	0.00458	0.00462	0.00459
	(A2 * !B1 * C1 * !X)	-0.00244	-0.00250	-0.00248
	(A2 * !B1 * !C1 * !X)	0.00456	0.00460	0.00457
	(A2 * !B1 * !C1 * !X)	-0.00246	-0.00252	-0.00250
	(A1 * !A2 * B1 * C1 * X)	0.00566	0.00566	0.00570
	(A1 * !A2 * B1 * C1 * X)	0.00074	0.00074	0.00077
	(A1 * !A2 * B1 * !C1 * !X)	0.00458	0.00462	0.00459
	(A1 * !A2 * B1 * !C1 * !X)	-0.00233	-0.00244	-0.00244
	(A1 * !A2 * !B1 * C1 * !X)	0.00458	0.00462	0.00459
	(A1 * !A2 * !B1 * C1 * !X)	-0.00233	-0.00244	-0.00245
	(A1 * !A2 * !B1 * !C1 * !X)	0.00456	0.00460	0.00457
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00235	-0.00247	-0.00247
	(!A1 * !A2 * B1 * !C1 * !X)	0.00446	0.00448	0.00447
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00247	-0.00249	-0.00248
	(!A1 * !A2 * !B1 * C1 * !X)	0.00450	0.00452	0.00451
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00248	-0.00250	-0.00249
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00446	0.00447	0.00446
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00250	-0.00252	-0.00251

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)**	-0.00031	-0.00032	-0.00044
	(A2 * B1 * C1 * X)	0.00230	0.00231	0.00221
	(A2 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * !C1 * !X)	0.00255	0.00256	0.00255
	(A2 * !B1 * C1 * !X)	-0.00105	-0.00107	-0.00106
	(A2 * !B1 * C1 * !X)	0.00254	0.00256	0.00255
	(A2 * !B1 * !C1 * !X)	-0.00108	-0.00108	-0.00107
	(A2 * !B1 * !C1 * !X)	0.00254	0.00255	0.00254
	(A1 * !A2 * B1 * C1 * X)	0.00004	0.00003	-0.00022
	(A1 * !A2 * B1 * C1 * X)	0.00261	0.00261	0.00241
	(A1 * !A2 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * B1 * !C1 * !X)	0.00250	0.00252	0.00251
	(A1 * !A2 * !B1 * C1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * !B1 * C1 * !X)	0.00250	0.00252	0.00251
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	0.00249	0.00251	0.00250
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00085	-0.00101	-0.00102
	(!A1 * !A2 * B1 * !C1 * !X)	0.00266	0.00261	0.00257
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00091	-0.00103	-0.00104
	(!A1 * !A2 * !B1 * C1 * !X)	0.00262	0.00259	0.00257
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00105	-0.00105
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00255	0.00258	0.00255

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00053	-0.00054	-0.00061
	(A2 * B1 * C1 * X)	0.00227	0.00227	0.00221
	(A2 * B1 * !C1 * !X)	-0.00075	-0.00077	-0.00075
	(A2 * B1 * !C1 * !X)	0.00318	0.00320	0.00318
	(A2 * !B1 * C1 * !X)	-0.00075	-0.00077	-0.00075
	(A2 * !B1 * C1 * !X)	0.00318	0.00319	0.00318
	(A2 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00077
	(A2 * !B1 * !C1 * !X)	0.00316	0.00319	0.00317
	(A1 * !A2 * B1 * C1 * X)	-0.00024	-0.00025	-0.00045
	(A1 * !A2 * B1 * C1 * X)	0.00251	0.00251	0.00235
	(A1 * !A2 * B1 * !C1 * !X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * B1 * !C1 * !X)	0.00312	0.00313	0.00312
	(A1 * !A2 * !B1 * C1 * !X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * !B1 * C1 * !X)	0.00312	0.00313	0.00312
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	0.00311	0.00312	0.00312
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00050	-0.00068	-0.00070
	(!A1 * !A2 * B1 * !C1 * !X)	0.00329	0.00323	0.00320
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00058	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * C1 * !X)	0.00326	0.00323	0.00320
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00065	-0.00070	-0.00072
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00319	0.00318	0.00319

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00047	-0.00049	-0.00072
	(A2 * B1 * C1 * X)	0.00459	0.00460	0.00439
	(A2 * B1 * !C1 * !X)	-0.00106	-0.00109	-0.00106
	(A2 * B1 * !C1 * !X)	0.00598	0.00600	0.00598
	(A2 * !B1 * C1 * !X)	-0.00106	-0.00109	-0.00107
	(A2 * !B1 * C1 * !X)	0.00597	0.00600	0.00597
	(A2 * !B1 * !C1 * !X)	-0.00110	-0.00112	-0.00110
	(A2 * !B1 * !C1 * !X)	0.00594	0.00598	0.00595
	(A1 * !A2 * B1 * C1 * X)	0.00030	0.00025	-0.00026
	(A1 * !A2 * B1 * C1 * X)	0.00521	0.00523	0.00481
	(A1 * !A2 * B1 * !C1 * !X)	-0.00105	-0.00109	-0.00107
	(A1 * !A2 * B1 * !C1 * !X)	0.00586	0.00591	0.00588
	(A1 * !A2 * !B1 * C1 * !X)	-0.00106	-0.00109	-0.00107
	(A1 * !A2 * !B1 * C1 * !X)	0.00587	0.00590	0.00587
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00109	-0.00112	-0.00110
	(A1 * !A2 * !B1 * !C1 * !X)	0.00585	0.00589	0.00586
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00062	-0.00093	-0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	0.00620	0.00604	0.00601
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00075	-0.00098	-0.00100
	(!A1 * !A2 * !B1 * C1 * !X)	0.00613	0.00602	0.00601
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00101	-0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00598	0.00598	0.00598

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00187	0.00189	0.00188
	(A3 * !C1 * !X)	-0.00169	-0.00171	-0.00170
	(A2 * !A3 * !C1 * !X)	0.00187	0.00189	0.00188
	(A2 * !A3 * !C1 * !X)	-0.00169	-0.00171	-0.00170
	(A1 * !A2 * !A3 * !C1 * !X)	0.00187	0.00188	0.00187
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00169	-0.00171	-0.00170
	(!A1 * !A2 * !A3 * C1 * !X)	0.00117	0.00117	0.00112
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00137	0.00138	0.00138
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00245	0.00247	0.00246
	(A3 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(A2 * !A3 * !C1 * !X)	0.00245	0.00247	0.00246
	(A2 * !A3 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * !A3 * !C1 * !X)	0.00245	0.00246	0.00246
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(!A1 * !A2 * !A3 * C1 * !X)	0.00153	0.00153	0.00152
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00139	-0.00139	-0.00138
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00139	-0.00141	-0.00139
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00484	0.00488	0.00485
	(A3 * !C1 * !X)	-0.00298	-0.00300	-0.00297
	(A2 * !A3 * !C1 * !X)	0.00483	0.00487	0.00485
	(A2 * !A3 * !C1 * !X)	-0.00297	-0.00300	-0.00297
	(A1 * !A2 * !A3 * !C1 * !X)	0.00484	0.00487	0.00485
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00298	-0.00300	-0.00297
	(!A1 * !A2 * !A3 * C1 * !X)	0.00323	0.00325	0.00322
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00301	-0.00303	-0.00301
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00369	0.00371	0.00369
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00303	-0.00305	-0.00302

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00079	-0.00093	-0.00096
	(A3 * !C1 * !X)	0.00278	0.00267	0.00261
	(A2 * !A3 * !C1 * !X)	-0.00079	-0.00093	-0.00096
	(A2 * !A3 * !C1 * !X)	0.00280	0.00267	0.00261
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00077	-0.00094	-0.00096
	(A1 * !A2 * !A3 * !C1 * !X)	0.00282	0.00266	0.00261
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00016	-0.00016	-0.00017
	(!A1 * !A2 * !A3 * C1 * !X)	0.00270	0.00270	0.00264
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00047	-0.00051	-0.00051
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00280	0.00276	0.00266
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00050	-0.00067	-0.00069
	(A3 * !C1 * !X)	0.00330	0.00316	0.00311
	(A2 * !A3 * !C1 * !X)	-0.00049	-0.00068	-0.00069
	(A2 * !A3 * !C1 * !X)	0.00331	0.00316	0.00311
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00048	-0.00067	-0.00069
	(A1 * !A2 * !A3 * !C1 * !X)	0.00334	0.00315	0.00311
	(!A1 * !A2 * !A3 * C1 * !X)	0.00029	0.00029	0.00028
	(!A1 * !A2 * !A3 * C1 * !X)	0.00321	0.00321	0.00315
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00002	-0.00005	-0.00005
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00333	0.00329	0.00319

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00088	-0.00126	-0.00130
	(A3 * !C1 * !X)	0.00692	0.00660	0.00652
	(A2 * !A3 * !C1 * !X)	-0.00088	-0.00126	-0.00130
	(A2 * !A3 * !C1 * !X)	0.00698	0.00661	0.00652
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00082	-0.00125	-0.00130
	(A1 * !A2 * !A3 * !C1 * !X)	0.00700	0.00663	0.00652
	(!A1 * !A2 * !A3 * C1 * !X)	0.00042	0.00041	0.00039
	(!A1 * !A2 * !A3 * C1 * !X)	0.00672	0.00677	0.00658
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00013	-0.00023	-0.00024
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00686	0.00685	0.00663

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00098	0.00098	0.00096
	(A3 * !B1 * !X)	-0.00201	-0.00202	-0.00205
	(A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00096
	(A2 * !A3 * !B1 * !X)	-0.00201	-0.00202	-0.00205
	(!A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00096
	(!A2 * !A3 * !B1 * !X)	-0.00201	-0.00201	-0.00205
	(!A1 * !A2 * !A3 * B1 * !X)	0.00114	0.00114	0.00102
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00182	-0.00183	-0.00202
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00148	0.00147	0.00145
	(A3 * !B1 * !X)	-0.00161	-0.00161	-0.00166
	(A2 * !A3 * !B1 * !X)	0.00148	0.00147	0.00145
	(A2 * !A3 * !B1 * !X)	-0.00161	-0.00161	-0.00166
	(!A2 * !A3 * !B1 * !X)	0.00148	0.00147	0.00145
	(!A2 * !A3 * !B1 * !X)	-0.00161	-0.00161	-0.00166
	(!A1 * !A2 * !A3 * B1 * !X)	0.00156	0.00155	0.00147
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00146	-0.00147	-0.00164
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00285	0.00286	0.00279
	(A3 * !B1 * !X)	-0.00289	-0.00292	-0.00303
	(A2 * !A3 * !B1 * !X)	0.00285	0.00286	0.00279
	(A2 * !A3 * !B1 * !X)	-0.00290	-0.00293	-0.00303
	(!A2 * !A3 * !B1 * !X)	0.00285	0.00286	0.00279
	(!A2 * !A3 * !B1 * !X)	-0.00290	-0.00292	-0.00304
	(!A1 * !A2 * !A3 * B1 * !X)	0.00301	0.00302	0.00280
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00254	-0.00258	-0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00007	-0.00008	-0.00007
	(A3 * !B1 * !X)	0.00293	0.00297	0.00294
	(A2 * !A3 * !B1 * !X)	-0.00007	-0.00008	-0.00007
	(A2 * !A3 * !B1 * !X)	0.00293	0.00297	0.00294
	(!A2 * !A3 * !B1 * !X)	-0.00007	-0.00008	-0.00007
	(!A2 * !A3 * !B1 * !X)	0.00293	0.00297	0.00294
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00008	-0.00008	-0.00008
	(!A1 * !A2 * !A3 * B1 * !X)	0.00293	0.00295	0.00294
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00030	0.00029	0.00030
	(A3 * !B1 * !X)	0.00339	0.00344	0.00340
	(A2 * !A3 * !B1 * !X)	0.00030	0.00029	0.00030
	(A2 * !A3 * !B1 * !X)	0.00339	0.00344	0.00340
	(!A2 * !A3 * !B1 * !X)	0.00030	0.00029	0.00030
	(!A2 * !A3 * !B1 * !X)	0.00339	0.00344	0.00340
	(!A1 * !A2 * !A3 * B1 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * !A3 * B1 * !X)	0.00340	0.00342	0.00341
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00070	0.00069	0.00072
	(A3 * !B1 * !X)	0.00654	0.00660	0.00652
	(A2 * !A3 * !B1 * !X)	0.00071	0.00069	0.00072
	(A2 * !A3 * !B1 * !X)	0.00652	0.00660	0.00652
	(!A2 * !A3 * !B1 * !X)	0.00071	0.00069	0.00072
	(!A2 * !A3 * !B1 * !X)	0.00652	0.00660	0.00652
	(!A1 * !A2 * !A3 * B1 * !X)	0.00079	0.00079	0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	0.00651	0.00653	0.00653

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00280	0.00326	0.00318	0.00289	0.45142
sky130_fd_sc_hs__o31ai_2	0.00574	0.00561	0.00586	0.00577	0.78183
sky130_fd_sc_hs__o31ai_4	0.01105	0.01103	0.01141	0.00838	1.40608

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	30.53240	98.93060
sky130_fd_sc_hs__o31ai_2	0.00000	61.04170	197.83000
sky130_fd_sc_hs__o31ai_4	0.00000	78.62540	296.35900

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)	0.13515	0.86717	8.37656
	A2->Y (FR)	0.12812	0.90583	9.00737
	A3->Y (FR)	0.09920	0.90793	9.38715
	B1->Y (FR)	0.02875	0.48581	5.33857
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.14576	0.75365	8.23063
	A2->Y (FR)	0.12911	0.78165	8.84137
	A3->Y (FR)	0.09852	0.80344	9.42481
	B1->Y (FR)	0.02565	0.42395	5.23675
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.13702	0.62557	7.88086
	A2->Y (FR)	0.12195	0.66234	8.59095
	A3->Y (FR)	0.08820	0.68893	9.23649
	B1->Y (FR)	0.03253	0.51631	7.21966

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.04774	0.38081	3.64933
	A2->Y (RF)	0.04752	0.37324	3.61811
	A3->Y (RF)	0.03702	0.35565	3.55099
	B1->Y (RF)	0.04097	0.44492	4.48781
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.04870	0.33243	3.54165
	A2->Y (RF)	0.04617	0.31811	3.48946
	A3->Y (RF)	0.03658	0.30235	3.43326
	B1->Y (RF)	0.03836	0.39403	4.43358
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.05020	0.28000	3.40253
	A2->Y (RF)	0.04560	0.26173	3.30194
	A3->Y (RF)	0.03238	0.23588	3.13633
	B1->Y (RF)	0.03861	0.36387	4.62391

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00106	0.00212	0.03614
	A1	0.01054	0.01161	0.04582
	A2	0.00111	0.00233	0.03279
	A2	0.00961	0.01083	0.04124
	A3	0.00107	0.00328	0.03917
	A3	0.00816	0.01016	0.04623
	B1	-0.00039	0.00358	0.05915
	B1	0.00483	0.00882	0.06492
sky130_fd_sc_hs__o31ai_2	A1	0.00218	0.00406	0.07013
	A1	0.02137	0.02324	0.08920
	A2	0.00225	0.00495	0.06410
	A2	0.01844	0.02110	0.08024
	A3	0.00214	0.00659	0.07222
	A3	0.01572	0.02017	0.08573
	B1	-0.00176	0.00671	0.11256
	B1	0.00810	0.01669	0.12281
sky130_fd_sc_hs__o31ai_4	A1	0.00340	0.00774	0.13330
	A1	0.04071	0.04506	0.17086
	A2	0.00349	0.00927	0.11990
	A2	0.03520	0.04091	0.15130
	A3	0.00322	0.01276	0.13585
	A3	0.02958	0.03914	0.16227
	B1	-0.00333	0.00784	0.12907
	B1	0.01144	0.02255	0.14421

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01365	0.01483	0.04431
	A1	0.00415	0.00529	0.03465
	A2	0.01148	0.01271	0.04001
	A2	0.00297	0.00417	0.03142
	A3	0.00889	0.01037	0.03634
	A3	0.00181	0.00325	0.02899
	B1	0.00623	0.00886	0.04928
	B1	0.00100	0.00363	0.04406
sky130_fd_sc_hs__o31ai_2	A1	0.02820	0.03037	0.08739
	A1	0.00898	0.01112	0.06821
	A2	0.02205	0.02473	0.07809
	A2	0.00583	0.00845	0.06158
	A3	0.01712	0.02016	0.06901
	A3	0.00348	0.00654	0.05533
	B1	0.01170	0.01768	0.09826
	B1	0.00183	0.00781	0.08829
sky130_fd_sc_hs__o31ai_4	A1	0.05166	0.05677	0.17300
	A1	0.01429	0.01934	0.13519
	A2	0.04003	0.04593	0.15208
	A2	0.00827	0.01414	0.12040
	A3	0.02957	0.03678	0.13590
	A3	0.00314	0.01037	0.10885
	B1	0.01788	0.02546	0.11192
	B1	0.00313	0.01066	0.09703

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)**	0.00243	0.00225	0.00223
	(A2 * A3 * B1 * !Y)	-0.00155	-0.00174	-0.00175
	(A2 * !B1 * Y)	0.00176	0.00177	0.00176
	(A2 * !B1 * Y)	-0.00221	-0.00223	-0.00222
	(A2 * !A3 * B1 * !Y)	0.00278	0.00244	0.00245
	(A2 * !A3 * B1 * !Y)	-0.00124	-0.00159	-0.00153
	(!A2 * A3 * B1 * !Y)	0.00300	0.00257	0.00261
	(!A2 * A3 * B1 * !Y)	-0.00104	-0.00150	-0.00138
	(!A2 * A3 * !B1 * Y)	0.00176	0.00177	0.00176
	(!A2 * A3 * !B1 * Y)	-0.00215	-0.00220	-0.00220
	(!A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00170
	(!A2 * !A3 * !B1 * Y)	-0.00223	-0.00223	-0.00222
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00500	0.00457	0.00448
	(A2 * A3 * B1 * !Y)	-0.00314	-0.00363	-0.00365
	(A2 * !B1 * Y)	0.00355	0.00357	0.00354
	(A2 * !B1 * Y)	-0.00458	-0.00462	-0.00460
	(A2 * !A3 * B1 * !Y)	0.00587	0.00502	0.00493
	(A2 * !A3 * B1 * !Y)	-0.00237	-0.00326	-0.00322
	(!A2 * A3 * B1 * !Y)	0.00624	0.00526	0.00526
	(!A2 * A3 * B1 * !Y)	-0.00201	-0.00308	-0.00290
	(!A2 * A3 * !B1 * Y)	0.00353	0.00357	0.00354
	(!A2 * A3 * !B1 * Y)	-0.00443	-0.00456	-0.00453
	(!A2 * !A3 * !B1 * Y)	0.00342	0.00344	0.00342
	(!A2 * !A3 * !B1 * Y)	-0.00463	-0.00464	-0.00461

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00886	0.00803	0.00786
	(A2 * A3 * B1 * !Y)	-0.00713	-0.00804	-0.00808
	(A2 * !B1 * Y)	0.00687	0.00690	0.00683
	(A2 * !B1 * Y)	-0.00908	-0.00914	-0.00910
	(A2 * !A3 * B1 * !Y)	0.01053	0.00892	0.00875
	(A2 * !A3 * B1 * !Y)	-0.00565	-0.00732	-0.00720
	(!A2 * A3 * B1 * !Y)	0.01122	0.00941	0.00940
	(!A2 * A3 * B1 * !Y)	-0.00499	-0.00694	-0.00658
	(!A2 * A3 * !B1 * Y)	0.00686	0.00690	0.00683
	(!A2 * A3 * !B1 * Y)	-0.00881	-0.00900	-0.00898
	(!A2 * !A3 * !B1 * Y)	0.00655	0.00658	0.00659
	(!A2 * !A3 * !B1 * Y)	-0.00913	-0.00915	-0.00913

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)**	-0.00125	-0.00126	-0.00125
	(A2 * A3 * B1 * !Y)	0.00272	0.00274	0.00272
	(A2 * !B1 * Y)	-0.00172	-0.00174	-0.00173
	(A2 * !B1 * Y)	0.00224	0.00227	0.00225
	(A2 * !A3 * B1 * !Y)	-0.00105	-0.00107	-0.00109
	(A2 * !A3 * B1 * !Y)	0.00294	0.00297	0.00291
	(!A2 * A3 * B1 * !Y)	-0.00088	-0.00089	-0.00093
	(!A2 * A3 * B1 * !Y)	0.00312	0.00314	0.00309
	(!A2 * A3 * !B1 * Y)	-0.00172	-0.00173	-0.00172
	(!A2 * A3 * !B1 * Y)	0.00219	0.00220	0.00220
	(!A2 * !A3 * !B1 * Y)	-0.00153	-0.00166	-0.00168
	(!A2 * !A3 * !B1 * Y)	0.00238	0.00231	0.00226

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00251	-0.00252	-0.00252
	(A2 * A3 * B1 * !Y)	0.00559	0.00562	0.00560
	(A2 * !B1 * Y)	-0.00347	-0.00350	-0.00348
	(A2 * !B1 * Y)	0.00463	0.00468	0.00464
	(A2 * !A3 * B1 * !Y)	-0.00211	-0.00213	-0.00217
	(A2 * !A3 * B1 * !Y)	0.00608	0.00609	0.00601
	(!A2 * A3 * B1 * !Y)	-0.00178	-0.00180	-0.00187
	(!A2 * A3 * B1 * !Y)	0.00640	0.00641	0.00633
	(!A2 * A3 * !B1 * Y)	-0.00347	-0.00349	-0.00348
	(!A2 * A3 * !B1 * Y)	0.00452	0.00456	0.00453
	(!A2 * !A3 * !B1 * Y)	-0.00298	-0.00334	-0.00337
	(!A2 * !A3 * !B1 * Y)	0.00500	0.00476	0.00469
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00567	-0.00570	-0.00567
	(A2 * A3 * B1 * !Y)	0.01024	0.01030	0.01025
	(A2 * !B1 * Y)	-0.00669	-0.00674	-0.00671
	(A2 * !B1 * Y)	0.00915	0.00923	0.00919
	(A2 * !A3 * B1 * !Y)	-0.00484	-0.00488	-0.00498
	(A2 * !A3 * B1 * !Y)	0.01118	0.01120	0.01106
	(!A2 * A3 * B1 * !Y)	-0.00417	-0.00426	-0.00437
	(!A2 * A3 * B1 * !Y)	0.01183	0.01193	0.01170
	(!A2 * A3 * !B1 * Y)	-0.00670	-0.00672	-0.00671
	(!A2 * A3 * !B1 * Y)	0.00895	0.00900	0.00898
	(!A2 * !A3 * !B1 * Y)	-0.00576	-0.00644	-0.00651
	(!A2 * !A3 * !B1 * Y)	0.00983	0.00941	0.00929

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)**	0.00261	0.00265	0.00254
	(A1 * A3 * B1 * !Y)	-0.00098	-0.00098	-0.00102
	(A1 * A3 * !B1 * Y)	0.00174	0.00176	0.00174
	(A1 * A3 * !B1 * Y)	-0.00188	-0.00190	-0.00186
	(A1 * !A3 * B1 * !Y)	0.00263	0.00263	0.00259
	(A1 * !A3 * B1 * !Y)	-0.00053	-0.00053	-0.00054
	(A1 * !A3 * !B1 * Y)	0.00176	0.00175	0.00174
	(A1 * !A3 * !B1 * Y)	-0.00256	-0.00255	-0.00254
	(!A1 * A3 * B1 * !Y)	0.00324	0.00272	0.00284
	(!A1 * A3 * B1 * !Y)	-0.00111	-0.00163	-0.00145
	(!A1 * A3 * !B1 * Y)	0.00175	0.00176	0.00174
	(!A1 * A3 * !B1 * Y)	-0.00256	-0.00256	-0.00254
	(!A1 * !A3 * !B1 * Y)	0.00168	0.00169	0.00168
	(!A1 * !A3 * !B1 * Y)	-0.00255	-0.00255	-0.00254
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00487	0.00491	0.00469
	(A1 * A3 * B1 * !Y)	-0.00182	-0.00188	-0.00196
	(A1 * A3 * !B1 * Y)	0.00345	0.00347	0.00343
	(A1 * A3 * !B1 * Y)	-0.00329	-0.00332	-0.00324
	(A1 * !A3 * B1 * !Y)	0.00480	0.00479	0.00473
	(A1 * !A3 * B1 * !Y)	-0.00094	-0.00093	-0.00096
	(A1 * !A3 * !B1 * Y)	0.00345	0.00345	0.00344
	(A1 * !A3 * !B1 * Y)	-0.00461	-0.00460	-0.00458
	(!A1 * A3 * B1 * !Y)	0.00596	0.00488	0.00519
	(!A1 * A3 * B1 * !Y)	-0.00217	-0.00321	-0.00286
	(!A1 * A3 * !B1 * Y)	0.00345	0.00344	0.00343
	(!A1 * A3 * !B1 * Y)	-0.00462	-0.00460	-0.00458
	(!A1 * !A3 * !B1 * Y)	0.00330	0.00333	0.00331
	(!A1 * !A3 * !B1 * Y)	-0.00459	-0.00461	-0.00459

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00878	0.00888	0.00842
	(A1 * A3 * B1 * !Y)	-0.00451	-0.00461	-0.00477
	(A1 * A3 * !B1 * Y)	0.00676	0.00688	0.00680
	(A1 * A3 * !B1 * Y)	-0.00657	-0.00663	-0.00647
	(A1 * !A3 * B1 * !Y)	0.00864	0.00870	0.00853
	(A1 * !A3 * B1 * !Y)	-0.00268	-0.00273	-0.00279
	(A1 * !A3 * !B1 * Y)	0.00677	0.00685	0.00680
	(A1 * !A3 * !B1 * Y)	-0.00916	-0.00922	-0.00916
	(!A1 * A3 * B1 * !Y)	0.01105	0.00891	0.00946
	(!A1 * A3 * B1 * !Y)	-0.00503	-0.00728	-0.00655
	(!A1 * A3 * !B1 * Y)	0.00677	0.00683	0.00679
	(!A1 * A3 * !B1 * Y)	-0.00917	-0.00922	-0.00917
	(!A1 * !A3 * !B1 * Y)	0.00650	0.00654	0.00654
	(!A1 * !A3 * !B1 * Y)	-0.00917	-0.00920	-0.00918

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

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

sky130_fd_sc_hs__o31ai_1	**(A1 * A3 * B1 * !Y)**	-0.00153	-0.00155	-0.00153
	(A1 * A3 * B1 * !Y)	0.00197	0.00199	0.00196
	(A1 * A3 * !B1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * A3 * !B1 * Y)	0.00188	0.00190	0.00186
	(A1 * !A3 * B1 * !Y)	-0.00138	-0.00140	-0.00151
	(A1 * !A3 * B1 * !Y)	0.00178	0.00178	0.00166
	(A1 * !A3 * !B1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A3 * !B1 * Y)	0.00257	0.00259	0.00257
	(!A1 * A3 * B1 * !Y)	-0.00112	-0.00114	-0.00119
	(!A1 * A3 * B1 * !Y)	0.00319	0.00320	0.00312
	(!A1 * A3 * !B1 * Y)	-0.00170	-0.00172	-0.00171
	(!A1 * A3 * !B1 * Y)	0.00256	0.00258	0.00257
	(!A1 * !A3 * !B1 * Y)	-0.00149	-0.00163	-0.00166
	(!A1 * !A3 * !B1 * Y)	0.00273	0.00262	0.00258
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00260	-0.00263	-0.00259
	(A1 * A3 * B1 * !Y)	0.00388	0.00392	0.00388
	(A1 * A3 * !B1 * Y)	-0.00337	-0.00340	-0.00337
	(A1 * A3 * !B1 * Y)	0.00329	0.00332	0.00324
	(A1 * !A3 * B1 * !Y)	-0.00221	-0.00226	-0.00252
	(A1 * !A3 * B1 * !Y)	0.00349	0.00351	0.00325
	(A1 * !A3 * !B1 * Y)	-0.00337	-0.00339	-0.00337
	(A1 * !A3 * !B1 * Y)	0.00463	0.00466	0.00463
	(!A1 * A3 * B1 * !Y)	-0.00173	-0.00177	-0.00188
	(!A1 * A3 * B1 * !Y)	0.00634	0.00635	0.00620
	(!A1 * A3 * !B1 * Y)	-0.00336	-0.00339	-0.00337
	(!A1 * A3 * !B1 * Y)	0.00463	0.00467	0.00465
	(!A1 * !A3 * !B1 * Y)	-0.00289	-0.00323	-0.00327
	(!A1 * !A3 * !B1 * Y)	0.00496	0.00472	0.00467

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00601	-0.00606	-0.00598
	(A1 * A3 * B1 * !Y)	0.00689	0.00695	0.00687
	(A1 * A3 * !B1 * Y)	-0.00668	-0.00672	-0.00668
	(A1 * A3 * !B1 * Y)	0.00657	0.00663	0.00647
	(A1 * !A3 * B1 * !Y)	-0.00528	-0.00531	-0.00586
	(A1 * !A3 * B1 * !Y)	0.00609	0.00608	0.00561
	(A1 * !A3 * !B1 * Y)	-0.00667	-0.00670	-0.00667
	(A1 * !A3 * !B1 * Y)	0.00926	0.00930	0.00926
	(!A1 * A3 * B1 * !Y)	-0.00425	-0.00435	-0.00457
	(!A1 * A3 * B1 * !Y)	0.01178	0.01181	0.01152
	(!A1 * A3 * !B1 * Y)	-0.00667	-0.00669	-0.00667
	(!A1 * A3 * !B1 * Y)	0.00928	0.00932	0.00929
	(!A1 * !A3 * !B1 * Y)	-0.00576	-0.00642	-0.00647
	(!A1 * !A3 * !B1 * Y)	0.00996	0.00944	0.00933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00254	0.00258	0.00255
	(A2 * B1 * !Y)	-0.00051	-0.00053	-0.00051
	(A2 * !B1 * Y)	0.00169	0.00170	0.00167
	(A2 * !B1 * Y)	-0.00252	-0.00253	-0.00251
	(A1 * !A2 * B1 * !Y)	0.00254	0.00257	0.00257
	(A1 * !A2 * B1 * !Y)	-0.00043	-0.00044	-0.00042
	(A1 * !A2 * !B1 * Y)	0.00169	0.00169	0.00167
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00250	-0.00248
	(!A1 * !A2 * !B1 * Y)	0.00162	0.00163	0.00162
	(!A1 * !A2 * !B1 * Y)	-0.00252	-0.00252	-0.00251

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00483	0.00489	0.00483
	(A2 * B1 * !Y)	-0.00101	-0.00104	-0.00100
	(A2 * !B1 * Y)	0.00335	0.00336	0.00336
	(A2 * !B1 * Y)	-0.00471	-0.00476	-0.00475
	(A1 * !A2 * B1 * !Y)	0.00486	0.00491	0.00488
	(A1 * !A2 * B1 * !Y)	-0.00087	-0.00088	-0.00082
	(A1 * !A2 * !B1 * Y)	0.00334	0.00335	0.00335
	(A1 * !A2 * !B1 * Y)	-0.00457	-0.00466	-0.00467
	(!A1 * !A2 * !B1 * Y)	0.00322	0.00324	0.00323
	(!A1 * !A2 * !B1 * Y)	-0.00476	-0.00477	-0.00476
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00866	0.00863	0.00864
	(A2 * B1 * !Y)	-0.00289	-0.00286	-0.00285
	(A2 * !B1 * Y)	0.00657	0.00665	0.00659
	(A2 * !B1 * Y)	-0.00934	-0.00947	-0.00943
	(A1 * !A2 * B1 * !Y)	0.00864	0.00880	0.00873
	(A1 * !A2 * B1 * !Y)	-0.00253	-0.00261	-0.00249
	(A1 * !A2 * !B1 * Y)	0.00662	0.00663	0.00659
	(A1 * !A2 * !B1 * Y)	-0.00911	-0.00921	-0.00921
	(!A1 * !A2 * !B1 * Y)	0.00632	0.00638	0.00635
	(!A1 * !A2 * !B1 * Y)	-0.00944	-0.00949	-0.00944

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00152	-0.00155	-0.00163
	(A2 * B1 * !Y)	0.00150	0.00151	0.00144
	(A2 * !B1 * Y)	-0.00163	-0.00165	-0.00164
	(A2 * !B1 * Y)	0.00252	0.00254	0.00253
	(A1 * !A2 * B1 * !Y)	-0.00123	-0.00126	-0.00146
	(A1 * !A2 * B1 * !Y)	0.00174	0.00175	0.00159
	(A1 * !A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * Y)	0.00247	0.00250	0.00248
	(!A1 * !A2 * !B1 * Y)	-0.00144	-0.00158	-0.00160
	(!A1 * !A2 * !B1 * Y)	0.00268	0.00261	0.00255
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00281	-0.00282	-0.00301
	(A2 * B1 * !Y)	0.00299	0.00299	0.00286
	(A2 * !B1 * Y)	-0.00329	-0.00330	-0.00329
	(A2 * !B1 * Y)	0.00478	0.00480	0.00479
	(A1 * !A2 * B1 * !Y)	-0.00213	-0.00216	-0.00266
	(A1 * !A2 * B1 * !Y)	0.00354	0.00354	0.00318
	(A1 * !A2 * !B1 * Y)	-0.00329	-0.00329	-0.00329
	(A1 * !A2 * !B1 * Y)	0.00466	0.00466	0.00467
	(!A1 * !A2 * !B1 * Y)	-0.00285	-0.00317	-0.00320
	(!A1 * !A2 * !B1 * Y)	0.00512	0.00488	0.00483
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00628	-0.00633	-0.00669
	(A2 * B1 * !Y)	0.00513	0.00513	0.00485
	(A2 * !B1 * Y)	-0.00645	-0.00651	-0.00647
	(A2 * !B1 * Y)	0.00946	0.00957	0.00950
	(A1 * !A2 * B1 * !Y)	-0.00500	-0.00503	-0.00602
	(A1 * !A2 * B1 * !Y)	0.00620	0.00617	0.00546
	(A1 * !A2 * !B1 * Y)	-0.00647	-0.00647	-0.00647
	(A1 * !A2 * !B1 * Y)	0.00921	0.00921	0.00921
	(!A1 * !A2 * !B1 * Y)	-0.00565	-0.00625	-0.00629
	(!A1 * !A2 * !B1 * Y)	0.01014	0.00971	0.00960

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)	0.00067	0.00067	0.00061
	(!A1 * !A2 * !A3 * Y)	-0.00251	-0.00252	-0.00264
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00132	0.00133	0.00118
	(!A1 * !A2 * !A3 * Y)	-0.00498	-0.00501	-0.00527
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00237	0.00237	0.00210
	(!A1 * !A2 * !A3 * Y)	-0.00559	-0.00563	-0.00612

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)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * !A3 * Y)	0.00267	0.00267	0.00268
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00107	-0.00107	-0.00106
	(!A1 * !A2 * !A3 * Y)	0.00534	0.00536	0.00535
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00188	-0.00190	-0.00188
	(!A1 * !A2 * !A3 * Y)	0.00623	0.00628	0.00626

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00274	0.00268	0.00267	0.00245	1.27461
sky130_fd_sc_hs__o31a_2	0.00290	0.00283	0.00283	0.00294	2.20076
sky130_fd_sc_hs__o31a_4	0.00500	0.00531	0.00524	0.00520	4.76518

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	84.16450	169.74000
sky130_fd_sc_hs__o31a_2	0.00000	97.80260	137.98200
sky130_fd_sc_hs__o31a_4	0.00000	196.07400	275.81600

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)	0.09267	0.56413	6.21072
	A2->X (RR)	0.08898	0.55141	6.05569
	A3->X (RR)	0.07585	0.52553	5.94657
	B1->X (RR)	0.08354	0.59464	6.76821
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.09639	0.48964	5.82933
	A2->X (RR)	0.09314	0.47917	5.70789
	A3->X (RR)	0.08012	0.45705	5.61063
	B1->X (RR)	0.08814	0.52976	6.61289
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.10314	0.43085	6.18929
	A2->X (RR)	0.09814	0.41510	6.01204
	A3->X (RR)	0.08300	0.39291	5.94072
	B1->X (RR)	0.09375	0.47491	6.86555

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.18899	0.58521	5.18381
	A2->X (FF)	0.17531	0.60947	5.45553
	A3->X (FF)	0.14745	0.61155	5.54919
	B1->X (FF)	0.06665	0.45439	4.93453
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.23789	0.60330	4.97012
	A2->X (FF)	0.22369	0.63075	5.23944
	A3->X (FF)	0.19531	0.63843	5.33453
	B1->X (FF)	0.07043	0.41269	4.44307
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.24197	0.57537	5.45894
	A2->X (FF)	0.22789	0.60009	5.64014
	A3->X (FF)	0.18959	0.59990	5.71602
	B1->X (FF)	0.06914	0.39835	4.80956

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01845	0.02070	0.08171
	A1	0.00998	0.01223	0.07369
	A2	0.01627	0.01885	0.07460
	A2	0.00907	0.01165	0.06792
	A3	0.01454	0.01764	0.07808
	A3	0.00848	0.01158	0.07254
	B1	0.01124	0.01789	0.12502
	B1	0.00692	0.01358	0.12095
sky130_fd_sc_hs__o31a_2	A1	0.02182	0.02380	0.07706
	A1	0.01284	0.01485	0.06818
	A2	0.01949	0.02187	0.07070
	A2	0.01184	0.01424	0.06333
	A3	0.01765	0.02051	0.07336
	A3	0.01109	0.01395	0.06727
	B1	0.01417	0.02101	0.13604
	B1	0.00908	0.01594	0.13174
sky130_fd_sc_hs__o31a_4	A1	0.04308	0.04803	0.19261
	A1	0.02646	0.03145	0.17787
	A2	0.03849	0.04400	0.17468
	A2	0.02374	0.02928	0.16198
	A3	0.03330	0.04002	0.17789
	A3	0.02140	0.02816	0.16586
	B1	0.02633	0.03926	0.24555
	B1	0.01767	0.03066	0.23787

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00668	0.00844	0.07773
	A1	0.01514	0.01689	0.08478
	A2	0.00670	0.00894	0.07417
	A2	0.01388	0.01611	0.08113
	A3	0.00668	0.01022	0.08118
	A3	0.01272	0.01626	0.08670
	B1	0.00450	0.01170	0.11668
	B1	0.01015	0.01694	0.11728
sky130_fd_sc_hs__o31a_2	A1	0.01384	0.01254	0.08231
	A1	0.02277	0.02135	0.08730
	A2	0.01389	0.01300	0.07703
	A2	0.02151	0.02061	0.08276
	A3	0.01388	0.01427	0.08305
	A3	0.02042	0.02081	0.08847
	B1	0.00825	0.01567	0.12693
	B1	0.01482	0.02166	0.12811
sky130_fd_sc_hs__o31a_4	A1	0.02930	0.02645	0.17226
	A1	0.04583	0.04300	0.18482
	A2	0.02875	0.02693	0.15543
	A2	0.04344	0.04154	0.16892
	A3	0.02921	0.02993	0.16590
	A3	0.04104	0.04169	0.17768
	B1	0.01746	0.03050	0.24098
	B1	0.03123	0.04347	0.24135

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)**	0.00281	0.00264	0.00261
	(A2 * A3 * B1 * X)	-0.00084	-0.00103	-0.00104
	(A2 * !B1 * !X)	0.00188	0.00189	0.00188
	(A2 * !B1 * !X)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * B1 * X)	0.00317	0.00285	0.00291
	(A2 * !A3 * B1 * X)	-0.00053	-0.00086	-0.00075
	(!A2 * A3 * B1 * X)	0.00340	0.00300	0.00314
	(!A2 * A3 * B1 * X)	-0.00033	-0.00076	-0.00054
	(!A2 * A3 * !B1 * !X)	0.00188	0.00189	0.00188
	(!A2 * A3 * !B1 * !X)	-0.00171	-0.00175	-0.00175
	(!A2 * !A3 * !B1 * !X)	0.00185	0.00185	0.00184
	(!A2 * !A3 * !B1 * !X)	-0.00178	-0.00177	-0.00177
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00271	0.00254	0.00251
	(A2 * A3 * B1 * X)	-0.00119	-0.00138	-0.00139
	(A2 * !B1 * !X)	0.00259	0.00260	0.00259
	(A2 * !B1 * !X)	-0.00130	-0.00132	-0.00131
	(A2 * !A3 * B1 * X)	0.00308	0.00275	0.00281
	(A2 * !A3 * B1 * X)	-0.00087	-0.00121	-0.00110
	(!A2 * A3 * B1 * X)	0.00332	0.00291	0.00304
	(!A2 * A3 * B1 * X)	-0.00066	-0.00111	-0.00089
	(!A2 * A3 * !B1 * !X)	0.00258	0.00260	0.00259
	(!A2 * A3 * !B1 * !X)	-0.00125	-0.00130	-0.00129
	(!A2 * !A3 * !B1 * !X)	0.00254	0.00255	0.00254
	(!A2 * !A3 * !B1 * !X)	-0.00131	-0.00132	-0.00131

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00469	0.00430	0.00420
	(A2 * A3 * B1 * X)	-0.00229	-0.00272	-0.00276
	(A2 * !B1 * !X)	0.00458	0.00459	0.00458
	(A2 * !B1 * !X)	-0.00238	-0.00240	-0.00238
	(A2 * !A3 * B1 * X)	0.00557	0.00481	0.00484
	(A2 * !A3 * B1 * X)	-0.00154	-0.00231	-0.00214
	(!A2 * A3 * B1 * X)	0.00602	0.00506	0.00523
	(!A2 * A3 * B1 * X)	-0.00114	-0.00216	-0.00179
	(!A2 * A3 * !B1 * !X)	0.00458	0.00460	0.00458
	(!A2 * A3 * !B1 * !X)	-0.00226	-0.00236	-0.00235
	(!A2 * !A3 * !B1 * !X)	0.00449	0.00450	0.00449
	(!A2 * !A3 * !B1 * !X)	-0.00243	-0.00242	-0.00241

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)**	-0.00070	-0.00072	-0.00071
	(A2 * A3 * B1 * X)	0.00293	0.00296	0.00294
	(A2 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !X)	0.00266	0.00268	0.00267
	(A2 * !A3 * B1 * X)	-0.00045	-0.00046	-0.00051
	(A2 * !A3 * B1 * X)	0.00323	0.00323	0.00318
	(!A2 * A3 * B1 * X)	-0.00019	-0.00021	-0.00027
	(!A2 * A3 * B1 * X)	0.00352	0.00352	0.00344
	(!A2 * A3 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(!A2 * A3 * !B1 * !X)	0.00262	0.00263	0.00263
	(!A2 * !A3 * !B1 * !X)	-0.00079	-0.00092	-0.00094
	(!A2 * !A3 * !B1 * !X)	0.00281	0.00274	0.00268

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00116	-0.00117	-0.00116
	(A2 * A3 * B1 * X)	0.00274	0.00276	0.00274
	(A2 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A2 * !B1 * !X)	0.00305	0.00307	0.00306
	(A2 * !A3 * B1 * X)	-0.00090	-0.00091	-0.00096
	(A2 * !A3 * B1 * X)	0.00303	0.00302	0.00298
	(!A2 * A3 * B1 * X)	-0.00064	-0.00066	-0.00072
	(!A2 * A3 * B1 * X)	0.00331	0.00332	0.00324
	(!A2 * A3 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(!A2 * A3 * !B1 * !X)	0.00302	0.00303	0.00302
	(!A2 * !A3 * !B1 * !X)	-0.00064	-0.00077	-0.00079
	(!A2 * !A3 * !B1 * !X)	0.00320	0.00313	0.00307
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00150	-0.00152	-0.00149
	(A2 * A3 * B1 * X)	0.00542	0.00548	0.00546
	(A2 * !B1 * !X)	-0.00104	-0.00106	-0.00105
	(A2 * !B1 * !X)	0.00588	0.00592	0.00589
	(A2 * !A3 * B1 * X)	-0.00103	-0.00107	-0.00112
	(A2 * !A3 * B1 * X)	0.00599	0.00603	0.00592
	(!A2 * A3 * B1 * X)	-0.00042	-0.00045	-0.00058
	(!A2 * A3 * B1 * X)	0.00665	0.00666	0.00651
	(!A2 * A3 * !B1 * !X)	-0.00105	-0.00106	-0.00105
	(!A2 * A3 * !B1 * !X)	0.00580	0.00583	0.00581
	(!A2 * !A3 * !B1 * !X)	-0.00065	-0.00093	-0.00097
	(!A2 * !A3 * !B1 * !X)	0.00621	0.00606	0.00595

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)**	0.00264	0.00267	0.00259
	(A1 * A3 * B1 * X)	-0.00025	-0.00026	-0.00028
	(A1 * A3 * !B1 * !X)	0.00192	0.00194	0.00193
	(A1 * A3 * !B1 * !X)	-0.00104	-0.00106	-0.00100
	(A1 * !A3 * B1 * X)	0.00266	0.00266	0.00264
	(A1 * !A3 * B1 * X)	0.00013	0.00013	0.00013
	(A1 * !A3 * !B1 * !X)	0.00194	0.00193	0.00193
	(A1 * !A3 * !B1 * !X)	-0.00159	-0.00159	-0.00158
	(!A1 * A3 * B1 * X)	0.00322	0.00277	0.00302
	(!A1 * A3 * B1 * X)	-0.00034	-0.00081	-0.00051
	(!A1 * A3 * !B1 * !X)	0.00194	0.00195	0.00193
	(!A1 * A3 * !B1 * !X)	-0.00159	-0.00159	-0.00158
	(!A1 * !A3 * !B1 * !X)	0.00187	0.00189	0.00188
	(!A1 * !A3 * !B1 * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00254	0.00257	0.00248
	(A1 * A3 * B1 * X)	-0.00057	-0.00057	-0.00060
	(A1 * A3 * !B1 * !X)	0.00253	0.00255	0.00253
	(A1 * A3 * !B1 * !X)	-0.00065	-0.00066	-0.00060
	(A1 * !A3 * B1 * X)	0.00256	0.00256	0.00254
	(A1 * !A3 * B1 * X)	-0.00017	-0.00017	-0.00017
	(A1 * !A3 * !B1 * !X)	0.00254	0.00253	0.00253
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00119	-0.00118
	(!A1 * A3 * B1 * X)	0.00314	0.00267	0.00291
	(!A1 * A3 * B1 * X)	-0.00063	-0.00111	-0.00081
	(!A1 * A3 * !B1 * !X)	0.00254	0.00255	0.00253
	(!A1 * A3 * !B1 * !X)	-0.00119	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00247	0.00250	0.00248
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00503	0.00511	0.00490
	(A1 * A3 * B1 * X)	-0.00120	-0.00119	-0.00127
	(A1 * A3 * !B1 * !X)	0.00507	0.00511	0.00509
	(A1 * A3 * !B1 * !X)	-0.00130	-0.00132	-0.00118
	(A1 * !A3 * B1 * X)	0.00512	0.00518	0.00505
	(A1 * !A3 * B1 * X)	-0.00034	-0.00038	-0.00038
	(A1 * !A3 * !B1 * !X)	0.00506	0.00510	0.00507
	(A1 * !A3 * !B1 * !X)	-0.00237	-0.00240	-0.00237
	(!A1 * A3 * B1 * X)	0.00630	0.00533	0.00572
	(!A1 * A3 * B1 * X)	-0.00122	-0.00226	-0.00175
	(!A1 * A3 * !B1 * !X)	0.00506	0.00511	0.00508
	(!A1 * A3 * !B1 * !X)	-0.00236	-0.00238	-0.00235
	(!A1 * !A3 * !B1 * !X)	0.00497	0.00500	0.00499
	(!A1 * !A3 * !B1 * !X)	-0.00237	-0.00239	-0.00237

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)**	-0.00065	-0.00065	-0.00064
	(A1 * A3 * B1 * X)	0.00218	0.00219	0.00217
	(A1 * A3 * !B1 * !X)	-0.00102	-0.00104	-0.00103
	(A1 * A3 * !B1 * !X)	0.00190	0.00192	0.00187
	(A1 * !A3 * B1 * X)	-0.00041	-0.00042	-0.00059
	(A1 * !A3 * B1 * X)	0.00213	0.00212	0.00196
	(A1 * !A3 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !A3 * !B1 * !X)	0.00248	0.00249	0.00249
	(!A1 * A3 * B1 * X)	-0.00008	-0.00009	-0.00018
	(!A1 * A3 * B1 * X)	0.00346	0.00345	0.00336
	(!A1 * A3 * !B1 * !X)	-0.00102	-0.00103	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00247	0.00250	0.00248
	(!A1 * !A3 * !B1 * !X)	-0.00082	-0.00096	-0.00098
	(!A1 * !A3 * !B1 * !X)	0.00264	0.00255	0.00249
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00109	-0.00110	-0.00109
	(A1 * A3 * B1 * X)	0.00194	0.00195	0.00193
	(A1 * A3 * !B1 * !X)	-0.00077	-0.00079	-0.00077
	(A1 * A3 * !B1 * !X)	0.00236	0.00237	0.00232
	(A1 * !A3 * B1 * X)	-0.00085	-0.00087	-0.00104
	(A1 * !A3 * B1 * X)	0.00187	0.00187	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00076	-0.00078	-0.00077
	(A1 * !A3 * !B1 * !X)	0.00293	0.00295	0.00294
	(!A1 * A3 * B1 * X)	-0.00052	-0.00055	-0.00063
	(!A1 * A3 * B1 * X)	0.00322	0.00322	0.00311
	(!A1 * A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * A3 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A1 * !A3 * !B1 * !X)	-0.00057	-0.00071	-0.00073
	(!A1 * !A3 * !B1 * !X)	0.00307	0.00299	0.00294

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00210	-0.00212	-0.00208
	(A1 * A3 * B1 * X)	0.00398	0.00400	0.00395
	(A1 * A3 * !B1 * !X)	-0.00156	-0.00158	-0.00156
	(A1 * A3 * !B1 * !X)	0.00467	0.00470	0.00462
	(A1 * !A3 * B1 * X)	-0.00170	-0.00173	-0.00199
	(A1 * !A3 * B1 * X)	0.00379	0.00379	0.00351
	(A1 * !A3 * !B1 * !X)	-0.00154	-0.00157	-0.00155
	(A1 * !A3 * !B1 * !X)	0.00589	0.00593	0.00590
	(!A1 * A3 * B1 * X)	-0.00093	-0.00098	-0.00115
	(!A1 * A3 * B1 * X)	0.00658	0.00658	0.00638
	(!A1 * A3 * !B1 * !X)	-0.00155	-0.00157	-0.00156
	(!A1 * A3 * !B1 * !X)	0.00587	0.00590	0.00588
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00144	-0.00147
	(!A1 * !A3 * !B1 * !X)	0.00617	0.00600	0.00591

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00256	0.00259	0.00256
	(A2 * B1 * X)	0.00004	0.00002	0.00004
	(A2 * !B1 * !X)	0.00190	0.00193	0.00191
	(A2 * !B1 * !X)	-0.00160	-0.00163	-0.00161
	(A1 * !A2 * B1 * X)	0.00257	0.00258	0.00259
	(A1 * !A2 * B1 * X)	0.00013	0.00013	0.00015
	(A1 * !A2 * !B1 * !X)	0.00193	0.00193	0.00191
	(A1 * !A2 * !B1 * !X)	-0.00157	-0.00160	-0.00160
	(!A1 * !A2 * !B1 * !X)	0.00186	0.00187	0.00187
	(!A1 * !A2 * !B1 * !X)	-0.00161	-0.00162	-0.00161

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00255	0.00258	0.00255
	(A2 * B1 * X)	-0.00024	-0.00026	-0.00024
	(A2 * !B1 * !X)	0.00257	0.00259	0.00257
	(A2 * !B1 * !X)	-0.00120	-0.00123	-0.00121
	(A1 * !A2 * B1 * X)	0.00256	0.00257	0.00258
	(A1 * !A2 * B1 * X)	-0.00014	-0.00015	-0.00013
	(A1 * !A2 * !B1 * !X)	0.00257	0.00259	0.00257
	(A1 * !A2 * !B1 * !X)	-0.00115	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * !X)	0.00252	0.00254	0.00252
	(!A1 * !A2 * !B1 * !X)	-0.00121	-0.00123	-0.00121
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00455	0.00458	0.00456
	(A2 * B1 * X)	-0.00067	-0.00069	-0.00066
	(A2 * !B1 * !X)	0.00475	0.00475	0.00476
	(A2 * !B1 * !X)	-0.00251	-0.00255	-0.00255
	(A1 * !A2 * B1 * X)	0.00456	0.00459	0.00461
	(A1 * !A2 * B1 * X)	-0.00047	-0.00049	-0.00044
	(A1 * !A2 * !B1 * !X)	0.00476	0.00479	0.00476
	(A1 * !A2 * !B1 * !X)	-0.00241	-0.00251	-0.00251
	(!A1 * !A2 * !B1 * !X)	0.00465	0.00466	0.00466
	(!A1 * !A2 * !B1 * !X)	-0.00256	-0.00257	-0.00256

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00063	-0.00064	-0.00071
	(A2 * B1 * X)	0.00189	0.00189	0.00183
	(A2 * !B1 * !X)	-0.00100	-0.00101	-0.00101
	(A2 * !B1 * !X)	0.00251	0.00251	0.00251
	(A1 * !A2 * B1 * X)	-0.00027	-0.00028	-0.00048
	(A1 * !A2 * B1 * X)	0.00220	0.00220	0.00204
	(A1 * !A2 * !B1 * !X)	-0.00100	-0.00101	-0.00101
	(A1 * !A2 * !B1 * !X)	0.00246	0.00246	0.00246
	(!A1 * !A2 * !B1 * !X)	-0.00080	-0.00095	-0.00097
	(!A1 * !A2 * !B1 * !X)	0.00267	0.00258	0.00252
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00117	-0.00118	-0.00126
	(A2 * B1 * X)	0.00161	0.00162	0.00155
	(A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00296	0.00296	0.00296
	(A1 * !A2 * B1 * X)	-0.00081	-0.00082	-0.00102
	(A1 * !A2 * B1 * X)	0.00192	0.00192	0.00176
	(A1 * !A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !X)	0.00291	0.00292	0.00292
	(!A1 * !A2 * !B1 * !X)	-0.00060	-0.00076	-0.00077
	(!A1 * !A2 * !B1 * !X)	0.00311	0.00302	0.00298
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00178	-0.00180	-0.00200
	(A2 * B1 * X)	0.00342	0.00342	0.00326
	(A2 * !B1 * !X)	-0.00122	-0.00126	-0.00123
	(A2 * !B1 * !X)	0.00604	0.00608	0.00605
	(A1 * !A2 * B1 * X)	-0.00103	-0.00103	-0.00153
	(A1 * !A2 * B1 * X)	0.00406	0.00404	0.00368
	(A1 * !A2 * !B1 * !X)	-0.00123	-0.00124	-0.00124
	(A1 * !A2 * !B1 * !X)	0.00594	0.00594	0.00594
	(!A1 * !A2 * !B1 * !X)	-0.00075	-0.00110	-0.00114
	(!A1 * !A2 * !B1 * !X)	0.00645	0.00618	0.00610

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)	0.00101	0.00100	0.00094
	(!A1 * !A2 * !A3 * !X)	-0.00154	-0.00155	-0.00166
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00159	0.00158	0.00151
	(!A1 * !A2 * !A3 * !X)	-0.00160	-0.00160	-0.00173
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00283	0.00283	0.00268
	(!A1 * !A2 * !A3 * !X)	-0.00291	-0.00294	-0.00319

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)	-0.00002	-0.00003	-0.00002
	(!A1 * !A2 * !A3 * !X)	0.00256	0.00260	0.00257
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00027	0.00026	0.00027
	(!A1 * !A2 * !A3 * !X)	0.00349	0.00353	0.00349
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00089	0.00087	0.00090
	(!A1 * !A2 * !A3 * !X)	0.00669	0.00679	0.00672

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00281	0.00307	0.00299	0.00295	0.00305	0.44403
sky130_fd_sc_hs__o32ai_2	0.00594	0.00556	0.00597	0.00567	0.00574	0.78025
sky130_fd_sc_hs__o32ai_4	0.01123	0.01125	0.01132	0.01156	0.01122	1.40190

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	31.46060	98.82810
sky130_fd_sc_hs__o32ai_2	0.00000	62.97950	197.44800
sky130_fd_sc_hs__o32ai_4	0.00000	125.74400	394.66400

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)	0.16044	0.88837	8.35136
	A2->Y (FR)	0.14934	0.92415	8.96712
	A3->Y (FR)	0.11990	0.92525	9.34331
	B1->Y (FR)	0.06207	0.64660	6.75154
	B2->Y (FR)	0.04945	0.68180	7.39009
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.16950	0.76097	8.09430
	A2->Y (FR)	0.15687	0.80813	8.88476
	A3->Y (FR)	0.12064	0.81052	9.27382
	B1->Y (FR)	0.06503	0.58169	6.91398
	B2->Y (FR)	0.04467	0.61099	7.50867
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.17025	0.65506	7.86801
	A2->Y (FR)	0.15736	0.70332	8.67449
	A3->Y (FR)	0.11993	0.71418	9.17412
	B1->Y (FR)	0.06203	0.47969	6.52551
	B2->Y (FR)	0.04293	0.52028	7.23829

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.06092	0.39534	3.62577
	A2->Y (RF)	0.05982	0.39621	3.69140
	A3->Y (RF)	0.04917	0.38192	3.64858
	B1->Y (RF)	0.04727	0.44803	4.47561
	B2->Y (RF)	0.03869	0.43243	4.40447
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.06276	0.33570	3.38310
	A2->Y (RF)	0.06216	0.34100	3.51712
	A3->Y (RF)	0.04019	0.30903	3.46605
	B1->Y (RF)	0.04858	0.38947	4.32825
	B2->Y (RF)	0.03755	0.37770	4.34277
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.06397	0.30583	3.58671
	A2->Y (RF)	0.05685	0.28576	3.46437
	A3->Y (RF)	0.04116	0.26025	3.33892
	B1->Y (RF)	0.06631	0.40038	4.74534
	B2->Y (RF)	0.05297	0.40090	4.94853

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00226	0.00327	0.03924
	A1	0.01326	0.01424	0.04852
	A2	0.00239	0.00362	0.03526
	A2	0.01212	0.01332	0.04355
	A3	0.00236	0.00458	0.04143
	A3	0.01029	0.01234	0.04938
	B1	-0.00013	0.00185	0.04086
	B1	0.00647	0.00845	0.04754
	B2	-0.00012	0.00298	0.04697
	B2	0.00506	0.00819	0.05217
sky130_fd_sc_hs__o32ai_2	A1	0.00410	0.00608	0.07768
	A1	0.02636	0.02834	0.09999
	A2	0.00436	0.00676	0.06655
	A2	0.02407	0.02642	0.08362
	A3	0.00422	0.00870	0.07799
	A3	0.02149	0.02586	0.09186
	B1	-0.00060	0.00339	0.07728
	B1	0.01263	0.01663	0.09089
	B2	-0.00084	0.00524	0.08535
	B2	0.00983	0.01592	0.09590

sky130_fd_sc_hs__o32ai_4	**A1**	0.00814	0.01279	0.15509
	A1	0.05345	0.05806	0.19526
	A2	0.00829	0.01395	0.13500
	A2	0.04792	0.05339	0.17181
	A3	0.00827	0.01794	0.15596
	A3	0.04228	0.05168	0.18606
	B1	-0.00133	0.00674	0.14137
	B1	0.02548	0.03350	0.16871
	B2	-0.00147	0.00999	0.14555
	B2	0.01968	0.03108	0.16646

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01638	0.01742	0.04693
	A1	0.00344	0.00453	0.03484
	A2	0.01379	0.01493	0.04194
	A2	0.00211	0.00329	0.03092
	A3	0.01126	0.01257	0.03801
	A3	0.00157	0.00292	0.02831
	B1	0.01136	0.01320	0.04732
	B1	0.00185	0.00392	0.03907
	B2	0.00619	0.00827	0.04159
	B2	0.00100	0.00307	0.03622

sky130_fd_sc_hs__o32ai_2	**A1**	0.03434	0.03650	0.09630
	A1	0.00802	0.01029	0.06965
	A2	0.02903	0.03121	0.08356
	A2	0.00876	0.01094	0.06315
	A3	0.02340	0.02620	0.07553
	A3	0.00558	0.00835	0.05752
	B1	0.01734	0.02177	0.08936
	B1	0.00412	0.00852	0.07592
	B2	0.01865	0.02261	0.08159
	B2	0.00128	0.00570	0.06712
sky130_fd_sc_hs__o32ai_4	**A1**	0.06731	0.07263	0.20479
	A1	0.01623	0.02171	0.15205
	A2	0.05681	0.06253	0.18155
	A2	0.01612	0.02179	0.14023
	A3	0.04556	0.05243	0.16316
	A3	0.01051	0.01740	0.12821
	B1	0.03423	0.04310	0.17461
	B1	0.00742	0.01619	0.14737
	B2	0.02382	0.03276	0.14604
	B2	0.00269	0.01165	0.12452

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)**	0.00207	0.00189	0.00186
	(A2 * A3 * B2 * !Y)	-0.00196	-0.00217	-0.00217
	(A2 * A3 * B1 * !B2 * !Y)	0.00230	0.00212	0.00209
	(A2 * A3 * B1 * !B2 * !Y)	-0.00173	-0.00193	-0.00194
	(A2 * !B1 * !B2 * Y)	0.00180	0.00181	0.00180
	(A2 * !B1 * !B2 * Y)	-0.00222	-0.00224	-0.00223
	(A2 * !A3 * B2 * !Y)	0.00244	0.00208	0.00209
	(A2 * !A3 * B2 * !Y)	-0.00164	-0.00201	-0.00195
	(A2 * !A3 * B1 * !B2 * !Y)	0.00267	0.00232	0.00232
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00140	-0.00178	-0.00172
	(!A2 * A3 * B2 * !Y)	0.00264	0.00221	0.00225
	(!A2 * A3 * B2 * !Y)	-0.00146	-0.00192	-0.00180
	(!A2 * A3 * B1 * !B2 * !Y)	0.00287	0.00244	0.00248
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00123	-0.00169	-0.00157
	(!A2 * A3 * !B1 * !B2 * Y)	0.00180	0.00181	0.00180
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00216	-0.00222	-0.00222
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00174	0.00176	0.00175
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00224	-0.00225	-0.00223

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00428	0.00392	0.00385
	(A2 * A3 * B2 * !Y)	-0.00410	-0.00452	-0.00453
	(A2 * A3 * B1 * !B2 * !Y)	0.00475	0.00438	0.00431
	(A2 * A3 * B1 * !B2 * !Y)	-0.00363	-0.00406	-0.00407
	(A2 * !B1 * !B2 * Y)	0.00373	0.00373	0.00371
	(A2 * !B1 * !B2 * Y)	-0.00467	-0.00469	-0.00467
	(A2 * !A3 * B2 * !Y)	0.00511	0.00436	0.00429
	(A2 * !A3 * B2 * !Y)	-0.00337	-0.00417	-0.00410
	(A2 * !A3 * B1 * !B2 * !Y)	0.00557	0.00482	0.00475
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00291	-0.00370	-0.00364
	(!A2 * A3 * B2 * !Y)	0.00546	0.00460	0.00461
	(!A2 * A3 * B2 * !Y)	-0.00305	-0.00398	-0.00379
	(!A2 * A3 * B1 * !B2 * !Y)	0.00592	0.00506	0.00508
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00259	-0.00352	-0.00333
	(!A2 * A3 * !B1 * !B2 * Y)	0.00371	0.00374	0.00371
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00452	-0.00463	-0.00463
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00359	0.00361	0.00358
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00471	-0.00472	-0.00468

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00819	0.00743	0.00727
	(A2 * A3 * B2 * !Y)	-0.00798	-0.00882	-0.00885
	(A2 * A3 * B1 * !B2 * !Y)	0.00912	0.00835	0.00820
	(A2 * A3 * B1 * !B2 * !Y)	-0.00705	-0.00790	-0.00792
	(A2 * !B1 * !B2 * Y)	0.00704	0.00706	0.00700
	(A2 * !B1 * !B2 * Y)	-0.00911	-0.00916	-0.00911
	(A2 * !A3 * B2 * !Y)	0.00981	0.00830	0.00816
	(A2 * !A3 * B2 * !Y)	-0.00656	-0.00812	-0.00798
	(A2 * !A3 * B1 * !B2 * !Y)	0.01073	0.00922	0.00909
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00564	-0.00720	-0.00706
	(!A2 * A3 * B2 * !Y)	0.01052	0.00879	0.00881
	(!A2 * A3 * B2 * !Y)	-0.00593	-0.00774	-0.00735
	(!A2 * A3 * B1 * !B2 * !Y)	0.01144	0.00971	0.00974
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00501	-0.00682	-0.00643
	(!A2 * A3 * !B1 * !B2 * Y)	0.00703	0.00706	0.00700
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00884	-0.00904	-0.00904
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00680	0.00678	0.00679
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00919	-0.00915	-0.00913

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)**	-0.00167	-0.00169	-0.00168
	(A2 * A3 * B2 * !Y)	0.00235	0.00238	0.00236
	(A2 * A3 * B1 * !B2 * !Y)	-0.00144	-0.00145	-0.00144
	(A2 * A3 * B1 * !B2 * !Y)	0.00258	0.00261	0.00259
	(A2 * !B1 * !B2 * Y)	-0.00174	-0.00175	-0.00174
	(A2 * !B1 * !B2 * Y)	0.00228	0.00231	0.00229
	(A2 * !A3 * B2 * !Y)	-0.00147	-0.00149	-0.00151
	(A2 * !A3 * B2 * !Y)	0.00258	0.00260	0.00255
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00123	-0.00126	-0.00128
	(A2 * !A3 * B1 * !B2 * !Y)	0.00280	0.00283	0.00278
	(!A2 * A3 * B2 * !Y)	-0.00130	-0.00131	-0.00135
	(!A2 * A3 * B2 * !Y)	0.00276	0.00277	0.00272
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00107	-0.00108	-0.00112
	(!A2 * A3 * B1 * !B2 * !Y)	0.00299	0.00300	0.00295
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00173	-0.00174	-0.00174
	(!A2 * A3 * !B1 * !B2 * Y)	0.00223	0.00225	0.00224
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00149	-0.00167	-0.00170
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00246	0.00236	0.00230

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00345	-0.00346	-0.00345
	(A2 * A3 * B2 * !Y)	0.00493	0.00496	0.00493
	(A2 * A3 * B1 * !B2 * !Y)	-0.00299	-0.00300	-0.00299
	(A2 * A3 * B1 * !B2 * !Y)	0.00539	0.00542	0.00539
	(A2 * !B1 * !B2 * Y)	-0.00359	-0.00360	-0.00359
	(A2 * !B1 * !B2 * Y)	0.00476	0.00479	0.00478
	(A2 * !A3 * B2 * !Y)	-0.00303	-0.00307	-0.00311
	(A2 * !A3 * B2 * !Y)	0.00539	0.00544	0.00533
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00257	-0.00261	-0.00265
	(A2 * !A3 * B1 * !B2 * !Y)	0.00585	0.00590	0.00580
	(!A2 * A3 * B2 * !Y)	-0.00271	-0.00274	-0.00280
	(!A2 * A3 * B2 * !Y)	0.00573	0.00575	0.00565
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00225	-0.00228	-0.00234
	(!A2 * A3 * B1 * !B2 * !Y)	0.00619	0.00621	0.00611
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00358	-0.00360	-0.00359
	(!A2 * A3 * !B1 * !B2 * Y)	0.00466	0.00469	0.00467
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00297	-0.00340	-0.00348
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00526	0.00498	0.00483

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00649	-0.00652	-0.00649
	(A2 * A3 * B2 * !Y)	0.00962	0.00969	0.00962
	(A2 * A3 * B1 * !B2 * !Y)	-0.00556	-0.00560	-0.00557
	(A2 * A3 * B1 * !B2 * !Y)	0.01054	0.01061	0.01055
	(A2 * !B1 * !B2 * Y)	-0.00677	-0.00682	-0.00677
	(A2 * !B1 * !B2 * Y)	0.00931	0.00942	0.00931
	(A2 * !A3 * B2 * !Y)	-0.00566	-0.00572	-0.00582
	(A2 * !A3 * B2 * !Y)	0.01055	0.01059	0.01043
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00474	-0.00479	-0.00489
	(A2 * !A3 * B1 * !B2 * !Y)	0.01147	0.01151	0.01135
	(!A2 * A3 * B2 * !Y)	-0.00502	-0.00507	-0.00519
	(!A2 * A3 * B2 * !Y)	0.01124	0.01127	0.01107
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00410	-0.00415	-0.00427
	(!A2 * A3 * B1 * !B2 * !Y)	0.01216	0.01219	0.01199
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00674	-0.00680	-0.00677
	(!A2 * A3 * !B1 * !B2 * Y)	0.00904	0.00916	0.00911
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00564	-0.00642	-0.00657
	(!A2 * !A3 * !B1 * !B2 * Y)	0.01024	0.00956	0.00941

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)**	0.00199	0.00202	0.00191
	(A1 * A3 * B2 * !Y)	-0.00141	-0.00142	-0.00146
	(A1 * A3 * B1 * !B2 * !Y)	0.00222	0.00225	0.00214
	(A1 * A3 * B1 * !B2 * !Y)	-0.00118	-0.00119	-0.00123
	(A1 * A3 * !B1 * !B2 * Y)	0.00173	0.00176	0.00174
	(A1 * A3 * !B1 * !B2 * Y)	-0.00171	-0.00173	-0.00168
	(A1 * !A3 * B2 * !Y)	0.00200	0.00199	0.00196
	(A1 * !A3 * B2 * !Y)	-0.00096	-0.00095	-0.00097
	(A1 * !A3 * B1 * !B2 * !Y)	0.00223	0.00222	0.00219
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00073	-0.00072	-0.00074
	(A1 * !A3 * !B1 * !B2 * Y)	0.00175	0.00174	0.00174
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00235	-0.00234	-0.00233
	(!A1 * A3 * B2 * !Y)	0.00260	0.00209	0.00221
	(!A1 * A3 * B2 * !Y)	-0.00153	-0.00205	-0.00187
	(!A1 * A3 * B1 * !B2 * !Y)	0.00283	0.00232	0.00244
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00130	-0.00182	-0.00164
	(!A1 * A3 * !B1 * !B2 * Y)	0.00175	0.00176	0.00174
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00235	-0.00235	-0.00233
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00167	0.00168	0.00168
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00233	-0.00233	-0.00233

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00400	0.00407	0.00381
	(A1 * A3 * B2 * !Y)	-0.00266	-0.00263	-0.00274
	(A1 * A3 * B1 * !B2 * !Y)	0.00447	0.00454	0.00429
	(A1 * A3 * B1 * !B2 * !Y)	-0.00219	-0.00216	-0.00226
	(A1 * A3 * !B1 * !B2 * Y)	0.00342	0.00344	0.00340
	(A1 * A3 * !B1 * !B2 * Y)	-0.00330	-0.00331	-0.00325
	(A1 * !A3 * B2 * !Y)	0.00397	0.00403	0.00388
	(A1 * !A3 * B2 * !Y)	-0.00164	-0.00167	-0.00168
	(A1 * !A3 * B1 * !B2 * !Y)	0.00444	0.00449	0.00435
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00118	-0.00121	-0.00122
	(A1 * !A3 * !B1 * !B2 * Y)	0.00342	0.00342	0.00340
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00454	-0.00453	-0.00450
	(!A1 * A3 * B2 * !Y)	0.00534	0.00411	0.00434
	(!A1 * A3 * B2 * !Y)	-0.00268	-0.00390	-0.00359
	(!A1 * A3 * B1 * !B2 * !Y)	0.00581	0.00457	0.00480
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00222	-0.00344	-0.00313
	(!A1 * A3 * !B1 * !B2 * Y)	0.00342	0.00341	0.00340
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00454	-0.00453	-0.00451
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00327	0.00331	0.00329
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00451	-0.00454	-0.00451

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00807	0.00822	0.00774
	(A1 * A3 * B2 * !Y)	-0.00539	-0.00534	-0.00554
	(A1 * A3 * B1 * !B2 * !Y)	0.00901	0.00915	0.00868
	(A1 * A3 * B1 * !B2 * !Y)	-0.00445	-0.00441	-0.00460
	(A1 * A3 * !B1 * !B2 * Y)	0.00704	0.00708	0.00701
	(A1 * A3 * !B1 * !B2 * Y)	-0.00659	-0.00660	-0.00648
	(A1 * !A3 * B2 * !Y)	0.00805	0.00816	0.00789
	(A1 * !A3 * B2 * !Y)	-0.00344	-0.00351	-0.00351
	(A1 * !A3 * B1 * !B2 * !Y)	0.00897	0.00908	0.00881
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00252	-0.00259	-0.00259
	(A1 * !A3 * !B1 * !B2 * Y)	0.00706	0.00704	0.00701
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00921	-0.00918	-0.00912
	(!A1 * A3 * B2 * !Y)	0.01080	0.00831	0.00886
	(!A1 * A3 * B2 * !Y)	-0.00560	-0.00797	-0.00734
	(!A1 * A3 * B1 * !B2 * !Y)	0.01172	0.00923	0.00978
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00468	-0.00705	-0.00642
	(!A1 * A3 * !B1 * !B2 * Y)	0.00705	0.00701	0.00701
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00922	-0.00917	-0.00914
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00674	0.00681	0.00678
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00915	-0.00919	-0.00914

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)**	-0.00167	-0.00169	-0.00167
	(A1 * A3 * B2 * !Y)	0.00162	0.00165	0.00163
	(A1 * A3 * B1 * !B2 * !Y)	-0.00144	-0.00146	-0.00144
	(A1 * A3 * B1 * !B2 * !Y)	0.00186	0.00188	0.00186
	(A1 * A3 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * A3 * !B1 * !B2 * Y)	0.00171	0.00173	0.00169
	(A1 * !A3 * B2 * !Y)	-0.00152	-0.00154	-0.00166
	(A1 * !A3 * B2 * !Y)	0.00143	0.00143	0.00131
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00129	-0.00130	-0.00143
	(A1 * !A3 * B1 * !B2 * !Y)	0.00167	0.00166	0.00154
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A3 * !B1 * !B2 * Y)	0.00238	0.00240	0.00239
	(!A1 * A3 * B2 * !Y)	-0.00126	-0.00129	-0.00134
	(!A1 * A3 * B2 * !Y)	0.00283	0.00284	0.00276
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00103	-0.00106	-0.00111
	(!A1 * A3 * B1 * !B2 * !Y)	0.00306	0.00307	0.00299
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
	(!A1 * A3 * !B1 * !B2 * Y)	0.00238	0.00240	0.00239
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00140	-0.00160	-0.00163
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00259	0.00247	0.00240

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00333	-0.00336	-0.00331
	(A1 * A3 * B2 * !Y)	0.00307	0.00311	0.00307
	(A1 * A3 * B1 * !B2 * !Y)	-0.00288	-0.00291	-0.00286
	(A1 * A3 * B1 * !B2 * !Y)	0.00353	0.00356	0.00352
	(A1 * A3 * !B1 * !B2 * Y)	-0.00329	-0.00330	-0.00329
	(A1 * A3 * !B1 * !B2 * Y)	0.00330	0.00331	0.00326
	(A1 * !A3 * B2 * !Y)	-0.00300	-0.00303	-0.00321
	(A1 * !A3 * B2 * !Y)	0.00262	0.00263	0.00242
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00252	-0.00257	-0.00275
	(A1 * !A3 * B1 * !B2 * !Y)	0.00307	0.00309	0.00288
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00328	-0.00331	-0.00329
	(A1 * !A3 * !B1 * !B2 * Y)	0.00460	0.00465	0.00462
	(!A1 * A3 * B2 * !Y)	-0.00244	-0.00247	-0.00259
	(!A1 * A3 * B2 * !Y)	0.00551	0.00549	0.00538
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00198	-0.00200	-0.00212
	(!A1 * A3 * B1 * !B2 * !Y)	0.00598	0.00595	0.00584
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00328	-0.00330	-0.00329
	(!A1 * A3 * !B1 * !B2 * Y)	0.00461	0.00463	0.00462
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00270	-0.00314	-0.00319
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00504	0.00477	0.00465

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00680	-0.00686	-0.00677
	(A1 * A3 * B2 * !Y)	0.00621	0.00627	0.00618
	(A1 * A3 * B1 * !B2 * !Y)	-0.00589	-0.00594	-0.00586
	(A1 * A3 * B1 * !B2 * !Y)	0.00712	0.00718	0.00710
	(A1 * A3 * !B1 * !B2 * Y)	-0.00677	-0.00679	-0.00678
	(A1 * A3 * !B1 * !B2 * Y)	0.00659	0.00660	0.00650
	(A1 * !A3 * B2 * !Y)	-0.00614	-0.00619	-0.00661
	(A1 * !A3 * B2 * !Y)	0.00538	0.00537	0.00492
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00522	-0.00527	-0.00569
	(A1 * !A3 * B1 * !B2 * !Y)	0.00630	0.00630	0.00585
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00677	-0.00680	-0.00678
	(A1 * !A3 * !B1 * !B2 * Y)	0.00935	0.00938	0.00935
	(!A1 * A3 * B2 * !Y)	-0.00507	-0.00516	-0.00536
	(!A1 * A3 * B2 * !Y)	0.01119	0.01121	0.01090
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00415	-0.00424	-0.00444
	(!A1 * A3 * B1 * !B2 * !Y)	0.01211	0.01214	0.01183
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00676	-0.00682	-0.00678
	(!A1 * A3 * !B1 * !B2 * Y)	0.00934	0.00944	0.00937
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00557	-0.00639	-0.00657
	(!A1 * !A3 * !B1 * !B2 * Y)	0.01025	0.00955	0.00942

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00188	0.00192	0.00189
	(A2 * B2 * !Y)	-0.00091	-0.00093	-0.00091
	(A2 * B1 * !B2 * !Y)	0.00211	0.00215	0.00212
	(A2 * B1 * !B2 * !Y)	-0.00068	-0.00070	-0.00068
	(A2 * !B1 * !B2 * Y)	0.00172	0.00175	0.00173
	(A2 * !B1 * !B2 * Y)	-0.00219	-0.00222	-0.00221
	(A1 * !A2 * B2 * !Y)	0.00189	0.00191	0.00191
	(A1 * !A2 * B2 * !Y)	-0.00083	-0.00084	-0.00082
	(A1 * !A2 * B1 * !B2 * !Y)	0.00212	0.00214	0.00214
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00060	-0.00061	-0.00059
	(A1 * !A2 * !B1 * !B2 * Y)	0.00174	0.00175	0.00173
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00214	-0.00218	-0.00219
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00166	0.00167	0.00167
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00221	-0.00221	-0.00220
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00413	0.00420	0.00414
	(A2 * B2 * !Y)	-0.00181	-0.00183	-0.00180
	(A2 * B1 * !B2 * !Y)	0.00460	0.00467	0.00460
	(A2 * B1 * !B2 * !Y)	-0.00134	-0.00137	-0.00134
	(A2 * !B1 * !B2 * Y)	0.00337	0.00341	0.00339
	(A2 * !B1 * !B2 * Y)	-0.00475	-0.00481	-0.00481
	(A1 * !A2 * B2 * !Y)	0.00414	0.00417	0.00418
	(A1 * !A2 * B2 * !Y)	-0.00165	-0.00165	-0.00162
	(A1 * !A2 * B1 * !B2 * !Y)	0.00461	0.00464	0.00464
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00118	-0.00119	-0.00116
	(A1 * !A2 * !B1 * !B2 * Y)	0.00337	0.00338	0.00338
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00461	-0.00472	-0.00474
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00325	0.00330	0.00327
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00481	-0.00484	-0.00480

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00785	0.00797	0.00786
	(A2 * B2 * !Y)	-0.00357	-0.00363	-0.00356
	(A2 * B1 * !B2 * !Y)	0.00877	0.00890	0.00879
	(A2 * B1 * !B2 * !Y)	-0.00265	-0.00270	-0.00263
	(A2 * !B1 * !B2 * Y)	0.00667	0.00666	0.00661
	(A2 * !B1 * !B2 * Y)	-0.00929	-0.00934	-0.00932
	(A1 * !A2 * B2 * !Y)	0.00787	0.00794	0.00794
	(A1 * !A2 * B2 * !Y)	-0.00324	-0.00327	-0.00319
	(A1 * !A2 * B1 * !B2 * !Y)	0.00880	0.00887	0.00886
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00232	-0.00234	-0.00226
	(A1 * !A2 * !B1 * !B2 * Y)	0.00659	0.00669	0.00661
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00894	-0.00918	-0.00916
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00639	0.00643	0.00642
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00933	-0.00935	-0.00932

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00165	-0.00167	-0.00175
	(A2 * B2 * !Y)	0.00113	0.00114	0.00106
	(A2 * B1 * !B2 * !Y)	-0.00143	-0.00144	-0.00152
	(A2 * B1 * !B2 * !Y)	0.00137	0.00137	0.00129
	(A2 * !B1 * !B2 * Y)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * !B2 * Y)	0.00225	0.00227	0.00226
	(A1 * !A2 * B2 * !Y)	-0.00136	-0.00138	-0.00159
	(A1 * !A2 * B2 * !Y)	0.00138	0.00138	0.00121
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00113	-0.00115	-0.00136
	(A1 * !A2 * B1 * !B2 * !Y)	0.00161	0.00161	0.00144
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00167	-0.00167	-0.00167
	(A1 * !A2 * !B1 * !B2 * Y)	0.00218	0.00219	0.00219
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00139	-0.00159	-0.00162
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00246	0.00234	0.00228
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00366	-0.00368	-0.00390
	(A2 * B2 * !Y)	0.00223	0.00223	0.00207
	(A2 * B1 * !B2 * !Y)	-0.00319	-0.00322	-0.00343
	(A2 * B1 * !B2 * !Y)	0.00270	0.00270	0.00254
	(A2 * !B1 * !B2 * Y)	-0.00327	-0.00329	-0.00327
	(A2 * !B1 * !B2 * Y)	0.00487	0.00491	0.00488
	(A1 * !A2 * B2 * !Y)	-0.00300	-0.00302	-0.00354
	(A1 * !A2 * B2 * !Y)	0.00276	0.00276	0.00239
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00253	-0.00257	-0.00307
	(A1 * !A2 * B1 * !B2 * !Y)	0.00323	0.00323	0.00286
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00327	-0.00328	-0.00327
	(A1 * !A2 * !B1 * !B2 * Y)	0.00473	0.00475	0.00474
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00271	-0.00314	-0.00318
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00531	0.00501	0.00494

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00686	-0.00696	-0.00734
	(A2 * B2 * !Y)	0.00444	0.00449	0.00414
	(A2 * B1 * !B2 * !Y)	-0.00593	-0.00598	-0.00641
	(A2 * B1 * !B2 * !Y)	0.00537	0.00538	0.00506
	(A2 * !B1 * !B2 * Y)	-0.00639	-0.00643	-0.00638
	(A2 * !B1 * !B2 * Y)	0.00947	0.00954	0.00947
	(A1 * !A2 * B2 * !Y)	-0.00560	-0.00565	-0.00666
	(A1 * !A2 * B2 * !Y)	0.00543	0.00544	0.00474
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00467	-0.00474	-0.00573
	(A1 * !A2 * B1 * !B2 * !Y)	0.00636	0.00638	0.00567
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00638	-0.00640	-0.00638
	(A1 * !A2 * !B1 * !B2 * Y)	0.00915	0.00918	0.00916
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00532	-0.00614	-0.00620
	(!A1 * !A2 * !B1 * !B2 * Y)	0.01028	0.00973	0.00959

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00254	0.00218	0.00234
	(A3 * B2 * !Y)	-0.00161	-0.00199	-0.00179
	(A2 * !A3 * B2 * !Y)	0.00256	0.00220	0.00236
	(A2 * !A3 * B2 * !Y)	-0.00159	-0.00197	-0.00177
	(A1 * !A2 * !A3 * B2 * !Y)	0.00277	0.00241	0.00257
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00138	-0.00175	-0.00155
	(!A1 * !A2 * !A3 * B2 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00264	-0.00265	-0.00262
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00076	0.00076	0.00067
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00244	-0.00246	-0.00262

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00506	0.00413	0.00433
	(A3 * B2 * !Y)	-0.00288	-0.00386	-0.00355
	(A2 * !A3 * B2 * !Y)	0.00509	0.00416	0.00436
	(A2 * !A3 * B2 * !Y)	-0.00285	-0.00382	-0.00351
	(A1 * !A2 * !A3 * B2 * !Y)	0.00552	0.00459	0.00480
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00242	-0.00339	-0.00308
	(!A1 * !A2 * !A3 * B2 * Y)	0.00102	0.00103	0.00102
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00524	-0.00526	-0.00521
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00127	0.00127	0.00108
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00483	-0.00488	-0.00520
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.01034	0.00855	0.00899
	(A3 * B2 * !Y)	-0.00594	-0.00780	-0.00714
	(A2 * !A3 * B2 * !Y)	0.01040	0.00861	0.00905
	(A2 * !A3 * B2 * !Y)	-0.00587	-0.00773	-0.00708
	(A1 * !A2 * !A3 * B2 * !Y)	0.01126	0.00947	0.00992
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00501	-0.00687	-0.00621
	(!A1 * !A2 * !A3 * B2 * Y)	0.00205	0.00206	0.00205
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01085	-0.01088	-0.01077
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00253	0.00254	0.00217
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.01006	-0.01014	-0.01076

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00143	-0.00146	-0.00151
	(A3 * B2 * !Y)	0.00270	0.00272	0.00264
	(A2 * !A3 * B2 * !Y)	-0.00142	-0.00143	-0.00149
	(A2 * !A3 * B2 * !Y)	0.00272	0.00271	0.00265
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00120	-0.00122	-0.00128
	(A1 * !A2 * !A3 * B2 * !Y)	0.00295	0.00293	0.00287
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00053	-0.00053	-0.00056
	(!A1 * !A2 * !A3 * B2 * Y)	0.00280	0.00282	0.00272
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00266	0.00270	0.00266
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00251	-0.00254	-0.00264
	(A3 * B2 * !Y)	0.00542	0.00540	0.00527
	(A2 * !A3 * B2 * !Y)	-0.00247	-0.00250	-0.00261
	(A2 * !A3 * B2 * !Y)	0.00543	0.00543	0.00531
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00204	-0.00208	-0.00218
	(A1 * !A2 * !A3 * B2 * !Y)	0.00586	0.00590	0.00574
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00081	-0.00083	-0.00087
	(!A1 * !A2 * !A3 * B2 * Y)	0.00548	0.00552	0.00538
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00095	-0.00098	-0.00096
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00526	0.00536	0.00529
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00536	-0.00541	-0.00563
	(A3 * B2 * !Y)	0.01089	0.01087	0.01058
	(A2 * !A3 * B2 * !Y)	-0.00529	-0.00535	-0.00556
	(A2 * !A3 * B2 * !Y)	0.01095	0.01094	0.01065
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00443	-0.00449	-0.00470
	(A1 * !A2 * !A3 * B2 * !Y)	0.01182	0.01182	0.01151
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00163	-0.00164	-0.00175
	(!A1 * !A2 * !A3 * B2 * Y)	0.01133	0.01136	0.01112
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00193	-0.00196	-0.00192
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01091	0.01109	0.01093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00199	0.00203	0.00201
	(A3 * B1 * !Y)	-0.00088	-0.00089	-0.00086
	(A2 * !A3 * B1 * !Y)	0.00201	0.00201	0.00203
	(A2 * !A3 * B1 * !Y)	-0.00086	-0.00086	-0.00084
	(A1 * !A2 * !A3 * B1 * !Y)	0.00223	0.00224	0.00225
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00065	-0.00065	-0.00063
	(!A1 * !A2 * !A3 * B1 * Y)	0.00055	0.00054	0.00054
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00268	-0.00267	-0.00266
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00067	0.00066	0.00057
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00248	-0.00250	-0.00265
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00395	0.00393	0.00398
	(A3 * B1 * !Y)	-0.00181	-0.00178	-0.00176
	(A2 * !A3 * B1 * !Y)	0.00398	0.00399	0.00401
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00176	-0.00172
	(A1 * !A2 * !A3 * B1 * !Y)	0.00441	0.00443	0.00445
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00133	-0.00132	-0.00129
	(!A1 * !A2 * !A3 * B1 * Y)	0.00108	0.00107	0.00108
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00533	-0.00533	-0.00530
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00133	0.00133	0.00114
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00495	-0.00497	-0.00529

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00775	0.00777	0.00781
	(A3 * B1 * !Y)	-0.00358	-0.00355	-0.00347
	(A2 * !A3 * B1 * !Y)	0.00780	0.00784	0.00787
	(A2 * !A3 * B1 * !Y)	-0.00348	-0.00348	-0.00340
	(A1 * !A2 * !A3 * B1 * !Y)	0.00867	0.00872	0.00874
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00253
	(!A1 * !A2 * !A3 * B1 * Y)	0.00207	0.00207	0.00207
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01061	-0.01060	-0.01053
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00255	0.00256	0.00219
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00979	-0.00990	-0.01051

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00157	-0.00160	-0.00172
	(A3 * B1 * !Y)	0.00130	0.00131	0.00118
	(A2 * !A3 * B1 * !Y)	-0.00155	-0.00157	-0.00170
	(A2 * !A3 * B1 * !Y)	0.00132	0.00131	0.00120
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00135	-0.00135	-0.00149
	(A1 * !A2 * !A3 * B1 * !Y)	0.00155	0.00153	0.00141
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00044	-0.00044	-0.00047
	(!A1 * !A2 * !A3 * B1 * Y)	0.00280	0.00280	0.00275
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00269	0.00270	0.00269

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00303	-0.00304	-0.00338
	(A3 * B1 * !Y)	0.00271	0.00270	0.00242
	(A2 * !A3 * B1 * !Y)	-0.00300	-0.00303	-0.00335
	(A2 * !A3 * B1 * !Y)	0.00273	0.00274	0.00246
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00258	-0.00260	-0.00291
	(A1 * !A2 * !A3 * B1 * !Y)	0.00319	0.00317	0.00289
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00087	-0.00088	-0.00092
	(!A1 * !A2 * !A3 * B1 * Y)	0.00558	0.00560	0.00547
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00536	0.00538	0.00538
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00594	-0.00601	-0.00661
	(A3 * B1 * !Y)	0.00533	0.00533	0.00480
	(A2 * !A3 * B1 * !Y)	-0.00592	-0.00596	-0.00654
	(A2 * !A3 * B1 * !Y)	0.00544	0.00540	0.00486
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00505	-0.00509	-0.00567
	(A1 * !A2 * !A3 * B1 * !Y)	0.00631	0.00627	0.00573
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00166	-0.00166	-0.00176
	(!A1 * !A2 * !A3 * B1 * Y)	0.01111	0.01110	0.01086
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01064	0.01069	0.01068

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00277	0.00270	0.00267	0.00269	0.00273	1.29794
sky130_fd_sc_hs__o32a_2	0.00290	0.00286	0.00289	0.00308	0.00289	2.48099
sky130_fd_sc_hs__o32a_4	0.00499	0.00532	0.00497	0.00656	0.00524	4.84374

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	59.34800	136.35600
sky130_fd_sc_hs__o32a_2	0.00000	77.06210	137.85300
sky130_fd_sc_hs__o32a_4	0.00000	154.67200	275.55700

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)	0.11063	0.59885	6.33531
	A2->X (RR)	0.10607	0.58763	6.19028
	A3->X (RR)	0.09346	0.56516	6.09678
	B1->X (RR)	0.09906	0.62167	6.76431
	B2->X (RR)	0.08706	0.59535	6.60080
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.11226	0.51462	6.09962
	A2->X (RR)	0.10883	0.50657	5.96876
	A3->X (RR)	0.09769	0.48764	5.88710
	B1->X (RR)	0.10137	0.54303	6.53840
	B2->X (RR)	0.09004	0.51785	6.36852
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.12836	0.47742	6.38446
	A2->X (RR)	0.11914	0.45902	6.21296
	A3->X (RR)	0.10238	0.43306	6.10640
	B1->X (RR)	0.11856	0.51271	6.81658
	B2->X (RR)	0.10025	0.48000	6.63234

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.21180	0.64088	5.34146
	A2->X (FF)	0.19800	0.66807	5.62047
	A3->X (FF)	0.16967	0.67356	5.72526
	B1->X (FF)	0.11364	0.52685	5.07408
	B2->X (FF)	0.09959	0.54288	5.25574
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.26203	0.66594	5.44877
	A2->X (FF)	0.24862	0.69664	5.72983
	A3->X (FF)	0.22129	0.70646	5.84595
	B1->X (FF)	0.14428	0.53516	5.14307
	B2->X (FF)	0.12925	0.55754	5.33748
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.26753	0.63013	5.60604
	A2->X (FF)	0.25168	0.65368	5.79850
	A3->X (FF)	0.21109	0.65686	5.91612
	B1->X (FF)	0.13601	0.48461	5.18222
	B2->X (FF)	0.11754	0.50081	5.37389

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.02017	0.02200	0.08222
	A1	0.00910	0.01121	0.07265
	A2	0.01797	0.02021	0.07542
	A2	0.00821	0.01066	0.06698
	A3	0.01625	0.01889	0.07865
	A3	0.00761	0.01056	0.07151
	B1	0.01528	0.01965	0.10415
	B1	0.00635	0.01127	0.09834
	B2	0.01099	0.01645	0.10782
	B2	0.00593	0.01141	0.10321
sky130_fd_sc_hs__o32a_2	A1	0.02456	0.02628	0.08786
	A1	0.01092	0.01323	0.07718
	A2	0.02231	0.02444	0.08065
	A2	0.01001	0.01267	0.06990
	A3	0.02052	0.02306	0.08358
	A3	0.00938	0.01249	0.07431
	B1	0.02263	0.02608	0.10738
	B1	0.01138	0.01608	0.10051
	B2	0.02068	0.02441	0.10981
	B2	0.00919	0.01467	0.10787

sky130_fd_sc_hs__o32a_4	**A1**	0.04278	0.04773	0.19234
	A1	0.02347	0.02853	0.17461
	A2	0.03780	0.04318	0.17384
	A2	0.02066	0.02609	0.15866
	A3	0.03250	0.03940	0.17794
	A3	0.01836	0.02533	0.16584
	B1	0.03909	0.04740	0.20380
	B1	0.01946	0.02865	0.18883
	B2	0.04184	0.04937	0.20452
	B2	0.01806	0.02892	0.19923

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00790	0.00891	0.07716
	A1	0.01822	0.01923	0.08667
	A2	0.00794	0.00943	0.07415
	A2	0.01695	0.01846	0.08263
	A3	0.00790	0.01071	0.08068
	A3	0.01578	0.01860	0.08810
	B1	0.00482	0.00911	0.09282
	B1	0.01259	0.01651	0.09689
	B2	0.00514	0.01040	0.09689
	B2	0.01258	0.01755	0.09763

sky130_fd_sc_hs__o32a_2	**A1**	0.01706	0.01434	0.08401
	A1	0.02805	0.02535	0.09365
	A2	0.01712	0.01488	0.07883
	A2	0.02681	0.02457	0.08845
	A3	0.01714	0.01617	0.08563
	A3	0.02574	0.02479	0.09421
	B1	0.01197	0.01356	0.08865
	B1	0.02127	0.02283	0.09792
	B2	0.01207	0.01535	0.09607
	B2	0.01979	0.02291	0.10368
sky130_fd_sc_hs__o32a_4	**A1**	0.03458	0.02841	0.16744
	A1	0.05499	0.04885	0.18761
	A2	0.03456	0.02936	0.15812
	A2	0.05284	0.04759	0.17207
	A3	0.03454	0.03228	0.16840
	A3	0.04978	0.04751	0.18107
	B1	0.02316	0.02595	0.18003
	B1	0.04133	0.04410	0.19664
	B2	0.02308	0.02914	0.19308
	B2	0.03757	0.04347	0.20547

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)**	0.00200	0.00183	0.00180
	(A2 * A3 * B2 * X)	-0.00169	-0.00188	-0.00189
	(A2 * A3 * B1 * !B2 * X)	0.00230	0.00213	0.00211
	(A2 * A3 * B1 * !B2 * X)	-0.00139	-0.00158	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00192	0.00193	0.00192
	(A2 * !B1 * !B2 * !X)	-0.00176	-0.00178	-0.00177
	(A2 * !A3 * B2 * X)	0.00236	0.00204	0.00210
	(A2 * !A3 * B2 * X)	-0.00138	-0.00171	-0.00160
	(A2 * !A3 * B1 * !B2 * X)	0.00266	0.00234	0.00240
	(A2 * !A3 * B1 * !B2 * X)	-0.00108	-0.00141	-0.00130
	(!A2 * A3 * B2 * X)	0.00259	0.00219	0.00233
	(!A2 * A3 * B2 * X)	-0.00118	-0.00161	-0.00138
	(!A2 * A3 * B1 * !B2 * X)	0.00289	0.00250	0.00263
	(!A2 * A3 * B1 * !B2 * X)	-0.00088	-0.00131	-0.00108
	(!A2 * A3 * !B1 * !B2 * !X)	0.00191	0.00193	0.00192
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00171	-0.00176	-0.00175
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00188	0.00189	0.00188
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00221	0.00205	0.00202
	(A2 * A3 * B2 * X)	-0.00168	-0.00187	-0.00187
	(A2 * A3 * B1 * !B2 * X)	0.00251	0.00235	0.00232
	(A2 * A3 * B1 * !B2 * X)	-0.00138	-0.00157	-0.00157
	(A2 * !B1 * !B2 * !X)	0.00255	0.00256	0.00255
	(A2 * !B1 * !B2 * !X)	-0.00133	-0.00134	-0.00134
	(A2 * !A3 * B2 * X)	0.00257	0.00226	0.00231
	(A2 * !A3 * B2 * X)	-0.00137	-0.00170	-0.00159
	(A2 * !A3 * B1 * !B2 * X)	0.00287	0.00256	0.00261
	(A2 * !A3 * B1 * !B2 * X)	-0.00106	-0.00140	-0.00129
	(!A2 * A3 * B2 * X)	0.00280	0.00241	0.00254
	(!A2 * A3 * B2 * X)	-0.00117	-0.00159	-0.00137
	(!A2 * A3 * B1 * !B2 * X)	0.00310	0.00271	0.00285
	(!A2 * A3 * B1 * !B2 * X)	-0.00087	-0.00129	-0.00107
	(!A2 * A3 * !B1 * !B2 * !X)	0.00255	0.00256	0.00255
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00128	-0.00133	-0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00249	0.00251	0.00250
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00134	-0.00135	-0.00134

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00367	0.00328	0.00320
	(A2 * A3 * B2 * X)	-0.00333	-0.00376	-0.00378
	(A2 * A3 * B1 * !B2 * X)	0.00427	0.00389	0.00380
	(A2 * A3 * B1 * !B2 * X)	-0.00273	-0.00316	-0.00318
	(A2 * !B1 * !B2 * !X)	0.00473	0.00475	0.00472
	(A2 * !B1 * !B2 * !X)	-0.00226	-0.00229	-0.00226
	(A2 * !A3 * B2 * X)	0.00456	0.00379	0.00381
	(A2 * !A3 * B2 * X)	-0.00257	-0.00336	-0.00320
	(A2 * !A3 * B1 * !B2 * X)	0.00516	0.00439	0.00441
	(A2 * !A3 * B1 * !B2 * X)	-0.00197	-0.00276	-0.00259
	(!A2 * A3 * B2 * X)	0.00500	0.00407	0.00424
	(!A2 * A3 * B2 * X)	-0.00217	-0.00317	-0.00279
	(!A2 * A3 * B1 * !B2 * X)	0.00560	0.00467	0.00485
	(!A2 * A3 * B1 * !B2 * X)	-0.00157	-0.00256	-0.00219
	(!A2 * A3 * !B1 * !B2 * !X)	0.00472	0.00475	0.00472
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00214	-0.00224	-0.00224
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00464	0.00466	0.00464
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00230	-0.00231	-0.00228

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)**	-0.00156	-0.00158	-0.00157
	(A2 * A3 * B2 * X)	0.00212	0.00215	0.00212
	(A2 * A3 * B1 * !B2 * X)	-0.00126	-0.00128	-0.00127
	(A2 * A3 * B1 * !B2 * X)	0.00242	0.00245	0.00243
	(A2 * !B1 * !B2 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !B2 * !X)	0.00269	0.00272	0.00270
	(A2 * !A3 * B2 * X)	-0.00130	-0.00132	-0.00136
	(A2 * !A3 * B2 * X)	0.00241	0.00241	0.00236
	(A2 * !A3 * B1 * !B2 * X)	-0.00100	-0.00102	-0.00106
	(A2 * !A3 * B1 * !B2 * X)	0.00271	0.00271	0.00267
	(!A2 * A3 * B2 * X)	-0.00104	-0.00106	-0.00113
	(!A2 * A3 * B2 * X)	0.00270	0.00270	0.00262
	(!A2 * A3 * B1 * !B2 * X)	-0.00074	-0.00076	-0.00083
	(!A2 * A3 * B1 * !B2 * X)	0.00300	0.00301	0.00292
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
	(!A2 * A3 * !B1 * !B2 * !X)	0.00266	0.00267	0.00267
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00075	-0.00092	-0.00094
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00289	0.00278	0.00272

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00175	-0.00177	-0.00175
	(A2 * A3 * B2 * X)	0.00214	0.00216	0.00214
	(A2 * A3 * B1 * !B2 * X)	-0.00145	-0.00146	-0.00145
	(A2 * A3 * B1 * !B2 * X)	0.00244	0.00246	0.00244
	(A2 * !B1 * !B2 * !X)	-0.00076	-0.00078	-0.00077
	(A2 * !B1 * !B2 * !X)	0.00311	0.00313	0.00312
	(A2 * !A3 * B2 * X)	-0.00149	-0.00150	-0.00155
	(A2 * !A3 * B2 * X)	0.00243	0.00242	0.00238
	(A2 * !A3 * B1 * !B2 * X)	-0.00119	-0.00120	-0.00125
	(A2 * !A3 * B1 * !B2 * X)	0.00273	0.00272	0.00268
	(!A2 * A3 * B2 * X)	-0.00123	-0.00125	-0.00132
	(!A2 * A3 * B2 * X)	0.00271	0.00272	0.00264
	(!A2 * A3 * B1 * !B2 * X)	-0.00093	-0.00095	-0.00101
	(!A2 * A3 * B1 * !B2 * X)	0.00301	0.00302	0.00294
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * A3 * !B1 * !B2 * !X)	0.00308	0.00309	0.00308
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00052	-0.00070	-0.00072
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00330	0.00319	0.00313

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00267	-0.00269	-0.00267
	(A2 * A3 * B2 * X)	0.00429	0.00434	0.00431
	(A2 * A3 * B1 * !B2 * X)	-0.00207	-0.00209	-0.00207
	(A2 * A3 * B1 * !B2 * X)	0.00489	0.00494	0.00492
	(A2 * !B1 * !B2 * !X)	-0.00112	-0.00114	-0.00112
	(A2 * !B1 * !B2 * !X)	0.00584	0.00589	0.00585
	(A2 * !A3 * B2 * X)	-0.00216	-0.00220	-0.00227
	(A2 * !A3 * B2 * X)	0.00487	0.00490	0.00480
	(A2 * !A3 * B1 * !B2 * X)	-0.00156	-0.00160	-0.00167
	(A2 * !A3 * B1 * !B2 * X)	0.00547	0.00550	0.00540
	(!A2 * A3 * B2 * X)	-0.00161	-0.00165	-0.00177
	(!A2 * A3 * B2 * X)	0.00547	0.00548	0.00533
	(!A2 * A3 * B1 * !B2 * X)	-0.00101	-0.00104	-0.00117
	(!A2 * A3 * B1 * !B2 * X)	0.00608	0.00608	0.00593
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00112
	(!A2 * A3 * !B1 * !B2 * !X)	0.00575	0.00577	0.00576
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00060	-0.00099	-0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00629	0.00603	0.00590

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)**	0.00182	0.00184	0.00176
	(A1 * A3 * B2 * X)	-0.00110	-0.00110	-0.00113
	(A1 * A3 * B1 * !B2 * X)	0.00212	0.00214	0.00206
	(A1 * A3 * B1 * !B2 * X)	-0.00080	-0.00080	-0.00083
	(A1 * A3 * !B1 * !B2 * !X)	0.00195	0.00197	0.00195
	(A1 * A3 * !B1 * !B2 * !X)	-0.00104	-0.00105	-0.00099
	(A1 * !A3 * B2 * X)	0.00183	0.00183	0.00181
	(A1 * !A3 * B2 * X)	-0.00071	-0.00071	-0.00071
	(A1 * !A3 * B1 * !B2 * X)	0.00213	0.00213	0.00211
	(A1 * !A3 * B1 * !B2 * X)	-0.00041	-0.00041	-0.00041
	(A1 * !A3 * !B1 * !B2 * !X)	0.00196	0.00196	0.00195
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00158	-0.00157
	(!A1 * A3 * B2 * X)	0.00240	0.00194	0.00219
	(!A1 * A3 * B2 * X)	-0.00117	-0.00164	-0.00135
	(!A1 * A3 * B1 * !B2 * X)	0.00270	0.00224	0.00249
	(!A1 * A3 * B1 * !B2 * X)	-0.00087	-0.00134	-0.00105
	(!A1 * A3 * !B1 * !B2 * !X)	0.00196	0.00197	0.00195
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00158	-0.00158	-0.00156
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00190	0.00192	0.00191
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00156	-0.00158	-0.00156

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00204	0.00207	0.00199
	(A1 * A3 * B2 * X)	-0.00110	-0.00109	-0.00112
	(A1 * A3 * B1 * !B2 * X)	0.00234	0.00237	0.00229
	(A1 * A3 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00082
	(A1 * A3 * !B1 * !B2 * !X)	0.00258	0.00260	0.00258
	(A1 * A3 * !B1 * !B2 * !X)	-0.00063	-0.00064	-0.00058
	(A1 * !A3 * B2 * X)	0.00206	0.00206	0.00204
	(A1 * !A3 * B2 * X)	-0.00071	-0.00071	-0.00070
	(A1 * !A3 * B1 * !B2 * X)	0.00236	0.00236	0.00234
	(A1 * !A3 * B1 * !B2 * X)	-0.00040	-0.00040	-0.00040
	(A1 * !A3 * !B1 * !B2 * !X)	0.00259	0.00258	0.00257
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * B2 * X)	0.00263	0.00217	0.00241
	(!A1 * A3 * B2 * X)	-0.00117	-0.00164	-0.00134
	(!A1 * A3 * B1 * !B2 * X)	0.00293	0.00247	0.00271
	(!A1 * A3 * B1 * !B2 * X)	-0.00086	-0.00133	-0.00104
	(!A1 * A3 * !B1 * !B2 * !X)	0.00259	0.00260	0.00258
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00117	-0.00117	-0.00115
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00251	0.00254	0.00252
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00115	-0.00117	-0.00115

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00359	0.00367	0.00345
	(A1 * A3 * B2 * X)	-0.00247	-0.00243	-0.00252
	(A1 * A3 * B1 * !B2 * X)	0.00419	0.00427	0.00405
	(A1 * A3 * B1 * !B2 * X)	-0.00186	-0.00183	-0.00192
	(A1 * A3 * !B1 * !B2 * !X)	0.00478	0.00481	0.00478
	(A1 * A3 * !B1 * !B2 * !X)	-0.00142	-0.00143	-0.00128
	(A1 * !A3 * B2 * X)	0.00371	0.00376	0.00363
	(A1 * !A3 * B2 * X)	-0.00154	-0.00157	-0.00157
	(A1 * !A3 * B1 * !B2 * X)	0.00431	0.00436	0.00423
	(A1 * !A3 * B1 * !B2 * X)	-0.00093	-0.00097	-0.00097
	(A1 * !A3 * !B1 * !B2 * !X)	0.00480	0.00478	0.00476
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00254	-0.00253	-0.00251
	(!A1 * A3 * B2 * X)	0.00497	0.00390	0.00431
	(!A1 * A3 * B2 * X)	-0.00245	-0.00354	-0.00301
	(!A1 * A3 * B1 * !B2 * X)	0.00557	0.00451	0.00491
	(!A1 * A3 * B1 * !B2 * X)	-0.00185	-0.00294	-0.00240
	(!A1 * A3 * !B1 * !B2 * !X)	0.00480	0.00482	0.00478
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00253	-0.00253	-0.00249
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00471	0.00468	0.00469
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00254	-0.00251	-0.00250

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)**	-0.00149	-0.00149	-0.00148
	(A1 * A3 * B2 * X)	0.00136	0.00137	0.00135
	(A1 * A3 * B1 * !B2 * X)	-0.00119	-0.00119	-0.00118
	(A1 * A3 * B1 * !B2 * X)	0.00167	0.00167	0.00166
	(A1 * A3 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * A3 * !B1 * !B2 * !X)	0.00193	0.00194	0.00190
	(A1 * !A3 * B2 * X)	-0.00124	-0.00125	-0.00142
	(A1 * !A3 * B2 * X)	0.00130	0.00130	0.00113
	(A1 * !A3 * B1 * !B2 * X)	-0.00093	-0.00095	-0.00112
	(A1 * !A3 * B1 * !B2 * X)	0.00160	0.00160	0.00143
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00100	-0.00102	-0.00101
	(A1 * !A3 * !B1 * !B2 * !X)	0.00250	0.00251	0.00251
	(!A1 * A3 * B2 * X)	-0.00091	-0.00092	-0.00102
	(!A1 * A3 * B2 * X)	0.00264	0.00262	0.00253
	(!A1 * A3 * B1 * !B2 * X)	-0.00061	-0.00062	-0.00072
	(!A1 * A3 * B1 * !B2 * X)	0.00294	0.00292	0.00283
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !B2 * !X)	0.00250	0.00252	0.00250
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00075	-0.00094	-0.00097
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00271	0.00258	0.00251

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00169	-0.00169	-0.00168
	(A1 * A3 * B2 * X)	0.00138	0.00139	0.00137
	(A1 * A3 * B1 * !B2 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A3 * B1 * !B2 * X)	0.00168	0.00169	0.00167
	(A1 * A3 * !B1 * !B2 * !X)	-0.00079	-0.00081	-0.00080
	(A1 * A3 * !B1 * !B2 * !X)	0.00236	0.00238	0.00233
	(A1 * !A3 * B2 * X)	-0.00144	-0.00146	-0.00162
	(A1 * !A3 * B2 * X)	0.00132	0.00132	0.00115
	(A1 * !A3 * B1 * !B2 * X)	-0.00113	-0.00116	-0.00132
	(A1 * !A3 * B1 * !B2 * X)	0.00162	0.00162	0.00145
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00080	-0.00079
	(A1 * !A3 * !B1 * !B2 * !X)	0.00294	0.00295	0.00295
	(!A1 * A3 * B2 * X)	-0.00111	-0.00114	-0.00122
	(!A1 * A3 * B2 * X)	0.00266	0.00266	0.00255
	(!A1 * A3 * B1 * !B2 * X)	-0.00081	-0.00084	-0.00092
	(!A1 * A3 * B1 * !B2 * X)	0.00296	0.00296	0.00285
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00079	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !B2 * !X)	0.00293	0.00295	0.00294
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00052	-0.00072	-0.00075
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00313	0.00301	0.00295

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00281	-0.00284	-0.00280
	(A1 * A3 * B2 * X)	0.00303	0.00307	0.00303
	(A1 * A3 * B1 * !B2 * X)	-0.00222	-0.00224	-0.00220
	(A1 * A3 * B1 * !B2 * X)	0.00364	0.00367	0.00363
	(A1 * A3 * !B1 * !B2 * !X)	-0.00118	-0.00121	-0.00119
	(A1 * A3 * !B1 * !B2 * !X)	0.00485	0.00488	0.00479
	(A1 * !A3 * B2 * X)	-0.00248	-0.00251	-0.00275
	(A1 * !A3 * B2 * X)	0.00279	0.00278	0.00251
	(A1 * !A3 * B1 * !B2 * X)	-0.00188	-0.00191	-0.00215
	(A1 * !A3 * B1 * !B2 * X)	0.00339	0.00339	0.00312
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00116	-0.00119	-0.00117
	(A1 * !A3 * !B1 * !B2 * !X)	0.00611	0.00613	0.00611
	(!A1 * A3 * B2 * X)	-0.00168	-0.00174	-0.00190
	(!A1 * A3 * B2 * X)	0.00565	0.00565	0.00545
	(!A1 * A3 * B1 * !B2 * X)	-0.00108	-0.00113	-0.00130
	(!A1 * A3 * B1 * !B2 * X)	0.00626	0.00626	0.00605
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * A3 * !B1 * !B2 * !X)	0.00609	0.00612	0.00609
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00063	-0.00104	-0.00110
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00653	0.00625	0.00612

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00173	0.00176	0.00174
	(A2 * B2 * X)	-0.00079	-0.00081	-0.00079
	(A2 * B1 * !B2 * X)	0.00203	0.00206	0.00204
	(A2 * B1 * !B2 * X)	-0.00049	-0.00051	-0.00049
	(A2 * !B1 * !B2 * !X)	0.00195	0.00197	0.00195
	(A2 * !B1 * !B2 * !X)	-0.00156	-0.00158	-0.00157
	(A1 * !A2 * B2 * X)	0.00174	0.00175	0.00176
	(A1 * !A2 * B2 * X)	-0.00069	-0.00070	-0.00068
	(A1 * !A2 * B1 * !B2 * X)	0.00204	0.00206	0.00206
	(A1 * !A2 * B1 * !B2 * X)	-0.00039	-0.00040	-0.00038
	(A1 * !A2 * !B1 * !B2 * !X)	0.00197	0.00197	0.00195
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00152	-0.00155	-0.00155
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00191	0.00193	0.00192
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00157	-0.00158	-0.00157
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00200	0.00203	0.00200
	(A2 * B2 * X)	-0.00078	-0.00080	-0.00078
	(A2 * B1 * !B2 * X)	0.00230	0.00233	0.00230
	(A2 * B1 * !B2 * X)	-0.00048	-0.00049	-0.00048
	(A2 * !B1 * !B2 * !X)	0.00258	0.00258	0.00258
	(A2 * !B1 * !B2 * !X)	-0.00118	-0.00120	-0.00120
	(A1 * !A2 * B2 * X)	0.00201	0.00202	0.00203
	(A1 * !A2 * B2 * X)	-0.00068	-0.00069	-0.00066
	(A1 * !A2 * B1 * !B2 * X)	0.00231	0.00232	0.00233
	(A1 * !A2 * B1 * !B2 * X)	-0.00038	-0.00039	-0.00036
	(A1 * !A2 * !B1 * !B2 * !X)	0.00260	0.00259	0.00258
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00115	-0.00118	-0.00118
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00252	0.00254	0.00253
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00119	-0.00120	-0.00119

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00328	0.00334	0.00329
	(A2 * B2 * X)	-0.00156	-0.00159	-0.00156
	(A2 * B1 * !B2 * X)	0.00389	0.00394	0.00390
	(A2 * B1 * !B2 * X)	-0.00096	-0.00099	-0.00096
	(A2 * !B1 * !B2 * !X)	0.00467	0.00468	0.00467
	(A2 * !B1 * !B2 * !X)	-0.00215	-0.00219	-0.00219
	(A1 * !A2 * B2 * X)	0.00330	0.00331	0.00334
	(A1 * !A2 * B2 * X)	-0.00137	-0.00138	-0.00134
	(A1 * !A2 * B1 * !B2 * X)	0.00390	0.00391	0.00395
	(A1 * !A2 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00074
	(A1 * !A2 * !B1 * !B2 * !X)	0.00467	0.00470	0.00467
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00204	-0.00215	-0.00216
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00459	0.00462	0.00460
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00219	-0.00221	-0.00219

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00146	-0.00147	-0.00155
	(A2 * B2 * X)	0.00105	0.00106	0.00099
	(A2 * B1 * !B2 * X)	-0.00116	-0.00117	-0.00125
	(A2 * B1 * !B2 * X)	0.00136	0.00136	0.00129
	(A2 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00102
	(A2 * !B1 * !B2 * !X)	0.00250	0.00250	0.00250
	(A1 * !A2 * B2 * X)	-0.00110	-0.00112	-0.00131
	(A1 * !A2 * B2 * X)	0.00136	0.00136	0.00120
	(A1 * !A2 * B1 * !B2 * X)	-0.00080	-0.00082	-0.00101
	(A1 * !A2 * B1 * !B2 * X)	0.00166	0.00166	0.00150
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00102
	(A1 * !A2 * !B1 * !B2 * !X)	0.00245	0.00245	0.00245
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00075	-0.00095	-0.00097
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00271	0.00258	0.00252
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00170	-0.00171	-0.00179
	(A2 * B2 * X)	0.00107	0.00107	0.00100
	(A2 * B1 * !B2 * X)	-0.00140	-0.00141	-0.00149
	(A2 * B1 * !B2 * X)	0.00137	0.00137	0.00130
	(A2 * !B1 * !B2 * !X)	-0.00079	-0.00080	-0.00080
	(A2 * !B1 * !B2 * !X)	0.00297	0.00297	0.00297
	(A1 * !A2 * B2 * X)	-0.00134	-0.00136	-0.00155
	(A1 * !A2 * B2 * X)	0.00137	0.00137	0.00121
	(A1 * !A2 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00125
	(A1 * !A2 * B1 * !B2 * X)	0.00167	0.00167	0.00151
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00079	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	0.00292	0.00292	0.00292
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00052	-0.00072	-0.00075
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00317	0.00304	0.00299

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00267	-0.00269	-0.00290
	(A2 * B2 * X)	0.00215	0.00216	0.00199
	(A2 * B1 * !B2 * X)	-0.00207	-0.00209	-0.00230
	(A2 * B1 * !B2 * X)	0.00276	0.00276	0.00259
	(A2 * !B1 * !B2 * !X)	-0.00106	-0.00110	-0.00108
	(A2 * !B1 * !B2 * !X)	0.00576	0.00578	0.00576
	(A1 * !A2 * B2 * X)	-0.00190	-0.00193	-0.00242
	(A1 * !A2 * B2 * X)	0.00281	0.00281	0.00243
	(A1 * !A2 * B1 * !B2 * X)	-0.00130	-0.00133	-0.00182
	(A1 * !A2 * B1 * !B2 * X)	0.00341	0.00341	0.00303
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00106	-0.00110	-0.00108
	(A1 * !A2 * !B1 * !B2 * !X)	0.00563	0.00565	0.00564
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00055	-0.00096	-0.00101
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00620	0.00592	0.00580

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00240	0.00205	0.00231
	(A3 * B2 * X)	-0.00138	-0.00175	-0.00145
	(A2 * !A3 * B2 * X)	0.00242	0.00207	0.00233
	(A2 * !A3 * B2 * X)	-0.00136	-0.00173	-0.00143
	(A1 * !A2 * !A3 * B2 * X)	0.00270	0.00235	0.00261
	(A1 * !A2 * !A3 * B2 * X)	-0.00108	-0.00145	-0.00115
	(!A1 * !A2 * !A3 * B2 * !X)	0.00102	0.00103	0.00103
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00202	-0.00203	-0.00201
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00114	0.00113	0.00105
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00184	-0.00186	-0.00200

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00277	0.00243	0.00269
	(A3 * B2 * X)	-0.00154	-0.00190	-0.00160
	(A2 * !A3 * B2 * X)	0.00279	0.00245	0.00271
	(A2 * !A3 * B2 * X)	-0.00152	-0.00188	-0.00158
	(A1 * !A2 * !A3 * B2 * X)	0.00307	0.00273	0.00298
	(A1 * !A2 * !A3 * B2 * X)	-0.00124	-0.00160	-0.00130
	(!A1 * !A2 * !A3 * B2 * !X)	0.00156	0.00156	0.00156
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00189	-0.00190	-0.00188
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00169	0.00169	0.00159
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00170	-0.00171	-0.00187
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00521	0.00448	0.00490
	(A3 * B2 * X)	-0.00319	-0.00398	-0.00344
	(A2 * !A3 * B2 * X)	0.00528	0.00455	0.00496
	(A2 * !A3 * B2 * X)	-0.00312	-0.00392	-0.00338
	(A1 * !A2 * !A3 * B2 * X)	0.00590	0.00517	0.00559
	(A1 * !A2 * !A3 * B2 * X)	-0.00252	-0.00332	-0.00277
	(!A1 * !A2 * !A3 * B2 * !X)	0.00275	0.00276	0.00276
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00421	-0.00422	-0.00418
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00297	0.00299	0.00281
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00385	-0.00390	-0.00418

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00107	-0.00110	-0.00118
	(A3 * B2 * X)	0.00269	0.00271	0.00260
	(A2 * !A3 * B2 * X)	-0.00105	-0.00108	-0.00116
	(A2 * !A3 * B2 * X)	0.00271	0.00273	0.00262
	(A1 * !A2 * !A3 * B2 * X)	-0.00077	-0.00079	-0.00089
	(A1 * !A2 * !A3 * B2 * X)	0.00299	0.00298	0.00290
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00004	-0.00004	-0.00007
	(!A1 * !A2 * !A3 * B2 * !X)	0.00305	0.00305	0.00298
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00012	-0.00013	-0.00012
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00290	0.00295	0.00291
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00142	-0.00145	-0.00153
	(A3 * B2 * X)	0.00287	0.00289	0.00277
	(A2 * !A3 * B2 * X)	-0.00140	-0.00142	-0.00151
	(A2 * !A3 * B2 * X)	0.00289	0.00288	0.00279
	(A1 * !A2 * !A3 * B2 * X)	-0.00112	-0.00114	-0.00123
	(A1 * !A2 * !A3 * B2 * X)	0.00317	0.00317	0.00307
	(!A1 * !A2 * !A3 * B2 * !X)	0.00028	0.00027	0.00024
	(!A1 * !A2 * !A3 * B2 * !X)	0.00376	0.00378	0.00370
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00020	0.00018	0.00020
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00363	0.00368	0.00364
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00236	-0.00241	-0.00258
	(A3 * B2 * X)	0.00600	0.00600	0.00581
	(A2 * !A3 * B2 * X)	-0.00235	-0.00240	-0.00256
	(A2 * !A3 * B2 * X)	0.00601	0.00602	0.00583
	(A1 * !A2 * !A3 * B2 * X)	-0.00189	-0.00193	-0.00208
	(A1 * !A2 * !A3 * B2 * X)	0.00650	0.00652	0.00633
	(!A1 * !A2 * !A3 * B2 * !X)	0.00094	0.00092	0.00087
	(!A1 * !A2 * !A3 * B2 * !X)	0.00794	0.00798	0.00784
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00077	0.00076	0.00077
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00769	0.00773	0.00772

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00179	0.00182	0.00182
	(A3 * B1 * X)	-0.00080	-0.00081	-0.00077
	(A2 * !A3 * B1 * X)	0.00181	0.00184	0.00184
	(A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00075
	(A1 * !A2 * !A3 * B1 * X)	0.00209	0.00210	0.00212
	(A1 * !A2 * !A3 * B1 * X)	-0.00050	-0.00050	-0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00200	-0.00199	-0.00198
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00104	0.00103	0.00095
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00182	-0.00183	-0.00197
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00202	0.00205	0.00204
	(A3 * B1 * X)	-0.00079	-0.00080	-0.00076
	(A2 * !A3 * B1 * X)	0.00204	0.00207	0.00206
	(A2 * !A3 * B1 * X)	-0.00077	-0.00079	-0.00075
	(A1 * !A2 * !A3 * B1 * X)	0.00232	0.00232	0.00234
	(A1 * !A2 * !A3 * B1 * X)	-0.00049	-0.00049	-0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	0.00140	0.00140	0.00140
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00160	-0.00163	-0.00160
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00154	0.00153	0.00144
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00142	-0.00143	-0.00159

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00348	0.00351	0.00353
	(A3 * B1 * X)	-0.00157	-0.00158	-0.00152
	(A2 * !A3 * B1 * X)	0.00352	0.00354	0.00357
	(A2 * !A3 * B1 * X)	-0.00153	-0.00154	-0.00148
	(A1 * !A2 * !A3 * B1 * X)	0.00408	0.00410	0.00413
	(A1 * !A2 * !A3 * B1 * X)	-0.00097	-0.00098	-0.00092
	(!A1 * !A2 * !A3 * B1 * !X)	0.00272	0.00270	0.00270
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00307	-0.00307	-0.00304
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00294	0.00295	0.00277
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00269	-0.00273	-0.00301

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00124	-0.00126	-0.00142
	(A3 * B1 * X)	0.00137	0.00136	0.00120
	(A2 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00140
	(A2 * !A3 * B1 * X)	0.00139	0.00138	0.00122
	(A1 * !A2 * !A3 * B1 * X)	-0.00094	-0.00095	-0.00112
	(A1 * !A2 * !A3 * B1 * X)	0.00167	0.00166	0.00150
	(!A1 * !A2 * !A3 * B1 * !X)	0.00008	0.00005	0.00004
	(!A1 * !A2 * !A3 * B1 * !X)	0.00301	0.00303	0.00295
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00002	-0.00003	-0.00002
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00288	0.00291	0.00288

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00145	-0.00146	-0.00162
	(A3 * B1 * X)	0.00139	0.00138	0.00122
	(A2 * !A3 * B1 * X)	-0.00143	-0.00144	-0.00160
	(A2 * !A3 * B1 * X)	0.00141	0.00140	0.00123
	(A1 * !A2 * !A3 * B1 * X)	-0.00115	-0.00116	-0.00132
	(A1 * !A2 * !A3 * B1 * X)	0.00169	0.00167	0.00151
	(!A1 * !A2 * !A3 * B1 * !X)	0.00045	0.00042	0.00040
	(!A1 * !A2 * !A3 * B1 * !X)	0.00349	0.00350	0.00342
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00035	0.00034	0.00035
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00335	0.00339	0.00336
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00231	-0.00234	-0.00268
	(A3 * B1 * X)	0.00276	0.00275	0.00244
	(A2 * !A3 * B1 * X)	-0.00227	-0.00231	-0.00264
	(A2 * !A3 * B1 * X)	0.00279	0.00279	0.00248
	(A1 * !A2 * !A3 * B1 * X)	-0.00171	-0.00175	-0.00209
	(A1 * !A2 * !A3 * B1 * X)	0.00335	0.00336	0.00304
	(!A1 * !A2 * !A3 * B1 * !X)	0.00103	0.00096	0.00093
	(!A1 * !A2 * !A3 * B1 * !X)	0.00682	0.00684	0.00669
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00081	0.00080	0.00081
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00653	0.00655	0.00655

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00286	0.00293	0.00303	0.00300	0.00303	0.33899
sky130_fd_sc_hs__o41ai_2	0.00565	0.00574	0.00554	0.00561	0.00590	0.59068
sky130_fd_sc_hs__o41ai_4	0.01101	0.01095	0.01110	0.01124	0.00812	1.07701

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	29.66150	98.80570
sky130_fd_sc_hs__o41ai_2	0.00000	59.33610	197.47100
sky130_fd_sc_hs__o41ai_4	0.00000	72.13910	295.81900

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)	0.20681	0.98106	8.15704
	A2->Y (FR)	0.19455	0.99915	8.61196
	A3->Y (FR)	0.16766	1.01477	9.10674
	A4->Y (FR)	0.12350	1.00170	9.36421
	B1->Y (FR)	0.02706	0.44265	4.56517
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.22098	0.85837	8.05311
	A2->Y (FR)	0.20589	0.86848	8.49202
	A3->Y (FR)	0.17464	0.89357	9.14320
	A4->Y (FR)	0.11226	0.87104	9.38883
	B1->Y (FR)	0.02133	0.36481	4.24406
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.21097	0.71782	7.76716
	A2->Y (FR)	0.19613	0.73504	8.28133
	A3->Y (FR)	0.16495	0.75873	8.93455
	A4->Y (FR)	0.10365	0.74710	9.27053
	B1->Y (FR)	0.02828	0.46661	6.16825

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.04831	0.35911	3.00493
	A2->Y (RF)	0.04936	0.35111	2.96947
	A3->Y (RF)	0.04699	0.34121	2.94139
	A4->Y (RF)	0.03709	0.32546	2.89064
	B1->Y (RF)	0.03816	0.41734	3.77731
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.04623	0.30668	2.82988
	A2->Y (RF)	0.04734	0.29850	2.79422
	A3->Y (RF)	0.04575	0.28585	2.74184
	A4->Y (RF)	0.03461	0.26731	2.69652
	B1->Y (RF)	0.03434	0.37022	3.71766
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.05144	0.26472	2.74740
	A2->Y (RF)	0.05014	0.25152	2.66130
	A3->Y (RF)	0.04552	0.23510	2.58342
	A4->Y (RF)	0.03128	0.20948	2.46286
	B1->Y (RF)	0.03804	0.35947	4.01465

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00183	0.00233	0.03896
	A1	0.01283	0.01332	0.04995
	A2	0.00189	0.00263	0.03511
	A2	0.01150	0.01224	0.04469
	A3	0.00188	0.00298	0.03301
	A3	0.01024	0.01135	0.04139
	A4	0.00183	0.00393	0.03939
	A4	0.00887	0.01095	0.04642
	B1	-0.00059	0.00392	0.06716
	B1	0.00450	0.00903	0.07251
sky130_fd_sc_hs__o41ai_2	A1	0.00287	0.00363	0.07355
	A1	0.02507	0.02585	0.09573
	A2	0.00296	0.00429	0.06731
	A2	0.02235	0.02369	0.08663
	A3	0.00306	0.00507	0.06132
	A3	0.01952	0.02155	0.07780
	A4	0.00290	0.00726	0.07271
	A4	0.01663	0.02101	0.08640
	B1	-0.00239	0.00743	0.13435
	B1	0.00753	0.01739	0.14447

sky130_fd_sc_hs__o41ai_4	**A1**	0.00495	0.00690	0.14021
	A1	0.04861	0.05063	0.18408
	A2	0.00509	0.00814	0.12645
	A2	0.04307	0.04614	0.16424
	A3	0.00510	0.00966	0.11638
	A3	0.03770	0.04219	0.14893
	A4	0.00480	0.01404	0.13877
	A4	0.03186	0.04107	0.16581
	B1	-0.00365	0.00874	0.15302
	B1	0.01037	0.02283	0.16806

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01599	0.01680	0.04764
	A1	0.00496	0.00576	0.03657
	A2	0.01341	0.01438	0.04313
	A2	0.00376	0.00469	0.03341
	A3	0.01072	0.01191	0.03891
	A3	0.00233	0.00351	0.03048
	A4	0.00820	0.00962	0.03579
	A4	0.00113	0.00257	0.02869
	B1	0.00545	0.00842	0.05607
	B1	0.00033	0.00330	0.05094

sky130_fd_sc_hs__o41ai_2	**A1**	0.03367	0.03516	0.09492
	A1	0.01146	0.01298	0.07264
	A2	0.02773	0.02972	0.08534
	A2	0.00829	0.01028	0.06590
	A3	0.02234	0.02464	0.07579
	A3	0.00581	0.00815	0.05918
	A4	0.01587	0.01908	0.06861
	A4	0.00209	0.00533	0.05487
	B1	0.01055	0.01757	0.11568
	B1	0.00061	0.00758	0.10571
sky130_fd_sc_hs__o41ai_4	**A1**	0.06271	0.06643	0.18761
	A1	0.01906	0.02272	0.14373
	A2	0.05133	0.05580	0.16723
	A2	0.01324	0.01772	0.12902
	A3	0.04063	0.04597	0.14822
	A3	0.00795	0.01331	0.11534
	A4	0.02854	0.03596	0.13551
	A4	0.00150	0.00887	0.10821
	B1	0.01607	0.02462	0.12894
	B1	0.00201	0.01050	0.11477

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)**	0.00227	0.00223	0.00222
	(A2 * A4 * B1 * !Y)	-0.00175	-0.00184	-0.00183
	(A2 * A3 * !A4 * B1 * !Y)	0.00239	0.00226	0.00224
	(A2 * A3 * !A4 * B1 * !Y)	-0.00165	-0.00181	-0.00181
	(A2 * !B1 * Y)	0.00178	0.00178	0.00178
	(A2 * !B1 * Y)	-0.00225	-0.00228	-0.00228
	(A2 * !A3 * !A4 * B1 * !Y)	0.00282	0.00248	0.00246
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00128	-0.00164	-0.00160
	(!A2 * A3 * A4 * B1 * !Y)	0.00239	0.00226	0.00224
	(!A2 * A3 * A4 * B1 * !Y)	-0.00157	-0.00179	-0.00180
	(!A2 * A3 * !B1 * Y)	0.00177	0.00179	0.00178
	(!A2 * A3 * !B1 * Y)	-0.00217	-0.00225	-0.00225
	(!A2 * A3 * !A4 * B1 * !Y)	0.00287	0.00251	0.00247
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00120	-0.00161	-0.00158
	(!A2 * !A3 * A4 * B1 * !Y)	0.00298	0.00263	0.00263
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00111	-0.00152	-0.00143
	(!A2 * !A3 * A4 * !B1 * Y)	0.00177	0.00178	0.00178
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00212	-0.00223	-0.00222
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00171	0.00173	0.00171
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00228	-0.00230	-0.00228

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00453	0.00445	0.00441
	(A2 * A4 * B1 * !Y)	-0.00349	-0.00368	-0.00367
	(A2 * A3 * !A4 * B1 * !Y)	0.00479	0.00451	0.00446
	(A2 * A3 * !A4 * B1 * !Y)	-0.00325	-0.00362	-0.00362
	(A2 * !B1 * Y)	0.00353	0.00355	0.00352
	(A2 * !B1 * Y)	-0.00450	-0.00457	-0.00456
	(A2 * !A3 * !A4 * B1 * !Y)	0.00583	0.00501	0.00490
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00236	-0.00322	-0.00319
	(!A2 * A3 * A4 * B1 * !Y)	0.00476	0.00451	0.00445
	(!A2 * A3 * A4 * B1 * !Y)	-0.00310	-0.00356	-0.00359
	(!A2 * A3 * !B1 * Y)	0.00352	0.00355	0.00352
	(!A2 * A3 * !B1 * Y)	-0.00432	-0.00450	-0.00448
	(!A2 * A3 * !A4 * B1 * !Y)	0.00587	0.00505	0.00491
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00223	-0.00318	-0.00316
	(!A2 * !A3 * A4 * B1 * !Y)	0.00608	0.00529	0.00523
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00205	-0.00298	-0.00286
	(!A2 * !A3 * A4 * !B1 * Y)	0.00352	0.00355	0.00352
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00421	-0.00444	-0.00441
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00339	0.00342	0.00340
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00458	-0.00459	-0.00457

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00800	0.00779	0.00771
	(A2 * A4 * B1 * !Y)	-0.00780	-0.00820	-0.00819
	(A2 * A3 * !A4 * B1 * !Y)	0.00853	0.00793	0.00783
	(A2 * A3 * !A4 * B1 * !Y)	-0.00731	-0.00808	-0.00807
	(A2 * !B1 * Y)	0.00683	0.00686	0.00680
	(A2 * !B1 * Y)	-0.00899	-0.00912	-0.00910
	(A2 * !A3 * !A4 * B1 * !Y)	0.01049	0.00891	0.00869
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00565	-0.00730	-0.00724
	(!A2 * A3 * A4 * B1 * !Y)	0.00847	0.00792	0.00780
	(!A2 * A3 * A4 * B1 * !Y)	-0.00703	-0.00796	-0.00801
	(!A2 * A3 * !B1 * Y)	0.00680	0.00686	0.00680
	(!A2 * A3 * !B1 * Y)	-0.00862	-0.00897	-0.00892
	(!A2 * A3 * !A4 * B1 * !Y)	0.01059	0.00899	0.00871
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00540	-0.00721	-0.00717
	(!A2 * !A3 * A4 * B1 * !Y)	0.01104	0.00948	0.00936
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00508	-0.00682	-0.00656
	(!A2 * !A3 * A4 * !B1 * Y)	0.00683	0.00685	0.00680
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00844	-0.00885	-0.00879
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00657	0.00659	0.00655
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00916	-0.00917	-0.00912

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)**	-0.00130	-0.00131	-0.00131
	(A2 * A4 * B1 * !Y)	0.00273	0.00276	0.00274
	(A2 * A3 * !A4 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(A2 * A3 * !A4 * B1 * !Y)	0.00276	0.00279	0.00277
	(A2 * !B1 * Y)	-0.00174	-0.00176	-0.00174
	(A2 * !B1 * Y)	0.00230	0.00233	0.00230
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00108	-0.00110	-0.00112
	(A2 * !A3 * !A4 * B1 * !Y)	0.00298	0.00300	0.00296
	(!A2 * A3 * A4 * B1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A2 * A3 * A4 * B1 * !Y)	0.00272	0.00273	0.00273
	(!A2 * A3 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(!A2 * A3 * !B1 * Y)	0.00224	0.00226	0.00225
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00105	-0.00106	-0.00107
	(!A2 * A3 * !A4 * B1 * !Y)	0.00300	0.00302	0.00299
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00090	-0.00091	-0.00093
	(!A2 * !A3 * A4 * B1 * !Y)	0.00316	0.00317	0.00314
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(!A2 * !A3 * A4 * !B1 * Y)	0.00221	0.00223	0.00222
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00152	-0.00167	-0.00169
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00244	0.00237	0.00232

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00258	-0.00261	-0.00258
	(A2 * A4 * B1 * !Y)	0.00548	0.00553	0.00549
	(A2 * A3 * !A4 * B1 * !Y)	-0.00255	-0.00257	-0.00255
	(A2 * A3 * !A4 * B1 * !Y)	0.00553	0.00557	0.00553
	(A2 * !B1 * Y)	-0.00346	-0.00347	-0.00346
	(A2 * !B1 * Y)	0.00458	0.00461	0.00460
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00212	-0.00215	-0.00217
	(A2 * !A3 * !A4 * B1 * !Y)	0.00601	0.00605	0.00596
	(!A2 * A3 * A4 * B1 * !Y)	-0.00252	-0.00254	-0.00253
	(!A2 * A3 * A4 * B1 * !Y)	0.00541	0.00545	0.00543
	(!A2 * A3 * !B1 * Y)	-0.00346	-0.00347	-0.00346
	(!A2 * A3 * !B1 * Y)	0.00447	0.00450	0.00448
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00204	-0.00207	-0.00207
	(!A2 * A3 * !A4 * B1 * !Y)	0.00602	0.00606	0.00600
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00177	-0.00179	-0.00182
	(!A2 * !A3 * A4 * B1 * !Y)	0.00631	0.00633	0.00628
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00345	-0.00348	-0.00346
	(!A2 * !A3 * A4 * !B1 * Y)	0.00440	0.00444	0.00441
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00300	-0.00333	-0.00336
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00489	0.00475	0.00465

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00578	-0.00580	-0.00578
	(A2 * A4 * B1 * !Y)	0.01008	0.01012	0.01009
	(A2 * A3 * !A4 * B1 * !Y)	-0.00568	-0.00574	-0.00571
	(A2 * A3 * !A4 * B1 * !Y)	0.01013	0.01024	0.01019
	(A2 * !B1 * Y)	-0.00668	-0.00672	-0.00668
	(A2 * !B1 * Y)	0.00916	0.00926	0.00917
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00483	-0.00491	-0.00495
	(A2 * !A3 * !A4 * B1 * !Y)	0.01110	0.01121	0.01103
	(!A2 * A3 * A4 * B1 * !Y)	-0.00565	-0.00569	-0.00565
	(!A2 * A3 * A4 * B1 * !Y)	0.00995	0.01002	0.00998
	(!A2 * A3 * !B1 * Y)	-0.00668	-0.00670	-0.00668
	(!A2 * A3 * !B1 * Y)	0.00892	0.00897	0.00892
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00471	-0.00476	-0.00476
	(!A2 * A3 * !A4 * B1 * !Y)	0.01116	0.01124	0.01111
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00416	-0.00418	-0.00426
	(!A2 * !A3 * A4 * B1 * !Y)	0.01176	0.01175	0.01167
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00667	-0.00671	-0.00668
	(!A2 * !A3 * A4 * !B1 * Y)	0.00877	0.00885	0.00879
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00581	-0.00641	-0.00648
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00978	0.00948	0.00927

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)**	0.00229	0.00230	0.00220
	(A1 * A3 * A4 * B1 * !Y)	-0.00107	-0.00108	-0.00111
	(A1 * A3 * !B1 * Y)	0.00172	0.00174	0.00172
	(A1 * A3 * !B1 * Y)	-0.00157	-0.00159	-0.00156
	(A1 * A3 * !A4 * B1 * !Y)	0.00234	0.00235	0.00220
	(A1 * A3 * !A4 * B1 * !Y)	-0.00096	-0.00098	-0.00105
	(A1 * !A3 * A4 * B1 * !Y)	0.00245	0.00254	0.00237
	(A1 * !A3 * A4 * B1 * !Y)	-0.00090	-0.00080	-0.00089
	(A1 * !A3 * A4 * !B1 * Y)	0.00172	0.00174	0.00172
	(A1 * !A3 * A4 * !B1 * Y)	-0.00152	-0.00152	-0.00150
	(A1 * !A3 * !A4 * B1 * !Y)	0.00239	0.00239	0.00233
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00046	-0.00047	-0.00049
	(A1 * !A3 * !A4 * !B1 * Y)	0.00173	0.00172	0.00172
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * A3 * A4 * B1 * !Y)	0.00250	0.00223	0.00219
	(!A1 * A3 * A4 * B1 * !Y)	-0.00147	-0.00175	-0.00176
	(!A1 * A3 * !B1 * Y)	0.00171	0.00174	0.00172
	(!A1 * A3 * !B1 * Y)	-0.00221	-0.00224	-0.00223
	(!A1 * A3 * !A4 * B1 * !Y)	0.00291	0.00244	0.00241
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00110	-0.00159	-0.00154
	(!A1 * !A3 * A4 * B1 * !Y)	0.00314	0.00258	0.00258
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00089	-0.00148	-0.00138
	(!A1 * !A3 * A4 * !B1 * Y)	0.00173	0.00174	0.00172
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00216	-0.00220	-0.00219
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00164	0.00165	0.00165
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00223	-0.00223	-0.00223

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00479	0.00479	0.00456
	(A1 * A3 * A4 * B1 * !Y)	-0.00221	-0.00223	-0.00227
	(A1 * A3 * !B1 * Y)	0.00354	0.00357	0.00353
	(A1 * A3 * !B1 * Y)	-0.00325	-0.00329	-0.00323
	(A1 * A3 * !A4 * B1 * !Y)	0.00490	0.00490	0.00459
	(A1 * A3 * !A4 * B1 * !Y)	-0.00198	-0.00201	-0.00214
	(A1 * !A3 * A4 * B1 * !Y)	0.00501	0.00527	0.00489
	(A1 * !A3 * A4 * B1 * !Y)	-0.00197	-0.00173	-0.00190
	(A1 * !A3 * A4 * !B1 * Y)	0.00352	0.00354	0.00353
	(A1 * !A3 * A4 * !B1 * Y)	-0.00321	-0.00323	-0.00317
	(A1 * !A3 * !A4 * B1 * !Y)	0.00489	0.00490	0.00478
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00098	-0.00099	-0.00103
	(A1 * !A3 * !A4 * !B1 * Y)	0.00356	0.00355	0.00353
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00466	-0.00464	-0.00462
	(!A1 * A3 * A4 * B1 * !Y)	0.00502	0.00450	0.00447
	(!A1 * A3 * A4 * B1 * !Y)	-0.00316	-0.00366	-0.00368
	(!A1 * A3 * !B1 * Y)	0.00352	0.00353	0.00353
	(!A1 * A3 * !B1 * Y)	-0.00458	-0.00462	-0.00462
	(!A1 * A3 * !A4 * B1 * !Y)	0.00593	0.00492	0.00493
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00235	-0.00331	-0.00323
	(!A1 * !A3 * A4 * B1 * !Y)	0.00626	0.00526	0.00524
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00197	-0.00311	-0.00293
	(!A1 * !A3 * A4 * !B1 * Y)	0.00351	0.00351	0.00353
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00444	-0.00454	-0.00455
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00338	0.00342	0.00339
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00463	-0.00466	-0.00463

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00832	0.00831	0.00787
	(A1 * A3 * A4 * B1 * !Y)	-0.00499	-0.00503	-0.00510
	(A1 * A3 * !B1 * Y)	0.00678	0.00681	0.00674
	(A1 * A3 * !B1 * Y)	-0.00616	-0.00623	-0.00610
	(A1 * A3 * !A4 * B1 * !Y)	0.00856	0.00853	0.00791
	(A1 * A3 * !A4 * B1 * !Y)	-0.00454	-0.00460	-0.00487
	(A1 * !A3 * A4 * B1 * !Y)	0.00884	0.00930	0.00854
	(A1 * !A3 * A4 * B1 * !Y)	-0.00450	-0.00406	-0.00440
	(A1 * !A3 * A4 * !B1 * Y)	0.00677	0.00676	0.00674
	(A1 * !A3 * A4 * !B1 * Y)	-0.00607	-0.00613	-0.00603
	(A1 * !A3 * !A4 * B1 * !Y)	0.00865	0.00865	0.00837
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00263	-0.00264	-0.00277
	(A1 * !A3 * !A4 * !B1 * Y)	0.00679	0.00676	0.00673
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00915	-0.00912	-0.00907
	(!A1 * A3 * A4 * B1 * !Y)	0.00903	0.00784	0.00776
	(!A1 * A3 * A4 * B1 * !Y)	-0.00686	-0.00799	-0.00804
	(!A1 * A3 * !B1 * Y)	0.00672	0.00673	0.00673
	(!A1 * A3 * !B1 * Y)	-0.00900	-0.00907	-0.00906
	(!A1 * A3 * !A4 * B1 * !Y)	0.01081	0.00866	0.00866
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00528	-0.00732	-0.00716
	(!A1 * !A3 * A4 * B1 * !Y)	0.01155	0.00924	0.00931
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00447	-0.00683	-0.00654
	(!A1 * !A3 * A4 * !B1 * Y)	0.00671	0.00672	0.00673
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00871	-0.00892	-0.00890
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00644	0.00654	0.00648
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00908	-0.00914	-0.00909

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)**	-0.00125	-0.00126	-0.00126
	(A1 * A3 * A4 * B1 * !Y)	0.00197	0.00198	0.00196
	(A1 * A3 * !B1 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * A3 * !B1 * Y)	0.00157	0.00159	0.00156
	(A1 * A3 * !A4 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A3 * !A4 * B1 * !Y)	0.00195	0.00197	0.00195
	(A1 * !A3 * A4 * B1 * !Y)	-0.00126	-0.00127	-0.00126
	(A1 * !A3 * A4 * B1 * !Y)	0.00188	0.00189	0.00187
	(A1 * !A3 * A4 * !B1 * Y)	-0.00168	-0.00169	-0.00169
	(A1 * !A3 * A4 * !B1 * Y)	0.00152	0.00152	0.00150
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00108	-0.00110	-0.00119
	(A1 * !A3 * !A4 * B1 * !Y)	0.00174	0.00175	0.00165
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * !A3 * !A4 * !B1 * Y)	0.00225	0.00227	0.00226
	(!A1 * A3 * A4 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * A3 * A4 * B1 * !Y)	0.00273	0.00274	0.00273
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * !B1 * Y)	0.00225	0.00227	0.00225
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00101	-0.00103	-0.00105
	(!A1 * A3 * !A4 * B1 * !Y)	0.00295	0.00297	0.00292
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00084	-0.00086	-0.00089
	(!A1 * !A3 * A4 * B1 * !Y)	0.00312	0.00314	0.00309
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00168	-0.00169	-0.00169
	(!A1 * !A3 * A4 * !B1 * Y)	0.00219	0.00220	0.00219
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00146	-0.00162	-0.00164
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00238	0.00232	0.00227

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00261	-0.00264	-0.00261
	(A1 * A3 * A4 * B1 * !Y)	0.00405	0.00408	0.00403
	(A1 * A3 * !B1 * Y)	-0.00346	-0.00349	-0.00347
	(A1 * A3 * !B1 * Y)	0.00325	0.00329	0.00323
	(A1 * A3 * !A4 * B1 * !Y)	-0.00259	-0.00261	-0.00258
	(A1 * A3 * !A4 * B1 * !Y)	0.00399	0.00402	0.00399
	(A1 * !A3 * A4 * B1 * !Y)	-0.00262	-0.00265	-0.00262
	(A1 * !A3 * A4 * B1 * !Y)	0.00387	0.00390	0.00389
	(A1 * !A3 * A4 * !B1 * Y)	-0.00347	-0.00349	-0.00347
	(A1 * !A3 * A4 * !B1 * Y)	0.00321	0.00323	0.00317
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00221	-0.00223	-0.00240
	(A1 * !A3 * !A4 * B1 * !Y)	0.00362	0.00361	0.00344
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00347	-0.00349	-0.00347
	(A1 * !A3 * !A4 * !B1 * Y)	0.00466	0.00470	0.00467
	(!A1 * A3 * A4 * B1 * !Y)	-0.00252	-0.00255	-0.00252
	(!A1 * A3 * A4 * B1 * !Y)	0.00560	0.00566	0.00562
	(!A1 * A3 * !B1 * Y)	-0.00346	-0.00349	-0.00347
	(!A1 * A3 * !B1 * Y)	0.00465	0.00470	0.00467
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00211	-0.00215	-0.00218
	(!A1 * A3 * !A4 * B1 * !Y)	0.00608	0.00611	0.00602
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00178	-0.00181	-0.00186
	(!A1 * !A3 * A4 * B1 * !Y)	0.00640	0.00643	0.00634
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00346	-0.00349	-0.00347
	(!A1 * !A3 * A4 * !B1 * Y)	0.00453	0.00458	0.00455
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00297	-0.00330	-0.00336
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00496	0.00474	0.00470

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00577	-0.00581	-0.00575
	(A1 * A3 * A4 * B1 * !Y)	0.00692	0.00696	0.00686
	(A1 * A3 * !B1 * Y)	-0.00660	-0.00666	-0.00661
	(A1 * A3 * !B1 * Y)	0.00616	0.00623	0.00610
	(A1 * A3 * !A4 * B1 * !Y)	-0.00569	-0.00573	-0.00569
	(A1 * A3 * !A4 * B1 * !Y)	0.00679	0.00685	0.00679
	(A1 * !A3 * A4 * B1 * !Y)	-0.00579	-0.00581	-0.00576
	(A1 * !A3 * A4 * B1 * !Y)	0.00663	0.00666	0.00663
	(A1 * !A3 * A4 * !B1 * Y)	-0.00659	-0.00664	-0.00661
	(A1 * !A3 * A4 * !B1 * Y)	0.00607	0.00613	0.00603
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00509	-0.00512	-0.00540
	(A1 * !A3 * !A4 * B1 * !Y)	0.00614	0.00612	0.00582
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00660	-0.00665	-0.00661
	(A1 * !A3 * !A4 * !B1 * Y)	0.00917	0.00924	0.00918
	(!A1 * A3 * A4 * B1 * !Y)	-0.00555	-0.00557	-0.00556
	(!A1 * A3 * A4 * B1 * !Y)	0.01019	0.01023	0.01022
	(!A1 * A3 * !B1 * Y)	-0.00658	-0.00664	-0.00661
	(!A1 * A3 * !B1 * Y)	0.00909	0.00921	0.00915
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00476	-0.00482	-0.00491
	(!A1 * A3 * !A4 * B1 * !Y)	0.01114	0.01117	0.01101
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00410	-0.00417	-0.00427
	(!A1 * !A3 * A4 * B1 * !Y)	0.01179	0.01184	0.01164
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00660	-0.00663	-0.00661
	(!A1 * !A3 * A4 * !B1 * Y)	0.00887	0.00892	0.00890
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00571	-0.00634	-0.00641
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00970	0.00942	0.00924

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)**	0.00249	0.00251	0.00239
	(A2 * A4 * B1 * !Y)	-0.00087	-0.00088	-0.00094
	(A2 * A4 * !B1 * Y)	0.00172	0.00174	0.00172
	(A2 * A4 * !B1 * Y)	-0.00161	-0.00163	-0.00159
	(A2 * !A4 * B1 * !Y)	0.00229	0.00232	0.00225
	(A2 * !A4 * B1 * !Y)	-0.00056	-0.00058	-0.00059
	(A2 * !A4 * !B1 * Y)	0.00174	0.00172	0.00172
	(A2 * !A4 * !B1 * Y)	-0.00228	-0.00228	-0.00228
	(A1 * !A2 * A4 * B1 * !Y)	0.00271	0.00255	0.00252
	(A1 * !A2 * A4 * B1 * !Y)	-0.00071	-0.00083	-0.00083
	(A1 * !A2 * A4 * !B1 * Y)	0.00172	0.00172	0.00172
	(A1 * !A2 * A4 * !B1 * Y)	-0.00157	-0.00158	-0.00156
	(A1 * !A2 * !A4 * B1 * !Y)	0.00242	0.00244	0.00239
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00039	-0.00041	-0.00042
	(A1 * !A2 * !A4 * !B1 * Y)	0.00174	0.00174	0.00172
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00221	-0.00225	-0.00223
	(!A1 * !A2 * A4 * B1 * !Y)	0.00304	0.00249	0.00264
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00102	-0.00155	-0.00137
	(!A1 * !A2 * A4 * !B1 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00230	-0.00229	-0.00228
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00164	0.00165	0.00165
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00228	-0.00228	-0.00228

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00480	0.00486	0.00458
	(A2 * A4 * B1 * !Y)	-0.00187	-0.00185	-0.00199
	(A2 * A4 * !B1 * Y)	0.00335	0.00338	0.00334
	(A2 * A4 * !B1 * Y)	-0.00324	-0.00327	-0.00321
	(A2 * !A4 * B1 * !Y)	0.00442	0.00447	0.00431
	(A2 * !A4 * B1 * !Y)	-0.00114	-0.00117	-0.00121
	(A2 * !A4 * !B1 * Y)	0.00332	0.00335	0.00334
	(A2 * !A4 * !B1 * Y)	-0.00447	-0.00453	-0.00452
	(A1 * !A2 * A4 * B1 * !Y)	0.00535	0.00500	0.00482
	(A1 * !A2 * A4 * B1 * !Y)	-0.00137	-0.00168	-0.00175
	(A1 * !A2 * A4 * !B1 * Y)	0.00335	0.00335	0.00334
	(A1 * !A2 * A4 * !B1 * Y)	-0.00313	-0.00316	-0.00310
	(A1 * !A2 * !A4 * B1 * !Y)	0.00471	0.00474	0.00461
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00078	-0.00080	-0.00085
	(A1 * !A2 * !A4 * !B1 * Y)	0.00333	0.00338	0.00334
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00434	-0.00442	-0.00441
	(!A1 * !A2 * A4 * B1 * !Y)	0.00616	0.00489	0.00507
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00182	-0.00308	-0.00282
	(!A1 * !A2 * A4 * !B1 * Y)	0.00336	0.00335	0.00334
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00455	-0.00454	-0.00452
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00320	0.00321	0.00322
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00453	-0.00453	-0.00453

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00879	0.00898	0.00844
	(A2 * A4 * B1 * !Y)	-0.00446	-0.00449	-0.00473
	(A2 * A4 * !B1 * Y)	0.00682	0.00694	0.00685
	(A2 * A4 * !B1 * Y)	-0.00633	-0.00635	-0.00626
	(A2 * !A4 * B1 * !Y)	0.00809	0.00818	0.00789
	(A2 * !A4 * B1 * !Y)	-0.00321	-0.00328	-0.00333
	(A2 * !A4 * !B1 * Y)	0.00683	0.00688	0.00684
	(A2 * !A4 * !B1 * Y)	-0.00912	-0.00921	-0.00919
	(A1 * !A2 * A4 * B1 * !Y)	0.00997	0.00926	0.00896
	(A1 * !A2 * A4 * B1 * !Y)	-0.00370	-0.00424	-0.00430
	(A1 * !A2 * A4 * !B1 * Y)	0.00688	0.00688	0.00684
	(A1 * !A2 * A4 * !B1 * Y)	-0.00615	-0.00624	-0.00612
	(A1 * !A2 * !A4 * B1 * !Y)	0.00870	0.00876	0.00847
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00254	-0.00258	-0.00261
	(A1 * !A2 * !A4 * !B1 * Y)	0.00684	0.00692	0.00684
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00883	-0.00891	-0.00890
	(!A1 * !A2 * A4 * B1 * !Y)	0.01141	0.00905	0.00943
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00476	-0.00722	-0.00666
	(!A1 * !A2 * A4 * !B1 * Y)	0.00683	0.00688	0.00684
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00922	-0.00925	-0.00920
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00662	0.00663	0.00659
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00926	-0.00925	-0.00921

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)**	-0.00132	-0.00133	-0.00132
	(A2 * A4 * B1 * !Y)	0.00187	0.00189	0.00188
	(A2 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A2 * A4 * !B1 * Y)	0.00161	0.00163	0.00159
	(A2 * !A4 * B1 * !Y)	-0.00130	-0.00131	-0.00132
	(A2 * !A4 * B1 * !Y)	0.00155	0.00156	0.00153
	(A2 * !A4 * !B1 * Y)	-0.00169	-0.00169	-0.00169
	(A2 * !A4 * !B1 * Y)	0.00230	0.00230	0.00230
	(A1 * !A2 * A4 * B1 * !Y)	-0.00132	-0.00133	-0.00130
	(A1 * !A2 * A4 * B1 * !Y)	0.00186	0.00187	0.00187
	(A1 * !A2 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * A4 * !B1 * Y)	0.00157	0.00158	0.00156
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00106	-0.00108	-0.00131
	(A1 * !A2 * !A4 * B1 * !Y)	0.00175	0.00175	0.00157
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !A4 * !B1 * Y)	0.00223	0.00225	0.00223
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00092	-0.00094	-0.00099
	(!A1 * !A2 * A4 * B1 * !Y)	0.00311	0.00312	0.00304
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * A4 * !B1 * Y)	0.00230	0.00233	0.00231
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00146	-0.00162	-0.00164
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00243	0.00236	0.00232

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00246	-0.00249	-0.00245
	(A2 * A4 * B1 * !Y)	0.00385	0.00389	0.00386
	(A2 * A4 * !B1 * Y)	-0.00327	-0.00330	-0.00328
	(A2 * A4 * !B1 * Y)	0.00324	0.00327	0.00321
	(A2 * !A4 * B1 * !Y)	-0.00239	-0.00241	-0.00238
	(A2 * !A4 * B1 * !Y)	0.00314	0.00316	0.00314
	(A2 * !A4 * !B1 * Y)	-0.00327	-0.00330	-0.00328
	(A2 * !A4 * !B1 * Y)	0.00454	0.00460	0.00456
	(A1 * !A2 * A4 * B1 * !Y)	-0.00244	-0.00246	-0.00240
	(A1 * !A2 * A4 * B1 * !Y)	0.00382	0.00385	0.00384
	(A1 * !A2 * A4 * !B1 * Y)	-0.00327	-0.00330	-0.00328
	(A1 * !A2 * A4 * !B1 * Y)	0.00313	0.00316	0.00310
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00193	-0.00195	-0.00237
	(A1 * !A2 * !A4 * B1 * !Y)	0.00348	0.00349	0.00320
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00327	-0.00329	-0.00328
	(A1 * !A2 * !A4 * !B1 * Y)	0.00440	0.00442	0.00441
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00160	-0.00164	-0.00174
	(!A1 * !A2 * A4 * B1 * !Y)	0.00631	0.00632	0.00618
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00327	-0.00329	-0.00328
	(!A1 * !A2 * A4 * !B1 * Y)	0.00456	0.00459	0.00457
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00283	-0.00315	-0.00319
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00483	0.00464	0.00460

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00592	-0.00597	-0.00591
	(A2 * A4 * B1 * !Y)	0.00674	0.00680	0.00675
	(A2 * A4 * !B1 * Y)	-0.00673	-0.00674	-0.00673
	(A2 * A4 * !B1 * Y)	0.00633	0.00635	0.00626
	(A2 * !A4 * B1 * !Y)	-0.00579	-0.00582	-0.00581
	(A2 * !A4 * B1 * !Y)	0.00544	0.00546	0.00543
	(A2 * !A4 * !B1 * Y)	-0.00671	-0.00673	-0.00672
	(A2 * !A4 * !B1 * Y)	0.00922	0.00925	0.00924
	(A1 * !A2 * A4 * B1 * !Y)	-0.00589	-0.00593	-0.00581
	(A1 * !A2 * A4 * B1 * !Y)	0.00673	0.00678	0.00676
	(A1 * !A2 * A4 * !B1 * Y)	-0.00669	-0.00676	-0.00672
	(A1 * !A2 * A4 * !B1 * Y)	0.00615	0.00624	0.00612
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00483	-0.00490	-0.00578
	(A1 * !A2 * !A4 * B1 * !Y)	0.00614	0.00616	0.00554
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00671	-0.00673	-0.00672
	(A1 * !A2 * !A4 * !B1 * Y)	0.00889	0.00891	0.00890
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00423	-0.00430	-0.00453
	(!A1 * !A2 * A4 * B1 * !Y)	0.01192	0.01189	0.01163
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00670	-0.00676	-0.00672
	(!A1 * !A2 * A4 * !B1 * Y)	0.00928	0.00939	0.00932
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00580	-0.00647	-0.00651
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00986	0.00947	0.00936

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00236	0.00239	0.00236
	(A3 * B1 * !Y)	-0.00050	-0.00052	-0.00050
	(A3 * !B1 * Y)	0.00173	0.00173	0.00171
	(A3 * !B1 * Y)	-0.00227	-0.00229	-0.00228
	(A2 * !A3 * B1 * !Y)	0.00236	0.00236	0.00237
	(A2 * !A3 * B1 * !Y)	-0.00049	-0.00049	-0.00049
	(A2 * !A3 * !B1 * Y)	0.00173	0.00173	0.00171
	(A2 * !A3 * !B1 * Y)	-0.00218	-0.00225	-0.00224
	(A1 * !A2 * !A3 * B1 * !Y)	0.00236	0.00239	0.00239
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00041	-0.00042	-0.00040
	(A1 * !A2 * !A3 * !B1 * Y)	0.00173	0.00173	0.00171
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00212	-0.00221	-0.00220
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00164	0.00164	0.00165
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00228	-0.00228	-0.00228
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00461	0.00467	0.00462
	(A3 * B1 * !Y)	-0.00107	-0.00109	-0.00106
	(A3 * !B1 * Y)	0.00340	0.00339	0.00338
	(A3 * !B1 * Y)	-0.00450	-0.00457	-0.00457
	(A2 * !A3 * B1 * !Y)	0.00461	0.00467	0.00462
	(A2 * !A3 * B1 * !Y)	-0.00104	-0.00106	-0.00103
	(A2 * !A3 * !B1 * Y)	0.00337	0.00338	0.00338
	(A2 * !A3 * !B1 * Y)	-0.00429	-0.00444	-0.00446
	(A1 * !A2 * !A3 * B1 * !Y)	0.00462	0.00465	0.00466
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00088	-0.00089	-0.00086
	(A1 * !A2 * !A3 * !B1 * Y)	0.00337	0.00342	0.00338
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00417	-0.00438	-0.00435
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00324	0.00328	0.00325
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00458	-0.00461	-0.00458

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00856	0.00869	0.00857
	(A3 * B1 * !Y)	-0.00286	-0.00292	-0.00285
	(A3 * !B1 * Y)	0.00681	0.00687	0.00685
	(A3 * !B1 * Y)	-0.00888	-0.00909	-0.00910
	(A2 * !A3 * B1 * !Y)	0.00853	0.00870	0.00857
	(A2 * !A3 * B1 * !Y)	-0.00276	-0.00285	-0.00278
	(A2 * !A3 * !B1 * Y)	0.00685	0.00689	0.00685
	(A2 * !A3 * !B1 * Y)	-0.00855	-0.00883	-0.00881
	(A1 * !A2 * !A3 * B1 * !Y)	0.00862	0.00872	0.00866
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00250	-0.00253	-0.00243
	(A1 * !A2 * !A3 * !B1 * Y)	0.00683	0.00694	0.00685
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00828	-0.00857	-0.00855
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00657	0.00660	0.00659
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00911	-0.00913	-0.00910

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00137	-0.00138	-0.00146
	(A3 * B1 * !Y)	0.00148	0.00148	0.00142
	(A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A3 * !B1 * Y)	0.00229	0.00232	0.00230
	(A2 * !A3 * B1 * !Y)	-0.00125	-0.00126	-0.00143
	(A2 * !A3 * B1 * !Y)	0.00155	0.00155	0.00142
	(A2 * !A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A2 * !A3 * !B1 * Y)	0.00223	0.00225	0.00224
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00094	-0.00096	-0.00128
	(A1 * !A2 * !A3 * B1 * !Y)	0.00180	0.00180	0.00158
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * !A3 * !B1 * Y)	0.00219	0.00221	0.00220
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00146	-0.00161	-0.00163
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00243	0.00237	0.00232
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00259	-0.00263	-0.00282
	(A3 * B1 * !Y)	0.00303	0.00305	0.00288
	(A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332
	(A3 * !B1 * Y)	0.00460	0.00464	0.00460
	(A2 * !A3 * B1 * !Y)	-0.00233	-0.00238	-0.00276
	(A2 * !A3 * B1 * !Y)	0.00317	0.00319	0.00289
	(A2 * !A3 * !B1 * Y)	-0.00332	-0.00331	-0.00332
	(A2 * !A3 * !B1 * Y)	0.00445	0.00444	0.00446
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00161	-0.00166	-0.00242
	(A1 * !A2 * !A3 * B1 * !Y)	0.00375	0.00376	0.00323
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332
	(A1 * !A2 * !A3 * !B1 * Y)	0.00434	0.00438	0.00435
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00287	-0.00319	-0.00323
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00488	0.00469	0.00465

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	-0.00625	-0.00634	-0.00669
	(A3 * B1 * !Y)	0.00506	0.00510	0.00478
	(A3 * !B1 * Y)	-0.00670	-0.00673	-0.00673
	(A3 * !B1 * Y)	0.00910	0.00913	0.00915
	(A2 * !A3 * B1 * !Y)	-0.00575	-0.00584	-0.00657
	(A2 * !A3 * B1 * !Y)	0.00530	0.00533	0.00480
	(A2 * !A3 * !B1 * Y)	-0.00673	-0.00675	-0.00673
	(A2 * !A3 * !B1 * Y)	0.00880	0.00883	0.00881
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00437	-0.00441	-0.00591
	(A1 * !A2 * !A3 * B1 * !Y)	0.00641	0.00639	0.00546
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00673	-0.00675	-0.00673
	(A1 * !A2 * !A3 * !B1 * Y)	0.00854	0.00857	0.00855
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00585	-0.00647	-0.00653
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00976	0.00935	0.00925

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)**	0.00076	0.00076	0.00066
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00255	-0.00257	-0.00273
sky130_fd_sc_hs__o41ai_2	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00174	0.00174	0.00156
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00489	-0.00491	-0.00525
sky130_fd_sc_hs__o41ai_4	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00257	0.00257	0.00225
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00518	-0.00522	-0.00587

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)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00278	0.00278	0.00279
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00142	-0.00144	-0.00141
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00535	0.00543	0.00535
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00198	-0.00200	-0.00196
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00605	0.00613	0.00605

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00273	0.00282	0.00283	0.00285	0.00258	1.29351
sky130_fd_sc_hs__o41a_2	0.00289	0.00302	0.00309	0.00294	0.00294	2.65303
sky130_fd_sc_hs__o41a_4	0.00526	0.00564	0.00567	0.00530	0.00483	4.71962

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	81.11000	151.77700
sky130_fd_sc_hs__o41a_2	0.00000	92.22540	120.01300
sky130_fd_sc_hs__o41a_4	0.00000	216.02500	306.36000

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)	0.10112	0.59458	6.39129
	A2->X (RR)	0.09853	0.57815	6.20677
	A3->X (RR)	0.09117	0.55654	6.04764
	A4->X (RR)	0.07739	0.52981	5.94491
	B1->X (RR)	0.09007	0.62366	6.80460
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.10160	0.50472	6.28924
	A2->X (RR)	0.09957	0.49258	6.12740
	A3->X (RR)	0.09357	0.47500	5.98150
	A4->X (RR)	0.07927	0.45055	5.88117
	B1->X (RR)	0.09141	0.54185	6.88286
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.11242	0.45679	6.31695
	A2->X (RR)	0.11011	0.44436	6.16228
	A3->X (RR)	0.09804	0.42074	5.98814
	A4->X (RR)	0.08510	0.39475	5.91339
	B1->X (RR)	0.10085	0.50426	6.91793

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.25419	0.64680	5.41376
	A2->X (FF)	0.24094	0.66407	5.57562
	A3->X (FF)	0.21275	0.67534	5.71305
	A4->X (FF)	0.17113	0.66747	5.76686
	B1->X (FF)	0.06812	0.49992	5.03749
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.30622	0.68119	5.77260
	A2->X (FF)	0.29479	0.70182	5.94425
	A3->X (FF)	0.26836	0.71680	6.09643
	A4->X (FF)	0.22192	0.71157	6.15974
	B1->X (FF)	0.07108	0.46763	5.17636
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.31831	0.64104	5.58767
	A2->X (FF)	0.30319	0.65455	5.74107
	A3->X (FF)	0.26612	0.66400	5.89063
	A4->X (FF)	0.21296	0.65037	5.93590
	B1->X (FF)	0.07847	0.42832	5.06302

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.02186	0.02416	0.09854
	A1	0.01149	0.01381	0.08846
	A2	0.01918	0.02155	0.08777
	A2	0.01021	0.01260	0.07915
	A3	0.01638	0.01900	0.07980
	A3	0.00878	0.01141	0.07271
	A4	0.01426	0.01745	0.08274
	A4	0.00791	0.01111	0.07691
	B1	0.01111	0.01699	0.10944
	B1	0.00687	0.01278	0.10549
sky130_fd_sc_hs__o41a_2	A1	0.02543	0.02768	0.10446
	A1	0.01436	0.01665	0.09421
	A2	0.02288	0.02518	0.09323
	A2	0.01315	0.01549	0.08423
	A3	0.02004	0.02262	0.08461
	A3	0.01158	0.01417	0.07726
	A4	0.01744	0.02071	0.08717
	A4	0.01038	0.01372	0.08014
	B1	0.01390	0.02061	0.13046
	B1	0.00899	0.01580	0.12614

sky130_fd_sc_hs__o41a_4	**A1**	0.05252	0.05586	0.19744
	A1	0.03183	0.03530	0.17785
	A2	0.04759	0.05150	0.17890
	A2	0.02893	0.03301	0.16148
	A3	0.04054	0.04546	0.16169
	A3	0.02480	0.02977	0.14791
	A4	0.03485	0.04108	0.16595
	A4	0.02233	0.02861	0.15322
	B1	0.04131	0.05083	0.23533
	B1	0.01996	0.03252	0.22918

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00808	0.00848	0.08433
	A1	0.01840	0.01881	0.09405
	A2	0.00814	0.00903	0.07596
	A2	0.01707	0.01797	0.08472
	A3	0.00813	0.00966	0.07061
	A3	0.01570	0.01725	0.07817
	A4	0.00807	0.01081	0.07667
	A4	0.01439	0.01714	0.08299
	B1	0.00436	0.01155	0.11719
	B1	0.01141	0.01813	0.11925

sky130_fd_sc_hs__o41a_2	**A1**	0.01662	0.01319	0.09013
	A1	0.02765	0.02424	0.10000
	A2	0.01670	0.01377	0.08216
	A2	0.02638	0.02344	0.09008
	A3	0.01669	0.01426	0.07707
	A3	0.02510	0.02272	0.08322
	A4	0.01662	0.01554	0.08411
	A4	0.02362	0.02256	0.08818
	B1	0.00893	0.01587	0.12674
	B1	0.01651	0.02334	0.13313
sky130_fd_sc_hs__o41a_4	**A1**	0.03367	0.02624	0.16547
	A1	0.05429	0.04687	0.18610
	A2	0.03300	0.02661	0.15699
	A2	0.05160	0.04520	0.16988
	A3	0.03311	0.02802	0.14216
	A3	0.04880	0.04375	0.15704
	A4	0.03359	0.03081	0.15734
	A4	0.04606	0.04326	0.16635
	B1	0.01881	0.03082	0.23239
	B1	0.03506	0.04640	0.23725

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)**	0.00252	0.00247	0.00246
	(A2 * A4 * B1 * X)	-0.00131	-0.00140	-0.00140
	(A2 * A3 * !A4 * B1 * X)	0.00263	0.00250	0.00249
	(A2 * A3 * !A4 * B1 * X)	-0.00120	-0.00138	-0.00137
	(A2 * !B1 * !X)	0.00199	0.00200	0.00199
	(A2 * !B1 * !X)	-0.00184	-0.00187	-0.00187
	(A2 * !A3 * !A4 * B1 * X)	0.00307	0.00272	0.00270
	(A2 * !A3 * !A4 * B1 * X)	-0.00084	-0.00120	-0.00117
	(!A2 * A3 * A4 * B1 * X)	0.00264	0.00250	0.00248
	(!A2 * A3 * A4 * B1 * X)	-0.00113	-0.00135	-0.00136
	(!A2 * A3 * !B1 * !X)	0.00199	0.00200	0.00199
	(!A2 * A3 * !B1 * !X)	-0.00176	-0.00184	-0.00185
	(!A2 * A3 * !A4 * B1 * X)	0.00312	0.00275	0.00271
	(!A2 * A3 * !A4 * B1 * X)	-0.00076	-0.00118	-0.00115
	(!A2 * !A3 * A4 * B1 * X)	0.00323	0.00287	0.00287
	(!A2 * !A3 * A4 * B1 * X)	-0.00067	-0.00109	-0.00100
	(!A2 * !A3 * A4 * !B1 * !X)	0.00199	0.00200	0.00199
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00171	-0.00182	-0.00184
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00194	0.00196	0.00194
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00187	-0.00189	-0.00187

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00245	0.00242	0.00240
	(A2 * A4 * B1 * X)	-0.00156	-0.00164	-0.00164
	(A2 * A3 * !A4 * B1 * X)	0.00256	0.00245	0.00243
	(A2 * A3 * !A4 * B1 * X)	-0.00146	-0.00161	-0.00161
	(A2 * !B1 * !X)	0.00264	0.00265	0.00264
	(A2 * !B1 * !X)	-0.00138	-0.00141	-0.00140
	(A2 * !A3 * !A4 * B1 * X)	0.00299	0.00266	0.00264
	(A2 * !A3 * !A4 * B1 * X)	-0.00110	-0.00145	-0.00140
	(!A2 * A3 * A4 * B1 * X)	0.00257	0.00244	0.00242
	(!A2 * A3 * A4 * B1 * X)	-0.00138	-0.00159	-0.00160
	(!A2 * A3 * !B1 * !X)	0.00264	0.00265	0.00264
	(!A2 * A3 * !B1 * !X)	-0.00129	-0.00138	-0.00138
	(!A2 * A3 * !A4 * B1 * X)	0.00305	0.00269	0.00265
	(!A2 * A3 * !A4 * B1 * X)	-0.00101	-0.00142	-0.00139
	(!A2 * !A3 * A4 * B1 * X)	0.00316	0.00281	0.00281
	(!A2 * !A3 * A4 * B1 * X)	-0.00092	-0.00132	-0.00124
	(!A2 * !A3 * A4 * !B1 * !X)	0.00264	0.00265	0.00264
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00125	-0.00136	-0.00137
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00257	0.00257	0.00257
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00141	-0.00141	-0.00140

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00488	0.00475	0.00471
	(A2 * A4 * B1 * X)	-0.00247	-0.00269	-0.00268
	(A2 * A3 * !A4 * B1 * X)	0.00516	0.00484	0.00477
	(A2 * A3 * !A4 * B1 * X)	-0.00221	-0.00261	-0.00262
	(A2 * !B1 * !X)	0.00461	0.00463	0.00460
	(A2 * !B1 * !X)	-0.00275	-0.00281	-0.00279
	(A2 * !A3 * !A4 * B1 * X)	0.00616	0.00536	0.00524
	(A2 * !A3 * !A4 * B1 * X)	-0.00137	-0.00220	-0.00217
	(!A2 * A3 * A4 * B1 * X)	0.00516	0.00481	0.00475
	(!A2 * A3 * A4 * B1 * X)	-0.00205	-0.00258	-0.00262
	(!A2 * A3 * !B1 * !X)	0.00460	0.00463	0.00460
	(!A2 * A3 * !B1 * !X)	-0.00257	-0.00275	-0.00276
	(!A2 * A3 * !A4 * B1 * X)	0.00624	0.00535	0.00521
	(!A2 * A3 * !A4 * B1 * X)	-0.00120	-0.00220	-0.00220
	(!A2 * !A3 * A4 * B1 * X)	0.00649	0.00561	0.00553
	(!A2 * !A3 * A4 * B1 * X)	-0.00100	-0.00200	-0.00189
	(!A2 * !A3 * A4 * !B1 * !X)	0.00460	0.00463	0.00460
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00246	-0.00270	-0.00274
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00451	0.00452	0.00450
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00285	-0.00285	-0.00282

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)**	-0.00062	-0.00063	-0.00063
	(A2 * A4 * B1 * X)	0.00323	0.00325	0.00323
	(A2 * A3 * !A4 * B1 * X)	-0.00061	-0.00062	-0.00061
	(A2 * A3 * !A4 * B1 * X)	0.00325	0.00328	0.00325
	(A2 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * !B1 * !X)	0.00276	0.00279	0.00276
	(A2 * !A3 * !A4 * B1 * X)	-0.00040	-0.00042	-0.00044
	(A2 * !A3 * !A4 * B1 * X)	0.00347	0.00349	0.00345
	(!A2 * A3 * A4 * B1 * X)	-0.00059	-0.00060	-0.00059
	(!A2 * A3 * A4 * B1 * X)	0.00320	0.00322	0.00322
	(!A2 * A3 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A2 * A3 * !B1 * !X)	0.00271	0.00273	0.00271
	(!A2 * A3 * !A4 * B1 * X)	-0.00036	-0.00038	-0.00038
	(!A2 * A3 * !A4 * B1 * X)	0.00348	0.00351	0.00348
	(!A2 * !A3 * A4 * B1 * X)	-0.00022	-0.00023	-0.00025
	(!A2 * !A3 * A4 * B1 * X)	0.00365	0.00366	0.00363
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00109	-0.00109	-0.00109
	(!A2 * !A3 * A4 * !B1 * !X)	0.00268	0.00269	0.00268
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00088	-0.00103	-0.00105
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00291	0.00284	0.00278

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00113	-0.00112	-0.00112
	(A2 * A4 * B1 * X)	0.00292	0.00292	0.00292
	(A2 * A3 * !A4 * B1 * X)	-0.00111	-0.00110	-0.00111
	(A2 * A3 * !A4 * B1 * X)	0.00294	0.00294	0.00294
	(A2 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(A2 * !B1 * !X)	0.00314	0.00318	0.00315
	(A2 * !A3 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00094
	(A2 * !A3 * !A4 * B1 * X)	0.00315	0.00318	0.00313
	(!A2 * A3 * A4 * B1 * X)	-0.00109	-0.00110	-0.00109
	(!A2 * A3 * A4 * B1 * X)	0.00289	0.00290	0.00290
	(!A2 * A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A2 * A3 * !B1 * !X)	0.00309	0.00311	0.00310
	(!A2 * A3 * !A4 * B1 * X)	-0.00086	-0.00088	-0.00088
	(!A2 * A3 * !A4 * B1 * X)	0.00318	0.00320	0.00317
	(!A2 * !A3 * A4 * B1 * X)	-0.00071	-0.00072	-0.00074
	(!A2 * !A3 * A4 * B1 * X)	0.00334	0.00335	0.00332
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A2 * !A3 * A4 * !B1 * !X)	0.00306	0.00308	0.00307
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00065	-0.00081	-0.00083
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00329	0.00322	0.00317

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00098	-0.00100	-0.00099
	(A2 * A4 * B1 * X)	0.00637	0.00642	0.00640
	(A2 * A3 * !A4 * B1 * X)	-0.00097	-0.00098	-0.00096
	(A2 * A3 * !A4 * B1 * X)	0.00641	0.00646	0.00644
	(A2 * !B1 * !X)	-0.00108	-0.00110	-0.00108
	(A2 * !B1 * !X)	0.00630	0.00636	0.00630
	(A2 * !A3 * !A4 * B1 * X)	-0.00062	-0.00064	-0.00064
	(A2 * !A3 * !A4 * B1 * X)	0.00683	0.00685	0.00680
	(!A2 * A3 * A4 * B1 * X)	-0.00092	-0.00093	-0.00091
	(!A2 * A3 * A4 * B1 * X)	0.00634	0.00638	0.00636
	(!A2 * A3 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(!A2 * A3 * !B1 * !X)	0.00617	0.00620	0.00618
	(!A2 * A3 * !A4 * B1 * X)	-0.00045	-0.00047	-0.00048
	(!A2 * A3 * !A4 * B1 * X)	0.00693	0.00696	0.00692
	(!A2 * !A3 * A4 * B1 * X)	-0.00017	-0.00018	-0.00022
	(!A2 * !A3 * A4 * B1 * X)	0.00724	0.00724	0.00720
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(!A2 * !A3 * A4 * !B1 * !X)	0.00610	0.00614	0.00611
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00067	-0.00095	-0.00099
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00660	0.00647	0.00637

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)**	0.00253	0.00254	0.00244
	(A1 * A3 * A4 * B1 * X)	-0.00064	-0.00065	-0.00068
	(A1 * A3 * !B1 * !X)	0.00193	0.00195	0.00194
	(A1 * A3 * !B1 * !X)	-0.00128	-0.00129	-0.00121
	(A1 * A3 * !A4 * B1 * X)	0.00257	0.00259	0.00245
	(A1 * A3 * !A4 * B1 * X)	-0.00054	-0.00055	-0.00061
	(A1 * !A3 * A4 * B1 * X)	0.00269	0.00280	0.00261
	(A1 * !A3 * A4 * B1 * X)	-0.00047	-0.00039	-0.00046
	(A1 * !A3 * A4 * !B1 * !X)	0.00193	0.00196	0.00194
	(A1 * !A3 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00118
	(A1 * !A3 * !A4 * B1 * X)	0.00261	0.00261	0.00257
	(A1 * !A3 * !A4 * B1 * X)	-0.00005	-0.00005	-0.00006
	(A1 * !A3 * !A4 * !B1 * !X)	0.00195	0.00194	0.00194
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00184	-0.00183	-0.00182
	(!A1 * A3 * A4 * B1 * X)	0.00274	0.00247	0.00243
	(!A1 * A3 * A4 * B1 * X)	-0.00105	-0.00132	-0.00133
	(!A1 * A3 * !B1 * !X)	0.00195	0.00196	0.00194
	(!A1 * A3 * !B1 * !X)	-0.00182	-0.00184	-0.00182
	(!A1 * A3 * !A4 * B1 * X)	0.00314	0.00267	0.00266
	(!A1 * A3 * !A4 * B1 * X)	-0.00068	-0.00116	-0.00111
	(!A1 * !A3 * A4 * B1 * X)	0.00337	0.00281	0.00282
	(!A1 * !A3 * A4 * B1 * X)	-0.00048	-0.00106	-0.00095
	(!A1 * !A3 * A4 * !B1 * !X)	0.00195	0.00196	0.00194
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00176	-0.00180	-0.00180
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00188	0.00190	0.00189
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00182	-0.00184	-0.00182

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00246	0.00247	0.00237
	(A1 * A3 * A4 * B1 * X)	-0.00088	-0.00089	-0.00091
	(A1 * A3 * !B1 * !X)	0.00257	0.00259	0.00257
	(A1 * A3 * !B1 * !X)	-0.00082	-0.00083	-0.00075
	(A1 * A3 * !A4 * B1 * X)	0.00249	0.00252	0.00237
	(A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00085
	(A1 * !A3 * A4 * B1 * X)	0.00262	0.00272	0.00253
	(A1 * !A3 * A4 * B1 * X)	-0.00072	-0.00063	-0.00072
	(A1 * !A3 * A4 * !B1 * !X)	0.00257	0.00257	0.00257
	(A1 * !A3 * A4 * !B1 * !X)	-0.00086	-0.00085	-0.00074
	(A1 * !A3 * !A4 * B1 * X)	0.00257	0.00257	0.00251
	(A1 * !A3 * !A4 * B1 * X)	-0.00029	-0.00030	-0.00032
	(A1 * !A3 * !A4 * !B1 * !X)	0.00258	0.00257	0.00257
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00142	-0.00141	-0.00140
	(!A1 * A3 * A4 * B1 * X)	0.00267	0.00241	0.00236
	(!A1 * A3 * A4 * B1 * X)	-0.00132	-0.00160	-0.00160
	(!A1 * A3 * !B1 * !X)	0.00256	0.00259	0.00257
	(!A1 * A3 * !B1 * !X)	-0.00138	-0.00141	-0.00140
	(!A1 * A3 * !A4 * B1 * X)	0.00310	0.00261	0.00259
	(!A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00143	-0.00138
	(!A1 * !A3 * A4 * B1 * X)	0.00333	0.00275	0.00275
	(!A1 * !A3 * A4 * B1 * X)	-0.00072	-0.00132	-0.00123
	(!A1 * !A3 * A4 * !B1 * !X)	0.00258	0.00259	0.00257
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00133	-0.00138	-0.00138
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00249	0.00252	0.00250
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00140	-0.00142	-0.00140

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00570	0.00574	0.00552
	(A1 * A3 * A4 * B1 * X)	-0.00115	-0.00116	-0.00123
	(A1 * A3 * !B1 * !X)	0.00527	0.00530	0.00528
	(A1 * A3 * !B1 * !X)	-0.00168	-0.00170	-0.00154
	(A1 * A3 * !A4 * B1 * X)	0.00580	0.00586	0.00555
	(A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00092	-0.00109
	(A1 * !A3 * A4 * B1 * X)	0.00601	0.00623	0.00583
	(A1 * !A3 * A4 * B1 * X)	-0.00081	-0.00064	-0.00081
	(A1 * !A3 * A4 * !B1 * !X)	0.00526	0.00530	0.00528
	(A1 * !A3 * A4 * !B1 * !X)	-0.00169	-0.00170	-0.00146
	(A1 * !A3 * !A4 * B1 * X)	0.00587	0.00593	0.00575
	(A1 * !A3 * !A4 * B1 * X)	0.00012	0.00007	0.00003
	(A1 * !A3 * !A4 * !B1 * !X)	0.00526	0.00529	0.00526
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00275	-0.00278	-0.00275
	(!A1 * A3 * A4 * B1 * X)	0.00604	0.00551	0.00544
	(!A1 * A3 * A4 * B1 * X)	-0.00193	-0.00255	-0.00257
	(!A1 * A3 * !B1 * !X)	0.00527	0.00530	0.00527
	(!A1 * A3 * !B1 * !X)	-0.00269	-0.00275	-0.00273
	(!A1 * A3 * !A4 * B1 * X)	0.00696	0.00595	0.00588
	(!A1 * A3 * !A4 * B1 * X)	-0.00111	-0.00218	-0.00214
	(!A1 * !A3 * A4 * B1 * X)	0.00736	0.00621	0.00621
	(!A1 * !A3 * A4 * B1 * X)	-0.00074	-0.00198	-0.00182
	(!A1 * !A3 * A4 * !B1 * !X)	0.00526	0.00530	0.00527
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00255	-0.00268	-0.00270
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00515	0.00519	0.00517
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00275	-0.00277	-0.00275

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)**	-0.00058	-0.00059	-0.00058
	(A1 * A3 * A4 * B1 * X)	0.00247	0.00248	0.00245
	(A1 * A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * A3 * !B1 * !X)	0.00204	0.00205	0.00203
	(A1 * A3 * !A4 * B1 * X)	-0.00057	-0.00057	-0.00056
	(A1 * A3 * !A4 * B1 * X)	0.00245	0.00246	0.00244
	(A1 * !A3 * A4 * B1 * X)	-0.00059	-0.00059	-0.00058
	(A1 * !A3 * A4 * B1 * X)	0.00237	0.00237	0.00236
	(A1 * !A3 * A4 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * A4 * !B1 * !X)	0.00197	0.00199	0.00196
	(A1 * !A3 * !A4 * B1 * X)	-0.00039	-0.00041	-0.00051
	(A1 * !A3 * !A4 * B1 * X)	0.00225	0.00225	0.00214
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * !A4 * !B1 * !X)	0.00272	0.00274	0.00273
	(!A1 * A3 * A4 * B1 * X)	-0.00052	-0.00053	-0.00053
	(!A1 * A3 * A4 * B1 * X)	0.00322	0.00323	0.00323
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00271	0.00273	0.00272
	(!A1 * A3 * !A4 * B1 * X)	-0.00034	-0.00035	-0.00037
	(!A1 * A3 * !A4 * B1 * X)	0.00345	0.00345	0.00341
	(!A1 * !A3 * A4 * B1 * X)	-0.00016	-0.00018	-0.00021
	(!A1 * !A3 * A4 * B1 * X)	0.00362	0.00363	0.00358
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * A4 * !B1 * !X)	0.00266	0.00267	0.00266
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00083	-0.00098	-0.00100
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00285	0.00278	0.00274

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00106	-0.00106	-0.00106
	(A1 * A3 * A4 * B1 * X)	0.00215	0.00216	0.00214
	(A1 * A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * A3 * !B1 * !X)	0.00243	0.00245	0.00241
	(A1 * A3 * !A4 * B1 * X)	-0.00104	-0.00106	-0.00105
	(A1 * A3 * !A4 * B1 * X)	0.00213	0.00215	0.00212
	(A1 * !A3 * A4 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * !A3 * A4 * B1 * X)	0.00207	0.00208	0.00207
	(A1 * !A3 * A4 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * !A3 * A4 * !B1 * !X)	0.00239	0.00241	0.00238
	(A1 * !A3 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00099
	(A1 * !A3 * !A4 * B1 * X)	0.00193	0.00193	0.00185
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * !A3 * !A4 * !B1 * !X)	0.00316	0.00317	0.00316
	(!A1 * A3 * A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * A3 * A4 * B1 * X)	0.00294	0.00297	0.00295
	(!A1 * A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * A3 * !B1 * !X)	0.00314	0.00316	0.00314
	(!A1 * A3 * !A4 * B1 * X)	-0.00082	-0.00083	-0.00085
	(!A1 * A3 * !A4 * B1 * X)	0.00317	0.00319	0.00314
	(!A1 * !A3 * A4 * B1 * X)	-0.00064	-0.00067	-0.00069
	(!A1 * !A3 * A4 * B1 * X)	0.00334	0.00336	0.00330
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * A4 * !B1 * !X)	0.00308	0.00310	0.00309
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00059	-0.00074	-0.00076
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00328	0.00321	0.00317

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00172	-0.00175	-0.00172
	(A1 * A3 * A4 * B1 * X)	0.00486	0.00490	0.00485
	(A1 * A3 * !B1 * !X)	-0.00175	-0.00178	-0.00176
	(A1 * A3 * !B1 * !X)	0.00489	0.00491	0.00486
	(A1 * A3 * !A4 * B1 * X)	-0.00170	-0.00172	-0.00170
	(A1 * A3 * !A4 * B1 * X)	0.00480	0.00482	0.00480
	(A1 * !A3 * A4 * B1 * X)	-0.00171	-0.00171	-0.00170
	(A1 * !A3 * A4 * B1 * X)	0.00467	0.00468	0.00467
	(A1 * !A3 * A4 * !B1 * !X)	-0.00173	-0.00177	-0.00175
	(A1 * !A3 * A4 * !B1 * !X)	0.00476	0.00479	0.00474
	(A1 * !A3 * !A4 * B1 * X)	-0.00135	-0.00138	-0.00148
	(A1 * !A3 * !A4 * B1 * X)	0.00438	0.00440	0.00425
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00172	-0.00176	-0.00174
	(A1 * !A3 * !A4 * !B1 * !X)	0.00626	0.00630	0.00627
	(!A1 * A3 * A4 * B1 * X)	-0.00158	-0.00160	-0.00157
	(!A1 * A3 * A4 * B1 * X)	0.00640	0.00645	0.00642
	(!A1 * A3 * !B1 * !X)	-0.00175	-0.00177	-0.00175
	(!A1 * A3 * !B1 * !X)	0.00621	0.00626	0.00623
	(!A1 * A3 * !A4 * B1 * X)	-0.00116	-0.00119	-0.00123
	(!A1 * A3 * !A4 * B1 * X)	0.00687	0.00690	0.00682
	(!A1 * !A3 * A4 * B1 * X)	-0.00084	-0.00088	-0.00093
	(!A1 * !A3 * A4 * B1 * X)	0.00719	0.00721	0.00713
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00174	-0.00176	-0.00175
	(!A1 * !A3 * A4 * !B1 * !X)	0.00609	0.00613	0.00611
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00135	-0.00165	-0.00166
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00651	0.00635	0.00629

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)**	0.00265	0.00267	0.00256
	(A2 * A4 * B1 * X)	-0.00040	-0.00041	-0.00046
	(A2 * A4 * !B1 * !X)	0.00192	0.00194	0.00193
	(A2 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00114
	(A2 * !A4 * B1 * X)	0.00245	0.00248	0.00242
	(A2 * !A4 * B1 * X)	-0.00010	-0.00012	-0.00012
	(A2 * !A4 * !B1 * !X)	0.00194	0.00193	0.00193
	(A2 * !A4 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(A1 * !A2 * A4 * B1 * X)	0.00287	0.00272	0.00269
	(A1 * !A2 * A4 * B1 * X)	-0.00024	-0.00036	-0.00036
	(A1 * !A2 * A4 * !B1 * !X)	0.00192	0.00193	0.00193
	(A1 * !A2 * A4 * !B1 * !X)	-0.00124	-0.00123	-0.00113
	(A1 * !A2 * !A4 * B1 * X)	0.00258	0.00261	0.00255
	(A1 * !A2 * !A4 * B1 * X)	0.00006	0.00004	0.00004
	(A1 * !A2 * !A4 * !B1 * !X)	0.00194	0.00194	0.00192
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00171	-0.00175	-0.00175
	(!A1 * !A2 * A4 * B1 * X)	0.00318	0.00264	0.00281
	(!A1 * !A2 * A4 * B1 * X)	-0.00058	-0.00110	-0.00090
	(!A1 * !A2 * A4 * !B1 * !X)	0.00194	0.00193	0.00193
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00179	-0.00178	-0.00177
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00187	0.00188	0.00188
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00269	0.00271	0.00259
	(A2 * A4 * B1 * X)	-0.00070	-0.00072	-0.00077
	(A2 * A4 * !B1 * !X)	0.00258	0.00261	0.00259
	(A2 * A4 * !B1 * !X)	-0.00089	-0.00090	-0.00082
	(A2 * !A4 * B1 * X)	0.00249	0.00252	0.00245
	(A2 * !A4 * B1 * X)	-0.00038	-0.00040	-0.00041
	(A2 * !A4 * !B1 * !X)	0.00260	0.00259	0.00259
	(A2 * !A4 * !B1 * !X)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * A4 * B1 * X)	0.00291	0.00279	0.00271
	(A1 * !A2 * A4 * B1 * X)	-0.00052	-0.00065	-0.00065
	(A1 * !A2 * A4 * !B1 * !X)	0.00259	0.00261	0.00259
	(A1 * !A2 * A4 * !B1 * !X)	-0.00090	-0.00091	-0.00079
	(A1 * !A2 * !A4 * B1 * X)	0.00263	0.00265	0.00259
	(A1 * !A2 * !A4 * B1 * X)	-0.00021	-0.00022	-0.00023
	(A1 * !A2 * !A4 * !B1 * !X)	0.00260	0.00260	0.00259
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00138	-0.00142	-0.00142
	(!A1 * !A2 * A4 * B1 * X)	0.00326	0.00269	0.00284
	(!A1 * !A2 * A4 * B1 * X)	-0.00083	-0.00137	-0.00120
	(!A1 * !A2 * A4 * !B1 * !X)	0.00260	0.00259	0.00259
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00146	-0.00145	-0.00144
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00251	0.00253	0.00252
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00599	0.00597	0.00576
	(A2 * A4 * B1 * X)	-0.00074	-0.00081	-0.00091
	(A2 * A4 * !B1 * !X)	0.00521	0.00525	0.00522
	(A2 * A4 * !B1 * !X)	-0.00167	-0.00169	-0.00153
	(A2 * !A4 * B1 * X)	0.00548	0.00551	0.00542
	(A2 * !A4 * B1 * X)	-0.00012	-0.00015	-0.00019
	(A2 * !A4 * !B1 * !X)	0.00520	0.00524	0.00521
	(A2 * !A4 * !B1 * !X)	-0.00268	-0.00274	-0.00273
	(A1 * !A2 * A4 * B1 * X)	0.00636	0.00608	0.00597
	(A1 * !A2 * A4 * B1 * X)	-0.00042	-0.00070	-0.00068
	(A1 * !A2 * A4 * !B1 * !X)	0.00521	0.00525	0.00522
	(A1 * !A2 * A4 * !B1 * !X)	-0.00169	-0.00169	-0.00146
	(A1 * !A2 * !A4 * B1 * X)	0.00576	0.00582	0.00570
	(A1 * !A2 * !A4 * B1 * X)	0.00020	0.00015	0.00015
	(A1 * !A2 * !A4 * !B1 * !X)	0.00520	0.00522	0.00521
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00253	-0.00266	-0.00269
	(!A1 * !A2 * A4 * B1 * X)	0.00693	0.00595	0.00618
	(!A1 * !A2 * A4 * B1 * X)	-0.00106	-0.00211	-0.00179
	(!A1 * !A2 * A4 * !B1 * !X)	0.00521	0.00525	0.00522
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00272	-0.00275	-0.00272
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00509	0.00514	0.00511
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00273	-0.00276	-0.00273

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)**	-0.00057	-0.00058	-0.00057
	(A2 * A4 * B1 * X)	0.00233	0.00233	0.00233
	(A2 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A2 * A4 * !B1 * !X)	0.00197	0.00198	0.00195
	(A2 * !A4 * B1 * X)	-0.00053	-0.00054	-0.00057
	(A2 * !A4 * B1 * X)	0.00202	0.00202	0.00199
	(A2 * !A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A2 * !A4 * !B1 * !X)	0.00266	0.00267	0.00267
	(A1 * !A2 * A4 * B1 * X)	-0.00057	-0.00057	-0.00055
	(A1 * !A2 * A4 * B1 * X)	0.00231	0.00232	0.00232
	(A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * A4 * !B1 * !X)	0.00193	0.00194	0.00191
	(A1 * !A2 * !A4 * B1 * X)	-0.00029	-0.00031	-0.00056
	(A1 * !A2 * !A4 * B1 * X)	0.00221	0.00221	0.00202
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * !A4 * !B1 * !X)	0.00259	0.00260	0.00260
	(!A1 * !A2 * A4 * B1 * X)	-0.00016	-0.00019	-0.00024
	(!A1 * !A2 * A4 * B1 * X)	0.00356	0.00357	0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !A2 * A4 * !B1 * !X)	0.00267	0.00268	0.00268
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00082	-0.00097	-0.00098
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00280	0.00273	0.00269

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00116	-0.00116	-0.00115
	(A2 * A4 * B1 * X)	0.00209	0.00209	0.00208
	(A2 * A4 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A2 * A4 * !B1 * !X)	0.00250	0.00252	0.00249
	(A2 * !A4 * B1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * !A4 * B1 * X)	0.00175	0.00175	0.00173
	(A2 * !A4 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A2 * !A4 * !B1 * !X)	0.00319	0.00320	0.00319
	(A1 * !A2 * A4 * B1 * X)	-0.00115	-0.00116	-0.00113
	(A1 * !A2 * A4 * B1 * X)	0.00205	0.00207	0.00206
	(A1 * !A2 * A4 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * A4 * !B1 * !X)	0.00244	0.00245	0.00243
	(A1 * !A2 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00114
	(A1 * !A2 * !A4 * B1 * X)	0.00192	0.00193	0.00176
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(A1 * !A2 * !A4 * !B1 * !X)	0.00312	0.00313	0.00312
	(!A1 * !A2 * A4 * B1 * X)	-0.00075	-0.00077	-0.00082
	(!A1 * !A2 * A4 * B1 * X)	0.00331	0.00331	0.00323
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * A4 * !B1 * !X)	0.00319	0.00321	0.00319
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00060	-0.00076	-0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00332	0.00325	0.00320

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00169	-0.00172	-0.00168
	(A2 * A4 * B1 * X)	0.00470	0.00474	0.00472
	(A2 * A4 * !B1 * !X)	-0.00170	-0.00172	-0.00170
	(A2 * A4 * !B1 * !X)	0.00488	0.00492	0.00486
	(A2 * !A4 * B1 * X)	-0.00159	-0.00162	-0.00164
	(A2 * !A4 * B1 * X)	0.00401	0.00402	0.00399
	(A2 * !A4 * !B1 * !X)	-0.00167	-0.00171	-0.00168
	(A2 * !A4 * !B1 * !X)	0.00620	0.00624	0.00621
	(A1 * !A2 * A4 * B1 * X)	-0.00168	-0.00170	-0.00163
	(A1 * !A2 * A4 * B1 * X)	0.00466	0.00468	0.00467
	(A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00172	-0.00170
	(A1 * !A2 * A4 * !B1 * !X)	0.00476	0.00479	0.00474
	(A1 * !A2 * !A4 * B1 * X)	-0.00107	-0.00111	-0.00162
	(A1 * !A2 * !A4 * B1 * X)	0.00444	0.00445	0.00407
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00167	-0.00171	-0.00169
	(A1 * !A2 * !A4 * !B1 * !X)	0.00606	0.00610	0.00607
	(!A1 * !A2 * A4 * B1 * X)	-0.00082	-0.00088	-0.00098
	(!A1 * !A2 * A4 * B1 * X)	0.00714	0.00716	0.00702
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00170	-0.00169
	(!A1 * !A2 * A4 * !B1 * !X)	0.00623	0.00625	0.00625
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00127	-0.00158	-0.00160
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00651	0.00634	0.00627

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00258	0.00261	0.00258
	(A3 * B1 * X)	-0.00004	-0.00006	-0.00004
	(A3 * !B1 * !X)	0.00195	0.00195	0.00195
	(A3 * !B1 * !X)	-0.00178	-0.00180	-0.00181
	(A2 * !A3 * B1 * X)	0.00259	0.00259	0.00259
	(A2 * !A3 * B1 * X)	-0.00003	-0.00003	-0.00002
	(A2 * !A3 * !B1 * !X)	0.00194	0.00196	0.00195
	(A2 * !A3 * !B1 * !X)	-0.00169	-0.00178	-0.00179
	(A1 * !A2 * !A3 * B1 * X)	0.00259	0.00262	0.00261
	(A1 * !A2 * !A3 * B1 * X)	0.00005	0.00003	0.00006
	(A1 * !A2 * !A3 * !B1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00163	-0.00175	-0.00178
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00189	0.00190	0.00190
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00181	-0.00181	-0.00181
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00249	0.00253	0.00250
	(A3 * B1 * X)	-0.00032	-0.00034	-0.00032
	(A3 * !B1 * !X)	0.00258	0.00260	0.00258
	(A3 * !B1 * !X)	-0.00134	-0.00138	-0.00137
	(A2 * !A3 * B1 * X)	0.00250	0.00253	0.00250
	(A2 * !A3 * B1 * X)	-0.00031	-0.00033	-0.00031
	(A2 * !A3 * !B1 * !X)	0.00257	0.00260	0.00258
	(A2 * !A3 * !B1 * !X)	-0.00125	-0.00134	-0.00135
	(A1 * !A2 * !A3 * B1 * X)	0.00250	0.00252	0.00253
	(A1 * !A2 * !A3 * B1 * X)	-0.00023	-0.00024	-0.00022
	(A1 * !A2 * !A3 * !B1 * !X)	0.00257	0.00260	0.00258
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00120	-0.00132	-0.00134
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00251	0.00253	0.00252
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00137	-0.00139	-0.00137

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00501	0.00506	0.00501
	(A3 * B1 * X)	-0.00008	-0.00012	-0.00008
	(A3 * !B1 * !X)	0.00460	0.00461	0.00460
	(A3 * !B1 * !X)	-0.00269	-0.00277	-0.00277
	(A2 * !A3 * B1 * X)	0.00502	0.00507	0.00502
	(A2 * !A3 * B1 * X)	-0.00006	-0.00008	-0.00005
	(A2 * !A3 * !B1 * !X)	0.00460	0.00463	0.00460
	(A2 * !A3 * !B1 * !X)	-0.00250	-0.00270	-0.00273
	(A1 * !A2 * !A3 * B1 * X)	0.00504	0.00505	0.00507
	(A1 * !A2 * !A3 * B1 * X)	0.00010	0.00010	0.00013
	(A1 * !A2 * !A3 * !B1 * !X)	0.00460	0.00463	0.00460
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00239	-0.00264	-0.00271
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00448	0.00450	0.00449
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00278	-0.00279	-0.00278

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00067	-0.00068	-0.00075
	(A3 * B1 * X)	0.00193	0.00194	0.00188
	(A3 * !B1 * !X)	-0.00104	-0.00106	-0.00104
	(A3 * !B1 * !X)	0.00270	0.00272	0.00270
	(A2 * !A3 * B1 * X)	-0.00055	-0.00057	-0.00073
	(A2 * !A3 * B1 * X)	0.00200	0.00201	0.00188
	(A2 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(A2 * !A3 * !B1 * !X)	0.00262	0.00264	0.00263
	(A1 * !A2 * !A3 * B1 * X)	-0.00024	-0.00026	-0.00057
	(A1 * !A2 * !A3 * B1 * X)	0.00226	0.00226	0.00204
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(A1 * !A2 * !A3 * !B1 * !X)	0.00258	0.00260	0.00259
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00084	-0.00099	-0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00284	0.00277	0.00272
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00113	-0.00114	-0.00122
	(A3 * B1 * X)	0.00168	0.00168	0.00161
	(A3 * !B1 * !X)	-0.00082	-0.00083	-0.00082
	(A3 * !B1 * !X)	0.00312	0.00313	0.00312
	(A2 * !A3 * B1 * X)	-0.00101	-0.00103	-0.00120
	(A2 * !A3 * B1 * X)	0.00174	0.00174	0.00161
	(A2 * !A3 * !B1 * !X)	-0.00082	-0.00084	-0.00082
	(A2 * !A3 * !B1 * !X)	0.00305	0.00307	0.00305
	(A1 * !A2 * !A3 * B1 * X)	-0.00071	-0.00073	-0.00105
	(A1 * !A2 * !A3 * B1 * X)	0.00199	0.00199	0.00177
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00082	-0.00084	-0.00082
	(A1 * !A2 * !A3 * !B1 * !X)	0.00301	0.00302	0.00301
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00060	-0.00076	-0.00078
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00325	0.00318	0.00314

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00116	-0.00119	-0.00133
	(A3 * B1 * X)	0.00391	0.00391	0.00379
	(A3 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(A3 * !B1 * !X)	0.00628	0.00629	0.00627
	(A2 * !A3 * B1 * X)	-0.00088	-0.00091	-0.00128
	(A2 * !A3 * B1 * X)	0.00407	0.00407	0.00380
	(A2 * !A3 * !B1 * !X)	-0.00106	-0.00109	-0.00108
	(A2 * !A3 * !B1 * !X)	0.00609	0.00612	0.00610
	(A1 * !A2 * !A3 * B1 * X)	-0.00021	-0.00023	-0.00094
	(A1 * !A2 * !A3 * B1 * X)	0.00462	0.00461	0.00413
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00110	-0.00108
	(A1 * !A2 * !A3 * !B1 * !X)	0.00599	0.00603	0.00600
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00067	-0.00096	-0.00099
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00656	0.00641	0.00632

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)**	0.00107	0.00106	0.00097
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00162	-0.00162	-0.00178
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00154	0.00154	0.00145
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00151	-0.00152	-0.00169
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00288	0.00289	0.00272
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00217	-0.00220	-0.00251

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)	-0.00003	-0.00004	-0.00003
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00269	0.00273	0.00270
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	0.00035	0.00034	0.00035
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00346	0.00350	0.00346
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	0.00087	0.00086	0.00089
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00605	0.00611	0.00606

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00264	0.00245	1.33143
sky130_fd_sc_hs__or2b_2	0.00274	0.00237	2.19615
sky130_fd_sc_hs__or2b_4	0.00522	0.00295	4.81150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	93.26330	152.42900
sky130_fd_sc_hs__or2b_2	0.00000	107.22100	203.95800
sky130_fd_sc_hs__or2b_4	0.00000	147.41900	273.81600

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)	0.06308	0.53122	6.39649
	B_N->X (FR)	0.10271	0.63343	7.39205
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.06319	0.44834	5.85491
	B_N->X (FR)	0.11231	0.57108	7.25496
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.05862	0.36648	6.11212
	B_N->X (FR)	0.11601	0.51127	7.39926

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.10045	0.48855	5.01803
	B_N->X (RF)	0.11108	0.41159	3.62714
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.13024	0.48518	4.71767
	B_N->X (RF)	0.14598	0.39186	3.01442
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.12954	0.44965	5.20094
	B_N->X (RF)	0.14312	0.37569	3.41620

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.01253	0.01649	0.08433
	A	0.00828	0.01225	0.08036
	B_N	0.00985	0.01715	0.12521
	B_N	0.01347	0.02078	0.12893
sky130_fd_sc_hs__or2b_2	A	0.01627	0.02049	0.08334
	A	0.01175	0.01600	0.07887
	B_N	0.01355	0.02080	0.12451
	B_N	0.01715	0.02438	0.12856
sky130_fd_sc_hs__or2b_4	A	0.02821	0.03854	0.20676
	A	0.01980	0.03025	0.20025
	B_N	0.02619	0.03502	0.16482
	B_N	0.03021	0.03904	0.16998

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00793	0.01180	0.07822
	A	0.01219	0.01603	0.08248
	B_N	0.01393	0.02070	0.12965
	B_N	0.01031	0.01702	0.12548
sky130_fd_sc_hs__or2b_2	A	0.01281	0.01541	0.08938
	A	0.01731	0.01982	0.09387
	B_N	0.01959	0.02397	0.12462
	B_N	0.01601	0.02036	0.12046
sky130_fd_sc_hs__or2b_4	A	0.02480	0.03054	0.19791
	A	0.03324	0.03885	0.20453
	B_N	0.03348	0.03860	0.17062
	B_N	0.02944	0.03443	0.16471

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00214	0.00182	0.00210
	(!B_N * X)	-0.00155	-0.00189	-0.00159
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00229	0.00197	0.00224
	(!B_N * X)	-0.00162	-0.00197	-0.00167
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00472	0.00395	0.00436
	(!B_N * X)	-0.00267	-0.00349	-0.00301

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00089	-0.00092	-0.00100
	(!B_N * X)	0.00279	0.00280	0.00269
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00100	-0.00103	-0.00112
	(!B_N * X)	0.00290	0.00291	0.00280
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00187	-0.00192	-0.00209
	(!B_N * X)	0.00550	0.00552	0.00531

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00602	0.01242	0.11367
	(A * X)	0.00188	0.00828	0.10953
sky130_fd_sc_hs__or2b_2	(A * X)	0.00632	0.01250	0.11139
	(A * X)	0.00217	0.00834	0.10725
sky130_fd_sc_hs__or2b_4	(A * X)	0.00783	0.01443	0.12997
	(A * X)	0.00294	0.00952	0.12508

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00142	0.00849	0.11099
	(A * X)	0.00556	0.01265	0.11513
sky130_fd_sc_hs__or2b_2	(A * X)	0.00142	0.00830	0.10853
	(A * X)	0.00557	0.01246	0.11268
sky130_fd_sc_hs__or2b_4	(A * X)	0.00376	0.01121	0.12775
	(A * X)	0.00867	0.01615	0.13265

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00239	0.00229	1.31389
sky130_fd_sc_hs__or2_2	0.00296	0.00261	2.21798
sky130_fd_sc_hs__or2_4	0.00474	0.00414	4.73757

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	53.63810	102.20900
sky130_fd_sc_hs__or2_2	0.00000	56.25660	103.05100
sky130_fd_sc_hs__or2_4	0.00000	111.15900	201.15800

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)	0.06025	0.51779	6.20596
	B->X (RR)	0.05441	0.49763	6.09291
sky130_fd_sc_hs__or2_2	A->X (RR)	0.06420	0.45039	5.89379
	B->X (RR)	0.05725	0.42950	5.75959
sky130_fd_sc_hs__or2_4	A->X (RR)	0.08526	0.45659	6.79661
	B->X (RR)	0.07017	0.41982	6.58946

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.10751	0.50526	5.10316
	B->X (FF)	0.09307	0.51629	5.41446
sky130_fd_sc_hs__or2_2	A->X (FF)	0.12834	0.48288	4.65744
	B->X (FF)	0.11137	0.49901	4.96953
sky130_fd_sc_hs__or2_4	A->X (FF)	0.11997	0.42108	4.57003
	B->X (FF)	0.10279	0.43371	4.90639

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.01091	0.01465	0.08014
	A	0.00589	0.00964	0.07560
	B	0.01049	0.01510	0.08814
	B	0.00648	0.01112	0.08464
sky130_fd_sc_hs__or2_2	A	0.01503	0.01898	0.08102
	A	0.00900	0.01295	0.07494
	B	0.01343	0.01808	0.08570
	B	0.00878	0.01348	0.08125
sky130_fd_sc_hs__or2_4	A	0.02847	0.03549	0.16063
	A	0.01846	0.02559	0.15529
	B	0.02418	0.03270	0.17053
	B	0.01712	0.02563	0.16386

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00490	0.00863	0.07322
	A	0.00992	0.01362	0.07758
	B	0.00473	0.00991	0.08986
	B	0.00873	0.01387	0.09371
sky130_fd_sc_hs__or2_2	A	0.00953	0.01196	0.08109
	A	0.01557	0.01797	0.08695
	B	0.00945	0.01358	0.10030
	B	0.01409	0.01809	0.10248
sky130_fd_sc_hs__or2_4	A	0.02072	0.02473	0.14241
	A	0.03071	0.03464	0.15076
	B	0.02073	0.02772	0.17765
	B	0.02781	0.03465	0.18079

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00208	0.00181	0.00231
	(B * X)	-0.00113	-0.00141	-0.00087
sky130_fd_sc_hs__or2_2	(B * X)	0.00249	0.00215	0.00242
	(B * X)	-0.00135	-0.00171	-0.00140
sky130_fd_sc_hs__or2_4	(B * X)	0.00364	0.00289	0.00339
	(B * X)	-0.00270	-0.00348	-0.00290

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00060	-0.00064	-0.00078
	(B * X)	0.00260	0.00259	0.00242
sky130_fd_sc_hs__or2_2	(B * X)	-0.00121	-0.00122	-0.00132
	(B * X)	0.00262	0.00261	0.00252
sky130_fd_sc_hs__or2_4	(B * X)	-0.00096	-0.00100	-0.00118
	(B * X)	0.00536	0.00536	0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00162	0.00165	0.00166
	(A * X)	-0.00065	-0.00066	-0.00061
sky130_fd_sc_hs__or2_2	(A * X)	0.00175	0.00178	0.00178
	(A * X)	-0.00080	-0.00081	-0.00077
sky130_fd_sc_hs__or2_4	(A * X)	0.00210	0.00213	0.00214
	(A * X)	-0.00159	-0.00161	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00101	-0.00103	-0.00125
	(A * X)	0.00128	0.00127	0.00104
sky130_fd_sc_hs__or2_2	(A * X)	-0.00123	-0.00125	-0.00141
	(A * X)	0.00133	0.00132	0.00116
sky130_fd_sc_hs__or2_4	(A * X)	-0.00103	-0.00106	-0.00139
	(A * X)	0.00269	0.00268	0.00235

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00259	0.00281	0.00238	1.33947
sky130_fd_sc_hs__or3b_2	0.00276	0.00268	0.00237	2.20669
sky130_fd_sc_hs__or3b_4	0.00486	0.00447	0.00277	4.80814

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	79.31450	153.42400
sky130_fd_sc_hs__or3b_2	0.00000	87.18390	206.01300
sky130_fd_sc_hs__or3b_4	0.00000	106.25400	270.48200

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)	0.07026	0.55575	6.40043
	B->X (RR)	0.06791	0.53828	6.21319
	C_N->X (FR)	0.10599	0.64070	7.44591
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.06893	0.46557	5.81098
	B->X (RR)	0.06635	0.45244	5.65511
	C_N->X (FR)	0.11344	0.57207	7.23464
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.09260	0.47723	6.81906
	B->X (RR)	0.08604	0.45476	6.60851
	C_N->X (FR)	0.13212	0.52907	7.45942

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.15989	0.55678	5.24138
	B->X (FF)	0.14941	0.58034	5.59227
	C_N->X (RF)	0.14817	0.46851	3.71950
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.20324	0.56254	4.95032
	B->X (FF)	0.18836	0.58750	5.29209
	C_N->X (RF)	0.18957	0.46351	3.19714
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.17975	0.47751	4.78172
	B->X (FF)	0.16538	0.50053	5.13502
	C_N->X (RF)	0.16693	0.40940	3.51811

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01491	0.01791	0.08099
	A	0.00931	0.01233	0.07569
	B	0.01315	0.01661	0.07536
	B	0.00842	0.01190	0.07110
	C_N	0.01012	0.01751	0.12427
	C_N	0.01322	0.02061	0.12767
sky130_fd_sc_hs__or3b_2	A	0.01869	0.02182	0.07906
	A	0.01293	0.01608	0.07343
	B	0.01660	0.02028	0.07369
	B	0.01198	0.01568	0.06947
	C_N	0.01360	0.02086	0.12284
	C_N	0.01692	0.02417	0.12657
sky130_fd_sc_hs__or3b_4	A	0.03316	0.03850	0.15786
	A	0.02298	0.02853	0.16022
	B	0.02817	0.03477	0.14675
	B	0.02067	0.02727	0.13952
	C_N	0.02475	0.03301	0.15660
	C_N	0.02854	0.03699	0.16151

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00934	0.01154	0.07450
	A	0.01490	0.01709	0.08004
	B	0.00919	0.01181	0.07614
	B	0.01389	0.01651	0.08083
	C_N	0.01531	0.02139	0.12853
	C_N	0.01220	0.01829	0.12480
sky130_fd_sc_hs__or3b_2	A	0.01541	0.01487	0.08131
	A	0.02114	0.02060	0.08523
	B	0.01525	0.01541	0.08168
	B	0.01985	0.01995	0.08513
	C_N	0.02195	0.02455	0.12188
	C_N	0.01864	0.02122	0.11861
sky130_fd_sc_hs__or3b_4	A	0.02771	0.02708	0.14177
	A	0.03785	0.03709	0.14765
	B	0.02787	0.02862	0.14571
	B	0.03540	0.03573	0.15059
	C_N	0.03594	0.03831	0.16100
	C_N	0.03216	0.03429	0.15724

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)	0.00292	0.00260	0.00268
	(B * C_N * X)	-0.00058	-0.00090	-0.00079
	(B * !C_N * X)	0.00171	0.00154	0.00151
	(B * !C_N * X)	-0.00176	-0.00194	-0.00194
	(!B * !C_N * X)	0.00229	0.00189	0.00204
	(!B * !C_N * X)	-0.00124	-0.00166	-0.00144
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00319	0.00286	0.00293
	(B * C_N * X)	-0.00055	-0.00090	-0.00079
	(B * !C_N * X)	0.00190	0.00173	0.00170
	(B * !C_N * X)	-0.00181	-0.00200	-0.00200
	(!B * !C_N * X)	0.00251	0.00210	0.00223
	(!B * !C_N * X)	-0.00127	-0.00171	-0.00150
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00433	0.00364	0.00376
	(B * C_N * X)	-0.00220	-0.00291	-0.00271
	(B * !C_N * X)	0.00277	0.00241	0.00236
	(B * !C_N * X)	-0.00369	-0.00408	-0.00409
	(!B * !C_N * X)	0.00397	0.00315	0.00340
	(!B * !C_N * X)	-0.00263	-0.00349	-0.00308

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)	-0.00021	-0.00022	-0.00026
	(B * C_N * X)	0.00327	0.00327	0.00322
	(B * !C_N * X)	-0.00134	-0.00135	-0.00134
	(B * !C_N * X)	0.00211	0.00214	0.00211
	(!B * !C_N * X)	-0.00082	-0.00084	-0.00091
	(!B * !C_N * X)	0.00267	0.00268	0.00260
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00043	-0.00044	-0.00049
	(B * C_N * X)	0.00329	0.00329	0.00325
	(B * !C_N * X)	-0.00150	-0.00152	-0.00151
	(B * !C_N * X)	0.00219	0.00222	0.00220
	(!B * !C_N * X)	-0.00099	-0.00101	-0.00107
	(!B * !C_N * X)	0.00276	0.00277	0.00268
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00109	-0.00114	-0.00121
	(B * C_N * X)	0.00538	0.00543	0.00530
	(B * !C_N * X)	-0.00196	-0.00198	-0.00197
	(B * !C_N * X)	0.00447	0.00453	0.00449
	(!B * !C_N * X)	-0.00092	-0.00096	-0.00109
	(!B * !C_N * X)	0.00561	0.00562	0.00546

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)	0.00278	0.00278	0.00277
	(A * C_N * X)	0.00004	0.00004	0.00005
	(A * !C_N * X)	0.00174	0.00176	0.00168
	(A * !C_N * X)	-0.00140	-0.00141	-0.00144
	(!A * !C_N * X)	0.00230	0.00186	0.00212
	(!A * !C_N * X)	-0.00147	-0.00191	-0.00162
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00284	0.00284	0.00283
	(A * C_N * X)	0.00013	0.00013	0.00014
	(A * !C_N * X)	0.00171	0.00174	0.00165
	(A * !C_N * X)	-0.00143	-0.00144	-0.00148
	(!A * !C_N * X)	0.00229	0.00185	0.00209
	(!A * !C_N * X)	-0.00144	-0.00190	-0.00162
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00325	0.00325	0.00322
	(A * C_N * X)	-0.00094	-0.00093	-0.00093
	(A * !C_N * X)	0.00235	0.00237	0.00222
	(A * !C_N * X)	-0.00273	-0.00273	-0.00284
	(!A * !C_N * X)	0.00342	0.00254	0.00303
	(!A * !C_N * X)	-0.00285	-0.00374	-0.00318

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)	-0.00053	-0.00055	-0.00070
	(A * C_N * X)	0.00221	0.00220	0.00204
	(A * !C_N * X)	-0.00148	-0.00148	-0.00147
	(A * !C_N * X)	0.00160	0.00160	0.00159
	(!A * !C_N * X)	-0.00091	-0.00094	-0.00103
	(!A * !C_N * X)	0.00282	0.00283	0.00272
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00056	-0.00058	-0.00074
	(A * C_N * X)	0.00215	0.00215	0.00198
	(A * !C_N * X)	-0.00142	-0.00143	-0.00142
	(A * !C_N * X)	0.00165	0.00166	0.00165
	(!A * !C_N * X)	-0.00086	-0.00088	-0.00097
	(!A * !C_N * X)	0.00285	0.00283	0.00274
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00100	-0.00103	-0.00136
	(A * C_N * X)	0.00320	0.00319	0.00286
	(A * !C_N * X)	-0.00175	-0.00176	-0.00173
	(A * !C_N * X)	0.00319	0.00323	0.00318
	(!A * !C_N * X)	-0.00058	-0.00062	-0.00079
	(!A * !C_N * X)	0.00564	0.00564	0.00543

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00558	0.01206	0.11273
	(B * X)	0.00155	0.00802	0.10869
	(A * !B * X)	0.00596	0.01243	0.11306
	(A * !B * X)	0.00185	0.00832	0.10895
sky130_fd_sc_hs__or3b_2	(B * X)	0.00614	0.01234	0.11127
	(B * X)	0.00197	0.00815	0.10710
	(A * !B * X)	0.00652	0.01271	0.11159
	(A * !B * X)	0.00227	0.00844	0.10734
sky130_fd_sc_hs__or3b_4	(B * X)	0.00727	0.01424	0.12815
	(B * X)	0.00226	0.00921	0.12316
	(A * !B * X)	0.00808	0.01503	0.12883
	(A * !B * X)	0.00290	0.00984	0.12368

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00117	0.00828	0.11006
	(B * X)	0.00520	0.01232	0.11408
	(A * !B * X)	0.00118	0.00829	0.11016
	(A * !B * X)	0.00532	0.01244	0.11426
sky130_fd_sc_hs__or3b_2	(B * X)	0.00126	0.00814	0.10822
	(B * X)	0.00542	0.01232	0.11239
	(A * !B * X)	0.00127	0.00815	0.10833
	(A * !B * X)	0.00554	0.01243	0.11256
sky130_fd_sc_hs__or3b_4	(B * X)	0.00166	0.00934	0.12397
	(B * X)	0.00665	0.01437	0.12895
	(A * !B * X)	0.00169	0.00938	0.12419
	(A * !B * X)	0.00689	0.01460	0.12932

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00267	0.00265	0.00260	1.36618
sky130_fd_sc_hs__or3_2	0.00272	0.00276	0.00282	2.56571
sky130_fd_sc_hs__or3_4	0.00507	0.00454	0.00444	4.78268

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	28.36840	69.03060
sky130_fd_sc_hs__or3_2	0.00000	36.24060	105.15500
sky130_fd_sc_hs__or3_4	0.00000	71.37420	202.79900

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)	0.07036	0.55479	6.42034
	B->X (RR)	0.06777	0.53728	6.23272
	C->X (RR)	0.06030	0.51369	6.13381
sky130_fd_sc_hs__or3_2	A->X (RR)	0.06795	0.46062	6.15002
	B->X (RR)	0.06523	0.44566	5.97311
	C->X (RR)	0.05938	0.42702	5.87965
sky130_fd_sc_hs__or3_4	A->X (RR)	0.09325	0.47751	6.78550
	B->X (RR)	0.08674	0.45475	6.57666
	C->X (RR)	0.07466	0.42715	6.47629

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.16287	0.56338	5.30723
	B->X (FF)	0.14948	0.58631	5.66382
	C->X (FF)	0.12269	0.58481	5.74644
sky130_fd_sc_hs__or3_2	A->X (FF)	0.19721	0.56989	5.41999
	B->X (FF)	0.18260	0.59503	5.76521
	C->X (FF)	0.15801	0.60162	5.85732
sky130_fd_sc_hs__or3_4	A->X (FF)	0.17918	0.47827	4.76275
	B->X (FF)	0.16450	0.50062	5.11446
	C->X (FF)	0.13551	0.49905	5.19684

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01423	0.01720	0.08292
	A	0.00698	0.00994	0.07593
	B	0.01200	0.01557	0.07667
	B	0.00601	0.00960	0.07114
	C	0.01046	0.01442	0.08056
	C	0.00558	0.00955	0.07618
sky130_fd_sc_hs__or3_2	A	0.01769	0.02132	0.09239
	A	0.01036	0.01403	0.08605
	B	0.01530	0.01944	0.08496
	B	0.00920	0.01342	0.07995
	C	0.01385	0.01840	0.08835
	C	0.00882	0.01346	0.08332
sky130_fd_sc_hs__or3_4	A	0.03436	0.03952	0.15904
	A	0.02122	0.02658	0.14574
	B	0.02888	0.03541	0.14680
	B	0.01883	0.02548	0.13722
	C	0.02497	0.03249	0.15294
	C	0.01714	0.02468	0.14595

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00611	0.00824	0.07173
	A	0.01336	0.01549	0.07891
	B	0.00617	0.00881	0.07375
	B	0.01214	0.01478	0.07973
	C	0.00607	0.00998	0.08194
	C	0.01093	0.01485	0.08533
sky130_fd_sc_hs__or3_2	A	0.01279	0.01273	0.08157
	A	0.02009	0.02003	0.08885
	B	0.01286	0.01335	0.08441
	B	0.01893	0.01941	0.08835
	C	0.01276	0.01450	0.08999
	C	0.01777	0.01952	0.09386
sky130_fd_sc_hs__or3_4	A	0.02379	0.02323	0.13808
	A	0.03688	0.03616	0.14681
	B	0.02435	0.02513	0.14305
	B	0.03437	0.03475	0.14953
	C	0.02402	0.02681	0.15485
	C	0.03183	0.03461	0.16002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00181	0.00164	0.00162
	(B * C * X)	-0.00174	-0.00193	-0.00194
	(B * !C * X)	0.00218	0.00185	0.00191
	(B * !C * X)	-0.00142	-0.00176	-0.00165
	(!B * C * X)	0.00239	0.00200	0.00214
	(!B * C * X)	-0.00125	-0.00166	-0.00144
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00192	0.00174	0.00172
	(B * C * X)	-0.00175	-0.00194	-0.00195
	(B * !C * X)	0.00229	0.00196	0.00201
	(B * !C * X)	-0.00142	-0.00177	-0.00166
	(!B * C * X)	0.00250	0.00211	0.00224
	(!B * C * X)	-0.00124	-0.00167	-0.00144
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00313	0.00277	0.00271
	(B * C * X)	-0.00346	-0.00385	-0.00386
	(B * !C * X)	0.00390	0.00322	0.00330
	(B * !C * X)	-0.00279	-0.00349	-0.00330
	(!B * C * X)	0.00433	0.00352	0.00377
	(!B * C * X)	-0.00243	-0.00329	-0.00286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00146	-0.00148	-0.00147
	(B * C * X)	0.00209	0.00211	0.00209
	(B * !C * X)	-0.00120	-0.00122	-0.00126
	(B * !C * X)	0.00238	0.00240	0.00233
	(!B * C * X)	-0.00094	-0.00096	-0.00103
	(!B * C * X)	0.00266	0.00267	0.00259
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00153	-0.00154	-0.00154
	(B * C * X)	0.00212	0.00212	0.00212
	(B * !C * X)	-0.00128	-0.00130	-0.00133
	(B * !C * X)	0.00241	0.00243	0.00236
	(!B * C * X)	-0.00102	-0.00104	-0.00110
	(!B * C * X)	0.00269	0.00270	0.00262
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00236	-0.00237	-0.00236
	(B * C * X)	0.00421	0.00424	0.00421
	(B * !C * X)	-0.00183	-0.00187	-0.00194
	(B * !C * X)	0.00480	0.00483	0.00471
	(!B * C * X)	-0.00132	-0.00136	-0.00148
	(!B * C * X)	0.00537	0.00538	0.00521

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00167	0.00168	0.00161
	(A * C * X)	-0.00114	-0.00116	-0.00118
	(A * !C * X)	0.00166	0.00166	0.00164
	(A * !C * X)	-0.00078	-0.00078	-0.00077
	(!A * C * X)	0.00220	0.00176	0.00202
	(!A * C * X)	-0.00126	-0.00171	-0.00140
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00171	0.00173	0.00165
	(A * C * X)	-0.00124	-0.00127	-0.00129
	(A * !C * X)	0.00172	0.00172	0.00170
	(A * !C * X)	-0.00088	-0.00089	-0.00088
	(!A * C * X)	0.00227	0.00183	0.00208
	(!A * C * X)	-0.00137	-0.00182	-0.00151
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00234	0.00237	0.00221
	(A * C * X)	-0.00236	-0.00237	-0.00243
	(A * !C * X)	0.00237	0.00237	0.00233
	(A * !C * X)	-0.00154	-0.00153	-0.00154
	(!A * C * X)	0.00346	0.00253	0.00302
	(!A * C * X)	-0.00256	-0.00349	-0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00141	-0.00142	-0.00140
	(A * C * X)	0.00133	0.00135	0.00133
	(A * !C * X)	-0.00115	-0.00117	-0.00135
	(A * !C * X)	0.00129	0.00128	0.00111
	(!A * C * X)	-0.00084	-0.00086	-0.00095
	(!A * C * X)	0.00260	0.00259	0.00249
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00143	-0.00144	-0.00142
	(A * C * X)	0.00147	0.00148	0.00146
	(A * !C * X)	-0.00119	-0.00120	-0.00138
	(A * !C * X)	0.00141	0.00141	0.00124
	(!A * C * X)	-0.00087	-0.00089	-0.00098
	(!A * C * X)	0.00274	0.00273	0.00263
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00176	-0.00178	-0.00175
	(A * C * X)	0.00278	0.00281	0.00276
	(A * !C * X)	-0.00129	-0.00132	-0.00167
	(A * !C * X)	0.00263	0.00262	0.00229
	(!A * C * X)	-0.00060	-0.00064	-0.00082
	(!A * C * X)	0.00537	0.00537	0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00161	0.00164	0.00161
	(B * X)	-0.00085	-0.00087	-0.00085
	(A * !B * X)	0.00162	0.00164	0.00164
	(A * !B * X)	-0.00076	-0.00076	-0.00074
sky130_fd_sc_hs__or3_2	(B * X)	0.00182	0.00185	0.00183
	(B * X)	-0.00085	-0.00087	-0.00085
	(A * !B * X)	0.00183	0.00185	0.00185
	(A * !B * X)	-0.00076	-0.00077	-0.00074
sky130_fd_sc_hs__or3_4	(B * X)	0.00233	0.00236	0.00233
	(B * X)	-0.00170	-0.00172	-0.00169
	(A * !B * X)	0.00235	0.00237	0.00239
	(A * !B * X)	-0.00149	-0.00150	-0.00145

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00144	-0.00144	-0.00151
	(B * X)	0.00103	0.00102	0.00096
	(A * !B * X)	-0.00107	-0.00109	-0.00128
	(A * !B * X)	0.00133	0.00133	0.00117
sky130_fd_sc_hs__or3_2	(B * X)	-0.00162	-0.00163	-0.00170
	(B * X)	0.00105	0.00105	0.00099
	(A * !B * X)	-0.00125	-0.00127	-0.00147
	(A * !B * X)	0.00136	0.00136	0.00120
sky130_fd_sc_hs__or3_4	(B * X)	-0.00196	-0.00198	-0.00213
	(B * X)	0.00205	0.00206	0.00192
	(A * !B * X)	-0.00118	-0.00118	-0.00164
	(A * !B * X)	0.00270	0.00268	0.00236

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00263	0.00260	0.00243	0.00246	1.33872
sky130_fd_sc_hs__or4bb_2	0.00262	0.00276	0.00239	0.00237	2.15733
sky130_fd_sc_hs__or4bb_4	0.00417	0.00425	0.00266	0.00264	4.11575

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	120.81200	255.15200
sky130_fd_sc_hs__or4bb_2	0.00000	125.56300	308.97900
sky130_fd_sc_hs__or4bb_4	0.00000	116.54800	339.89400

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)	0.07153	0.56736	6.33595
	B->X (RR)	0.07139	0.55440	6.19108
	C_N->X (FR)	0.12407	0.66855	7.52307
	D_N->X (FR)	0.10995	0.64760	7.48624
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.06962	0.47556	5.80066
	B->X (RR)	0.07068	0.46764	5.66795
	C_N->X (FR)	0.11469	0.56676	7.06398
	D_N->X (FR)	0.11299	0.56843	7.13364
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.10121	0.50631	6.52742
	B->X (RR)	0.10250	0.49631	6.37594
	C_N->X (FR)	0.16266	0.57918	7.44559
	D_N->X (FR)	0.15685	0.57762	7.46229

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.22734	0.62541	5.42497
	B->X (FF)	0.21112	0.64109	5.76010
	C_N->X (RF)	0.21765	0.55686	3.79142
	D_N->X (RF)	0.16972	0.51311	3.75084
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.27522	0.62875	5.21335
	B->X (FF)	0.26492	0.64909	5.34971
	C_N->X (RF)	0.26528	0.54879	3.16951
	D_N->X (RF)	0.22786	0.51967	3.17779
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.30325	0.59702	4.76004
	B->X (FF)	0.29012	0.60878	4.92317
	C_N->X (RF)	0.29333	0.54088	3.08919
	D_N->X (RF)	0.23548	0.49683	3.06168

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01867	0.02091	0.07970
	A	0.01325	0.01550	0.07458
	B	0.01663	0.01951	0.07453
	B	0.01217	0.01508	0.07056
	C_N	0.01325	0.02028	0.12424
	C_N	0.01678	0.02381	0.12808
	D_N	0.01269	0.01993	0.12405
	D_N	0.01580	0.02306	0.12749
sky130_fd_sc_hs__or4bb_2	A	0.02188	0.02558	0.10429
	A	0.01640	0.02010	0.09896
	B	0.02010	0.02382	0.09362
	B	0.01542	0.01917	0.08936
	C_N	0.01612	0.02362	0.12991
	C_N	0.01954	0.02701	0.13346
	D_N	0.01626	0.02316	0.12708
	D_N	0.01940	0.02629	0.13038
sky130_fd_sc_hs__or4bb_4	A	0.03904	0.04376	0.16796
	A	0.02918	0.03391	0.15870
	B	0.03353	0.03857	0.14937
	B	0.02610	0.03117	0.14298
	C_N	0.03073	0.03785	0.15562
	C_N	0.03397	0.04109	0.15995
	D_N	0.02867	0.03626	0.15824
	D_N	0.03195	0.03952	0.16261

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01332	0.01379	0.07340
	A	0.01874	0.01922	0.07840
	B	0.01314	0.01422	0.07424
	B	0.01759	0.01865	0.07867
	C_N	0.01980	0.02459	0.12714
	C_N	0.01628	0.02103	0.12352
	D_N	0.01791	0.02338	0.12758
	D_N	0.01476	0.02019	0.12395
sky130_fd_sc_hs__or4bb_2	A	0.02060	0.01818	0.09485
	A	0.02608	0.02367	0.09815
	B	0.02031	0.01825	0.08681
	B	0.02496	0.02290	0.08874
	C_N	0.02670	0.02818	0.13194
	C_N	0.02331	0.02473	0.12772
	D_N	0.02561	0.02714	0.12431
	D_N	0.02248	0.02384	0.12034
sky130_fd_sc_hs__or4bb_4	A	0.03981	0.03269	0.15036
	A	0.04967	0.04251	0.15990
	B	0.04011	0.03361	0.13875
	B	0.04752	0.04101	0.14508
	C_N	0.04770	0.04426	0.15258
	C_N	0.04446	0.04061	0.14854
	D_N	0.04591	0.04273	0.15508
	D_N	0.04263	0.03917	0.15128

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)**	0.00385	0.00353	0.00357
	(B * C_N * D_N * X)	0.00033	-0.00001	0.00007
	(B * !D_N * X)	0.00257	0.00245	0.00243
	(B * !D_N * X)	-0.00093	-0.00107	-0.00107
	(B * !C_N * D_N * X)	0.00259	0.00245	0.00243
	(B * !C_N * D_N * X)	-0.00091	-0.00107	-0.00106
	(!B * C_N * !D_N * X)	0.00318	0.00283	0.00295
	(!B * C_N * !D_N * X)	-0.00035	-0.00073	-0.00056
	(!B * !C_N * D_N * X)	0.00307	0.00272	0.00272
	(!B * !C_N * D_N * X)	-0.00045	-0.00084	-0.00078
	(!B * !C_N * !D_N * X)	0.00171	0.00158	0.00155
	(!B * !C_N * !D_N * X)	-0.00173	-0.00192	-0.00193
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00395	0.00364	0.00368
	(B * C_N * D_N * X)	0.00033	0.00001	0.00009
	(B * !D_N * X)	0.00268	0.00256	0.00254
	(B * !D_N * X)	-0.00091	-0.00104	-0.00104
	(B * !C_N * D_N * X)	0.00254	0.00240	0.00238
	(B * !C_N * D_N * X)	-0.00105	-0.00120	-0.00120
	(!B * C_N * !D_N * X)	0.00329	0.00294	0.00306
	(!B * C_N * !D_N * X)	-0.00033	-0.00071	-0.00054
	(!B * !C_N * D_N * X)	0.00302	0.00267	0.00267
	(!B * !C_N * D_N * X)	-0.00060	-0.00098	-0.00091
	(!B * !C_N * !D_N * X)	0.00167	0.00153	0.00151
	(!B * !C_N * !D_N * X)	-0.00186	-0.00206	-0.00206

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00459	0.00382	0.00382
	(B * C_N * D_N * X)	-0.00154	-0.00236	-0.00226
	(B * !D_N * X)	0.00301	0.00274	0.00269
	(B * !D_N * X)	-0.00305	-0.00337	-0.00337
	(B * !C_N * D_N * X)	0.00305	0.00274	0.00270
	(B * !C_N * D_N * X)	-0.00301	-0.00337	-0.00336
	(!B * C_N * !D_N * X)	0.00437	0.00358	0.00374
	(!B * C_N * !D_N * X)	-0.00178	-0.00262	-0.00235
	(!B * !C_N * D_N * X)	0.00414	0.00334	0.00329
	(!B * !C_N * D_N * X)	-0.00200	-0.00286	-0.00279
	(!B * !C_N * !D_N * X)	0.00245	0.00216	0.00212
	(!B * !C_N * !D_N * X)	-0.00351	-0.00391	-0.00392

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)**	0.00061	0.00059	0.00056
	(B * C_N * D_N * X)	0.00412	0.00414	0.00408
	(B * !D_N * X)	-0.00052	-0.00053	-0.00052
	(B * !D_N * X)	0.00297	0.00299	0.00298
	(B * !C_N * D_N * X)	-0.00051	-0.00052	-0.00052
	(B * !C_N * D_N * X)	0.00298	0.00299	0.00298
	(!B * C_N * !D_N * X)	0.00004	0.00002	-0.00003
	(!B * C_N * !D_N * X)	0.00355	0.00357	0.00350
	(!B * !C_N * D_N * X)	-0.00022	-0.00023	-0.00025
	(!B * !C_N * D_N * X)	0.00329	0.00330	0.00327
	(!B * !C_N * !D_N * X)	-0.00137	-0.00139	-0.00137
	(!B * !C_N * !D_N * X)	0.00208	0.00211	0.00209

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00052	0.00051	0.00047
	(B * C_N * D_N * X)	0.00412	0.00412	0.00408
	(B * !D_N * X)	-0.00061	-0.00062	-0.00061
	(B * !D_N * X)	0.00297	0.00299	0.00298
	(B * !C_N * D_N * X)	-0.00044	-0.00044	-0.00044
	(B * !C_N * D_N * X)	0.00314	0.00314	0.00314
	(!B * C_N * !D_N * X)	-0.00005	-0.00007	-0.00012
	(!B * C_N * !D_N * X)	0.00355	0.00357	0.00350
	(!B * !C_N * D_N * X)	-0.00015	-0.00016	-0.00018
	(!B * !C_N * D_N * X)	0.00345	0.00346	0.00343
	(!B * !C_N * !D_N * X)	-0.00130	-0.00131	-0.00130
	(!B * !C_N * !D_N * X)	0.00224	0.00227	0.00225
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00006	-0.00008	-0.00014
	(B * C_N * D_N * X)	0.00606	0.00607	0.00598
	(B * !D_N * X)	-0.00116	-0.00117	-0.00116
	(B * !D_N * X)	0.00489	0.00492	0.00491
	(B * !C_N * D_N * X)	-0.00115	-0.00116	-0.00115
	(B * !C_N * D_N * X)	0.00489	0.00492	0.00491
	(!B * C_N * !D_N * X)	-0.00007	-0.00009	-0.00018
	(!B * C_N * !D_N * X)	0.00606	0.00606	0.00594
	(!B * !C_N * D_N * X)	-0.00055	-0.00057	-0.00060
	(!B * !C_N * D_N * X)	0.00555	0.00558	0.00550
	(!B * !C_N * !D_N * X)	-0.00171	-0.00171	-0.00170
	(!B * !C_N * !D_N * X)	0.00428	0.00429	0.00428

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)**	0.00354	0.00355	0.00353
	(A * C_N * D_N * X)	0.00089	0.00089	0.00089
	(A * C_N * !D_N * X)	0.00296	0.00306	0.00296
	(A * C_N * !D_N * X)	-0.00038	-0.00030	-0.00037
	(A * !C_N * D_N * X)	0.00237	0.00238	0.00226
	(A * !C_N * D_N * X)	-0.00073	-0.00075	-0.00082
	(A * !C_N * !D_N * X)	0.00144	0.00145	0.00136
	(A * !C_N * !D_N * X)	-0.00170	-0.00172	-0.00175
	(!A * C_N * !D_N * X)	0.00337	0.00287	0.00303
	(!A * C_N * !D_N * X)	-0.00031	-0.00082	-0.00062
	(!A * !C_N * D_N * X)	0.00288	0.00248	0.00253
	(!A * !C_N * D_N * X)	-0.00080	-0.00122	-0.00112
	(!A * !C_N * !D_N * X)	0.00163	0.00140	0.00137
	(!A * !C_N * !D_N * X)	-0.00204	-0.00228	-0.00228
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00390	0.00393	0.00389
	(A * C_N * D_N * X)	0.00102	0.00100	0.00101
	(A * C_N * !D_N * X)	0.00333	0.00342	0.00332
	(A * C_N * !D_N * X)	-0.00026	-0.00018	-0.00025
	(A * !C_N * D_N * X)	0.00281	0.00283	0.00272
	(A * !C_N * D_N * X)	-0.00051	-0.00051	-0.00059
	(A * !C_N * !D_N * X)	0.00190	0.00191	0.00182
	(A * !C_N * !D_N * X)	-0.00147	-0.00148	-0.00152
	(!A * C_N * !D_N * X)	0.00374	0.00320	0.00339
	(!A * C_N * !D_N * X)	-0.00017	-0.00070	-0.00050
	(!A * !C_N * D_N * X)	0.00334	0.00292	0.00299
	(!A * !C_N * D_N * X)	-0.00055	-0.00099	-0.00090
	(!A * !C_N * !D_N * X)	0.00209	0.00185	0.00182
	(!A * !C_N * !D_N * X)	-0.00181	-0.00205	-0.00206

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00371	0.00372	0.00363
	(A * C_N * D_N * X)	-0.00034	-0.00035	-0.00040
	(A * C_N * !D_N * X)	0.00359	0.00382	0.00360
	(A * C_N * !D_N * X)	-0.00188	-0.00168	-0.00185
	(A * !C_N * D_N * X)	0.00308	0.00304	0.00278
	(A * !C_N * D_N * X)	-0.00196	-0.00201	-0.00219
	(A * !C_N * !D_N * X)	0.00236	0.00234	0.00214
	(A * !C_N * !D_N * X)	-0.00276	-0.00279	-0.00286
	(!A * C_N * !D_N * X)	0.00444	0.00345	0.00372
	(!A * C_N * !D_N * X)	-0.00163	-0.00268	-0.00235
	(!A * !C_N * D_N * X)	0.00406	0.00312	0.00323
	(!A * !C_N * D_N * X)	-0.00207	-0.00294	-0.00283
	(!A * !C_N * !D_N * X)	0.00261	0.00210	0.00207
	(!A * !C_N * !D_N * X)	-0.00349	-0.00395	-0.00398

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)**	0.00048	0.00046	0.00032
	(A * C_N * D_N * X)	0.00313	0.00314	0.00298
	(A * C_N * !D_N * X)	-0.00091	-0.00092	-0.00091
	(A * C_N * !D_N * X)	0.00231	0.00231	0.00230
	(A * !C_N * D_N * X)	-0.00035	-0.00035	-0.00034
	(A * !C_N * D_N * X)	0.00269	0.00270	0.00267
	(A * !C_N * !D_N * X)	-0.00123	-0.00123	-0.00122
	(A * !C_N * !D_N * X)	0.00184	0.00185	0.00181
	(!A * C_N * !D_N * X)	-0.00003	-0.00005	-0.00012
	(!A * C_N * !D_N * X)	0.00360	0.00361	0.00354
	(!A * !C_N * D_N * X)	-0.00005	-0.00006	-0.00010
	(!A * !C_N * D_N * X)	0.00361	0.00362	0.00356
	(!A * !C_N * !D_N * X)	-0.00117	-0.00117	-0.00117
	(!A * !C_N * !D_N * X)	0.00247	0.00247	0.00248
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00014	0.00013	-0.00001
	(A * C_N * D_N * X)	0.00303	0.00302	0.00288
	(A * C_N * !D_N * X)	-0.00124	-0.00126	-0.00125
	(A * C_N * !D_N * X)	0.00219	0.00221	0.00220
	(A * !C_N * D_N * X)	-0.00078	-0.00079	-0.00077
	(A * !C_N * D_N * X)	0.00248	0.00249	0.00246
	(A * !C_N * !D_N * X)	-0.00166	-0.00167	-0.00166
	(A * !C_N * !D_N * X)	0.00162	0.00163	0.00161
	(!A * C_N * !D_N * X)	-0.00037	-0.00039	-0.00045
	(!A * C_N * !D_N * X)	0.00352	0.00352	0.00344
	(!A * !C_N * D_N * X)	-0.00048	-0.00050	-0.00053
	(!A * !C_N * D_N * X)	0.00341	0.00342	0.00336
	(!A * !C_N * !D_N * X)	-0.00160	-0.00162	-0.00161
	(!A * !C_N * !D_N * X)	0.00227	0.00229	0.00228

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	-0.00019	-0.00022	-0.00045
	(A * C_N * D_N * X)	0.00387	0.00387	0.00364
	(A * C_N * !D_N * X)	-0.00174	-0.00175	-0.00173
	(A * C_N * !D_N * X)	0.00346	0.00348	0.00346
	(A * !C_N * D_N * X)	-0.00117	-0.00118	-0.00115
	(A * !C_N * D_N * X)	0.00364	0.00368	0.00364
	(A * !C_N * !D_N * X)	-0.00176	-0.00177	-0.00175
	(A * !C_N * !D_N * X)	0.00310	0.00312	0.00309
	(!A * C_N * !D_N * X)	-0.00001	-0.00005	-0.00017
	(!A * C_N * !D_N * X)	0.00604	0.00605	0.00590
	(!A * !C_N * D_N * X)	-0.00054	-0.00056	-0.00064
	(!A * !C_N * D_N * X)	0.00554	0.00555	0.00544
	(!A * !C_N * !D_N * X)	-0.00163	-0.00165	-0.00163
	(!A * !C_N * !D_N * X)	0.00441	0.00446	0.00443

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.00711	0.01325	0.11200
	(B * X)	0.00284	0.00896	0.10773
	(A * !B * X) + (!A * !B * !D_N * X)	0.00745	0.01358	0.11224
	(A * !B * X) + (!A * !B * !D_N * X)	0.00309	0.00920	0.10789
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.00666	0.01306	0.11382
	(B * X)	0.00253	0.00893	0.10969
	(A * !B * X) + (!A * !B * !D_N * X)	0.00699	0.01338	0.11401
	(A * !B * X) + (!A * !B * !D_N * X)	0.00277	0.00916	0.10979
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.00718	0.01392	0.12597
	(B * X)	0.00275	0.00947	0.12154
	(A * !B * X) + (!A * !B * !D_N * X)	0.00787	0.01460	0.12645
	(A * !B * X) + (!A * !B * !D_N * X)	0.00327	0.00998	0.12186

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00228	0.00910	0.10894
	(B * X)	0.00655	0.01337	0.11321
	(A * !B * X) + (!A * !B * !D_N * X)	0.00240	0.00921	0.10913
	(A * !B * X) + (!A * !B * !D_N * X)	0.00677	0.01358	0.11348
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00217	0.00925	0.11109
	(B * X)	0.00630	0.01336	0.11521
	(A * !B * X) + (!A * !B * !D_N * X)	0.00227	0.00933	0.11121
	(A * !B * X) + (!A * !B * !D_N * X)	0.00651	0.01359	0.11541
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00302	0.01054	0.12308
	(B * X)	0.00742	0.01496	0.12749
	(A * !B * X) + (!A * !B * !D_N * X)	0.00329	0.01079	0.12349
	(A * !B * X) + (!A * !B * !D_N * X)	0.00787	0.01540	0.12804

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)	0.00649	0.01275	0.11152
	(B * C_N * X)	0.00262	0.00888	0.10766
	(A * !B * C_N * X)	0.00685	0.01311	0.11184
	(A * !B * C_N * X)	0.00293	0.00918	0.10793
	(!C_N * X)	0.00571	0.01198	0.11083
	(!C_N * X)	0.00187	0.00812	0.10698
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00657	0.01280	0.11183
	(B * C_N * X)	0.00273	0.00894	0.10798
	(A * !B * C_N * X)	0.00692	0.01316	0.11214
	(A * !B * C_N * X)	0.00303	0.00924	0.10825
	(!C_N * X)	0.00581	0.01205	0.11109
	(!C_N * X)	0.00198	0.00819	0.10726
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00804	0.01465	0.12737
	(B * C_N * X)	0.00364	0.01024	0.12296
	(A * !B * C_N * X)	0.00886	0.01546	0.12808
	(A * !B * C_N * X)	0.00433	0.01092	0.12357
	(!C_N * X)	0.00784	0.01445	0.12722
	(!C_N * X)	0.00347	0.01007	0.12283

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)	0.00226	0.00918	0.10906
	(B * C_N * X)	0.00611	0.01306	0.11291
	(A * !B * C_N * X)	0.00231	0.00923	0.10919
	(A * !B * C_N * X)	0.00622	0.01316	0.11309
	(!C_N * X)	0.00121	0.00815	0.10809
	(!C_N * X)	0.00507	0.01202	0.11194
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00255	0.00944	0.10962
	(B * C_N * X)	0.00638	0.01329	0.11345
	(A * !B * C_N * X)	0.00260	0.00949	0.10975
	(A * !B * C_N * X)	0.00649	0.01340	0.11363
	(!C_N * X)	0.00149	0.00838	0.10856
	(!C_N * X)	0.00531	0.01223	0.11238
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00332	0.01071	0.12410
	(B * C_N * X)	0.00771	0.01512	0.12850
	(A * !B * C_N * X)	0.00341	0.01079	0.12438
	(A * !B * C_N * X)	0.00791	0.01533	0.12885
	(!C_N * X)	0.00223	0.00962	0.12301
	(!C_N * X)	0.00660	0.01402	0.12739

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00268	0.00256	0.00265	0.00248	1.28550
sky130_fd_sc_hs__or4b_2	0.00277	0.00270	0.00269	0.00237	2.20866
sky130_fd_sc_hs__or4b_4	0.00413	0.00465	0.00468	0.00261	4.98104

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	69.87700	154.42700
sky130_fd_sc_hs__or4b_2	0.00000	74.64330	208.01600
sky130_fd_sc_hs__or4b_4	0.00000	81.58570	272.30600

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)	0.07498	0.57625	6.27001
	B->X (RR)	0.07472	0.56390	6.13150
	C->X (RR)	0.07114	0.54636	5.97991
	D_N->X (FR)	0.11060	0.64805	7.37887
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.07090	0.47799	5.75736
	B->X (RR)	0.07118	0.46964	5.64252
	C->X (RR)	0.06802	0.45472	5.51491
	D_N->X (FR)	0.11784	0.57974	7.25032
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.10322	0.50813	6.88244
	B->X (RR)	0.10218	0.49415	6.73265
	C->X (RR)	0.09216	0.46657	6.54688
	D_N->X (FR)	0.13981	0.54507	7.63348

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.23723	0.63463	5.30865
	B->X (FF)	0.22079	0.65048	5.64028
	C->X (FF)	0.19706	0.66249	5.76347
	D_N->X (RF)	0.17632	0.52226	3.66778
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.28817	0.64539	5.15276
	B->X (FF)	0.27214	0.66297	5.46278
	C->X (FF)	0.24368	0.67524	5.58786
	D_N->X (RF)	0.23298	0.53419	3.27500
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.29109	0.60694	5.36725
	B->X (FF)	0.27839	0.61852	5.52927
	C->X (FF)	0.23991	0.62339	5.67041
	D_N->X (RF)	0.22024	0.49471	3.73484

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01785	0.01992	0.07518
	A	0.01077	0.01285	0.06849
	B	0.01557	0.01830	0.07017
	B	0.00985	0.01259	0.06493
	C	0.01355	0.01644	0.06433
	C	0.00872	0.01163	0.06002
	D_N	0.01054	0.01775	0.12278
	D_N	0.01346	0.02065	0.12584
sky130_fd_sc_hs__or4b_2	A	0.02147	0.02396	0.07729
	A	0.01429	0.01682	0.07028
	B	0.01924	0.02229	0.07241
	B	0.01338	0.01646	0.06697
	C	0.01705	0.02034	0.06660
	C	0.01209	0.01541	0.06217
	D_N	0.01425	0.02148	0.12253
	D_N	0.01733	0.02454	0.12571
sky130_fd_sc_hs__or4b_4	A	0.03951	0.04365	0.16483
	A	0.02700	0.03115	0.15210
	B	0.03516	0.03996	0.14979
	B	0.02449	0.02942	0.13893
	C	0.02921	0.03499	0.13740
	C	0.02073	0.02657	0.12940
	D_N	0.02634	0.03422	0.15433
	D_N	0.02921	0.03713	0.15878

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01037	0.01058	0.06922
	A	0.01743	0.01766	0.07576
	B	0.01042	0.01127	0.07020
	B	0.01614	0.01698	0.07584
	C	0.01030	0.01167	0.06562
	C	0.01512	0.01649	0.07044
	D_N	0.01619	0.02167	0.12732
	D_N	0.01329	0.01872	0.12412
sky130_fd_sc_hs__or4b_2	A	0.01774	0.01414	0.07612
	A	0.02491	0.02155	0.08223
	B	0.01783	0.01500	0.07710
	B	0.02367	0.02086	0.08138
	C	0.01760	0.01547	0.07130
	C	0.02254	0.02045	0.07548
	D_N	0.02453	0.02535	0.12148
	D_N	0.02146	0.02219	0.11817
sky130_fd_sc_hs__or4b_4	A	0.03691	0.02944	0.14551
	A	0.04941	0.04193	0.15655
	B	0.03664	0.02980	0.13396
	B	0.04728	0.04043	0.14423
	C	0.03608	0.03057	0.12954
	C	0.04454	0.03901	0.13478
	D_N	0.04436	0.04171	0.15838
	D_N	0.04149	0.03843	0.15530

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)**	0.00265	0.00250	0.00248
	(B * C * D_N * X)	-0.00088	-0.00105	-0.00105
	(B * !D_N * X)	0.00165	0.00159	0.00158
	(B * !D_N * X)	-0.00187	-0.00195	-0.00195
	(B * !C * D_N * X)	0.00305	0.00273	0.00275
	(B * !C * D_N * X)	-0.00052	-0.00087	-0.00079
	(!B * C * D_N * X)	0.00313	0.00277	0.00277
	(!B * C * D_N * X)	-0.00045	-0.00084	-0.00077
	(!B * C * !D_N * X)	0.00177	0.00163	0.00160
	(!B * C * !D_N * X)	-0.00170	-0.00191	-0.00191
	(!B * !C * !D_N * X)	0.00241	0.00206	0.00214
	(!B * !C * !D_N * X)	-0.00120	-0.00159	-0.00142
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00280	0.00266	0.00264
	(B * C * D_N * X)	-0.00090	-0.00106	-0.00106
	(B * !D_N * X)	0.00175	0.00170	0.00169
	(B * !D_N * X)	-0.00194	-0.00202	-0.00201
	(B * !C * D_N * X)	0.00321	0.00289	0.00291
	(B * !C * D_N * X)	-0.00054	-0.00088	-0.00080
	(!B * C * D_N * X)	0.00330	0.00294	0.00293
	(!B * C * D_N * X)	-0.00044	-0.00085	-0.00078
	(!B * C * !D_N * X)	0.00188	0.00174	0.00171
	(!B * C * !D_N * X)	-0.00176	-0.00197	-0.00197
	(!B * !C * !D_N * X)	0.00253	0.00217	0.00224
	(!B * !C * !D_N * X)	-0.00125	-0.00165	-0.00148

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00282	0.00250	0.00244
	(B * C * D_N * X)	-0.00296	-0.00332	-0.00333
	(B * !D_N * X)	0.00196	0.00183	0.00180
	(B * !D_N * X)	-0.00380	-0.00398	-0.00397
	(B * !C * D_N * X)	0.00379	0.00304	0.00302
	(B * !C * D_N * X)	-0.00212	-0.00289	-0.00278
	(!B * C * D_N * X)	0.00393	0.00307	0.00301
	(!B * C * D_N * X)	-0.00195	-0.00287	-0.00278
	(!B * C * !D_N * X)	0.00224	0.00190	0.00185
	(!B * C * !D_N * X)	-0.00341	-0.00388	-0.00390
	(!B * !C * !D_N * X)	0.00368	0.00284	0.00291
	(!B * !C * !D_N * X)	-0.00226	-0.00318	-0.00291

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)**	-0.00058	-0.00059	-0.00058
	(B * C * D_N * X)	0.00295	0.00297	0.00295
	(B * !D_N * X)	-0.00148	-0.00149	-0.00148
	(B * !D_N * X)	0.00205	0.00207	0.00205
	(B * !C * D_N * X)	-0.00033	-0.00035	-0.00038
	(B * !C * D_N * X)	0.00322	0.00324	0.00318
	(!B * C * D_N * X)	-0.00028	-0.00030	-0.00032
	(!B * C * D_N * X)	0.00326	0.00327	0.00324
	(!B * C * !D_N * X)	-0.00144	-0.00145	-0.00144
	(!B * C * !D_N * X)	0.00204	0.00207	0.00205
	(!B * !C * !D_N * X)	-0.00092	-0.00094	-0.00098
	(!B * !C * !D_N * X)	0.00265	0.00267	0.00260

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00071	-0.00073	-0.00072
	(B * C * D_N * X)	0.00298	0.00300	0.00299
	(B * !D_N * X)	-0.00156	-0.00156	-0.00156
	(B * !D_N * X)	0.00214	0.00215	0.00214
	(B * !C * D_N * X)	-0.00047	-0.00048	-0.00052
	(B * !C * D_N * X)	0.00326	0.00324	0.00322
	(!B * C * D_N * X)	-0.00042	-0.00043	-0.00045
	(!B * C * D_N * X)	0.00330	0.00331	0.00327
	(!B * C * !D_N * X)	-0.00152	-0.00153	-0.00152
	(!B * C * !D_N * X)	0.00213	0.00215	0.00214
	(!B * !C * !D_N * X)	-0.00100	-0.00102	-0.00106
	(!B * !C * !D_N * X)	0.00274	0.00275	0.00268
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00094	-0.00095	-0.00094
	(B * C * D_N * X)	0.00483	0.00487	0.00484
	(B * !D_N * X)	-0.00154	-0.00155	-0.00154
	(B * !D_N * X)	0.00423	0.00425	0.00423
	(B * !C * D_N * X)	-0.00049	-0.00051	-0.00056
	(B * !C * D_N * X)	0.00535	0.00538	0.00529
	(!B * C * D_N * X)	-0.00032	-0.00034	-0.00037
	(!B * C * D_N * X)	0.00548	0.00553	0.00545
	(!B * C * !D_N * X)	-0.00146	-0.00147	-0.00146
	(!B * C * !D_N * X)	0.00421	0.00424	0.00423
	(!B * !C * !D_N * X)	-0.00042	-0.00045	-0.00054
	(!B * !C * !D_N * X)	0.00542	0.00544	0.00533

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)**	0.00244	0.00245	0.00233
	(A * C * D_N * X)	-0.00028	-0.00029	-0.00035
	(A * C * !D_N * X)	0.00151	0.00152	0.00143
	(A * C * !D_N * X)	-0.00125	-0.00126	-0.00129
	(A * !C * D_N * X)	0.00248	0.00248	0.00245
	(A * !C * D_N * X)	0.00014	0.00014	0.00013
	(A * !C * !D_N * X)	0.00165	0.00173	0.00159
	(A * !C * !D_N * X)	-0.00113	-0.00104	-0.00113
	(!A * C * D_N * X)	0.00294	0.00252	0.00258
	(!A * C * D_N * X)	-0.00041	-0.00084	-0.00072
	(!A * C * !D_N * X)	0.00170	0.00146	0.00142
	(!A * C * !D_N * X)	-0.00163	-0.00188	-0.00188
	(!A * !C * !D_N * X)	0.00233	0.00183	0.00194
	(!A * !C * !D_N * X)	-0.00103	-0.00157	-0.00137
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00260	0.00263	0.00251
	(A * C * D_N * X)	-0.00029	-0.00029	-0.00035
	(A * C * !D_N * X)	0.00164	0.00165	0.00156
	(A * C * !D_N * X)	-0.00131	-0.00132	-0.00134
	(A * !C * D_N * X)	0.00266	0.00267	0.00264
	(A * !C * D_N * X)	0.00014	0.00014	0.00014
	(A * !C * !D_N * X)	0.00179	0.00187	0.00172
	(A * !C * !D_N * X)	-0.00119	-0.00110	-0.00119
	(!A * C * D_N * X)	0.00315	0.00272	0.00277
	(!A * C * D_N * X)	-0.00039	-0.00084	-0.00073
	(!A * C * !D_N * X)	0.00184	0.00160	0.00156
	(!A * C * !D_N * X)	-0.00167	-0.00193	-0.00193
	(!A * !C * !D_N * X)	0.00251	0.00199	0.00209
	(!A * !C * !D_N * X)	-0.00108	-0.00161	-0.00142

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00321	0.00326	0.00298
	(A * C * D_N * X)	-0.00189	-0.00187	-0.00202
	(A * C * !D_N * X)	0.00248	0.00250	0.00229
	(A * C * !D_N * X)	-0.00274	-0.00273	-0.00279
	(A * !C * D_N * X)	0.00334	0.00333	0.00322
	(A * !C * D_N * X)	-0.00092	-0.00092	-0.00098
	(A * !C * !D_N * X)	0.00278	0.00295	0.00261
	(A * !C * !D_N * X)	-0.00242	-0.00225	-0.00244
	(!A * C * D_N * X)	0.00439	0.00337	0.00341
	(!A * C * D_N * X)	-0.00194	-0.00297	-0.00282
	(!A * C * !D_N * X)	0.00288	0.00233	0.00225
	(!A * C * !D_N * X)	-0.00338	-0.00395	-0.00396
	(!A * !C * !D_N * X)	0.00426	0.00317	0.00331
	(!A * !C * !D_N * X)	-0.00206	-0.00325	-0.00294

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)**	-0.00043	-0.00043	-0.00042
	(A * C * D_N * X)	0.00222	0.00223	0.00220
	(A * C * !D_N * X)	-0.00131	-0.00131	-0.00131
	(A * C * !D_N * X)	0.00136	0.00136	0.00134
	(A * !C * D_N * X)	-0.00019	-0.00021	-0.00036
	(A * !C * D_N * X)	0.00213	0.00213	0.00198
	(A * !C * !D_N * X)	-0.00131	-0.00132	-0.00130
	(A * !C * !D_N * X)	0.00130	0.00131	0.00129
	(!A * C * D_N * X)	-0.00011	-0.00013	-0.00017
	(!A * C * D_N * X)	0.00321	0.00322	0.00316
	(!A * C * !D_N * X)	-0.00124	-0.00125	-0.00124
	(!A * C * !D_N * X)	0.00204	0.00206	0.00205
	(!A * !C * !D_N * X)	-0.00073	-0.00075	-0.00082
	(!A * !C * !D_N * X)	0.00261	0.00260	0.00253
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00058	-0.00059	-0.00058
	(A * C * D_N * X)	0.00224	0.00225	0.00222
	(A * C * !D_N * X)	-0.00141	-0.00141	-0.00141
	(A * C * !D_N * X)	0.00144	0.00144	0.00142
	(A * !C * D_N * X)	-0.00036	-0.00038	-0.00051
	(A * !C * D_N * X)	0.00215	0.00215	0.00201
	(A * !C * !D_N * X)	-0.00142	-0.00142	-0.00141
	(A * !C * !D_N * X)	0.00139	0.00139	0.00138
	(!A * C * D_N * X)	-0.00027	-0.00029	-0.00032
	(!A * C * D_N * X)	0.00324	0.00325	0.00319
	(!A * C * !D_N * X)	-0.00135	-0.00137	-0.00136
	(!A * C * !D_N * X)	0.00213	0.00215	0.00213
	(!A * !C * !D_N * X)	-0.00085	-0.00086	-0.00093
	(!A * !C * !D_N * X)	0.00269	0.00268	0.00261

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00145	-0.00146	-0.00143
	(A * C * D_N * X)	0.00346	0.00348	0.00343
	(A * C * !D_N * X)	-0.00196	-0.00198	-0.00196
	(A * C * !D_N * X)	0.00297	0.00299	0.00296
	(A * !C * D_N * X)	-0.00103	-0.00106	-0.00122
	(A * !C * D_N * X)	0.00321	0.00322	0.00302
	(A * !C * !D_N * X)	-0.00197	-0.00198	-0.00195
	(A * !C * !D_N * X)	0.00284	0.00286	0.00284
	(!A * C * D_N * X)	-0.00073	-0.00076	-0.00084
	(!A * C * D_N * X)	0.00551	0.00553	0.00543
	(!A * C * !D_N * X)	-0.00183	-0.00185	-0.00184
	(!A * C * !D_N * X)	0.00434	0.00440	0.00437
	(!A * !C * !D_N * X)	-0.00083	-0.00085	-0.00098
	(!A * !C * !D_N * X)	0.00547	0.00545	0.00532

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)**	0.00256	0.00258	0.00253
	(B * D_N * X)	0.00003	0.00001	0.00001
	(B * !D_N * X)	0.00174	0.00176	0.00167
	(B * !D_N * X)	-0.00124	-0.00124	-0.00130
	(A * !B * D_N * X)	0.00266	0.00266	0.00265
	(A * !B * D_N * X)	0.00020	0.00020	0.00019
	(A * !B * !D_N * X)	0.00195	0.00182	0.00181
	(A * !B * !D_N * X)	-0.00107	-0.00117	-0.00117
	(!A * !B * !D_N * X)	0.00227	0.00178	0.00206
	(!A * !B * !D_N * X)	-0.00131	-0.00177	-0.00147

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00274	0.00277	0.00272
	(B * D_N * X)	0.00002	0.00000	-0.00001
	(B * !D_N * X)	0.00174	0.00177	0.00167
	(B * !D_N * X)	-0.00145	-0.00146	-0.00152
	(A * !B * D_N * X)	0.00285	0.00289	0.00284
	(A * !B * D_N * X)	0.00020	0.00019	0.00019
	(A * !B * !D_N * X)	0.00196	0.00184	0.00180
	(A * !B * !D_N * X)	-0.00127	-0.00139	-0.00138
	(!A * !B * !D_N * X)	0.00229	0.00180	0.00207
	(!A * !B * !D_N * X)	-0.00148	-0.00194	-0.00167
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00338	0.00342	0.00333
	(B * D_N * X)	-0.00117	-0.00121	-0.00122
	(B * !D_N * X)	0.00281	0.00278	0.00261
	(B * !D_N * X)	-0.00282	-0.00286	-0.00296
	(A * !B * D_N * X)	0.00361	0.00363	0.00358
	(A * !B * D_N * X)	-0.00082	-0.00083	-0.00084
	(A * !B * !D_N * X)	0.00315	0.00286	0.00283
	(A * !B * !D_N * X)	-0.00246	-0.00268	-0.00268
	(!A * !B * !D_N * X)	0.00376	0.00280	0.00333
	(!A * !B * !D_N * X)	-0.00291	-0.00382	-0.00327

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)**	-0.00063	-0.00064	-0.00067
	(B * D_N * X)	0.00189	0.00189	0.00186
	(B * !D_N * X)	-0.00144	-0.00144	-0.00143
	(B * !D_N * X)	0.00142	0.00143	0.00142
	(A * !B * D_N * X)	-0.00031	-0.00033	-0.00058
	(A * !B * D_N * X)	0.00215	0.00215	0.00194
	(A * !B * !D_N * X)	-0.00143	-0.00144	-0.00141
	(A * !B * !D_N * X)	0.00141	0.00141	0.00141
	(!A * !B * !D_N * X)	-0.00086	-0.00088	-0.00097
	(!A * !B * !D_N * X)	0.00268	0.00267	0.00257
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00079	-0.00080	-0.00082
	(B * D_N * X)	0.00193	0.00193	0.00191
	(B * !D_N * X)	-0.00140	-0.00141	-0.00139
	(B * !D_N * X)	0.00167	0.00169	0.00168
	(A * !B * D_N * X)	-0.00048	-0.00050	-0.00074
	(A * !B * D_N * X)	0.00217	0.00217	0.00197
	(A * !B * !D_N * X)	-0.00140	-0.00140	-0.00138
	(A * !B * !D_N * X)	0.00164	0.00165	0.00165
	(!A * !B * !D_N * X)	-0.00084	-0.00086	-0.00095
	(!A * !B * !D_N * X)	0.00290	0.00288	0.00279
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00179	-0.00181	-0.00188
	(B * D_N * X)	0.00273	0.00274	0.00269
	(B * !D_N * X)	-0.00201	-0.00202	-0.00199
	(B * !D_N * X)	0.00331	0.00333	0.00332
	(A * !B * D_N * X)	-0.00112	-0.00116	-0.00172
	(A * !B * D_N * X)	0.00328	0.00328	0.00284
	(A * !B * !D_N * X)	-0.00200	-0.00200	-0.00195
	(A * !B * !D_N * X)	0.00323	0.00324	0.00325
	(!A * !B * !D_N * X)	-0.00087	-0.00091	-0.00109
	(!A * !B * !D_N * X)	0.00573	0.00570	0.00552

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00571	0.01209	0.11286
	(C * X)	0.00157	0.00793	0.10871
	(B * !C * X)	0.00582	0.01220	0.11293
	(B * !C * X)	0.00162	0.00798	0.10873
	(A * !B * !C * X)	0.00619	0.01256	0.11324
	(A * !B * !C * X)	0.00193	0.00828	0.10900
sky130_fd_sc_hs__or4b_2	(C * X)	0.00631	0.01228	0.11136
	(C * X)	0.00207	0.00802	0.10711
	(B * !C * X)	0.00643	0.01240	0.11144
	(B * !C * X)	0.00212	0.00807	0.10714
	(A * !B * !C * X)	0.00679	0.01276	0.11175
	(A * !B * !C * X)	0.00242	0.00837	0.10740
sky130_fd_sc_hs__or4b_4	(C * X)	0.00704	0.01394	0.12830
	(C * X)	0.00237	0.00925	0.12363
	(B * !C * X)	0.00734	0.01423	0.12849
	(B * !C * X)	0.00252	0.00939	0.12369
	(A * !B * !C * X)	0.00812	0.01500	0.12916
	(A * !B * !C * X)	0.00315	0.01002	0.12424

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00117	0.00829	0.11006
	(C * X)	0.00529	0.01242	0.11419
	(B * !C * X)	0.00117	0.00829	0.11006
	(B * !C * X)	0.00532	0.01245	0.11421
	(A * !B * !C * X)	0.00119	0.00830	0.11016
	(A * !B * !C * X)	0.00543	0.01255	0.11438
sky130_fd_sc_hs__or4b_2	(C * X)	0.00141	0.00823	0.10830
	(C * X)	0.00563	0.01248	0.11254
	(B * !C * X)	0.00141	0.00823	0.10830
	(B * !C * X)	0.00566	0.01251	0.11257
	(A * !B * !C * X)	0.00142	0.00824	0.10841
	(A * !B * !C * X)	0.00578	0.01262	0.11274
sky130_fd_sc_hs__or4b_4	(C * X)	0.00214	0.00976	0.12473
	(C * X)	0.00678	0.01442	0.12939
	(B * !C * X)	0.00214	0.00977	0.12475
	(B * !C * X)	0.00685	0.01449	0.12946
	(A * !B * !C * X)	0.00217	0.00979	0.12498
	(A * !B * !C * X)	0.00708	0.01471	0.12982

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00266	0.00254	0.00259	0.00252	1.28209
sky130_fd_sc_hs__or4_2	0.00277	0.00273	0.00285	0.00283	2.57070
sky130_fd_sc_hs__or4_4	0.00408	0.00468	0.00474	0.00447	4.93778

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	18.92230	68.88500
sky130_fd_sc_hs__or4_2	0.00000	23.65790	107.11200
sky130_fd_sc_hs__or4_4	0.00000	46.70030	204.30800

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)	0.07229	0.57295	6.28866
	B->X (RR)	0.07283	0.56128	6.15057
	C->X (RR)	0.06915	0.54251	5.99852
	D->X (RR)	0.06091	0.51868	5.90890
sky130_fd_sc_hs__or4_2	A->X (RR)	0.06899	0.46932	6.07022
	B->X (RR)	0.06915	0.45979	5.93499
	C->X (RR)	0.06661	0.44516	5.79831
	D->X (RR)	0.06037	0.42662	5.72420
sky130_fd_sc_hs__or4_4	A->X (RR)	0.09464	0.48928	6.78219
	B->X (RR)	0.09718	0.48200	6.66996
	C->X (RR)	0.08805	0.45193	6.45804
	D->X (RR)	0.07736	0.42748	6.37900

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.22829	0.62011	5.25353
	B->X (FF)	0.21245	0.63597	5.58315
	C->X (FF)	0.18530	0.64608	5.70435
	D->X (FF)	0.14166	0.63316	5.74433
sky130_fd_sc_hs__or4_2	A->X (FF)	0.27764	0.64969	5.62764
	B->X (FF)	0.26179	0.66745	5.94387
	C->X (FF)	0.23800	0.68327	6.07497
	D->X (FF)	0.19656	0.67798	6.12806
sky130_fd_sc_hs__or4_4	A->X (FF)	0.27912	0.59101	5.34415
	B->X (FF)	0.26794	0.60250	5.34046
	C->X (FF)	0.23058	0.60856	5.63315
	D->X (FF)	0.17765	0.59310	5.66415

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01682	0.01892	0.07480
	A	0.00823	0.01033	0.06658
	B	0.01453	0.01725	0.06933
	B	0.00725	0.00998	0.06253
	C	0.01217	0.01507	0.06330
	C	0.00600	0.00892	0.05766
	D	0.01059	0.01392	0.06692
	D	0.00552	0.00886	0.06237
sky130_fd_sc_hs__or4_2	A	0.02031	0.02316	0.08924
	A	0.01137	0.01422	0.08132
	B	0.01794	0.02137	0.08255
	B	0.01026	0.01373	0.07595
	C	0.01575	0.01934	0.07548
	C	0.00917	0.01284	0.06907
	D	0.01413	0.01818	0.07912
	D	0.00864	0.01277	0.07391
sky130_fd_sc_hs__or4_4	A	0.04060	0.04520	0.16827
	A	0.02526	0.02999	0.15278
	B	0.03630	0.04073	0.14794
	B	0.02275	0.02739	0.13464
	C	0.03012	0.03606	0.13918
	C	0.01914	0.02520	0.12904
	D	0.02608	0.03317	0.14621
	D	0.01746	0.02459	0.13867

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00645	0.00678	0.06576
	A	0.01503	0.01537	0.07390
	B	0.00650	0.00745	0.06688
	B	0.01376	0.01472	0.07395
	C	0.00654	0.00806	0.06230
	C	0.01269	0.01423	0.06846
	D	0.00637	0.00919	0.06907
	D	0.01143	0.01426	0.07415
sky130_fd_sc_hs__or4_2	A	0.01482	0.01185	0.07665
	A	0.02376	0.02079	0.08517
	B	0.01487	0.01250	0.07775
	B	0.02254	0.02019	0.08414
	C	0.01487	0.01298	0.07344
	C	0.02143	0.01955	0.07774
	D	0.01475	0.01414	0.08009
	D	0.02024	0.01966	0.08360
sky130_fd_sc_hs__or4_4	A	0.03048	0.02365	0.14279
	A	0.04580	0.03888	0.15530
	B	0.03033	0.02406	0.11747
	B	0.04386	0.03759	0.13099
	C	0.03047	0.02586	0.12233
	C	0.04145	0.03682	0.13330
	D	0.02986	0.02735	0.13543
	D	0.03845	0.03589	0.14404

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00161	0.00156	0.00155
	(B * D * X)	-0.00189	-0.00198	-0.00198
	(B * C * !D * X)	0.00173	0.00160	0.00158
	(B * C * !D * X)	-0.00178	-0.00195	-0.00195
	(B * !C * !D * X)	0.00216	0.00184	0.00185
	(B * !C * !D * X)	-0.00142	-0.00176	-0.00168
	(!B * C * D * X)	0.00173	0.00159	0.00157
	(!B * C * D * X)	-0.00172	-0.00193	-0.00194
	(!B * C * !D * X)	0.00223	0.00188	0.00187
	(!B * C * !D * X)	-0.00134	-0.00173	-0.00166
	(!B * !C * D * X)	0.00237	0.00203	0.00210
	(!B * !C * D * X)	-0.00123	-0.00162	-0.00145
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00178	0.00172	0.00171
	(B * D * X)	-0.00190	-0.00199	-0.00199
	(B * C * !D * X)	0.00190	0.00176	0.00174
	(B * C * !D * X)	-0.00179	-0.00196	-0.00196
	(B * !C * !D * X)	0.00232	0.00200	0.00201
	(B * !C * !D * X)	-0.00144	-0.00178	-0.00170
	(!B * C * D * X)	0.00189	0.00176	0.00174
	(!B * C * D * X)	-0.00174	-0.00195	-0.00195
	(!B * C * !D * X)	0.00239	0.00204	0.00203
	(!B * C * !D * X)	-0.00136	-0.00175	-0.00168
	(!B * !C * D * X)	0.00253	0.00219	0.00227
	(!B * !C * D * X)	-0.00126	-0.00164	-0.00146

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00194	0.00182	0.00179
	(B * D * X)	-0.00376	-0.00395	-0.00394
	(B * C * !D * X)	0.00220	0.00191	0.00186
	(B * C * !D * X)	-0.00352	-0.00388	-0.00388
	(B * !C * !D * X)	0.00320	0.00246	0.00243
	(B * !C * !D * X)	-0.00268	-0.00344	-0.00333
	(!B * C * D * X)	0.00222	0.00189	0.00184
	(!B * C * D * X)	-0.00337	-0.00385	-0.00388
	(!B * C * !D * X)	0.00333	0.00250	0.00243
	(!B * C * !D * X)	-0.00251	-0.00342	-0.00333
	(!B * !C * D * X)	0.00364	0.00282	0.00290
	(!B * !C * D * X)	-0.00228	-0.00319	-0.00289

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00146	-0.00147	-0.00146
	(B * D * X)	0.00206	0.00208	0.00206
	(B * C * !D * X)	-0.00144	-0.00145	-0.00144
	(B * C * !D * X)	0.00208	0.00211	0.00209
	(B * !C * !D * X)	-0.00119	-0.00121	-0.00124
	(B * !C * !D * X)	0.00236	0.00238	0.00232
	(!B * C * D * X)	-0.00143	-0.00144	-0.00143
	(!B * C * D * X)	0.00206	0.00208	0.00206
	(!B * C * !D * X)	-0.00114	-0.00115	-0.00117
	(!B * C * !D * X)	0.00240	0.00240	0.00238
	(!B * !C * D * X)	-0.00090	-0.00092	-0.00097
	(!B * !C * D * X)	0.00266	0.00268	0.00261

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00160	-0.00161	-0.00160
	(B * D * X)	0.00210	0.00212	0.00210
	(B * C * !D * X)	-0.00157	-0.00158	-0.00158
	(B * C * !D * X)	0.00213	0.00214	0.00213
	(B * !C * !D * X)	-0.00133	-0.00135	-0.00138
	(B * !C * !D * X)	0.00240	0.00242	0.00236
	(!B * C * D * X)	-0.00156	-0.00158	-0.00156
	(!B * C * D * X)	0.00209	0.00212	0.00210
	(!B * C * !D * X)	-0.00128	-0.00129	-0.00131
	(!B * C * !D * X)	0.00244	0.00245	0.00242
	(!B * !C * D * X)	-0.00104	-0.00106	-0.00111
	(!B * !C * D * X)	0.00271	0.00272	0.00265
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00157	-0.00158	-0.00157
	(B * D * X)	0.00416	0.00419	0.00417
	(B * C * !D * X)	-0.00154	-0.00155	-0.00154
	(B * C * !D * X)	0.00419	0.00424	0.00421
	(B * !C * !D * X)	-0.00109	-0.00111	-0.00115
	(B * !C * !D * X)	0.00472	0.00475	0.00466
	(!B * C * D * X)	-0.00149	-0.00150	-0.00149
	(!B * C * D * X)	0.00414	0.00417	0.00416
	(!B * C * !D * X)	-0.00091	-0.00093	-0.00097
	(!B * C * !D * X)	0.00485	0.00489	0.00482
	(!B * !C * D * X)	-0.00045	-0.00047	-0.00057
	(!B * !C * D * X)	0.00537	0.00538	0.00527

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)**	0.00150	0.00151	0.00141
	(A * C * D * X)	-0.00132	-0.00134	-0.00136
	(A * C * !D * X)	0.00155	0.00157	0.00143
	(A * C * !D * X)	-0.00122	-0.00123	-0.00129
	(A * !C * D * X)	0.00165	0.00175	0.00158
	(A * !C * D * X)	-0.00116	-0.00109	-0.00115
	(A * !C * !D * X)	0.00161	0.00161	0.00158
	(A * !C * !D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * D * X)	0.00169	0.00145	0.00141
	(!A * C * D * X)	-0.00166	-0.00192	-0.00192
	(!A * C * !D * X)	0.00210	0.00166	0.00170
	(!A * C * !D * X)	-0.00130	-0.00174	-0.00164
	(!A * !C * D * X)	0.00234	0.00183	0.00194
	(!A * !C * D * X)	-0.00110	-0.00162	-0.00142
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00165	0.00166	0.00156
	(A * C * D * X)	-0.00137	-0.00139	-0.00141
	(A * C * !D * X)	0.00170	0.00171	0.00158
	(A * C * !D * X)	-0.00127	-0.00129	-0.00134
	(A * !C * D * X)	0.00179	0.00187	0.00173
	(A * !C * D * X)	-0.00122	-0.00113	-0.00120
	(A * !C * !D * X)	0.00176	0.00176	0.00173
	(A * !C * !D * X)	-0.00086	-0.00086	-0.00086
	(!A * C * D * X)	0.00184	0.00161	0.00157
	(!A * C * D * X)	-0.00175	-0.00200	-0.00200
	(!A * C * !D * X)	0.00223	0.00182	0.00186
	(!A * C * !D * X)	-0.00141	-0.00183	-0.00172
	(!A * !C * D * X)	0.00250	0.00198	0.00209
	(!A * !C * D * X)	-0.00119	-0.00171	-0.00150

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00253	0.00255	0.00235
	(A * C * D * X)	-0.00273	-0.00271	-0.00276
	(A * C * !D * X)	0.00263	0.00268	0.00238
	(A * C * !D * X)	-0.00251	-0.00247	-0.00262
	(A * !C * D * X)	0.00282	0.00300	0.00266
	(A * !C * D * X)	-0.00236	-0.00218	-0.00235
	(A * !C * !D * X)	0.00279	0.00278	0.00267
	(A * !C * !D * X)	-0.00152	-0.00152	-0.00157
	(!A * C * D * X)	0.00290	0.00236	0.00229
	(!A * C * D * X)	-0.00338	-0.00395	-0.00396
	(!A * C * !D * X)	0.00387	0.00286	0.00287
	(!A * C * !D * X)	-0.00252	-0.00354	-0.00339
	(!A * !C * D * X)	0.00431	0.00320	0.00335
	(!A * !C * D * X)	-0.00216	-0.00328	-0.00294

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)**	-0.00131	-0.00132	-0.00131
	(A * C * D * X)	0.00142	0.00143	0.00140
	(A * C * !D * X)	-0.00130	-0.00131	-0.00129
	(A * C * !D * X)	0.00141	0.00141	0.00139
	(A * !C * D * X)	-0.00132	-0.00132	-0.00131
	(A * !C * D * X)	0.00132	0.00133	0.00132
	(A * !C * !D * X)	-0.00107	-0.00109	-0.00124
	(A * !C * !D * X)	0.00130	0.00129	0.00115
	(!A * C * D * X)	-0.00125	-0.00126	-0.00125
	(!A * C * D * X)	0.00208	0.00210	0.00208
	(!A * C * !D * X)	-0.00100	-0.00101	-0.00105
	(!A * C * !D * X)	0.00236	0.00237	0.00232
	(!A * !C * D * X)	-0.00074	-0.00076	-0.00082
	(!A * !C * D * X)	0.00265	0.00264	0.00257
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00144	-0.00144	-0.00143
	(A * C * D * X)	0.00150	0.00151	0.00148
	(A * C * !D * X)	-0.00142	-0.00143	-0.00141
	(A * C * !D * X)	0.00149	0.00149	0.00146
	(A * !C * D * X)	-0.00144	-0.00145	-0.00143
	(A * !C * D * X)	0.00140	0.00141	0.00140
	(A * !C * !D * X)	-0.00120	-0.00122	-0.00137
	(A * !C * !D * X)	0.00139	0.00139	0.00124
	(!A * C * D * X)	-0.00138	-0.00139	-0.00139
	(!A * C * D * X)	0.00217	0.00219	0.00218
	(!A * C * !D * X)	-0.00113	-0.00115	-0.00119
	(!A * C * !D * X)	0.00247	0.00248	0.00242
	(!A * !C * D * X)	-0.00087	-0.00089	-0.00096
	(!A * !C * D * X)	0.00276	0.00275	0.00267

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00206	-0.00208	-0.00206
	(A * C * D * X)	0.00291	0.00294	0.00290
	(A * C * !D * X)	-0.00204	-0.00206	-0.00203
	(A * C * !D * X)	0.00286	0.00291	0.00286
	(A * !C * D * X)	-0.00206	-0.00207	-0.00204
	(A * !C * D * X)	0.00275	0.00277	0.00275
	(A * !C * !D * X)	-0.00165	-0.00168	-0.00184
	(A * !C * !D * X)	0.00262	0.00263	0.00242
	(!A * C * D * X)	-0.00190	-0.00193	-0.00191
	(!A * C * D * X)	0.00429	0.00435	0.00432
	(!A * C * !D * X)	-0.00139	-0.00141	-0.00149
	(!A * C * !D * X)	0.00490	0.00491	0.00482
	(!A * !C * D * X)	-0.00090	-0.00091	-0.00105
	(!A * !C * D * X)	0.00545	0.00541	0.00530

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00165	0.00166	0.00157
	(B * D * X)	-0.00113	-0.00115	-0.00119
	(B * !D * X)	0.00146	0.00148	0.00143
	(B * !D * X)	-0.00088	-0.00090	-0.00091
	(A * !B * D * X)	0.00185	0.00171	0.00171
	(A * !B * D * X)	-0.00100	-0.00110	-0.00108
	(A * !B * !D * X)	0.00159	0.00162	0.00157
	(A * !B * !D * X)	-0.00071	-0.00073	-0.00072
	(!A * !B * D * X)	0.00216	0.00167	0.00196
	(!A * !B * D * X)	-0.00125	-0.00172	-0.00141

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00185	0.00187	0.00178
	(B * D * X)	-0.00113	-0.00113	-0.00117
	(B * !D * X)	0.00169	0.00172	0.00166
	(B * !D * X)	-0.00089	-0.00090	-0.00091
	(A * !B * D * X)	0.00208	0.00194	0.00193
	(A * !B * D * X)	-0.00098	-0.00109	-0.00107
	(A * !B * !D * X)	0.00184	0.00183	0.00181
	(A * !B * !D * X)	-0.00071	-0.00070	-0.00072
	(!A * !B * D * X)	0.00241	0.00191	0.00219
	(!A * !B * D * X)	-0.00125	-0.00173	-0.00142
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00288	0.00285	0.00268
	(B * D * X)	-0.00234	-0.00237	-0.00245
	(B * !D * X)	0.00241	0.00244	0.00234
	(B * !D * X)	-0.00181	-0.00184	-0.00185
	(A * !B * D * X)	0.00322	0.00291	0.00289
	(A * !B * D * X)	-0.00203	-0.00224	-0.00222
	(A * !B * !D * X)	0.00270	0.00270	0.00264
	(A * !B * !D * X)	-0.00145	-0.00146	-0.00147
	(!A * !B * D * X)	0.00384	0.00285	0.00338
	(!A * !B * D * X)	-0.00255	-0.00349	-0.00291

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	-0.00134
	(B * D * X)	0.00132	0.00132	0.00131
	(B * !D * X)	-0.00129	-0.00130	-0.00133
	(B * !D * X)	0.00106	0.00106	0.00102
	(A * !B * D * X)	-0.00134	-0.00135	-0.00132
	(A * !B * D * X)	0.00131	0.00132	0.00132
	(A * !B * !D * X)	-0.00099	-0.00101	-0.00129
	(A * !B * !D * X)	0.00131	0.00131	0.00110
	(!A * !B * D * X)	-0.00077	-0.00079	-0.00088
	(!A * !B * D * X)	0.00261	0.00260	0.00250
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00154	-0.00155	-0.00153
	(B * D * X)	0.00132	0.00133	0.00132
	(B * !D * X)	-0.00151	-0.00152	-0.00153
	(B * !D * X)	0.00107	0.00107	0.00105
	(A * !B * D * X)	-0.00154	-0.00154	-0.00151
	(A * !B * D * X)	0.00133	0.00133	0.00133
	(A * !B * !D * X)	-0.00122	-0.00124	-0.00150
	(A * !B * !D * X)	0.00132	0.00132	0.00112
	(!A * !B * D * X)	-0.00098	-0.00100	-0.00109
	(!A * !B * D * X)	0.00265	0.00264	0.00254
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00211	-0.00213	-0.00210
	(B * D * X)	0.00277	0.00280	0.00278
	(B * !D * X)	-0.00200	-0.00202	-0.00207
	(B * !D * X)	0.00221	0.00221	0.00215
	(A * !B * D * X)	-0.00209	-0.00210	-0.00205
	(A * !B * D * X)	0.00272	0.00274	0.00275
	(A * !B * !D * X)	-0.00138	-0.00139	-0.00201
	(A * !B * !D * X)	0.00274	0.00270	0.00228
	(!A * !B * D * X)	-0.00096	-0.00100	-0.00118
	(!A * !B * D * X)	0.00537	0.00535	0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00153	0.00156	0.00154
	(C * X)	-0.00088	-0.00090	-0.00088
	(B * !C * X)	0.00153	0.00154	0.00154
	(B * !C * X)	-0.00086	-0.00087	-0.00087
	(A * !B * !C * X)	0.00154	0.00156	0.00157
	(A * !B * !C * X)	-0.00077	-0.00078	-0.00076
sky130_fd_sc_hs__or4_2	(C * X)	0.00182	0.00186	0.00183
	(C * X)	-0.00087	-0.00088	-0.00087
	(B * !C * X)	0.00183	0.00184	0.00183
	(B * !C * X)	-0.00085	-0.00086	-0.00085
	(A * !B * !C * X)	0.00183	0.00185	0.00186
	(A * !B * !C * X)	-0.00075	-0.00076	-0.00074
sky130_fd_sc_hs__or4_4	(C * X)	0.00251	0.00253	0.00252
	(C * X)	-0.00169	-0.00171	-0.00170
	(B * !C * X)	0.00251	0.00254	0.00253
	(B * !C * X)	-0.00165	-0.00167	-0.00166
	(A * !B * !C * X)	0.00255	0.00259	0.00259
	(A * !B * !C * X)	-0.00147	-0.00150	-0.00143

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00138	-0.00139	-0.00145
	(C * X)	0.00103	0.00103	0.00097
	(B * !C * X)	-0.00127	-0.00128	-0.00143
	(B * !C * X)	0.00110	0.00110	0.00098
	(A * !B * !C * X)	-0.00091	-0.00092	-0.00122
	(A * !B * !C * X)	0.00141	0.00141	0.00119
sky130_fd_sc_hs__or4_2	(C * X)	-0.00165	-0.00166	-0.00172
	(C * X)	0.00103	0.00104	0.00098
	(B * !C * X)	-0.00154	-0.00156	-0.00170
	(B * !C * X)	0.00109	0.00109	0.00099
	(A * !B * !C * X)	-0.00118	-0.00120	-0.00148
	(A * !B * !C * X)	0.00140	0.00140	0.00120
sky130_fd_sc_hs__or4_4	(C * X)	-0.00217	-0.00218	-0.00233
	(C * X)	0.00202	0.00203	0.00191
	(B * !C * X)	-0.00189	-0.00191	-0.00228
	(B * !C * X)	0.00218	0.00218	0.00192
	(A * !B * !C * X)	-0.00114	-0.00116	-0.00185
	(A * !B * !C * X)	0.00283	0.00282	0.00235

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**F**	**0**	**1**
0	**1**	**0**	**1**	**1**	**F**	**0**	**1**
x	**1**	**1**	**1**	**1**	**F**	**1**	**0**
1	**x**	**0**	**1**	**1**	**F**	**1**	**0**
1	**0**	**1**	**1**	**1**	**F**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbn_1	0.00204	0.00186	0.00430	0.00188	0.00572	0.00312	1.31153	1.30788
sky130_fd_sc_hs__sdfbbn_2	0.00205	0.00188	0.00435	0.00176	0.00563	0.00308	2.62887	2.62135

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	414.31500	687.65100
sky130_fd_sc_hs__sdfbbn_2	0.00000	445.64200	739.61100

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)	0.33865	0.89796	7.76422
	SET_B->Q (FR)	0.16238	0.75636	7.84206
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.38363	0.84388	7.79658
	SET_B->Q (FR)	0.19281	0.70470	7.90540

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)	0.35086	0.74475	5.01185
	RESET_B->Q (FF)	0.23186	0.65668	5.03426
	SET_B->Q (RF)	0.14966	0.46136	3.48435
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.37978	0.72395	5.06960
	RESET_B->Q (FF)	0.26260	0.63941	5.11444
	SET_B->Q (RF)	0.18104	0.45817	3.63654

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)	0.31440	0.88970	7.77547
	RESET_B->Q_N (FR)	0.19573	0.80611	7.80143
	SET_B->Q_N (RR)	0.11350	0.61933	6.67227
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.31499	0.80153	7.69648
	RESET_B->Q_N (FR)	0.19892	0.71945	7.74491
	SET_B->Q_N (RR)	0.11707	0.54358	6.64015

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)	0.28823	0.74096	5.10011
	SET_B->Q_N (FF)	0.11614	0.60685	5.43114
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.30595	0.71826	5.05348
	SET_B->Q_N (FF)	0.12366	0.57722	5.40405

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)	-0.05773	-0.04732	1.03115
	setup	CLK_N (F)	0.15383	0.13200	-0.99140
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06291	-0.05429	1.01879
	setup	CLK_N (F)	0.15614	0.13551	-0.97643

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)	-0.18448	-0.23223	-0.78646
	setup	CLK_N (F)	0.21001	0.25221	0.79829
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.19977	-0.24956	-0.84648
	setup	CLK_N (F)	0.22636	0.26803	0.85716

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)	-0.05773	-0.04732	1.03115
	setup	CLK_N (F)	0.15383	0.13200	-0.99140
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06291	-0.05429	1.01879
	setup	CLK_N (F)	0.15614	0.13551	-0.97643

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)	-0.18448	-0.23223	-0.78646
	setup	CLK_N (F)	0.21001	0.25221	0.79829
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.19977	-0.24956	-0.84648
	setup	CLK_N (F)	0.22636	0.26803	0.85716

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)	-0.08159	-0.05855	1.02837
	setup	CLK_N (F)	0.18234	0.14769	-0.96852
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08705	-0.06002	1.02412
	setup	CLK_N (F)	0.18492	0.15100	-0.96485

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)	-0.23408	-0.26070	-0.80159
	setup	CLK_N (F)	0.26771	0.28219	0.81579
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25387	-0.27994	-0.86817
	setup	CLK_N (F)	0.28674	0.30213	0.88105

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)	-0.08159	-0.05855	1.02837
	hold	CLK_N (F)	-0.09021	-0.06544	1.01054
	setup	CLK_N (F)	0.17598	0.14000	-0.98863
	setup	CLK_N (F)	0.18234	0.14769	-0.96852
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08705	-0.06002	1.02412
	hold	CLK_N (F)	-0.09152	-0.06918	1.00242
	setup	CLK_N (F)	0.18116	0.14400	-0.98314
	setup	CLK_N (F)	0.18492	0.15100	-0.96485

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)	-0.23666	-0.26455	-0.80159
	hold	CLK_N (F)	-0.23408	-0.26070	-0.80583
	setup	CLK_N (F)	0.26771	0.28219	0.81548
	setup	CLK_N (F)	0.26444	0.28179	0.81579
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25771	-0.28365	-0.86817
	hold	CLK_N (F)	-0.25387	-0.27994	-0.87151
	setup	CLK_N (F)	0.28674	0.30213	0.87837
	setup	CLK_N (F)	0.28196	0.30031	0.88105

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)	-0.07280	-0.07063	0.83768
	setup	CLK_N (F)	0.26696	0.23403	-0.71009
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07599	-0.07710	0.81325
	setup	CLK_N (F)	0.28372	0.25073	-0.70922

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)	-0.10873	-0.09865	-0.07501
	setup	CLK_N (F)	0.21544	0.22923	0.53681
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11527	-0.10297	-0.08918
	setup	CLK_N (F)	0.23115	0.24706	0.60767

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)	-0.23786	-0.21571	0.83768
	hold	CLK_N (F)	-0.07280	-0.07063	0.75397
	setup	CLK_N (F)	0.26696	0.23403	-0.82246
	setup	CLK_N (F)	0.16922	0.15584	-0.71009
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25697	-0.23383	0.81325
	hold	CLK_N (F)	-0.07599	-0.07710	0.75101
	setup	CLK_N (F)	0.28372	0.25073	-0.79864
	setup	CLK_N (F)	0.16980	0.15800	-0.70922

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)	-0.10873	-0.09865	-0.07501
	hold	CLK_N (F)	-0.18881	-0.20980	-0.52773
	setup	CLK_N (F)	0.20438	0.18908	0.14491
	setup	CLK_N (F)	0.21544	0.22923	0.53681
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11527	-0.10297	-0.08918
	hold	CLK_N (F)	-0.20498	-0.22850	-0.59579
	setup	CLK_N (F)	0.20632	0.19001	0.16088
	setup	CLK_N (F)	0.23115	0.24706	0.60767

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)	0.09899	0.05667	-1.16160
	removal	CLK_N (F)	0.00760	0.04580	1.31290
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09570	0.05359	-1.15276
	removal	CLK_N (F)	0.01049	0.04841	1.31175

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)	0.09878	0.05664	-1.16560
	recovery	CLK_N (F)	0.09899	0.05667	-1.16160
	recovery	CLK_N (F)	0.09893	0.05665	-1.16178
	removal	CLK_N (F)	0.00760	0.04580	1.31290
	removal	CLK_N (F)	0.00760	0.04580	1.31290
	removal	CLK_N (F)	0.00760	0.04580	1.31290
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09553	0.05355	-1.15276
	recovery	CLK_N (F)	0.09561	0.05359	-1.15473
	recovery	CLK_N (F)	0.09570	0.05359	-1.15295
	removal	CLK_N (F)	0.01049	0.04841	1.31175
	removal	CLK_N (F)	0.01049	0.04841	1.31175
	removal	CLK_N (F)	0.01049	0.04841	1.31175

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 ()	0.19142	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17131	0.67139	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.20147	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17383	0.67139	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)	-0.01448	-0.07454	-0.66888
	removal	CLK_N (F)	0.02886	0.08818	1.30175
	hold	RESET_B (R)	-0.06189	-0.09298	-0.53868
	setup	RESET_B (R)	0.11174	0.13575	1.54425
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01059	-0.07054	-0.38492
	removal	CLK_N (F)	0.02312	0.08377	1.27782
	hold	RESET_B (R)	-0.08023	-0.11526	-0.62428
	setup	RESET_B (R)	0.11885	0.15305	2.57843

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)	-0.01448	-0.07454	-0.66888
	recovery	CLK_N (F)	-0.01449	-0.07454	-0.66890
	recovery	CLK_N (F)	-0.01490	-0.07464	-0.67168
	removal	CLK_N (F)	0.02886	0.08818	1.29881
	removal	CLK_N (F)	0.02886	0.08818	1.29881
	removal	CLK_N (F)	0.02568	0.08818	1.30175
	hold	RESET_B (R)	-0.06189	-0.09298	-0.54360
	hold	RESET_B (R)	-0.06265	-0.09317	-0.53868
	setup	RESET_B (R)	0.11174	0.13575	1.54425
	setup	RESET_B (R)	0.08833	0.12010	1.50699
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01059	-0.07054	-0.38492
	recovery	CLK_N (F)	-0.01059	-0.07054	-0.39074
	recovery	CLK_N (F)	-0.01059	-0.07054	-0.39351
	removal	CLK_N (F)	0.02312	0.08377	1.27782
	removal	CLK_N (F)	0.02312	0.08377	1.27782
	removal	CLK_N (F)	0.02312	0.08377	1.27782
	hold	RESET_B (R)	-0.08054	-0.12120	-0.62934
	hold	RESET_B (R)	-0.08023	-0.11526	-0.62428
	setup	RESET_B (R)	0.11885	0.15305	2.48782
	setup	RESET_B (R)	0.09272	0.14000	2.57843

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 ()	0.12859	0.67139	16.50020
	min_pulse_width	SET_B ()	0.11100	0.67139	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.14367	0.67139	16.50020
	min_pulse_width	SET_B ()	0.13111	0.67139	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 ()	0.17885	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.14116	0.67139	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.18136	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.14870	0.67139	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 ()	0.14870	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.17131	0.67139	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.16377	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.17885	0.67139	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	0.02263	0.02619	0.09137
	CLK_N	0.02514	0.02871	0.09302
	SET_B	0.02204	0.02804	0.13529
	SET_B	0.02674	0.03273	0.13909
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02789	0.03003	0.09620
	CLK_N	0.03030	0.03244	0.09693
	SET_B	0.02663	0.03194	0.14062
	SET_B	0.03121	0.03649	0.14362

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02149	0.02543	0.08802
	CLK_N	0.02370	0.02763	0.08987
	RESET_B	0.02416	0.02642	0.06453
	RESET_B	0.02554	0.02779	0.06586
	SET_B	0.02486	0.02874	0.13385
	SET_B	0.02018	0.02404	0.12914
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02585	0.02937	0.09265
	CLK_N	0.02810	0.03161	0.09405
	RESET_B	0.02899	0.03080	0.07007
	RESET_B	0.03042	0.03221	0.07063
	SET_B	0.02955	0.03306	0.13815
	SET_B	0.02497	0.02843	0.13351

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02443	0.02839	0.09196
	CLK_N	0.02664	0.03060	0.09327
	RESET_B	0.02644	0.02871	0.06823
	RESET_B	0.02781	0.03008	0.06871
	SET_B	0.02720	0.03115	0.13672
	SET_B	0.02252	0.02639	0.13184
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02898	0.03249	0.09691
	CLK_N	0.03123	0.03473	0.09758
	RESET_B	0.03147	0.03335	0.07391
	RESET_B	0.03289	0.03476	0.07370
	SET_B	0.03210	0.03567	0.14129
	SET_B	0.02752	0.03099	0.13645

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02027	0.02381	0.08806
	CLK_N	0.02278	0.02633	0.09023
	SET_B	0.02015	0.02616	0.13197
	SET_B	0.02486	0.03083	0.13653
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02540	0.02751	0.09222
	CLK_N	0.02781	0.02994	0.09384
	SET_B	0.02462	0.02993	0.13668
	SET_B	0.02919	0.03448	0.14080

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)**	0.00461	0.00463	0.00464
	(CLK_N * SCD * SCE)	0.00269	0.00268	0.00271
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01668	0.01938	0.07855
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01367	0.01638	0.07555
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01220	0.01431	0.06534
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00873	0.01084	0.06188
	(CLK_N * !SCD * SCE)	0.00602	0.00601	0.00599
	(CLK_N * !SCD * SCE)	0.00378	0.00377	0.00376
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01123	0.01328	0.06417
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00779	0.00984	0.06073
	(!CLK_N * SCD * SCE)	0.00704	0.00705	0.00707
	(!CLK_N * SCD * SCE)	0.00512	0.00511	0.00514
	(!CLK_N * !SCE)	0.01051	0.01307	0.06538
	(!CLK_N * !SCE)	0.00708	0.00962	0.06195
	(!CLK_N * !SCD * SCE)	0.00538	0.00538	0.00537
	(!CLK_N * !SCD * SCE)	0.00316	0.00316	0.00313

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00479	0.00480	0.00481
	(CLK_N * SCD * SCE)	0.00283	0.00282	0.00285
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01728	0.01993	0.07864
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01418	0.01683	0.07554
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01253	0.01460	0.06509
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00900	0.01106	0.06158
	(CLK_N * !SCD * SCE)	0.00619	0.00620	0.00618
	(CLK_N * !SCD * SCE)	0.00394	0.00392	0.00391
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01176	0.01380	0.06412
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00826	0.01030	0.06063
	(!CLK_N * SCD * SCE)	0.00520	0.00521	0.00523
	(!CLK_N * SCD * SCE)	0.00324	0.00324	0.00327
	(!CLK_N * !SCE)	0.00865	0.01124	0.06339
	(!CLK_N * !SCE)	0.00515	0.00774	0.05990
	(!CLK_N * !SCD * SCE)	0.00459	0.00458	0.00456
	(!CLK_N * !SCD * SCE)	0.00233	0.00232	0.00229

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)**	0.00229	0.00228	0.00215
	(CLK_N * SCD * SCE)	0.00424	0.00423	0.00410
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01775	0.02070	0.07803
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02074	0.02371	0.08103
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00638	0.00903	0.06095
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00984	0.01252	0.06443
	(CLK_N * !SCD * SCE)	0.00501	0.00501	0.00501
	(CLK_N * !SCD * SCE)	0.00726	0.00725	0.00725
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00765	0.01037	0.06266
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01107	0.01382	0.06610
	(!CLK_N * SCD * SCE)	0.00473	0.00471	0.00458
	(!CLK_N * SCD * SCE)	0.00667	0.00666	0.00653
	(!CLK_N * !SCE)	0.00676	0.00984	0.06323
	(!CLK_N * !SCE)	0.01018	0.01328	0.06667
	(!CLK_N * !SCD * SCE)	0.00437	0.00436	0.00437
	(!CLK_N * !SCD * SCE)	0.00660	0.00661	0.00660

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00242	0.00241	0.00228
	(CLK_N * SCD * SCE)	0.00440	0.00439	0.00426
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01922	0.02210	0.07891
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02232	0.02519	0.08200
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00686	0.00946	0.06086
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01040	0.01300	0.06439
	(CLK_N * !SCD * SCE)	0.00515	0.00513	0.00513
	(CLK_N * !SCD * SCE)	0.00740	0.00740	0.00740
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00853	0.01119	0.06296
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01203	0.01470	0.06645
	(!CLK_N * SCD * SCE)	0.00284	0.00282	0.00269
	(!CLK_N * SCD * SCE)	0.00481	0.00481	0.00467
	(!CLK_N * !SCE)	0.00617	0.00914	0.06154
	(!CLK_N * !SCE)	0.00965	0.01263	0.06502
	(!CLK_N * !SCD * SCE)	0.00348	0.00347	0.00348
	(!CLK_N * !SCD * SCE)	0.00576	0.00576	0.00575

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)**	0.01478	0.01655	0.06583
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01008	0.01187	0.06114
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01929	0.02162	0.07844
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01505	0.01738	0.07422
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01380	0.01556	0.06460
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00914	0.01089	0.05994
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01604	0.01769	0.06637
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01107	0.01271	0.06141
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02057	0.02274	0.07907
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01607	0.01823	0.07457
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01507	0.01669	0.06515
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01013	0.01175	0.06023
	(!CLK_N * D * SCE)	0.01310	0.01515	0.06547
	(!CLK_N * D * SCE)	0.00843	0.01048	0.06081
	(!CLK_N * !D * SCE)	0.01436	0.01623	0.06595
	(!CLK_N * !D * SCE)	0.00943	0.01130	0.06103
	!SCE	0.00459	0.00429	0.00446
	!SCE	0.00206	0.00175	0.00194

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01503	0.01678	0.06542
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01037	0.01212	0.06076
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01981	0.02210	0.07834
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01558	0.01786	0.07412
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01426	0.01598	0.06442
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00963	0.01135	0.05979
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01627	0.01790	0.06597
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01135	0.01295	0.06104
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02106	0.02321	0.07896
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01657	0.01870	0.07446
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01550	0.01710	0.06497
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01061	0.01219	0.06007
	(!CLK_N * D * SCE)	0.01116	0.01321	0.06333
	(!CLK_N * D * SCE)	0.00653	0.00857	0.05870
	(!CLK_N * !D * SCE)	0.01240	0.01428	0.06380
	(!CLK_N * !D * SCE)	0.00751	0.00937	0.05891
	!SCE	0.00473	0.00443	0.00460
	!SCE	0.00220	0.00189	0.00209

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)**	0.00867	0.01038	0.06045
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01339	0.01510	0.06512
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02020	0.02213	0.07661
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02445	0.02638	0.08083
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00994	0.01170	0.06215
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01462	0.01638	0.06679
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00818	0.00997	0.06036
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01315	0.01495	0.06530
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01981	0.02187	0.07695
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02432	0.02638	0.08143
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00945	0.01129	0.06206
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01438	0.01624	0.06697
	(!CLK_N * D * SCE)	0.00908	0.01108	0.06241
	(!CLK_N * D * SCE)	0.01375	0.01576	0.06705
	(!CLK_N * !D * SCE)	0.00858	0.01070	0.06235
	(!CLK_N * !D * SCE)	0.01352	0.01565	0.06727
	!SCE	0.00244	0.00241	0.00234
	!SCE	0.00495	0.00495	0.00487

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00917	0.01085	0.06031
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01386	0.01554	0.06495
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02169	0.02358	0.07746
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02593	0.02783	0.08167
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01084	0.01257	0.06240
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01548	0.01722	0.06701
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00867	0.01043	0.06021
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01362	0.01538	0.06513
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02130	0.02331	0.07775
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02580	0.02781	0.08223
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01034	0.01216	0.06231
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01524	0.01707	0.06719
	(!CLK_N * D * SCE)	0.00849	0.01042	0.06065
	(!CLK_N * D * SCE)	0.01313	0.01508	0.06526
	(!CLK_N * !D * SCE)	0.00799	0.01004	0.06056
	(!CLK_N * !D * SCE)	0.01289	0.01495	0.06544
	!SCE	0.00258	0.00256	0.00250
	!SCE	0.00512	0.00511	0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00925	0.01338	0.08328
	(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)	0.00298	0.00708	0.07701
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02600	0.03031	0.10355
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02107	0.02540	0.09859
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01451	0.01893	0.09244
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01005	0.01445	0.08794
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01579	0.02023	0.09401
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01129	0.01571	0.08947
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01807	0.02450	0.14366
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01019	0.01658	0.13577
sky130_fd_sc_hs__sdfbbn_1	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02255	0.02968	0.15742
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01514	0.02224	0.14999
	(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)	0.01045	0.01469	0.08421
	(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)	0.00469	0.00889	0.07840
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01709	0.02354	0.14244
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00925	0.01566	0.13460
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01159	0.01573	0.08562
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00532	0.00942	0.07935
	(!CLK_N * D * !SCD)	0.01515	0.01953	0.09362
	(!CLK_N * D * !SCD)	0.01065	0.01501	0.08908
	(!CLK_N * !D * SCD)	0.01650	0.02331	0.14341
	(!CLK_N * !D * SCD)	0.00866	0.01544	0.13556

	(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)	0.00978	0.01392	0.08393
	(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)	0.00343	0.00754	0.07759
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02754	0.03190	0.10522
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02260	0.02694	0.10025
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01505	0.01951	0.09306
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01055	0.01499	0.08851
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01673	0.02121	0.09502
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01219	0.01664	0.09043
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01844	0.02488	0.14354
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01047	0.01688	0.13558
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)	0.02319	0.03023	0.15765
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01565	0.02267	0.15011
	(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)	0.01097	0.01522	0.08485
	(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)	0.00512	0.00934	0.07897
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01767	0.02408	0.14252
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00973	0.01610	0.13459
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00981	0.01396	0.08397
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00347	0.00758	0.07762
	(!CLK_N * D * !SCD)	0.01461	0.01897	0.09267
	(!CLK_N * D * !SCD)	0.01007	0.01440	0.08809
	(!CLK_N * !D * SCD)	0.01469	0.02148	0.14155
	(!CLK_N * !D * SCD)	0.00675	0.01352	0.13362

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00257	0.00727	0.07762
	(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)	0.00885	0.01358	0.08390
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01645	0.02108	0.09405
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02139	0.02605	0.09884
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01197	0.01650	0.08827
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01645	0.02101	0.09258
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01100	0.01552	0.08710
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01550	0.02002	0.09144
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00645	0.01320	0.13332
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01435	0.02115	0.14121
sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.01780	0.02480	0.14961
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02523	0.03226	0.15705
	(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)	0.00413	0.00883	0.07889
	(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)	0.00993	0.01465	0.08470
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00772	0.01453	0.13503
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01558	0.02244	0.14289
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00467	0.00939	0.07973
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01097	0.01569	0.08601
	(!CLK_N * D * !SCD)	0.01020	0.01466	0.08686
	(!CLK_N * D * !SCD)	0.01471	0.01919	0.09119
	(!CLK_N * !D * SCD)	0.00672	0.01388	0.13554
	(!CLK_N * !D * SCD)	0.01458	0.02179	0.14340

	(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)	0.00293	0.00764	0.07811
	(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)	0.00929	0.01402	0.08447
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01694	0.02157	0.09454
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02189	0.02654	0.09934
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01219	0.01672	0.08851
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01671	0.02127	0.09287
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01142	0.01593	0.08754
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01597	0.02052	0.09193
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00689	0.01360	0.13322
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01488	0.02158	0.14120
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)	0.01923	0.02616	0.15052
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02677	0.03372	0.15807
	(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)	0.00451	0.00924	0.07940
	(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)	0.01039	0.01513	0.08528
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00856	0.01531	0.13534
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01650	0.02330	0.14328
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00272	0.00744	0.07790
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00908	0.01383	0.08426
	(!CLK_N * D * !SCD)	0.00822	0.01273	0.08544
	(!CLK_N * D * !SCD)	0.01278	0.01732	0.08983
	(!CLK_N * !D * SCD)	0.00607	0.01313	0.13383
	(!CLK_N * !D * SCD)	0.01401	0.02112	0.14178

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)	0.01733	0.02068	0.09456
	(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)	0.01427	0.01761	0.09150
	(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)	0.01299	0.01623	0.08372
	(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)	0.00949	0.01273	0.08023
	(!SET_B * Q * !Q_N)	0.01139	0.01486	0.08322
	(!SET_B * Q * !Q_N)	0.00784	0.01129	0.07965

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)**	0.01748	0.02081	0.09454
	(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)	0.01448	0.01780	0.09155
	(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)	0.01310	0.01634	0.08376
	(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)	0.00971	0.01294	0.08037
	(!SET_B * Q * !Q_N)	0.01139	0.01485	0.08314
	(!SET_B * Q * !Q_N)	0.00792	0.01138	0.07968

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)**	0.01599	0.02001	0.09331
	(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)	0.01906	0.02308	0.09636
	(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)	0.00719	0.01110	0.08020
	(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)	0.01068	0.01459	0.08370
	(!SET_B * Q * !Q_N)	0.00526	0.00921	0.07799
	(!SET_B * Q * !Q_N)	0.00886	0.01282	0.08158

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)**	0.01712	0.02111	0.09425
	(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)	0.02012	0.02411	0.09725
	(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)	0.00784	0.01173	0.08074
	(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)	0.01123	0.01513	0.08414
	(!SET_B * Q * !Q_N)	0.00545	0.00939	0.07807
	(!SET_B * Q * !Q_N)	0.00893	0.01288	0.08155

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)**	0.00686	0.00683	0.00685
	(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)	-0.00137	-0.00134	-0.00135
	(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)	0.01794	0.02151	0.11146
	(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)	0.00916	0.01267	0.10264

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)**	0.00711	0.00711	0.00711
	(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)	-0.00108	-0.00107	-0.00105
	(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)	0.01875	0.02223	0.11191
	(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)	0.01005	0.01347	0.10320

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)**	0.00009	-0.00019	-0.00023
	(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)	0.00833	0.00805	0.00798
	(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)	0.00528	0.01051	0.10365
	(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)	0.01412	0.01935	0.11246
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)**	0.00013	-0.00012	-0.00018
	(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)	0.00832	0.00806	0.00799
	(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)	0.00530	0.01048	0.10348
	(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)	0.01404	0.01922	0.11221

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)	0.02612	0.03356	0.16304
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02183	0.02928	0.15875
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01694	0.02398	0.14960
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01223	0.01924	0.14486
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02592	0.03335	0.16284
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02164	0.02904	0.15855
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01672	0.02376	0.14937
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01200	0.01902	0.14463
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02969	0.03660	0.16590
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02459	0.03149	0.16080
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01847	0.02544	0.15098
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01375	0.02069	0.14625
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01787	0.02498	0.15512
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01318	0.02026	0.15042
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02074	0.02808	0.15643
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01602	0.02334	0.15170
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02052	0.02783	0.15621
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01580	0.02308	0.15148
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02638	0.03383	0.16330
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02209	0.02953	0.15901
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01720	0.02423	0.14985
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01248	0.01949	0.14512
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02923	0.03608	0.16550
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02409	0.03092	0.16033
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02967	0.03661	0.16595
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02454	0.03145	0.16080
	(!D * !SCE * SET_B * !Q * Q_N)	0.01805	0.02502	0.15058
	(!D * !SCE * SET_B * !Q * Q_N)	0.01334	0.02027	0.14585
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01745	0.02457	0.15475
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01277	0.01984	0.15005
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01847	0.02543	0.15099
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01375	0.02068	0.14625
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01787	0.02499	0.15517
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01318	0.02027	0.15046
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02099	0.02833	0.15669
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01628	0.02360	0.15196

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02682	0.03430	0.16363
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02256	0.03002	0.15938
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01700	0.02383	0.14961
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01235	0.01914	0.14493
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02663	0.03411	0.16345
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02236	0.02982	0.15918
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01677	0.02360	0.14938
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01212	0.01891	0.14470
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03038	0.03731	0.16659
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02537	0.03227	0.16156
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01888	0.02589	0.15134
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.02120	0.14666
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01791	0.02503	0.15513
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01328	0.02037	0.15049
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02133	0.02868	0.15693
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01667	0.02402	0.15226
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02110	0.02845	0.15670
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01644	0.02379	0.15203
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02709	0.03456	0.16390
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02283	0.03028	0.15963
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01726	0.02408	0.14987
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01260	0.01940	0.14519
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02991	0.03684	0.16616
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02486	0.03177	0.16110
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03036	0.03730	0.16662
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02532	0.03224	0.16157
	(!D * !SCE * SET_B * !Q * Q_N)	0.01846	0.02547	0.15094
	(!D * !SCE * SET_B * !Q * Q_N)	0.01380	0.02078	0.14627
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01749	0.02461	0.15475
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01286	0.01995	0.15012
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01888	0.02589	0.15135
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.02120	0.14668
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01791	0.02504	0.15518
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01328	0.02038	0.15054
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02158	0.02894	0.15719
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01692	0.02427	0.15252

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)**	0.01408	0.02181	0.14674
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01880	0.02657	0.15147
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01369	0.02142	0.14635
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01840	0.02618	0.15108
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01592	0.02360	0.14809
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02064	0.02835	0.15283
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01847	0.02640	0.15416
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02317	0.03113	0.15887
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01842	0.02614	0.15033
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02314	0.03088	0.15506
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01802	0.02575	0.14994
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02275	0.03049	0.15467
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01434	0.02207	0.14700
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01905	0.02682	0.15173
	(!D * !SCE * SET_B * !Q * Q_N)	0.01533	0.02301	0.14751
	(!D * !SCE * SET_B * !Q * Q_N)	0.02005	0.02777	0.15224
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01788	0.02581	0.15364
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02258	0.03054	0.15835
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01592	0.02360	0.14809
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02064	0.02835	0.15283
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01845	0.02641	0.15419
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02315	0.03114	0.15890
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01867	0.02640	0.15058
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02340	0.03114	0.15532

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.01422	0.02194	0.14680
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01888	0.02661	0.15147
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01384	0.02156	0.14642
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01849	0.02623	0.15109
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01631	0.02397	0.14835
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02096	0.02865	0.15302
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01862	0.02654	0.15422
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02325	0.03121	0.15888
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01906	0.02676	0.15084
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02372	0.03144	0.15551
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01868	0.02638	0.15045
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02333	0.03106	0.15512
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01448	0.02220	0.14706
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01914	0.02687	0.15173
	(!D * !SCE * SET_B * !Q * Q_N)	0.01573	0.02339	0.14780
	(!D * !SCE * SET_B * !Q * Q_N)	0.02039	0.02808	0.15248
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01804	0.02596	0.15370
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02267	0.03063	0.15836
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01631	0.02396	0.14838
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02096	0.02865	0.15306
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01860	0.02654	0.15425
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02323	0.03122	0.15891
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01932	0.02702	0.15110
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02397	0.03170	0.15576

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbp_1	0.00203	0.00188	0.00420	0.00177	0.00647	0.00307	1.28086	1.20828

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbp_1	0.00000	414.10700	687.30400

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)	0.34087	0.81479	6.41658
	SET_B->Q (FR)	0.15018	0.74435	7.78322

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.27710	0.57486	3.49088
	RESET_B->Q (FF)	0.22515	0.64151	4.94366
	SET_B->Q (RF)	0.15199	0.45025	3.37758

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)	0.24147	0.73360	6.36822
	RESET_B->Q_N (FR)	0.18961	0.80715	7.83337
	SET_B->Q_N (RR)	0.11652	0.62318	6.65912

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)	0.28964	0.63745	3.46260
	SET_B->Q_N (FF)	0.10459	0.56802	5.08388

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)	-0.10043	-0.16498	-0.63231
	setup	CLK (R)	0.12396	0.17793	0.76045

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)	-0.15589	-0.22855	-0.75414
	setup	CLK (R)	0.20651	0.27557	3.27809

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)	-0.10043	-0.16498	-0.63231
	setup	CLK (R)	0.12396	0.17793	0.76045

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)	-0.15589	-0.22855	-0.75414
	setup	CLK (R)	0.20651	0.27557	3.27809

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)	-0.12411	-0.17583	-0.61464
	setup	CLK (R)	0.15604	0.19777	0.75804

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)	-0.21030	-0.26234	0.11316
	setup	CLK (R)	0.26850	0.31097	3.32029

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)	-0.12411	-0.17583	-0.61464
	hold	CLK (R)	-0.13120	-0.18334	-0.63214
	setup	CLK (R)	0.14965	0.18862	0.74471
	setup	CLK (R)	0.15604	0.19777	0.75804

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)	-0.21470	-0.26377	-0.36785
	hold	CLK (R)	-0.21030	-0.26234	0.11316
	setup	CLK (R)	0.26850	0.31097	3.24022
	setup	CLK (R)	0.26471	0.30990	3.32029

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)	-0.11661	-0.18828	0.07006
	setup	CLK (R)	0.26706	0.26212	1.13219

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)	-0.15065	-0.20619	0.41673
	setup	CLK (R)	0.21311	0.25568	3.08477

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)	-0.21231	-0.21629	0.07006
	hold	CLK (R)	-0.11661	-0.18828	-0.89277
	setup	CLK (R)	0.26706	0.26212	1.13219
	setup	CLK (R)	0.14457	0.20319	1.01028

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)	-0.15065	-0.22563	-1.73306
	hold	CLK (R)	-0.16024	-0.20619	0.41673
	setup	CLK (R)	0.17838	0.23980	1.78016
	setup	CLK (R)	0.21311	0.25568	3.08477

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)	0.06540	0.06592	2.14388
	removal	CLK (R)	-0.03194	-0.03621	-0.01293

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)	0.06531	0.06584	1.93761
	recovery	CLK (R)	0.06518	0.06592	1.98180
	recovery	CLK (R)	0.06540	0.06587	2.14388
	removal	CLK (R)	-0.03194	-0.03621	-0.01293
	removal	CLK (R)	-0.03194	-0.03621	-0.01293
	removal	CLK (R)	-0.03194	-0.03621	-0.01693

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 ()	0.16629	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.17634	0.67139	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)	0.01107	0.00400	6.12374
	removal	CLK (R)	0.05891	0.08377	-0.00247
	hold	RESET_B (R)	-0.06533	-0.10050	-0.64607
	setup	RESET_B (R)	0.10463	0.13681	1.58420

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)	0.00837	0.00400	6.10962
	recovery	CLK (R)	0.00734	0.00400	6.12374
	recovery	CLK (R)	0.01107	0.00400	6.10445
	removal	CLK (R)	0.05891	0.08377	-0.00353
	removal	CLK (R)	0.05891	0.08377	-0.00353
	removal	CLK (R)	0.05891	0.08377	-0.00247
	hold	RESET_B (R)	-0.06625	-0.10050	-0.65261
	hold	RESET_B (R)	-0.06533	-0.10152	-0.64607
	setup	RESET_B (R)	0.09925	0.13000	1.58420
	setup	RESET_B (R)	0.10463	0.13681	1.58139

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 ()	0.09844	0.67139	16.50020
	min_pulse_width	SET_B ()	0.11100	0.67139	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 ()	0.10346	0.67139	16.50020
	min_pulse_width	CLK ()	0.12105	0.67139	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 ()	0.15121	0.67139	16.50020
	min_pulse_width	CLK ()	0.20649	0.67139	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	0.02487	0.02806	0.09129
	CLK	0.02247	0.02565	0.08857
	SET_B	0.02154	0.02796	0.13791
	SET_B	0.02658	0.03296	0.14205

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02243	0.02624	0.09247
	CLK	0.01983	0.02361	0.08966
	RESET_B	0.02241	0.02461	0.06318
	RESET_B	0.02368	0.02587	0.06387
	SET_B	0.02365	0.02757	0.13512
	SET_B	0.01865	0.02250	0.12994

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02548	0.02927	0.09659
	CLK	0.02287	0.02665	0.09372
	RESET_B	0.02477	0.02703	0.06612
	RESET_B	0.02603	0.02829	0.06651
	SET_B	0.02608	0.03001	0.13765
	SET_B	0.02108	0.02493	0.13254

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02233	0.02552	0.08818
	CLK	0.01992	0.02310	0.08556
	SET_B	0.01950	0.02594	0.13455
	SET_B	0.02453	0.03093	0.13933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00704	0.00706	0.00707
	(CLK * SCD * SCE)	0.00512	0.00511	0.00514
	(CLK * !SCE)	0.01037	0.01311	0.06529
	(CLK * !SCE)	0.00692	0.00964	0.06183
	(CLK * !SCD * SCE)	0.00539	0.00539	0.00537
	(CLK * !SCD * SCE)	0.00315	0.00316	0.00313
	(!CLK * SCD * SCE)	0.00462	0.00463	0.00465
	(!CLK * SCD * SCE)	0.00269	0.00268	0.00271
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01662	0.01942	0.07840
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01334	0.01614	0.07513
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01183	0.01397	0.06470
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00807	0.01021	0.06095
	(!CLK * !SCD * SCE)	0.00602	0.00602	0.00600
	(!CLK * !SCD * SCE)	0.00378	0.00377	0.00376
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01102	0.01313	0.06369
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00727	0.00939	0.05995

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00472	0.00470	0.00457
	(CLK * SCD * SCE)	0.00666	0.00666	0.00652
	(CLK * !SCE)	0.00559	0.00880	0.06206
	(CLK * !SCE)	0.00906	0.01228	0.06552
	(CLK * !SCD * SCE)	0.00436	0.00435	0.00436
	(CLK * !SCD * SCE)	0.00659	0.00660	0.00659
	(!CLK * SCD * SCE)	0.00228	0.00227	0.00214
	(!CLK * SCD * SCE)	0.00424	0.00423	0.00410
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01549	0.01851	0.07576
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01877	0.02178	0.07902
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00622	0.00890	0.06049
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00999	0.01267	0.06424
	(!CLK * !SCD * SCE)	0.00501	0.00500	0.00500
	(!CLK * !SCD * SCE)	0.00725	0.00724	0.00724
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00728	0.01003	0.06201
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01103	0.01377	0.06574

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.01296	0.01510	0.06508
	(CLK * D * SCE)	0.00829	0.01042	0.06041
	(CLK * !D * SCE)	0.01422	0.01615	0.06554
	(CLK * !D * SCE)	0.00928	0.01120	0.06061
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01439	0.01618	0.06494
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00944	0.01121	0.06000
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01922	0.02159	0.07812
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01475	0.01710	0.07366
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01357	0.01534	0.06389
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00864	0.01039	0.05897
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01565	0.01730	0.06547
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01043	0.01207	0.06025
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02049	0.02272	0.07876
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01575	0.01796	0.07402
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01484	0.01645	0.06442
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00963	0.01125	0.05922
	!SCE	0.00701	0.00672	0.00689
	!SCE	0.00448	0.00416	0.00436

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00791	0.00999	0.06096
	(CLK * D * SCE)	0.01259	0.01468	0.06561
	(CLK * !D * SCE)	0.00742	0.00963	0.06090
	(CLK * !D * SCE)	0.01237	0.01459	0.06582
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00850	0.01021	0.05976
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01348	0.01520	0.06471
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01797	0.01993	0.07416
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02246	0.02442	0.07861
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00956	0.01133	0.06127
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01452	0.01630	0.06619
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00802	0.00981	0.05968
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01326	0.01506	0.06489
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01762	0.01973	0.07451
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02237	0.02448	0.07924
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00908	0.01094	0.06120
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01430	0.01617	0.06639
	!SCE	0.00484	0.00482	0.00475
	!SCE	0.00739	0.00738	0.00730

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)	0.01143	0.01547	0.08457
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00527	0.00926	0.07840
	(CLK * D * !SCD)	0.01386	0.01813	0.09142
	(CLK * D * !SCD)	0.00950	0.01375	0.08703
	(CLK * !D * SCD)	0.01623	0.02315	0.14213
	(CLK * !D * SCD)	0.00847	0.01535	0.13437
	(!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)	0.00942	0.01342	0.08256
	(!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)	0.00325	0.00726	0.07639
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02394	0.02818	0.10062
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01938	0.02360	0.09601
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01450	0.01885	0.09150
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01043	0.01475	0.08738
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01558	0.01994	0.09287
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01148	0.01582	0.08873
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01787	0.02436	0.14222
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00983	0.01628	0.13417
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02267	0.02984	0.15654
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01511	0.02225	0.14897
	(!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)	0.01063	0.01477	0.08351
	(!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)	0.00497	0.00907	0.07781
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01706	0.02352	0.14116
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00903	0.01545	0.13311

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)	0.00489	0.00953	0.07908
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01106	0.01573	0.08525
	(CLK * D * !SCD)	0.01026	0.01468	0.08615
	(CLK * D * !SCD)	0.01464	0.01908	0.09036
	(CLK * !D * SCD)	0.00576	0.01301	0.13368
	(CLK * !D * SCD)	0.01355	0.02082	0.14147
	(!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)	0.00245	0.00709	0.07663
	(!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)	0.00862	0.01329	0.08281
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01625	0.02084	0.09298
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02082	0.02540	0.09739
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01146	0.01593	0.08684
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01555	0.02006	0.09077
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01064	0.01510	0.08584
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01475	0.01925	0.08978
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00618	0.01290	0.13184
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01426	0.02099	0.13989
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01543	0.02246	0.14635
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02301	0.03006	0.15391
	(!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)	0.00401	0.00865	0.07787
	(!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)	0.00970	0.01436	0.08357
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00724	0.01403	0.13336
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01529	0.02209	0.14142

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)	0.01266	0.01603	0.08307
	(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)	0.00973	0.01309	0.08014
	(!SET_B * Q * !Q_N)	0.01117	0.01475	0.08266
	(!SET_B * Q * !Q_N)	0.00817	0.01175	0.07967
	(!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)	0.01652	0.01993	0.09310
	(!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)	0.01406	0.01746	0.09064

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)	0.00786	0.01181	0.08035
	(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)	0.01078	0.01473	0.08328
	(!SET_B * Q * !Q_N)	0.00493	0.00894	0.07715
	(!SET_B * Q * !Q_N)	0.00794	0.01197	0.08017
	(!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)	0.01395	0.01805	0.09046
	(!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)	0.01641	0.02051	0.09292

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)	0.00746	0.00749	0.00745
	(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)	-0.00175	-0.00177	-0.00174
	(!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)	0.01561	0.01950	0.11118
	(!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)	0.00579	0.00967	0.10135

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)	0.00032	0.00002	-0.00001
	(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)	0.00948	0.00927	0.00919
	(!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)	0.00595	0.01146	0.10603
	(!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)	0.01574	0.02133	0.11585

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)**	0.01945	0.02616	0.15115
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01444	0.02111	0.14612
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01938	0.02609	0.15108
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01437	0.02105	0.14605
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02070	0.02763	0.15260
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01569	0.02259	0.14757
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02410	0.03098	0.15529
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01880	0.02568	0.14998
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02286	0.02969	0.15738
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01812	0.02492	0.15263
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02280	0.02962	0.15731
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01806	0.02485	0.15255
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01970	0.02642	0.15142
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01469	0.02137	0.14638
	(!D * !SCE * SET_B * !Q * Q_N)	0.02044	0.02737	0.15234
	(!D * !SCE * SET_B * !Q * Q_N)	0.01543	0.02233	0.14731
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02383	0.03072	0.15502
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01854	0.02542	0.14970
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02070	0.02763	0.15260
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01569	0.02259	0.14757
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02410	0.03097	0.15526
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01880	0.02566	0.14995
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02312	0.02994	0.15764
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01839	0.02517	0.15288

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)	0.02061	0.02850	0.15674
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02580	0.03374	0.16197
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01164	0.01937	0.14427
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01665	0.02443	0.14931
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02009	0.02799	0.15665
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02528	0.03321	0.16187
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01110	0.01883	0.14373
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01611	0.02388	0.14876
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02459	0.03245	0.15832
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02946	0.03734	0.16321
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01376	0.02142	0.14556
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01876	0.02645	0.15058
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01475	0.02281	0.14908
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02004	0.02814	0.15440
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01467	0.02250	0.14945
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01940	0.02725	0.15421
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01412	0.02194	0.14933
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01885	0.02670	0.15409
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02086	0.02876	0.15700
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02606	0.03399	0.16221
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01190	0.01963	0.14453
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01691	0.02468	0.14957
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02377	0.03163	0.15806
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02860	0.03647	0.16292
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02460	0.03248	0.15888
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02945	0.03734	0.16375
	(!D * !SCE * SET_B * !Q * Q_N)	0.01302	0.02068	0.14515
	(!D * !SCE * SET_B * !Q * Q_N)	0.01802	0.02571	0.15018
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01401	0.02207	0.14834
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01931	0.02741	0.15366
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01376	0.02142	0.14556
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01876	0.02645	0.15057
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01476	0.02281	0.14908
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02006	0.02815	0.15440
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01492	0.02275	0.14970
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01965	0.02750	0.15446

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**0**	**1**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfrbp_1	0.00194	0.00201	0.00438	0.00602	0.00321	1.31487	1.34690
sky130_fd_sc_hs__sdfrbp_2	0.00197	0.00204	0.00449	0.00604	0.00315	2.63531	2.62954

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	280.92200	420.68700
sky130_fd_sc_hs__sdfrbp_2	0.00000	321.40400	438.21800

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)	0.20941	0.67215	6.21519
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.24489	0.62009	6.47230

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.20118	0.49836	3.40459
	RESET_B->Q (FF)	0.27813	0.73210	5.41012
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.23077	0.48595	3.60349
	RESET_B->Q (FF)	0.31083	0.72483	5.63810

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)	0.16453	0.64600	6.23735
	RESET_B->Q_N (FR)	0.24134	0.87564	8.23487
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.16753	0.56259	6.14895
	RESET_B->Q_N (FR)	0.24789	0.79808	8.17706

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)	0.16019	0.52376	3.72978
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.17020	0.48921	3.56106

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)	-0.09856	-0.19929	-1.20076
	setup	CLK (R)	0.18031	0.24947	1.37622
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10204	-0.20586	-1.23245
	setup	CLK (R)	0.18133	0.25494	1.39556

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)	-0.09185	-0.17888	-1.13518
	setup	CLK (R)	0.19037	0.26932	1.92736
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10044	-0.19088	-1.38757
	setup	CLK (R)	0.19647	0.28033	1.98616

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)	-0.09856	-0.19929	-1.20114
	hold	CLK (R)	-0.09889	-0.19969	-1.20076
	setup	CLK (R)	0.17829	0.24947	1.37586
	setup	CLK (R)	0.18031	0.24947	1.37622
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10282	-0.20586	-1.23245
	hold	CLK (R)	-0.10204	-0.20677	-1.23444
	setup	CLK (R)	0.18133	0.25350	1.39556
	setup	CLK (R)	0.18076	0.25494	1.39543

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)	-0.09420	-0.18061	-1.14199
	hold	CLK (R)	-0.09185	-0.17888	-1.13518
	setup	CLK (R)	0.19037	0.26932	1.92736
	setup	CLK (R)	0.18740	0.26928	1.92652
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10044	-0.19088	-1.38757
	hold	CLK (R)	-0.10221	-0.19266	-1.39973
	setup	CLK (R)	0.19647	0.28033	1.98616
	setup	CLK (R)	0.19638	0.28006	1.98299

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)	-0.12658	-0.21394	-1.18602
	setup	CLK (R)	0.21846	0.27386	1.34311
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12821	-0.21598	-1.20919
	setup	CLK (R)	0.21940	0.27468	1.36032

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)	-0.12534	-0.20105	-1.25286
	setup	CLK (R)	0.24080	0.30117	1.99081
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13409	-0.21210	-1.49060
	setup	CLK (R)	0.24776	0.30715	2.04131

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)	-0.12658	-0.21394	-1.18602
	hold	CLK (R)	-0.13681	-0.22459	-1.19773
	setup	CLK (R)	0.20815	0.26355	1.33710
	setup	CLK (R)	0.21846	0.27386	1.34311
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12821	-0.21598	-1.20919
	hold	CLK (R)	-0.13689	-0.22922	-1.22135
	setup	CLK (R)	0.20857	0.26385	1.35091
	setup	CLK (R)	0.21940	0.27468	1.36032

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)	-0.13604	-0.20836	-1.28154
	hold	CLK (R)	-0.12534	-0.20105	-1.25286
	setup	CLK (R)	0.24080	0.30117	1.97911
	setup	CLK (R)	0.24046	0.29592	1.99081
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14330	-0.21679	-1.49060
	hold	CLK (R)	-0.13409	-0.21210	-1.50389
	setup	CLK (R)	0.24776	0.30665	2.02699
	setup	CLK (R)	0.24766	0.30715	2.04131

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)	-0.10688	-0.17372	-0.09356
	setup	CLK (R)	0.24739	0.26243	1.51405
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10869	-0.17950	-0.13455
	setup	CLK (R)	0.25502	0.26736	1.53565

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)	-0.10585	-0.16801	-1.03023
	setup	CLK (R)	0.24197	0.31146	2.03881
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11252	-0.17700	-1.23766
	setup	CLK (R)	0.23883	0.31049	2.05129

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)	-0.14149	-0.17372	-0.09356
	hold	CLK (R)	-0.10688	-0.21125	-1.35752
	setup	CLK (R)	0.24739	0.26214	0.49769
	setup	CLK (R)	0.18981	0.26243	1.51405
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14635	-0.17950	-0.13455
	hold	CLK (R)	-0.10869	-0.21523	-1.38855
	setup	CLK (R)	0.25502	0.26736	0.52212
	setup	CLK (R)	0.18996	0.26440	1.53565

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)	-0.16151	-0.26531	-1.95346
	hold	CLK (R)	-0.10585	-0.16801	-1.03023
	setup	CLK (R)	0.24197	0.31146	2.03881
	setup	CLK (R)	0.19947	0.25733	1.74906
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16315	-0.26303	-1.97023
	hold	CLK (R)	-0.11252	-0.17700	-1.23766
	setup	CLK (R)	0.23883	0.31049	2.05129
	setup	CLK (R)	0.20866	0.26348	1.78883

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)	0.24030	0.27366	1.87853
	removal	CLK (R)	-0.17697	-0.21604	-1.64670
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.24053	0.27322	1.85926
	removal	CLK (R)	-0.18276	-0.22425	-1.67949

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)	0.23134	0.26524	1.87187
	recovery	CLK (R)	0.21634	0.24711	1.87853
	recovery	CLK (R)	0.21179	0.23637	1.86164
	recovery	CLK (R)	0.24030	0.27366	1.86703
	removal	CLK (R)	-0.19278	-0.24240	-1.68951
	removal	CLK (R)	-0.17835	-0.22425	-1.66032
	removal	CLK (R)	-0.17697	-0.21604	-1.64670
	removal	CLK (R)	-0.20276	-0.25150	-1.69141
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.23013	0.26472	1.85648
	recovery	CLK (R)	0.21694	0.24900	1.84816
	recovery	CLK (R)	0.21446	0.24311	1.83890
	recovery	CLK (R)	0.24053	0.27322	1.85926
	removal	CLK (R)	-0.19720	-0.24776	-1.71912
	removal	CLK (R)	-0.18539	-0.23168	-1.69305
	removal	CLK (R)	-0.18276	-0.22425	-1.67949
	removal	CLK (R)	-0.20972	-0.25694	-1.72352

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 ()	0.13613	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.12105	0.67139	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.13613	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.13613	0.67139	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 ()	0.12105	0.67139	16.50020
	min_pulse_width	CLK ()	0.08336	0.67139	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.14618	0.67139	16.50020
	min_pulse_width	CLK ()	0.09844	0.67139	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 ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.18388	0.67139	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.16629	0.67139	16.50020
	min_pulse_width	CLK ()	0.18639	0.67139	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	0.02287	0.02599	0.09110
	CLK	0.02029	0.02339	0.08815
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02816	0.03031	0.09619
	CLK	0.02554	0.02762	0.09307

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01894	0.02254	0.08591
	CLK	0.01640	0.01998	0.08321
	RESET_B	0.01685	0.02088	0.08823
	RESET_B	0.02264	0.02673	0.09387
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02318	0.02661	0.09061
	CLK	0.02081	0.02414	0.08779
	RESET_B	0.02124	0.02498	0.09179
	RESET_B	0.02718	0.03096	0.09781

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02020	0.02377	0.08817
	CLK	0.01766	0.02125	0.08514
	RESET_B	0.01812	0.02215	0.08982
	RESET_B	0.02391	0.02801	0.09551
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02462	0.02794	0.09297
	CLK	0.02224	0.02556	0.08990
	RESET_B	0.02267	0.02641	0.09437
	RESET_B	0.02863	0.03243	0.09982

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02078	0.02388	0.08808
	CLK	0.01821	0.02130	0.08548
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02578	0.02785	0.09307
	CLK	0.02316	0.02523	0.09006

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	0.00423	0.00424	0.00425
	(CLK * RESET_B * SCD * SCE)	0.00234	0.00233	0.00237
	(CLK * RESET_B * SCD * !SCE)	0.00839	0.01074	0.05951
	(CLK * RESET_B * SCD * !SCE)	0.00459	0.00694	0.05571
	(CLK * RESET_B * !SCD * !SCE)	0.00878	0.01111	0.05968
	(CLK * RESET_B * !SCD * !SCE)	0.00499	0.00731	0.05589
	(CLK * !SCD * SCE)	0.00270	0.00270	0.00268
	(CLK * !SCD * SCE)	0.00052	0.00050	0.00049
	(CLK * !RESET_B * SCD * SCE)	0.00267	0.00268	0.00266
	(CLK * !RESET_B * SCD * SCE)	0.00050	0.00049	0.00048
	(CLK * !RESET_B * SCD * !SCE)	0.00199	0.00199	0.00192
	(CLK * !RESET_B * SCD * !SCE)	-0.00013	-0.00015	-0.00026
	(CLK * !RESET_B * !SCD * !SCE)	0.00198	0.00199	0.00192
	(CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00020	-0.00028
	(!CLK * RESET_B * SCD * SCE)	0.00464	0.00465	0.00467
	(!CLK * RESET_B * SCD * SCE)	0.00275	0.00276	0.00279
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01706	0.02007	0.08110
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01308	0.01608	0.07710
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01745	0.02044	0.08126
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01347	0.01645	0.07727
	(!CLK * !SCD * SCE)	0.00428	0.00428	0.00426
	(!CLK * !SCD * SCE)	0.00210	0.00208	0.00207
	(!CLK * !RESET_B * SCD * SCE)	0.00271	0.00271	0.00269
	(!CLK * !RESET_B * SCD * SCE)	0.00054	0.00053	0.00051
	(!CLK * !RESET_B * SCD * !SCE)	0.00202	0.00203	0.00195
	(!CLK * !RESET_B * SCD * !SCE)	-0.00010	-0.00011	-0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	0.00202	0.00202	0.00195
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00015	-0.00017	-0.00024

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00471	0.00472	0.00474
	(CLK * RESET_B * SCD * SCE)	0.00280	0.00279	0.00282
	(CLK * RESET_B * SCD * !SCE)	0.00918	0.01146	0.06013
	(CLK * RESET_B * SCD * !SCE)	0.00532	0.00759	0.05626
	(CLK * RESET_B * !SCD * !SCE)	0.00958	0.01183	0.06030
	(CLK * RESET_B * !SCD * !SCE)	0.00572	0.00797	0.05644
	(CLK * !SCD * SCE)	0.00315	0.00316	0.00314
	(CLK * !SCD * SCE)	0.00095	0.00093	0.00092
	(CLK * !RESET_B * SCD * SCE)	0.00313	0.00314	0.00312
	(CLK * !RESET_B * SCD * SCE)	0.00094	0.00092	0.00091
	(CLK * !RESET_B * SCD * !SCE)	0.00243	0.00243	0.00236
	(CLK * !RESET_B * SCD * !SCE)	0.00028	0.00026	0.00015
	(CLK * !RESET_B * !SCD * !SCE)	0.00242	0.00242	0.00236
	(CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00021	0.00013
	(!CLK * RESET_B * SCD * SCE)	0.00483	0.00483	0.00485
	(!CLK * RESET_B * SCD * SCE)	0.00291	0.00291	0.00294
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01762	0.02058	0.08163
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01356	0.01651	0.07756
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01801	0.02095	0.08179
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01395	0.01689	0.07773
	(!CLK * !SCD * SCE)	0.00444	0.00444	0.00442
	(!CLK * !SCD * SCE)	0.00223	0.00222	0.00220
	(!CLK * !RESET_B * SCD * SCE)	0.00317	0.00317	0.00315
	(!CLK * !RESET_B * SCD * SCE)	0.00097	0.00096	0.00095
	(!CLK * !RESET_B * SCD * !SCE)	0.00246	0.00246	0.00239
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00019
	(!CLK * !RESET_B * !SCD * !SCE)	0.00245	0.00246	0.00239
	(!CLK * !RESET_B * !SCD * !SCE)	0.00026	0.00024	0.00017

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00200	0.00198	0.00185
	(CLK * RESET_B * SCD * SCE)	0.00389	0.00388	0.00375
	(CLK * RESET_B * SCD * !SCE)	0.00226	0.00518	0.05521
	(CLK * RESET_B * SCD * !SCE)	0.00605	0.00897	0.05901
	(CLK * RESET_B * !SCD * !SCE)	0.00225	0.00519	0.05542
	(CLK * RESET_B * !SCD * !SCE)	0.00605	0.00899	0.05922
	(CLK * !SCD * SCE)	0.00139	0.00139	0.00139
	(CLK * !SCD * SCE)	0.00358	0.00359	0.00358
	(CLK * !RESET_B * SCD * SCE)	0.00140	0.00140	0.00141
	(CLK * !RESET_B * SCD * SCE)	0.00358	0.00358	0.00358
	(CLK * !RESET_B * SCD * !SCE)	0.00115	0.00114	0.00115
	(CLK * !RESET_B * SCD * !SCE)	0.00331	0.00334	0.00332
	(CLK * !RESET_B * !SCD * !SCE)	0.00114	0.00114	0.00115
	(CLK * !RESET_B * !SCD * !SCE)	0.00332	0.00334	0.00332
	(!CLK * RESET_B * SCD * SCE)	0.00241	0.00240	0.00226
	(!CLK * RESET_B * SCD * SCE)	0.00431	0.00430	0.00416
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01302	0.01657	0.07728
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01703	0.02056	0.08127
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01303	0.01658	0.07750
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01703	0.02057	0.08149
	(!CLK * !SCD * SCE)	0.00299	0.00298	0.00299
	(!CLK * !SCD * SCE)	0.00517	0.00518	0.00517
	(!CLK * !RESET_B * SCD * SCE)	0.00144	0.00144	0.00144
	(!CLK * !RESET_B * SCD * SCE)	0.00362	0.00362	0.00361
	(!CLK * !RESET_B * SCD * !SCE)	0.00118	0.00118	0.00118
	(!CLK * !RESET_B * SCD * !SCE)	0.00335	0.00337	0.00336
	(!CLK * !RESET_B * !SCD * !SCE)	0.00118	0.00117	0.00118
	(!CLK * !RESET_B * !SCD * !SCE)	0.00335	0.00337	0.00336

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00242	0.00240	0.00227
	(CLK * RESET_B * SCD * SCE)	0.00434	0.00433	0.00420
	(CLK * RESET_B * SCD * !SCE)	0.00283	0.00568	0.05566
	(CLK * RESET_B * SCD * !SCE)	0.00669	0.00956	0.05953
	(CLK * RESET_B * !SCD * !SCE)	0.00283	0.00570	0.05587
	(CLK * RESET_B * !SCD * !SCE)	0.00670	0.00957	0.05973
	(CLK * !SCD * SCE)	0.00184	0.00183	0.00183
	(CLK * !SCD * SCE)	0.00404	0.00405	0.00405
	(CLK * !RESET_B * SCD * SCE)	0.00185	0.00184	0.00185
	(CLK * !RESET_B * SCD * SCE)	0.00404	0.00405	0.00405
	(CLK * !RESET_B * SCD * !SCE)	0.00161	0.00161	0.00162
	(CLK * !RESET_B * SCD * !SCE)	0.00381	0.00383	0.00382
	(CLK * !RESET_B * !SCD * !SCE)	0.00161	0.00161	0.00161
	(CLK * !RESET_B * !SCD * !SCE)	0.00381	0.00384	0.00382
	(!CLK * RESET_B * SCD * SCE)	0.00253	0.00252	0.00238
	(!CLK * RESET_B * SCD * SCE)	0.00446	0.00445	0.00432
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01341	0.01689	0.07759
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01746	0.02096	0.08166
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01340	0.01690	0.07781
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01747	0.02097	0.08187
	(!CLK * !SCD * SCE)	0.00313	0.00312	0.00313
	(!CLK * !SCD * SCE)	0.00534	0.00535	0.00534
	(!CLK * !RESET_B * SCD * SCE)	0.00189	0.00188	0.00188
	(!CLK * !RESET_B * SCD * SCE)	0.00408	0.00409	0.00408
	(!CLK * !RESET_B * SCD * !SCE)	0.00165	0.00165	0.00165
	(!CLK * !RESET_B * SCD * !SCE)	0.00385	0.00387	0.00385
	(!CLK * !RESET_B * !SCD * !SCE)	0.00165	0.00164	0.00165
	(!CLK * !RESET_B * !SCD * !SCE)	0.00385	0.00387	0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.01058	0.01246	0.05917
	(CLK * D * RESET_B * SCE)	0.00561	0.00747	0.05420
	(CLK * D * RESET_B * !SCE)	0.00416	0.00396	0.00419
	(CLK * D * RESET_B * !SCE)	0.00158	0.00135	0.00161
	(CLK * D * !RESET_B * SCE)	0.00262	0.00262	0.00259
	(CLK * D * !RESET_B * SCE)	0.00042	0.00043	0.00044
	(CLK * D * !RESET_B * !SCE)	0.00194	0.00195	0.00196
	(CLK * D * !RESET_B * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK * !D * RESET_B * SCE)	0.01184	0.01352	0.05967
	(CLK * !D * RESET_B * SCE)	0.00662	0.00828	0.05443
	(CLK * !D * !RESET_B * SCE)	0.00261	0.00262	0.00259
	(CLK * !D * !RESET_B * SCE)	0.00044	0.00043	0.00044
	(!D * RESET_B * !SCE)	0.00243	0.00243	0.00243
	(!D * RESET_B * !SCE)	-0.00015	-0.00015	-0.00015
	(!D * !RESET_B * !SCE)	0.00207	0.00207	0.00207
	(!D * !RESET_B * !SCE)	-0.00031	-0.00030	-0.00029
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01934	0.02191	0.07988
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01419	0.01674	0.07471
	(!CLK * D * RESET_B * !SCE)	0.00458	0.00437	0.00461
	(!CLK * D * RESET_B * !SCE)	0.00199	0.00176	0.00202
	(!CLK * D * !RESET_B * SCE)	0.00265	0.00265	0.00262
	(!CLK * D * !RESET_B * SCE)	0.00046	0.00046	0.00047
	(!CLK * D * !RESET_B * !SCE)	0.00198	0.00198	0.00199
	(!CLK * D * !RESET_B * !SCE)	-0.00014	-0.00015	-0.00013
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02062	0.02311	0.08066
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01521	0.01768	0.07523
	(!CLK * !D * !RESET_B * SCE)	0.00264	0.00265	0.00262
	(!CLK * !D * !RESET_B * SCE)	0.00047	0.00046	0.00047

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCE)**	0.01127	0.01310	0.05974
	(CLK * D * RESET_B * SCE)	0.00622	0.00805	0.05469
	(CLK * D * RESET_B * !SCE)	0.00463	0.00443	0.00467
	(CLK * D * RESET_B * !SCE)	0.00201	0.00179	0.00205
	(CLK * D * !RESET_B * SCE)	0.00309	0.00309	0.00306
	(CLK * D * !RESET_B * SCE)	0.00088	0.00087	0.00089
	(CLK * D * !RESET_B * !SCE)	0.00241	0.00241	0.00242
	(CLK * D * !RESET_B * !SCE)	0.00026	0.00025	0.00027
	(CLK * !D * RESET_B * SCE)	0.01253	0.01417	0.06024
	(CLK * !D * RESET_B * SCE)	0.00722	0.00886	0.05493
	(CLK * !D * !RESET_B * SCE)	0.00309	0.00309	0.00306
	(CLK * !D * !RESET_B * SCE)	0.00088	0.00087	0.00089
	(!D * RESET_B * !SCE)	0.00290	0.00290	0.00291
	(!D * RESET_B * !SCE)	0.00030	0.00029	0.00029
	(!D * !RESET_B * !SCE)	0.00253	0.00253	0.00253
	(!D * !RESET_B * !SCE)	0.00013	0.00012	0.00014
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01978	0.02232	0.08030
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01453	0.01706	0.07506
	(!CLK * D * RESET_B * !SCE)	0.00475	0.00455	0.00479
	(!CLK * D * RESET_B * !SCE)	0.00212	0.00190	0.00217
	(!CLK * D * !RESET_B * SCE)	0.00312	0.00312	0.00310
	(!CLK * D * !RESET_B * SCE)	0.00091	0.00091	0.00092
	(!CLK * D * !RESET_B * !SCE)	0.00244	0.00245	0.00245
	(!CLK * D * !RESET_B * !SCE)	0.00030	0.00029	0.00030
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02109	0.02353	0.08114
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01558	0.01801	0.07563
	(!CLK * !D * !RESET_B * SCE)	0.00312	0.00312	0.00310
	(!CLK * !D * !RESET_B * SCE)	0.00091	0.00091	0.00092

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00449	0.00650	0.05423
	(CLK * D * RESET_B * SCE)	0.00947	0.01149	0.05917
	(CLK * D * RESET_B * !SCE)	0.00199	0.00196	0.00189
	(CLK * D * RESET_B * !SCE)	0.00457	0.00458	0.00449
	(CLK * D * !RESET_B * SCE)	0.00149	0.00150	0.00149
	(CLK * D * !RESET_B * SCE)	0.00365	0.00364	0.00362
	(CLK * D * !RESET_B * !SCE)	0.00113	0.00113	0.00112
	(CLK * D * !RESET_B * !SCE)	0.00327	0.00328	0.00326
	(CLK * !D * RESET_B * SCE)	0.00391	0.00606	0.05410
	(CLK * !D * RESET_B * SCE)	0.00915	0.01131	0.05931
	(CLK * !D * !RESET_B * SCE)	0.00149	0.00150	0.00149
	(CLK * !D * !RESET_B * SCE)	0.00364	0.00364	0.00362
	(!D * RESET_B * !SCE)	0.00074	0.00065	0.00064
	(!D * RESET_B * !SCE)	0.00332	0.00327	0.00322
	(!D * !RESET_B * !SCE)	0.00101	0.00099	0.00096
	(!D * !RESET_B * !SCE)	0.00346	0.00346	0.00338
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01557	0.01805	0.07442
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02075	0.02324	0.07957
	(!CLK * D * RESET_B * !SCE)	0.00241	0.00238	0.00231
	(!CLK * D * RESET_B * !SCE)	0.00499	0.00500	0.00491
	(!CLK * D * !RESET_B * SCE)	0.00153	0.00153	0.00152
	(!CLK * D * !RESET_B * SCE)	0.00368	0.00368	0.00365
	(!CLK * D * !RESET_B * !SCE)	0.00117	0.00117	0.00116
	(!CLK * D * !RESET_B * !SCE)	0.00331	0.00331	0.00329
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01526	0.01789	0.07529
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02070	0.02333	0.08070
	(!CLK * !D * !RESET_B * SCE)	0.00153	0.00153	0.00152
	(!CLK * !D * !RESET_B * SCE)	0.00368	0.00368	0.00365

	(CLK * D * RESET_B * SCE)	0.00501	0.00700	0.05469
	(CLK * D * RESET_B * SCE)	0.01007	0.01207	0.05970
	(CLK * D * RESET_B * !SCE)	0.00241	0.00239	0.00232
	(CLK * D * RESET_B * !SCE)	0.00503	0.00504	0.00495
	(CLK * D * !RESET_B * SCE)	0.00192	0.00192	0.00191
	(CLK * D * !RESET_B * SCE)	0.00410	0.00410	0.00407
	(CLK * D * !RESET_B * !SCE)	0.00158	0.00157	0.00156
	(CLK * D * !RESET_B * !SCE)	0.00374	0.00375	0.00373
	(CLK * !D * RESET_B * SCE)	0.00450	0.00663	0.05461
	(CLK * !D * RESET_B * SCE)	0.00982	0.01195	0.05990
	(CLK * !D * !RESET_B * SCE)	0.00192	0.00192	0.00191
	(CLK * !D * !RESET_B * SCE)	0.00410	0.00410	0.00407
	(!D * RESET_B * !SCE)	0.00117	0.00108	0.00107
	(!D * RESET_B * !SCE)	0.00379	0.00373	0.00369
	(!D * !RESET_B * !SCE)	0.00146	0.00144	0.00141
	(!D * !RESET_B * !SCE)	0.00393	0.00392	0.00385
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01595	0.01834	0.07472
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02121	0.02361	0.07994
	(!CLK * D * RESET_B * !SCE)	0.00253	0.00250	0.00244
	(!CLK * D * RESET_B * !SCE)	0.00515	0.00516	0.00506
	(!CLK * D * !RESET_B * SCE)	0.00196	0.00196	0.00195
	(!CLK * D * !RESET_B * SCE)	0.00414	0.00413	0.00411
	(!CLK * D * !RESET_B * !SCE)	0.00161	0.00161	0.00160
	(!CLK * D * !RESET_B * !SCE)	0.00377	0.00378	0.00376
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01565	0.01825	0.07538
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02117	0.02378	0.08086
	(!CLK * !D * !RESET_B * SCE)	0.00196	0.00196	0.00195
	(!CLK * !D * !RESET_B * SCE)	0.00413	0.00413	0.00411

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)**	0.00979	0.01349	0.08345
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00305	0.00675	0.07674
	(CLK * D * RESET_B * !SCD)	0.01148	0.01555	0.08960
	(CLK * D * RESET_B * !SCD)	0.00697	0.01100	0.08503
	(CLK * !D * RESET_B * SCD)	0.01559	0.02173	0.13736
	(CLK * !D * RESET_B * SCD)	0.00692	0.01302	0.12868
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01020	0.01391	0.08387
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00349	0.00717	0.07716
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02243	0.02644	0.10079
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01810	0.02210	0.09643
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00869	0.01263	0.08241
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00234	0.00626	0.07606
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02430	0.03137	0.16055
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01543	0.02247	0.15167

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00974	0.01356	0.08359
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00284	0.00661	0.07667
	(CLK * D * RESET_B * !SCD)	0.01159	0.01572	0.08985
	(CLK * D * RESET_B * !SCD)	0.00689	0.01101	0.08511
	(CLK * !D * RESET_B * SCD)	0.01583	0.02202	0.13785
	(CLK * !D * RESET_B * SCD)	0.00692	0.01305	0.12892
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00986	0.01368	0.08371
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00296	0.00672	0.07679
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02234	0.02642	0.10085
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01784	0.02194	0.09632
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00870	0.01275	0.08262
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00216	0.00617	0.07607
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02431	0.03146	0.16098
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01519	0.02231	0.15184

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)**	0.00224	0.00673	0.07715
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00898	0.01347	0.08388
	(CLK * D * RESET_B * !SCD)	0.00850	0.01273	0.08523
	(CLK * D * RESET_B * !SCD)	0.01303	0.01728	0.08959
	(CLK * !D * RESET_B * SCD)	0.00280	0.00938	0.12664
	(CLK * !D * RESET_B * SCD)	0.01148	0.01809	0.13533
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00267	0.00714	0.07757
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00938	0.01387	0.08428
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01716	0.02155	0.09498
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02150	0.02590	0.09913
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00122	0.00562	0.07591
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00754	0.01194	0.08224
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01354	0.02055	0.14647
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02241	0.02942	0.15536

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00274	0.00728	0.07778
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00968	0.01423	0.08470
	(CLK * D * RESET_B * !SCD)	0.00934	0.01356	0.08609
	(CLK * D * RESET_B * !SCD)	0.01405	0.01828	0.09060
	(CLK * !D * RESET_B * SCD)	0.00336	0.00996	0.12738
	(CLK * !D * RESET_B * SCD)	0.01229	0.01893	0.13633
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00286	0.00739	0.07789
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00980	0.01434	0.08482
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01775	0.02217	0.09562
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02227	0.02670	0.09994
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00167	0.00613	0.07646
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00821	0.01271	0.08300
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01389	0.02092	0.14708
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02301	0.03006	0.15622

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)**	0.01402	0.01612	0.07768
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00253	0.00458	0.06615
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01318	0.01537	0.07733
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00214	0.00427	0.06626
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00571	0.00575	0.00570
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00283	-0.00285	-0.00281
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01303	0.01537	0.07731
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00253	0.00489	0.06681
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01529	0.01719	0.07820
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00353	0.00541	0.06642
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00518	0.00520	0.00517
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00334	-0.00335	-0.00332
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00571	0.00574	0.00570
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00283	-0.00285	-0.00281
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00519	0.00520	0.00518
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00335	-0.00335	-0.00333
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02314	0.02579	0.11180
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01148	0.01406	0.10011
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02223	0.02488	0.11192
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01100	0.01362	0.10067
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00572	0.00576	0.00573
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00278	-0.00280	-0.00278
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02206	0.02487	0.11175
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01138	0.01419	0.10106
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02446	0.02687	0.11254
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01253	0.01488	0.10058
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00519	0.00521	0.00520
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00329	-0.00331	-0.00329
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00572	0.00575	0.00573
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00278	-0.00280	-0.00278
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00519	0.00522	0.00520
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00330	-0.00331	-0.00330

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01456	0.01662	0.07805
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00302	0.00505	0.06649
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01386	0.01600	0.07779
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00276	0.00485	0.06668
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00604	0.00605	0.00603
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00248	-0.00248	-0.00247
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01370	0.01600	0.07777
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00317	0.00546	0.06723
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01583	0.01769	0.07856
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00403	0.00589	0.06674
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00549	0.00551	0.00550
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00298	-0.00299	-0.00297
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00603	0.00604	0.00602
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00249	-0.00248	-0.00247
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00549	0.00551	0.00550
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00299	-0.00300	-0.00299
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02369	0.02631	0.11223
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01199	0.01454	0.10049
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02292	0.02555	0.11246
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01164	0.01424	0.10118
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00604	0.00607	0.00605
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00244	-0.00247	-0.00244
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02275	0.02557	0.11228
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01203	0.01484	0.10155
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02503	0.02739	0.11299
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01306	0.01539	0.10100
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00551	0.00553	0.00551
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00295	-0.00297	-0.00295
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00603	0.00607	0.00604
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00245	-0.00247	-0.00245
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00551	0.00553	0.00552
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00297	-0.00298	-0.00296

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)	0.00312	0.00641	0.06961
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01464	0.01799	0.08109
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00141	0.00471	0.06791
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01249	0.01581	0.07895
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00142	-0.00161	-0.00163
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00704	0.00695	0.00689
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00105	0.00451	0.06808
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01156	0.01505	0.07857
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00254	0.00601	0.06947
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01432	0.01781	0.08122
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00186	-0.00209	-0.00211
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00659	0.00647	0.00640
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00143	-0.00162	-0.00163
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00703	0.00695	0.00689
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00189	-0.00210	-0.00212
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00659	0.00647	0.00640
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01115	0.01567	0.10699
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02287	0.02739	0.11865
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00940	0.01376	0.10478
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02067	0.02507	0.11602
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00145	-0.00160	-0.00160
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00701	0.00697	0.00692
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00903	0.01339	0.10489
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01972	0.02413	0.11558
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01059	0.01534	0.10731
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02256	0.02734	0.11925
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00189	-0.00207	-0.00208
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00657	0.00648	0.00643
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00146	-0.00160	-0.00160
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00701	0.00696	0.00692
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00191	-0.00208	-0.00209
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00656	0.00648	0.00643

sky130_fd_sc_hs__sdfrbp_2	(CLK * D * SCD * SCE * !Q * Q_N)	0.00375	0.00699	0.07014
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01531	0.01860	0.08163
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00199	0.00522	0.06837
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01311	0.01639	0.07944
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00084	-0.00103	-0.00105
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00760	0.00752	0.00745
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00164	0.00505	0.06854
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01218	0.01558	0.07906
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00325	0.00664	0.07003
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01507	0.01850	0.08181
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00128	-0.00149	-0.00153
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00715	0.00702	0.00696
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00085	-0.00102	-0.00105
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00759	0.00750	0.00745
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00130	-0.00150	-0.00154
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00715	0.00702	0.00696
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01182	0.01633	0.10750
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02357	0.02811	0.11922
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01003	0.01431	0.10534
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02133	0.02565	0.11661
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00085	-0.00101	-0.00101
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00759	0.00754	0.00749
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00965	0.01414	0.10544
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02038	0.02493	0.11617
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01133	0.01605	0.10791
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02334	0.02811	0.11989
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00129	-0.00148	-0.00149
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00714	0.00706	0.00700
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00086	-0.00101	-0.00101
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00758	0.00754	0.00748
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00132	-0.00149	-0.00150
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00713	0.00706	0.00700

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)**	0.01886	0.02540	0.14736
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01377	0.02027	0.14225
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01856	0.02509	0.14705
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01346	0.01997	0.14194
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01901	0.02554	0.14751
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01391	0.02042	0.14240
	(D * !SCD * SCE * !Q * Q_N)	0.01777	0.02424	0.14599
	(D * !SCD * SCE * !Q * Q_N)	0.01267	0.01915	0.14089
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01776	0.02426	0.14595
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01267	0.01915	0.14086
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01726	0.02375	0.14545
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01216	0.01865	0.14035
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01726	0.02375	0.14545
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01216	0.01865	0.14036
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01912	0.02565	0.14762
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01402	0.02053	0.14251
	(!D * !SCE * !Q * Q_N)	0.01727	0.02374	0.14549
	(!D * !SCE * !Q * Q_N)	0.01217	0.01865	0.14039
	(!D * !SCD * SCE * !Q * Q_N)	0.01776	0.02425	0.14598
	(!D * !SCD * SCE * !Q * Q_N)	0.01267	0.01915	0.14089
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01776	0.02425	0.14622
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01267	0.01915	0.14111

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01911	0.02558	0.14811
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01412	0.02056	0.14310
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01881	0.02527	0.14780
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01381	0.02025	0.14280
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01926	0.02572	0.14826
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01426	0.02070	0.14325
	(D * !SCD * SCE * !Q * Q_N)	0.01823	0.02470	0.14722
	(D * !SCD * SCE * !Q * Q_N)	0.01323	0.01967	0.14222
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01823	0.02470	0.14719
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01323	0.01967	0.14219
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01772	0.02420	0.14669
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01273	0.01917	0.14169
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01772	0.02419	0.14669
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01273	0.01917	0.14169
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01937	0.02584	0.14837
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01437	0.02081	0.14336
	(!D * !SCE * !Q * Q_N)	0.01773	0.02420	0.14671
	(!D * !SCE * !Q * Q_N)	0.01273	0.01917	0.14170
	(!D * !SCD * SCE * !Q * Q_N)	0.01823	0.02470	0.14721
	(!D * !SCD * SCE * !Q * Q_N)	0.01323	0.01967	0.14221
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01823	0.02470	0.14719
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01323	0.01967	0.14219

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)**	0.01149	0.01914	0.14097
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01661	0.02427	0.14607
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01858	0.02639	0.15241
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02345	0.03130	0.15732
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01118	0.01882	0.14066
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01630	0.02395	0.14577
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01830	0.02609	0.15209
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02318	0.03100	0.15699
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02139	0.02917	0.15308
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02674	0.03453	0.15842
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01163	0.01929	0.14111
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01675	0.02441	0.14622
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01872	0.02652	0.15250
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02361	0.03143	0.15741
	(D * !SCD * SCE * !Q * Q_N)	0.00965	0.01729	0.13920
	(D * !SCD * SCE * !Q * Q_N)	0.01473	0.02240	0.14431
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00965	0.01728	0.13916
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01473	0.02239	0.14427
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00915	0.01678	0.13866
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01422	0.02189	0.14377
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00915	0.01678	0.13866
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01422	0.02189	0.14377
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01175	0.01940	0.14122
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01686	0.02453	0.14633
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01882	0.02663	0.15265
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02370	0.03154	0.15756
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02081	0.02858	0.15252
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02612	0.03390	0.15782
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02135	0.02915	0.15308
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02668	0.03447	0.15839
	(!D * !SCE * !Q * Q_N)	0.00915	0.01679	0.13870
	(!D * !SCE * !Q * Q_N)	0.01423	0.02190	0.14380
	(!D * !SCD * SCE * !Q * Q_N)	0.00965	0.01729	0.13919
	(!D * !SCD * SCE * !Q * Q_N)	0.01473	0.02240	0.14430
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00965	0.01728	0.13916
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01473	0.02239	0.14427

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01160	0.01937	0.14238
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01660	0.02438	0.14739
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01904	0.02700	0.15438
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02383	0.03180	0.15919
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01130	0.01906	0.14208
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01629	0.02407	0.14709
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01876	0.02670	0.15404
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02355	0.03151	0.15885
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02151	0.02940	0.15456
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02674	0.03465	0.15980
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01175	0.01950	0.14253
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01674	0.02453	0.14754
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01919	0.02713	0.15446
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02398	0.03194	0.15927
	(D * !SCD * SCE * !Q * Q_N)	0.01013	0.01790	0.14100
	(D * !SCD * SCE * !Q * Q_N)	0.01513	0.02291	0.14601
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01012	0.01789	0.14097
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01512	0.02291	0.14597
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00962	0.01738	0.14047
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01462	0.02240	0.14547
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00962	0.01738	0.14047
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01462	0.02240	0.14547
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01186	0.01962	0.14264
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01685	0.02465	0.14765
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01928	0.02723	0.15461
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02408	0.03203	0.15941
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02093	0.02882	0.15399
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02613	0.03405	0.15920
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02146	0.02936	0.15456
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02667	0.03459	0.15978
	(!D * !SCE * !Q * Q_N)	0.00963	0.01739	0.14050
	(!D * !SCE * !Q * Q_N)	0.01463	0.02241	0.14551
	(!D * !SCD * SCE * !Q * Q_N)	0.01013	0.01790	0.14100
	(!D * !SCD * SCE * !Q * Q_N)	0.01512	0.02292	0.14600
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01012	0.01789	0.14097
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01512	0.02291	0.14598

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00205	0.00201	0.00432	0.00596	0.00301	1.31583

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	263.33300	376.25200

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)	0.22454	0.79230	7.72728

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)	0.19531	0.59618	4.91247
	RESET_B->Q (FF)	0.26618	0.71819	5.38651

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)	-0.04819	-0.05632	0.64418
	setup	CLK_N (F)	0.14400	0.13960	-0.56863

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)	-0.11323	-0.16385	-0.40353
	setup	CLK_N (F)	0.24714	0.27606	0.45436

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)	-0.04819	-0.05647	0.64259
	hold	CLK_N (F)	-0.04912	-0.05632	0.64418
	setup	CLK_N (F)	0.14400	0.13867	-0.57099
	setup	CLK_N (F)	0.14288	0.13960	-0.56863

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)	-0.11532	-0.16385	-0.40364
	hold	CLK_N (F)	-0.11323	-0.16385	-0.40353
	setup	CLK_N (F)	0.24714	0.27413	0.45436
	setup	CLK_N (F)	0.24692	0.27606	0.45342

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)	-0.07057	-0.06531	0.63355
	setup	CLK_N (F)	0.17788	0.16006	-0.55298

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)	-0.14765	-0.17642	-0.42832
	setup	CLK_N (F)	0.29570	0.30269	0.47924

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)	-0.07057	-0.06531	0.63355
	hold	CLK_N (F)	-0.08147	-0.07558	0.61282
	setup	CLK_N (F)	0.16785	0.14689	-0.57238
	setup	CLK_N (F)	0.17788	0.16006	-0.55298

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)	-0.15408	-0.18703	-0.42923
	hold	CLK_N (F)	-0.14765	-0.17642	-0.42832
	setup	CLK_N (F)	0.29514	0.30080	0.47924
	setup	CLK_N (F)	0.29570	0.30269	0.47806

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)	-0.05389	-0.06599	1.00052
	setup	CLK_N (F)	0.30071	0.25602	-0.41888

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)	-0.10765	-0.11466	-0.18728
	setup	CLK_N (F)	0.26134	0.26368	0.30975

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)	-0.15863	-0.14661	1.00052
	hold	CLK_N (F)	-0.05389	-0.06599	0.49241
	setup	CLK_N (F)	0.30071	0.25602	-0.97064
	setup	CLK_N (F)	0.15163	0.15029	-0.41888

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)	-0.10765	-0.11466	-0.18728
	hold	CLK_N (F)	-0.12891	-0.15478	-0.26145
	setup	CLK_N (F)	0.20483	0.19393	0.22286
	setup	CLK_N (F)	0.26134	0.26368	0.30975

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)	0.19840	0.15600	-0.22703
	removal	CLK_N (F)	-0.14465	-0.10235	0.30592

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)	0.19103	0.14691	-0.23766
	recovery	CLK_N (F)	0.17921	0.13095	-0.29025
	recovery	CLK_N (F)	0.17561	0.12147	-0.30139
	recovery	CLK_N (F)	0.19840	0.15600	-0.22703
	removal	CLK_N (F)	-0.16267	-0.12688	0.24334
	removal	CLK_N (F)	-0.15236	-0.10987	0.29569
	removal	CLK_N (F)	-0.14465	-0.10235	0.30592
	removal	CLK_N (F)	-0.17361	-0.13735	0.22988

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 ()	0.11100	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.13613	0.67139	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 ()	0.14116	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.18136	0.67139	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 ()	0.12357	0.67139	16.50020
	min_pulse_width	CLK_N ()	0.12105	0.67139	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	0.03657	0.04464	0.17110
	CLK_N	0.04173	0.04984	0.17673

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.02831	0.03638	0.16632
	CLK_N	0.03286	0.04094	0.16977
	RESET_B	0.03063	0.03853	0.17227
	RESET_B	0.04176	0.04979	0.18329

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)**	0.00425	0.00426	0.00428
	(CLK_N * RESET_B * SCD * SCE)	0.00223	0.00222	0.00226
	(CLK_N * RESET_B * SCD * !SCE)	0.01737	0.02019	0.08030
	(CLK_N * RESET_B * SCD * !SCE)	0.01346	0.01628	0.07641
	(CLK_N * RESET_B * !SCD * !SCE)	0.01775	0.02055	0.08047
	(CLK_N * RESET_B * !SCD * !SCE)	0.01384	0.01665	0.07657
	(CLK_N * !SCD * SCE)	0.00392	0.00393	0.00390
	(CLK_N * !SCD * SCE)	0.00160	0.00159	0.00157
	(CLK_N * !RESET_B * SCD * SCE)	0.00277	0.00278	0.00276
	(CLK_N * !RESET_B * SCD * SCE)	0.00046	0.00045	0.00044
	(CLK_N * !RESET_B * SCD * !SCE)	0.00194	0.00194	0.00188
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00032	-0.00034	-0.00044
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00193	0.00193	0.00188
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00038	-0.00040	-0.00046
	(!CLK_N * RESET_B * SCD * SCE)	0.00425	0.00426	0.00428
	(!CLK_N * RESET_B * SCD * SCE)	0.00223	0.00222	0.00226
	(!CLK_N * RESET_B * SCD * !SCE)	0.00866	0.01087	0.05903
	(!CLK_N * RESET_B * SCD * !SCE)	0.00473	0.00691	0.05508
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00905	0.01123	0.05920
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00512	0.00729	0.05526
	(!CLK_N * !SCD * SCE)	0.00276	0.00277	0.00274
	(!CLK_N * !SCD * SCE)	0.00044	0.00042	0.00041
	(!CLK_N * !RESET_B * SCD * SCE)	0.00274	0.00275	0.00273
	(!CLK_N * !RESET_B * SCD * SCE)	0.00043	0.00041	0.00040
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00191	0.00191	0.00184
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00036	-0.00038	-0.00048
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00189	0.00190	0.00184
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00041	-0.00043	-0.00050

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)**	0.00193	0.00192	0.00179
	(CLK_N * RESET_B * SCD * SCE)	0.00398	0.00397	0.00383
	(CLK_N * RESET_B * SCD * !SCE)	0.01403	0.01739	0.07733
	(CLK_N * RESET_B * SCD * !SCE)	0.01793	0.02130	0.08124
	(CLK_N * RESET_B * !SCD * !SCE)	0.01403	0.01745	0.07755
	(CLK_N * RESET_B * !SCD * !SCE)	0.01793	0.02136	0.08146
	(CLK_N * !SCD * SCE)	0.00247	0.00246	0.00247
	(CLK_N * !SCD * SCE)	0.00479	0.00481	0.00480
	(CLK_N * !RESET_B * SCD * SCE)	0.00134	0.00133	0.00134
	(CLK_N * !RESET_B * SCD * SCE)	0.00365	0.00367	0.00366
	(CLK_N * !RESET_B * SCD * !SCE)	0.00123	0.00123	0.00123
	(CLK_N * !RESET_B * SCD * !SCE)	0.00354	0.00354	0.00355
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00123	0.00122	0.00123
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00355	0.00357	0.00355
	(!CLK_N * RESET_B * SCD * SCE)	0.00194	0.00192	0.00179
	(!CLK_N * RESET_B * SCD * SCE)	0.00398	0.00397	0.00383
	(!CLK_N * RESET_B * SCD * !SCE)	0.00282	0.00561	0.05512
	(!CLK_N * RESET_B * SCD * !SCE)	0.00676	0.00957	0.05906
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00282	0.00563	0.05533
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00675	0.00958	0.05927
	(!CLK_N * !SCD * SCE)	0.00130	0.00129	0.00130
	(!CLK_N * !SCD * SCE)	0.00362	0.00363	0.00363
	(!CLK_N * !RESET_B * SCD * SCE)	0.00131	0.00130	0.00130
	(!CLK_N * !RESET_B * SCD * SCE)	0.00362	0.00363	0.00362
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00119	0.00120	0.00120
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00351	0.00351	0.00352
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00119	0.00119	0.00119
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00351	0.00354	0.00352

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)**	0.01959	0.02206	0.07949
	(CLK_N * D * RESET_B * SCE)	0.01463	0.01709	0.07453
	(CLK_N * D * RESET_B * !SCE)	0.00406	0.00385	0.00411
	(CLK_N * D * RESET_B * !SCE)	0.00144	0.00123	0.00150
	(CLK_N * D * !RESET_B * SCE)	0.00271	0.00271	0.00269
	(CLK_N * D * !RESET_B * SCE)	0.00051	0.00051	0.00052
	(CLK_N * D * !RESET_B * !SCE)	0.00197	0.00197	0.00198
	(CLK_N * D * !RESET_B * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK_N * !D * RESET_B * SCE)	0.02087	0.02322	0.08036
	(CLK_N * !D * RESET_B * SCE)	0.01564	0.01798	0.07513
	(CLK_N * !D * !RESET_B * SCE)	0.00271	0.00271	0.00269
	(CLK_N * !D * !RESET_B * SCE)	0.00051	0.00050	0.00052
	(!D * RESET_B * !SCE)	0.00360	0.00361	0.00361
	(!D * RESET_B * !SCE)	0.00100	0.00099	0.00099
	(!D * !RESET_B * !SCE)	0.00208	0.00208	0.00207
	(!D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00030
	(!CLK_N * D * RESET_B * SCE)	0.01080	0.01263	0.05903
	(!CLK_N * D * RESET_B * SCE)	0.00580	0.00762	0.05404
	(!CLK_N * D * RESET_B * !SCE)	0.00406	0.00385	0.00411
	(!CLK_N * D * RESET_B * !SCE)	0.00144	0.00123	0.00150
	(!CLK_N * D * !RESET_B * SCE)	0.00268	0.00268	0.00266
	(!CLK_N * D * !RESET_B * SCE)	0.00048	0.00047	0.00049
	(!CLK_N * D * !RESET_B * !SCE)	0.00193	0.00194	0.00194
	(!CLK_N * D * !RESET_B * !SCE)	-0.00021	-0.00022	-0.00020
	(!CLK_N * !D * RESET_B * SCE)	0.01205	0.01370	0.05953
	(!CLK_N * !D * RESET_B * SCE)	0.00678	0.00843	0.05426
	(!CLK_N * !D * !RESET_B * SCE)	0.00268	0.00268	0.00266
	(!CLK_N * !D * !RESET_B * SCE)	0.00047	0.00047	0.00049

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)	0.01639	0.01870	0.07463
	(CLK_N * D * RESET_B * SCE)	0.02136	0.02369	0.07957
	(CLK_N * D * RESET_B * !SCE)	0.00204	0.00201	0.00194
	(CLK_N * D * RESET_B * !SCE)	0.00465	0.00466	0.00457
	(CLK_N * D * !RESET_B * SCE)	0.00143	0.00143	0.00142
	(CLK_N * D * !RESET_B * SCE)	0.00360	0.00360	0.00357
	(CLK_N * D * !RESET_B * !SCE)	0.00115	0.00115	0.00114
	(CLK_N * D * !RESET_B * !SCE)	0.00331	0.00332	0.00330
	(CLK_N * !D * RESET_B * SCE)	0.01611	0.01863	0.07529
	(CLK_N * !D * RESET_B * SCE)	0.02134	0.02387	0.08050
	(CLK_N * !D * !RESET_B * SCE)	0.00143	0.00143	0.00142
	(CLK_N * !D * !RESET_B * SCE)	0.00360	0.00360	0.00357
	(!D * RESET_B * !SCE)	0.00187	0.00178	0.00177
	(!D * RESET_B * !SCE)	0.00449	0.00443	0.00438
	(!D * !RESET_B * !SCE)	0.00105	0.00103	0.00100
	(!D * !RESET_B * !SCE)	0.00351	0.00350	0.00343
	(!CLK_N * D * RESET_B * SCE)	0.00485	0.00684	0.05431
	(!CLK_N * D * RESET_B * SCE)	0.00986	0.01186	0.05929
	(!CLK_N * D * RESET_B * !SCE)	0.00204	0.00202	0.00195
	(!CLK_N * D * RESET_B * !SCE)	0.00465	0.00466	0.00457
	(!CLK_N * D * !RESET_B * SCE)	0.00139	0.00139	0.00139
	(!CLK_N * D * !RESET_B * SCE)	0.00357	0.00356	0.00354
	(!CLK_N * D * !RESET_B * !SCE)	0.00112	0.00111	0.00110
	(!CLK_N * D * !RESET_B * !SCE)	0.00328	0.00328	0.00326
	(!CLK_N * !D * RESET_B * SCE)	0.00437	0.00648	0.05424
	(!CLK_N * !D * RESET_B * SCE)	0.00964	0.01175	0.05949
	(!CLK_N * !D * !RESET_B * SCE)	0.00139	0.00139	0.00139
	(!CLK_N * !D * !RESET_B * SCE)	0.00357	0.00356	0.00354

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)	0.00921	0.01299	0.08215
	(CLK_N * D * RESET_B * SCD)	0.00245	0.00620	0.07539
	(CLK_N * D * RESET_B * !SCD)	0.02272	0.02681	0.10022
	(CLK_N * D * RESET_B * !SCD)	0.01812	0.02218	0.09557
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00813	0.01217	0.08118
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00173	0.00575	0.07478
	(CLK_N * !D * RESET_B * SCD)	0.02409	0.03104	0.15747
	(CLK_N * !D * RESET_B * SCD)	0.01539	0.02233	0.14877
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00921	0.01299	0.08215
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00245	0.00621	0.07539
	(!CLK_N * D * RESET_B * !SCD)	0.01136	0.01549	0.08868
	(!CLK_N * D * RESET_B * !SCD)	0.00679	0.01091	0.08407
	(!CLK_N * !D * RESET_B * SCD)	0.01533	0.02133	0.13451
	(!CLK_N * !D * RESET_B * SCD)	0.00660	0.01257	0.12577

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)	0.00226	0.00675	0.07636
	(CLK_N * D * RESET_B * SCD)	0.00905	0.01355	0.08313
	(CLK_N * D * RESET_B * !SCD)	0.01760	0.02197	0.09446
	(CLK_N * D * RESET_B * !SCD)	0.02221	0.02661	0.09889
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00122	0.00562	0.07510
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00759	0.01204	0.08147
	(CLK_N * !D * RESET_B * SCD)	0.01451	0.02128	0.14435
	(CLK_N * !D * RESET_B * SCD)	0.02320	0.03002	0.15305
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00226	0.00676	0.07636
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00904	0.01355	0.08314
	(!CLK_N * D * RESET_B * !SCD)	0.00892	0.01316	0.08467
	(!CLK_N * D * RESET_B * !SCD)	0.01350	0.01774	0.08909
	(!CLK_N * !D * RESET_B * SCD)	0.00331	0.00970	0.12440
	(!CLK_N * !D * RESET_B * SCD)	0.01204	0.01847	0.13315

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.02426	0.02674	0.11197
	(CLK_N * D * SCD * SCE * !Q)	0.01276	0.01520	0.10046
	(CLK_N * D * SCD * !SCE * !Q)	0.02350	0.02595	0.11211
	(CLK_N * D * SCD * !SCE * !Q)	0.01246	0.01485	0.10103
	(CLK_N * D * !SCD * SCE * !Q)	0.00620	0.00623	0.00621
	(CLK_N * D * !SCD * SCE * !Q)	-0.00234	-0.00236	-0.00234
	(CLK_N * D * !SCD * !SCE * !Q)	0.02334	0.02601	0.11187
	(CLK_N * D * !SCD * !SCE * !Q)	0.01285	0.01546	0.10135
	(CLK_N * !D * SCD * SCE * !Q)	0.02555	0.02798	0.11262
	(CLK_N * !D * SCD * SCE * !Q)	0.01378	0.01616	0.10082
	(CLK_N * !D * SCD * !SCE * !Q)	0.00566	0.00569	0.00568
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00285	-0.00287	-0.00285
	(CLK_N * !D * !SCD * SCE * !Q)	0.00619	0.00622	0.00620
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00234	-0.00236	-0.00234
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00567	0.00571	0.00568
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00286	-0.00288	-0.00286
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01466	0.01669	0.07779
	(!CLK_N * D * SCD * SCE * !Q)	0.00310	0.00507	0.06622
	(!CLK_N * D * SCD * !SCE * !Q)	0.01399	0.01605	0.07758
	(!CLK_N * D * SCD * !SCE * !Q)	0.00288	0.00492	0.06645
	(!CLK_N * D * !SCD * SCE * !Q)	0.00606	0.00608	0.00608
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00247	-0.00248	-0.00248
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01383	0.01608	0.07756
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00328	0.00551	0.06700
	(!CLK_N * !D * SCD * SCE * !Q)	0.01592	0.01776	0.07829
	(!CLK_N * !D * SCD * SCE * !Q)	0.00409	0.00589	0.06645
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00553	0.00554	0.00554
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00299	-0.00299	-0.00299
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00605	0.00612	0.00607
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00247	-0.00251	-0.00248
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00553	0.00559	0.00555
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00299	-0.00304	-0.00300

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01186	0.01611	0.10674
	(CLK_N * D * SCD * SCE * !Q)	0.02338	0.02767	0.11824
	(CLK_N * D * SCD * !SCE * !Q)	0.01006	0.01422	0.10454
	(CLK_N * D * SCD * !SCE * !Q)	0.02113	0.02530	0.11559
	(CLK_N * D * !SCD * SCE * !Q)	-0.00194	-0.00211	-0.00210
	(CLK_N * D * !SCD * SCE * !Q)	0.00655	0.00649	0.00646
	(CLK_N * D * !SCD * !SCE * !Q)	0.00968	0.01396	0.10464
	(CLK_N * D * !SCD * !SCE * !Q)	0.02018	0.02449	0.11514
	(CLK_N * !D * SCD * SCE * !Q)	0.01139	0.01587	0.10711
	(CLK_N * !D * SCD * SCE * !Q)	0.02317	0.02766	0.11887
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00237	-0.00258	-0.00259
	(CLK_N * !D * SCD * !SCE * !Q)	0.00610	0.00601	0.00596
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00195	-0.00211	-0.00211
	(CLK_N * !D * !SCD * SCE * !Q)	0.00654	0.00649	0.00645
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00240	-0.00259	-0.00259
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00610	0.00601	0.00596
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00299	0.00621	0.06908
	(!CLK_N * D * SCD * SCE * !Q)	0.01456	0.01784	0.08059
	(!CLK_N * D * SCD * !SCE * !Q)	0.00122	0.00447	0.06733
	(!CLK_N * D * SCD * !SCE * !Q)	0.01234	0.01560	0.07842
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00181	-0.00202	-0.00203
	(!CLK_N * D * !SCD * SCE * !Q)	0.00668	0.00657	0.00653
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00087	0.00425	0.06750
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01141	0.01486	0.07804
	(!CLK_N * !D * SCD * SCE * !Q)	0.00251	0.00588	0.06898
	(!CLK_N * !D * SCD * SCE * !Q)	0.01434	0.01777	0.08079
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00225	-0.00249	-0.00251
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00623	0.00609	0.00604
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00182	-0.00202	-0.00203
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00667	0.00657	0.00653
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00227	-0.00250	-0.00252
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00623	0.00609	0.00604

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)**	0.01717	0.02400	0.14844
	(D * RESET_B * SCD * SCE * Q)	0.01230	0.01912	0.14356
	(D * RESET_B * SCD * SCE * !Q)	0.02622	0.03324	0.15996
	(D * RESET_B * SCD * SCE * !Q)	0.02139	0.02840	0.15513
	(D * RESET_B * SCD * !SCE * Q)	0.01686	0.02370	0.14813
	(D * RESET_B * SCD * !SCE * Q)	0.01200	0.01881	0.14325
	(D * RESET_B * SCD * !SCE * !Q)	0.02597	0.03298	0.15966
	(D * RESET_B * SCD * !SCE * !Q)	0.02114	0.02814	0.15483
	(D * RESET_B * !SCD * SCE * Q)	0.02628	0.03305	0.16076
	(D * RESET_B * !SCD * SCE * Q)	0.02142	0.02818	0.15589
	(D * RESET_B * !SCD * !SCE * Q)	0.01731	0.02415	0.14858
	(D * RESET_B * !SCD * !SCE * Q)	0.01245	0.01926	0.14370
	(D * RESET_B * !SCD * !SCE * !Q)	0.02639	0.03341	0.16012
	(D * RESET_B * !SCD * !SCE * !Q)	0.02157	0.02856	0.15527
	(D * !SCD * SCE * !Q)	0.01608	0.02293	0.14735
	(D * !SCD * SCE * !Q)	0.01122	0.01805	0.14247
	(D * !RESET_B * SCD * SCE * !Q)	0.01608	0.02294	0.14732
	(D * !RESET_B * SCD * SCE * !Q)	0.01122	0.01805	0.14244
	(D * !RESET_B * SCD * !SCE * !Q)	0.01558	0.02244	0.14682
	(D * !RESET_B * SCD * !SCE * !Q)	0.01072	0.01755	0.14194
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01558	0.02244	0.14682
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01072	0.01755	0.14194
	(!D * RESET_B * SCD * SCE * Q)	0.01742	0.02426	0.14869
	(!D * RESET_B * SCD * SCE * Q)	0.01256	0.01937	0.14381
	(!D * RESET_B * SCD * SCE * !Q)	0.02648	0.03342	0.16023
	(!D * RESET_B * SCD * SCE * !Q)	0.02165	0.02857	0.15539
	(!D * RESET_B * !SCE * Q)	0.02575	0.03252	0.16023
	(!D * RESET_B * !SCE * Q)	0.02085	0.02762	0.15533
	(!D * RESET_B * !SCD * SCE * Q)	0.02622	0.03300	0.16076
	(!D * RESET_B * !SCD * SCE * Q)	0.02134	0.02811	0.15587
	(!D * !SCE * !Q)	0.01558	0.02244	0.14685
	(!D * !SCE * !Q)	0.01072	0.01755	0.14197
	(!D * !SCD * SCE * !Q)	0.01608	0.02293	0.14735
	(!D * !SCD * SCE * !Q)	0.01122	0.01804	0.14247
	(!D * !RESET_B * SCD * SCE * !Q)	0.01608	0.02294	0.14732
	(!D * !RESET_B * SCD * SCE * !Q)	0.01122	0.01805	0.14244

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)	0.01345	0.02104	0.14431
	(D * RESET_B * SCD * SCE * Q)	0.01832	0.02593	0.14918
	(D * RESET_B * SCD * !SCE * Q)	0.01315	0.02073	0.14400
	(D * RESET_B * SCD * !SCE * Q)	0.01801	0.02563	0.14887
	(D * RESET_B * !SCD * !SCE * Q)	0.01360	0.02118	0.14445
	(D * RESET_B * !SCD * !SCE * Q)	0.01846	0.02608	0.14932
	(D * !SCD * SCE * !Q)	0.01237	0.01995	0.14349
	(D * !SCD * SCE * !Q)	0.01723	0.02485	0.14837
	(D * !RESET_B * SCD * SCE * !Q)	0.01237	0.01995	0.14346
	(D * !RESET_B * SCD * SCE * !Q)	0.01723	0.02484	0.14834
	(D * !RESET_B * SCD * !SCE * !Q)	0.01187	0.01945	0.14296
	(D * !RESET_B * SCD * !SCE * !Q)	0.01673	0.02433	0.14784
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01187	0.01945	0.14296
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01673	0.02434	0.14784
	(!D * RESET_B * SCD * SCE * Q)	0.01371	0.02129	0.14456
	(!D * RESET_B * SCD * SCE * Q)	0.01858	0.02619	0.14944
	(!D * !SCE * !Q)	0.01187	0.01945	0.14299
	(!D * !SCE * !Q)	0.01673	0.02435	0.14787
	(!D * !SCD * SCE * !Q)	0.01237	0.01995	0.14349
	(!D * !SCD * SCE * !Q)	0.01723	0.02484	0.14836
	(!D * !RESET_B * SCD * SCE * !Q)	0.01237	0.01995	0.14346
	(!D * !RESET_B * SCD * SCE * !Q)	0.01723	0.02484	0.14834

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK	Q
sky130_fd_sc_hs__sdfrtp_1	0.00197	0.00205	0.00432	0.00590	0.00322	1.32232
sky130_fd_sc_hs__sdfrtp_2	0.00191	0.00206	0.00440	0.00601	0.00322	2.61829
sky130_fd_sc_hs__sdfrtp_4	0.00191	0.00204	0.00444	0.00591	0.00321	4.89037

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	263.27000	376.33100
sky130_fd_sc_hs__sdfrtp_2	0.00000	286.09900	425.82200
sky130_fd_sc_hs__sdfrtp_4	0.00000	397.64700	524.86000

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)	0.18239	0.64384	6.17332
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.19395	0.56499	6.17524
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.22582	0.53488	6.22684

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.19027	0.48726	3.40227
	RESET_B->Q (FF)	0.26426	0.71686	5.40075
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.19644	0.44711	3.39856
	RESET_B->Q (FF)	0.27131	0.67897	5.40206
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.20548	0.41594	3.26104
	RESET_B->Q (FF)	0.27868	0.64628	5.26285

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)	-0.11164	-0.21717	-1.25255
	setup	CLK (R)	0.20171	0.27134	1.41957
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10987	-0.21194	-1.25654
	setup	CLK (R)	0.20144	0.26587	1.42302
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11027	-0.21194	-1.24615
	setup	CLK (R)	0.19066	0.26040	1.43292

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)	-0.09735	-0.18690	-1.26629
	setup	CLK (R)	0.19824	0.28399	1.96506
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09451	-0.17882	-1.18053
	setup	CLK (R)	0.18874	0.27032	1.92675
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09498	-0.18202	-1.03803
	setup	CLK (R)	0.18590	0.27065	1.92602

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)	-0.11164	-0.21717	-1.25255
	hold	CLK (R)	-0.11194	-0.21717	-1.25406
	setup	CLK (R)	0.20141	0.27134	1.41957
	setup	CLK (R)	0.20171	0.27134	1.41911
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10987	-0.21194	-1.25654
	hold	CLK (R)	-0.11092	-0.21194	-1.25658
	setup	CLK (R)	0.20135	0.26587	1.42302
	setup	CLK (R)	0.20144	0.26587	1.42267
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11027	-0.21194	-1.24841
	hold	CLK (R)	-0.11150	-0.21265	-1.24615
	setup	CLK (R)	0.18785	0.25847	1.43160
	setup	CLK (R)	0.19066	0.26040	1.43292

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)	-0.09919	-0.18694	-1.26629
	hold	CLK (R)	-0.09735	-0.18690	-1.26790
	setup	CLK (R)	0.19809	0.28399	1.96506
	setup	CLK (R)	0.19824	0.28384	1.96423
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09459	-0.17899	-1.18526
	hold	CLK (R)	-0.09451	-0.17882	-1.18053
	setup	CLK (R)	0.18840	0.26874	1.92675
	setup	CLK (R)	0.18874	0.27032	1.92364
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09498	-0.18202	-1.04280
	hold	CLK (R)	-0.09508	-0.18202	-1.03803
	setup	CLK (R)	0.18491	0.27065	1.92275
	setup	CLK (R)	0.18590	0.27050	1.92602

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)	-0.13684	-0.22764	-1.22827
	setup	CLK (R)	0.23875	0.29373	1.38083
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13956	-0.22440	-1.22083
	setup	CLK (R)	0.23783	0.28994	1.37900
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13993	-0.22440	-1.21262
	setup	CLK (R)	0.22465	0.28301	1.37976

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)	-0.12850	-0.20413	-1.38064
	setup	CLK (R)	0.24886	0.30823	2.00989
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12886	-0.20179	-1.30688
	setup	CLK (R)	0.24274	0.30266	1.99989
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13014	-0.20518	-1.18713
	setup	CLK (R)	0.24305	0.30362	1.99792

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)	-0.13684	-0.22764	-1.22827
	hold	CLK (R)	-0.15008	-0.24054	-1.24601
	setup	CLK (R)	0.22986	0.28192	1.37154
	setup	CLK (R)	0.23875	0.29373	1.38083
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13956	-0.22440	-1.22083
	hold	CLK (R)	-0.14755	-0.23523	-1.23978
	setup	CLK (R)	0.22904	0.28081	1.36832
	setup	CLK (R)	0.23783	0.28994	1.37900
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13993	-0.22440	-1.21262
	hold	CLK (R)	-0.14875	-0.23445	-1.22216
	setup	CLK (R)	0.21919	0.27309	1.37320
	setup	CLK (R)	0.22465	0.28301	1.37976

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)	-0.13624	-0.20981	-1.39649
	hold	CLK (R)	-0.12850	-0.20413	-1.38064
	setup	CLK (R)	0.24886	0.30823	1.99775
	setup	CLK (R)	0.24810	0.30648	2.00989
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13592	-0.20731	-1.31920
	hold	CLK (R)	-0.12886	-0.20179	-1.30688
	setup	CLK (R)	0.24274	0.30266	1.98878
	setup	CLK (R)	0.24257	0.30138	1.99989
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13972	-0.21223	-1.21239
	hold	CLK (R)	-0.13014	-0.20518	-1.18713
	setup	CLK (R)	0.24305	0.30362	1.99296
	setup	CLK (R)	0.23851	0.29757	1.99792

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)	-0.11948	-0.17229	-0.14615
	setup	CLK (R)	0.25210	0.28396	1.55635
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11948	-0.16518	-0.12093
	setup	CLK (R)	0.24466	0.27934	1.57934
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11944	-0.17119	-0.07505
	setup	CLK (R)	0.24357	0.27387	1.58281

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)	-0.10748	-0.17139	-1.14063
	setup	CLK (R)	0.26198	0.32552	2.04848
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10428	-0.16441	-1.04302
	setup	CLK (R)	0.25625	0.31595	2.02623
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10619	-0.16479	-0.91800
	setup	CLK (R)	0.24459	0.31157	2.02714

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)	-0.14116	-0.17229	-0.14615
	hold	CLK (R)	-0.11948	-0.22778	-1.40854
	setup	CLK (R)	0.25210	0.26672	0.48996
	setup	CLK (R)	0.20941	0.28396	1.55635
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13979	-0.16518	-0.12093
	hold	CLK (R)	-0.11948	-0.22520	-1.42640
	setup	CLK (R)	0.24466	0.25724	0.48796
	setup	CLK (R)	0.20797	0.27934	1.57934
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14068	-0.17119	-0.07505
	hold	CLK (R)	-0.11944	-0.22273	-1.41642
	setup	CLK (R)	0.24357	0.25669	0.49020
	setup	CLK (R)	0.19856	0.27387	1.58281

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)	-0.17018	-0.27285	-1.96055
	hold	CLK (R)	-0.10748	-0.17139	-1.14063
	setup	CLK (R)	0.26198	0.32552	2.04848
	setup	CLK (R)	0.20807	0.26675	1.77189
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16668	-0.26746	-1.93538
	hold	CLK (R)	-0.10428	-0.16441	-1.04302
	setup	CLK (R)	0.25625	0.31595	2.02623
	setup	CLK (R)	0.19805	0.25353	1.71939
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16732	-0.26746	-1.93191
	hold	CLK (R)	-0.10619	-0.16479	-0.91800
	setup	CLK (R)	0.24459	0.31157	2.02714
	setup	CLK (R)	0.19803	0.25292	1.71861

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)	0.26235	0.29280	1.88076
	removal	CLK (R)	-0.18324	-0.22742	-1.66877
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.25872	0.28991	1.88031
	removal	CLK (R)	-0.18176	-0.22492	-1.66968
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.24652	0.28027	1.91229
	removal	CLK (R)	-0.17965	-0.22212	-1.66303

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)	0.25162	0.28228	1.88076
	recovery	CLK (R)	0.23818	0.26755	1.87091
	recovery	CLK (R)	0.23253	0.25902	1.86771
	recovery	CLK (R)	0.26235	0.29280	1.87422
	removal	CLK (R)	-0.20221	-0.25091	-1.70826
	removal	CLK (R)	-0.18946	-0.23523	-1.68215
	removal	CLK (R)	-0.18324	-0.22742	-1.66877
	removal	CLK (R)	-0.21134	-0.26319	-1.71349
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.25054	0.27966	1.87717
	recovery	CLK (R)	0.23581	0.26241	1.87304
	recovery	CLK (R)	0.23199	0.25334	1.86192
	recovery	CLK (R)	0.25872	0.28991	1.88031
	removal	CLK (R)	-0.20214	-0.24838	-1.70962
	removal	CLK (R)	-0.18772	-0.23272	-1.68274
	removal	CLK (R)	-0.18176	-0.22492	-1.66968
	removal	CLK (R)	-0.21024	-0.25816	-1.71698
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.23890	0.27422	1.90876
	recovery	CLK (R)	0.22636	0.25637	1.91229
	recovery	CLK (R)	0.22303	0.24842	1.90339
	recovery	CLK (R)	0.24652	0.28027	1.90638
	removal	CLK (R)	-0.19918	-0.24809	-1.70565
	removal	CLK (R)	-0.18527	-0.22992	-1.67679
	removal	CLK (R)	-0.17965	-0.22212	-1.66303
	removal	CLK (R)	-0.20547	-0.25739	-1.70996

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 ()	0.13362	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.10598	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.13362	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.11100	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.13362	0.67139	16.50020
	min_pulse_width	RESET_B ()	0.11100	0.67139	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 ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.07582	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.10095	0.67139	16.50020
	min_pulse_width	CLK ()	0.07582	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.11854	0.67139	16.50020
	min_pulse_width	CLK ()	0.08085	0.67139	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 ()	0.17634	0.67139	16.50020
	min_pulse_width	CLK ()	0.18136	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.18890	0.67139	16.50020
	min_pulse_width	CLK ()	0.18388	0.67139	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.17634	0.67139	16.50020
	min_pulse_width	CLK ()	0.18136	0.67139	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	0.03941	0.04661	0.17680
	CLK	0.03427	0.04149	0.17202
sky130_fd_sc_hs__sdfrtp_2	CLK	0.04295	0.05018	0.18082
	CLK	0.03765	0.04493	0.17623
sky130_fd_sc_hs__sdfrtp_4	CLK	0.05510	0.06150	0.19176
	CLK	0.04992	0.05640	0.18786

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.03429	0.04154	0.16810
	CLK	0.02925	0.03652	0.16268
	RESET_B	0.03001	0.03813	0.17257
	RESET_B	0.04164	0.04984	0.18369
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03880	0.04602	0.17258
	CLK	0.03384	0.04100	0.16683
	RESET_B	0.03512	0.04316	0.17675
	RESET_B	0.04680	0.05492	0.18858
sky130_fd_sc_hs__sdfrtp_4	CLK	0.04965	0.05648	0.18323
	CLK	0.04458	0.05144	0.17728
	RESET_B	0.04616	0.05395	0.19101
	RESET_B	0.05759	0.06550	0.19928

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)**	0.00424	0.00425	0.00427
	(CLK * RESET_B * SCD * SCE)	0.00229	0.00228	0.00232
	(CLK * RESET_B * SCD * !SCE)	0.00932	0.01152	0.06006
	(CLK * RESET_B * SCD * !SCE)	0.00543	0.00761	0.05617
	(CLK * RESET_B * !SCD * !SCE)	0.00972	0.01189	0.06024
	(CLK * RESET_B * !SCD * !SCE)	0.00583	0.00799	0.05634
	(CLK * !SCD * SCE)	0.00270	0.00270	0.00268
	(CLK * !SCD * SCE)	0.00044	0.00043	0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00267	0.00268	0.00266
	(CLK * !RESET_B * SCD * SCE)	0.00043	0.00042	0.00041
	(CLK * !RESET_B * SCD * !SCE)	0.00199	0.00199	0.00192
	(CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00022	-0.00033
	(CLK * !RESET_B * !SCD * !SCE)	0.00198	0.00199	0.00192
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00027	-0.00035
	(!CLK * RESET_B * SCD * SCE)	0.00424	0.00425	0.00427
	(!CLK * RESET_B * SCD * SCE)	0.00229	0.00228	0.00232
	(!CLK * RESET_B * SCD * !SCE)	0.01770	0.02062	0.08154
	(!CLK * RESET_B * SCD * !SCE)	0.01361	0.01651	0.07745
	(!CLK * RESET_B * !SCD * !SCE)	0.01808	0.02098	0.08171
	(!CLK * RESET_B * !SCD * !SCE)	0.01400	0.01688	0.07762
	(!CLK * !SCD * SCE)	0.00386	0.00386	0.00384
	(!CLK * !SCD * SCE)	0.00160	0.00159	0.00157
	(!CLK * !RESET_B * SCD * SCE)	0.00271	0.00271	0.00269
	(!CLK * !RESET_B * SCD * SCE)	0.00046	0.00045	0.00044
	(!CLK * !RESET_B * SCD * !SCE)	0.00203	0.00203	0.00195
	(!CLK * !RESET_B * SCD * !SCE)	-0.00017	-0.00018	-0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	0.00202	0.00202	0.00196
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00022	-0.00024	-0.00031

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00462	0.00463	0.00465
	(CLK * RESET_B * SCD * SCE)	0.00277	0.00276	0.00280
	(CLK * RESET_B * SCD * !SCE)	0.00877	0.01114	0.06015
	(CLK * RESET_B * SCD * !SCE)	0.00505	0.00740	0.05641
	(CLK * RESET_B * !SCD * !SCE)	0.00917	0.01151	0.06032
	(CLK * RESET_B * !SCD * !SCE)	0.00545	0.00778	0.05659
	(CLK * !SCD * SCE)	0.00311	0.00312	0.00310
	(CLK * !SCD * SCE)	0.00097	0.00095	0.00094
	(CLK * !RESET_B * SCD * SCE)	0.00309	0.00310	0.00308
	(CLK * !RESET_B * SCD * SCE)	0.00095	0.00094	0.00093
	(CLK * !RESET_B * SCD * !SCE)	0.00241	0.00242	0.00234
	(CLK * !RESET_B * SCD * !SCE)	0.00032	0.00031	0.00020
	(CLK * !RESET_B * !SCD * !SCE)	0.00240	0.00241	0.00235
	(CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00025	0.00018
	(!CLK * RESET_B * SCD * SCE)	0.00390	0.00391	0.00393
	(!CLK * RESET_B * SCD * SCE)	0.00205	0.00204	0.00207
	(!CLK * RESET_B * SCD * !SCE)	0.01668	0.01967	0.08087
	(!CLK * RESET_B * SCD * !SCE)	0.01277	0.01575	0.07694
	(!CLK * RESET_B * !SCD * !SCE)	0.01706	0.02004	0.08103
	(!CLK * RESET_B * !SCD * !SCE)	0.01315	0.01612	0.07711
	(!CLK * !SCD * SCE)	0.00355	0.00356	0.00353
	(!CLK * !SCD * SCE)	0.00140	0.00139	0.00138
	(!CLK * !RESET_B * SCD * SCE)	0.00312	0.00313	0.00311
	(!CLK * !RESET_B * SCD * SCE)	0.00099	0.00097	0.00096
	(!CLK * !RESET_B * SCD * !SCE)	0.00245	0.00245	0.00238
	(!CLK * !RESET_B * SCD * !SCE)	0.00036	0.00034	0.00023
	(!CLK * !RESET_B * !SCD * !SCE)	0.00244	0.00244	0.00238
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00029	0.00021

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00548	0.00550	0.00551
	(CLK * RESET_B * SCD * SCE)	0.00362	0.00362	0.00365
	(CLK * RESET_B * SCD * !SCE)	0.00971	0.01206	0.06103
	(CLK * RESET_B * SCD * !SCE)	0.00594	0.00828	0.05725
	(CLK * RESET_B * !SCD * !SCE)	0.01010	0.01243	0.06120
	(CLK * RESET_B * !SCD * !SCE)	0.00634	0.00866	0.05743
	(CLK * !SCD * SCE)	0.00397	0.00397	0.00395
	(CLK * !SCD * SCE)	0.00181	0.00180	0.00178
	(CLK * !RESET_B * SCD * SCE)	0.00394	0.00395	0.00392
	(CLK * !RESET_B * SCD * SCE)	0.00180	0.00179	0.00177
	(CLK * !RESET_B * SCD * !SCE)	0.00328	0.00328	0.00321
	(CLK * !RESET_B * SCD * !SCE)	0.00119	0.00117	0.00107
	(CLK * !RESET_B * !SCD * !SCE)	0.00327	0.00327	0.00321
	(CLK * !RESET_B * !SCD * !SCE)	0.00113	0.00112	0.00105
	(!CLK * RESET_B * SCD * SCE)	0.00510	0.00509	0.00512
	(!CLK * RESET_B * SCD * SCE)	0.00323	0.00324	0.00327
	(!CLK * RESET_B * SCD * !SCE)	0.01802	0.02107	0.08273
	(!CLK * RESET_B * SCD * !SCE)	0.01405	0.01708	0.07875
	(!CLK * RESET_B * !SCD * !SCE)	0.01840	0.02143	0.08290
	(!CLK * RESET_B * !SCD * !SCE)	0.01444	0.01745	0.07892
	(!CLK * !SCD * SCE)	0.00475	0.00476	0.00473
	(!CLK * !SCD * SCE)	0.00260	0.00259	0.00257
	(!CLK * !RESET_B * SCD * SCE)	0.00398	0.00398	0.00396
	(!CLK * !RESET_B * SCD * SCE)	0.00183	0.00182	0.00181
	(!CLK * !RESET_B * SCD * !SCE)	0.00331	0.00331	0.00324
	(!CLK * !RESET_B * SCD * !SCE)	0.00122	0.00121	0.00110
	(!CLK * !RESET_B * !SCD * !SCE)	0.00330	0.00331	0.00325
	(!CLK * !RESET_B * !SCD * !SCE)	0.00117	0.00115	0.00108

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)**	0.00195	0.00193	0.00180
	(CLK * RESET_B * SCD * SCE)	0.00392	0.00391	0.00377
	(CLK * RESET_B * SCD * !SCE)	0.00233	0.00512	0.05503
	(CLK * RESET_B * SCD * !SCE)	0.00622	0.00902	0.05892
	(CLK * RESET_B * !SCD * !SCE)	0.00233	0.00514	0.05524
	(CLK * RESET_B * !SCD * !SCE)	0.00621	0.00903	0.05913
	(CLK * !SCD * SCE)	0.00136	0.00136	0.00136
	(CLK * !SCD * SCE)	0.00361	0.00363	0.00362
	(CLK * !RESET_B * SCD * SCE)	0.00138	0.00137	0.00137
	(CLK * !RESET_B * SCD * SCE)	0.00361	0.00362	0.00362
	(CLK * !RESET_B * SCD * !SCE)	0.00111	0.00112	0.00112
	(CLK * !RESET_B * SCD * !SCE)	0.00337	0.00338	0.00337
	(CLK * !RESET_B * !SCD * !SCE)	0.00111	0.00111	0.00112
	(CLK * !RESET_B * !SCD * !SCE)	0.00337	0.00339	0.00337
	(!CLK * RESET_B * SCD * SCE)	0.00194	0.00193	0.00180
	(!CLK * RESET_B * SCD * SCE)	0.00392	0.00391	0.00377
	(!CLK * RESET_B * SCD * !SCE)	0.01293	0.01640	0.07717
	(!CLK * RESET_B * SCD * !SCE)	0.01702	0.02051	0.08127
	(!CLK * RESET_B * !SCD * !SCE)	0.01290	0.01642	0.07739
	(!CLK * RESET_B * !SCD * !SCE)	0.01698	0.02052	0.08148
	(!CLK * !SCD * SCE)	0.00254	0.00253	0.00253
	(!CLK * !SCD * SCE)	0.00479	0.00480	0.00479
	(!CLK * !RESET_B * SCD * SCE)	0.00141	0.00141	0.00141
	(!CLK * !RESET_B * SCD * SCE)	0.00365	0.00366	0.00365
	(!CLK * !RESET_B * SCD * !SCE)	0.00115	0.00115	0.00116
	(!CLK * !RESET_B * SCD * !SCE)	0.00340	0.00342	0.00340
	(!CLK * !RESET_B * !SCD * !SCE)	0.00115	0.00115	0.00115
	(!CLK * !RESET_B * !SCD * !SCE)	0.00340	0.00342	0.00340

sky130_fd_sc_hs__sdfrtp_2	(CLK * RESET_B * SCD * SCE)	0.00245	0.00244	0.00230
	(CLK * RESET_B * SCD * SCE)	0.00432	0.00431	0.00417
	(CLK * RESET_B * SCD * !SCE)	0.00282	0.00574	0.05602
	(CLK * RESET_B * SCD * !SCE)	0.00654	0.00947	0.05976
	(CLK * RESET_B * !SCD * !SCE)	0.00282	0.00576	0.05623
	(CLK * RESET_B * !SCD * !SCE)	0.00655	0.00949	0.05996
	(CLK * !SCD * SCE)	0.00182	0.00182	0.00182
	(CLK * !SCD * SCE)	0.00398	0.00398	0.00398
	(CLK * !RESET_B * SCD * SCE)	0.00183	0.00183	0.00184
	(CLK * !RESET_B * SCD * SCE)	0.00398	0.00398	0.00398
	(CLK * !RESET_B * SCD * !SCE)	0.00157	0.00157	0.00158
	(CLK * !RESET_B * SCD * !SCE)	0.00371	0.00373	0.00372
	(CLK * !RESET_B * !SCD * !SCE)	0.00157	0.00157	0.00157
	(CLK * !RESET_B * !SCD * !SCE)	0.00371	0.00374	0.00372
	(!CLK * RESET_B * SCD * SCE)	0.00173	0.00171	0.00158
	(!CLK * RESET_B * SCD * SCE)	0.00360	0.00359	0.00345
	(!CLK * RESET_B * SCD * !SCE)	0.01328	0.01679	0.07771
	(!CLK * RESET_B * SCD * !SCE)	0.01721	0.02071	0.08164
	(!CLK * RESET_B * !SCD * !SCE)	0.01329	0.01680	0.07793
	(!CLK * RESET_B * !SCD * !SCE)	0.01722	0.02072	0.08185
	(!CLK * !SCD * SCE)	0.00227	0.00227	0.00227
	(!CLK * !SCD * SCE)	0.00443	0.00443	0.00443
	(!CLK * !RESET_B * SCD * SCE)	0.00187	0.00187	0.00187
	(!CLK * !RESET_B * SCD * SCE)	0.00402	0.00402	0.00401
	(!CLK * !RESET_B * SCD * !SCE)	0.00161	0.00161	0.00161
	(!CLK * !RESET_B * SCD * !SCE)	0.00374	0.00377	0.00375
	(!CLK * !RESET_B * !SCD * !SCE)	0.00161	0.00160	0.00161
	(!CLK * !RESET_B * !SCD * !SCE)	0.00375	0.00377	0.00375

sky130_fd_sc_hs__sdfrtp_4	(CLK * RESET_B * SCD * SCE)	0.00331	0.00329	0.00316
	(CLK * RESET_B * SCD * SCE)	0.00517	0.00517	0.00503
	(CLK * RESET_B * SCD * !SCE)	0.00362	0.00654	0.05678
	(CLK * RESET_B * SCD * !SCE)	0.00738	0.01031	0.06055
	(CLK * RESET_B * !SCD * !SCE)	0.00361	0.00655	0.05698
	(CLK * RESET_B * !SCD * !SCE)	0.00739	0.01032	0.06076
	(CLK * !SCD * SCE)	0.00269	0.00268	0.00269
	(CLK * !SCD * SCE)	0.00485	0.00486	0.00485
	(CLK * !RESET_B * SCD * SCE)	0.00270	0.00270	0.00270
	(CLK * !RESET_B * SCD * SCE)	0.00485	0.00485	0.00485
	(CLK * !RESET_B * SCD * !SCE)	0.00242	0.00241	0.00242
	(CLK * !RESET_B * SCD * !SCE)	0.00456	0.00459	0.00456
	(CLK * !RESET_B * !SCD * !SCE)	0.00242	0.00241	0.00242
	(CLK * !RESET_B * !SCD * !SCE)	0.00456	0.00459	0.00457
	(!CLK * RESET_B * SCD * SCE)	0.00292	0.00291	0.00277
	(!CLK * RESET_B * SCD * SCE)	0.00479	0.00478	0.00465
	(!CLK * RESET_B * SCD * !SCE)	0.01414	0.01771	0.07906
	(!CLK * RESET_B * SCD * !SCE)	0.01810	0.02169	0.08304
	(!CLK * RESET_B * !SCD * !SCE)	0.01416	0.01773	0.07928
	(!CLK * RESET_B * !SCD * !SCE)	0.01814	0.02170	0.08325
	(!CLK * !SCD * SCE)	0.00349	0.00348	0.00349
	(!CLK * !SCD * SCE)	0.00564	0.00565	0.00565
	(!CLK * !RESET_B * SCD * SCE)	0.00274	0.00274	0.00274
	(!CLK * !RESET_B * SCD * SCE)	0.00489	0.00489	0.00488
	(!CLK * !RESET_B * SCD * !SCE)	0.00246	0.00245	0.00246
	(!CLK * !RESET_B * SCD * !SCE)	0.00459	0.00461	0.00460
	(!CLK * !RESET_B * !SCD * !SCE)	0.00245	0.00245	0.00245
	(!CLK * !RESET_B * !SCD * !SCE)	0.00460	0.00461	0.00460

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)	0.01136	0.01314	0.05963
	(CLK * D * RESET_B * SCE)	0.00630	0.00808	0.05458
	(CLK * D * RESET_B * !SCE)	0.00417	0.00397	0.00421
	(CLK * D * RESET_B * !SCE)	0.00152	0.00130	0.00157
	(CLK * D * !RESET_B * SCE)	0.00264	0.00264	0.00261
	(CLK * D * !RESET_B * SCE)	0.00041	0.00040	0.00041
	(CLK * D * !RESET_B * !SCE)	0.00194	0.00195	0.00196
	(CLK * D * !RESET_B * !SCE)	-0.00022	-0.00023	-0.00022
	(CLK * !D * RESET_B * SCE)	0.01262	0.01423	0.06014
	(CLK * !D * RESET_B * SCE)	0.00730	0.00890	0.05482
	(CLK * !D * !RESET_B * SCE)	0.00264	0.00264	0.00261
	(CLK * !D * !RESET_B * SCE)	0.00040	0.00040	0.00041
	(!D * RESET_B * !SCE)	0.00245	0.00245	0.00245
	(!D * RESET_B * !SCE)	-0.00020	-0.00020	-0.00019
	(!D * !RESET_B * !SCE)	0.00207	0.00207	0.00206
	(!D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00034
	(!CLK * D * RESET_B * SCE)	0.01982	0.02232	0.08013
	(!CLK * D * RESET_B * SCE)	0.01456	0.01705	0.07488
	(!CLK * D * RESET_B * !SCE)	0.00417	0.00397	0.00421
	(!CLK * D * RESET_B * !SCE)	0.00152	0.00130	0.00157
	(!CLK * D * !RESET_B * SCE)	0.00267	0.00267	0.00265
	(!CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00045
	(!CLK * D * !RESET_B * !SCE)	0.00198	0.00198	0.00199
	(!CLK * D * !RESET_B * !SCE)	-0.00019	-0.00020	-0.00018
	(!CLK * !D * RESET_B * SCE)	0.02113	0.02355	0.08107
	(!CLK * !D * RESET_B * SCE)	0.01561	0.01802	0.07556
	(!CLK * !D * !RESET_B * SCE)	0.00267	0.00268	0.00265
	(!CLK * !D * !RESET_B * SCE)	0.00044	0.00043	0.00045

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.01103	0.01289	0.05957
	(CLK * D * RESET_B * SCE)	0.00606	0.00790	0.05458
	(CLK * D * RESET_B * !SCE)	0.00464	0.00442	0.00466
	(CLK * D * RESET_B * !SCE)	0.00200	0.00178	0.00203
	(CLK * D * !RESET_B * SCE)	0.00304	0.00304	0.00301
	(CLK * D * !RESET_B * SCE)	0.00082	0.00081	0.00082
	(CLK * D * !RESET_B * !SCE)	0.00237	0.00238	0.00238
	(CLK * D * !RESET_B * !SCE)	0.00021	0.00020	0.00022
	(CLK * !D * RESET_B * SCE)	0.01229	0.01395	0.06007
	(CLK * !D * RESET_B * SCE)	0.00706	0.00869	0.05481
	(CLK * !D * !RESET_B * SCE)	0.00304	0.00304	0.00301
	(CLK * !D * !RESET_B * SCE)	0.00082	0.00081	0.00082
	(!D * RESET_B * !SCE)	0.00287	0.00289	0.00287
	(!D * RESET_B * !SCE)	0.00025	0.00022	0.00024
	(!D * !RESET_B * !SCE)	0.00249	0.00250	0.00249
	(!D * !RESET_B * !SCE)	0.00008	0.00007	0.00009
	(!CLK * D * RESET_B * SCE)	0.01901	0.02151	0.07934
	(!CLK * D * RESET_B * SCE)	0.01386	0.01633	0.07416
	(!CLK * D * RESET_B * !SCE)	0.00392	0.00370	0.00394
	(!CLK * D * RESET_B * !SCE)	0.00128	0.00105	0.00131
	(!CLK * D * !RESET_B * SCE)	0.00307	0.00307	0.00305
	(!CLK * D * !RESET_B * SCE)	0.00085	0.00084	0.00086
	(!CLK * D * !RESET_B * !SCE)	0.00241	0.00241	0.00242
	(!CLK * D * !RESET_B * !SCE)	0.00025	0.00024	0.00025
	(!CLK * !D * RESET_B * SCE)	0.02030	0.02269	0.08024
	(!CLK * !D * RESET_B * SCE)	0.01488	0.01724	0.07480
	(!CLK * !D * !RESET_B * SCE)	0.00307	0.00307	0.00305
	(!CLK * !D * !RESET_B * SCE)	0.00085	0.00084	0.00085

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.01192	0.01378	0.06050
	(CLK * D * RESET_B * SCE)	0.00692	0.00877	0.05550
	(CLK * D * RESET_B * !SCE)	0.00547	0.00525	0.00549
	(CLK * D * RESET_B * !SCE)	0.00286	0.00263	0.00289
	(CLK * D * !RESET_B * SCE)	0.00389	0.00389	0.00387
	(CLK * D * !RESET_B * SCE)	0.00171	0.00170	0.00171
	(CLK * D * !RESET_B * !SCE)	0.00323	0.00324	0.00324
	(CLK * D * !RESET_B * !SCE)	0.00110	0.00109	0.00111
	(CLK * !D * RESET_B * SCE)	0.01318	0.01485	0.06101
	(CLK * !D * RESET_B * SCE)	0.00793	0.00958	0.05574
	(CLK * !D * !RESET_B * SCE)	0.00389	0.00389	0.00387
	(CLK * !D * !RESET_B * SCE)	0.00170	0.00169	0.00171
	(!D * RESET_B * !SCE)	0.00372	0.00374	0.00373
	(!D * RESET_B * !SCE)	0.00113	0.00111	0.00113
	(!D * !RESET_B * !SCE)	0.00335	0.00336	0.00335
	(!D * !RESET_B * !SCE)	0.00097	0.00096	0.00098
	(!CLK * D * RESET_B * SCE)	0.02032	0.02289	0.08134
	(!CLK * D * RESET_B * SCE)	0.01514	0.01768	0.07614
	(!CLK * D * RESET_B * !SCE)	0.00508	0.00487	0.00511
	(!CLK * D * RESET_B * !SCE)	0.00248	0.00225	0.00251
	(!CLK * D * !RESET_B * SCE)	0.00392	0.00393	0.00390
	(!CLK * D * !RESET_B * SCE)	0.00174	0.00173	0.00174
	(!CLK * D * !RESET_B * !SCE)	0.00327	0.00327	0.00328
	(!CLK * D * !RESET_B * !SCE)	0.00113	0.00112	0.00114
	(!CLK * !D * RESET_B * SCE)	0.02160	0.02410	0.08212
	(!CLK * !D * RESET_B * SCE)	0.01615	0.01863	0.07666
	(!CLK * !D * !RESET_B * SCE)	0.00392	0.00393	0.00390
	(!CLK * !D * !RESET_B * SCE)	0.00174	0.00173	0.00174

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)	0.00454	0.00650	0.05407
	(CLK * D * RESET_B * SCE)	0.00961	0.01157	0.05910
	(CLK * D * RESET_B * !SCE)	0.00194	0.00191	0.00185
	(CLK * D * RESET_B * !SCE)	0.00459	0.00459	0.00450
	(CLK * D * !RESET_B * SCE)	0.00144	0.00144	0.00143
	(CLK * D * !RESET_B * SCE)	0.00364	0.00364	0.00361
	(CLK * D * !RESET_B * !SCE)	0.00111	0.00110	0.00109
	(CLK * D * !RESET_B * !SCE)	0.00329	0.00330	0.00328
	(CLK * !D * RESET_B * SCE)	0.00403	0.00611	0.05398
	(CLK * !D * RESET_B * SCE)	0.00936	0.01145	0.05927
	(CLK * !D * !RESET_B * SCE)	0.00144	0.00144	0.00143
	(CLK * !D * !RESET_B * SCE)	0.00364	0.00364	0.00361
	(!D * RESET_B * !SCE)	0.00069	0.00061	0.00059
	(!D * RESET_B * !SCE)	0.00334	0.00328	0.00324
	(!D * !RESET_B * !SCE)	0.00099	0.00097	0.00094
	(!D * !RESET_B * !SCE)	0.00349	0.00347	0.00340
	(!CLK * D * RESET_B * SCE)	0.01551	0.01787	0.07422
	(!CLK * D * RESET_B * SCE)	0.02078	0.02315	0.07945
	(!CLK * D * RESET_B * !SCE)	0.00194	0.00191	0.00184
	(!CLK * D * RESET_B * !SCE)	0.00458	0.00459	0.00450
	(!CLK * D * !RESET_B * SCE)	0.00147	0.00147	0.00147
	(!CLK * D * !RESET_B * SCE)	0.00368	0.00367	0.00365
	(!CLK * D * !RESET_B * !SCE)	0.00114	0.00114	0.00112
	(!CLK * D * !RESET_B * !SCE)	0.00332	0.00333	0.00331
	(!CLK * !D * RESET_B * SCE)	0.01520	0.01777	0.07488
	(!CLK * !D * RESET_B * SCE)	0.02073	0.02331	0.08038
	(!CLK * !D * !RESET_B * SCE)	0.00147	0.00147	0.00147
	(!CLK * !D * !RESET_B * SCE)	0.00368	0.00367	0.00365

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00496	0.00695	0.05466
	(CLK * D * RESET_B * SCE)	0.00996	0.01195	0.05961
	(CLK * D * RESET_B * !SCE)	0.00237	0.00234	0.00227
	(CLK * D * RESET_B * !SCE)	0.00500	0.00501	0.00492
	(CLK * D * !RESET_B * SCE)	0.00192	0.00192	0.00191
	(CLK * D * !RESET_B * SCE)	0.00411	0.00411	0.00408
	(CLK * D * !RESET_B * !SCE)	0.00156	0.00155	0.00154
	(CLK * D * !RESET_B * !SCE)	0.00374	0.00375	0.00372
	(CLK * !D * RESET_B * SCE)	0.00445	0.00657	0.05457
	(CLK * !D * RESET_B * SCE)	0.00971	0.01184	0.05980
	(CLK * !D * !RESET_B * SCE)	0.00191	0.00192	0.00191
	(CLK * !D * !RESET_B * SCE)	0.00411	0.00411	0.00408
	(!D * RESET_B * !SCE)	0.00115	0.00106	0.00105
	(!D * RESET_B * !SCE)	0.00378	0.00373	0.00368
	(!D * !RESET_B * !SCE)	0.00144	0.00142	0.00139
	(!D * !RESET_B * !SCE)	0.00393	0.00392	0.00385
	(!CLK * D * RESET_B * SCE)	0.01575	0.01817	0.07448
	(!CLK * D * RESET_B * SCE)	0.02094	0.02336	0.07963
	(!CLK * D * RESET_B * !SCE)	0.00165	0.00162	0.00155
	(!CLK * D * RESET_B * !SCE)	0.00428	0.00429	0.00420
	(!CLK * D * !RESET_B * SCE)	0.00195	0.00195	0.00194
	(!CLK * D * !RESET_B * SCE)	0.00415	0.00415	0.00412
	(!CLK * D * !RESET_B * !SCE)	0.00159	0.00159	0.00158
	(!CLK * D * !RESET_B * !SCE)	0.00377	0.00379	0.00376
	(!CLK * !D * RESET_B * SCE)	0.01552	0.01808	0.07514
	(!CLK * !D * RESET_B * SCE)	0.02096	0.02353	0.08056
	(!CLK * !D * !RESET_B * SCE)	0.00195	0.00195	0.00194
	(!CLK * !D * !RESET_B * SCE)	0.00415	0.00414	0.00412

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00586	0.00785	0.05558
	(CLK * D * RESET_B * SCE)	0.01087	0.01286	0.06055
	(CLK * D * RESET_B * !SCE)	0.00325	0.00323	0.00316
	(CLK * D * RESET_B * !SCE)	0.00586	0.00586	0.00577
	(CLK * D * !RESET_B * SCE)	0.00278	0.00278	0.00277
	(CLK * D * !RESET_B * SCE)	0.00494	0.00494	0.00491
	(CLK * D * !RESET_B * !SCE)	0.00242	0.00241	0.00240
	(CLK * D * !RESET_B * !SCE)	0.00457	0.00458	0.00455
	(CLK * !D * RESET_B * SCE)	0.00527	0.00740	0.05544
	(CLK * !D * RESET_B * SCE)	0.01054	0.01268	0.06069
	(CLK * !D * !RESET_B * SCE)	0.00277	0.00278	0.00277
	(CLK * !D * !RESET_B * SCE)	0.00494	0.00493	0.00491
	(!D * RESET_B * !SCE)	0.00201	0.00192	0.00191
	(!D * RESET_B * !SCE)	0.00461	0.00456	0.00451
	(!D * !RESET_B * !SCE)	0.00230	0.00228	0.00225
	(!D * !RESET_B * !SCE)	0.00476	0.00475	0.00468
	(!CLK * D * RESET_B * SCE)	0.01675	0.01922	0.07590
	(!CLK * D * RESET_B * SCE)	0.02196	0.02444	0.08108
	(!CLK * D * RESET_B * !SCE)	0.00287	0.00284	0.00277
	(!CLK * D * RESET_B * !SCE)	0.00547	0.00548	0.00539
	(!CLK * D * !RESET_B * SCE)	0.00281	0.00281	0.00280
	(!CLK * D * !RESET_B * SCE)	0.00498	0.00497	0.00495
	(!CLK * D * !RESET_B * !SCE)	0.00245	0.00245	0.00244
	(!CLK * D * !RESET_B * !SCE)	0.00460	0.00461	0.00459
	(!CLK * !D * RESET_B * SCE)	0.01643	0.01904	0.07651
	(!CLK * !D * RESET_B * SCE)	0.02190	0.02452	0.08196
	(!CLK * !D * !RESET_B * SCE)	0.00281	0.00281	0.00280
	(!CLK * !D * !RESET_B * SCE)	0.00498	0.00497	0.00495

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)	0.00914	0.01300	0.08304
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00247	0.00628	0.07635
	(CLK * D * RESET_B * !SCD)	0.01100	0.01517	0.08926
	(CLK * D * RESET_B * !SCD)	0.00652	0.01068	0.08474
	(CLK * !D * RESET_B * SCD)	0.01577	0.02193	0.13750
	(CLK * !D * RESET_B * SCD)	0.00710	0.01327	0.12882
	(!CLK * D * RESET_B * SCD)	0.00914	0.01299	0.08303
	(!CLK * D * RESET_B * SCD)	0.00247	0.00628	0.07635
	(!CLK * D * RESET_B * !SCD)	0.02180	0.02591	0.10033
	(!CLK * D * RESET_B * !SCD)	0.01752	0.02164	0.09602
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00814	0.01224	0.08211
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00182	0.00589	0.07579
	(!CLK * !D * RESET_B * SCD)	0.02420	0.03137	0.16061
	(!CLK * !D * RESET_B * SCD)	0.01532	0.02247	0.15172

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00962	0.01352	0.08413
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00281	0.00673	0.07736
	(CLK * D * RESET_B * !SCD)	0.01135	0.01562	0.09029
	(CLK * D * RESET_B * !SCD)	0.00674	0.01099	0.08563
	(CLK * !D * RESET_B * SCD)	0.01539	0.02180	0.13898
	(CLK * !D * RESET_B * SCD)	0.00671	0.01307	0.13029
	(!CLK * D * RESET_B * SCD)	0.00890	0.01280	0.08340
	(!CLK * D * RESET_B * SCD)	0.00209	0.00601	0.07664
	(!CLK * D * RESET_B * !SCD)	0.02202	0.02623	0.10116
	(!CLK * D * RESET_B * !SCD)	0.01760	0.02179	0.09670
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00853	0.01267	0.08308
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00210	0.00624	0.07668
	(!CLK * !D * RESET_B * SCD)	0.02334	0.03065	0.16122
	(!CLK * !D * RESET_B * SCD)	0.01447	0.02175	0.15233

sky130_fd_sc_hs__sdfrtp_4	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01049	0.01440	0.08501
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00367	0.00759	0.07823
	(CLK * D * RESET_B * !SCD)	0.01224	0.01652	0.09118
	(CLK * D * RESET_B * !SCD)	0.00766	0.01192	0.08655
	(CLK * !D * RESET_B * SCD)	0.01632	0.02272	0.13995
	(CLK * !D * RESET_B * SCD)	0.00758	0.01394	0.13120
	(!CLK * D * RESET_B * SCD)	0.01011	0.01401	0.08462
	(!CLK * D * RESET_B * SCD)	0.00328	0.00720	0.07784
	(!CLK * D * RESET_B * !SCD)	0.02301	0.02723	0.10221
	(!CLK * D * RESET_B * !SCD)	0.01863	0.02283	0.09779
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00936	0.01351	0.08394
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00298	0.00709	0.07753
	(!CLK * !D * RESET_B * SCD)	0.02467	0.03205	0.16318
	(!CLK * !D * RESET_B * SCD)	0.01573	0.02307	0.15422

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)**	0.00231	0.00687	0.07738
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00902	0.01359	0.08408
	(CLK * D * RESET_B * !SCD)	0.00947	0.01374	0.08615
	(CLK * D * RESET_B * !SCD)	0.01396	0.01824	0.09048
	(CLK * !D * RESET_B * SCD)	0.00288	0.00946	0.12659
	(CLK * !D * RESET_B * SCD)	0.01156	0.01814	0.13528
	(!CLK * D * RESET_B * SCD)	0.00232	0.00687	0.07738
	(!CLK * D * RESET_B * SCD)	0.00901	0.01359	0.08407
	(!CLK * D * RESET_B * !SCD)	0.01784	0.02227	0.09566
	(!CLK * D * RESET_B * !SCD)	0.02212	0.02657	0.09978
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00120	0.00569	0.07602
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00750	0.01204	0.08233
	(!CLK * !D * RESET_B * SCD)	0.01344	0.02047	0.14640
	(!CLK * !D * RESET_B * SCD)	0.02232	0.02935	0.15530

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00263	0.00725	0.07832
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00941	0.01404	0.08509
	(CLK * D * RESET_B * !SCD)	0.00886	0.01321	0.08629
	(CLK * D * RESET_B * !SCD)	0.01349	0.01787	0.09075
	(CLK * !D * RESET_B * SCD)	0.00331	0.01008	0.12887
	(CLK * !D * RESET_B * SCD)	0.01201	0.01879	0.13759
	(!CLK * D * RESET_B * SCD)	0.00191	0.00653	0.07760
	(!CLK * D * RESET_B * SCD)	0.00869	0.01332	0.08436
	(!CLK * D * RESET_B * !SCD)	0.01674	0.02126	0.09522
	(!CLK * D * RESET_B * !SCD)	0.02119	0.02570	0.09947
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00159	0.00614	0.07705
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00797	0.01256	0.08344
	(!CLK * !D * RESET_B * SCD)	0.01373	0.02088	0.14830
	(!CLK * !D * RESET_B * SCD)	0.02262	0.02981	0.15720

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00345	0.00808	0.07915
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01024	0.01488	0.08593
	(CLK * D * RESET_B * !SCD)	0.00974	0.01409	0.08717
	(CLK * D * RESET_B * !SCD)	0.01435	0.01872	0.09159
	(CLK * !D * RESET_B * SCD)	0.00410	0.01087	0.12971
	(CLK * !D * RESET_B * SCD)	0.01285	0.01962	0.13848
	(!CLK * D * RESET_B * SCD)	0.00307	0.00769	0.07877
	(!CLK * D * RESET_B * SCD)	0.00986	0.01450	0.08554
	(!CLK * D * RESET_B * !SCD)	0.01804	0.02255	0.09656
	(!CLK * D * RESET_B * !SCD)	0.02245	0.02696	0.10078
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00243	0.00699	0.07791
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00884	0.01342	0.08431
	(!CLK * !D * RESET_B * SCD)	0.01459	0.02179	0.14962
	(!CLK * !D * RESET_B * SCD)	0.02354	0.03078	0.15860

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)**	0.01468	0.01666	0.07791
	(CLK * D * SCD * SCE * !Q)	0.00325	0.00518	0.06645
	(CLK * D * SCD * !SCE * !Q)	0.01402	0.01605	0.07768
	(CLK * D * SCD * !SCE * !Q)	0.00301	0.00500	0.06666
	(CLK * D * !SCD * SCE * !Q)	0.00557	0.00564	0.00560
	(CLK * D * !SCD * SCE * !Q)	-0.00280	-0.00285	-0.00282
	(CLK * D * !SCD * !SCE * !Q)	0.01386	0.01609	0.07766
	(CLK * D * !SCD * !SCE * !Q)	0.00341	0.00558	0.06721
	(CLK * !D * SCD * SCE * !Q)	0.01595	0.01776	0.07843
	(CLK * !D * SCD * SCE * !Q)	0.00425	0.00601	0.06669
	(CLK * !D * SCD * !SCE * !Q)	0.00505	0.00507	0.00507
	(CLK * !D * SCD * !SCE * !Q)	-0.00332	-0.00334	-0.00333
	(CLK * !D * !SCD * SCE * !Q)	0.00557	0.00564	0.00559
	(CLK * !D * !SCD * SCE * !Q)	-0.00280	-0.00285	-0.00282
	(CLK * !D * !SCD * !SCE * !Q)	0.00506	0.00509	0.00507
	(CLK * !D * !SCD * !SCE * !Q)	-0.00334	-0.00336	-0.00334
	(!CLK * D * SCD * SCE * !Q)	0.02393	0.02643	0.11224
	(!CLK * D * SCD * SCE * !Q)	0.01229	0.01474	0.10058
	(!CLK * D * SCD * !SCE * !Q)	0.02318	0.02571	0.11237
	(!CLK * D * SCD * !SCE * !Q)	0.01198	0.01451	0.10119
	(!CLK * D * !SCD * SCE * !Q)	0.00563	0.00566	0.00564
	(!CLK * D * !SCD * SCE * !Q)	-0.00277	-0.00279	-0.00277
	(!CLK * D * !SCD * !SCE * !Q)	0.02302	0.02570	0.11219
	(!CLK * D * !SCD * !SCE * !Q)	0.01237	0.01505	0.10153
	(!CLK * !D * SCD * SCE * !Q)	0.02524	0.02754	0.11287
	(!CLK * !D * SCD * SCE * !Q)	0.01333	0.01559	0.10096
	(!CLK * !D * SCD * !SCE * !Q)	0.00510	0.00512	0.00511
	(!CLK * !D * SCD * !SCE * !Q)	-0.00328	-0.00329	-0.00328
	(!CLK * !D * !SCD * SCE * !Q)	0.00563	0.00566	0.00564
	(!CLK * !D * !SCD * SCE * !Q)	-0.00277	-0.00279	-0.00277
	(!CLK * !D * !SCD * !SCE * !Q)	0.00511	0.00514	0.00512
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00329	-0.00331	-0.00329

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.01434	0.01645	0.07794
	(CLK * D * SCD * SCE * !Q)	0.00293	0.00499	0.06652
	(CLK * D * SCD * !SCE * !Q)	0.01350	0.01570	0.07761
	(CLK * D * SCD * !SCE * !Q)	0.00252	0.00468	0.06662
	(CLK * D * !SCD * SCE * !Q)	0.00602	0.00606	0.00604
	(CLK * D * !SCD * SCE * !Q)	-0.00239	-0.00242	-0.00240
	(CLK * D * !SCD * !SCE * !Q)	0.01334	0.01572	0.07759
	(CLK * D * !SCD * !SCE * !Q)	0.00292	0.00528	0.06718
	(CLK * !D * SCD * SCE * !Q)	0.01561	0.01751	0.07846
	(CLK * !D * SCD * SCE * !Q)	0.00393	0.00582	0.06676
	(CLK * !D * SCD * !SCE * !Q)	0.00550	0.00552	0.00551
	(CLK * !D * SCD * !SCE * !Q)	-0.00292	-0.00293	-0.00291
	(CLK * !D * !SCD * SCE * !Q)	0.00602	0.00608	0.00604
	(CLK * !D * !SCD * SCE * !Q)	-0.00239	-0.00244	-0.00241
	(CLK * !D * !SCD * !SCE * !Q)	0.00552	0.00553	0.00551
	(CLK * !D * !SCD * !SCE * !Q)	-0.00294	-0.00294	-0.00292
	(!CLK * D * SCD * SCE * !Q)	0.02388	0.02646	0.11236
	(!CLK * D * SCD * SCE * !Q)	0.01228	0.01482	0.10075
	(!CLK * D * SCD * !SCE * !Q)	0.02296	0.02556	0.11237
	(!CLK * D * SCD * !SCE * !Q)	0.01180	0.01440	0.10123
	(!CLK * D * !SCD * SCE * !Q)	0.00605	0.00609	0.00606
	(!CLK * D * !SCD * SCE * !Q)	-0.00238	-0.00241	-0.00238
	(!CLK * D * !SCD * !SCE * !Q)	0.02278	0.02560	0.11220
	(!CLK * D * !SCD * !SCE * !Q)	0.01218	0.01496	0.10160
	(!CLK * !D * SCD * SCE * !Q)	0.02519	0.02754	0.11298
	(!CLK * !D * SCD * SCE * !Q)	0.01332	0.01567	0.10114
	(!CLK * !D * SCD * !SCE * !Q)	0.00552	0.00554	0.00553
	(!CLK * !D * SCD * !SCE * !Q)	-0.00290	-0.00291	-0.00289
	(!CLK * !D * !SCD * SCE * !Q)	0.00605	0.00608	0.00606
	(!CLK * !D * !SCD * SCE * !Q)	-0.00239	-0.00240	-0.00239
	(!CLK * !D * !SCD * !SCE * !Q)	0.00553	0.00556	0.00554
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00290	-0.00292	-0.00290

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01522	0.01734	0.07885
	(CLK * D * SCD * SCE * !Q)	0.00387	0.00592	0.06744
	(CLK * D * SCD * !SCE * !Q)	0.01439	0.01656	0.07848
	(CLK * D * SCD * !SCE * !Q)	0.00345	0.00559	0.06752
	(CLK * D * !SCD * SCE * !Q)	0.00683	0.00689	0.00685
	(CLK * D * !SCD * SCE * !Q)	-0.00150	-0.00156	-0.00152
	(CLK * D * !SCD * !SCE * !Q)	0.01423	0.01659	0.07847
	(CLK * D * !SCD * !SCE * !Q)	0.00385	0.00620	0.06808
	(CLK * !D * SCD * SCE * !Q)	0.01651	0.01842	0.07937
	(CLK * !D * SCD * SCE * !Q)	0.00486	0.00674	0.06770
	(CLK * !D * SCD * !SCE * !Q)	0.00633	0.00634	0.00632
	(CLK * !D * SCD * !SCE * !Q)	-0.00205	-0.00205	-0.00203
	(CLK * !D * !SCD * SCE * !Q)	0.00683	0.00689	0.00685
	(CLK * !D * !SCD * SCE * !Q)	-0.00150	-0.00156	-0.00152
	(CLK * !D * !SCD * !SCE * !Q)	0.00629	0.00634	0.00632
	(CLK * !D * !SCD * !SCE * !Q)	-0.00201	-0.00206	-0.00204
	(!CLK * D * SCD * SCE * !Q)	0.02476	0.02739	0.11368
	(!CLK * D * SCD * SCE * !Q)	0.01319	0.01579	0.10209
	(!CLK * D * SCD * !SCE * !Q)	0.02383	0.02640	0.11370
	(!CLK * D * SCD * !SCE * !Q)	0.01271	0.01529	0.10255
	(!CLK * D * !SCD * SCE * !Q)	0.00685	0.00688	0.00686
	(!CLK * D * !SCD * SCE * !Q)	-0.00151	-0.00153	-0.00151
	(!CLK * D * !SCD * !SCE * !Q)	0.02367	0.02651	0.11348
	(!CLK * D * !SCD * !SCE * !Q)	0.01309	0.01593	0.10292
	(!CLK * !D * SCD * SCE * !Q)	0.02605	0.02846	0.11431
	(!CLK * !D * SCD * SCE * !Q)	0.01422	0.01660	0.10246
	(!CLK * !D * SCD * !SCE * !Q)	0.00634	0.00634	0.00633
	(!CLK * !D * SCD * !SCE * !Q)	-0.00204	-0.00203	-0.00202
	(!CLK * !D * !SCD * SCE * !Q)	0.00685	0.00688	0.00686
	(!CLK * !D * !SCD * SCE * !Q)	-0.00151	-0.00152	-0.00151
	(!CLK * !D * !SCD * !SCE * !Q)	0.00630	0.00635	0.00633
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00200	-0.00204	-0.00203

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)**	0.00329	0.00651	0.06954
	(CLK * D * SCD * SCE * !Q)	0.01477	0.01802	0.08094
	(CLK * D * SCD * !SCE * !Q)	0.00151	0.00471	0.06775
	(CLK * D * SCD * !SCE * !Q)	0.01254	0.01580	0.07874
	(CLK * D * !SCD * SCE * !Q)	-0.00134	-0.00154	-0.00155
	(CLK * D * !SCD * SCE * !Q)	0.00702	0.00692	0.00687
	(CLK * D * !SCD * !SCE * !Q)	0.00115	0.00452	0.06792
	(CLK * D * !SCD * !SCE * !Q)	0.01161	0.01499	0.07836
	(CLK * !D * SCD * SCE * !Q)	0.00279	0.00616	0.06943
	(CLK * !D * SCD * SCE * !Q)	0.01452	0.01791	0.08112
	(CLK * !D * SCD * !SCE * !Q)	-0.00178	-0.00202	-0.00203
	(CLK * !D * SCD * !SCE * !Q)	0.00657	0.00644	0.00638
	(CLK * !D * !SCD * SCE * !Q)	-0.00135	-0.00154	-0.00155
	(CLK * !D * !SCD * SCE * !Q)	0.00701	0.00692	0.00686
	(CLK * !D * !SCD * !SCE * !Q)	-0.00180	-0.00203	-0.00204
	(CLK * !D * !SCD * !SCE * !Q)	0.00657	0.00644	0.00638
	(!CLK * D * SCD * SCE * !Q)	0.01148	0.01589	0.10708
	(!CLK * D * SCD * SCE * !Q)	0.02315	0.02759	0.11871
	(!CLK * D * SCD * !SCE * !Q)	0.00965	0.01394	0.10487
	(!CLK * D * SCD * !SCE * !Q)	0.02088	0.02519	0.11606
	(!CLK * D * !SCD * SCE * !Q)	-0.00138	-0.00153	-0.00154
	(!CLK * D * !SCD * SCE * !Q)	0.00698	0.00692	0.00688
	(!CLK * D * !SCD * !SCE * !Q)	0.00928	0.01357	0.10498
	(!CLK * D * !SCD * !SCE * !Q)	0.01993	0.02426	0.11562
	(!CLK * !D * SCD * SCE * !Q)	0.01098	0.01563	0.10746
	(!CLK * !D * SCD * SCE * !Q)	0.02291	0.02757	0.11933
	(!CLK * !D * SCD * !SCE * !Q)	-0.00181	-0.00200	-0.00202
	(!CLK * !D * SCD * !SCE * !Q)	0.00653	0.00643	0.00639
	(!CLK * !D * !SCD * SCE * !Q)	-0.00139	-0.00153	-0.00154
	(!CLK * !D * !SCD * SCE * !Q)	0.00697	0.00691	0.00688
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00184	-0.00202	-0.00203
	(!CLK * !D * !SCD * !SCE * !Q)	0.00653	0.00643	0.00639

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00361	0.00691	0.07008
	(CLK * D * SCD * SCE * !Q)	0.01505	0.01840	0.08148
	(CLK * D * SCD * !SCE * !Q)	0.00192	0.00522	0.06840
	(CLK * D * SCD * !SCE * !Q)	0.01291	0.01625	0.07936
	(CLK * D * !SCD * SCE * !Q)	-0.00091	-0.00110	-0.00112
	(CLK * D * !SCD * SCE * !Q)	0.00749	0.00740	0.00734
	(CLK * D * !SCD * !SCE * !Q)	0.00156	0.00505	0.06858
	(CLK * D * !SCD * !SCE * !Q)	0.01199	0.01546	0.07898
	(CLK * !D * SCD * SCE * !Q)	0.00310	0.00656	0.06999
	(CLK * !D * SCD * SCE * !Q)	0.01480	0.01831	0.08163
	(CLK * !D * SCD * !SCE * !Q)	-0.00134	-0.00158	-0.00160
	(CLK * !D * SCD * !SCE * !Q)	0.00704	0.00691	0.00684
	(CLK * !D * !SCD * SCE * !Q)	-0.00092	-0.00111	-0.00112
	(CLK * !D * !SCD * SCE * !Q)	0.00748	0.00740	0.00733
	(CLK * !D * !SCD * !SCE * !Q)	-0.00137	-0.00159	-0.00161
	(CLK * !D * !SCD * !SCE * !Q)	0.00704	0.00691	0.00684
	(!CLK * D * SCD * SCE * !Q)	0.01245	0.01695	0.10799
	(!CLK * D * SCD * SCE * !Q)	0.02407	0.02860	0.11958
	(!CLK * D * SCD * !SCE * !Q)	0.01072	0.01508	0.10587
	(!CLK * D * SCD * !SCE * !Q)	0.02190	0.02630	0.11701
	(!CLK * D * !SCD * SCE * !Q)	-0.00092	-0.00107	-0.00108
	(!CLK * D * !SCD * SCE * !Q)	0.00747	0.00742	0.00738
	(!CLK * D * !SCD * !SCE * !Q)	0.01035	0.01474	0.10599
	(!CLK * D * !SCD * !SCE * !Q)	0.02095	0.02538	0.11658
	(!CLK * !D * SCD * SCE * !Q)	0.01197	0.01669	0.10839
	(!CLK * !D * SCD * SCE * !Q)	0.02385	0.02859	0.12024
	(!CLK * !D * SCD * !SCE * !Q)	-0.00135	-0.00155	-0.00156
	(!CLK * !D * SCD * !SCE * !Q)	0.00702	0.00694	0.00688
	(!CLK * !D * !SCD * SCE * !Q)	-0.00093	-0.00108	-0.00108
	(!CLK * !D * !SCD * SCE * !Q)	0.00746	0.00742	0.00737
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00138	-0.00156	-0.00157
	(!CLK * !D * !SCD * !SCE * !Q)	0.00702	0.00694	0.00688

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00449	0.00779	0.07094
	(CLK * D * SCD * SCE * !Q)	0.01590	0.01925	0.08230
	(CLK * D * SCD * !SCE * !Q)	0.00279	0.00610	0.06925
	(CLK * D * SCD * !SCE * !Q)	0.01376	0.01706	0.08017
	(CLK * D * !SCD * SCE * !Q)	-0.00000	-0.00020	-0.00021
	(CLK * D * !SCD * SCE * !Q)	0.00832	0.00822	0.00817
	(CLK * D * !SCD * !SCE * !Q)	0.00244	0.00589	0.06942
	(CLK * D * !SCD * !SCE * !Q)	0.01283	0.01633	0.07979
	(CLK * !D * SCD * SCE * !Q)	0.00390	0.00737	0.07080
	(CLK * !D * SCD * SCE * !Q)	0.01557	0.01908	0.08241
	(CLK * !D * SCD * !SCE * !Q)	-0.00044	-0.00067	-0.00069
	(CLK * !D * SCD * !SCE * !Q)	0.00787	0.00773	0.00767
	(CLK * !D * !SCD * SCE * !Q)	-0.00001	-0.00020	-0.00021
	(CLK * !D * !SCD * SCE * !Q)	0.00831	0.00821	0.00816
	(CLK * !D * !SCD * !SCE * !Q)	-0.00046	-0.00068	-0.00070
	(CLK * !D * !SCD * !SCE * !Q)	0.00787	0.00773	0.00767
	(!CLK * D * SCD * SCE * !Q)	0.01301	0.01754	0.10911
	(!CLK * D * SCD * SCE * !Q)	0.02461	0.02915	0.12066
	(!CLK * D * SCD * !SCE * !Q)	0.01127	0.01549	0.10695
	(!CLK * D * SCD * !SCE * !Q)	0.02243	0.02669	0.11807
	(!CLK * D * !SCD * SCE * !Q)	-0.00000	-0.00016	-0.00016
	(!CLK * D * !SCD * SCE * !Q)	0.00831	0.00825	0.00821
	(!CLK * D * !SCD * !SCE * !Q)	0.01089	0.01525	0.10707
	(!CLK * D * !SCD * !SCE * !Q)	0.02147	0.02588	0.11764
	(!CLK * !D * SCD * SCE * !Q)	0.01244	0.01721	0.10946
	(!CLK * !D * SCD * SCE * !Q)	0.02430	0.02910	0.12128
	(!CLK * !D * SCD * !SCE * !Q)	-0.00044	-0.00063	-0.00064
	(!CLK * !D * SCD * !SCE * !Q)	0.00786	0.00777	0.00772
	(!CLK * !D * !SCD * SCE * !Q)	-0.00001	-0.00016	-0.00016
	(!CLK * !D * !SCD * SCE * !Q)	0.00830	0.00825	0.00821
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00047	-0.00064	-0.00065
	(!CLK * !D * !SCD * !SCE * !Q)	0.00786	0.00776	0.00772

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)	0.01865	0.02512	0.14704
	(D * RESET_B * SCD * SCE * Q)	0.01356	0.02004	0.14196
	(D * RESET_B * SCD * !SCE * Q)	0.01834	0.02482	0.14674
	(D * RESET_B * SCD * !SCE * Q)	0.01326	0.01973	0.14165
	(D * RESET_B * !SCD * !SCE * Q)	0.01879	0.02527	0.14719
	(D * RESET_B * !SCD * !SCE * Q)	0.01371	0.02018	0.14211
	(D * !SCD * SCE * !Q)	0.01795	0.02443	0.14606
	(D * !SCD * SCE * !Q)	0.01287	0.01932	0.14097
	(D * !RESET_B * SCD * SCE * !Q)	0.01795	0.02442	0.14603
	(D * !RESET_B * SCD * SCE * !Q)	0.01286	0.01932	0.14095
	(D * !RESET_B * SCD * !SCE * !Q)	0.01744	0.02392	0.14553
	(D * !RESET_B * SCD * !SCE * !Q)	0.01236	0.01881	0.14045
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01744	0.02392	0.14553
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01236	0.01881	0.14045
	(!D * RESET_B * SCD * SCE * Q)	0.01890	0.02538	0.14731
	(!D * RESET_B * SCD * SCE * Q)	0.01382	0.02029	0.14222
	(!D * !SCE * !Q)	0.01745	0.02393	0.14583
	(!D * !SCE * !Q)	0.01237	0.01882	0.14075
	(!D * !SCD * SCE * !Q)	0.01795	0.02442	0.14606
	(!D * !SCD * SCE * !Q)	0.01287	0.01931	0.14098
	(!D * !RESET_B * SCD * SCE * !Q)	0.01795	0.02442	0.14603
	(!D * !RESET_B * SCD * SCE * !Q)	0.01287	0.01932	0.14094

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01834	0.02482	0.14684
	(D * RESET_B * SCD * SCE * Q)	0.01322	0.01970	0.14172
	(D * RESET_B * SCD * !SCE * Q)	0.01803	0.02451	0.14653
	(D * RESET_B * SCD * !SCE * Q)	0.01291	0.01939	0.14140
	(D * RESET_B * !SCD * !SCE * Q)	0.01848	0.02496	0.14698
	(D * RESET_B * !SCD * !SCE * Q)	0.01336	0.01984	0.14185
	(D * !SCD * SCE * !Q)	0.01845	0.02489	0.14665
	(D * !SCD * SCE * !Q)	0.01333	0.01979	0.14154
	(D * !RESET_B * SCD * SCE * !Q)	0.01844	0.02490	0.14662
	(D * !RESET_B * SCD * SCE * !Q)	0.01333	0.01979	0.14150
	(D * !RESET_B * SCD * !SCE * !Q)	0.01794	0.02439	0.14612
	(D * !RESET_B * SCD * !SCE * !Q)	0.01283	0.01929	0.14100
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01794	0.02439	0.14612
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01283	0.01929	0.14100
	(!D * RESET_B * SCD * SCE * Q)	0.01859	0.02508	0.14710
	(!D * RESET_B * SCD * SCE * Q)	0.01348	0.01995	0.14198
	(!D * !SCE * !Q)	0.01795	0.02439	0.14615
	(!D * !SCE * !Q)	0.01283	0.01929	0.14104
	(!D * !SCD * SCE * !Q)	0.01845	0.02490	0.14665
	(!D * !SCD * SCE * !Q)	0.01333	0.01978	0.14153
	(!D * !RESET_B * SCD * SCE * !Q)	0.01844	0.02490	0.14661
	(!D * !RESET_B * SCD * SCE * !Q)	0.01333	0.01979	0.14150

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01932	0.02583	0.14778
	(D * RESET_B * SCD * SCE * Q)	0.01421	0.02070	0.14265
	(D * RESET_B * SCD * !SCE * Q)	0.01901	0.02552	0.14747
	(D * RESET_B * SCD * !SCE * Q)	0.01390	0.02040	0.14235
	(D * RESET_B * !SCD * !SCE * Q)	0.01946	0.02597	0.14792
	(D * RESET_B * !SCD * !SCE * Q)	0.01435	0.02085	0.14280
	(D * !SCD * SCE * !Q)	0.01905	0.02552	0.14723
	(D * !SCD * SCE * !Q)	0.01394	0.02041	0.14212
	(D * !RESET_B * SCD * SCE * !Q)	0.01904	0.02552	0.14720
	(D * !RESET_B * SCD * SCE * !Q)	0.01393	0.02041	0.14209
	(D * !RESET_B * SCD * !SCE * !Q)	0.01854	0.02502	0.14696
	(D * !RESET_B * SCD * !SCE * !Q)	0.01343	0.01991	0.14184
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01854	0.02502	0.14696
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01343	0.01991	0.14184
	(!D * RESET_B * SCD * SCE * Q)	0.01958	0.02608	0.14803
	(!D * RESET_B * SCD * SCE * Q)	0.01446	0.02096	0.14291
	(!D * !SCE * !Q)	0.01855	0.02502	0.14672
	(!D * !SCE * !Q)	0.01344	0.01991	0.14161
	(!D * !SCD * SCE * !Q)	0.01905	0.02552	0.14722
	(!D * !SCD * SCE * !Q)	0.01394	0.02041	0.14211
	(!D * !RESET_B * SCD * SCE * !Q)	0.01904	0.02552	0.14720
	(!D * !RESET_B * SCD * SCE * !Q)	0.01393	0.02041	0.14209

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)**	0.01107	0.01863	0.14042
	(D * RESET_B * SCD * SCE * Q)	0.01613	0.02374	0.14551
	(D * RESET_B * SCD * SCE * !Q)	0.01859	0.02639	0.15232
	(D * RESET_B * SCD * SCE * !Q)	0.02345	0.03126	0.15720
	(D * RESET_B * SCD * !SCE * Q)	0.01076	0.01833	0.14011
	(D * RESET_B * SCD * !SCE * Q)	0.01583	0.02343	0.14521
	(D * RESET_B * SCD * !SCE * !Q)	0.01831	0.02610	0.15199
	(D * RESET_B * SCD * !SCE * !Q)	0.02318	0.03099	0.15687
	(D * RESET_B * !SCD * SCE * Q)	0.02107	0.02882	0.15258
	(D * RESET_B * !SCD * SCE * Q)	0.02638	0.03416	0.15791
	(D * RESET_B * !SCD * !SCE * Q)	0.01121	0.01878	0.14056
	(D * RESET_B * !SCD * !SCE * Q)	0.01628	0.02389	0.14566
	(D * RESET_B * !SCD * !SCE * !Q)	0.01873	0.02652	0.15241
	(D * RESET_B * !SCD * !SCE * !Q)	0.02360	0.03142	0.15730
	(D * !SCD * SCE * !Q)	0.00964	0.01722	0.13908
	(D * !SCD * SCE * !Q)	0.01471	0.02233	0.14417
	(D * !RESET_B * SCD * SCE * !Q)	0.00963	0.01721	0.13904
	(D * !RESET_B * SCD * SCE * !Q)	0.01471	0.02232	0.14414
	(D * !RESET_B * SCD * !SCE * !Q)	0.00913	0.01671	0.13836
	(D * !RESET_B * SCD * !SCE * !Q)	0.01421	0.02181	0.14345
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00913	0.01671	0.13836
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01421	0.02181	0.14345
	(!D * RESET_B * SCD * SCE * Q)	0.01132	0.01889	0.14067
	(!D * RESET_B * SCD * SCE * Q)	0.01639	0.02400	0.14577
	(!D * RESET_B * SCD * SCE * !Q)	0.01883	0.02663	0.15254
	(!D * RESET_B * SCD * SCE * !Q)	0.02370	0.03150	0.15743
	(!D * RESET_B * !SCE * Q)	0.02050	0.02825	0.15203
	(!D * RESET_B * !SCE * Q)	0.02578	0.03356	0.15732
	(!D * RESET_B * !SCD * SCE * Q)	0.02102	0.02878	0.15257
	(!D * RESET_B * !SCD * SCE * Q)	0.02631	0.03409	0.15788
	(!D * !SCE * !Q)	0.00914	0.01672	0.13858
	(!D * !SCE * !Q)	0.01421	0.02183	0.14367
	(!D * !SCD * SCE * !Q)	0.00964	0.01722	0.13889
	(!D * !SCD * SCE * !Q)	0.01471	0.02232	0.14398
	(!D * !RESET_B * SCD * SCE * !Q)	0.00963	0.01721	0.13886
	(!D * !RESET_B * SCD * SCE * !Q)	0.01471	0.02232	0.14395

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01080	0.01838	0.14017
	(D * RESET_B * SCD * SCE * Q)	0.01591	0.02353	0.14529
	(D * RESET_B * SCD * SCE * !Q)	0.01940	0.02721	0.15320
	(D * RESET_B * SCD * SCE * !Q)	0.02431	0.03215	0.15813
	(D * RESET_B * SCD * !SCE * Q)	0.01050	0.01808	0.13987
	(D * RESET_B * SCD * !SCE * Q)	0.01560	0.02322	0.14500
	(D * RESET_B * SCD * !SCE * !Q)	0.01913	0.02692	0.15288
	(D * RESET_B * SCD * !SCE * !Q)	0.02404	0.03186	0.15782
	(D * RESET_B * !SCD * SCE * Q)	0.02158	0.02933	0.15324
	(D * RESET_B * !SCD * SCE * Q)	0.02691	0.03469	0.15859
	(D * RESET_B * !SCD * !SCE * Q)	0.01095	0.01853	0.14031
	(D * RESET_B * !SCD * !SCE * Q)	0.01605	0.02367	0.14544
	(D * RESET_B * !SCD * !SCE * !Q)	0.01955	0.02734	0.15330
	(D * RESET_B * !SCD * !SCE * !Q)	0.02447	0.03229	0.15824
	(D * !SCD * SCE * !Q)	0.01011	0.01769	0.13969
	(D * !SCD * SCE * !Q)	0.01522	0.02283	0.14482
	(D * !RESET_B * SCD * SCE * !Q)	0.01010	0.01768	0.13965
	(D * !RESET_B * SCD * SCE * !Q)	0.01521	0.02283	0.14478
	(D * !RESET_B * SCD * !SCE * !Q)	0.00960	0.01718	0.13898
	(D * !RESET_B * SCD * !SCE * !Q)	0.01471	0.02233	0.14411
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00960	0.01718	0.13898
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01471	0.02233	0.14411
	(!D * RESET_B * SCD * SCE * Q)	0.01106	0.01864	0.14043
	(!D * RESET_B * SCD * SCE * Q)	0.01616	0.02378	0.14555
	(!D * RESET_B * SCD * SCE * !Q)	0.01964	0.02744	0.15343
	(!D * RESET_B * SCD * SCE * !Q)	0.02456	0.03238	0.15837
	(!D * RESET_B * !SCE * Q)	0.02097	0.02873	0.15265
	(!D * RESET_B * !SCE * Q)	0.02627	0.03405	0.15797
	(!D * RESET_B * !SCD * SCE * Q)	0.02155	0.02932	0.15323
	(!D * RESET_B * !SCD * SCE * Q)	0.02686	0.03466	0.15856
	(!D * !SCE * !Q)	0.00961	0.01719	0.13901
	(!D * !SCE * !Q)	0.01471	0.02233	0.14414
	(!D * !SCD * SCE * !Q)	0.01011	0.01770	0.13969
	(!D * !SCD * SCE * !Q)	0.01521	0.02282	0.14481
	(!D * !RESET_B * SCD * SCE * !Q)	0.01010	0.01768	0.13966
	(!D * !RESET_B * SCD * SCE * !Q)	0.01521	0.02283	0.14478

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01196	0.01960	0.14135
	(D * RESET_B * SCD * SCE * Q)	0.01706	0.02472	0.14647
	(D * RESET_B * SCD * SCE * !Q)	0.02014	0.02795	0.15391
	(D * RESET_B * SCD * SCE * !Q)	0.02504	0.03287	0.15883
	(D * RESET_B * SCD * !SCE * Q)	0.01165	0.01930	0.14104
	(D * RESET_B * SCD * !SCE * Q)	0.01675	0.02441	0.14617
	(D * RESET_B * SCD * !SCE * !Q)	0.01987	0.02768	0.15360
	(D * RESET_B * SCD * !SCE * !Q)	0.02477	0.03259	0.15851
	(D * RESET_B * !SCD * SCE * Q)	0.02244	0.03020	0.15403
	(D * RESET_B * !SCD * SCE * Q)	0.02777	0.03557	0.15939
	(D * RESET_B * !SCD * !SCE * Q)	0.01210	0.01974	0.14149
	(D * RESET_B * !SCD * !SCE * Q)	0.01720	0.02488	0.14662
	(D * RESET_B * !SCD * !SCE * !Q)	0.02030	0.02810	0.15402
	(D * RESET_B * !SCD * !SCE * !Q)	0.02520	0.03303	0.15894
	(D * !SCD * SCE * !Q)	0.01088	0.01853	0.14036
	(D * !SCD * SCE * !Q)	0.01598	0.02365	0.14548
	(D * !RESET_B * SCD * SCE * !Q)	0.01087	0.01852	0.14032
	(D * !RESET_B * SCD * SCE * !Q)	0.01597	0.02364	0.14544
	(D * !RESET_B * SCD * !SCE * !Q)	0.01037	0.01801	0.13982
	(D * !RESET_B * SCD * !SCE * !Q)	0.01547	0.02312	0.14494
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01037	0.01801	0.13982
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01547	0.02312	0.14494
	(!D * RESET_B * SCD * SCE * Q)	0.01221	0.01985	0.14160
	(!D * RESET_B * SCD * SCE * Q)	0.01731	0.02499	0.14673
	(!D * RESET_B * SCD * SCE * !Q)	0.02038	0.02820	0.15414
	(!D * RESET_B * SCD * SCE * !Q)	0.02529	0.03311	0.15906
	(!D * RESET_B * !SCE * Q)	0.02183	0.02959	0.15344
	(!D * RESET_B * !SCE * Q)	0.02713	0.03492	0.15877
	(!D * RESET_B * !SCD * SCE * Q)	0.02240	0.03018	0.15402
	(!D * RESET_B * !SCD * SCE * Q)	0.02772	0.03553	0.15936
	(!D * !SCE * !Q)	0.01038	0.01802	0.13985
	(!D * !SCE * !Q)	0.01548	0.02313	0.14498
	(!D * !SCD * SCE * !Q)	0.01087	0.01852	0.14035
	(!D * !SCD * SCE * !Q)	0.01598	0.02365	0.14548
	(!D * !RESET_B * SCD * SCE * !Q)	0.01087	0.01852	0.14032
	(!D * !RESET_B * SCD * SCE * !Q)	0.01597	0.02364	0.14544

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfsbp_1	0.00197	0.00218	0.00417	0.00354	0.00311	1.27945	1.19916
sky130_fd_sc_hs__sdfsbp_2	0.00203	0.00212	0.00437	0.00356	0.00314	2.60040	2.60787

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	269.27700	348.31600
sky130_fd_sc_hs__sdfsbp_2	0.00000	321.50900	501.60300

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)	0.24872	0.71001	6.23230
	SET_B->Q (FR)	0.22856	0.87869	8.28540
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.27773	0.65017	6.28490
	SET_B->Q (FR)	0.31066	0.87474	8.42751

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.23089	0.52328	3.32579
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.24814	0.51064	3.52917

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)	0.19497	0.69002	6.18871
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.18686	0.59123	6.27567

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)	0.19944	0.54759	3.17432
	SET_B->Q_N (FF)	0.17695	0.71518	5.22219
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.20201	0.51832	3.61685
	SET_B->Q_N (FF)	0.21908	0.75377	5.76785

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)	-0.09229	-0.18090	-0.91559
	setup	CLK (R)	0.14123	0.21021	1.03946
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11543	-0.20470	-0.87681
	setup	CLK (R)	0.17270	0.23973	1.22846

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)	-0.09406	-0.18193	-1.26373
	setup	CLK (R)	0.20393	0.29024	2.26920
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12199	-0.20492	-0.24040
	setup	CLK (R)	0.24734	0.32473	3.17710

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)	-0.09229	-0.18090	-0.91559
	setup	CLK (R)	0.14123	0.21021	1.03946
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11543	-0.20470	-0.87681
	setup	CLK (R)	0.17270	0.23973	1.22846

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)	-0.09406	-0.18193	-1.26373
	setup	CLK (R)	0.20393	0.29024	2.26920
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12199	-0.20492	-0.24040
	setup	CLK (R)	0.24734	0.32473	3.17710

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)	-0.11508	-0.18569	-0.87696
	setup	CLK (R)	0.17050	0.22164	0.99905
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13642	-0.20456	-0.79925
	setup	CLK (R)	0.20486	0.25037	1.13226

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)	-0.12071	-0.19544	-1.36090
	setup	CLK (R)	0.25428	0.31251	2.28075
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15282	-0.22441	-0.30717
	setup	CLK (R)	0.29575	0.35017	3.18751

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)	-0.11508	-0.18569	-0.87696
	hold	CLK (R)	-0.12311	-0.19531	-0.89107
	setup	CLK (R)	0.16518	0.21420	0.98970
	setup	CLK (R)	0.17050	0.22164	0.99905
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13642	-0.20456	-0.79925
	hold	CLK (R)	-0.14562	-0.21517	-0.82752
	setup	CLK (R)	0.19725	0.24054	1.12175
	setup	CLK (R)	0.20486	0.25037	1.13226

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)	-0.12927	-0.20378	-1.38345
	hold	CLK (R)	-0.12071	-0.19544	-1.36090
	setup	CLK (R)	0.25428	0.31251	2.27548
	setup	CLK (R)	0.24997	0.30990	2.28075
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16041	-0.22737	-0.43324
	hold	CLK (R)	-0.15282	-0.22441	-0.30717
	setup	CLK (R)	0.29575	0.35017	3.18751
	setup	CLK (R)	0.29490	0.34913	3.14714

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)	-0.10420	-0.15819	-0.03319
	setup	CLK (R)	0.25295	0.26542	1.19010
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12724	-0.17988	0.17624
	setup	CLK (R)	0.29618	0.30168	1.37984

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)	-0.10602	-0.17058	-1.14533
	setup	CLK (R)	0.21857	0.27711	2.08964
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13377	-0.18809	-0.19566
	setup	CLK (R)	0.25678	0.31039	2.94888

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)	-0.13191	-0.15819	-0.03319
	hold	CLK (R)	-0.10420	-0.19878	-1.06601
	setup	CLK (R)	0.25295	0.26542	0.79782
	setup	CLK (R)	0.15501	0.22529	1.19010
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15922	-0.17988	0.17624
	hold	CLK (R)	-0.12724	-0.22040	-1.03848
	setup	CLK (R)	0.29618	0.30168	1.22461
	setup	CLK (R)	0.18504	0.25702	1.37984

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)	-0.14586	-0.24219	-1.92579
	hold	CLK (R)	-0.10602	-0.17058	-1.14533
	setup	CLK (R)	0.19493	0.26581	1.96665
	setup	CLK (R)	0.21857	0.27711	2.08964
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16924	-0.25791	-1.81725
	hold	CLK (R)	-0.13377	-0.18809	-0.19566
	setup	CLK (R)	0.22446	0.29028	1.96598
	setup	CLK (R)	0.25678	0.31039	2.94888

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)	-0.07933	-0.12668	-0.44141
	removal	CLK (R)	0.10628	0.14769	0.53730
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.12114	-0.18582	-0.25481
	removal	CLK (R)	0.13732	0.20494	1.32363

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)	-0.08083	-0.12669	-0.44530
	recovery	CLK (R)	-0.07933	-0.12668	-0.44141
	recovery	CLK (R)	-0.08097	-0.12685	-0.44256
	removal	CLK (R)	0.10628	0.14769	0.53730
	removal	CLK (R)	0.10628	0.14769	0.53730
	removal	CLK (R)	0.10628	0.14769	0.53730
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.12114	-0.18582	-0.25482
	recovery	CLK (R)	-0.12114	-0.18582	-0.25481
	recovery	CLK (R)	-0.12114	-0.18582	-0.28281
	removal	CLK (R)	0.13732	0.20494	1.32363
	removal	CLK (R)	0.13732	0.20494	1.32363
	removal	CLK (R)	0.13732	0.20494	1.31834

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 ()	0.18639	0.67139	16.50020
	min_pulse_width	SET_B ()	0.17634	0.67139	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.21655	0.67139	16.50020
	min_pulse_width	SET_B ()	0.23916	0.67139	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 ()	0.14870	0.67139	16.50020
	min_pulse_width	CLK ()	0.10346	0.67139	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.15624	0.67139	16.50020
	min_pulse_width	CLK ()	0.10598	0.67139	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 ()	0.15875	0.67139	16.50020
	min_pulse_width	CLK ()	0.22409	0.67139	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.20649	0.67139	16.50020
	min_pulse_width	CLK ()	0.27937	0.67139	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	0.02309	0.02579	0.09097
	CLK	0.02068	0.02334	0.08814
	SET_B	0.01514	0.01710	0.05807
	SET_B	0.01804	0.02001	0.06079
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03104	0.03315	0.10312
	CLK	0.02853	0.03063	0.09981
	SET_B	0.02214	0.02185	0.06733
	SET_B	0.02505	0.02480	0.06634

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01979	0.02316	0.08487
	CLK	0.01723	0.02058	0.08219
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02710	0.03043	0.09388
	CLK	0.02458	0.02790	0.09127

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02104	0.02446	0.08693
	CLK	0.01848	0.02183	0.08414
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02895	0.03238	0.09750
	CLK	0.02643	0.02978	0.09411

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02105	0.02370	0.08803
	CLK	0.01863	0.02129	0.08550
	SET_B	0.01354	0.01551	0.05676
	SET_B	0.01644	0.01841	0.05905
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02908	0.03129	0.09974
	CLK	0.02658	0.02870	0.09692
	SET_B	0.02060	0.02031	0.06081
	SET_B	0.02351	0.02327	0.06365

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * SCD * SCE)	0.00405	0.00407	0.00409
	(CLK * SCD * SCE)	0.00213	0.00213	0.00216
	(CLK * !SCE)	0.00708	0.01000	0.06254
	(CLK * !SCE)	0.00359	0.00649	0.05904
	(CLK * !SCD * SCE)	0.00317	0.00318	0.00315
	(CLK * !SCD * SCE)	0.00094	0.00094	0.00092
	(!CLK * SCD * SCE)	0.00401	0.00402	0.00404
	(!CLK * SCD * SCE)	0.00209	0.00209	0.00212
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01517	0.01759	0.07176
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01130	0.01371	0.06789
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01255	0.01466	0.06480
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00856	0.01067	0.06082
	(!CLK * !SCD * SCE)	0.00317	0.00318	0.00316
	(!CLK * !SCD * SCE)	0.00096	0.00095	0.00093

sky130_fd_sc_hs__sdfsbp_2	(CLK * SCD * SCE)	0.00479	0.00480	0.00481
	(CLK * SCD * SCE)	0.00280	0.00280	0.00283
	(CLK * !SCE)	0.00793	0.01080	0.06374
	(CLK * !SCE)	0.00437	0.00723	0.06017
	(CLK * !SCD * SCE)	0.00372	0.00372	0.00370
	(CLK * !SCD * SCE)	0.00144	0.00144	0.00142
	(!CLK * SCD * SCE)	0.00425	0.00426	0.00428
	(!CLK * SCD * SCE)	0.00228	0.00227	0.00230
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01712	0.01941	0.07330
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01334	0.01564	0.06953
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01448	0.01649	0.06618
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01057	0.01258	0.06227
	(!CLK * !SCD * SCE)	0.00339	0.00340	0.00337
	(!CLK * !SCD * SCE)	0.00111	0.00110	0.00109

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00180	0.00179	0.00165
	(CLK * SCD * SCE)	0.00374	0.00373	0.00359
	(CLK * !SCE)	0.00286	0.00617	0.05927
	(CLK * !SCE)	0.00635	0.00967	0.06277
	(CLK * !SCD * SCE)	0.00183	0.00183	0.00183
	(CLK * !SCD * SCE)	0.00406	0.00406	0.00406
	(!CLK * SCD * SCE)	0.00176	0.00174	0.00161
	(!CLK * SCD * SCE)	0.00370	0.00368	0.00355
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01086	0.01378	0.06884
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01473	0.01765	0.07271
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00669	0.00929	0.06042
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01069	0.01330	0.06442
	(!CLK * !SCD * SCE)	0.00184	0.00184	0.00184
	(!CLK * !SCD * SCE)	0.00408	0.00407	0.00407

sky130_fd_sc_hs__sdfsbp_2	(CLK * SCD * SCE)	0.00237	0.00235	0.00222
	(CLK * SCD * SCE)	0.00436	0.00435	0.00422
	(CLK * !SCE)	0.00355	0.00682	0.06041
	(CLK * !SCE)	0.00713	0.01039	0.06398
	(CLK * !SCD * SCE)	0.00231	0.00230	0.00231
	(CLK * !SCD * SCE)	0.00458	0.00459	0.00459
	(!CLK * SCD * SCE)	0.00183	0.00182	0.00168
	(!CLK * SCD * SCE)	0.00383	0.00382	0.00368
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01358	0.01635	0.07144
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01736	0.02011	0.07521
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00902	0.01146	0.06236
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01294	0.01537	0.06627
	(!CLK * !SCD * SCE)	0.00198	0.00197	0.00198
	(!CLK * !SCD * SCE)	0.00426	0.00427	0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00949	0.01181	0.06261
	(CLK * D * SCE)	0.00453	0.00683	0.05763
	(CLK * !D * SCE)	0.01076	0.01285	0.06308
	(CLK * !D * SCE)	0.00553	0.00761	0.05784
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01742	0.01950	0.07157
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01208	0.01415	0.06622
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01479	0.01666	0.06540
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00933	0.01119	0.05994
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01870	0.02062	0.07235
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01309	0.01501	0.06673
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01606	0.01778	0.06595
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01034	0.01204	0.06021
	!SCE	0.00431	0.00411	0.00435
	!SCE	0.00138	0.00115	0.00142

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.01017	0.01249	0.06319
	(CLK * D * SCE)	0.00527	0.00757	0.05829
	(CLK * !D * SCE)	0.01144	0.01354	0.06366
	(CLK * !D * SCE)	0.00627	0.00836	0.05849
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01923	0.02127	0.07278
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01412	0.01616	0.06767
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01658	0.01843	0.06646
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01134	0.01317	0.06121
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02050	0.02243	0.07344
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01513	0.01705	0.06806
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01785	0.01954	0.06704
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01234	0.01403	0.06152
	!SCE	0.00486	0.00467	0.00491
	!SCE	0.00201	0.00179	0.00206

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00477	0.00712	0.05822
	(CLK * D * SCE)	0.00976	0.01210	0.06316
	(CLK * !D * SCE)	0.00427	0.00676	0.05815
	(CLK * !D * SCE)	0.00952	0.01202	0.06338
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01297	0.01506	0.06780
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01833	0.02043	0.07313
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00872	0.01053	0.06002
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01421	0.01601	0.06546
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01255	0.01474	0.06794
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01817	0.02036	0.07354
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00823	0.01012	0.05991
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01397	0.01588	0.06563
	!SCE	0.00146	0.00145	0.00137
	!SCE	0.00441	0.00439	0.00431

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00553	0.00787	0.05898
	(CLK * D * SCE)	0.01044	0.01280	0.06385
	(CLK * !D * SCE)	0.00503	0.00750	0.05891
	(CLK * !D * SCE)	0.01020	0.01269	0.06406
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01576	0.01778	0.06998
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02087	0.02291	0.07507
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01109	0.01279	0.06167
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01634	0.01806	0.06689
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01534	0.01737	0.07009
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02072	0.02276	0.07545
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01058	0.01236	0.06155
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01610	0.01789	0.06706
	!SCE	0.00220	0.00218	0.00211
	!SCE	0.00506	0.00505	0.00497

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)**	0.00868	0.01256	0.08180
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00227	0.00612	0.07540
	(CLK * D * !SCD)	0.01122	0.01535	0.08879
	(CLK * D * !SCD)	0.00667	0.01079	0.08419
	(CLK * !D * SCD)	0.01335	0.01991	0.13682
	(CLK * !D * SCD)	0.00532	0.01186	0.12878
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00864	0.01251	0.08175
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00223	0.00607	0.07535
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01905	0.02326	0.09643
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01486	0.01907	0.09222
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01481	0.01904	0.09190
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01075	0.01498	0.08780
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02143	0.02779	0.14676
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01302	0.01937	0.13834
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01880	0.02488	0.13978
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01028	0.01633	0.13124
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00819	0.01220	0.08113
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00228	0.00625	0.07518

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00956	0.01348	0.08352
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00294	0.00683	0.07691
	(CLK * D * !SCD)	0.01212	0.01632	0.09056
	(CLK * D * !SCD)	0.00736	0.01154	0.08577
	(CLK * !D * SCD)	0.01433	0.02101	0.14021
	(CLK * !D * SCD)	0.00607	0.01273	0.13195
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00903	0.01295	0.08299
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00241	0.00630	0.07637
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02201	0.02626	0.10012
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01745	0.02169	0.09552
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01733	0.02164	0.09515
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01291	0.01719	0.09070
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02351	0.02990	0.15076
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01504	0.02143	0.14229
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02087	0.02699	0.14359
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01227	0.01837	0.13499
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00853	0.01257	0.08227
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00239	0.00641	0.07610

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)**	0.00211	0.00666	0.07634
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00851	0.01310	0.08276
	(CLK * D * !SCD)	0.00735	0.01165	0.08384
	(CLK * D * !SCD)	0.01192	0.01623	0.08824
	(CLK * !D * SCD)	0.00332	0.01025	0.12816
	(CLK * !D * SCD)	0.01135	0.01833	0.13622
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00206	0.00661	0.07632
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00847	0.01305	0.08273
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01539	0.01973	0.09103
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01959	0.02396	0.09506
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01277	0.01710	0.08819
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01685	0.02119	0.09210
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01131	0.01785	0.13700
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01971	0.02628	0.14543
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00715	0.01343	0.12924
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01568	0.02200	0.13779
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00216	0.00666	0.07612
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00809	0.01262	0.08206

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00256	0.00717	0.07767
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00918	0.01381	0.08430
	(CLK * D * !SCD)	0.00788	0.01225	0.08510
	(CLK * D * !SCD)	0.01266	0.01706	0.08971
	(CLK * !D * SCD)	0.00401	0.01102	0.13145
	(CLK * !D * SCD)	0.01227	0.01933	0.13972
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00202	0.00663	0.07714
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00866	0.01329	0.08377
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01701	0.02145	0.09327
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02158	0.02605	0.09767
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01438	0.01881	0.09041
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01882	0.02324	0.09469
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01402	0.02054	0.14160
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02249	0.02902	0.15006
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00947	0.01573	0.13331
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01808	0.02437	0.14193
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00222	0.00678	0.07700
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00837	0.01295	0.08317

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)	0.00560	0.00563	0.00561
	(CLK * Q * !Q_N)	0.00022	0.00020	0.00021
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00574	0.00577	0.00575
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00034	0.00033	0.00035
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00829	0.01035	0.05132
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00269	0.00471	0.04571
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00584	0.00585	0.00584
	(CLK * Q * !Q_N)	0.00030	0.00029	0.00030
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00589	0.00591	0.00590
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00035	0.00035	0.00036
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00877	0.01078	0.05151
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00300	0.00500	0.04574

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)	0.00001	-0.00005	-0.00006
	(CLK * Q * !Q_N)	0.00544	0.00538	0.00535
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00016	-0.00027	-0.00027
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00527	0.00517	0.00513
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00240	0.00492	0.04613
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00804	0.01053	0.05174
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00015	0.00006	0.00006
	(CLK * Q * !Q_N)	0.00568	0.00564	0.00560
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00003	-0.00009	-0.00011
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00556	0.00548	0.00544
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00237	0.00485	0.04580
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00813	0.01061	0.05157

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)	0.01862	0.02505	0.14735
	(D * SCD * SCE * Q * !Q_N)	0.01365	0.02005	0.14237
	(D * !SCE * Q * !Q_N)	0.01831	0.02475	0.14705
	(D * !SCE * Q * !Q_N)	0.01334	0.01975	0.14207
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01764	0.02403	0.14634
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01266	0.01903	0.14134
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03274	0.03948	0.16259
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02729	0.03400	0.15713
	(!D * SCD * SCE * Q * !Q_N)	0.01887	0.02531	0.14761
	(!D * SCD * SCE * Q * !Q_N)	0.01390	0.02031	0.14263
	(!D * !SCE * SET_B * !Q * Q_N)	0.01714	0.02353	0.14581
	(!D * !SCE * SET_B * !Q * Q_N)	0.01216	0.01853	0.14084
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03222	0.03897	0.16208
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02676	0.03347	0.15660
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01764	0.02403	0.14631
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01266	0.01903	0.14134
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03277	0.03947	0.16253
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02732	0.03398	0.15706

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.02356	0.02989	0.15607
	(D * SCD * SCE * Q * !Q_N)	0.01854	0.02485	0.15104
	(D * !SCE * Q * !Q_N)	0.02325	0.02959	0.15577
	(D * !SCE * Q * !Q_N)	0.01823	0.02454	0.15073
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02317	0.02947	0.15541
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01814	0.02443	0.15037
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05826	0.06535	0.19415
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05291	0.05999	0.18880
	(!D * SCD * SCE * Q * !Q_N)	0.02382	0.03015	0.15633
	(!D * SCD * SCE * Q * !Q_N)	0.01880	0.02511	0.15130
	(!D * !SCE * SET_B * !Q * Q_N)	0.02267	0.02897	0.15490
	(!D * !SCE * SET_B * !Q * Q_N)	0.01764	0.02393	0.14987
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05775	0.06486	0.19364
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05239	0.05947	0.18827
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02317	0.02947	0.15540
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01814	0.02442	0.15037
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05836	0.06535	0.19398
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05301	0.05998	0.18861

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01897	0.02675	0.15358
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02357	0.03136	0.15820
	(D * SCD * SCE * Q * !Q_N)	0.01149	0.01914	0.14219
	(D * SCD * SCE * Q * !Q_N)	0.01646	0.02412	0.14717
	(D * !SCE * SET_B * !Q * Q_N)	0.01866	0.02643	0.15327
	(D * !SCE * SET_B * !Q * Q_N)	0.02326	0.03104	0.15789
	(D * !SCE * Q * !Q_N)	0.01118	0.01883	0.14188
	(D * !SCE * Q * !Q_N)	0.01615	0.02382	0.14686
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02086	0.02876	0.15339
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02624	0.03416	0.15879
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01064	0.01831	0.14152
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01561	0.02330	0.14651
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01674	0.02462	0.14912
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02221	0.03013	0.15461
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01920	0.02698	0.15381
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02380	0.03159	0.15843
	(!D * SCD * SCE * Q * !Q_N)	0.01175	0.01940	0.14244
	(!D * SCD * SCE * Q * !Q_N)	0.01671	0.02438	0.14743
	(!D * !SCE * SET_B * Q * !Q_N)	0.02034	0.02824	0.15284
	(!D * !SCE * SET_B * Q * !Q_N)	0.02569	0.03359	0.15821
	(!D * !SCE * SET_B * !Q * Q_N)	0.01014	0.01781	0.14102
	(!D * !SCE * SET_B * !Q * Q_N)	0.01511	0.02280	0.14601
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01624	0.02412	0.14861
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02171	0.02961	0.15409
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02086	0.02873	0.15319
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02622	0.03410	0.15855
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01064	0.01831	0.14152
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01561	0.02329	0.14651
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01675	0.02462	0.14911
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02221	0.03012	0.15459

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.02403	0.03159	0.16166
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02885	0.03643	0.16649
	(D * SCD * SCE * Q * !Q_N)	0.01352	0.02102	0.14668
	(D * SCD * SCE * Q * !Q_N)	0.01854	0.02603	0.15171
	(D * !SCE * SET_B * !Q * Q_N)	0.02371	0.03128	0.16161
	(D * !SCE * SET_B * !Q * Q_N)	0.02854	0.03612	0.16644
	(D * !SCE * Q * !Q_N)	0.01321	0.02071	0.14636
	(D * !SCE * Q * !Q_N)	0.01823	0.02573	0.15139
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02600	0.03373	0.16114
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03127	0.03900	0.16640
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01308	0.02061	0.14655
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01811	0.02564	0.15158
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02134	0.02910	0.15630
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02672	0.03447	0.16169
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02426	0.03182	0.16188
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02908	0.03666	0.16672
	(!D * SCD * SCE * Q * !Q_N)	0.01377	0.02128	0.14694
	(!D * SCD * SCE * Q * !Q_N)	0.01880	0.02629	0.15196
	(!D * !SCE * SET_B * Q * !Q_N)	0.02544	0.03318	0.16055
	(!D * !SCE * SET_B * Q * !Q_N)	0.03068	0.03842	0.16580
	(!D * !SCE * SET_B * !Q * Q_N)	0.01258	0.02011	0.14622
	(!D * !SCE * SET_B * !Q * Q_N)	0.01761	0.02514	0.15125
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02084	0.02860	0.15579
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02621	0.03398	0.16118
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02601	0.03375	0.16089
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03125	0.03900	0.16616
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01308	0.02060	0.14674
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01811	0.02564	0.15178
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02135	0.02910	0.15629
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02672	0.03449	0.16168

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00196	0.00219	0.00416	0.00346	0.00310	1.28351
sky130_fd_sc_hs__sdfstp_2	0.00196	0.00214	0.00416	0.00355	0.00310	2.61923
sky130_fd_sc_hs__sdfstp_4	0.00196	0.00219	0.00421	0.00356	0.00310	4.88356

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	235.69400	316.09000
sky130_fd_sc_hs__sdfstp_2	0.00000	254.25600	498.46300
sky130_fd_sc_hs__sdfstp_4	0.00000	378.55900	597.00500

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)	0.20785	0.67098	6.17775
	SET_B->Q (FR)	0.19691	0.83601	8.17472
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.19605	0.56764	6.18118
	SET_B->Q (FR)	0.22368	0.77906	8.29980
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.22779	0.53390	6.13327
	SET_B->Q (FR)	0.26447	0.76036	8.27559

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.21752	0.51064	3.33364
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.22265	0.47900	3.46534
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.22865	0.45066	3.43670

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)	-0.09353	-0.18165	-0.91418
	setup	CLK (R)	0.14256	0.20858	1.02495
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11271	-0.20319	-0.96004
	setup	CLK (R)	0.17253	0.23706	1.11123
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11616	-0.20592	-0.96456
	setup	CLK (R)	0.16941	0.23706	1.14147

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)	-0.08241	-0.17060	-1.36434
	setup	CLK (R)	0.19945	0.28229	2.23406
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09723	-0.18816	-1.57726
	setup	CLK (R)	0.23362	0.31361	2.39184
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10447	-0.19603	-1.40987
	setup	CLK (R)	0.23287	0.31469	2.39769

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)	-0.09353	-0.18165	-0.91418
	setup	CLK (R)	0.14256	0.20858	1.02495
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11271	-0.20319	-0.96004
	setup	CLK (R)	0.17253	0.23706	1.11123
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11616	-0.20592	-0.96456
	setup	CLK (R)	0.16941	0.23706	1.14147

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)	-0.08241	-0.17060	-1.36434
	setup	CLK (R)	0.19945	0.28229	2.23406
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09723	-0.18816	-1.57726
	setup	CLK (R)	0.23362	0.31361	2.39184
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10447	-0.19603	-1.40987
	setup	CLK (R)	0.23287	0.31469	2.39769

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)	-0.11617	-0.18984	-0.87849
	setup	CLK (R)	0.17405	0.22346	0.98291
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13630	-0.20714	-0.91131
	setup	CLK (R)	0.20283	0.24947	1.05436
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13671	-0.20708	-0.91217
	setup	CLK (R)	0.19756	0.24907	1.07505

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)	-0.11118	-0.18699	-1.45279
	setup	CLK (R)	0.24492	0.30441	2.25516
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12871	-0.20378	-1.64912
	setup	CLK (R)	0.27903	0.33703	2.37737
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13582	-0.21083	-1.47329
	setup	CLK (R)	0.27930	0.33724	2.39294

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)	-0.11617	-0.18984	-0.87849
	hold	CLK (R)	-0.12341	-0.19574	-0.88996
	setup	CLK (R)	0.16916	0.21519	0.97832
	setup	CLK (R)	0.17405	0.22346	0.98291
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13630	-0.20714	-0.91131
	hold	CLK (R)	-0.14221	-0.21598	-0.92475
	setup	CLK (R)	0.19820	0.24359	1.04705
	setup	CLK (R)	0.20283	0.24947	1.05436
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13671	-0.20708	-0.91217
	hold	CLK (R)	-0.14541	-0.21798	-0.92691
	setup	CLK (R)	0.19145	0.24150	1.07179
	setup	CLK (R)	0.19756	0.24907	1.07505

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)	-0.11745	-0.19415	-1.47105
	hold	CLK (R)	-0.11118	-0.18699	-1.45279
	setup	CLK (R)	0.24411	0.30441	2.24319
	setup	CLK (R)	0.24492	0.30433	2.25516
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13463	-0.20962	-1.66028
	hold	CLK (R)	-0.12871	-0.20378	-1.64912
	setup	CLK (R)	0.27903	0.33703	2.37089
	setup	CLK (R)	0.27852	0.33675	2.37737
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14394	-0.21390	-1.51099
	hold	CLK (R)	-0.13582	-0.21083	-1.47329
	setup	CLK (R)	0.27930	0.33724	2.38847
	setup	CLK (R)	0.27748	0.33675	2.39294

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)	-0.10769	-0.14858	-0.09167
	setup	CLK (R)	0.24621	0.25667	1.17618
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12591	-0.16410	-0.16693
	setup	CLK (R)	0.28014	0.28862	1.25519
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12599	-0.16789	-0.11743
	setup	CLK (R)	0.27893	0.28718	1.27821

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)	-0.09666	-0.15904	-1.26316
	setup	CLK (R)	0.21427	0.26996	2.05646
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11249	-0.17508	-1.43793
	setup	CLK (R)	0.24729	0.30289	2.19439
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11889	-0.18203	-1.30483
	setup	CLK (R)	0.24500	0.30289	2.22676

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)	-0.11783	-0.14858	-0.09167
	hold	CLK (R)	-0.10769	-0.19875	-1.07124
	setup	CLK (R)	0.24621	0.25667	0.78320
	setup	CLK (R)	0.15660	0.22746	1.17618
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13818	-0.16410	-0.16693
	hold	CLK (R)	-0.12591	-0.21985	-1.11259
	setup	CLK (R)	0.28014	0.28862	0.88111
	setup	CLK (R)	0.18640	0.25347	1.25519
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14101	-0.16789	-0.11743
	hold	CLK (R)	-0.12599	-0.22191	-1.11368
	setup	CLK (R)	0.27893	0.28718	0.89592
	setup	CLK (R)	0.18060	0.25397	1.27821

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)	-0.14762	-0.24426	-1.92910
	hold	CLK (R)	-0.09666	-0.15904	-1.26316
	setup	CLK (R)	0.19545	0.26628	1.96292
	setup	CLK (R)	0.21427	0.26996	2.05646
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16930	-0.25894	-1.93093
	hold	CLK (R)	-0.11249	-0.17508	-1.43793
	setup	CLK (R)	0.22603	0.28871	1.99351
	setup	CLK (R)	0.24729	0.30289	2.19439
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16710	-0.25894	-1.93291
	hold	CLK (R)	-0.11889	-0.18203	-1.30483
	setup	CLK (R)	0.22325	0.28813	2.00342
	setup	CLK (R)	0.24500	0.30289	2.22676

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)	-0.08520	-0.13708	-0.48484
	removal	CLK (R)	0.10794	0.15431	0.62793
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.13091	-0.17902	-0.49337
	removal	CLK (R)	0.18039	0.39474	5.15116
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12331	-0.17855	-0.53103
	removal	CLK (R)	0.15782	0.32404	3.88577

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)	-0.08521	-0.13708	-0.48484
	recovery	CLK (R)	-0.08520	-0.13708	-0.48484
	recovery	CLK (R)	-0.08531	-0.13708	-0.48484
	removal	CLK (R)	0.10794	0.15431	0.62793
	removal	CLK (R)	0.10794	0.15431	0.62793
	removal	CLK (R)	0.10794	0.15431	0.62499
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.13091	-0.17902	-0.49421
	recovery	CLK (R)	-0.13091	-0.17902	-0.49337
	recovery	CLK (R)	-0.13091	-0.17902	-0.49445
	removal	CLK (R)	0.18039	0.39474	5.15116
	removal	CLK (R)	0.18039	0.39474	5.15116
	removal	CLK (R)	0.18039	0.39474	5.13283
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12331	-0.17855	-0.53357
	recovery	CLK (R)	-0.12331	-0.17855	-0.53103
	recovery	CLK (R)	-0.12331	-0.17855	-0.53322
	removal	CLK (R)	0.15782	0.32404	3.88577
	removal	CLK (R)	0.15782	0.32404	3.88577
	removal	CLK (R)	0.15782	0.32404	3.87347

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 ()	0.16880	0.67139	16.50020
	min_pulse_width	SET_B ()	0.14367	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.18639	0.67139	16.50020
	min_pulse_width	SET_B ()	0.16377	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.18890	0.67139	16.50020
	min_pulse_width	SET_B ()	0.18388	0.67139	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 ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.08839	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.09090	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.09090	0.67139	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 ()	0.15875	0.67139	16.50020
	min_pulse_width	CLK ()	0.21906	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.20649	0.67139	16.50020
	min_pulse_width	CLK ()	0.26681	0.67139	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.25927	0.67139	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	0.03858	0.04533	0.17513
	CLK	0.03387	0.04062	0.17075
	SET_B	0.02260	0.02801	0.10898
	SET_B	0.02826	0.03363	0.11467
sky130_fd_sc_hs__sdfstp_2	CLK	0.04492	0.05187	0.18528
	CLK	0.04026	0.04721	0.18130
	SET_B	0.02660	0.03170	0.11371
	SET_B	0.03241	0.03748	0.11942
sky130_fd_sc_hs__sdfstp_4	CLK	0.05703	0.06348	0.19665
	CLK	0.05244	0.05895	0.19335
	SET_B	0.03971	0.04400	0.12597
	SET_B	0.04552	0.04985	0.13175

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.03590	0.04263	0.16582
	CLK	0.03079	0.03740	0.16030
sky130_fd_sc_hs__sdfstp_2	CLK	0.04514	0.05159	0.17485
	CLK	0.04013	0.04637	0.16837
sky130_fd_sc_hs__sdfstp_4	CLK	0.05580	0.06193	0.18515
	CLK	0.05069	0.05668	0.17875

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00361	0.00363	0.00364
	(CLK * SCD * SCE)	0.00171	0.00170	0.00174
	(CLK * !SCE)	0.00670	0.00963	0.06220
	(CLK * !SCE)	0.00323	0.00614	0.05872
	(CLK * !SCD * SCE)	0.00273	0.00274	0.00272
	(CLK * !SCD * SCE)	0.00053	0.00051	0.00050
	(!CLK * SCD * SCE)	0.00357	0.00358	0.00360
	(!CLK * SCD * SCE)	0.00167	0.00166	0.00169
	(!CLK * !SCE * SET_B)	0.01439	0.01683	0.07105
	(!CLK * !SCE * SET_B)	0.01060	0.01304	0.06727
	(!CLK * !SCE * !SET_B * Q)	0.01191	0.01403	0.06421
	(!CLK * !SCE * !SET_B * Q)	0.00802	0.01014	0.06033
	(!CLK * !SCD * SCE)	0.00274	0.00275	0.00272
	(!CLK * !SCD * SCE)	0.00054	0.00052	0.00051
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00335	0.00336	0.00338
	(CLK * SCD * SCE)	0.00145	0.00144	0.00147
	(CLK * !SCE)	0.00639	0.00932	0.06188
	(CLK * !SCE)	0.00292	0.00583	0.05840
	(CLK * !SCD * SCE)	0.00247	0.00248	0.00245
	(CLK * !SCD * SCE)	0.00027	0.00025	0.00024
	(!CLK * SCD * SCE)	0.00329	0.00331	0.00333
	(!CLK * SCD * SCE)	0.00139	0.00138	0.00142
	(!CLK * !SCE * SET_B)	0.01609	0.01843	0.07202
	(!CLK * !SCE * SET_B)	0.01217	0.01451	0.06810
	(!CLK * !SCE * !SET_B * Q)	0.01340	0.01544	0.06485
	(!CLK * !SCE * !SET_B * Q)	0.00938	0.01141	0.06083
	(!CLK * !SCD * SCE)	0.00248	0.00249	0.00246
	(!CLK * !SCD * SCE)	0.00028	0.00026	0.00025

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00552	0.00553	0.00555
	(CLK * SCD * SCE)	0.00361	0.00361	0.00364
	(CLK * !SCE)	0.00871	0.01155	0.06404
	(CLK * !SCE)	0.00524	0.00806	0.06056
	(CLK * !SCD * SCE)	0.00450	0.00451	0.00449
	(CLK * !SCD * SCE)	0.00231	0.00229	0.00228
	(!CLK * SCD * SCE)	0.00449	0.00450	0.00452
	(!CLK * SCD * SCE)	0.00259	0.00258	0.00261
	(!CLK * !SCE * SET_B)	0.01716	0.01950	0.07309
	(!CLK * !SCE * SET_B)	0.01335	0.01567	0.06926
	(!CLK * !SCE * !SET_B * Q)	0.01452	0.01654	0.06594
	(!CLK * !SCE * !SET_B * Q)	0.01060	0.01260	0.06202
	(!CLK * !SCD * SCE)	0.00368	0.00368	0.00366
	(!CLK * !SCD * SCE)	0.00148	0.00147	0.00145

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00138	0.00137	0.00123
	(CLK * SCD * SCE)	0.00330	0.00329	0.00316
	(CLK * !SCE)	0.00230	0.00563	0.05876
	(CLK * !SCE)	0.00578	0.00912	0.06224
	(CLK * !SCD * SCE)	0.00141	0.00140	0.00141
	(CLK * !SCD * SCE)	0.00362	0.00362	0.00362
	(!CLK * SCD * SCE)	0.00133	0.00132	0.00119
	(!CLK * SCD * SCE)	0.00326	0.00325	0.00311
	(!CLK * !SCE * SET_B)	0.01036	0.01330	0.06838
	(!CLK * !SCE * SET_B)	0.01414	0.01707	0.07216
	(!CLK * !SCE * !SET_B * Q)	0.00638	0.00898	0.06014
	(!CLK * !SCE * !SET_B * Q)	0.01026	0.01288	0.06403
	(!CLK * !SCD * SCE)	0.00141	0.00141	0.00142
	(!CLK * !SCD * SCE)	0.00363	0.00363	0.00363
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00112	0.00111	0.00097
	(CLK * SCD * SCE)	0.00304	0.00303	0.00290
	(CLK * !SCE)	0.00210	0.00543	0.05855
	(CLK * !SCE)	0.00557	0.00891	0.06203
	(CLK * !SCD * SCE)	0.00114	0.00114	0.00115
	(CLK * !SCD * SCE)	0.00336	0.00336	0.00336
	(!CLK * SCD * SCE)	0.00106	0.00105	0.00091
	(!CLK * SCD * SCE)	0.00299	0.00298	0.00284
	(!CLK * !SCE * SET_B)	0.01165	0.01448	0.06924
	(!CLK * !SCE * SET_B)	0.01557	0.01839	0.07315
	(!CLK * !SCE * !SET_B * Q)	0.00735	0.00984	0.06047
	(!CLK * !SCE * !SET_B * Q)	0.01137	0.01388	0.06450
	(!CLK * !SCD * SCE)	0.00116	0.00115	0.00116
	(!CLK * !SCD * SCE)	0.00338	0.00338	0.00337

sky130_fd_sc_hs__sdfstp_4	(CLK * SCD * SCE)	0.00329	0.00328	0.00314
	(CLK * SCD * SCE)	0.00521	0.00520	0.00507
	(CLK * !SCE)	0.00428	0.00757	0.06069
	(CLK * !SCE)	0.00776	0.01104	0.06417
	(CLK * !SCD * SCE)	0.00318	0.00317	0.00318
	(CLK * !SCD * SCE)	0.00538	0.00539	0.00538
	(!CLK * SCD * SCE)	0.00226	0.00225	0.00211
	(!CLK * SCD * SCE)	0.00418	0.00417	0.00403
	(!CLK * !SCE * SET_B)	0.01297	0.01578	0.07054
	(!CLK * !SCE * SET_B)	0.01679	0.01961	0.07436
	(!CLK * !SCE * !SET_B * Q)	0.00870	0.01118	0.06179
	(!CLK * !SCE * !SET_B * Q)	0.01263	0.01512	0.06572
	(!CLK * !SCD * SCE)	0.00235	0.00234	0.00235
	(!CLK * !SCD * SCE)	0.00456	0.00456	0.00456

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00910	0.01143	0.06220
	(CLK * D * SCE)	0.00414	0.00644	0.05722
	(CLK * !D * SCE)	0.01037	0.01246	0.06267
	(CLK * !D * SCE)	0.00514	0.00722	0.05743
	(!CLK * D * SCE * SET_B)	0.01664	0.01872	0.07080
	(!CLK * D * SCE * SET_B)	0.01137	0.01345	0.06553
	(!CLK * D * SCE * !SET_B * Q)	0.01415	0.01602	0.06475
	(!CLK * D * SCE * !SET_B * Q)	0.00877	0.01064	0.05939
	(!CLK * !D * SCE * SET_B)	0.01792	0.01986	0.07159
	(!CLK * !D * SCE * SET_B)	0.01238	0.01430	0.06604
	(!CLK * !D * SCE * !SET_B * Q)	0.01542	0.01714	0.06531
	(!CLK * !D * SCE * !SET_B * Q)	0.00978	0.01149	0.05966
	!SCE	0.00387	0.00367	0.00391
	!SCE	0.00093	0.00071	0.00098
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00876	0.01107	0.06186
	(CLK * D * SCE)	0.00383	0.00613	0.05693
	(CLK * !D * SCE)	0.01003	0.01212	0.06233
	(CLK * !D * SCE)	0.00483	0.00691	0.05713
	(!CLK * D * SCE * SET_B)	0.01831	0.02034	0.07196
	(!CLK * D * SCE * SET_B)	0.01295	0.01498	0.06659
	(!CLK * D * SCE * !SET_B * Q)	0.01561	0.01743	0.06558
	(!CLK * D * SCE * !SET_B * Q)	0.01014	0.01195	0.06011
	(!CLK * !D * SCE * SET_B)	0.01959	0.02150	0.07264
	(!CLK * !D * SCE * SET_B)	0.01396	0.01586	0.06700
	(!CLK * !D * SCE * !SET_B * Q)	0.01688	0.01856	0.06614
	(!CLK * !D * SCE * !SET_B * Q)	0.01115	0.01281	0.06040
	!SCE	0.00358	0.00336	0.00361
	!SCE	0.00066	0.00045	0.00072

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.01111	0.01340	0.06409
	(CLK * D * SCE)	0.00614	0.00841	0.05911
	(CLK * !D * SCE)	0.01238	0.01444	0.06455
	(CLK * !D * SCE)	0.00714	0.00920	0.05931
	(!CLK * D * SCE * SET_B)	0.01943	0.02145	0.07304
	(!CLK * D * SCE * SET_B)	0.01410	0.01612	0.06772
	(!CLK * D * SCE * !SET_B * Q)	0.01676	0.01857	0.06671
	(!CLK * D * SCE * !SET_B * Q)	0.01134	0.01314	0.06129
	(!CLK * !D * SCE * SET_B)	0.02070	0.02261	0.07380
	(!CLK * !D * SCE * SET_B)	0.01511	0.01701	0.06821
	(!CLK * !D * SCE * !SET_B * Q)	0.01803	0.01970	0.06727
	(!CLK * !D * SCE * !SET_B * Q)	0.01234	0.01400	0.06158
	!SCE	0.00577	0.00558	0.00581
	!SCE	0.00283	0.00261	0.00288

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00423	0.00659	0.05768
	(CLK * D * SCE)	0.00922	0.01158	0.06262
	(CLK * !D * SCE)	0.00373	0.00624	0.05761
	(CLK * !D * SCE)	0.00898	0.01148	0.06283
	(!CLK * D * SCE * SET_B)	0.01248	0.01456	0.06731
	(!CLK * D * SCE * SET_B)	0.01777	0.01985	0.07256
	(!CLK * D * SCE * !SET_B * Q)	0.00841	0.01022	0.05970
	(!CLK * D * SCE * !SET_B * Q)	0.01381	0.01562	0.06505
	(!CLK * !D * SCE * SET_B)	0.01206	0.01426	0.06745
	(!CLK * !D * SCE * SET_B)	0.01761	0.01981	0.07297
	(!CLK * !D * SCE * !SET_B * Q)	0.00792	0.00981	0.05959
	(!CLK * !D * SCE * !SET_B * Q)	0.01357	0.01548	0.06521
	!SCE	0.00105	0.00103	0.00095
	!SCE	0.00398	0.00398	0.00390
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00411	0.00646	0.05756
	(CLK * D * SCE)	0.00904	0.01142	0.06246
	(CLK * !D * SCE)	0.00361	0.00610	0.05749
	(CLK * !D * SCE)	0.00880	0.01132	0.06267
	(!CLK * D * SCE * SET_B)	0.01388	0.01585	0.06827
	(!CLK * D * SCE * SET_B)	0.01925	0.02123	0.07361
	(!CLK * D * SCE * !SET_B * Q)	0.00946	0.01118	0.06022
	(!CLK * D * SCE * !SET_B * Q)	0.01494	0.01668	0.06567
	(!CLK * !D * SCE * SET_B)	0.01345	0.01551	0.06836
	(!CLK * !D * SCE * SET_B)	0.01907	0.02116	0.07399
	(!CLK * !D * SCE * !SET_B * Q)	0.00897	0.01076	0.06010
	(!CLK * !D * SCE * !SET_B * Q)	0.01470	0.01652	0.06583
	!SCE	0.00082	0.00080	0.00073
	!SCE	0.00373	0.00371	0.00363

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00621	0.00853	0.05964
	(CLK * D * SCE)	0.01119	0.01353	0.06459
	(CLK * !D * SCE)	0.00571	0.00817	0.05958
	(CLK * !D * SCE)	0.01094	0.01343	0.06480
	(!CLK * D * SCE * SET_B)	0.01512	0.01708	0.06951
	(!CLK * D * SCE * SET_B)	0.02044	0.02242	0.07480
	(!CLK * D * SCE * !SET_B * Q)	0.01074	0.01245	0.06147
	(!CLK * D * SCE * !SET_B * Q)	0.01617	0.01790	0.06688
	(!CLK * !D * SCE * SET_B)	0.01469	0.01675	0.06960
	(!CLK * !D * SCE * SET_B)	0.02027	0.02235	0.07517
	(!CLK * !D * SCE * !SET_B * Q)	0.01025	0.01203	0.06136
	(!CLK * !D * SCE * !SET_B * Q)	0.01594	0.01774	0.06704
	!SCE	0.00295	0.00293	0.00286
	!SCE	0.00590	0.00588	0.00581

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00826	0.01213	0.08137
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00187	0.00571	0.07499
	(CLK * D * !SCD)	0.01069	0.01483	0.08827
	(CLK * D * !SCD)	0.00616	0.01028	0.08369
	(CLK * !D * SCD)	0.01298	0.01955	0.13646
	(CLK * !D * SCD)	0.00497	0.01152	0.12844
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00822	0.01209	0.08133
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00183	0.00567	0.07494
	(!CLK * D * !SCD * SET_B)	0.01858	0.02280	0.09598
	(!CLK * D * !SCD * SET_B)	0.01434	0.01854	0.09170
	(!CLK * D * !SCD * !SET_B * Q)	0.01452	0.01876	0.09161
	(!CLK * D * !SCD * !SET_B * Q)	0.01038	0.01461	0.08743
	(!CLK * !D * SCD * SET_B)	0.02066	0.02704	0.14603
	(!CLK * !D * SCD * SET_B)	0.01235	0.01870	0.13771
	(!CLK * !D * SCD * !SET_B * Q)	0.01817	0.02426	0.13916
	(!CLK * !D * SCD * !SET_B * Q)	0.00976	0.01582	0.13074
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00779	0.01179	0.08071
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00189	0.00586	0.07478

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00801	0.01187	0.08106
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00161	0.00544	0.07467
	(CLK * D * !SCD)	0.01054	0.01468	0.08813
	(CLK * D * !SCD)	0.00599	0.01011	0.08352
	(CLK * !D * SCD)	0.01268	0.01923	0.13608
	(CLK * !D * SCD)	0.00466	0.01119	0.12806
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00795	0.01181	0.08101
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00156	0.00539	0.07462
	(!CLK * D * !SCD * SET_B)	0.01991	0.02413	0.09726
	(!CLK * D * !SCD * SET_B)	0.01579	0.02000	0.09310
	(!CLK * D * !SCD * !SET_B * Q)	0.01552	0.01979	0.09253
	(!CLK * D * !SCD * !SET_B * Q)	0.01151	0.01574	0.08847
	(!CLK * !D * SCD * SET_B)	0.02237	0.02866	0.14718
	(!CLK * !D * SCD * SET_B)	0.01391	0.02019	0.13872
	(!CLK * !D * SCD * !SET_B * Q)	0.01967	0.02566	0.13994
	(!CLK * !D * SCD * !SET_B * Q)	0.01111	0.01709	0.13137
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00755	0.01154	0.08042
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00164	0.00560	0.07447

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01022	0.01409	0.08332
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00377	0.00760	0.07688
	(CLK * D * !SCD)	0.01271	0.01683	0.09030
	(CLK * D * !SCD)	0.00810	0.01223	0.08566
	(CLK * !D * SCD)	0.01504	0.02160	0.13838
	(CLK * !D * SCD)	0.00697	0.01347	0.13029
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00919	0.01305	0.08229
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00274	0.00657	0.07585
	(!CLK * D * !SCD * SET_B)	0.02123	0.02544	0.09851
	(!CLK * D * !SCD * SET_B)	0.01697	0.02117	0.09421
	(!CLK * D * !SCD * !SET_B * Q)	0.01687	0.02112	0.09384
	(!CLK * D * !SCD * !SET_B * Q)	0.01272	0.01694	0.08965
	(!CLK * !D * SCD * SET_B)	0.02350	0.02978	0.14836
	(!CLK * !D * SCD * SET_B)	0.01508	0.02134	0.13992
	(!CLK * !D * SCD * !SET_B * Q)	0.02084	0.02682	0.14115
	(!CLK * !D * SCD * !SET_B * Q)	0.01232	0.01827	0.13262
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00878	0.01277	0.08169
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00281	0.00677	0.07570

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)**	0.00171	0.00624	0.07593
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00808	0.01266	0.08233
	(CLK * D * !SCD)	0.00699	0.01129	0.08348
	(CLK * D * !SCD)	0.01155	0.01586	0.08787
	(CLK * !D * SCD)	0.00276	0.00971	0.12767
	(CLK * !D * SCD)	0.01079	0.01777	0.13568
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00166	0.00619	0.07589
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00805	0.01261	0.08229
	(!CLK * D * !SCD * SET_B)	0.01464	0.01901	0.09028
	(!CLK * D * !SCD * SET_B)	0.01890	0.02329	0.09435
	(!CLK * D * !SCD * !SET_B * Q)	0.01216	0.01647	0.08757
	(!CLK * D * !SCD * !SET_B * Q)	0.01631	0.02065	0.09156
	(!CLK * !D * SCD * SET_B)	0.01082	0.01736	0.13653
	(!CLK * !D * SCD * SET_B)	0.01912	0.02571	0.14486
	(!CLK * !D * SCD * !SET_B * Q)	0.00685	0.01312	0.12893
	(!CLK * !D * SCD * !SET_B * Q)	0.01526	0.02158	0.13737
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00175	0.00623	0.07568
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00765	0.01216	0.08160

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00143	0.00598	0.07563
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00783	0.01240	0.08203
	(CLK * D * !SCD)	0.00667	0.01096	0.08313
	(CLK * D * !SCD)	0.01125	0.01555	0.08752
	(CLK * !D * SCD)	0.00255	0.00950	0.12740
	(CLK * !D * SCD)	0.01059	0.01756	0.13541
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00139	0.00591	0.07557
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00777	0.01234	0.08197
	(!CLK * D * !SCD * SET_B)	0.01633	0.02070	0.09174
	(!CLK * D * !SCD * SET_B)	0.02046	0.02486	0.09570
	(!CLK * D * !SCD * !SET_B * Q)	0.01363	0.01800	0.08882
	(!CLK * D * !SCD * !SET_B * Q)	0.01767	0.02206	0.09267
	(!CLK * !D * SCD * SET_B)	0.01212	0.01855	0.13724
	(!CLK * !D * SCD * SET_B)	0.02057	0.02701	0.14569
	(!CLK * !D * SCD * !SET_B * Q)	0.00782	0.01400	0.12920
	(!CLK * !D * SCD * !SET_B * Q)	0.01637	0.02258	0.13776
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00146	0.00596	0.07536
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00741	0.01191	0.08130

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00356	0.00810	0.07780
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01000	0.01458	0.08425
	(CLK * D * !SCD)	0.00894	0.01322	0.08531
	(CLK * D * !SCD)	0.01356	0.01787	0.08976
	(CLK * !D * SCD)	0.00471	0.01160	0.12953
	(CLK * !D * SCD)	0.01278	0.01973	0.13763
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00253	0.00706	0.07677
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00898	0.01355	0.08322
	(!CLK * D * !SCD * SET_B)	0.01736	0.02174	0.09279
	(!CLK * D * !SCD * SET_B)	0.02163	0.02603	0.09689
	(!CLK * D * !SCD * !SET_B * Q)	0.01471	0.01907	0.08990
	(!CLK * D * !SCD * !SET_B * Q)	0.01888	0.02327	0.09389
	(!CLK * !D * SCD * SET_B)	0.01339	0.01982	0.13856
	(!CLK * !D * SCD * SET_B)	0.02181	0.02824	0.14698
	(!CLK * !D * SCD * !SET_B * Q)	0.00912	0.01529	0.13054
	(!CLK * !D * SCD * !SET_B * Q)	0.01765	0.02385	0.13907
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00263	0.00712	0.07657
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00859	0.01312	0.08255

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00497	0.00500	0.00497
	(CLK * Q)	-0.00024	-0.00025	-0.00024
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00515	0.00518	0.00515
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00006	-0.00007	-0.00006
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00763	0.00970	0.05073
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00223	0.00430	0.04532
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00498	0.00501	0.00499
	(CLK * Q)	-0.00045	-0.00046	-0.00044
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00520	0.00523	0.00521
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00023	-0.00024	-0.00023
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00764	0.00972	0.05087
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00202	0.00407	0.04524

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00597	0.00600	0.00598
	(CLK * Q)	0.00064	0.00062	0.00064
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00617	0.00620	0.00618
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00084	0.00083	0.00084
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00869	0.01074	0.05154
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00315	0.00518	0.04600

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00021	-0.00028	-0.00028
	(CLK * Q)	0.00503	0.00497	0.00493
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00044	-0.00053	-0.00055
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00481	0.00471	0.00467
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00193	0.00447	0.04570
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00734	0.00989	0.05108

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00071	-0.00081	-0.00082
	(CLK * Q)	0.00470	0.00466	0.00462
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00100	-0.00113	-0.00114
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00442	0.00434	0.00430
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00163	0.00413	0.04552
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00723	0.00977	0.05115
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00068	0.00059	0.00058
	(CLK * Q)	0.00600	0.00597	0.00593
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00041	0.00028	0.00027
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00574	0.00566	0.00562
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00292	0.00540	0.04644
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00843	0.01095	0.05195

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)**	0.01828	0.02473	0.14691
	(D * SCD * SCE * Q)	0.01339	0.01982	0.14201
	(D * !SCE * Q)	0.01797	0.02442	0.14660
	(D * !SCE * Q)	0.01308	0.01951	0.14170
	(D * !SCD * SCE * SET_B * !Q)	0.01760	0.02401	0.14619
	(D * !SCD * SCE * SET_B * !Q)	0.01270	0.01908	0.14127
	(D * !SCD * SCE * !SET_B * Q)	0.03221	0.03895	0.16190
	(D * !SCD * SCE * !SET_B * Q)	0.02694	0.03365	0.15661
	(!D * SCD * SCE * Q)	0.01854	0.02498	0.14717
	(!D * SCD * SCE * Q)	0.01364	0.02007	0.14227
	(!D * !SCE * SET_B * !Q)	0.01710	0.02351	0.14569
	(!D * !SCE * SET_B * !Q)	0.01220	0.01858	0.14077
	(!D * !SCE * !SET_B * Q)	0.03169	0.03843	0.16138
	(!D * !SCE * !SET_B * Q)	0.02640	0.03311	0.15608
	(!D * !SCD * SCE * SET_B * !Q)	0.01760	0.02400	0.14619
	(!D * !SCD * SCE * SET_B * !Q)	0.01270	0.01908	0.14127
	(!D * !SCD * SCE * !SET_B * Q)	0.03225	0.03892	0.16179
	(!D * !SCD * SCE * !SET_B * Q)	0.02696	0.03363	0.15649

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.02048	0.02665	0.14853
	(D * SCD * SCE * Q)	0.01564	0.02178	0.14367
	(D * !SCE * Q)	0.02017	0.02634	0.14823
	(D * !SCE * Q)	0.01533	0.02148	0.14337
	(D * !SCD * SCE * SET_B * !Q)	0.02154	0.02763	0.14935
	(D * !SCD * SCE * SET_B * !Q)	0.01666	0.02273	0.14447
	(D * !SCD * SCE * !SET_B * Q)	0.04913	0.05592	0.18023
	(D * !SCD * SCE * !SET_B * Q)	0.04381	0.05058	0.17490
	(!D * SCD * SCE * Q)	0.02074	0.02691	0.14879
	(!D * SCD * SCE * Q)	0.01589	0.02204	0.14393
	(!D * !SCE * SET_B * !Q)	0.02104	0.02713	0.14885
	(!D * !SCE * SET_B * !Q)	0.01616	0.02223	0.14397
	(!D * !SCE * !SET_B * Q)	0.04861	0.05540	0.17973
	(!D * !SCE * !SET_B * Q)	0.04327	0.05005	0.17437
	(!D * !SCD * SCE * SET_B * !Q)	0.02154	0.02764	0.14935
	(!D * !SCD * SCE * SET_B * !Q)	0.01666	0.02274	0.14446
	(!D * !SCD * SCE * !SET_B * Q)	0.04920	0.05592	0.18018
	(!D * !SCD * SCE * !SET_B * Q)	0.04387	0.05058	0.17483

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.02146	0.02767	0.14962
	(D * SCD * SCE * Q)	0.01660	0.02279	0.14475
	(D * !SCE * Q)	0.02115	0.02737	0.14931
	(D * !SCE * Q)	0.01630	0.02249	0.14444
	(D * !SCD * SCE * SET_B * !Q)	0.02224	0.02837	0.14986
	(D * !SCD * SCE * SET_B * !Q)	0.01736	0.02347	0.14498
	(D * !SCD * SCE * !SET_B * Q)	0.05112	0.05804	0.18269
	(D * !SCD * SCE * !SET_B * Q)	0.04587	0.05278	0.17741
	(!D * SCD * SCE * Q)	0.02172	0.02793	0.14987
	(!D * SCD * SCE * Q)	0.01686	0.02305	0.14500
	(!D * !SCE * SET_B * !Q)	0.02174	0.02787	0.14964
	(!D * !SCE * SET_B * !Q)	0.01686	0.02297	0.14475
	(!D * !SCE * !SET_B * Q)	0.05060	0.05752	0.18227
	(!D * !SCE * !SET_B * Q)	0.04533	0.05224	0.17700
	(!D * !SCD * SCE * SET_B * !Q)	0.02224	0.02838	0.15013
	(!D * !SCD * SCE * SET_B * !Q)	0.01736	0.02348	0.14524
	(!D * !SCD * SCE * !SET_B * Q)	0.05120	0.05804	0.18268
	(!D * !SCD * SCE * !SET_B * Q)	0.04594	0.05277	0.17740

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)**	0.01861	0.02637	0.15313
	(D * SCD * SCE * SET_B * !Q)	0.02322	0.03100	0.15775
	(D * SCD * SCE * Q)	0.01101	0.01864	0.14157
	(D * SCD * SCE * Q)	0.01590	0.02354	0.14647
	(D * !SCE * SET_B * !Q)	0.01830	0.02605	0.15279
	(D * !SCE * SET_B * !Q)	0.02290	0.03068	0.15742
	(D * !SCE * Q)	0.01070	0.01834	0.14126
	(D * !SCE * Q)	0.01559	0.02324	0.14616
	(D * !SCD * SCE * SET_B * Q)	0.02053	0.02840	0.15289
	(D * !SCD * SCE * SET_B * Q)	0.02575	0.03366	0.15814
	(D * !SCD * SCE * SET_B * !Q)	0.01071	0.01836	0.14145
	(D * !SCD * SCE * SET_B * !Q)	0.01560	0.02327	0.14636
	(D * !SCD * SCE * !SET_B * Q)	0.01657	0.02446	0.14880
	(D * !SCD * SCE * !SET_B * Q)	0.02187	0.02980	0.15413
	(!D * SCD * SCE * SET_B * !Q)	0.01884	0.02660	0.15335
	(!D * SCD * SCE * SET_B * !Q)	0.02345	0.03123	0.15798
	(!D * SCD * SCE * Q)	0.01126	0.01890	0.14183
	(!D * SCD * SCE * Q)	0.01615	0.02380	0.14674
	(!D * !SCE * SET_B * Q)	0.02001	0.02788	0.15236
	(!D * !SCE * SET_B * Q)	0.02520	0.03310	0.15758
	(!D * !SCE * SET_B * !Q)	0.01021	0.01786	0.14095
	(!D * !SCE * SET_B * !Q)	0.01510	0.02277	0.14586
	(!D * !SCE * !SET_B * Q)	0.01607	0.02396	0.14829
	(!D * !SCE * !SET_B * Q)	0.02137	0.02929	0.15360
	(!D * !SCD * SCE * SET_B * Q)	0.02053	0.02840	0.15271
	(!D * !SCD * SCE * SET_B * Q)	0.02573	0.03363	0.15793
	(!D * !SCD * SCE * SET_B * !Q)	0.01071	0.01836	0.14145
	(!D * !SCD * SCE * SET_B * !Q)	0.01560	0.02327	0.14636
	(!D * !SCD * SCE * !SET_B * Q)	0.01658	0.02446	0.14880
	(!D * !SCD * SCE * !SET_B * Q)	0.02187	0.02978	0.15411

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.02313	0.03065	0.15748
	(D * SCD * SCE * SET_B * !Q)	0.02755	0.03509	0.16192
	(D * SCD * SCE * Q)	0.01212	0.01954	0.14195
	(D * SCD * SCE * Q)	0.01696	0.02442	0.14681
	(D * !SCE * SET_B * !Q)	0.02282	0.03033	0.15716
	(D * !SCE * SET_B * !Q)	0.02724	0.03477	0.16160
	(D * !SCE * Q)	0.01181	0.01924	0.14164
	(D * !SCE * Q)	0.01665	0.02411	0.14651
	(D * !SCD * SCE * SET_B * Q)	0.02364	0.03131	0.15550
	(D * !SCD * SCE * SET_B * Q)	0.02891	0.03659	0.16080
	(D * !SCD * SCE * SET_B * !Q)	0.01207	0.01960	0.14237
	(D * !SCD * SCE * SET_B * !Q)	0.01694	0.02450	0.14725
	(D * !SCD * SCE * !SET_B * Q)	0.01927	0.02697	0.15082
	(D * !SCD * SCE * !SET_B * Q)	0.02462	0.03235	0.15618
	(!D * SCD * SCE * SET_B * !Q)	0.02336	0.03088	0.15770
	(!D * SCD * SCE * SET_B * !Q)	0.02779	0.03532	0.16215
	(!D * SCD * SCE * Q)	0.01237	0.01980	0.14221
	(!D * SCD * SCE * Q)	0.01722	0.02467	0.14707
	(!D * !SCE * SET_B * Q)	0.02310	0.03079	0.15497
	(!D * !SCE * SET_B * Q)	0.02834	0.03604	0.16023
	(!D * !SCE * SET_B * !Q)	0.01157	0.01910	0.14188
	(!D * !SCE * SET_B * !Q)	0.01644	0.02399	0.14677
	(!D * !SCE * !SET_B * Q)	0.01877	0.02647	0.15031
	(!D * !SCE * !SET_B * Q)	0.02411	0.03184	0.15566
	(!D * !SCD * SCE * SET_B * Q)	0.02364	0.03133	0.15516
	(!D * !SCD * SCE * SET_B * Q)	0.02889	0.03659	0.16042
	(!D * !SCD * SCE * SET_B * !Q)	0.01207	0.01959	0.14236
	(!D * !SCD * SCE * SET_B * !Q)	0.01693	0.02449	0.14725
	(!D * !SCD * SCE * !SET_B * Q)	0.01927	0.02698	0.15082
	(!D * !SCD * SCE * !SET_B * Q)	0.02462	0.03234	0.15618

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.02352	0.03105	0.15798
	(D * SCD * SCE * SET_B * !Q)	0.02803	0.03558	0.16251
	(D * SCD * SCE * Q)	0.01310	0.02055	0.14298
	(D * SCD * SCE * Q)	0.01796	0.02543	0.14786
	(D * !SCE * SET_B * !Q)	0.02320	0.03074	0.15764
	(D * !SCE * SET_B * !Q)	0.02772	0.03527	0.16218
	(D * !SCE * Q)	0.01280	0.02024	0.14268
	(D * !SCE * Q)	0.01765	0.02513	0.14755
	(D * !SCD * SCE * SET_B * Q)	0.02441	0.03212	0.15632
	(D * !SCD * SCE * SET_B * Q)	0.02961	0.03733	0.16154
	(D * !SCD * SCE * SET_B * !Q)	0.01264	0.02019	0.14300
	(D * !SCD * SCE * SET_B * !Q)	0.01751	0.02509	0.14789
	(D * !SCD * SCE * !SET_B * Q)	0.02008	0.02778	0.15173
	(D * !SCD * SCE * !SET_B * Q)	0.02536	0.03310	0.15704
	(!D * SCD * SCE * SET_B * !Q)	0.02374	0.03128	0.15819
	(!D * SCD * SCE * SET_B * !Q)	0.02827	0.03582	0.16273
	(!D * SCD * SCE * Q)	0.01336	0.02080	0.14324
	(!D * SCD * SCE * Q)	0.01821	0.02569	0.14811
	(!D * !SCE * SET_B * Q)	0.02388	0.03159	0.15578
	(!D * !SCE * SET_B * Q)	0.02905	0.03678	0.16096
	(!D * !SCE * SET_B * !Q)	0.01214	0.01969	0.14250
	(!D * !SCE * SET_B * !Q)	0.01701	0.02459	0.14739
	(!D * !SCE * !SET_B * Q)	0.01958	0.02730	0.15121
	(!D * !SCE * !SET_B * Q)	0.02486	0.03261	0.15651
	(!D * !SCD * SCE * SET_B * Q)	0.02441	0.03213	0.15601
	(!D * !SCD * SCE * SET_B * Q)	0.02960	0.03733	0.16121
	(!D * !SCD * SCE * SET_B * !Q)	0.01264	0.02018	0.14300
	(!D * !SCD * SCE * SET_B * !Q)	0.01750	0.02509	0.14789
	(!D * !SCD * SCE * !SET_B * Q)	0.02008	0.02781	0.15173
	(!D * !SCD * SCE * !SET_B * Q)	0.02536	0.03311	0.15702

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00197	0.00200	0.00422	0.00310	1.33342	1.28126
sky130_fd_sc_hs__sdfxbp_2	0.00195	0.00197	0.00427	0.00309	2.60065	2.57267

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	337.19400	444.77800
sky130_fd_sc_hs__sdfxbp_2	0.00000	371.81000	485.01000

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)	0.19731	0.66104	6.22938
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.19065	0.56449	6.16804

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.20819	0.51806	3.49809
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.22217	0.48872	3.42224

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)	0.24484	0.71027	6.26247
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.28424	0.64822	6.21900

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)	0.23252	0.52288	3.37528
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.24674	0.49338	3.49587

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)	-0.06558	-0.14203	-0.74766
	setup	CLK (R)	0.13239	0.18666	0.89070
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06589	-0.14293	-0.76770
	setup	CLK (R)	0.13268	0.18936	0.90435

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)	-0.08178	-0.16722	-1.21611
	setup	CLK (R)	0.16721	0.25188	2.07905
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08153	-0.16905	-1.33656
	setup	CLK (R)	0.16956	0.25535	2.10573

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)	-0.06558	-0.14203	-0.74766
	setup	CLK (R)	0.13239	0.18666	0.89070
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06589	-0.14293	-0.76770
	setup	CLK (R)	0.13268	0.18936	0.90435

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)	-0.08178	-0.16722	-1.21611
	setup	CLK (R)	0.16721	0.25188	2.07905
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08153	-0.16905	-1.33656
	setup	CLK (R)	0.16956	0.25535	2.10573

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)	-0.08951	-0.15118	-0.71674
	setup	CLK (R)	0.16469	0.20761	0.85329
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08675	-0.15088	-0.72322
	setup	CLK (R)	0.16667	0.20604	0.82605

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)	-0.11756	-0.19370	-1.87436
	setup	CLK (R)	0.21987	0.28442	2.15584
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11567	-0.19708	-1.97936
	setup	CLK (R)	0.22254	0.28571	2.21246

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)	-0.08951	-0.15118	-0.71674
	hold	CLK (R)	-0.09583	-0.16090	-0.72924
	setup	CLK (R)	0.16257	0.19876	0.84176
	setup	CLK (R)	0.16469	0.20761	0.85329
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08675	-0.15088	-0.72322
	hold	CLK (R)	-0.09440	-0.16004	-0.73516
	setup	CLK (R)	0.15907	0.19748	0.82086
	setup	CLK (R)	0.16667	0.20604	0.82605

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)	-0.12512	-0.20192	-1.87436
	hold	CLK (R)	-0.11756	-0.19370	-1.89087
	setup	CLK (R)	0.21987	0.28442	2.14346
	setup	CLK (R)	0.21920	0.28102	2.15584
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12427	-0.20344	-1.97936
	hold	CLK (R)	-0.11567	-0.19708	-2.00043
	setup	CLK (R)	0.22254	0.28526	2.20192
	setup	CLK (R)	0.21851	0.28571	2.21246

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)	-0.08160	-0.15767	0.41276
	setup	CLK (R)	0.22026	0.23303	1.30144
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08058	-0.15854	-0.32396
	setup	CLK (R)	0.22306	0.23856	1.15679

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)	-0.09743	-0.15472	0.18417
	setup	CLK (R)	0.18602	0.24712	2.55667
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09961	-0.15744	-0.63409
	setup	CLK (R)	0.19037	0.24914	1.89535

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)	-0.12243	-0.15767	-0.29521
	hold	CLK (R)	-0.08160	-0.16019	0.41276
	setup	CLK (R)	0.22026	0.23303	0.40927
	setup	CLK (R)	0.14994	0.21094	1.30144
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12645	-0.16031	-0.32396
	hold	CLK (R)	-0.08058	-0.15854	-0.95220
	setup	CLK (R)	0.22306	0.23856	0.43749
	setup	CLK (R)	0.14779	0.20954	1.15679

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)	-0.12042	-0.20781	-1.80575
	hold	CLK (R)	-0.09743	-0.15472	0.18417
	setup	CLK (R)	0.18602	0.24712	1.86774
	setup	CLK (R)	0.18473	0.24023	2.55667
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12245	-0.21159	-1.82994
	hold	CLK (R)	-0.09961	-0.15744	-0.63409
	setup	CLK (R)	0.19037	0.24914	1.89535
	setup	CLK (R)	0.18813	0.24452	1.89211

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 ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.07582	0.67139	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.08085	0.67139	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 ()	0.15372	0.67139	16.50020
	min_pulse_width	CLK ()	0.18388	0.67139	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.15624	0.67139	16.50020
	min_pulse_width	CLK ()	0.18639	0.67139	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	0.02071	0.02463	0.09219
	CLK	0.01826	0.02218	0.08936
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02527	0.02919	0.09732
	CLK	0.02281	0.02673	0.09426

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02014	0.02399	0.08877
	CLK	0.01768	0.02153	0.08595
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02438	0.02790	0.09262
	CLK	0.02192	0.02543	0.09003

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02209	0.02597	0.09128
	CLK	0.01964	0.02349	0.08842
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02645	0.02996	0.09592
	CLK	0.02399	0.02749	0.09281

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01903	0.02299	0.08956
	CLK	0.01657	0.02049	0.08699
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02340	0.02735	0.09392
	CLK	0.02094	0.02487	0.09132

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00498	0.00499	0.00501
	(CLK * SCD * SCE)	0.00298	0.00298	0.00301
	(CLK * !SCE)	0.00804	0.01096	0.06392
	(CLK * !SCE)	0.00441	0.00732	0.06028
	(CLK * !SCD * SCE)	0.00398	0.00399	0.00396
	(CLK * !SCD * SCE)	0.00167	0.00167	0.00166
	(!CLK * SCD * SCE)	0.00376	0.00377	0.00379
	(!CLK * SCD * SCE)	0.00176	0.00176	0.00179
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01351	0.01691	0.07978
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00989	0.01328	0.07614
	(!CLK * !SCD * SCE)	0.00456	0.00456	0.00453
	(!CLK * !SCD * SCE)	0.00225	0.00224	0.00223
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00515	0.00517	0.00518
	(CLK * SCD * SCE)	0.00316	0.00315	0.00318
	(CLK * !SCE)	0.00811	0.01102	0.06396
	(CLK * !SCE)	0.00452	0.00742	0.06036
	(CLK * !SCD * SCE)	0.00417	0.00418	0.00415
	(CLK * !SCD * SCE)	0.00186	0.00186	0.00184
	(!CLK * SCD * SCE)	0.00422	0.00423	0.00425
	(!CLK * SCD * SCE)	0.00222	0.00221	0.00225
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01403	0.01743	0.08022
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01044	0.01383	0.07662
	(!CLK * !SCD * SCE)	0.00503	0.00503	0.00501
	(!CLK * !SCD * SCE)	0.00272	0.00272	0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00256	0.00254	0.00241
	(CLK * SCD * SCE)	0.00457	0.00456	0.00443
	(CLK * !SCE)	0.00371	0.00701	0.06064
	(CLK * !SCE)	0.00733	0.01064	0.06428
	(CLK * !SCD * SCE)	0.00243	0.00243	0.00243
	(CLK * !SCD * SCE)	0.00473	0.00474	0.00474
	(!CLK * SCD * SCE)	0.00134	0.00132	0.00119
	(!CLK * SCD * SCE)	0.00335	0.00334	0.00321
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01273	0.01625	0.07683
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01636	0.01989	0.08046
	(!CLK * !SCD * SCE)	0.00303	0.00302	0.00303
	(!CLK * !SCD * SCE)	0.00533	0.00534	0.00533
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00270	0.00268	0.00255
	(CLK * SCD * SCE)	0.00471	0.00471	0.00457
	(CLK * !SCE)	0.00399	0.00729	0.06091
	(CLK * !SCE)	0.00758	0.01090	0.06451
	(CLK * !SCD * SCE)	0.00257	0.00256	0.00256
	(CLK * !SCD * SCE)	0.00487	0.00487	0.00487
	(!CLK * SCD * SCE)	0.00176	0.00175	0.00162
	(!CLK * SCD * SCE)	0.00378	0.00377	0.00364
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01324	0.01672	0.07725
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01683	0.02033	0.08085
	(!CLK * !SCD * SCE)	0.00345	0.00343	0.00344
	(!CLK * !SCD * SCE)	0.00575	0.00575	0.00574

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.01036	0.01265	0.06326
	(CLK * D * SCE)	0.00560	0.00787	0.05849
	(CLK * !D * SCE)	0.01163	0.01370	0.06373
	(CLK * !D * SCE)	0.00660	0.00866	0.05870
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01589	0.01872	0.07848
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01114	0.01395	0.07371
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01718	0.01984	0.07919
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01216	0.01479	0.07416
	!SCE	0.00488	0.00467	0.00491
	!SCE	0.00222	0.00199	0.00225
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.01039	0.01270	0.06341
	(CLK * D * SCE)	0.00570	0.00799	0.05871
	(CLK * !D * SCE)	0.01166	0.01375	0.06389
	(CLK * !D * SCE)	0.00670	0.00877	0.05892
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01636	0.01920	0.07889
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01167	0.01450	0.07419
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01765	0.02031	0.07971
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01269	0.01534	0.07474
	!SCE	0.00499	0.00479	0.00503
	!SCE	0.00235	0.00213	0.00239

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00574	0.00806	0.05909
	(CLK * D * SCE)	0.01052	0.01285	0.06382
	(CLK * !D * SCE)	0.00523	0.00769	0.05901
	(CLK * !D * SCE)	0.01027	0.01274	0.06403
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01504	0.01755	0.07424
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01982	0.02233	0.07898
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01476	0.01743	0.07480
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01980	0.02248	0.07982
	!SCE	0.00259	0.00257	0.00250
	!SCE	0.00526	0.00526	0.00517
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00601	0.00835	0.05948
	(CLK * D * SCE)	0.01071	0.01308	0.06416
	(CLK * !D * SCE)	0.00550	0.00799	0.05941
	(CLK * !D * SCE)	0.01047	0.01297	0.06436
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01550	0.01800	0.07477
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02021	0.02273	0.07945
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01523	0.01791	0.07534
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02019	0.02288	0.08029
	!SCE	0.00279	0.00277	0.00270
	!SCE	0.00544	0.00544	0.00534

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)**	0.00983	0.01377	0.08383
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00315	0.00709	0.07718
	(CLK * D * !SCD)	0.01217	0.01642	0.09069
	(CLK * D * !SCD)	0.00742	0.01166	0.08591
	(CLK * !D * SCD)	0.01470	0.02140	0.14064
	(CLK * !D * SCD)	0.00634	0.01303	0.13230
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00861	0.01255	0.08261
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00194	0.00587	0.07597
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02125	0.02547	0.09944
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01653	0.02074	0.09466
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02021	0.02761	0.15779
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01185	0.01924	0.14945
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00967	0.01372	0.08345
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00348	0.00753	0.07725

sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01022	0.01412	0.08417
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00341	0.00730	0.07738
	(CLK * D * !SCD)	0.01266	0.01687	0.09114
	(CLK * D * !SCD)	0.00774	0.01191	0.08618
	(CLK * !D * SCD)	0.01503	0.02167	0.14094
	(CLK * !D * SCD)	0.00656	0.01320	0.13250
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00929	0.01319	0.08323
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00248	0.00637	0.07645
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02195	0.02613	0.10009
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01703	0.02120	0.09513
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02097	0.02832	0.15845
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01251	0.01985	0.15001
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01032	0.01433	0.08405
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00400	0.00801	0.07772

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)**	0.00275	0.00731	0.07783
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00940	0.01399	0.08448
	(CLK * D * !SCD)	0.00811	0.01244	0.08530
	(CLK * D * !SCD)	0.01288	0.01722	0.08989
	(CLK * !D * SCD)	0.00411	0.01107	0.13149
	(CLK * !D * SCD)	0.01245	0.01944	0.13985
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00154	0.00610	0.07661
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00818	0.01278	0.08327
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01356	0.01805	0.09166
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01833	0.02280	0.09625
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01312	0.02022	0.14646
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02147	0.02860	0.15479
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00335	0.00791	0.07812
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00955	0.01411	0.08429

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00287	0.00738	0.07789
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00965	0.01420	0.08469
	(CLK * D * !SCD)	0.00816	0.01245	0.08531
	(CLK * D * !SCD)	0.01310	0.01741	0.09007
	(CLK * !D * SCD)	0.00436	0.01128	0.13173
	(CLK * !D * SCD)	0.01281	0.01976	0.14019
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00194	0.00646	0.07696
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00872	0.01328	0.08376
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01407	0.01850	0.09212
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01898	0.02346	0.09687
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01358	0.02063	0.14685
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02203	0.02911	0.15531
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00377	0.00829	0.07849
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01010	0.01462	0.08481

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)	0.01738	0.02438	0.14901
	(D * SCD * SCE * Q * !Q_N)	0.01247	0.01944	0.14409
	(D * !SCE * Q * !Q_N)	0.01705	0.02407	0.14868
	(D * !SCE * Q * !Q_N)	0.01214	0.01913	0.14376
	(D * !SCD * SCE * !Q * Q_N)	0.01784	0.02483	0.14960
	(D * !SCD * SCE * !Q * Q_N)	0.01293	0.01989	0.14467
	(!D * SCD * SCE * Q * !Q_N)	0.01763	0.02464	0.14927
	(!D * SCD * SCE * Q * !Q_N)	0.01272	0.01970	0.14435
	(!D * !SCE * !Q * Q_N)	0.01734	0.02454	0.14899
	(!D * !SCE * !Q * Q_N)	0.01243	0.01961	0.14406
	(!D * !SCD * SCE * !Q * Q_N)	0.01784	0.02483	0.14959
	(!D * !SCD * SCE * !Q * Q_N)	0.01293	0.01989	0.14466
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01814	0.02511	0.15026
	(D * SCD * SCE * Q * !Q_N)	0.01323	0.02017	0.14534
	(D * !SCE * Q * !Q_N)	0.01782	0.02480	0.14995
	(D * !SCE * Q * !Q_N)	0.01291	0.01986	0.14503
	(D * !SCD * SCE * !Q * Q_N)	0.01833	0.02529	0.15058
	(D * !SCD * SCE * !Q * Q_N)	0.01343	0.02036	0.14567
	(!D * SCD * SCE * Q * !Q_N)	0.01839	0.02536	0.15052
	(!D * SCD * SCE * Q * !Q_N)	0.01348	0.02043	0.14560
	(!D * !SCE * !Q * Q_N)	0.01783	0.02480	0.14996
	(!D * !SCE * !Q * Q_N)	0.01293	0.01987	0.14504
	(!D * !SCD * SCE * !Q * Q_N)	0.01833	0.02529	0.15058
	(!D * !SCD * SCE * !Q * Q_N)	0.01342	0.02036	0.14567

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)**	0.01092	0.01855	0.14213
	(D * SCD * SCE * Q * !Q_N)	0.01583	0.02350	0.14706
	(D * SCD * SCE * !Q * Q_N)	0.01838	0.02620	0.15328
	(D * SCD * SCE * !Q * Q_N)	0.02329	0.03114	0.15820
	(D * !SCE * Q * !Q_N)	0.01061	0.01825	0.14179
	(D * !SCE * Q * !Q_N)	0.01552	0.02320	0.14672
	(D * !SCE * !Q * Q_N)	0.01806	0.02594	0.15389
	(D * !SCE * !Q * Q_N)	0.02297	0.03086	0.15881
	(D * !SCD * SCE * Q * !Q_N)	0.02193	0.02968	0.15597
	(D * !SCD * SCE * Q * !Q_N)	0.02687	0.03466	0.16092
	(D * !SCD * SCE * !Q * Q_N)	0.01183	0.01950	0.14324
	(D * !SCD * SCE * !Q * Q_N)	0.01674	0.02444	0.14817
	(!D * SCD * SCE * Q * !Q_N)	0.01117	0.01881	0.14239
	(!D * SCD * SCE * Q * !Q_N)	0.01608	0.02376	0.14733
	(!D * SCD * SCE * !Q * Q_N)	0.01861	0.02644	0.15350
	(!D * SCD * SCE * !Q * Q_N)	0.02352	0.03135	0.15842
	(!D * !SCE * Q * !Q_N)	0.02128	0.02898	0.15454
	(!D * !SCE * Q * !Q_N)	0.02619	0.03391	0.15947
	(!D * !SCE * !Q * Q_N)	0.01131	0.01897	0.14261
	(!D * !SCE * !Q * Q_N)	0.01622	0.02392	0.14754
	(!D * !SCD * SCE * Q * !Q_N)	0.02195	0.02966	0.15597
	(!D * !SCD * SCE * Q * !Q_N)	0.02688	0.03461	0.16091
	(!D * !SCD * SCE * !Q * Q_N)	0.01183	0.01949	0.14324
	(!D * !SCD * SCE * !Q * Q_N)	0.01674	0.02444	0.14817

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01148	0.01916	0.14314
	(D * SCD * SCE * Q * !Q_N)	0.01639	0.02410	0.14807
	(D * SCD * SCE * !Q * Q_N)	0.01881	0.02669	0.15451
	(D * SCD * SCE * !Q * Q_N)	0.02371	0.03161	0.15942
	(D * !SCE * Q * !Q_N)	0.01118	0.01886	0.14282
	(D * !SCE * Q * !Q_N)	0.01609	0.02380	0.14775
	(D * !SCE * !Q * Q_N)	0.01849	0.02640	0.15453
	(D * !SCE * !Q * Q_N)	0.02340	0.03134	0.15945
	(D * !SCD * SCE * Q * !Q_N)	0.02239	0.03020	0.15664
	(D * !SCD * SCE * Q * !Q_N)	0.02733	0.03517	0.16161
	(D * !SCD * SCE * !Q * Q_N)	0.01209	0.01979	0.14396
	(D * !SCD * SCE * !Q * Q_N)	0.01700	0.02474	0.14889
	(!D * SCD * SCE * Q * !Q_N)	0.01174	0.01942	0.14340
	(!D * SCD * SCE * Q * !Q_N)	0.01665	0.02436	0.14833
	(!D * SCD * SCE * !Q * Q_N)	0.01904	0.02691	0.15473
	(!D * SCD * SCE * !Q * Q_N)	0.02395	0.03185	0.15965
	(!D * !SCE * Q * !Q_N)	0.02174	0.02951	0.15545
	(!D * !SCE * Q * !Q_N)	0.02665	0.03444	0.16035
	(!D * !SCE * !Q * Q_N)	0.01157	0.01927	0.14333
	(!D * !SCE * !Q * Q_N)	0.01648	0.02422	0.14826
	(!D * !SCD * SCE * Q * !Q_N)	0.02242	0.03019	0.15687
	(!D * !SCD * SCE * Q * !Q_N)	0.02735	0.03514	0.16181
	(!D * !SCD * SCE * !Q * Q_N)	0.01209	0.01979	0.14396
	(!D * !SCD * SCE * !Q * Q_N)	0.01699	0.02473	0.14888

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00199	0.00210	0.00437	0.00307	1.31622
sky130_fd_sc_hs__sdfxtp_2	0.00202	0.00206	0.00423	0.00310	2.52354
sky130_fd_sc_hs__sdfxtp_4	0.00200	0.00204	0.00436	0.00308	4.85247

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	276.74000	415.97900
sky130_fd_sc_hs__sdfxtp_2	0.00000	285.91400	392.30900
sky130_fd_sc_hs__sdfxtp_4	0.00000	404.15100	522.54000

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)**	0.18078	0.64404	6.20271
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.18347	0.55551	6.07727
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.21916	0.53004	6.25620

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.19894	0.50046	3.42600
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.20619	0.46227	3.33858
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.20800	0.42573	3.38987

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)	-0.06769	-0.14566	-0.75272
	setup	CLK (R)	0.13440	0.18958	0.88643
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07160	-0.14702	-0.75731
	setup	CLK (R)	0.14274	0.19369	0.90219
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06724	-0.14319	-0.74335
	setup	CLK (R)	0.13076	0.18613	0.90395

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)	-0.08618	-0.16983	-1.27743
	setup	CLK (R)	0.17429	0.25620	2.08696
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08871	-0.17331	-1.24913
	setup	CLK (R)	0.18213	0.26730	2.11905
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08550	-0.16971	-1.09196
	setup	CLK (R)	0.17273	0.25535	2.08565

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)	-0.06769	-0.14566	-0.75272
	setup	CLK (R)	0.13440	0.18958	0.88643
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07160	-0.14702	-0.75731
	setup	CLK (R)	0.14274	0.19369	0.90219
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06724	-0.14319	-0.74335
	setup	CLK (R)	0.13076	0.18613	0.90395

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)	-0.08618	-0.16983	-1.27743
	setup	CLK (R)	0.17429	0.25620	2.08696
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08871	-0.17331	-1.24913
	setup	CLK (R)	0.18213	0.26730	2.11905
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08550	-0.16971	-1.09196
	setup	CLK (R)	0.17273	0.25535	2.08565

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)	-0.09160	-0.15118	-0.72210
	setup	CLK (R)	0.17042	0.21078	0.86377
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09037	-0.15318	-0.72539
	setup	CLK (R)	0.17512	0.21304	0.87032
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08837	-0.14918	-0.71249
	setup	CLK (R)	0.16554	0.20526	0.87224

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)	-0.11919	-0.19934	-1.88853
	setup	CLK (R)	0.22614	0.28744	2.16023
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12361	-0.20358	-1.87857
	setup	CLK (R)	0.23505	0.29642	2.17556
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12039	-0.19956	-1.87110
	setup	CLK (R)	0.22560	0.28571	2.15902

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)	-0.09160	-0.15118	-0.72210
	hold	CLK (R)	-0.09731	-0.16245	-0.73442
	setup	CLK (R)	0.16367	0.20126	0.85330
	setup	CLK (R)	0.17042	0.21078	0.86377
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09037	-0.15318	-0.72539
	hold	CLK (R)	-0.09736	-0.16378	-0.73700
	setup	CLK (R)	0.17037	0.20492	0.86295
	setup	CLK (R)	0.17512	0.21304	0.87032
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08837	-0.14918	-0.71249
	hold	CLK (R)	-0.09559	-0.16019	-0.72684
	setup	CLK (R)	0.15967	0.19872	0.85968
	setup	CLK (R)	0.16554	0.20526	0.87224

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)	-0.12964	-0.20556	-1.88853
	hold	CLK (R)	-0.11919	-0.19934	-1.89398
	setup	CLK (R)	0.22614	0.28744	2.14401
	setup	CLK (R)	0.22288	0.28722	2.16023
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13353	-0.20907	-1.87857
	hold	CLK (R)	-0.12361	-0.20358	-1.89665
	setup	CLK (R)	0.23505	0.29642	2.16439
	setup	CLK (R)	0.23256	0.29307	2.17556
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12753	-0.20488	-1.87110
	hold	CLK (R)	-0.12039	-0.19956	-1.87482
	setup	CLK (R)	0.22560	0.28526	2.14573
	setup	CLK (R)	0.22532	0.28571	2.15902

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)	-0.08156	-0.16245	0.54336
	setup	CLK (R)	0.22711	0.24216	1.29424
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08015	-0.16227	0.57353
	setup	CLK (R)	0.23600	0.24988	1.30857
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08000	-0.16019	0.59304
	setup	CLK (R)	0.22714	0.24180	1.57961

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)	-0.10244	-0.15761	0.24598
	setup	CLK (R)	0.19110	0.25263	2.65438
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10243	-0.16213	0.24686
	setup	CLK (R)	0.19814	0.25610	2.68990
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10195	-0.15866	0.69730
	setup	CLK (R)	0.18954	0.24891	2.63905

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)	-0.12988	-0.16472	-0.30637
	hold	CLK (R)	-0.08156	-0.16245	0.54336
	setup	CLK (R)	0.22711	0.24216	0.41568
	setup	CLK (R)	0.15329	0.21374	1.29424
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13088	-0.16669	-0.29529
	hold	CLK (R)	-0.08015	-0.16227	0.57353
	setup	CLK (R)	0.23600	0.24988	0.41958
	setup	CLK (R)	0.15884	0.21682	1.30857
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12902	-0.16311	-0.29795
	hold	CLK (R)	-0.08000	-0.16019	0.59304
	setup	CLK (R)	0.22714	0.24180	0.41809
	setup	CLK (R)	0.14916	0.20958	1.57961

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)	-0.12499	-0.21516	-1.82042
	hold	CLK (R)	-0.10244	-0.15761	0.24598
	setup	CLK (R)	0.19090	0.25263	1.87947
	setup	CLK (R)	0.19110	0.24819	2.65438
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12454	-0.21330	-1.81483
	hold	CLK (R)	-0.10243	-0.16213	0.24686
	setup	CLK (R)	0.19814	0.25379	1.88062
	setup	CLK (R)	0.19769	0.25610	2.68990
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12201	-0.21227	-1.80942
	hold	CLK (R)	-0.10195	-0.15866	0.69730
	setup	CLK (R)	0.18533	0.24891	1.88301
	setup	CLK (R)	0.18954	0.24499	2.63905

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 ()	0.08587	0.67139	16.50020
	min_pulse_width	CLK ()	0.07331	0.67139	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.09090	0.67139	16.50020
	min_pulse_width	CLK ()	0.07833	0.67139	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.11854	0.67139	16.50020
	min_pulse_width	CLK ()	0.08085	0.67139	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 ()	0.15624	0.67139	16.50020
	min_pulse_width	CLK ()	0.18388	0.67139	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.16377	0.67139	16.50020
	min_pulse_width	CLK ()	0.19142	0.67139	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.15121	0.67139	16.50020
	min_pulse_width	CLK ()	0.18890	0.67139	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	0.03322	0.04105	0.17485
	CLK	0.02835	0.03618	0.17032
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03665	0.04447	0.17837
	CLK	0.03174	0.03958	0.17415
sky130_fd_sc_hs__sdfxtp_4	CLK	0.04923	0.05618	0.18991
	CLK	0.04434	0.05130	0.18666

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.03118	0.03895	0.16849
	CLK	0.02631	0.03400	0.16323
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03624	0.04370	0.17286
	CLK	0.03131	0.03863	0.16734
sky130_fd_sc_hs__sdfxtp_4	CLK	0.04666	0.05374	0.18266
	CLK	0.04177	0.04878	0.17780

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00412	0.00414	0.00415
	(CLK * SCD * SCE)	0.00210	0.00209	0.00212
	(CLK * !SCE)	0.00717	0.01007	0.06297
	(CLK * !SCE)	0.00346	0.00634	0.05924
	(CLK * !SCD * SCE)	0.00312	0.00313	0.00310
	(CLK * !SCD * SCE)	0.00078	0.00078	0.00076
	(!CLK * SCD * SCE)	0.00364	0.00365	0.00367
	(!CLK * SCD * SCE)	0.00161	0.00160	0.00164
	(!CLK * !SCE)	0.01361	0.01700	0.07984
	(!CLK * !SCE)	0.00989	0.01327	0.07612
	(!CLK * !SCD * SCE)	0.00443	0.00444	0.00441
	(!CLK * !SCD * SCE)	0.00209	0.00209	0.00207
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00460	0.00462	0.00464
	(CLK * SCD * SCE)	0.00253	0.00252	0.00256
	(CLK * !SCE)	0.00798	0.01076	0.06362
	(CLK * !SCE)	0.00419	0.00697	0.05982
	(CLK * !SCD * SCE)	0.00359	0.00360	0.00357
	(CLK * !SCD * SCE)	0.00120	0.00120	0.00119
	(!CLK * SCD * SCE)	0.00341	0.00342	0.00344
	(!CLK * SCD * SCE)	0.00133	0.00133	0.00136
	(!CLK * !SCE)	0.01423	0.01756	0.08017
	(!CLK * !SCE)	0.01045	0.01376	0.07638
	(!CLK * !SCD * SCE)	0.00419	0.00419	0.00416
	(!CLK * !SCD * SCE)	0.00180	0.00179	0.00178

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00544	0.00546	0.00548
	(CLK * SCD * SCE)	0.00340	0.00339	0.00343
	(CLK * !SCE)	0.00847	0.01138	0.06431
	(CLK * !SCE)	0.00476	0.00766	0.06059
	(CLK * !SCD * SCE)	0.00445	0.00445	0.00443
	(CLK * !SCD * SCE)	0.00209	0.00208	0.00207
	(!CLK * SCD * SCE)	0.00458	0.00459	0.00461
	(!CLK * SCD * SCE)	0.00253	0.00253	0.00256
	(!CLK * !SCE)	0.01454	0.01792	0.08068
	(!CLK * !SCE)	0.01084	0.01420	0.07696
	(!CLK * !SCD * SCE)	0.00539	0.00539	0.00537
	(!CLK * !SCD * SCE)	0.00303	0.00302	0.00301

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00163	0.00161	0.00148
	(CLK * SCD * SCE)	0.00367	0.00366	0.00353
	(CLK * !SCE)	0.00291	0.00619	0.05976
	(CLK * !SCE)	0.00663	0.00993	0.06349
	(CLK * !SCD * SCE)	0.00151	0.00150	0.00151
	(CLK * !SCD * SCE)	0.00384	0.00385	0.00384
	(!CLK * SCD * SCE)	0.00114	0.00112	0.00099
	(!CLK * SCD * SCE)	0.00319	0.00318	0.00304
	(!CLK * !SCE)	0.01243	0.01593	0.07649
	(!CLK * !SCE)	0.01615	0.01966	0.08022
	(!CLK * !SCD * SCE)	0.00284	0.00283	0.00283
	(!CLK * !SCD * SCE)	0.00517	0.00518	0.00517

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00202	0.00200	0.00187
	(CLK * SCD * SCE)	0.00411	0.00410	0.00396
	(CLK * !SCE)	0.00341	0.00664	0.06015
	(CLK * !SCE)	0.00721	0.01044	0.06394
	(CLK * !SCD * SCE)	0.00191	0.00191	0.00191
	(CLK * !SCD * SCE)	0.00430	0.00430	0.00429
	(!CLK * SCD * SCE)	0.00082	0.00080	0.00067
	(!CLK * SCD * SCE)	0.00291	0.00290	0.00277
	(!CLK * !SCE)	0.01237	0.01576	0.07619
	(!CLK * !SCE)	0.01615	0.01956	0.07999
	(!CLK * !SCD * SCE)	0.00253	0.00252	0.00252
	(!CLK * !SCD * SCE)	0.00490	0.00491	0.00491
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00290	0.00288	0.00275
	(CLK * SCD * SCE)	0.00496	0.00496	0.00482
	(CLK * !SCE)	0.00417	0.00746	0.06106
	(CLK * !SCE)	0.00787	0.01118	0.06478
	(CLK * !SCD * SCE)	0.00278	0.00277	0.00278
	(CLK * !SCD * SCE)	0.00513	0.00514	0.00513
	(!CLK * SCD * SCE)	0.00203	0.00202	0.00188
	(!CLK * SCD * SCE)	0.00410	0.00409	0.00395
	(!CLK * !SCE)	0.01368	0.01717	0.07767
	(!CLK * !SCE)	0.01739	0.02089	0.08138
	(!CLK * !SCD * SCE)	0.00374	0.00373	0.00373
	(!CLK * !SCD * SCE)	0.00610	0.00610	0.00609

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00959	0.01185	0.06233
	(CLK * D * SCE)	0.00468	0.00692	0.05741
	(CLK * !D * SCE)	0.01086	0.01290	0.06280
	(CLK * !D * SCE)	0.00568	0.00770	0.05762
	(!CLK * D * SCE)	0.01609	0.01888	0.07857
	(!CLK * D * SCE)	0.01117	0.01396	0.07366
	(!CLK * !D * SCE)	0.01738	0.02000	0.07910
	(!CLK * !D * SCE)	0.01220	0.01482	0.07392
	!SCE	0.00401	0.00381	0.00404
	!SCE	0.00126	0.00102	0.00128
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.01020	0.01242	0.06287
	(CLK * D * SCE)	0.00532	0.00753	0.05798
	(CLK * !D * SCE)	0.01146	0.01349	0.06334
	(CLK * !D * SCE)	0.00632	0.00833	0.05820
	(!CLK * D * SCE)	0.01651	0.01926	0.07867
	(!CLK * D * SCE)	0.01163	0.01437	0.07379
	(!CLK * !D * SCE)	0.01780	0.02040	0.07956
	(!CLK * !D * SCE)	0.01266	0.01524	0.07440
	!SCE	0.00444	0.00425	0.00449
	!SCE	0.00175	0.00152	0.00179
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.01084	0.01312	0.06371
	(CLK * D * SCE)	0.00602	0.00828	0.05889
	(CLK * !D * SCE)	0.01211	0.01417	0.06419
	(CLK * !D * SCE)	0.00702	0.00907	0.05909
	(!CLK * D * SCE)	0.01697	0.01977	0.07944
	(!CLK * D * SCE)	0.01215	0.01493	0.07462
	(!CLK * !D * SCE)	0.01825	0.02089	0.08016
	(!CLK * !D * SCE)	0.01317	0.01578	0.07507
	!SCE	0.00528	0.00508	0.00531
	!SCE	0.00258	0.00235	0.00261

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00487	0.00715	0.05806
	(CLK * D * SCE)	0.00980	0.01209	0.06295
	(CLK * !D * SCE)	0.00436	0.00678	0.05799
	(CLK * !D * SCE)	0.00956	0.01199	0.06315
	(!CLK * D * SCE)	0.01468	0.01715	0.07376
	(!CLK * D * SCE)	0.01961	0.02209	0.07865
	(!CLK * !D * SCE)	0.01439	0.01703	0.07433
	(!CLK * !D * SCE)	0.01959	0.02224	0.07950
	!SCE	0.00167	0.00165	0.00158
	!SCE	0.00444	0.00444	0.00435
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00547	0.00774	0.05861
	(CLK * D * SCE)	0.01036	0.01264	0.06347
	(CLK * !D * SCE)	0.00496	0.00737	0.05854
	(CLK * !D * SCE)	0.01011	0.01253	0.06367
	(!CLK * D * SCE)	0.01469	0.01710	0.07362
	(!CLK * D * SCE)	0.01958	0.02200	0.07847
	(!CLK * !D * SCE)	0.01440	0.01700	0.07416
	(!CLK * !D * SCE)	0.01955	0.02215	0.07929
	!SCE	0.00210	0.00208	0.00200
	!SCE	0.00481	0.00479	0.00471

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00615	0.00846	0.05947
	(CLK * D * SCE)	0.01099	0.01331	0.06427
	(CLK * !D * SCE)	0.00564	0.00809	0.05940
	(CLK * !D * SCE)	0.01074	0.01320	0.06447
	(!CLK * D * SCE)	0.01595	0.01840	0.07504
	(!CLK * D * SCE)	0.02079	0.02324	0.07985
	(!CLK * !D * SCE)	0.01566	0.01830	0.07561
	(!CLK * !D * SCE)	0.02076	0.02340	0.08069
	!SCE	0.00300	0.00298	0.00291
	!SCE	0.00571	0.00571	0.00561

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)**	0.00927	0.01315	0.08319
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00225	0.00612	0.07620
	(CLK * D * !SCD)	0.01170	0.01588	0.09013
	(CLK * D * !SCD)	0.00668	0.01083	0.08507
	(CLK * !D * SCD)	0.01415	0.02078	0.13990
	(CLK * !D * SCD)	0.00542	0.01201	0.13117
	(!CLK * D * SCD)	0.00879	0.01266	0.08270
	(!CLK * D * SCD)	0.00177	0.00564	0.07571
	(!CLK * D * !SCD)	0.02129	0.02544	0.09940
	(!CLK * D * !SCD)	0.01626	0.02040	0.09434
	(!CLK * !D * SCD)	0.02061	0.02797	0.15811
	(!CLK * !D * SCD)	0.01189	0.01920	0.14937
	(!CLK * !D * !SCD)	0.00983	0.01382	0.08353
	(!CLK * !D * !SCD)	0.00330	0.00728	0.07699

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00946	0.01339	0.08342
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00269	0.00660	0.07668
	(CLK * D * !SCD)	0.01201	0.01624	0.09047
	(CLK * D * !SCD)	0.00726	0.01149	0.08568
	(CLK * !D * SCD)	0.01464	0.02126	0.14036
	(CLK * !D * SCD)	0.00613	0.01272	0.13184
	(!CLK * D * SCD)	0.00827	0.01219	0.08223
	(!CLK * D * SCD)	0.00149	0.00541	0.07548
	(!CLK * D * !SCD)	0.02104	0.02524	0.09914
	(!CLK * D * !SCD)	0.01628	0.02046	0.09434
	(!CLK * !D * SCD)	0.02092	0.02826	0.15822
	(!CLK * !D * SCD)	0.01242	0.01972	0.14970
	(!CLK * !D * !SCD)	0.00936	0.01339	0.08311
	(!CLK * !D * !SCD)	0.00307	0.00710	0.07681
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01056	0.01442	0.08440
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00356	0.00741	0.07743
	(CLK * D * !SCD)	0.01294	0.01710	0.09131
	(CLK * D * !SCD)	0.00790	0.01203	0.08623
	(CLK * !D * SCD)	0.01547	0.02206	0.14119
	(CLK * !D * SCD)	0.00675	0.01334	0.13249
	(!CLK * D * SCD)	0.00969	0.01355	0.08354
	(!CLK * D * SCD)	0.00269	0.00654	0.07656
	(!CLK * D * !SCD)	0.02252	0.02666	0.10053
	(!CLK * D * !SCD)	0.01747	0.02160	0.09547
	(!CLK * !D * SCD)	0.02157	0.02882	0.15885
	(!CLK * !D * SCD)	0.01285	0.02014	0.15015
	(!CLK * !D * !SCD)	0.01074	0.01471	0.08437
	(!CLK * !D * !SCD)	0.00422	0.00820	0.07785

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)	0.00183	0.00632	0.07683
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00884	0.01334	0.08383
	(CLK * D * !SCD)	0.00726	0.01151	0.08435
	(CLK * D * !SCD)	0.01229	0.01657	0.08922
	(CLK * !D * SCD)	0.00328	0.01014	0.13045
	(CLK * !D * SCD)	0.01203	0.01892	0.13921
	(!CLK * D * SCD)	0.00135	0.00584	0.07634
	(!CLK * D * SCD)	0.00835	0.01286	0.08334
	(!CLK * D * !SCD)	0.01366	0.01809	0.09169
	(!CLK * D * !SCD)	0.01869	0.02313	0.09654
	(!CLK * !D * SCD)	0.01279	0.01980	0.14596
	(!CLK * !D * SCD)	0.02153	0.02858	0.15472
	(!CLK * !D * !SCD)	0.00320	0.00772	0.07786
	(!CLK * !D * !SCD)	0.00971	0.01427	0.08439

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00229	0.00682	0.07733
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00904	0.01361	0.08408
	(CLK * D * !SCD)	0.00801	0.01231	0.08508
	(CLK * D * !SCD)	0.01280	0.01710	0.08969
	(CLK * !D * SCD)	0.00379	0.01068	0.13091
	(CLK * !D * SCD)	0.01231	0.01922	0.13944
	(!CLK * D * SCD)	0.00110	0.00564	0.07613
	(!CLK * D * SCD)	0.00784	0.01241	0.08288
	(!CLK * D * !SCD)	0.01424	0.01869	0.09223
	(!CLK * D * !SCD)	0.01903	0.02349	0.09684
	(!CLK * !D * SCD)	0.01272	0.01974	0.14572
	(!CLK * !D * SCD)	0.02124	0.02827	0.15424
	(!CLK * !D * !SCD)	0.00288	0.00740	0.07760
	(!CLK * !D * !SCD)	0.00917	0.01372	0.08388
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00316	0.00764	0.07810
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01014	0.01465	0.08508
	(CLK * D * !SCD)	0.00858	0.01284	0.08564
	(CLK * D * !SCD)	0.01364	0.01791	0.09053
	(CLK * !D * SCD)	0.00457	0.01144	0.13175
	(CLK * !D * SCD)	0.01327	0.02017	0.14046
	(!CLK * D * SCD)	0.00230	0.00677	0.07723
	(!CLK * D * SCD)	0.00927	0.01378	0.08422
	(!CLK * D * !SCD)	0.01462	0.01904	0.09260
	(!CLK * D * !SCD)	0.01968	0.02413	0.09749
	(!CLK * !D * SCD)	0.01408	0.02108	0.14711
	(!CLK * !D * SCD)	0.02278	0.02980	0.15580
	(!CLK * !D * !SCD)	0.00415	0.00863	0.07877
	(!CLK * !D * !SCD)	0.01066	0.01517	0.08528

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)	0.01706	0.02407	0.14854
	(D * SCD * SCE * Q)	0.01220	0.01917	0.14366
	(D * !SCE * Q)	0.01674	0.02375	0.14823
	(D * !SCE * Q)	0.01187	0.01885	0.14335
	(D * !SCD * SCE * !Q)	0.01694	0.02392	0.14853
	(D * !SCD * SCE * !Q)	0.01208	0.01903	0.14367
	(!D * SCD * SCE * Q)	0.01732	0.02432	0.14880
	(!D * SCD * SCE * Q)	0.01245	0.01943	0.14392
	(!D * !SCE * !Q)	0.01644	0.02343	0.14793
	(!D * !SCE * !Q)	0.01158	0.01853	0.14307
	(!D * !SCD * SCE * !Q)	0.01694	0.02392	0.14853
	(!D * !SCD * SCE * !Q)	0.01207	0.01902	0.14367
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01706	0.02398	0.14840
	(D * SCD * SCE * Q)	0.01214	0.01904	0.14347
	(D * !SCE * Q)	0.01674	0.02367	0.14807
	(D * !SCE * Q)	0.01182	0.01873	0.14314
	(D * !SCD * SCE * !Q)	0.01778	0.02469	0.14924
	(D * !SCD * SCE * !Q)	0.01287	0.01975	0.14430
	(!D * SCD * SCE * Q)	0.01732	0.02424	0.14865
	(!D * SCD * SCE * Q)	0.01240	0.01930	0.14372
	(!D * !SCE * !Q)	0.01729	0.02420	0.14863
	(!D * !SCE * !Q)	0.01237	0.01926	0.14370
	(!D * !SCD * SCE * !Q)	0.01778	0.02468	0.14923
	(!D * !SCD * SCE * !Q)	0.01287	0.01975	0.14430

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01815	0.02513	0.14963
	(D * SCD * SCE * Q)	0.01327	0.02022	0.14473
	(D * !SCE * Q)	0.01783	0.02482	0.14930
	(D * !SCE * Q)	0.01295	0.01991	0.14440
	(D * !SCD * SCE * !Q)	0.01834	0.02531	0.14993
	(D * !SCD * SCE * !Q)	0.01346	0.02040	0.14503
	(!D * SCD * SCE * Q)	0.01841	0.02539	0.14988
	(!D * SCD * SCE * Q)	0.01353	0.02048	0.14499
	(!D * !SCE * !Q)	0.01784	0.02481	0.14932
	(!D * !SCE * !Q)	0.01296	0.01991	0.14442
	(!D * !SCD * SCE * !Q)	0.01834	0.02531	0.14992
	(!D * !SCD * SCE * !Q)	0.01346	0.02040	0.14502

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)**	0.01091	0.01853	0.14196
	(D * SCD * SCE * Q)	0.01578	0.02343	0.14684
	(D * SCD * SCE * !Q)	0.01772	0.02554	0.15252
	(D * SCD * SCE * !Q)	0.02258	0.03043	0.15738
	(D * !SCE * Q)	0.01059	0.01823	0.14163
	(D * !SCE * Q)	0.01546	0.02313	0.14651
	(D * !SCE * !Q)	0.01741	0.02529	0.15323
	(D * !SCE * !Q)	0.02227	0.03017	0.15810
	(D * !SCD * SCE * Q)	0.02160	0.02935	0.15541
	(D * !SCD * SCE * Q)	0.02651	0.03427	0.16034
	(D * !SCD * SCE * !Q)	0.01093	0.01859	0.14218
	(D * !SCD * SCE * !Q)	0.01579	0.02349	0.14707
	(!D * SCD * SCE * Q)	0.01117	0.01879	0.14223
	(!D * SCD * SCE * Q)	0.01604	0.02369	0.14711
	(!D * SCD * SCE * !Q)	0.01795	0.02577	0.15274
	(!D * SCD * SCE * !Q)	0.02281	0.03064	0.15760
	(!D * !SCE * Q)	0.02094	0.02866	0.15399
	(!D * !SCE * Q)	0.02582	0.03356	0.15887
	(!D * !SCE * !Q)	0.01041	0.01807	0.14155
	(!D * !SCE * !Q)	0.01527	0.02297	0.14643
	(!D * !SCD * SCE * Q)	0.02163	0.02933	0.15542
	(!D * !SCD * SCE * Q)	0.02651	0.03422	0.16031
	(!D * !SCD * SCE * !Q)	0.01092	0.01859	0.14218
	(!D * !SCD * SCE * !Q)	0.01579	0.02349	0.14706

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.01097	0.01857	0.14190
	(D * SCD * SCE * Q)	0.01588	0.02351	0.14683
	(D * SCD * SCE * !Q)	0.01901	0.02678	0.15364
	(D * SCD * SCE * !Q)	0.02391	0.03171	0.15854
	(D * !SCE * Q)	0.01067	0.01827	0.14158
	(D * !SCE * Q)	0.01558	0.02321	0.14650
	(D * !SCE * !Q)	0.01869	0.02651	0.15429
	(D * !SCE * !Q)	0.02360	0.03145	0.15921
	(D * !SCD * SCE * Q)	0.02174	0.02948	0.15518
	(D * !SCD * SCE * Q)	0.02669	0.03445	0.16014
	(D * !SCD * SCE * !Q)	0.01158	0.01921	0.14271
	(D * !SCD * SCE * !Q)	0.01649	0.02415	0.14764
	(!D * SCD * SCE * Q)	0.01123	0.01883	0.14215
	(!D * SCD * SCE * Q)	0.01614	0.02377	0.14708
	(!D * SCD * SCE * !Q)	0.01924	0.02700	0.15386
	(!D * SCD * SCE * !Q)	0.02415	0.03194	0.15877
	(!D * !SCE * Q)	0.02109	0.02879	0.15403
	(!D * !SCE * Q)	0.02600	0.03373	0.15896
	(!D * !SCE * !Q)	0.01105	0.01869	0.14207
	(!D * !SCE * !Q)	0.01596	0.02363	0.14700
	(!D * !SCD * SCE * Q)	0.02176	0.02948	0.15545
	(!D * !SCD * SCE * Q)	0.02668	0.03443	0.16039
	(!D * !SCD * SCE * !Q)	0.01157	0.01920	0.14271
	(!D * !SCD * SCE * !Q)	0.01648	0.02415	0.14763

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01177	0.01940	0.14286
	(D * SCD * SCE * Q)	0.01666	0.02431	0.14776
	(D * SCD * SCE * !Q)	0.01907	0.02687	0.15375
	(D * SCD * SCE * !Q)	0.02394	0.03177	0.15863
	(D * !SCE * Q)	0.01146	0.01910	0.14253
	(D * !SCE * Q)	0.01635	0.02401	0.14743
	(D * !SCE * !Q)	0.01875	0.02661	0.15439
	(D * !SCE * !Q)	0.02362	0.03149	0.15929
	(D * !SCD * SCE * Q)	0.02291	0.03066	0.15683
	(D * !SCD * SCE * Q)	0.02783	0.03561	0.16177
	(D * !SCD * SCE * !Q)	0.01224	0.01989	0.14352
	(D * !SCD * SCE * !Q)	0.01712	0.02481	0.14842
	(!D * SCD * SCE * Q)	0.01203	0.01966	0.14312
	(!D * SCD * SCE * Q)	0.01691	0.02457	0.14802
	(!D * SCD * SCE * !Q)	0.01929	0.02710	0.15397
	(!D * SCD * SCE * !Q)	0.02417	0.03198	0.15887
	(!D * !SCE * Q)	0.02226	0.02997	0.15541
	(!D * !SCE * Q)	0.02715	0.03485	0.16032
	(!D * !SCE * !Q)	0.01172	0.01937	0.14289
	(!D * !SCE * !Q)	0.01660	0.02429	0.14779
	(!D * !SCD * SCE * Q)	0.02293	0.03065	0.15684
	(!D * !SCD * SCE * Q)	0.02784	0.03557	0.16176
	(!D * !SCD * SCE * !Q)	0.01223	0.01989	0.14351
	(!D * !SCD * SCE * !Q)	0.01711	0.02481	0.14841

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00246	0.00228	0.00490	1.25667
sky130_fd_sc_hs__sdlclkp_2	0.00245	0.00226	0.00520	2.47291
sky130_fd_sc_hs__sdlclkp_4	0.00234	0.00215	0.00531	4.79436

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	302.54100	416.19800
sky130_fd_sc_hs__sdlclkp_2	0.00000	313.60000	454.82900
sky130_fd_sc_hs__sdlclkp_4	0.00000	368.67000	553.88300

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)**	0.07052	0.52128	6.32632
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.07459	0.44670	6.26702
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.09916	0.43894	6.48647

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.07796	0.47965	5.00187
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.08624	0.46408	5.06596
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.11173	0.48501	5.16411

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)	-0.04285	-0.10581	-0.55962
	setup	CLK (R)	0.13585	0.22192	0.75995
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04179	-0.10361	-0.55113
	setup	CLK (R)	0.13312	0.20551	0.76552
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04534	-0.10581	-0.54868
	setup	CLK (R)	0.12975	0.18966	0.84792

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)	-0.09944	-0.18312	-2.22071
	setup	CLK (R)	0.13262	0.23844	2.30072
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09831	-0.18124	-2.20857
	setup	CLK (R)	0.12837	0.22287	2.29386
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.10296	-0.18576	-2.22279
	setup	CLK (R)	0.13084	0.22263	2.29859

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)	-0.04285	-0.10581	-0.55962
	setup	CLK (R)	0.13585	0.22192	0.75995
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04179	-0.10361	-0.55113
	setup	CLK (R)	0.13312	0.20551	0.76552
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04534	-0.10581	-0.54868
	setup	CLK (R)	0.12975	0.18966	0.84792

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)	-0.09944	-0.18312	-2.22071
	setup	CLK (R)	0.13262	0.23844	2.30072
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09831	-0.18124	-2.20857
	setup	CLK (R)	0.12837	0.22287	2.29386
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.10296	-0.18576	-2.22279
	setup	CLK (R)	0.13084	0.22263	2.29859

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)	-0.04898	-0.11683	-0.74614
	setup	CLK (R)	0.14296	0.23119	0.93142
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04714	-0.11683	-0.73944
	setup	CLK (R)	0.13549	0.21870	0.94102
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04755	-0.11683	-0.74026
	setup	CLK (R)	0.13511	0.20156	1.03572

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)	-0.11106	-0.17301	-2.04522
	setup	CLK (R)	0.14295	0.22527	2.12079
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10712	-0.17078	-2.03791
	setup	CLK (R)	0.13869	0.21000	2.10992
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11189	-0.17601	-2.04939
	setup	CLK (R)	0.14096	0.21523	2.11762

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)	-0.04898	-0.11683	-0.74614
	setup	CLK (R)	0.14296	0.23119	0.93142
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04714	-0.11683	-0.73944
	setup	CLK (R)	0.13549	0.21870	0.94102
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04755	-0.11683	-0.74026
	setup	CLK (R)	0.13511	0.20156	1.03572

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)	-0.11106	-0.17301	-2.04522
	setup	CLK (R)	0.14295	0.22527	2.12079
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10712	-0.17078	-2.03791
	setup	CLK (R)	0.13869	0.21000	2.10992
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11189	-0.17601	-2.04939
	setup	CLK (R)	0.14096	0.21523	2.11762

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 ()	0.05069	0.67139	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.05823	0.67139	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.08587	0.67139	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** ()	0.18136	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.14367	0.67139	16.50020
sky130_fd_sc_hs__sdlclkp_2	**min_pulse_width**	**CLK** ()	0.17634	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.14367	0.67139	16.50020
sky130_fd_sc_hs__sdlclkp_4	**min_pulse_width**	**CLK** ()	0.17383	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.14618	0.67139	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	0.02834	0.04067	0.25455
	CLK	0.02061	0.03294	0.24716
sky130_fd_sc_hs__sdlclkp_2	CLK	0.03085	0.04309	0.26210
	CLK	0.02264	0.03489	0.25472
sky130_fd_sc_hs__sdlclkp_4	CLK	0.03847	0.04974	0.26861
	CLK	0.03003	0.04148	0.26102

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01445	0.02874	0.24237
	CLK	0.02222	0.03646	0.24970
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01863	0.03265	0.25221
	CLK	0.02687	0.04075	0.25817
sky130_fd_sc_hs__sdlclkp_4	CLK	0.03066	0.04228	0.26232
	CLK	0.03910	0.05062	0.26697

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00426	0.00428	0.00430
	(CLK * SCE)	0.00192	0.00192	0.00197
	(CLK * !SCE)	0.00863	0.01353	0.09464
	(CLK * !SCE)	0.00462	0.00952	0.09063
	(!CLK * SCE * !GCLK)	0.00293	0.00296	0.00298
	(!CLK * SCE * !GCLK)	0.00060	0.00059	0.00065
	(!CLK * !SCE * !GCLK)	0.01557	0.02030	0.11062
	(!CLK * !SCE * !GCLK)	0.01199	0.01671	0.10704
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00469	0.00471	0.00472
	(CLK * SCE)	0.00235	0.00235	0.00240
	(CLK * !SCE)	0.00901	0.01393	0.09503
	(CLK * !SCE)	0.00501	0.00992	0.09104
	(!CLK * SCE * !GCLK)	0.00335	0.00338	0.00340
	(!CLK * SCE * !GCLK)	0.00103	0.00102	0.00108
	(!CLK * !SCE * !GCLK)	0.01580	0.02057	0.11091
	(!CLK * !SCE * !GCLK)	0.01229	0.01703	0.10737
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00548	0.00550	0.00552
	(CLK * SCE)	0.00324	0.00324	0.00329
	(CLK * !SCE)	0.00972	0.01460	0.09556
	(CLK * !SCE)	0.00591	0.01078	0.09174
	(!CLK * SCE * !GCLK)	0.00417	0.00419	0.00421
	(!CLK * SCE * !GCLK)	0.00194	0.00193	0.00198
	(!CLK * !SCE * !GCLK)	0.01674	0.02143	0.11162
	(!CLK * !SCE * !GCLK)	0.01334	0.01803	0.10823

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00164	0.00161	0.00140
	(CLK * SCE)	0.00398	0.00397	0.00374
	(CLK * !SCE)	0.00266	0.00817	0.09084
	(CLK * !SCE)	0.00666	0.01219	0.09485
	(!CLK * SCE * !GCLK)	0.00040	0.00037	0.00015
	(!CLK * SCE * !GCLK)	0.00273	0.00272	0.00249
	(!CLK * !SCE * !GCLK)	0.01458	0.02021	0.11069
	(!CLK * !SCE * !GCLK)	0.01816	0.02381	0.11428
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00208	0.00205	0.00183
	(CLK * SCE)	0.00440	0.00440	0.00416
	(CLK * !SCE)	0.00313	0.00864	0.09131
	(CLK * !SCE)	0.00710	0.01264	0.09530
	(!CLK * SCE * !GCLK)	0.00083	0.00080	0.00058
	(!CLK * SCE * !GCLK)	0.00316	0.00315	0.00292
	(!CLK * !SCE * !GCLK)	0.01505	0.02075	0.11143
	(!CLK * !SCE * !GCLK)	0.01859	0.02430	0.11497
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00301	0.00297	0.00275
	(CLK * SCE)	0.00524	0.00523	0.00500
	(CLK * !SCE)	0.00428	0.00976	0.09226
	(CLK * !SCE)	0.00811	0.01358	0.09608
	(!CLK * SCE * !GCLK)	0.00175	0.00172	0.00149
	(!CLK * SCE * !GCLK)	0.00398	0.00397	0.00374
	(!CLK * !SCE * !GCLK)	0.01630	0.02195	0.11244
	(!CLK * !SCE * !GCLK)	0.01969	0.02536	0.11585

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00457	0.00431	0.00481
	(CLK * GATE)	0.00138	0.00111	0.00164
	(CLK * !GATE)	0.00990	0.01423	0.08967
	(CLK * !GATE)	0.00496	0.00929	0.08474
	(!CLK * GATE * !GCLK)	0.00329	0.00302	0.00353
	(!CLK * GATE * !GCLK)	0.00010	-0.00018	0.00036
	(!CLK * !GATE * !GCLK)	0.01684	0.02141	0.10668
	(!CLK * !GATE * !GCLK)	0.01234	0.01689	0.10217
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00499	0.00473	0.00523
	(CLK * GATE)	0.00181	0.00154	0.00207
	(CLK * !GATE)	0.01027	0.01461	0.09005
	(CLK * !GATE)	0.00536	0.00969	0.08515
	(!CLK * GATE * !GCLK)	0.00370	0.00344	0.00394
	(!CLK * GATE * !GCLK)	0.00053	0.00025	0.00079
	(!CLK * !GATE * !GCLK)	0.01707	0.02164	0.10721
	(!CLK * !GATE * !GCLK)	0.01263	0.01717	0.10276
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00580	0.00553	0.00603
	(CLK * GATE)	0.00272	0.00243	0.00296
	(CLK * !GATE)	0.01101	0.01534	0.09069
	(CLK * !GATE)	0.00627	0.01059	0.08596
	(!CLK * GATE * !GCLK)	0.00451	0.00425	0.00475
	(!CLK * GATE * !GCLK)	0.00143	0.00115	0.00168
	(!CLK * !GATE * !GCLK)	0.01801	0.02258	0.10801
	(!CLK * !GATE * !GCLK)	0.01371	0.01826	0.10369

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00219	0.00216	0.00201
	(CLK * GATE)	0.00537	0.00536	0.00520
	(CLK * !GATE)	0.00273	0.00703	0.08372
	(CLK * !GATE)	0.00766	0.01196	0.08866
	(!CLK * GATE * !GCLK)	0.00091	0.00087	0.00072
	(!CLK * GATE * !GCLK)	0.00408	0.00407	0.00391
	(!CLK * !GATE * !GCLK)	0.01457	0.01884	0.10181
	(!CLK * !GATE * !GCLK)	0.01909	0.02336	0.10633
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00262	0.00259	0.00245
	(CLK * GATE)	0.00579	0.00578	0.00562
	(CLK * !GATE)	0.00319	0.00750	0.08420
	(CLK * !GATE)	0.00810	0.01240	0.08911
	(!CLK * GATE * !GCLK)	0.00134	0.00131	0.00116
	(!CLK * GATE * !GCLK)	0.00450	0.00450	0.00433
	(!CLK * !GATE * !GCLK)	0.01508	0.01937	0.10253
	(!CLK * !GATE * !GCLK)	0.01954	0.02384	0.10700
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00355	0.00352	0.00337
	(CLK * GATE)	0.00663	0.00661	0.00645
	(CLK * !GATE)	0.00435	0.00861	0.08523
	(CLK * !GATE)	0.00909	0.01336	0.08997
	(!CLK * GATE * !GCLK)	0.00226	0.00223	0.00208
	(!CLK * GATE * !GCLK)	0.00534	0.00533	0.00517
	(!CLK * !GATE * !GCLK)	0.01631	0.02059	0.10362
	(!CLK * !GATE * !GCLK)	0.02063	0.02492	0.10795

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01340	0.02071	0.14164
	(!GATE * !SCE * !GCLK)	0.00598	0.01324	0.13421
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01397	0.02145	0.14247
	(!GATE * !SCE * !GCLK)	0.00614	0.01361	0.13461
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01500	0.02244	0.14349
	(!GATE * !SCE * !GCLK)	0.00697	0.01434	0.13544

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01483	0.02316	0.16334
	(GATE * SCE * !GCLK)	0.02279	0.03117	0.17132
	(GATE * !SCE * !GCLK)	0.01564	0.02394	0.16380
	(GATE * !SCE * !GCLK)	0.02361	0.03196	0.17175
	(!GATE * SCE * !GCLK)	0.01524	0.02358	0.16356
	(!GATE * SCE * !GCLK)	0.02321	0.03155	0.17154
	(!GATE * !SCE * !GCLK)	0.00729	0.01513	0.13461
	(!GATE * !SCE * !GCLK)	0.01470	0.02258	0.14204
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01486	0.02323	0.16505
	(GATE * SCE * !GCLK)	0.02332	0.03175	0.17351
	(GATE * !SCE * !GCLK)	0.01568	0.02403	0.16544
	(GATE * !SCE * !GCLK)	0.02413	0.03251	0.17392
	(!GATE * SCE * !GCLK)	0.01528	0.02364	0.16524
	(!GATE * SCE * !GCLK)	0.02373	0.03215	0.17371
	(!GATE * !SCE * !GCLK)	0.00745	0.01531	0.13500
	(!GATE * !SCE * !GCLK)	0.01530	0.02317	0.14287
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01619	0.02452	0.16643
	(GATE * SCE * !GCLK)	0.02481	0.03319	0.17507
	(GATE * !SCE * !GCLK)	0.01701	0.02529	0.16681
	(GATE * !SCE * !GCLK)	0.02563	0.03398	0.17544
	(!GATE * SCE * !GCLK)	0.01661	0.02492	0.16662
	(!GATE * SCE * !GCLK)	0.02523	0.03359	0.17526
	(!GATE * !SCE * !GCLK)	0.00857	0.01637	0.13610
	(!GATE * !SCE * !GCLK)	0.01661	0.02448	0.14416

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00207	0.00398	0.00186	0.00400	0.00294	1.32079	1.31661
sky130_fd_sc_hs__sedfxbp_2	0.00216	0.00403	0.00188	0.00407	0.00295	2.22463	2.28642

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	342.73100	541.95400
sky130_fd_sc_hs__sedfxbp_2	0.00000	384.33500	574.75200

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)	0.18639	0.66429	6.23906
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.19304	0.59257	6.03030

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.16293	0.51312	3.59603
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.18222	0.47635	2.98407

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)	0.24261	0.70588	6.29139
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.28513	0.65569	6.09087

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)	0.26010	0.57629	3.54767
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.28703	0.53995	3.12514

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)	-0.17456	-0.26626	-1.10621
	setup	CLK (R)	0.21148	0.29433	1.16940
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.17677	-0.27077	-1.13707
	setup	CLK (R)	0.21221	0.29742	1.19535

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)	-0.26254	-0.36420	-2.33510
	setup	CLK (R)	0.33401	0.42367	2.75268
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26355	-0.36675	-2.36423
	setup	CLK (R)	0.32986	0.42298	2.73153

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)	-0.17456	-0.26626	-1.10621
	setup	CLK (R)	0.21148	0.29433	1.16940
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.17677	-0.27077	-1.13707
	setup	CLK (R)	0.21221	0.29742	1.19535

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)	-0.26254	-0.36420	-2.33510
	setup	CLK (R)	0.33401	0.42367	2.75268
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26355	-0.36675	-2.36423
	setup	CLK (R)	0.32986	0.42298	2.73153

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)	-0.04964	-0.05865	0.12118
	setup	CLK (R)	0.36870	0.38551	0.96374
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04726	-0.05928	0.09229
	setup	CLK (R)	0.36686	0.38347	0.99315

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)	-0.23523	-0.32344	-1.97618
	setup	CLK (R)	0.29423	0.36652	2.29550
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.23524	-0.32724	-2.00453
	setup	CLK (R)	0.29173	0.36532	2.32414

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)	-0.04964	-0.05865	0.12118
	hold	CLK (R)	-0.13407	-0.14936	-0.24684
	setup	CLK (R)	0.20771	0.26432	0.96374
	setup	CLK (R)	0.36870	0.38551	0.96020
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04726	-0.05928	0.09229
	hold	CLK (R)	-0.13495	-0.14606	-0.27852
	setup	CLK (R)	0.20870	0.26710	0.99315
	setup	CLK (R)	0.36686	0.38347	0.95820

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)	-0.27733	-0.35305	-2.27465
	hold	CLK (R)	-0.23523	-0.32344	-1.97618
	setup	CLK (R)	0.29423	0.36652	2.29550
	setup	CLK (R)	0.25304	0.33443	1.98177
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27250	-0.35224	-2.30845
	hold	CLK (R)	-0.23524	-0.32724	-2.00453
	setup	CLK (R)	0.29173	0.36532	2.32414
	setup	CLK (R)	0.25070	0.33412	2.01568

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)	-0.11021	-0.17128	-0.74272
	setup	CLK (R)	0.12818	0.18246	0.78335
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10893	-0.17396	-0.77846
	setup	CLK (R)	0.13030	0.18500	0.81088

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)	-0.18278	-0.24494	-2.00685
	setup	CLK (R)	0.24135	0.30266	2.52354
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18154	-0.24531	-2.04740
	setup	CLK (R)	0.23831	0.30205	2.48509

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)	-0.11021	-0.17128	-0.74272
	setup	CLK (R)	0.12818	0.18246	0.78335
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10893	-0.17396	-0.77846
	setup	CLK (R)	0.13030	0.18500	0.81088

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)	-0.18278	-0.24494	-2.00685
	setup	CLK (R)	0.24135	0.30266	2.52354
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18154	-0.24531	-2.04740
	setup	CLK (R)	0.23831	0.30205	2.48509

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)	0.00232	0.00793	0.42374
	setup	CLK (R)	0.25597	0.26975	0.78172
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00124	0.00565	0.39072
	setup	CLK (R)	0.25811	0.27096	0.79078

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)	-0.14195	-0.23186	-1.97984
	setup	CLK (R)	0.21621	0.29466	2.69404
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14311	-0.23424	-2.02260
	setup	CLK (R)	0.21343	0.29313	2.62493

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)	-0.19794	-0.21297	-0.06639
	hold	CLK (R)	0.00232	0.00793	0.42374
	hold	CLK (R)	-0.09172	-0.16619	-0.59094
	hold	CLK (R)	-0.08860	-0.10828	-0.15365
	setup	CLK (R)	0.25597	0.26946	0.77869
	setup	CLK (R)	0.11362	0.17952	0.65754
	setup	CLK (R)	0.11362	0.17952	0.65868
	setup	CLK (R)	0.25596	0.26975	0.78172
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19848	-0.21715	-0.14958
	hold	CLK (R)	0.00124	0.00565	0.39072
	hold	CLK (R)	-0.09077	-0.16843	-0.61912
	hold	CLK (R)	-0.08820	-0.10995	-0.18988
	setup	CLK (R)	0.25799	0.27096	0.79078
	setup	CLK (R)	0.11386	0.18208	0.68662
	setup	CLK (R)	0.11148	0.18152	0.68417
	setup	CLK (R)	0.25811	0.27096	0.78770

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)	-0.15806	-0.26409	-1.99816
	hold	CLK (R)	-0.14609	-0.23273	-2.20485
	hold	CLK (R)	-0.14195	-0.23186	-2.22478
	hold	CLK (R)	-0.15294	-0.25617	-1.97984
	setup	CLK (R)	0.19018	0.27757	2.01294
	setup	CLK (R)	0.16678	0.24620	2.22629
	setup	CLK (R)	0.21621	0.29466	2.69404
	setup	CLK (R)	0.17145	0.26498	1.99035
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16082	-0.26930	-2.04177
	hold	CLK (R)	-0.14830	-0.23519	-2.23900
	hold	CLK (R)	-0.14311	-0.23424	-2.26163
	hold	CLK (R)	-0.15640	-0.26169	-2.02260
	setup	CLK (R)	0.19236	0.28250	2.05902
	setup	CLK (R)	0.16683	0.25141	2.26212
	setup	CLK (R)	0.21343	0.29313	2.62493
	setup	CLK (R)	0.17553	0.27035	2.03302

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 ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.13111	0.67139	16.50020
	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.13111	0.67139	16.50020
	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.13111	0.67139	16.50020
	min_pulse_width	CLK ()	0.13111	0.67139	16.50020
	min_pulse_width	CLK ()	0.09341	0.67139	16.50020
	min_pulse_width	CLK ()	0.13111	0.67139	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	16.50020
	min_pulse_width	CLK ()	0.11100	0.67139	16.50020
	min_pulse_width	CLK ()	0.17131	0.67139	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 ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.20147	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.20147	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.21152	0.67139	16.50020
	min_pulse_width	CLK ()	0.20147	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.20147	0.67139	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.20649	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	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	0.02516	0.02855	0.09182
	CLK	0.02215	0.02553	0.08833
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02982	0.03247	0.09642
	CLK	0.02684	0.02937	0.09293

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02207	0.02519	0.09104
	CLK	0.01962	0.02271	0.08841
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02665	0.02861	0.09516
	CLK	0.02488	0.02678	0.09318

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02488	0.02805	0.09494
	CLK	0.02242	0.02552	0.09209
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03030	0.03217	0.09971
	CLK	0.02781	0.02968	0.09672

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02334	0.02674	0.08931
	CLK	0.02033	0.02371	0.08601
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02750	0.03006	0.09268
	CLK	0.02452	0.02702	0.08949

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00995	0.01248	0.06451
	(DE * SCE)	0.00641	0.00894	0.06098
	(CLK * DE * !SCE)	0.01488	0.01679	0.06670
	(CLK * DE * !SCE)	0.01017	0.01207	0.06200
	(CLK * !DE * !SCE)	0.00280	0.00280	0.00278
	(CLK * !DE * !SCE)	0.00044	0.00043	0.00042
	(!DE * SCE)	0.00420	0.00418	0.00417
	(!DE * SCE)	0.00184	0.00183	0.00181
	(!CLK * DE * !SCE * Q * !Q_N)	0.02305	0.02583	0.08737
	(!CLK * DE * !SCE * Q * !Q_N)	0.01837	0.02117	0.08271
	(!CLK * DE * !SCE * !Q * Q_N)	0.02297	0.02559	0.08659
	(!CLK * DE * !SCE * !Q * Q_N)	0.01826	0.02088	0.08188
	(!CLK * !DE * !SCE)	0.00278	0.00278	0.00276
	(!CLK * !DE * !SCE)	0.00042	0.00041	0.00040
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.01033	0.01286	0.06493
	(DE * SCE)	0.00666	0.00920	0.06126
	(CLK * DE * !SCE)	0.01539	0.01729	0.06717
	(CLK * DE * !SCE)	0.01052	0.01241	0.06230
	(CLK * !DE * !SCE)	0.00310	0.00310	0.00308
	(CLK * !DE * !SCE)	0.00064	0.00063	0.00062
	(!DE * SCE)	0.00450	0.00448	0.00447
	(!DE * SCE)	0.00204	0.00203	0.00201
	(!CLK * DE * !SCE * Q * !Q_N)	0.02358	0.02636	0.08787
	(!CLK * DE * !SCE * Q * !Q_N)	0.01875	0.02154	0.08304
	(!CLK * DE * !SCE * !Q * Q_N)	0.02332	0.02596	0.08691
	(!CLK * DE * !SCE * !Q * Q_N)	0.01845	0.02109	0.08204
	(!CLK * !DE * !SCE)	0.00308	0.00308	0.00306
	(!CLK * !DE * !SCE)	0.00062	0.00061	0.00060

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00639	0.00957	0.06232
	(DE * SCE)	0.00994	0.01312	0.06585
	(CLK * DE * !SCE)	0.00667	0.00932	0.06094
	(CLK * DE * !SCE)	0.01137	0.01402	0.06565
	(CLK * !DE * !SCE)	0.00203	0.00204	0.00204
	(CLK * !DE * !SCE)	0.00441	0.00440	0.00440
	(!DE * SCE)	0.00341	0.00340	0.00341
	(!DE * SCE)	0.00576	0.00578	0.00577
	(!CLK * DE * !SCE * Q * !Q_N)	0.01800	0.02102	0.08182
	(!CLK * DE * !SCE * Q * !Q_N)	0.02266	0.02569	0.08648
	(!CLK * DE * !SCE * !Q * Q_N)	0.01918	0.02239	0.08391
	(!CLK * DE * !SCE * !Q * Q_N)	0.02389	0.02709	0.08861
	(!CLK * !DE * !SCE)	0.00203	0.00203	0.00204
	(!CLK * !DE * !SCE)	0.00441	0.00440	0.00440
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00642	0.00963	0.06238
	(DE * SCE)	0.01010	0.01329	0.06605
	(CLK * DE * !SCE)	0.00679	0.00943	0.06104
	(CLK * DE * !SCE)	0.01167	0.01431	0.06590
	(CLK * !DE * !SCE)	0.00231	0.00231	0.00231
	(CLK * !DE * !SCE)	0.00477	0.00478	0.00477
	(!DE * SCE)	0.00369	0.00367	0.00368
	(!DE * SCE)	0.00613	0.00615	0.00614
	(!CLK * DE * !SCE * Q * !Q_N)	0.01821	0.02122	0.08200
	(!CLK * DE * !SCE * Q * !Q_N)	0.02302	0.02605	0.08682
	(!CLK * DE * !SCE * !Q * Q_N)	0.01924	0.02244	0.08394
	(!CLK * DE * !SCE * !Q * Q_N)	0.02412	0.02730	0.08881
	(!CLK * !DE * !SCE)	0.00231	0.00230	0.00231
	(!CLK * !DE * !SCE)	0.00477	0.00478	0.00477

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01504	0.02118	0.13794
	SCE	0.00739	0.01351	0.13028
	(CLK * !SCE)	0.01996	0.02565	0.14049
	(CLK * !SCE)	0.01115	0.01679	0.13165
	(!CLK * D * !SCE * Q * !Q_N)	0.00874	0.01245	0.08112
	(!CLK * D * !SCE * Q * !Q_N)	0.00243	0.00611	0.07481
	(!CLK * D * !SCE * !Q * Q_N)	0.02805	0.03430	0.15852
	(!CLK * D * !SCE * !Q * Q_N)	0.01924	0.02547	0.14968
	(!CLK * !D * !SCE * Q * !Q_N)	0.02541	0.02929	0.10126
	(!CLK * !D * !SCE * Q * !Q_N)	0.02171	0.02557	0.09756
	(!CLK * !D * !SCE * !Q * Q_N)	0.00922	0.01321	0.08173
	(!CLK * !D * !SCE * !Q * Q_N)	0.00292	0.00689	0.07543
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01534	0.02154	0.13830
	SCE	0.00757	0.01373	0.13052
	(CLK * !SCE)	0.02040	0.02608	0.14092
	(CLK * !SCE)	0.01142	0.01710	0.13193
	(!CLK * D * !SCE * Q * !Q_N)	0.00915	0.01288	0.08155
	(!CLK * D * !SCE * Q * !Q_N)	0.00274	0.00645	0.07515
	(!CLK * D * !SCE * !Q * Q_N)	0.02833	0.03460	0.15880
	(!CLK * D * !SCE * !Q * Q_N)	0.01935	0.02561	0.14980
	(!CLK * !D * !SCE * Q * !Q_N)	0.02567	0.02954	0.10151
	(!CLK * !D * !SCE * Q * !Q_N)	0.02193	0.02579	0.09778
	(!CLK * !D * !SCE * !Q * Q_N)	0.00952	0.01352	0.08204
	(!CLK * !D * !SCE * !Q * Q_N)	0.00312	0.00711	0.07565

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00682	0.01355	0.13126
	SCE	0.01447	0.02122	0.13888
	(CLK * !SCE)	0.00705	0.01333	0.13012
	(CLK * !SCE)	0.01588	0.02217	0.13894
	(!CLK * D * !SCE * Q * !Q_N)	0.00177	0.00604	0.07518
	(!CLK * D * !SCE * Q * !Q_N)	0.00808	0.01237	0.08149
	(!CLK * D * !SCE * !Q * Q_N)	0.01919	0.02582	0.15010
	(!CLK * D * !SCE * !Q * Q_N)	0.02802	0.03465	0.15892
	(!CLK * !D * !SCE * Q * !Q_N)	0.02294	0.02726	0.09864
	(!CLK * !D * !SCE * Q * !Q_N)	0.02666	0.03099	0.10237
	(!CLK * !D * !SCE * !Q * Q_N)	0.00222	0.00662	0.07564
	(!CLK * !D * !SCE * !Q * Q_N)	0.00851	0.01295	0.08195
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00684	0.01360	0.13133
	SCE	0.01462	0.02141	0.13908
	(CLK * !SCE)	0.00717	0.01345	0.13022
	(CLK * !SCE)	0.01615	0.02247	0.13920
	(!CLK * D * !SCE * Q * !Q_N)	0.00217	0.00645	0.07559
	(!CLK * D * !SCE * Q * !Q_N)	0.00858	0.01288	0.08199
	(!CLK * D * !SCE * !Q * Q_N)	0.01924	0.02588	0.15015
	(!CLK * D * !SCE * !Q * Q_N)	0.02823	0.03488	0.15910
	(!CLK * !D * !SCE * Q * !Q_N)	0.02337	0.02769	0.09909
	(!CLK * !D * !SCE * Q * !Q_N)	0.02712	0.03144	0.10284
	(!CLK * !D * !SCE * !Q * Q_N)	0.00244	0.00685	0.07587
	(!CLK * !D * !SCE * !Q * Q_N)	0.00882	0.01327	0.08227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.01092	0.01317	0.06369
	(CLK * SCE)	0.00716	0.00939	0.05992
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01866	0.02140	0.08104
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01490	0.01762	0.07727
	!SCE	0.00523	0.00504	0.00528
	!SCE	0.00269	0.00247	0.00275
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.01134	0.01358	0.06407
	(CLK * SCE)	0.00750	0.00973	0.06023
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01892	0.02166	0.08122
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01508	0.01781	0.07738
	!SCE	0.00551	0.00532	0.00556
	!SCE	0.00293	0.00271	0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00797	0.01034	0.06105
	(CLK * SCE)	0.01174	0.01412	0.06480
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01855	0.02118	0.07894
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02231	0.02495	0.08268
	!SCE	0.00325	0.00323	0.00315
	!SCE	0.00578	0.00579	0.00570
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00823	0.01058	0.06126
	(CLK * SCE)	0.01206	0.01443	0.06508
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01874	0.02135	0.07911
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02258	0.02520	0.08293
	!SCE	0.00354	0.00352	0.00345
	!SCE	0.00613	0.00613	0.00604

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.01308	0.01956	0.13306
	(CLK * D)	0.00646	0.01293	0.12642
	(CLK * !D)	0.01357	0.02003	0.13265
	(CLK * !D)	0.00695	0.01339	0.12601
	(!CLK * D * SCD * Q * !Q_N)	0.00837	0.01243	0.08107
	(!CLK * D * SCD * Q * !Q_N)	0.00291	0.00695	0.07560
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00893	0.01299	0.08162
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00347	0.00750	0.07616
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02485	0.02858	0.12249
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02043	0.02413	0.11802
	(!CLK * D * !SCD * Q * !Q_N)	0.02455	0.02825	0.12199
	(!CLK * D * !SCD * Q * !Q_N)	0.02013	0.02379	0.11752
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02078	0.02786	0.15129
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01416	0.02120	0.14465
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00892	0.01299	0.08171
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00329	0.00731	0.07604
	(!CLK * !D * SCD * !Q * Q_N)	0.02127	0.02832	0.15086
	(!CLK * !D * SCD * !Q * Q_N)	0.01465	0.02167	0.14422
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02162	0.02863	0.15138
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01500	0.02200	0.14475
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00968	0.01375	0.08247
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00405	0.00807	0.07680
	(!CLK * !D * !SCD * !Q * Q_N)	0.00942	0.01348	0.08221
	(!CLK * !D * !SCD * !Q * Q_N)	0.00379	0.00781	0.07654
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00813	0.01219	0.08083
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00267	0.00671	0.07536
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02432	0.02801	0.12180
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01990	0.02355	0.11733

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.01351	0.01997	0.13340
	(CLK * D)	0.00670	0.01313	0.12658
	(CLK * !D)	0.01399	0.02049	0.13298
	(CLK * !D)	0.00718	0.01365	0.12615
	(!CLK * D * SCD * Q * !Q_N)	0.00891	0.01293	0.08148
	(!CLK * D * SCD * Q * !Q_N)	0.00329	0.00729	0.07587
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00933	0.01335	0.08190
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00371	0.00771	0.07628
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02527	0.02894	0.12272
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02072	0.02436	0.11812
	(!CLK * D * !SCD * Q * !Q_N)	0.02506	0.02869	0.12232
	(!CLK * D * !SCD * Q * !Q_N)	0.02051	0.02412	0.11773
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02104	0.02810	0.15146
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01423	0.02126	0.14464
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00938	0.01341	0.08205
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00359	0.00758	0.07623
	(!CLK * !D * SCD * !Q * Q_N)	0.02153	0.02858	0.15102
	(!CLK * !D * SCD * !Q * Q_N)	0.01472	0.02173	0.14419
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02206	0.02908	0.15171
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01525	0.02223	0.14489
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01027	0.01430	0.08294
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00449	0.00847	0.07712
	(!CLK * !D * !SCD * !Q * Q_N)	0.00988	0.01390	0.08255
	(!CLK * !D * !SCD * !Q * Q_N)	0.00409	0.00808	0.07673
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00867	0.01268	0.08124
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00305	0.00705	0.07562
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02482	0.02845	0.12213
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02027	0.02387	0.11754

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00370	0.01123	0.12614
	(CLK * D)	0.01035	0.01789	0.13278
	(CLK * !D)	0.00420	0.01173	0.12586
	(CLK * !D)	0.01085	0.01840	0.13250
	(!CLK * D * SCD * Q * !Q_N)	0.00215	0.00681	0.07610
	(!CLK * D * SCD * Q * !Q_N)	0.00763	0.01225	0.08156
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00310	0.00776	0.07705
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00858	0.01321	0.08251
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01827	0.02528	0.12679
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02272	0.02973	0.13107
	(!CLK * D * !SCD * Q * !Q_N)	0.01794	0.02496	0.12666
	(!CLK * D * !SCD * Q * !Q_N)	0.02239	0.02941	0.13093
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01546	0.02309	0.14752
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02210	0.02972	0.15416
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00206	0.00658	0.07573
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00772	0.01227	0.08140
	(!CLK * !D * SCD * !Q * Q_N)	0.01613	0.02374	0.14773
	(!CLK * !D * SCD * !Q * Q_N)	0.02278	0.03037	0.15436
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01562	0.02318	0.14690
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02227	0.02982	0.15354
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00242	0.00694	0.07610
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00808	0.01263	0.08176
	(!CLK * !D * !SCD * !Q * Q_N)	0.00255	0.00708	0.07623
	(!CLK * !D * !SCD * !Q * Q_N)	0.00822	0.01276	0.08190
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00191	0.00656	0.07585
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00738	0.01201	0.08132
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01763	0.02466	0.12646
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02208	0.02911	0.13072

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00404	0.01151	0.12634
	(CLK * D)	0.01087	0.01835	0.13316
	(CLK * !D)	0.00454	0.01203	0.12604
	(CLK * !D)	0.01137	0.01888	0.13287
	(!CLK * D * SCD * Q * !Q_N)	0.00269	0.00729	0.07651
	(!CLK * D * SCD * Q * !Q_N)	0.00832	0.01292	0.08212
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00347	0.00807	0.07729
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00910	0.01370	0.08290
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01865	0.02561	0.12713
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02323	0.03019	0.13152
	(!CLK * D * !SCD * Q * !Q_N)	0.01854	0.02550	0.12721
	(!CLK * D * !SCD * Q * !Q_N)	0.02312	0.03009	0.13161
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01572	0.02330	0.14759
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02254	0.03013	0.15441
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00236	0.00685	0.07591
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00819	0.01269	0.08173
	(!CLK * !D * SCD * !Q * Q_N)	0.01639	0.02395	0.14783
	(!CLK * !D * SCD * !Q * Q_N)	0.02322	0.03079	0.15465
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01600	0.02351	0.14707
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02283	0.03034	0.15389
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00290	0.00739	0.07645
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00872	0.01322	0.08227
	(!CLK * !D * !SCD * !Q * Q_N)	0.00286	0.00735	0.07641
	(!CLK * !D * !SCD * !Q * Q_N)	0.00869	0.01319	0.08223
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00245	0.00704	0.07627
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00808	0.01268	0.08188
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01823	0.02522	0.12701
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02281	0.02978	0.13141

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)	0.01915	0.02604	0.15027
	(SCD * SCE * Q * !Q_N)	0.01442	0.02127	0.14554
	(D * !SCE * Q * !Q_N)	0.01839	0.02527	0.14952
	(D * !SCE * Q * !Q_N)	0.01366	0.02050	0.14478
	(D * !DE * !SCE * !Q * Q_N)	0.01859	0.02549	0.14992
	(D * !DE * !SCE * !Q * Q_N)	0.01386	0.02073	0.14517
	(!SCD * SCE * !Q * Q_N)	0.02091	0.02780	0.15226
	(!SCD * SCE * !Q * Q_N)	0.01618	0.02305	0.14751
	(!D * !SCE * !Q * Q_N)	0.01909	0.02598	0.15042
	(!D * !SCE * !Q * Q_N)	0.01435	0.02123	0.14567
	(!D * !DE * !SCE * Q * !Q_N)	0.01815	0.02503	0.14927
	(!D * !DE * !SCE * Q * !Q_N)	0.01341	0.02026	0.14454
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01951	0.02645	0.15164
	(SCD * SCE * Q * !Q_N)	0.01478	0.02169	0.14691
	(D * !SCE * Q * !Q_N)	0.01873	0.02567	0.15087
	(D * !SCE * Q * !Q_N)	0.01400	0.02091	0.14614
	(D * !DE * !SCE * !Q * Q_N)	0.01891	0.02588	0.15127
	(D * !DE * !SCE * !Q * Q_N)	0.01418	0.02112	0.14652
	(!SCD * SCE * !Q * Q_N)	0.02124	0.02821	0.15359
	(!SCD * SCE * !Q * Q_N)	0.01651	0.02345	0.14886
	(!D * !SCE * !Q * Q_N)	0.01941	0.02637	0.15177
	(!D * !SCE * !Q * Q_N)	0.01468	0.02162	0.14703
	(!D * !DE * !SCE * Q * !Q_N)	0.01849	0.02543	0.15063
	(!D * !DE * !SCE * Q * !Q_N)	0.01376	0.02067	0.14589

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)	0.01164	0.01922	0.14290
	(SCD * SCE * Q * !Q_N)	0.01638	0.02399	0.14765
	(SCD * SCE * !Q * Q_N)	0.02100	0.02875	0.15597
	(SCD * SCE * !Q * Q_N)	0.02574	0.03349	0.16072
	(D * DE * !SCE * !Q * Q_N)	0.02028	0.02801	0.15524
	(D * DE * !SCE * !Q * Q_N)	0.02502	0.03276	0.15996
	(D * !SCE * Q * !Q_N)	0.01089	0.01847	0.14216
	(D * !SCE * Q * !Q_N)	0.01562	0.02324	0.14691
	(D * !DE * !SCE * !Q * Q_N)	0.01135	0.01887	0.14219
	(D * !DE * !SCE * !Q * Q_N)	0.01609	0.02364	0.14694
	(!SCD * SCE * Q * !Q_N)	0.02444	0.03215	0.15725
	(!SCD * SCE * Q * !Q_N)	0.02919	0.03693	0.16202
	(!SCD * SCE * !Q * Q_N)	0.01365	0.02117	0.14448
	(!SCD * SCE * !Q * Q_N)	0.01839	0.02594	0.14923
	(!D * DE * !SCE * Q * !Q_N)	0.02364	0.03135	0.15635
	(!D * DE * !SCE * Q * !Q_N)	0.02838	0.03612	0.16109
	(!D * !SCE * !Q * Q_N)	0.01185	0.01937	0.14269
	(!D * !SCE * !Q * Q_N)	0.01659	0.02414	0.14744
	(!D * !DE * !SCE * Q * !Q_N)	0.01065	0.01823	0.14190
	(!D * !DE * !SCE * Q * !Q_N)	0.01538	0.02300	0.14665

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.01222	0.01990	0.14435
	(SCD * SCE * Q * !Q_N)	0.01695	0.02466	0.14909
	(SCD * SCE * !Q * Q_N)	0.02116	0.02909	0.15692
	(SCD * SCE * !Q * Q_N)	0.02589	0.03385	0.16166
	(D * DE * !SCE * !Q * Q_N)	0.02046	0.02837	0.15622
	(D * DE * !SCE * !Q * Q_N)	0.02518	0.03311	0.16096
	(D * !SCE * Q * !Q_N)	0.01148	0.01916	0.14361
	(D * !SCE * Q * !Q_N)	0.01621	0.02392	0.14835
	(D * !DE * !SCE * !Q * Q_N)	0.01166	0.01933	0.14337
	(D * !DE * !SCE * !Q * Q_N)	0.01639	0.02409	0.14811
	(!SCD * SCE * Q * !Q_N)	0.02490	0.03273	0.15860
	(!SCD * SCE * Q * !Q_N)	0.02965	0.03748	0.16336
	(!SCD * SCE * !Q * Q_N)	0.01395	0.02162	0.14565
	(!SCD * SCE * !Q * Q_N)	0.01868	0.02638	0.15040
	(!D * DE * !SCE * Q * !Q_N)	0.02408	0.03191	0.15767
	(!D * DE * !SCE * Q * !Q_N)	0.02882	0.03668	0.16242
	(!D * !SCE * !Q * Q_N)	0.01216	0.01983	0.14387
	(!D * !SCE * !Q * Q_N)	0.01689	0.02459	0.14861
	(!D * !DE * !SCE * Q * !Q_N)	0.01124	0.01891	0.14336
	(!D * !DE * !SCE * Q * !Q_N)	0.01597	0.02367	0.14811

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00208	0.00405	0.00190	0.00395	0.00293	1.31807
sky130_fd_sc_hs__sedfxtp_2	0.00217	0.00408	0.00192	0.00400	0.00295	2.62807
sky130_fd_sc_hs__sedfxtp_4	0.00218	0.00406	0.00192	0.00397	0.00305	4.89798

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	311.52400	530.68300
sky130_fd_sc_hs__sedfxtp_2	0.00000	337.00000	580.12000
sky130_fd_sc_hs__sedfxtp_4	0.00000	388.05200	679.14800

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)**	0.18147	0.65556	6.21494
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.18794	0.58266	6.30777
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.21543	0.54890	6.22408

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.15298	0.48771	3.47240
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.17400	0.48100	3.56847
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.22979	0.51682	3.63018

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)	-0.17345	-0.26887	-1.11230
	setup	CLK (R)	0.20983	0.29342	1.16706
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.17585	-0.26856	-1.11226
	setup	CLK (R)	0.21151	0.29342	1.17050
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.18015	-0.26857	-1.09297
	setup	CLK (R)	0.21043	0.29356	1.17192

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)	-0.26462	-0.36639	-2.34485
	setup	CLK (R)	0.33370	0.42266	2.66353
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.26090	-0.36309	-2.33579
	setup	CLK (R)	0.33121	0.42257	2.88067
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.26595	-0.36446	-2.33747
	setup	CLK (R)	0.32421	0.41505	3.34164

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)	-0.04564	-0.05865	0.11802
	setup	CLK (R)	0.36908	0.38674	0.96567
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.04564	-0.05865	0.11797
	setup	CLK (R)	0.36884	0.38423	1.00035
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04564	-0.05865	0.11514
	setup	CLK (R)	0.35881	0.37828	1.19076

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)	-0.23641	-0.32714	-1.98583
	setup	CLK (R)	0.29605	0.36835	2.30263
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.23733	-0.32675	-1.98647
	setup	CLK (R)	0.29377	0.36570	2.29890
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.23795	-0.32680	-1.98383
	setup	CLK (R)	0.29372	0.36929	2.30410

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)	-0.04564	-0.05865	0.11802
	hold	CLK (R)	-0.13775	-0.15327	-0.25334
	setup	CLK (R)	0.20818	0.26415	0.96567
	setup	CLK (R)	0.36908	0.38674	0.93133
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.04564	-0.05865	0.11797
	hold	CLK (R)	-0.13246	-0.14606	-0.24550
	setup	CLK (R)	0.21113	0.26526	0.96821
	setup	CLK (R)	0.36884	0.38423	1.00035
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04564	-0.05865	0.11514
	hold	CLK (R)	-0.13467	-0.14979	-0.24303
	setup	CLK (R)	0.20786	0.26479	0.97007
	setup	CLK (R)	0.35881	0.37828	1.19076

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)	-0.27704	-0.35446	-2.28303
	hold	CLK (R)	-0.23641	-0.32714	-1.98583
	setup	CLK (R)	0.29605	0.36835	2.30263
	setup	CLK (R)	0.25017	0.33642	1.99434
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27441	-0.35141	-2.27623
	hold	CLK (R)	-0.23733	-0.32675	-1.98647
	setup	CLK (R)	0.29377	0.36570	2.29890
	setup	CLK (R)	0.25218	0.33767	1.99560
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.27683	-0.35596	-2.28065
	hold	CLK (R)	-0.23795	-0.32680	-1.98383
	setup	CLK (R)	0.29372	0.36929	2.30410
	setup	CLK (R)	0.25045	0.33686	1.99588

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)	-0.10946	-0.17307	-0.74976
	setup	CLK (R)	0.13110	0.18439	0.78784
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10925	-0.17289	-0.74693
	setup	CLK (R)	0.13139	0.18441	0.79027
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11043	-0.17284	-0.74071
	setup	CLK (R)	0.13014	0.18432	0.79048

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)	-0.18005	-0.24635	-2.02332
	setup	CLK (R)	0.24191	0.30339	2.44869
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.17952	-0.24474	-2.01027
	setup	CLK (R)	0.23816	0.29904	2.57417
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.18334	-0.24691	-2.02230
	setup	CLK (R)	0.23245	0.29750	2.90615

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)	0.00232	0.00793	0.41781
	setup	CLK (R)	0.25977	0.27565	0.75853
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00265	0.00793	0.42075
	setup	CLK (R)	0.25750	0.27096	0.82080
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00232	0.00793	0.41203
	setup	CLK (R)	0.24967	0.26696	0.98276

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)	-0.14095	-0.23483	-1.99932
	setup	CLK (R)	0.21516	0.29531	2.55829
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.13987	-0.23076	-1.99866
	setup	CLK (R)	0.21434	0.29420	2.80992
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14455	-0.23530	-1.99874
	setup	CLK (R)	0.20740	0.28657	3.24848

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)	-0.20230	-0.21627	-0.09851
	hold	CLK (R)	0.00232	0.00793	0.41781
	hold	CLK (R)	-0.09206	-0.16511	-0.59315
	hold	CLK (R)	-0.09435	-0.11120	-0.16757
	setup	CLK (R)	0.25970	0.27565	0.75853
	setup	CLK (R)	0.11374	0.17927	0.65963
	setup	CLK (R)	0.11362	0.17952	0.65972
	setup	CLK (R)	0.25977	0.27565	0.75476
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19767	-0.21350	-0.06668
	hold	CLK (R)	0.00265	0.00793	0.42075
	hold	CLK (R)	-0.09068	-0.16806	-0.58769
	hold	CLK (R)	-0.08850	-0.10705	-0.16259
	setup	CLK (R)	0.25728	0.27096	0.82080
	setup	CLK (R)	0.11258	0.17952	0.65950
	setup	CLK (R)	0.11401	0.18208	0.66139
	setup	CLK (R)	0.25750	0.27096	0.81235
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20272	-0.21817	-0.05914
	hold	CLK (R)	0.00232	0.00793	0.41203
	hold	CLK (R)	-0.09364	-0.16997	-0.57591
	hold	CLK (R)	-0.09122	-0.10995	-0.16574
	setup	CLK (R)	0.24967	0.26696	0.97790
	setup	CLK (R)	0.11001	0.18208	0.66481
	setup	CLK (R)	0.11001	0.18208	0.66432
	setup	CLK (R)	0.24963	0.26696	0.98276

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)	-0.16024	-0.26768	-2.01877
	hold	CLK (R)	-0.14787	-0.23483	-2.21637
	hold	CLK (R)	-0.14095	-0.23564	-2.23627
	hold	CLK (R)	-0.15482	-0.26084	-1.99932
	setup	CLK (R)	0.19135	0.28272	2.03549
	setup	CLK (R)	0.16838	0.24876	2.23961
	setup	CLK (R)	0.21516	0.29531	2.55829
	setup	CLK (R)	0.17421	0.26949	2.01194
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16140	-0.26610	-2.01907
	hold	CLK (R)	-0.14426	-0.23076	-2.20129
	hold	CLK (R)	-0.13987	-0.23142	-2.22632
	hold	CLK (R)	-0.15624	-0.26030	-1.99866
	setup	CLK (R)	0.19194	0.28363	2.03136
	setup	CLK (R)	0.16404	0.24568	2.23204
	setup	CLK (R)	0.21434	0.29420	2.80992
	setup	CLK (R)	0.17613	0.26879	2.01153
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16209	-0.26640	-2.01920
	hold	CLK (R)	-0.14930	-0.23562	-2.21112
	hold	CLK (R)	-0.14455	-0.23530	-2.23343
	hold	CLK (R)	-0.15773	-0.25962	-1.99874
	setup	CLK (R)	0.18917	0.28272	2.03549
	setup	CLK (R)	0.16480	0.25039	2.23827
	setup	CLK (R)	0.20740	0.28657	3.24848
	setup	CLK (R)	0.17222	0.26993	2.01261

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** ()	0.09090	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.09090	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.12105	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.09090	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.12357	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.09090	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.12105	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.12105	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.09090	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.12357	0.67139	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK** ()	0.10598	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.10598	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.15875	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.10598	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.15875	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.10598	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.15875	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.15875	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.10598	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.15875	0.67139	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.13362	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13362	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.22409	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13613	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.22660	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13613	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.22409	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.22409	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13613	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.22660	0.67139	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 ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.20901	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19896	0.67139	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.14367	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.20649	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020
	min_pulse_width	CLK ()	0.13362	0.67139	16.50020
	min_pulse_width	CLK ()	0.19644	0.67139	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.13111	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13864	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.18890	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13111	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.18890	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13111	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.19644	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.18890	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.13111	0.67139	16.50020
	min_pulse_width	**CLK** ()	0.18890	0.67139	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	0.04312	0.05029	0.17629
	CLK	0.03727	0.04444	0.17077
sky130_fd_sc_hs__sedfxtp_2	CLK	0.04758	0.05451	0.18075
	CLK	0.04168	0.04862	0.17548
sky130_fd_sc_hs__sedfxtp_4	CLK	0.05696	0.06216	0.18870
	CLK	0.05092	0.05612	0.18396

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.03800	0.04485	0.17653
	CLK	0.03302	0.03985	0.17117
sky130_fd_sc_hs__sedfxtp_2	CLK	0.04516	0.05009	0.18164
	CLK	0.04013	0.04496	0.17557
sky130_fd_sc_hs__sedfxtp_4	CLK	0.06202	0.06004	0.18910
	CLK	0.05683	0.05446	0.18294

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00979	0.01234	0.06441
	(DE * SCE)	0.00624	0.00880	0.06087
	(CLK * DE * !SCE)	0.01477	0.01670	0.06663
	(CLK * DE * !SCE)	0.01003	0.01195	0.06189
	(CLK * !DE * !SCE)	0.00271	0.00271	0.00269
	(CLK * !DE * !SCE)	0.00033	0.00032	0.00031
	(!DE * SCE)	0.00411	0.00409	0.00408
	(!DE * SCE)	0.00173	0.00172	0.00170
	(!CLK * DE * !SCE * Q)	0.02262	0.02541	0.08699
	(!CLK * DE * !SCE * Q)	0.01791	0.02071	0.08229
	(!CLK * DE * !SCE * !Q)	0.02286	0.02551	0.08649
	(!CLK * DE * !SCE * !Q)	0.01813	0.02077	0.08175
	(!CLK * !DE * !SCE)	0.00269	0.00269	0.00267
	(!CLK * !DE * !SCE)	0.00031	0.00030	0.00029
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.01040	0.01292	0.06496
	(DE * SCE)	0.00669	0.00923	0.06126
	(CLK * DE * !SCE)	0.01544	0.01734	0.06723
	(CLK * DE * !SCE)	0.01054	0.01242	0.06232
	(CLK * !DE * !SCE)	0.00314	0.00314	0.00312
	(CLK * !DE * !SCE)	0.00066	0.00065	0.00064
	(!DE * SCE)	0.00454	0.00453	0.00451
	(!DE * SCE)	0.00206	0.00205	0.00203
	(!CLK * DE * !SCE * Q)	0.02276	0.02554	0.08708
	(!CLK * DE * !SCE * Q)	0.01790	0.02068	0.08222
	(!CLK * DE * !SCE * !Q)	0.02348	0.02612	0.08708
	(!CLK * DE * !SCE * !Q)	0.01858	0.02121	0.08217
	(!CLK * !DE * !SCE)	0.00312	0.00312	0.00310
	(!CLK * !DE * !SCE)	0.00064	0.00063	0.00062

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.01126	0.01379	0.06585
	(DE * SCE)	0.00755	0.01008	0.06214
	(CLK * DE * !SCE)	0.01635	0.01824	0.06807
	(CLK * DE * !SCE)	0.01144	0.01332	0.06317
	(CLK * !DE * !SCE)	0.00400	0.00400	0.00399
	(CLK * !DE * !SCE)	0.00152	0.00151	0.00150
	(!DE * SCE)	0.00541	0.00539	0.00537
	(!DE * SCE)	0.00292	0.00291	0.00289
	(!CLK * DE * !SCE * Q)	0.02268	0.02544	0.08698
	(!CLK * DE * !SCE * Q)	0.01781	0.02057	0.08211
	(!CLK * DE * !SCE * !Q)	0.02417	0.02681	0.08778
	(!CLK * DE * !SCE * !Q)	0.01926	0.02190	0.08286
	(!CLK * !DE * !SCE)	0.00398	0.00398	0.00396
	(!CLK * !DE * !SCE)	0.00150	0.00149	0.00148

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00617	0.00938	0.06216
	(DE * SCE)	0.00973	0.01293	0.06570
	(CLK * DE * !SCE)	0.00648	0.00913	0.06077
	(CLK * DE * !SCE)	0.01120	0.01388	0.06551
	(CLK * !DE * !SCE)	0.00193	0.00193	0.00193
	(CLK * !DE * !SCE)	0.00432	0.00431	0.00431
	(!DE * SCE)	0.00331	0.00330	0.00330
	(!DE * SCE)	0.00567	0.00569	0.00568
	(!CLK * DE * !SCE * Q)	0.01734	0.02038	0.08118
	(!CLK * DE * !SCE * Q)	0.02203	0.02507	0.08586
	(!CLK * DE * !SCE * !Q)	0.01887	0.02209	0.08359
	(!CLK * DE * !SCE * !Q)	0.02362	0.02682	0.08833
	(!CLK * !DE * !SCE)	0.00193	0.00193	0.00193
	(!CLK * !DE * !SCE)	0.00432	0.00431	0.00431
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00655	0.00973	0.06248
	(DE * SCE)	0.01026	0.01345	0.06618
	(CLK * DE * !SCE)	0.00681	0.00946	0.06107
	(CLK * DE * !SCE)	0.01174	0.01438	0.06597
	(CLK * !DE * !SCE)	0.00236	0.00236	0.00236
	(CLK * !DE * !SCE)	0.00483	0.00485	0.00484
	(!DE * SCE)	0.00373	0.00372	0.00373
	(!DE * SCE)	0.00622	0.00622	0.00621
	(!CLK * DE * !SCE * Q)	0.01729	0.02030	0.08108
	(!CLK * DE * !SCE * Q)	0.02215	0.02516	0.08594
	(!CLK * DE * !SCE * !Q)	0.01917	0.02237	0.08388
	(!CLK * DE * !SCE * !Q)	0.02409	0.02727	0.08878
	(!CLK * !DE * !SCE)	0.00237	0.00236	0.00236
	(!CLK * !DE * !SCE)	0.00483	0.00485	0.00484

sky130_fd_sc_hs__sedfxtp_4	(DE * SCE)	0.00733	0.01054	0.06329
	(DE * SCE)	0.01106	0.01424	0.06701
	(CLK * DE * !SCE)	0.00788	0.01051	0.06206
	(CLK * DE * !SCE)	0.01281	0.01544	0.06697
	(CLK * !DE * !SCE)	0.00322	0.00322	0.00322
	(CLK * !DE * !SCE)	0.00570	0.00571	0.00571
	(!DE * SCE)	0.00459	0.00458	0.00459
	(!DE * SCE)	0.00708	0.00709	0.00708
	(!CLK * DE * !SCE * Q)	0.01742	0.02044	0.08119
	(!CLK * DE * !SCE * Q)	0.02228	0.02530	0.08605
	(!CLK * DE * !SCE * !Q)	0.02020	0.02340	0.08488
	(!CLK * DE * !SCE * !Q)	0.02513	0.02830	0.08978
	(!CLK * !DE * !SCE)	0.00323	0.00322	0.00322
	(!CLK * !DE * !SCE)	0.00570	0.00572	0.00571

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	SCE	0.01493	0.02113	0.13793
	SCE	0.00719	0.01335	0.13018
	(CLK * !SCE)	0.01991	0.02562	0.14050
	(CLK * !SCE)	0.01097	0.01665	0.13154
	(!CLK * D * !SCE * Q)	0.00834	0.01206	0.08078
	(!CLK * D * !SCE * Q)	0.00192	0.00563	0.07436
	(!CLK * D * !SCE * !Q)	0.02800	0.03427	0.15851
	(!CLK * D * !SCE * !Q)	0.01906	0.02532	0.14956
	(!CLK * !D * !SCE * Q)	0.02484	0.02870	0.10072
	(!CLK * !D * !SCE * Q)	0.02103	0.02489	0.09693
	(!CLK * !D * !SCE * !Q)	0.00918	0.01317	0.08174
	(!CLK * !D * !SCE * !Q)	0.00277	0.00675	0.07533

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01551	0.02169	0.13847
	SCE	0.00762	0.01376	0.13057
	(CLK * !SCE)	0.02055	0.02623	0.14109
	(CLK * !SCE)	0.01145	0.01712	0.13198
	(!CLK * D * !SCE * Q)	0.00839	0.01211	0.08083
	(!CLK * D * !SCE * Q)	0.00188	0.00559	0.07433
	(!CLK * D * !SCE * !Q)	0.02859	0.03485	0.15907
	(!CLK * D * !SCE * !Q)	0.01949	0.02574	0.14998
	(!CLK * !D * !SCE * Q)	0.02484	0.02871	0.10073
	(!CLK * !D * !SCE * Q)	0.02104	0.02488	0.09691
	(!CLK * !D * !SCE * !Q)	0.00964	0.01363	0.08220
	(!CLK * !D * !SCE * !Q)	0.00315	0.00712	0.07571
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01635	0.02254	0.13934
	SCE	0.00849	0.01464	0.13147
	(CLK * !SCE)	0.02143	0.02713	0.14194
	(CLK * !SCE)	0.01237	0.01804	0.13286
	(!CLK * D * !SCE * Q)	0.00840	0.01212	0.08085
	(!CLK * D * !SCE * Q)	0.00192	0.00563	0.07438
	(!CLK * D * !SCE * !Q)	0.02925	0.03552	0.15975
	(!CLK * D * !SCE * !Q)	0.02019	0.02645	0.15070
	(!CLK * !D * !SCE * Q)	0.02497	0.02884	0.10086
	(!CLK * !D * !SCE * Q)	0.02119	0.02504	0.09707
	(!CLK * !D * !SCE * !Q)	0.01049	0.01449	0.08306
	(!CLK * !D * !SCE * !Q)	0.00402	0.00801	0.07660

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00661	0.01333	0.13106
	SCE	0.01436	0.02111	0.13881
	(CLK * !SCE)	0.00686	0.01312	0.12993
	(CLK * !SCE)	0.01581	0.02210	0.13885
	(!CLK * D * !SCE * Q)	0.00129	0.00556	0.07473
	(!CLK * D * !SCE * Q)	0.00771	0.01197	0.08114
	(!CLK * D * !SCE * !Q)	0.01890	0.02550	0.14978
	(!CLK * D * !SCE * !Q)	0.02784	0.03446	0.15872
	(!CLK * !D * !SCE * Q)	0.02246	0.02677	0.09822
	(!CLK * !D * !SCE * Q)	0.02627	0.03058	0.10203
	(!CLK * !D * !SCE * !Q)	0.00210	0.00649	0.07555
	(!CLK * !D * !SCE * !Q)	0.00849	0.01292	0.08195
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00704	0.01374	0.13146
	SCE	0.01493	0.02167	0.13935
	(CLK * !SCE)	0.00726	0.01350	0.13029
	(CLK * !SCE)	0.01637	0.02264	0.13937
	(!CLK * D * !SCE * Q)	0.00128	0.00554	0.07472
	(!CLK * D * !SCE * Q)	0.00779	0.01204	0.08122
	(!CLK * D * !SCE * !Q)	0.01924	0.02584	0.15011
	(!CLK * D * !SCE * !Q)	0.02834	0.03495	0.15920
	(!CLK * !D * !SCE * Q)	0.02249	0.02680	0.09822
	(!CLK * !D * !SCE * Q)	0.02632	0.03063	0.10206
	(!CLK * !D * !SCE * !Q)	0.00250	0.00689	0.07595
	(!CLK * !D * !SCE * !Q)	0.00898	0.01341	0.08244

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00783	0.01454	0.13228
	SCE	0.01569	0.02244	0.14014
	(CLK * !SCE)	0.00834	0.01457	0.13131
	(CLK * !SCE)	0.01740	0.02367	0.14037
	(!CLK * D * !SCE * Q)	0.00132	0.00558	0.07475
	(!CLK * D * !SCE * Q)	0.00779	0.01204	0.08123
	(!CLK * D * !SCE * !Q)	0.02029	0.02688	0.15113
	(!CLK * D * !SCE * !Q)	0.02934	0.03597	0.16016
	(!CLK * !D * !SCE * Q)	0.02241	0.02672	0.09814
	(!CLK * !D * !SCE * Q)	0.02621	0.03052	0.10195
	(!CLK * !D * !SCE * !Q)	0.00337	0.00776	0.07682
	(!CLK * !D * !SCE * !Q)	0.00982	0.01424	0.08328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.01082	0.01308	0.06358
	(CLK * SCE)	0.00697	0.00922	0.05973
	(!CLK * SCE)	0.01856	0.02136	0.08087
	(!CLK * SCE)	0.01471	0.01751	0.07702
	!SCE	0.00511	0.00493	0.00517
	!SCE	0.00251	0.00229	0.00256
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.01139	0.01364	0.06415
	(CLK * SCE)	0.00750	0.00973	0.06025
	(!CLK * SCE)	0.01908	0.02188	0.08146
	(!CLK * SCE)	0.01519	0.01798	0.07756
	!SCE	0.00558	0.00538	0.00562
	!SCE	0.00293	0.00271	0.00298
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.01225	0.01448	0.06493
	(CLK * SCE)	0.00838	0.01059	0.06105
	(!CLK * SCE)	0.01972	0.02251	0.08211
	(!CLK * SCE)	0.01584	0.01863	0.07823
	!SCE	0.00642	0.00624	0.00648
	!SCE	0.00379	0.00358	0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00790	0.01027	0.06096
	(CLK * SCE)	0.01175	0.01414	0.06479
	(!CLK * SCE)	0.01837	0.02101	0.07876
	(!CLK * SCE)	0.02222	0.02488	0.08259
	!SCE	0.00317	0.00314	0.00307
	!SCE	0.00577	0.00578	0.00569
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00823	0.01060	0.06130
	(CLK * SCE)	0.01212	0.01451	0.06518
	(!CLK * SCE)	0.01864	0.02127	0.07905
	(!CLK * SCE)	0.02254	0.02518	0.08292
	!SCE	0.00357	0.00355	0.00348
	!SCE	0.00622	0.00622	0.00613
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00943	0.01177	0.06239
	(CLK * SCE)	0.01331	0.01565	0.06625
	(!CLK * SCE)	0.01981	0.02243	0.08016
	(!CLK * SCE)	0.02368	0.02633	0.08402
	!SCE	0.00445	0.00442	0.00435
	!SCE	0.00707	0.00708	0.00699

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.01284	0.01935	0.13280
	(CLK * D)	0.00624	0.01271	0.12618
	(CLK * !D)	0.01332	0.01981	0.13238
	(CLK * !D)	0.00672	0.01318	0.12576
	(!CLK * D * SCD * Q)	0.00778	0.01184	0.08043
	(!CLK * D * SCD * Q)	0.00236	0.00640	0.07500
	(!CLK * D * DE * SCD * !Q)	0.00872	0.01278	0.08137
	(!CLK * D * DE * SCD * !Q)	0.00330	0.00735	0.07595
	(!CLK * D * DE * !SCD * !Q)	0.02474	0.02844	0.12226
	(!CLK * D * DE * !SCD * !Q)	0.02039	0.02406	0.11786
	(!CLK * D * !SCD * Q)	0.02402	0.02769	0.12133
	(!CLK * D * !SCD * Q)	0.01966	0.02331	0.11693
	(!CLK * D * !DE * SCD * !Q)	0.02053	0.02763	0.15100
	(!CLK * D * !DE * SCD * !Q)	0.01393	0.02099	0.14437
	(!CLK * D * !DE * !SCD * !Q)	0.00881	0.01288	0.08155
	(!CLK * D * !DE * !SCD * !Q)	0.00322	0.00725	0.07593
	(!CLK * !D * SCD * !Q)	0.02102	0.02811	0.15055
	(!CLK * !D * SCD * !Q)	0.01442	0.02147	0.14393
	(!CLK * !D * DE * SCD * Q)	0.02101	0.02805	0.15071
	(!CLK * !D * DE * SCD * Q)	0.01441	0.02144	0.14410
	(!CLK * !D * DE * !SCD * Q)	0.00918	0.01325	0.08192
	(!CLK * !D * DE * !SCD * Q)	0.00359	0.00762	0.07630
	(!CLK * !D * !SCD * !Q)	0.00931	0.01337	0.08205
	(!CLK * !D * !SCD * !Q)	0.00371	0.00774	0.07642
	(!CLK * !D * !DE * SCD * Q)	0.00754	0.01160	0.08019
	(!CLK * !D * !DE * SCD * Q)	0.00212	0.00616	0.07476
	(!CLK * !D * !DE * !SCD * Q)	0.02378	0.02745	0.12115
	(!CLK * !D * !DE * !SCD * Q)	0.01943	0.02306	0.11675

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.01342	0.01992	0.13337
	(CLK * D)	0.00673	0.01319	0.12666
	(CLK * !D)	0.01391	0.02041	0.13295
	(CLK * !D)	0.00722	0.01371	0.12623
	(!CLK * D * SCD * Q)	0.00787	0.01191	0.08047
	(!CLK * D * SCD * Q)	0.00236	0.00639	0.07496
	(!CLK * D * DE * SCD * !Q)	0.00924	0.01328	0.08184
	(!CLK * D * DE * SCD * !Q)	0.00373	0.00776	0.07633
	(!CLK * D * DE * !SCD * !Q)	0.02511	0.02880	0.12258
	(!CLK * D * DE * !SCD * !Q)	0.02069	0.02433	0.11810
	(!CLK * D * !SCD * Q)	0.02401	0.02765	0.12129
	(!CLK * D * !SCD * Q)	0.01958	0.02322	0.11680
	(!CLK * D * !DE * SCD * !Q)	0.02107	0.02816	0.15151
	(!CLK * D * !DE * SCD * !Q)	0.01437	0.02142	0.14480
	(!CLK * D * !DE * !SCD * !Q)	0.00930	0.01336	0.08201
	(!CLK * D * !DE * !SCD * !Q)	0.00362	0.00764	0.07629
	(!CLK * !D * SCD * !Q)	0.02156	0.02863	0.15107
	(!CLK * !D * SCD * !Q)	0.01486	0.02190	0.14435
	(!CLK * !D * DE * SCD * Q)	0.02108	0.02809	0.15072
	(!CLK * !D * DE * SCD * Q)	0.01437	0.02140	0.14401
	(!CLK * !D * DE * !SCD * Q)	0.00925	0.01330	0.08195
	(!CLK * !D * DE * !SCD * Q)	0.00357	0.00758	0.07624
	(!CLK * !D * !SCD * !Q)	0.00980	0.01385	0.08250
	(!CLK * !D * !SCD * !Q)	0.00412	0.00814	0.07679
	(!CLK * !D * !DE * SCD * Q)	0.00762	0.01167	0.08023
	(!CLK * !D * !DE * SCD * Q)	0.00211	0.00614	0.07472
	(!CLK * !D * !DE * !SCD * Q)	0.02377	0.02743	0.12112
	(!CLK * !D * !DE * !SCD * Q)	0.01934	0.02297	0.11664

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.01430	0.02076	0.13420
	(CLK * D)	0.00766	0.01408	0.12753
	(CLK * !D)	0.01479	0.02123	0.13377
	(CLK * !D)	0.00814	0.01454	0.12710
	(!CLK * D * SCD * Q)	0.00785	0.01191	0.08053
	(!CLK * D * SCD * Q)	0.00239	0.00643	0.07506
	(!CLK * D * DE * SCD * !Q)	0.01006	0.01412	0.08274
	(!CLK * D * DE * SCD * !Q)	0.00459	0.00863	0.07727
	(!CLK * D * DE * !SCD * !Q)	0.02625	0.02992	0.12374
	(!CLK * D * DE * !SCD * !Q)	0.02186	0.02549	0.11929
	(!CLK * D * !SCD * Q)	0.02424	0.02791	0.12157
	(!CLK * D * !SCD * Q)	0.01984	0.02348	0.11712
	(!CLK * D * !DE * SCD * !Q)	0.02172	0.02878	0.15225
	(!CLK * D * !DE * SCD * !Q)	0.01507	0.02213	0.14558
	(!CLK * D * !DE * !SCD * !Q)	0.01014	0.01420	0.08291
	(!CLK * D * !DE * !SCD * !Q)	0.00450	0.00853	0.07724
	(!CLK * !D * SCD * !Q)	0.02220	0.02926	0.15180
	(!CLK * !D * SCD * !Q)	0.01556	0.02261	0.14513
	(!CLK * !D * DE * SCD * Q)	0.02094	0.02797	0.15070
	(!CLK * !D * DE * SCD * Q)	0.01429	0.02130	0.14403
	(!CLK * !D * DE * !SCD * Q)	0.00925	0.01331	0.08202
	(!CLK * !D * DE * !SCD * Q)	0.00361	0.00763	0.07635
	(!CLK * !D * !SCD * !Q)	0.01063	0.01469	0.08341
	(!CLK * !D * !SCD * !Q)	0.00500	0.00902	0.07774
	(!CLK * !D * !DE * SCD * Q)	0.00761	0.01167	0.08029
	(!CLK * !D * !DE * SCD * Q)	0.00214	0.00619	0.07482
	(!CLK * !D * !DE * !SCD * Q)	0.02400	0.02767	0.12152
	(!CLK * !D * !DE * !SCD * Q)	0.01961	0.02324	0.11707

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00371	0.01122	0.12607
	(CLK * D)	0.01034	0.01786	0.13269
	(CLK * !D)	0.00421	0.01172	0.12577
	(CLK * !D)	0.01084	0.01836	0.13240
	(!CLK * D * SCD * Q)	0.00192	0.00656	0.07581
	(!CLK * D * SCD * Q)	0.00735	0.01200	0.08122
	(!CLK * D * DE * SCD * !Q)	0.00318	0.00781	0.07706
	(!CLK * D * DE * SCD * !Q)	0.00861	0.01325	0.08248
	(!CLK * D * DE * !SCD * !Q)	0.01841	0.02542	0.12696
	(!CLK * D * DE * !SCD * !Q)	0.02281	0.02978	0.13117
	(!CLK * D * !SCD * Q)	0.01781	0.02481	0.12655
	(!CLK * D * !SCD * Q)	0.02220	0.02921	0.13076
	(!CLK * D * !DE * SCD * !Q)	0.01535	0.02296	0.14731
	(!CLK * D * !DE * SCD * !Q)	0.02197	0.02960	0.15393
	(!CLK * D * !DE * !SCD * !Q)	0.00206	0.00656	0.07566
	(!CLK * D * !DE * !SCD * !Q)	0.00765	0.01220	0.08128
	(!CLK * !D * SCD * !Q)	0.01602	0.02362	0.14756
	(!CLK * !D * SCD * !Q)	0.02265	0.03026	0.15418
	(!CLK * !D * DE * SCD * Q)	0.01516	0.02272	0.14634
	(!CLK * !D * DE * SCD * Q)	0.02179	0.02935	0.15296
	(!CLK * !D * DE * !SCD * Q)	0.00211	0.00661	0.07571
	(!CLK * !D * DE * !SCD * Q)	0.00770	0.01225	0.08133
	(!CLK * !D * !SCD * !Q)	0.00256	0.00705	0.07615
	(!CLK * !D * !SCD * !Q)	0.00815	0.01269	0.08177
	(!CLK * !D * !DE * SCD * Q)	0.00168	0.00631	0.07556
	(!CLK * !D * !DE * SCD * Q)	0.00711	0.01175	0.08098
	(!CLK * !D * !DE * !SCD * Q)	0.01750	0.02452	0.12635
	(!CLK * !D * !DE * !SCD * Q)	0.02189	0.02891	0.13056

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00408	0.01158	0.12643
	(CLK * D)	0.01080	0.01831	0.13315
	(CLK * !D)	0.00459	0.01207	0.12613
	(CLK * !D)	0.01129	0.01881	0.13285
	(!CLK * D * SCD * Q)	0.00190	0.00652	0.07575
	(!CLK * D * SCD * Q)	0.00742	0.01205	0.08125
	(!CLK * D * DE * SCD * !Q)	0.00357	0.00819	0.07741
	(!CLK * D * DE * SCD * !Q)	0.00908	0.01371	0.08292
	(!CLK * D * DE * !SCD * !Q)	0.01882	0.02580	0.12731
	(!CLK * D * DE * !SCD * !Q)	0.02329	0.03025	0.13160
	(!CLK * D * !SCD * Q)	0.01775	0.02473	0.12645
	(!CLK * D * !SCD * Q)	0.02223	0.02919	0.13074
	(!CLK * D * !DE * SCD * !Q)	0.01566	0.02327	0.14762
	(!CLK * D * !DE * SCD * !Q)	0.02237	0.02998	0.15433
	(!CLK * D * !DE * !SCD * !Q)	0.00244	0.00695	0.07602
	(!CLK * D * !DE * !SCD * !Q)	0.00816	0.01268	0.08173
	(!CLK * !D * SCD * !Q)	0.01632	0.02392	0.14786
	(!CLK * !D * SCD * !Q)	0.02305	0.03062	0.15457
	(!CLK * !D * DE * SCD * Q)	0.01511	0.02265	0.14630
	(!CLK * !D * DE * SCD * Q)	0.02184	0.02936	0.15300
	(!CLK * !D * DE * !SCD * Q)	0.00208	0.00660	0.07567
	(!CLK * !D * DE * !SCD * Q)	0.00781	0.01232	0.08138
	(!CLK * !D * !SCD * !Q)	0.00293	0.00745	0.07652
	(!CLK * !D * !SCD * !Q)	0.00866	0.01317	0.08222
	(!CLK * !D * !DE * SCD * Q)	0.00166	0.00628	0.07550
	(!CLK * !D * !DE * SCD * Q)	0.00717	0.01180	0.08101
	(!CLK * !D * !DE * !SCD * Q)	0.01745	0.02444	0.12625
	(!CLK * !D * !DE * !SCD * Q)	0.02192	0.02890	0.13054

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00527	0.01273	0.12757
	(CLK * D)	0.01195	0.01941	0.13423
	(CLK * !D)	0.00577	0.01323	0.12727
	(CLK * !D)	0.01245	0.01992	0.13394
	(!CLK * D * SCD * Q)	0.00195	0.00658	0.07587
	(!CLK * D * SCD * Q)	0.00743	0.01207	0.08133
	(!CLK * D * DE * SCD * !Q)	0.00446	0.00909	0.07837
	(!CLK * D * DE * SCD * !Q)	0.00993	0.01457	0.08383
	(!CLK * D * DE * !SCD * !Q)	0.01951	0.02651	0.12812
	(!CLK * D * DE * !SCD * !Q)	0.02395	0.03094	0.13237
	(!CLK * D * !SCD * Q)	0.01765	0.02467	0.12645
	(!CLK * D * !SCD * Q)	0.02209	0.02910	0.13070
	(!CLK * D * !DE * SCD * !Q)	0.01682	0.02441	0.14879
	(!CLK * D * !DE * SCD * !Q)	0.02349	0.03109	0.15543
	(!CLK * D * !DE * !SCD * !Q)	0.00332	0.00784	0.07697
	(!CLK * D * !DE * !SCD * !Q)	0.00900	0.01352	0.08264
	(!CLK * !D * SCD * !Q)	0.01749	0.02508	0.14903
	(!CLK * !D * SCD * !Q)	0.02417	0.03173	0.15570
	(!CLK * !D * DE * SCD * Q)	0.01540	0.02292	0.14659
	(!CLK * !D * DE * SCD * Q)	0.02207	0.02960	0.15324
	(!CLK * !D * DE * !SCD * Q)	0.00213	0.00665	0.07578
	(!CLK * !D * DE * !SCD * Q)	0.00781	0.01233	0.08145
	(!CLK * !D * !SCD * !Q)	0.00384	0.00834	0.07747
	(!CLK * !D * !SCD * !Q)	0.00948	0.01402	0.08313
	(!CLK * !D * !DE * SCD * Q)	0.00171	0.00634	0.07563
	(!CLK * !D * !DE * SCD * Q)	0.00718	0.01182	0.08109
	(!CLK * !D * !DE * !SCD * Q)	0.01734	0.02437	0.12625
	(!CLK * !D * !DE * !SCD * Q)	0.02178	0.02879	0.13049

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01832	0.02524	0.14971
	(SCD * SCE * Q)	0.01363	0.02053	0.14501
	(D * !SCE * Q)	0.01755	0.02447	0.14894
	(D * !SCE * Q)	0.01286	0.01976	0.14424
	(D * !DE * !SCE * !Q)	0.01837	0.02531	0.14998
	(D * !DE * !SCE * !Q)	0.01368	0.02060	0.14527
	(!SCD * SCE * !Q)	0.02070	0.02764	0.15232
	(!SCD * SCE * !Q)	0.01601	0.02293	0.14762
	(!D * !SCE * !Q)	0.01887	0.02581	0.15047
	(!D * !SCE * !Q)	0.01418	0.02110	0.14577
	(!D * !DE * !SCE * Q)	0.01731	0.02422	0.14870
	(!D * !DE * !SCE * Q)	0.01262	0.01951	0.14400
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01851	0.02542	0.14993
	(SCD * SCE * Q)	0.01380	0.02068	0.14521
	(D * !SCE * Q)	0.01775	0.02465	0.14916
	(D * !SCE * Q)	0.01303	0.01991	0.14444
	(D * !DE * !SCE * !Q)	0.01899	0.02591	0.15063
	(D * !DE * !SCE * !Q)	0.01428	0.02118	0.14589
	(!SCD * SCE * !Q)	0.02131	0.02824	0.15296
	(!SCD * SCE * !Q)	0.01660	0.02350	0.14823
	(!D * !SCE * !Q)	0.01949	0.02641	0.15112
	(!D * !SCE * !Q)	0.01477	0.02168	0.14640
	(!D * !DE * !SCE * Q)	0.01750	0.02441	0.14892
	(!D * !DE * !SCE * Q)	0.01279	0.01967	0.14419

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01853	0.02544	0.14983
	(SCD * SCE * Q)	0.01367	0.02056	0.14496
	(D * !SCE * Q)	0.01776	0.02466	0.14908
	(D * !SCE * Q)	0.01290	0.01978	0.14420
	(D * !DE * !SCE * !Q)	0.01971	0.02683	0.15125
	(D * !DE * !SCE * !Q)	0.01485	0.02194	0.14637
	(!SCD * SCE * !Q)	0.02203	0.02916	0.15357
	(!SCD * SCE * !Q)	0.01717	0.02427	0.14869
	(!D * !SCE * !Q)	0.02020	0.02732	0.15174
	(!D * !SCE * !Q)	0.01534	0.02243	0.14687
	(!D * !DE * !SCE * Q)	0.01752	0.02442	0.14883
	(!D * !DE * !SCE * Q)	0.01266	0.01954	0.14396

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.01128	0.01893	0.14280
	(SCD * SCE * Q)	0.01596	0.02364	0.14751
	(SCD * SCE * !Q)	0.02072	0.02854	0.15596
	(SCD * SCE * !Q)	0.02541	0.03323	0.16066
	(D * DE * !SCE * !Q)	0.02002	0.02781	0.15524
	(D * DE * !SCE * !Q)	0.02471	0.03251	0.15993
	(D * !SCE * Q)	0.01053	0.01818	0.14205
	(D * !SCE * Q)	0.01522	0.02290	0.14676
	(D * !DE * !SCE * !Q)	0.01107	0.01865	0.14218
	(D * !DE * !SCE * !Q)	0.01576	0.02337	0.14688
	(!SCD * SCE * Q)	0.02391	0.03170	0.15661
	(!SCD * SCE * Q)	0.02861	0.03644	0.16134
	(!SCD * SCE * !Q)	0.01336	0.02094	0.14446
	(!SCD * SCE * !Q)	0.01805	0.02566	0.14916
	(!D * DE * !SCE * Q)	0.02309	0.03090	0.15608
	(!D * DE * !SCE * Q)	0.02779	0.03561	0.16078
	(!D * !SCE * !Q)	0.01157	0.01915	0.14268
	(!D * !SCE * !Q)	0.01626	0.02387	0.14738
	(!D * !DE * !SCE * Q)	0.01029	0.01794	0.14180
	(!D * !DE * !SCE * Q)	0.01498	0.02266	0.14651

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.01137	0.01899	0.14291
	(SCD * SCE * Q)	0.01609	0.02374	0.14764
	(SCD * SCE * !Q)	0.02117	0.02895	0.15641
	(SCD * SCE * !Q)	0.02588	0.03367	0.16115
	(D * DE * !SCE * !Q)	0.02045	0.02821	0.15569
	(D * DE * !SCE * !Q)	0.02517	0.03295	0.16042
	(D * !SCE * Q)	0.01062	0.01824	0.14213
	(D * !SCE * Q)	0.01534	0.02299	0.14686
	(D * !DE * !SCE * !Q)	0.01158	0.01912	0.14269
	(D * !DE * !SCE * !Q)	0.01629	0.02387	0.14742
	(!SCD * SCE * Q)	0.02400	0.03176	0.15704
	(!SCD * SCE * Q)	0.02873	0.03652	0.16178
	(!SCD * SCE * !Q)	0.01388	0.02142	0.14498
	(!SCD * SCE * !Q)	0.01859	0.02616	0.14971
	(!D * DE * !SCE * Q)	0.02317	0.03092	0.15610
	(!D * DE * !SCE * Q)	0.02790	0.03567	0.16084
	(!D * !SCE * !Q)	0.01208	0.01962	0.14319
	(!D * !SCE * !Q)	0.01679	0.02436	0.14792
	(!D * !DE * !SCE * Q)	0.01038	0.01801	0.14189
	(!D * !DE * !SCE * Q)	0.01509	0.02271	0.14662

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01114	0.01878	0.14260
	(SCD * SCE * Q)	0.01600	0.02363	0.14748
	(SCD * SCE * !Q)	0.02172	0.02950	0.15685
	(SCD * SCE * !Q)	0.02658	0.03438	0.16173
	(D * DE * !SCE * !Q)	0.02101	0.02878	0.15613
	(D * DE * !SCE * !Q)	0.02587	0.03365	0.16100
	(D * !SCE * Q)	0.01040	0.01803	0.14186
	(D * !SCE * Q)	0.01526	0.02292	0.14673
	(D * !DE * !SCE * !Q)	0.01233	0.01988	0.14337
	(D * !DE * !SCE * !Q)	0.01719	0.02478	0.14824
	(!SCD * SCE * Q)	0.02364	0.03139	0.15631
	(!SCD * SCE * Q)	0.02851	0.03629	0.16120
	(!SCD * SCE * !Q)	0.01462	0.02217	0.14565
	(!SCD * SCE * !Q)	0.01949	0.02707	0.15052
	(!D * DE * !SCE * Q)	0.02279	0.03055	0.15576
	(!D * DE * !SCE * Q)	0.02766	0.03544	0.16062
	(!D * !SCE * !Q)	0.01283	0.02038	0.14386
	(!D * !SCE * !Q)	0.01769	0.02527	0.14874
	(!D * !DE * !SCE * Q)	0.01016	0.01778	0.14161
	(!D * !DE * !SCE * Q)	0.01501	0.02268	0.14649

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00528	0.00549	0.65856
sky130_fd_sc_hs__xnor2_2	0.00878	0.00874	1.20479
sky130_fd_sc_hs__xnor2_4	0.01573	0.01578	2.04236

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	97.44990	203.26200
sky130_fd_sc_hs__xnor2_2	0.00000	126.54400	199.27000
sky130_fd_sc_hs__xnor2_4	0.00000	237.02000	409.15400

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	0.07375	0.39510	3.32072
	A->Y (FR)	!B	0.07666	0.77269	8.84739
	B->Y (RR)	A	0.06749	0.40175	3.48201
	B->Y (FR)	!A	0.06412	0.80671	9.43427
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.08079	0.35091	3.17604
	A->Y (FR)	!B	0.07537	0.65063	8.55526
	B->Y (RR)	A	0.07754	0.36577	3.28539
	B->Y (FR)	!A	0.06018	0.67897	9.11729
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.09327	0.47461	6.13849
	A->Y (FR)	!B	0.07750	0.57437	8.56432
	B->Y (RR)	A	0.08892	0.48339	6.21158
	B->Y (FR)	!A	0.05996	0.62019	9.31555

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	0.08652	0.48241	4.24112
	A->Y (RF)	!B	0.04480	0.43851	4.93255
	B->Y (FF)	A	0.08575	0.48183	4.34152
	B->Y (RF)	!A	0.03439	0.41912	4.82365
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.10065	0.48332	4.49929
	A->Y (RF)	!B	0.04268	0.35814	4.65192
	B->Y (FF)	A	0.09537	0.44178	4.07815
	B->Y (RF)	!A	0.03540	0.35142	4.70530
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.09230	0.42970	4.47906
	A->Y (RF)	!B	0.04470	0.30011	4.42027
	B->Y (FF)	A	0.08833	0.39274	4.07220
	B->Y (RF)	!A	0.03564	0.29062	4.49160

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	0.01432	0.02027	0.12450
	A	B	0.00500	0.01096	0.11527
	A	!B	-0.00068	0.00078	0.03053
	A	!B	0.00889	0.01019	0.04010
	B	A	0.01340	0.01960	0.12287
	B	A	0.00630	0.01252	0.11568
	B	!A	0.00037	0.00287	0.03760
	B	!A	0.00790	0.01042	0.04513
sky130_fd_sc_hs__xnor2_2	A	B	0.01997	0.02541	0.13247
	A	B	0.00625	0.01171	0.11880
	A	!B	0.00035	0.00352	0.06150
	A	!B	0.01717	0.02046	0.07809
	B	A	0.01911	0.02438	0.11646
	B	A	0.00872	0.01403	0.10605
	B	!A	0.00106	0.00607	0.06898
	B	!A	0.01466	0.01967	0.08267
sky130_fd_sc_hs__xnor2_4	A	B	0.03906	0.04910	0.24802
	A	B	0.01443	0.02436	0.22347
	A	!B	-0.00010	0.00667	0.11580
	A	!B	0.03201	0.03872	0.14753
	B	A	0.03790	0.04768	0.22099
	B	A	0.01978	0.02955	0.20333
	B	!A	0.00090	0.01088	0.12280
	B	!A	0.02694	0.03689	0.14877

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	0.00432	0.01139	0.11625
	A	B	0.01361	0.02066	0.12531
	A	!B	0.01208	0.01338	0.03888
	A	!B	0.00249	0.00375	0.02887
	B	A	0.00610	0.01213	0.11582
	B	A	0.01313	0.01911	0.12282
	B	!A	0.00878	0.01024	0.03408
	B	!A	0.00148	0.00290	0.02626
sky130_fd_sc_hs__xnor2_2	A	B	0.00920	0.01594	0.12281
	A	B	0.02288	0.02958	0.13608
	A	!B	0.02323	0.02608	0.07668
	A	!B	0.00637	0.00912	0.05913
	B	A	0.01243	0.01745	0.12226
	B	A	0.02253	0.02755	0.13237
	B	!A	0.01741	0.02066	0.06751
	B	!A	0.00411	0.00734	0.05355
sky130_fd_sc_hs__xnor2_4	A	B	0.01459	0.02684	0.22725
	A	B	0.03932	0.05148	0.25088
	A	!B	0.04197	0.04853	0.15238
	A	!B	0.00976	0.01626	0.11927
	B	A	0.01829	0.02828	0.21984
	B	A	0.03605	0.04601	0.23714
	B	!A	0.03144	0.03896	0.13286
	B	!A	0.00614	0.01361	0.10624

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00274	0.00707	0.00442	1.28857
sky130_fd_sc_hs__xnor3_2	0.00279	0.00711	0.00447	2.51298
sky130_fd_sc_hs__xnor3_4	0.00278	0.00709	0.00437	4.93044

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	411.89400	487.26100
sky130_fd_sc_hs__xnor3_2	0.00000	437.62300	537.59300
sky130_fd_sc_hs__xnor3_4	0.00000	489.73100	638.62900

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)	0.24804	0.85624	7.81018
	B->X (-R)	0.17354	0.74448	7.76965
	C->X (-R)	0.12519	0.69889	7.66956
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.26559	0.79099	7.74675
	B->X (-R)	0.18699	0.67181	7.65742
	C->X (-R)	0.13531	0.62560	7.56854
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.30980	0.78365	7.77768
	B->X (-R)	0.23549	0.67100	7.74387
	C->X (-R)	0.17930	0.62075	7.61760

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.19296	0.73307	5.52560
	B->X (-F)	0.18253	0.71348	5.96216
	C->X (-F)	0.10694	0.59716	5.66834
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.21716	0.71855	5.42229
	B->X (-F)	0.20212	0.68859	5.81920
	C->X (-F)	0.12730	0.58409	5.54451
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.26529	0.74564	5.55263
	B->X (-F)	0.25748	0.72576	5.99633
	C->X (-F)	0.19141	0.62972	5.74766

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.03745	0.04319	0.16437
	A	0.03158	0.03733	0.15849
	B	0.03558	0.04727	0.28262
	B	0.03399	0.04779	0.28193
	C	0.02384	0.03100	0.15320
	C	0.01672	0.02388	0.14633
sky130_fd_sc_hs__xnor3_2	A	0.04148	0.04631	0.16417
	A	0.03552	0.04037	0.15832
	B	0.03956	0.05049	0.28354
	B	0.02721	0.03816	0.27153
	C	0.02782	0.03469	0.15711
	C	0.02063	0.02750	0.15050
sky130_fd_sc_hs__xnor3_4	A	0.05359	0.05592	0.18016
	A	0.04771	0.05009	0.17410
	B	0.05147	0.05967	0.29422
	B	0.03926	0.04747	0.28188
	C	0.03957	0.04405	0.17495
	C	0.03252	0.03708	0.16811

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.03109	0.03606	0.15421
	A	0.03697	0.04196	0.16007
	B	0.02238	0.03457	0.26726
	B	0.03474	0.04693	0.27933
	C	0.01236	0.02009	0.14641
	C	0.01948	0.02721	0.15352
sky130_fd_sc_hs__xnor3_2	A	0.03917	0.04032	0.15770
	A	0.04513	0.04634	0.16043
	B	0.03009	0.03866	0.26949
	B	0.04245	0.05101	0.28024
	C	0.01991	0.02432	0.15290
	C	0.02712	0.03149	0.15930
sky130_fd_sc_hs__xnor3_4	A	0.06182	0.05373	0.17051
	A	0.06772	0.05960	0.17328
	B	0.05232	0.05112	0.28057
	B	0.06454	0.06344	0.29019
	C	0.04458	0.03686	0.16246
	C	0.05166	0.04397	0.16943

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage 1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00540	0.00558	0.59738
sky130_fd_sc_hs__xor2_2	0.00828	0.00821	1.11221
sky130_fd_sc_hs__xor2_4	0.01681	0.01636	1.91074

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	57.31300	70.52620
sky130_fd_sc_hs__xor2_2	0.00000	85.60680	122.87900
sky130_fd_sc_hs__xor2_4	0.00000	170.57700	245.51400

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	0.08412	0.65263	5.83299
	A->X (FR)	B	0.09118	0.80336	8.82979
	B->X (RR)	!A	0.09632	0.66679	6.04073
	B->X (FR)	A	0.06986	0.75967	8.54386
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.07381	0.54179	5.82170
	A->X (FR)	B	0.07973	0.67597	8.76640
	B->X (RR)	!A	0.08099	0.51976	5.60034
	B->X (FR)	A	0.06377	0.66000	8.73717
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.06836	0.43283	5.52953
	A->X (FR)	B	0.08038	0.56241	8.22930
	B->X (RR)	!A	0.07147	0.39918	5.10613
	B->X (FR)	A	0.06610	0.55327	8.36683

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	0.10628	0.40768	3.09163
	A->X (RF)	B	0.04251	0.40883	4.42615
	B->X (FF)	!A	0.09605	0.41914	3.24195
	B->X (RF)	A	0.03458	0.45367	5.07632
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.14027	0.53160	4.88557
	A->X (RF)	B	0.03916	0.34998	4.47950
	B->X (FF)	!A	0.12372	0.54503	5.05277
	B->X (RF)	A	0.03483	0.43275	5.64404
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.14278	0.48456	4.80361
	A->X (RF)	B	0.04070	0.29077	4.18715
	B->X (FF)	!A	0.12204	0.49511	4.87775
	B->X (RF)	A	0.03638	0.35118	5.13018

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	0.00255	0.00399	0.03574
	A	B	0.01216	0.01359	0.04542
	A	!B	0.01432	0.01894	0.10161
	A	!B	0.00449	0.00912	0.09190
	B	A	0.00184	0.00324	0.03429
	B	A	0.00902	0.01050	0.04156
	B	!A	0.01341	0.01758	0.10411
	B	!A	0.00599	0.01017	0.09692
sky130_fd_sc_hs__xor2_2	A	B	0.00406	0.00711	0.06434
	A	B	0.01984	0.02288	0.08015
	A	!B	0.01889	0.02396	0.11362
	A	!B	0.00533	0.01037	0.10009
	B	A	0.00206	0.00519	0.05952
	B	A	0.01436	0.01753	0.07167
	B	!A	0.01904	0.02286	0.11638
	B	!A	0.00891	0.01271	0.10640
sky130_fd_sc_hs__xor2_4	A	B	0.00706	0.01368	0.12401
	A	B	0.04021	0.04683	0.15696
	A	!B	0.03796	0.04766	0.22472
	A	!B	0.01126	0.02089	0.19801
	B	A	0.00460	0.01154	0.11833
	B	A	0.03032	0.03724	0.14575
	B	!A	0.03464	0.04287	0.22359
	B	!A	0.01521	0.02348	0.20406

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	0.01102	0.01214	0.03912
	A	B	0.00139	0.00240	0.02915
	A	!B	0.00317	0.00744	0.08858
	A	!B	0.01295	0.01722	0.09835
	B	A	0.00928	0.01081	0.03739
	B	A	0.00204	0.00356	0.02981
	B	!A	0.00456	0.00992	0.09551
	B	!A	0.01227	0.01760	0.10322
sky130_fd_sc_hs__xor2_2	A	B	0.01913	0.02158	0.07307
	A	B	0.00335	0.00578	0.05704
	A	!B	0.00443	0.00849	0.09634
	A	!B	0.01795	0.02200	0.10918
	B	A	0.01637	0.01951	0.06445
	B	A	0.00400	0.00708	0.05208
	B	!A	0.00647	0.01151	0.10387
	B	!A	0.01736	0.02241	0.11402
sky130_fd_sc_hs__xor2_4	A	B	0.03921	0.04499	0.15101
	A	B	0.00606	0.01171	0.11661
	A	!B	0.00924	0.01729	0.19077
	A	!B	0.03584	0.04387	0.21701
	B	A	0.03311	0.04023	0.13436
	B	A	0.00713	0.01417	0.10761
	B	!A	0.01388	0.02442	0.19626
	B	!A	0.03471	0.04514	0.21573

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.80v_150C.ccs
Cell Library: Process , Voltage
1.80, Temp 150.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00274	0.00728	0.00441	1.29010
sky130_fd_sc_hs__xor3_2	0.00275	0.00739	0.00441	2.50132
sky130_fd_sc_hs__xor3_4	0.00273	0.00749	0.00436	4.89399

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	411.96800	489.10900
sky130_fd_sc_hs__xor3_2	0.00000	437.80600	539.23100
sky130_fd_sc_hs__xor3_4	0.00000	489.77500	639.78400

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)	0.24229	0.84065	7.66796
	B->X (-R)	0.16692	0.72559	7.57731
	C->X (-R)	0.12108	0.68897	7.53414
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.25488	0.77218	7.62958
	B->X (-R)	0.18232	0.66178	7.53613
	C->X (-R)	0.13161	0.62222	7.49037
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.30579	0.77984	7.75429
	B->X (-R)	0.22731	0.65694	7.66369
	C->X (-R)	0.16528	0.61132	7.61490

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.19137	0.72218	5.36855
	B->X (-F)	0.18057	0.69635	5.78333
	C->X (-F)	0.10154	0.58335	5.54848
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.21304	0.71046	5.37265
	B->X (-F)	0.20277	0.68471	5.78926
	C->X (-F)	0.12595	0.59080	5.59127
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.26842	0.75030	5.55814
	B->X (-F)	0.26255	0.72730	5.98561
	C->X (-F)	0.18556	0.63853	5.79355

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.03997	0.04563	0.16588
	A	0.03410	0.03977	0.16008
	B	0.03650	0.04822	0.28679
	B	0.03430	0.04802	0.28469
	C	0.02277	0.03010	0.15633
	C	0.01565	0.02297	0.14944
sky130_fd_sc_hs__xor3_2	A	0.04436	0.04956	0.17059
	A	0.03864	0.04386	0.16497
	B	0.04094	0.05201	0.29015
	B	0.02805	0.03911	0.27747
	C	0.02732	0.03396	0.16324
	C	0.02021	0.02689	0.15650
sky130_fd_sc_hs__xor3_4	A	0.05578	0.05853	0.18149
	A	0.05000	0.05275	0.17551
	B	0.05252	0.06086	0.30020
	B	0.03961	0.04800	0.28714
	C	0.03979	0.04310	0.17336
	C	0.03274	0.03611	0.16615

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.03176	0.03654	0.15530
	A	0.03764	0.04243	0.16032
	B	0.01984	0.03216	0.26857
	B	0.03267	0.04496	0.28068
	C	0.01103	0.01896	0.14847
	C	0.01817	0.02607	0.15432
sky130_fd_sc_hs__xor3_2	A	0.04044	0.04150	0.15916
	A	0.04617	0.04726	0.16354
	B	0.02745	0.03630	0.27156
	B	0.04038	0.04923	0.28338
	C	0.02028	0.02424	0.15193
	C	0.02742	0.03135	0.15807
sky130_fd_sc_hs__xor3_4	A	0.06434	0.05553	0.17111
	A	0.07015	0.06137	0.17486
	B	0.05489	0.05198	0.27700
	B	0.06745	0.06462	0.28727
	C	0.04562	0.03781	0.16229
	C	0.05266	0.04488	0.16935