sky130_fd_sc_hs_ff_1.95v_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_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00278	0.00287	0.00299	0.00298	0.46468
sky130_fd_sc_hs__a2111oi_2	0.00544	0.00532	0.00440	0.00442	0.00441	0.77105
sky130_fd_sc_hs__a2111oi_4	0.01079	0.01067	0.00862	0.00849	0.00864	1.41093

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	150.84700	521.97700
sky130_fd_sc_hs__a2111oi_2	0.00000	297.31600	1043.47000
sky130_fd_sc_hs__a2111oi_4	0.00000	592.80700	2085.82000

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)	0.11350	0.75567	7.61846
	A2->Y (FR)	0.13431	0.79723	7.90993
	B1->Y (FR)	0.12429	0.83516	8.49977
	C1->Y (FR)	0.10565	0.85833	8.94706
	D1->Y (FR)	0.07761	0.85918	9.22090
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.10701	0.63349	7.33637
	A2->Y (FR)	0.13388	0.66800	7.54749
	B1->Y (FR)	0.11879	0.67135	7.62823
	C1->Y (FR)	0.09835	0.70742	8.31107
	D1->Y (FR)	0.05799	0.70196	8.59530
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.10356	0.52794	7.12984
	A2->Y (FR)	0.13348	0.57137	7.45382
	B1->Y (FR)	0.11887	0.58336	7.68893
	C1->Y (FR)	0.09546	0.61785	8.40763
	D1->Y (FR)	0.05491	0.61923	8.75425

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02967	0.29803	2.73994
	A2->Y (RF)	0.03263	0.25736	2.20511
	B1->Y (RF)	0.02195	0.22138	1.93418
	C1->Y (RF)	0.02167	0.21344	1.87441
	D1->Y (RF)	0.01806	0.20436	1.82054
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02588	0.24715	2.58430
	A2->Y (RF)	0.03062	0.20666	2.00083
	B1->Y (RF)	0.03462	0.31765	3.55760
	C1->Y (RF)	0.03205	0.30372	3.46027
	D1->Y (RF)	0.02234	0.28655	3.39825
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02807	0.21502	2.67919
	A2->Y (RF)	0.03206	0.15979	1.84848
	B1->Y (RF)	0.03037	0.24845	3.21648
	C1->Y (RF)	0.02851	0.23272	3.10979
	D1->Y (RF)	0.01965	0.21981	3.12095

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00174	0.00686	0.13692
	A1	0.01302	0.01810	0.14811
	A2	0.00222	0.00746	0.14151
	A2	0.01503	0.02027	0.15425
	B1	0.00127	0.00812	0.14491
	B1	0.01093	0.01778	0.15464
	C1	0.00127	0.00820	0.13024
	C1	0.00945	0.01639	0.13853
	D1	0.00117	0.00961	0.14033
	D1	0.00795	0.01637	0.14694
sky130_fd_sc_hs__a2111oi_2	A1	0.00156	0.01168	0.25243
	A1	0.02292	0.03304	0.27336
	A2	0.00347	0.01372	0.26453
	A2	0.02784	0.03810	0.28841
	B1	0.00198	0.01173	0.20504
	B1	0.01850	0.02827	0.22175
	C1	0.00214	0.01182	0.17838
	C1	0.01542	0.02505	0.19132
	D1	0.00198	0.01464	0.19476
	D1	0.01206	0.02473	0.20446

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00210	0.02257	0.46419
	A1	0.04489	0.06540	0.50542
	A2	0.00552	0.02647	0.48716
	A2	0.05443	0.07529	0.53483
	B1	0.00313	0.02353	0.39013
	B1	0.03609	0.05649	0.42302
	C1	0.00332	0.02404	0.34269
	C1	0.02982	0.05053	0.36905
	D1	0.00296	0.02884	0.36550
	D1	0.02307	0.04890	0.38529

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.02368	0.02867	0.13797
	A1	0.01239	0.01736	0.12665
	A2	0.02464	0.02939	0.14144
	A2	0.01184	0.01660	0.12863
	B1	0.01604	0.02280	0.14700
	B1	0.00641	0.01315	0.13744
	C1	0.01344	0.02019	0.13376
	C1	0.00526	0.01200	0.12565
	D1	0.01311	0.01998	0.12931
	D1	0.00636	0.01320	0.12261

sky130_fd_sc_hs__a2111oi_2	**A1**	0.04576	0.05558	0.25910
	A1	0.02441	0.03424	0.23769
	A2	0.04760	0.05729	0.27017
	A2	0.02323	0.03289	0.24576
	B1	0.03046	0.03960	0.20772
	B1	0.01394	0.02309	0.19129
	C1	0.02517	0.03424	0.18511
	C1	0.01192	0.02101	0.17192
	D1	0.02372	0.03362	0.17427
	D1	0.01366	0.02350	0.16417
sky130_fd_sc_hs__a2111oi_4	**A1**	0.09135	0.11165	0.49384
	A1	0.04852	0.06883	0.45072
	A2	0.09496	0.11607	0.53173
	A2	0.04605	0.06707	0.48295
	B1	0.05967	0.07977	0.41206
	B1	0.02669	0.04677	0.37907
	C1	0.04854	0.06858	0.36472
	C1	0.02212	0.04208	0.33832
	D1	0.04650	0.06762	0.33672
	D1	0.02648	0.04750	0.31660

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)**	0.00230	0.00221	0.00218
	(A2 * B1 * D1 * !Y)	-0.00221	-0.00235	-0.00232
	(A2 * B1 * C1 * !D1 * !Y)	0.00252	0.00234	0.00233
	(A2 * B1 * C1 * !D1 * !Y)	-0.00199	-0.00222	-0.00217
	(A2 * B1 * !C1 * !D1 * !Y)	0.00362	0.00322	0.00438
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00101	-0.00141	-0.00019
	(A2 * !B1 * C1 * D1 * !Y)	0.00255	0.00236	0.00234
	(A2 * !B1 * C1 * D1 * !Y)	-0.00198	-0.00222	-0.00215
	(A2 * !B1 * C1 * !D1 * !Y)	0.00381	0.00337	0.00453
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00089	-0.00133	-0.00006
	(A2 * !B1 * !C1 * D1 * !Y)	0.00423	0.00383	0.00602
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00059	-0.00101	0.00136
	(!A2 * B1 * D1 * !Y)	0.00214	0.00216	0.00215
	(!A2 * B1 * D1 * !Y)	-0.00232	-0.00233	-0.00232
	(!A2 * B1 * C1 * !D1 * !Y)	0.00229	0.00231	0.00230
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00216	-0.00218	-0.00217
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00444	0.00446	0.00444
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00002	-0.00005	-0.00003
	(!A2 * !B1 * C1 * D1 * !Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00215	-0.00216	-0.00215
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00462	0.00464	0.00462
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00016	0.00013	0.00015
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00634	0.00634	0.00635
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00188	0.00186	0.00188
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00097	0.00097	0.00092
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00252	-0.00253	-0.00260

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00460	0.00438	0.00436
	(A2 * B1 * D1 * !Y)	-0.00438	-0.00464	-0.00461
	(A2 * B1 * C1 * !D1 * !Y)	0.00508	0.00467	0.00466
	(A2 * B1 * C1 * !D1 * !Y)	-0.00393	-0.00439	-0.00432
	(A2 * B1 * !C1 * !D1 * !Y)	0.00737	0.00653	0.00876
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00190	-0.00277	-0.00036
	(A2 * !B1 * C1 * D1 * !Y)	0.00513	0.00470	0.00469
	(A2 * !B1 * C1 * D1 * !Y)	-0.00390	-0.00438	-0.00428
	(A2 * !B1 * C1 * !D1 * !Y)	0.00774	0.00683	0.00906
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00166	-0.00261	-0.00011
	(A2 * !B1 * !C1 * D1 * !Y)	0.00858	0.00774	0.01199
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00107	-0.00195	0.00269
	(!A2 * B1 * D1 * !Y)	0.00428	0.00430	0.00428
	(!A2 * B1 * D1 * !Y)	-0.00464	-0.00464	-0.00463
	(!A2 * B1 * C1 * !D1 * !Y)	0.00458	0.00460	0.00459
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00431	-0.00434	-0.00432
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00886	0.00886	0.00886
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00003	-0.00006	-0.00005
	(!A2 * !B1 * C1 * D1 * !Y)	0.00461	0.00463	0.00462
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00429	-0.00431	-0.00429
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00920	0.00922	0.00921
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00031	0.00028	0.00030
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01258	0.01261	0.01261
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00369	0.00365	0.00370
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00167	0.00168	0.00155
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00528	-0.00534	-0.00550

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00921	0.00880	0.00874
	(A2 * B1 * D1 * !Y)	-0.00881	-0.00934	-0.00926
	(A2 * B1 * C1 * !D1 * !Y)	0.01015	0.00936	0.00935
	(A2 * B1 * C1 * !D1 * !Y)	-0.00793	-0.00883	-0.00867
	(A2 * B1 * !C1 * !D1 * !Y)	0.01457	0.01302	0.01754
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00402	-0.00568	-0.00077
	(A2 * !B1 * C1 * D1 * !Y)	0.01024	0.00944	0.00941
	(A2 * !B1 * C1 * D1 * !Y)	-0.00791	-0.00883	-0.00860
	(A2 * !B1 * C1 * !D1 * !Y)	0.01531	0.01362	0.01813
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00357	-0.00537	-0.00028
	(A2 * !B1 * !C1 * D1 * !Y)	0.01694	0.01539	0.02391
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00245	-0.00409	0.00524
	(!A2 * B1 * D1 * !Y)	0.00860	0.00864	0.00859
	(!A2 * B1 * D1 * !Y)	-0.00931	-0.00932	-0.00929
	(!A2 * B1 * C1 * !D1 * !Y)	0.00921	0.00924	0.00921
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00870	-0.00871	-0.00868
	(!A2 * B1 * !C1 * !D1 * !Y)	0.01773	0.01775	0.01775
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00008	-0.00018	-0.00014
	(!A2 * !B1 * C1 * D1 * !Y)	0.00923	0.00929	0.00926
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00859	-0.00865	-0.00862
	(!A2 * !B1 * C1 * !D1 * !Y)	0.01844	0.01843	0.01844
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00053	0.00051	0.00055
	(!A2 * !B1 * !C1 * D1 * !Y)	0.02508	0.02513	0.02515
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00722	0.00716	0.00726
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00323	0.00325	0.00301
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01069	-0.01081	-0.01112

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)**	-0.00171	-0.00172	-0.00171
	(A2 * B1 * D1 * !Y)	0.00280	0.00282	0.00279
	(A2 * B1 * C1 * !D1 * !Y)	-0.00157	-0.00158	-0.00159
	(A2 * B1 * C1 * !D1 * !Y)	0.00295	0.00297	0.00293
	(A2 * B1 * !C1 * !D1 * !Y)	0.00043	0.00037	0.00011
	(A2 * B1 * !C1 * !D1 * !Y)	0.00506	0.00503	0.00474
	(A2 * !B1 * C1 * D1 * !Y)	-0.00154	-0.00156	-0.00156
	(A2 * !B1 * C1 * D1 * !Y)	0.00297	0.00300	0.00296
	(A2 * !B1 * C1 * !D1 * !Y)	0.00070	0.00064	0.00034
	(A2 * !B1 * C1 * !D1 * !Y)	0.00536	0.00534	0.00502
	(A2 * !B1 * !C1 * D1 * !Y)	0.00246	0.00236	0.00173
	(A2 * !B1 * !C1 * D1 * !Y)	0.00723	0.00716	0.00652
	(!A2 * B1 * D1 * !Y)	-0.00168	-0.00170	-0.00168
	(!A2 * B1 * D1 * !Y)	0.00277	0.00281	0.00279
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00154	-0.00155	-0.00153
	(!A2 * B1 * C1 * !D1 * !Y)	0.00295	0.00297	0.00294
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00060	0.00058	0.00060
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00507	0.00510	0.00507
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00152	-0.00154	-0.00151
	(!A2 * !B1 * C1 * D1 * !Y)	0.00295	0.00299	0.00295
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00078	0.00076	0.00079
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00525	0.00530	0.00525
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00251	0.00248	0.00250
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00698	0.00702	0.00697
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00022	-0.00022	-0.00021
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00327	0.00329	0.00328

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00340	-0.00341	-0.00342
	(A2 * B1 * D1 * !Y)	0.00557	0.00558	0.00557
	(A2 * B1 * C1 * !D1 * !Y)	-0.00312	-0.00314	-0.00316
	(A2 * B1 * C1 * !D1 * !Y)	0.00588	0.00589	0.00586
	(A2 * B1 * !C1 * !D1 * !Y)	0.00079	0.00069	0.00015
	(A2 * B1 * !C1 * !D1 * !Y)	0.01004	0.00998	0.00942
	(A2 * !B1 * C1 * D1 * !Y)	-0.00308	-0.00309	-0.00312
	(A2 * !B1 * C1 * D1 * !Y)	0.00593	0.00594	0.00591
	(A2 * !B1 * C1 * !D1 * !Y)	0.00132	0.00120	0.00061
	(A2 * !B1 * C1 * !D1 * !Y)	0.01066	0.01061	0.00997
	(A2 * !B1 * !C1 * D1 * !Y)	0.00483	0.00463	0.00340
	(A2 * !B1 * !C1 * D1 * !Y)	0.01437	0.01422	0.01296
	(!A2 * B1 * D1 * !Y)	-0.00336	-0.00337	-0.00336
	(!A2 * B1 * D1 * !Y)	0.00555	0.00554	0.00556
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00306	-0.00308	-0.00305
	(!A2 * B1 * C1 * !D1 * !Y)	0.00585	0.00588	0.00587
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00122	0.00120	0.00121
	(!A2 * B1 * !C1 * !D1 * !Y)	0.01012	0.01012	0.01013
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00303	-0.00306	-0.00303
	(!A2 * !B1 * C1 * D1 * !Y)	0.00588	0.00591	0.00590
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00157	0.00155	0.00155
	(!A2 * !B1 * C1 * !D1 * !Y)	0.01047	0.01048	0.01048
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00497	0.00495	0.00494
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01387	0.01388	0.01387
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00076	-0.00076	-0.00074
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00624	0.00629	0.00625

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00684	-0.00688	-0.00689
	(A2 * B1 * D1 * !Y)	0.01116	0.01122	0.01117
	(A2 * B1 * C1 * !D1 * !Y)	-0.00632	-0.00634	-0.00637
	(A2 * B1 * C1 * !D1 * !Y)	0.01184	0.01184	0.01173
	(A2 * B1 * !C1 * !D1 * !Y)	0.00152	0.00132	0.00027
	(A2 * B1 * !C1 * !D1 * !Y)	0.02016	0.02001	0.01887
	(A2 * !B1 * C1 * D1 * !Y)	-0.00620	-0.00625	-0.00628
	(A2 * !B1 * C1 * D1 * !Y)	0.01189	0.01194	0.01184
	(A2 * !B1 * C1 * !D1 * !Y)	0.00260	0.00236	0.00118
	(A2 * !B1 * C1 * !D1 * !Y)	0.02137	0.02127	0.01998
	(A2 * !B1 * !C1 * D1 * !Y)	0.00951	0.00912	0.00668
	(A2 * !B1 * !C1 * D1 * !Y)	0.02868	0.02840	0.02589
	(!A2 * B1 * D1 * !Y)	-0.00679	-0.00681	-0.00675
	(!A2 * B1 * D1 * !Y)	0.01117	0.01118	0.01115
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00616	-0.00621	-0.00614
	(!A2 * B1 * C1 * !D1 * !Y)	0.01174	0.01181	0.01176
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00238	0.00233	0.00236
	(!A2 * B1 * !C1 * !D1 * !Y)	0.02026	0.02029	0.02026
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00609	-0.00614	-0.00608
	(!A2 * !B1 * C1 * D1 * !Y)	0.01178	0.01184	0.01182
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00308	0.00301	0.00305
	(!A2 * !B1 * C1 * !D1 * !Y)	0.02094	0.02102	0.02096
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00980	0.00974	0.00975
	(!A2 * !B1 * !C1 * D1 * !Y)	0.02768	0.02772	0.02765
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00141	-0.00144	-0.00138
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01255	0.01269	0.01261

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)**	0.00241	0.00229	0.00229
	(A1 * B1 * D1 * !Y)	-0.00222	-0.00234	-0.00233
	(A1 * B1 * C1 * !D1 * !Y)	0.00264	0.00243	0.00244
	(A1 * B1 * C1 * !D1 * !Y)	-0.00200	-0.00222	-0.00218
	(A1 * B1 * !C1 * !D1 * !Y)	0.00374	0.00333	0.00448
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00102	-0.00143	-0.00021
	(A1 * !B1 * C1 * D1 * !Y)	0.00266	0.00244	0.00245
	(A1 * !B1 * C1 * D1 * !Y)	-0.00200	-0.00221	-0.00216
	(A1 * !B1 * C1 * !D1 * !Y)	0.00392	0.00349	0.00464
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00091	-0.00135	-0.00007
	(A1 * !B1 * !C1 * D1 * !Y)	0.00434	0.00393	0.00612
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00062	-0.00101	0.00134
	(!A1 * B1 * !Y)	0.00226	0.00227	0.00226
	(!A1 * B1 * !Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !B1 * C1 * !Y)	0.00243	0.00244	0.00243
	(!A1 * !B1 * C1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00646	0.00647	0.00646
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00187	0.00185	0.00187
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00245	0.00249	0.00245
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00216	-0.00219	-0.00218

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00461	0.00440	0.00438
	(A1 * B1 * D1 * !Y)	-0.00437	-0.00463	-0.00459
	(A1 * B1 * C1 * !D1 * !Y)	0.00508	0.00468	0.00468
	(A1 * B1 * C1 * !D1 * !Y)	-0.00393	-0.00437	-0.00430
	(A1 * B1 * !C1 * !D1 * !Y)	0.00735	0.00656	0.00878
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00192	-0.00277	-0.00035
	(A1 * !B1 * C1 * D1 * !Y)	0.00512	0.00472	0.00471
	(A1 * !B1 * C1 * D1 * !Y)	-0.00391	-0.00437	-0.00426
	(A1 * !B1 * C1 * !D1 * !Y)	0.00769	0.00683	0.00908
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00171	-0.00261	-0.00010
	(A1 * !B1 * !C1 * D1 * !Y)	0.00852	0.00775	0.01200
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00113	-0.00196	0.00270
	(!A1 * B1 * !Y)	0.00431	0.00433	0.00430
	(!A1 * B1 * !Y)	-0.00461	-0.00463	-0.00461
	(!A1 * !B1 * C1 * !Y)	0.00464	0.00467	0.00464
	(!A1 * !B1 * C1 * !Y)	-0.00428	-0.00429	-0.00428
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01263	0.01266	0.01264
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00371	0.00368	0.00372
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00439	0.00445	0.00440
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00454	-0.00459	-0.00458

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00925	0.00886	0.00879
	(A1 * B1 * D1 * !Y)	-0.00882	-0.00933	-0.00924
	(A1 * B1 * C1 * !D1 * !Y)	0.01019	0.00942	0.00940
	(A1 * B1 * C1 * !D1 * !Y)	-0.00795	-0.00882	-0.00866
	(A1 * B1 * !C1 * !D1 * !Y)	0.01459	0.01307	0.01758
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00406	-0.00567	-0.00077
	(A1 * !B1 * C1 * D1 * !Y)	0.01025	0.00949	0.00945
	(A1 * !B1 * C1 * D1 * !Y)	-0.00794	-0.00882	-0.00858
	(A1 * !B1 * C1 * !D1 * !Y)	0.01527	0.01364	0.01816
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00366	-0.00534	-0.00028
	(A1 * !B1 * !C1 * D1 * !Y)	0.01688	0.01543	0.02394
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00255	-0.00406	0.00523
	(!A1 * B1 * !Y)	0.00865	0.00872	0.00864
	(!A1 * B1 * !Y)	-0.00929	-0.00933	-0.00927
	(!A1 * !B1 * C1 * !Y)	0.00932	0.00941	0.00931
	(!A1 * !B1 * C1 * !Y)	-0.00862	-0.00868	-0.00861
	(!A1 * !B1 * !C1 * D1 * !Y)	0.02519	0.02526	0.02521
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00725	0.00720	0.00729
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00884	0.00889	0.00883
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00915	-0.00920	-0.00922

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)**	-0.00181	-0.00182	-0.00182
	(A1 * B1 * D1 * !Y)	0.00281	0.00283	0.00281
	(A1 * B1 * C1 * !D1 * !Y)	-0.00167	-0.00169	-0.00169
	(A1 * B1 * C1 * !D1 * !Y)	0.00296	0.00298	0.00295
	(A1 * B1 * !C1 * !D1 * !Y)	0.00032	0.00026	-0.00000
	(A1 * B1 * !C1 * !D1 * !Y)	0.00507	0.00505	0.00475
	(A1 * !B1 * C1 * D1 * !Y)	-0.00165	-0.00167	-0.00167
	(A1 * !B1 * C1 * D1 * !Y)	0.00298	0.00302	0.00298
	(A1 * !B1 * C1 * !D1 * !Y)	0.00059	0.00052	0.00022
	(A1 * !B1 * C1 * !D1 * !Y)	0.00538	0.00536	0.00503
	(A1 * !B1 * !C1 * D1 * !Y)	0.00234	0.00223	0.00161
	(A1 * !B1 * !C1 * D1 * !Y)	0.00723	0.00717	0.00653
	(!A1 * B1 * !Y)	-0.00181	-0.00181	-0.00179
	(!A1 * B1 * !Y)	0.00281	0.00281	0.00280
	(!A1 * !B1 * C1 * !Y)	-0.00164	-0.00164	-0.00162
	(!A1 * !B1 * C1 * !Y)	0.00297	0.00298	0.00297
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00239	0.00239	0.00240
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00701	0.00701	0.00699
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00144	-0.00160	-0.00160
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00321	0.00308	0.00300

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00343	-0.00345	-0.00344
	(A1 * B1 * D1 * !Y)	0.00557	0.00559	0.00555
	(A1 * B1 * C1 * !D1 * !Y)	-0.00315	-0.00317	-0.00318
	(A1 * B1 * C1 * !D1 * !Y)	0.00588	0.00588	0.00584
	(A1 * B1 * !C1 * !D1 * !Y)	0.00076	0.00066	0.00013
	(A1 * B1 * !C1 * !D1 * !Y)	0.01004	0.00996	0.00940
	(A1 * !B1 * C1 * D1 * !Y)	-0.00310	-0.00312	-0.00314
	(A1 * !B1 * C1 * D1 * !Y)	0.00591	0.00594	0.00589
	(A1 * !B1 * C1 * !D1 * !Y)	0.00129	0.00117	0.00059
	(A1 * !B1 * C1 * !D1 * !Y)	0.01066	0.01060	0.00995
	(A1 * !B1 * !C1 * D1 * !Y)	0.00478	0.00460	0.00337
	(A1 * !B1 * !C1 * D1 * !Y)	0.01435	0.01419	0.01294
	(!A1 * B1 * !Y)	-0.00338	-0.00342	-0.00338
	(!A1 * B1 * !Y)	0.00552	0.00560	0.00554
	(!A1 * !B1 * C1 * !Y)	-0.00304	-0.00309	-0.00305
	(!A1 * !B1 * C1 * !Y)	0.00585	0.00593	0.00588
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00495	0.00490	0.00493
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01385	0.01392	0.01385
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00286	-0.00332	-0.00331
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00611	0.00576	0.00563

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00690	-0.00695	-0.00693
	(A1 * B1 * D1 * !Y)	0.01119	0.01127	0.01115
	(A1 * B1 * C1 * !D1 * !Y)	-0.00635	-0.00641	-0.00641
	(A1 * B1 * C1 * !D1 * !Y)	0.01181	0.01188	0.01172
	(A1 * B1 * !C1 * !D1 * !Y)	0.00147	0.00124	0.00022
	(A1 * B1 * !C1 * !D1 * !Y)	0.02013	0.02002	0.01885
	(A1 * !B1 * C1 * D1 * !Y)	-0.00626	-0.00632	-0.00632
	(A1 * !B1 * C1 * D1 * !Y)	0.01191	0.01198	0.01183
	(A1 * !B1 * C1 * !D1 * !Y)	0.00253	0.00232	0.00113
	(A1 * !B1 * C1 * !D1 * !Y)	0.02137	0.02121	0.01995
	(A1 * !B1 * !C1 * D1 * !Y)	0.00940	0.00904	0.00661
	(A1 * !B1 * !C1 * D1 * !Y)	0.02865	0.02835	0.02584
	(!A1 * B1 * !Y)	-0.00681	-0.00688	-0.00678
	(!A1 * B1 * !Y)	0.01111	0.01125	0.01114
	(!A1 * !B1 * C1 * !Y)	-0.00613	-0.00621	-0.00612
	(!A1 * !B1 * C1 * !Y)	0.01176	0.01191	0.01180
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00975	0.00966	0.00973
	(!A1 * !B1 * !C1 * D1 * !Y)	0.02766	0.02779	0.02765
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00576	-0.00668	-0.00664
	(!A1 * !B1 * !C1 * !D1 * Y)	0.01228	0.01159	0.01131

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)**	0.00247	0.00245	0.00233
	(A1 * A2 * C1 * D1 * !Y)	-0.00152	-0.00157	-0.00159
	(A1 * A2 * C1 * !D1 * !Y)	0.00280	0.00281	0.00308
	(A1 * A2 * C1 * !D1 * !Y)	-0.00118	-0.00119	-0.00083
	(A1 * A2 * !C1 * D1 * !Y)	0.00291	0.00306	0.00326
	(A1 * A2 * !C1 * D1 * !Y)	-0.00105	-0.00093	-0.00061
	(A1 * A2 * !C1 * !D1 * !Y)	0.00275	0.00278	0.00357
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00038	-0.00037	0.00043
	(A1 * !A2 * C1 * D1 * !Y)	0.00270	0.00238	0.00241
	(A1 * !A2 * C1 * D1 * !Y)	-0.00185	-0.00218	-0.00210
	(A1 * !A2 * C1 * !D1 * !Y)	0.00340	0.00297	0.00455
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00124	-0.00167	-0.00002
	(A1 * !A2 * !C1 * D1 * !Y)	0.00390	0.00340	0.00601
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00088	-0.00138	0.00138
	(!A1 * C1 * D1 * !Y)	0.00269	0.00238	0.00241
	(!A1 * C1 * D1 * !Y)	-0.00187	-0.00218	-0.00210
	(!A1 * C1 * !D1 * !Y)	0.00338	0.00297	0.00455
	(!A1 * C1 * !D1 * !Y)	-0.00126	-0.00167	-0.00002
	(!A1 * !C1 * D1 * !Y)	0.00387	0.00339	0.00601
	(!A1 * !C1 * D1 * !Y)	-0.00091	-0.00138	0.00138

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00324	0.00320	0.00291
	(A1 * A2 * C1 * D1 * !Y)	-0.00300	-0.00310	-0.00317
	(A1 * A2 * C1 * !D1 * !Y)	0.00388	0.00389	0.00435
	(A1 * A2 * C1 * !D1 * !Y)	-0.00228	-0.00234	-0.00168
	(A1 * A2 * !C1 * D1 * !Y)	0.00407	0.00447	0.00476
	(A1 * A2 * !C1 * D1 * !Y)	-0.00216	-0.00182	-0.00125
	(A1 * A2 * !C1 * !D1 * !Y)	0.00410	0.00415	0.00567
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00056	-0.00053	0.00103
	(A1 * !A2 * C1 * D1 * !Y)	0.00370	0.00303	0.00308
	(A1 * !A2 * C1 * D1 * !Y)	-0.00365	-0.00441	-0.00425
	(A1 * !A2 * C1 * !D1 * !Y)	0.00521	0.00430	0.00739
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00233	-0.00332	-0.00006
	(A1 * !A2 * !C1 * D1 * !Y)	0.00617	0.00522	0.01026
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00166	-0.00267	0.00269
	(!A1 * C1 * D1 * !Y)	0.00369	0.00303	0.00308
	(!A1 * C1 * D1 * !Y)	-0.00367	-0.00441	-0.00425
	(!A1 * C1 * !D1 * !Y)	0.00518	0.00431	0.00739
	(!A1 * C1 * !D1 * !Y)	-0.00236	-0.00332	-0.00006
	(!A1 * !C1 * D1 * !Y)	0.00613	0.00521	0.01026
	(!A1 * !C1 * D1 * !Y)	-0.00169	-0.00267	0.00270

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00630	0.00621	0.00565
	(A1 * A2 * C1 * D1 * !Y)	-0.00622	-0.00632	-0.00646
	(A1 * A2 * C1 * !D1 * !Y)	0.00755	0.00762	0.00856
	(A1 * A2 * C1 * !D1 * !Y)	-0.00471	-0.00474	-0.00342
	(A1 * A2 * !C1 * D1 * !Y)	0.00791	0.00874	0.00933
	(A1 * A2 * !C1 * D1 * !Y)	-0.00444	-0.00373	-0.00255
	(A1 * A2 * !C1 * !D1 * !Y)	0.00775	0.00786	0.01132
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00135	-0.00128	0.00220
	(A1 * !A2 * C1 * D1 * !Y)	0.00737	0.00588	0.00599
	(A1 * !A2 * C1 * D1 * !Y)	-0.00750	-0.00902	-0.00869
	(A1 * !A2 * C1 * !D1 * !Y)	0.01037	0.00841	0.01459
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00488	-0.00686	-0.00034
	(A1 * !A2 * !C1 * D1 * !Y)	0.01217	0.01020	0.02026
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00344	-0.00560	0.00510
	(!A1 * C1 * D1 * !Y)	0.00731	0.00588	0.00599
	(!A1 * C1 * D1 * !Y)	-0.00756	-0.00901	-0.00869
	(!A1 * C1 * !D1 * !Y)	0.01029	0.00841	0.01459
	(!A1 * C1 * !D1 * !Y)	-0.00496	-0.00685	-0.00034
	(!A1 * !C1 * D1 * !Y)	0.01208	0.01018	0.02027
	(!A1 * !C1 * D1 * !Y)	-0.00356	-0.00562	0.00510

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)**	-0.00190	-0.00191	-0.00186
	(A1 * A2 * C1 * D1 * !Y)	0.00219	0.00220	0.00209
	(A1 * A2 * C1 * !D1 * !Y)	-0.00189	-0.00190	-0.00173
	(A1 * A2 * C1 * !D1 * !Y)	0.00217	0.00219	0.00217
	(A1 * A2 * !C1 * D1 * !Y)	-0.00196	-0.00197	-0.00173
	(A1 * A2 * !C1 * D1 * !Y)	0.00204	0.00207	0.00211
	(A1 * A2 * !C1 * !D1 * !Y)	0.00303	0.00286	0.00074
	(A1 * A2 * !C1 * !D1 * !Y)	0.00622	0.00606	0.00394
	(A1 * !A2 * C1 * D1 * !Y)	-0.00163	-0.00164	-0.00165
	(A1 * !A2 * C1 * D1 * !Y)	0.00290	0.00291	0.00288
	(A1 * !A2 * C1 * !D1 * !Y)	0.00058	0.00051	0.00019
	(A1 * !A2 * C1 * !D1 * !Y)	0.00519	0.00514	0.00481
	(A1 * !A2 * !C1 * D1 * !Y)	0.00237	0.00226	0.00159
	(A1 * !A2 * !C1 * D1 * !Y)	0.00708	0.00700	0.00632
	(!A1 * C1 * D1 * !Y)	-0.00162	-0.00164	-0.00165
	(!A1 * C1 * D1 * !Y)	0.00289	0.00291	0.00288
	(!A1 * C1 * !D1 * !Y)	0.00058	0.00052	0.00020
	(!A1 * C1 * !D1 * !Y)	0.00520	0.00515	0.00481
	(!A1 * !C1 * D1 * !Y)	0.00238	0.00227	0.00160
	(!A1 * !C1 * D1 * !Y)	0.00709	0.00701	0.00633

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00204	-0.00204	-0.00194
	(A1 * A2 * C1 * D1 * !Y)	0.00440	0.00440	0.00419
	(A1 * A2 * C1 * !D1 * !Y)	-0.00200	-0.00201	-0.00170
	(A1 * A2 * C1 * !D1 * !Y)	0.00441	0.00443	0.00435
	(A1 * A2 * !C1 * D1 * !Y)	-0.00220	-0.00218	-0.00173
	(A1 * A2 * !C1 * D1 * !Y)	0.00413	0.00413	0.00423
	(A1 * A2 * !C1 * !D1 * !Y)	0.00753	0.00720	0.00294
	(A1 * A2 * !C1 * !D1 * !Y)	0.01228	0.01195	0.00773
	(A1 * !A2 * C1 * D1 * !Y)	-0.00151	-0.00155	-0.00157
	(A1 * !A2 * C1 * D1 * !Y)	0.00583	0.00589	0.00580
	(A1 * !A2 * C1 * !D1 * !Y)	0.00281	0.00267	0.00202
	(A1 * !A2 * C1 * !D1 * !Y)	0.01034	0.01027	0.00958
	(A1 * !A2 * !C1 * D1 * !Y)	0.00640	0.00618	0.00485
	(A1 * !A2 * !C1 * D1 * !Y)	0.01415	0.01399	0.01263
	(!A1 * C1 * D1 * !Y)	-0.00151	-0.00154	-0.00157
	(!A1 * C1 * D1 * !Y)	0.00583	0.00589	0.00580
	(!A1 * C1 * !D1 * !Y)	0.00281	0.00268	0.00203
	(!A1 * C1 * !D1 * !Y)	0.01035	0.01027	0.00959
	(!A1 * !C1 * D1 * !Y)	0.00641	0.00619	0.00487
	(!A1 * !C1 * D1 * !Y)	0.01417	0.01400	0.01264

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00389	-0.00391	-0.00371
	(A1 * A2 * C1 * D1 * !Y)	0.00891	0.00895	0.00850
	(A1 * A2 * C1 * !D1 * !Y)	-0.00385	-0.00384	-0.00327
	(A1 * A2 * C1 * !D1 * !Y)	0.00895	0.00895	0.00877
	(A1 * A2 * !C1 * D1 * !Y)	-0.00423	-0.00423	-0.00335
	(A1 * A2 * !C1 * D1 * !Y)	0.00830	0.00838	0.00847
	(A1 * A2 * !C1 * !D1 * !Y)	0.01505	0.01435	0.00584
	(A1 * A2 * !C1 * !D1 * !Y)	0.02437	0.02375	0.01523
	(A1 * !A2 * C1 * D1 * !Y)	-0.00286	-0.00292	-0.00297
	(A1 * !A2 * C1 * D1 * !Y)	0.01188	0.01194	0.01179
	(A1 * !A2 * C1 * !D1 * !Y)	0.00578	0.00551	0.00422
	(A1 * !A2 * C1 * !D1 * !Y)	0.02091	0.02072	0.01936
	(A1 * !A2 * !C1 * D1 * !Y)	0.01285	0.01240	0.00977
	(A1 * !A2 * !C1 * D1 * !Y)	0.02836	0.02805	0.02534
	(!A1 * C1 * D1 * !Y)	-0.00287	-0.00292	-0.00298
	(!A1 * C1 * D1 * !Y)	0.01189	0.01194	0.01179
	(!A1 * C1 * !D1 * !Y)	0.00580	0.00553	0.00424
	(!A1 * C1 * !D1 * !Y)	0.02093	0.02073	0.01938
	(!A1 * !C1 * D1 * !Y)	0.01289	0.01245	0.00982
	(!A1 * !C1 * D1 * !Y)	0.02842	0.02811	0.02539

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)**	0.00266	0.00269	0.00275
	(A1 * B1 * D1 * !Y)	-0.00111	-0.00111	-0.00100
	(A1 * B1 * !D1 * !Y)	0.00243	0.00243	0.00244
	(A1 * B1 * !D1 * !Y)	-0.00077	-0.00076	-0.00073
	(A1 * A2 * !B1 * D1 * !Y)	0.00304	0.00294	0.00349
	(A1 * A2 * !B1 * D1 * !Y)	-0.00090	-0.00105	-0.00047
	(A1 * A2 * !B1 * !D1 * !Y)	0.00259	0.00261	0.00304
	(A1 * A2 * !B1 * !D1 * !Y)	0.00013	0.00015	0.00055
	(A1 * !A2 * !B1 * D1 * !Y)	0.00350	0.00312	0.00603
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00113	-0.00152	0.00145
	(!A1 * B1 * D1 * !Y)	0.00276	0.00280	0.00297
	(!A1 * B1 * D1 * !Y)	-0.00107	-0.00106	-0.00084
	(!A1 * B1 * !D1 * !Y)	0.00250	0.00256	0.00302
	(!A1 * B1 * !D1 * !Y)	-0.00070	-0.00071	-0.00020
	(!A1 * !B1 * D1 * !Y)	0.00349	0.00312	0.00604
	(!A1 * !B1 * D1 * !Y)	-0.00114	-0.00152	0.00145

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00331	0.00340	0.00342
	(A1 * B1 * D1 * !Y)	-0.00246	-0.00238	-0.00226
	(A1 * B1 * !D1 * !Y)	0.00297	0.00300	0.00298
	(A1 * B1 * !D1 * !Y)	-0.00144	-0.00148	-0.00140
	(A1 * A2 * !B1 * D1 * !Y)	0.00424	0.00394	0.00488
	(A1 * A2 * !B1 * D1 * !Y)	-0.00179	-0.00216	-0.00115
	(A1 * A2 * !B1 * !D1 * !Y)	0.00337	0.00342	0.00428
	(A1 * A2 * !B1 * !D1 * !Y)	0.00039	0.00042	0.00121
	(A1 * !A2 * !B1 * D1 * !Y)	0.00545	0.00440	0.01004
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00204	-0.00311	0.00263
	(!A1 * B1 * D1 * !Y)	0.00351	0.00362	0.00383
	(!A1 * B1 * D1 * !Y)	-0.00237	-0.00228	-0.00197
	(!A1 * B1 * !D1 * !Y)	0.00324	0.00329	0.00417
	(!A1 * B1 * !D1 * !Y)	-0.00119	-0.00119	-0.00028
	(!A1 * !B1 * D1 * !Y)	0.00544	0.00439	0.01004
	(!A1 * !B1 * D1 * !Y)	-0.00204	-0.00312	0.00263

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00654	0.00663	0.00674
	(A1 * B1 * D1 * !Y)	-0.00472	-0.00467	-0.00438
	(A1 * B1 * !D1 * !Y)	0.00587	0.00593	0.00582
	(A1 * B1 * !D1 * !Y)	-0.00300	-0.00303	-0.00291
	(A1 * A2 * !B1 * D1 * !Y)	0.00831	0.00767	0.00962
	(A1 * A2 * !B1 * D1 * !Y)	-0.00343	-0.00422	-0.00213
	(A1 * A2 * !B1 * !D1 * !Y)	0.00658	0.00667	0.00839
	(A1 * A2 * !B1 * !D1 * !Y)	0.00083	0.00087	0.00244
	(A1 * !A2 * !B1 * D1 * !Y)	0.01063	0.00860	0.01987
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00413	-0.00618	0.00531
	(!A1 * B1 * D1 * !Y)	0.00693	0.00707	0.00758
	(!A1 * B1 * D1 * !Y)	-0.00457	-0.00447	-0.00379
	(!A1 * B1 * !D1 * !Y)	0.00634	0.00644	0.00808
	(!A1 * B1 * !D1 * !Y)	-0.00257	-0.00259	-0.00084
	(!A1 * !B1 * D1 * !Y)	0.01062	0.00857	0.01988
	(!A1 * !B1 * D1 * !Y)	-0.00415	-0.00621	0.00532

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)**	-0.00210	-0.00210	-0.00202
	(A1 * B1 * D1 * !Y)	0.00170	0.00170	0.00169
	(A1 * B1 * !D1 * !Y)	-0.00128	-0.00130	-0.00152
	(A1 * B1 * !D1 * !Y)	0.00191	0.00190	0.00172
	(A1 * A2 * !B1 * D1 * !Y)	-0.00202	-0.00202	-0.00170
	(A1 * A2 * !B1 * D1 * !Y)	0.00197	0.00197	0.00210
	(A1 * A2 * !B1 * !D1 * !Y)	0.00364	0.00351	0.00154
	(A1 * A2 * !B1 * !D1 * !Y)	0.00637	0.00623	0.00429
	(A1 * !A2 * !B1 * D1 * !Y)	0.00227	0.00214	0.00154
	(A1 * !A2 * !B1 * D1 * !Y)	0.00686	0.00677	0.00614
	(!A1 * B1 * D1 * !Y)	-0.00210	-0.00210	-0.00199
	(!A1 * B1 * D1 * !Y)	0.00185	0.00185	0.00179
	(!A1 * B1 * !D1 * !Y)	0.00061	0.00050	-0.00071
	(!A1 * B1 * !D1 * !Y)	0.00384	0.00375	0.00253
	(!A1 * !B1 * D1 * !Y)	0.00227	0.00215	0.00155
	(!A1 * !B1 * D1 * !Y)	0.00687	0.00679	0.00615

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00217	-0.00218	-0.00201
	(A1 * B1 * D1 * !Y)	0.00357	0.00360	0.00358
	(A1 * B1 * !D1 * !Y)	-0.00071	-0.00073	-0.00119
	(A1 * B1 * !D1 * !Y)	0.00375	0.00375	0.00337
	(A1 * A2 * !B1 * D1 * !Y)	-0.00202	-0.00201	-0.00142
	(A1 * A2 * !B1 * D1 * !Y)	0.00410	0.00411	0.00432
	(A1 * A2 * !B1 * !D1 * !Y)	0.00903	0.00875	0.00480
	(A1 * A2 * !B1 * !D1 * !Y)	0.01260	0.01234	0.00843
	(A1 * !A2 * !B1 * D1 * !Y)	0.00651	0.00626	0.00500
	(A1 * !A2 * !B1 * D1 * !Y)	0.01394	0.01377	0.01246
	(!A1 * B1 * D1 * !Y)	-0.00216	-0.00217	-0.00196
	(!A1 * B1 * D1 * !Y)	0.00385	0.00388	0.00379
	(!A1 * B1 * !D1 * !Y)	0.00299	0.00280	0.00038
	(!A1 * B1 * !D1 * !Y)	0.00754	0.00736	0.00493
	(!A1 * !B1 * D1 * !Y)	0.00652	0.00627	0.00501
	(!A1 * !B1 * D1 * !Y)	0.01396	0.01379	0.01247

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00421	-0.00421	-0.00390
	(A1 * B1 * D1 * !Y)	0.00708	0.00710	0.00705
	(A1 * B1 * !D1 * !Y)	-0.00134	-0.00140	-0.00228
	(A1 * B1 * !D1 * !Y)	0.00755	0.00756	0.00682
	(A1 * A2 * !B1 * D1 * !Y)	-0.00391	-0.00389	-0.00272
	(A1 * A2 * !B1 * D1 * !Y)	0.00809	0.00812	0.00847
	(A1 * A2 * !B1 * !D1 * !Y)	0.01821	0.01766	0.00973
	(A1 * A2 * !B1 * !D1 * !Y)	0.02517	0.02463	0.01680
	(A1 * !A2 * !B1 * D1 * !Y)	0.01303	0.01254	0.01003
	(A1 * !A2 * !B1 * D1 * !Y)	0.02767	0.02726	0.02469
	(!A1 * B1 * D1 * !Y)	-0.00420	-0.00419	-0.00379
	(!A1 * B1 * D1 * !Y)	0.00767	0.00768	0.00747
	(!A1 * B1 * !D1 * !Y)	0.00624	0.00585	0.00103
	(!A1 * B1 * !D1 * !Y)	0.01535	0.01497	0.01013
	(!A1 * !B1 * D1 * !Y)	0.01308	0.01259	0.01007
	(!A1 * !B1 * D1 * !Y)	0.02771	0.02732	0.02474

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00235	0.00239	0.00237
	(A1 * C1 * !Y)	-0.00090	-0.00091	-0.00088
	(A1 * B1 * !C1 * !Y)	0.00237	0.00240	0.00241
	(A1 * B1 * !C1 * !Y)	-0.00069	-0.00070	-0.00065
	(A1 * A2 * !B1 * !C1 * !Y)	0.00242	0.00247	0.00285
	(A1 * A2 * !B1 * !C1 * !Y)	0.00031	0.00032	0.00068
	(!A1 * C1 * !Y)	0.00235	0.00238	0.00238
	(!A1 * C1 * !Y)	-0.00088	-0.00089	-0.00085
	(!A1 * B1 * !C1 * !Y)	0.00238	0.00243	0.00263
	(!A1 * B1 * !C1 * !Y)	-0.00032	-0.00032	-0.00009

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00270	0.00273	0.00274
	(A1 * C1 * !Y)	-0.00183	-0.00184	-0.00180
	(A1 * B1 * !C1 * !Y)	0.00270	0.00276	0.00279
	(A1 * B1 * !C1 * !Y)	-0.00140	-0.00144	-0.00135
	(A1 * A2 * !B1 * !C1 * !Y)	0.00278	0.00283	0.00361
	(A1 * A2 * !B1 * !C1 * !Y)	0.00060	0.00063	0.00128
	(!A1 * C1 * !Y)	0.00271	0.00274	0.00276
	(!A1 * C1 * !Y)	-0.00180	-0.00181	-0.00176
	(!A1 * B1 * !C1 * !Y)	0.00276	0.00279	0.00319
	(!A1 * B1 * !C1 * !Y)	-0.00064	-0.00063	-0.00027
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00534	0.00546	0.00544
	(A1 * C1 * !Y)	-0.00348	-0.00357	-0.00345
	(A1 * B1 * !C1 * !Y)	0.00536	0.00539	0.00553
	(A1 * B1 * !C1 * !Y)	-0.00274	-0.00274	-0.00262
	(A1 * A2 * !B1 * !C1 * !Y)	0.00551	0.00563	0.00721
	(A1 * A2 * !B1 * !C1 * !Y)	0.00141	0.00145	0.00281
	(!A1 * C1 * !Y)	0.00537	0.00549	0.00549
	(!A1 * C1 * !Y)	-0.00341	-0.00349	-0.00335
	(!A1 * B1 * !C1 * !Y)	0.00547	0.00557	0.00636
	(!A1 * B1 * !C1 * !Y)	-0.00120	-0.00120	-0.00043

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00183	-0.00186	-0.00193
	(A1 * C1 * !Y)	0.00141	0.00142	0.00135
	(A1 * B1 * !C1 * !Y)	-0.00119	-0.00122	-0.00140
	(A1 * B1 * !C1 * !Y)	0.00192	0.00192	0.00177
	(A1 * A2 * !B1 * !C1 * !Y)	0.00404	0.00392	0.00219
	(A1 * A2 * !B1 * !C1 * !Y)	0.00655	0.00644	0.00474
	(!A1 * C1 * !Y)	-0.00172	-0.00173	-0.00182
	(!A1 * C1 * !Y)	0.00153	0.00153	0.00146
	(!A1 * B1 * !C1 * !Y)	0.00111	0.00103	0.00001
	(!A1 * B1 * !C1 * !Y)	0.00400	0.00394	0.00292
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00169	-0.00171	-0.00193
	(A1 * C1 * !Y)	0.00287	0.00288	0.00268
	(A1 * B1 * !C1 * !Y)	-0.00039	-0.00043	-0.00086
	(A1 * B1 * !C1 * !Y)	0.00386	0.00388	0.00355
	(A1 * A2 * !B1 * !C1 * !Y)	0.01017	0.00996	0.00654
	(A1 * A2 * !B1 * !C1 * !Y)	0.01321	0.01301	0.00965
	(!A1 * C1 * !Y)	-0.00142	-0.00145	-0.00168
	(!A1 * C1 * !Y)	0.00311	0.00312	0.00293
	(!A1 * B1 * !C1 * !Y)	0.00432	0.00419	0.00219
	(!A1 * B1 * !C1 * !Y)	0.00814	0.00803	0.00606
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00330	-0.00333	-0.00376
	(A1 * C1 * !Y)	0.00564	0.00564	0.00530
	(A1 * B1 * !C1 * !Y)	-0.00072	-0.00081	-0.00165
	(A1 * B1 * !C1 * !Y)	0.00764	0.00768	0.00704
	(A1 * A2 * !B1 * !C1 * !Y)	0.02027	0.01984	0.01296
	(A1 * A2 * !B1 * !C1 * !Y)	0.02613	0.02571	0.01894
	(!A1 * C1 * !Y)	-0.00280	-0.00285	-0.00327
	(!A1 * C1 * !Y)	0.00608	0.00611	0.00576
	(!A1 * B1 * !C1 * !Y)	0.00858	0.00832	0.00432
	(!A1 * B1 * !C1 * !Y)	0.01614	0.01589	0.01193

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00263	0.00278	0.00263	0.00268	0.00264	1.71106
sky130_fd_sc_hs__a2111o_2	0.00291	0.00305	0.00286	0.00294	0.00306	3.18938
sky130_fd_sc_hs__a2111o_4	0.00496	0.00493	0.00507	0.00509	0.00500	6.17551

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	216.20500	607.57200
sky130_fd_sc_hs__a2111o_2	0.00000	269.93800	1090.19000
sky130_fd_sc_hs__a2111o_4	0.00000	550.21900	2260.07000

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)	0.06610	0.44278	5.52541
	A2->X (RR)	0.06969	0.42636	5.29778
	B1->X (RR)	0.05298	0.39288	4.92447
	C1->X (RR)	0.05069	0.37938	4.75179
	D1->X (RR)	0.04438	0.35957	4.61416
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.07031	0.38472	5.48975
	A2->X (RR)	0.07382	0.36387	5.25171
	B1->X (RR)	0.05395	0.33187	4.89217
	C1->X (RR)	0.05068	0.31704	4.70952
	D1->X (RR)	0.04564	0.30142	4.59203
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.07753	0.33093	5.52699
	A2->X (RR)	0.08225	0.30958	5.24127
	B1->X (RR)	0.05417	0.25719	4.69923
	C1->X (RR)	0.05166	0.24398	4.50149
	D1->X (RR)	0.04461	0.22561	4.38732

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.16107	0.55316	6.40221
	A2->X (FF)	0.17163	0.57442	6.54032
	B1->X (FF)	0.14599	0.58200	6.80751
	C1->X (FF)	0.12719	0.59145	6.90710
	D1->X (FF)	0.09822	0.58947	6.99018
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.18033	0.52016	6.13663
	A2->X (FF)	0.18820	0.54030	6.29286
	B1->X (FF)	0.16535	0.54983	6.54628
	C1->X (FF)	0.14581	0.56372	6.66422
	D1->X (FF)	0.11910	0.56453	6.74365
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.20598	0.51102	6.48429
	A2->X (FF)	0.23119	0.55006	6.71040
	B1->X (FF)	0.21920	0.57787	7.01791
	C1->X (FF)	0.19824	0.59905	7.15381
	D1->X (FF)	0.15518	0.59486	7.14461

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.03343	0.04444	0.26163
	A1	0.02306	0.03407	0.25131
	A2	0.03449	0.04456	0.26065
	A2	0.02300	0.03307	0.24905
	B1	0.02334	0.03640	0.25906
	B1	0.01459	0.02764	0.24985
	C1	0.02142	0.03378	0.23274
	C1	0.01400	0.02636	0.22489
	D1	0.02528	0.03819	0.23928
	D1	0.01920	0.03212	0.23290
sky130_fd_sc_hs__a2111o_2	A1	0.04101	0.05315	0.30207
	A1	0.02944	0.04159	0.29040
	A2	0.04245	0.05339	0.30144
	A2	0.02944	0.04038	0.28796
	B1	0.02903	0.04402	0.29635
	B1	0.01930	0.03427	0.28551
	C1	0.02627	0.04056	0.26421
	C1	0.01800	0.03226	0.25493
	D1	0.02848	0.04309	0.26838
	D1	0.02153	0.03617	0.26083

sky130_fd_sc_hs__a2111o_4	**A1**	0.08130	0.10094	0.52977
	A1	0.06098	0.08055	0.50863
	A2	0.08382	0.10017	0.51521
	A2	0.06077	0.07714	0.49050
	B1	0.05703	0.08385	0.52486
	B1	0.03938	0.06617	0.50444
	C1	0.05238	0.07702	0.45141
	C1	0.03758	0.06219	0.43484
	D1	0.05764	0.08302	0.45612
	D1	0.04585	0.07120	0.44221

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.02013	0.02562	0.23439
	A1	0.03049	0.03597	0.24409
	A2	0.02123	0.02649	0.23640
	A2	0.03271	0.03797	0.24784
	B1	0.01887	0.02710	0.23996
	B1	0.02761	0.03583	0.24870
	C1	0.01891	0.02677	0.21632
	C1	0.02632	0.03417	0.22374
	D1	0.01896	0.02829	0.22293
	D1	0.02504	0.03436	0.22904

sky130_fd_sc_hs__a2111o_2	**A1**	0.04110	0.04055	0.27255
	A1	0.05267	0.05207	0.28127
	A2	0.04240	0.04161	0.27686
	A2	0.05540	0.05459	0.28831
	B1	0.03835	0.04201	0.27810
	B1	0.04805	0.05166	0.28464
	C1	0.03841	0.04161	0.24836
	C1	0.04667	0.04985	0.25537
	D1	0.03826	0.04293	0.25285
	D1	0.04518	0.04983	0.25976
sky130_fd_sc_hs__a2111o_4	**A1**	0.09053	0.08258	0.47020
	A1	0.11084	0.10288	0.49063
	A2	0.09763	0.08617	0.46933
	A2	0.12069	0.10901	0.49252
	B1	0.08466	0.08396	0.49480
	B1	0.10232	0.10157	0.50361
	C1	0.08494	0.08317	0.42285
	C1	0.09973	0.09777	0.43369
	D1	0.08471	0.08581	0.42049
	D1	0.09649	0.09742	0.42836

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)**	0.00242	0.00232	0.00231
	(A2 * B1 * D1 * X)	-0.00190	-0.00201	-0.00200
	(A2 * B1 * C1 * !D1 * X)	0.00262	0.00245	0.00244
	(A2 * B1 * C1 * !D1 * X)	-0.00171	-0.00190	-0.00187
	(A2 * B1 * !C1 * !D1 * X)	0.00366	0.00331	0.00453
	(A2 * B1 * !C1 * !D1 * X)	-0.00080	-0.00116	0.00015
	(A2 * !B1 * C1 * D1 * X)	0.00264	0.00246	0.00245
	(A2 * !B1 * C1 * D1 * X)	-0.00170	-0.00189	-0.00185
	(A2 * !B1 * C1 * !D1 * X)	0.00383	0.00347	0.00472
	(A2 * !B1 * C1 * !D1 * X)	-0.00069	-0.00107	0.00031
	(A2 * !B1 * !C1 * D1 * X)	0.00424	0.00395	0.00658
	(A2 * !B1 * !C1 * D1 * X)	-0.00041	-0.00072	0.00209
	(!A2 * B1 * D1 * X)	0.00229	0.00230	0.00229
	(!A2 * B1 * D1 * X)	-0.00201	-0.00201	-0.00200
	(!A2 * B1 * C1 * !D1 * X)	0.00242	0.00243	0.00242
	(!A2 * B1 * C1 * !D1 * X)	-0.00187	-0.00188	-0.00187
	(!A2 * B1 * !C1 * !D1 * X)	0.00463	0.00464	0.00463
	(!A2 * B1 * !C1 * !D1 * X)	0.00035	0.00033	0.00034
	(!A2 * !B1 * C1 * D1 * X)	0.00244	0.00243	0.00244
	(!A2 * !B1 * C1 * D1 * X)	-0.00186	-0.00186	-0.00186
	(!A2 * !B1 * C1 * !D1 * X)	0.00486	0.00485	0.00486
	(!A2 * !B1 * C1 * !D1 * X)	0.00057	0.00056	0.00057
	(!A2 * !B1 * !C1 * D1 * X)	0.00708	0.00708	0.00710
	(!A2 * !B1 * !C1 * D1 * X)	0.00280	0.00279	0.00280
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00599	0.00599	0.00592
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00258	0.00257	0.00249

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00260	0.00249	0.00249
	(A2 * B1 * D1 * X)	-0.00203	-0.00216	-0.00215
	(A2 * B1 * C1 * !D1 * X)	0.00283	0.00263	0.00264
	(A2 * B1 * C1 * !D1 * X)	-0.00182	-0.00204	-0.00200
	(A2 * B1 * !C1 * !D1 * X)	0.00393	0.00354	0.00469
	(A2 * B1 * !C1 * !D1 * X)	-0.00085	-0.00125	-0.00002
	(A2 * !B1 * C1 * D1 * X)	0.00285	0.00264	0.00265
	(A2 * !B1 * C1 * D1 * X)	-0.00181	-0.00203	-0.00198
	(A2 * !B1 * C1 * !D1 * X)	0.00411	0.00369	0.00484
	(A2 * !B1 * C1 * !D1 * X)	-0.00074	-0.00117	0.00011
	(A2 * !B1 * !C1 * D1 * X)	0.00452	0.00413	0.00633
	(A2 * !B1 * !C1 * D1 * X)	-0.00045	-0.00084	0.00153
	(!A2 * B1 * D1 * X)	0.00245	0.00248	0.00246
	(!A2 * B1 * D1 * X)	-0.00214	-0.00217	-0.00215
	(!A2 * B1 * C1 * !D1 * X)	0.00260	0.00263	0.00261
	(!A2 * B1 * C1 * !D1 * X)	-0.00199	-0.00202	-0.00200
	(!A2 * B1 * !C1 * !D1 * X)	0.00476	0.00477	0.00475
	(!A2 * B1 * !C1 * !D1 * X)	0.00014	0.00012	0.00014
	(!A2 * !B1 * C1 * D1 * X)	0.00262	0.00264	0.00263
	(!A2 * !B1 * C1 * D1 * X)	-0.00198	-0.00200	-0.00198
	(!A2 * !B1 * C1 * !D1 * X)	0.00493	0.00494	0.00493
	(!A2 * !B1 * C1 * !D1 * X)	0.00033	0.00031	0.00032
	(!A2 * !B1 * !C1 * D1 * X)	0.00665	0.00667	0.00666
	(!A2 * !B1 * !C1 * D1 * X)	0.00206	0.00203	0.00205
	(!A2 * !B1 * !C1 * !D1 * !X)	0.01005	0.01006	0.01001
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00647	0.00644	0.00637

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00448	0.00429	0.00426
	(A2 * B1 * D1 * X)	-0.00364	-0.00390	-0.00386
	(A2 * B1 * C1 * !D1 * X)	0.00492	0.00455	0.00452
	(A2 * B1 * C1 * !D1 * X)	-0.00323	-0.00367	-0.00360
	(A2 * B1 * !C1 * !D1 * X)	0.00716	0.00638	0.00872
	(A2 * B1 * !C1 * !D1 * X)	-0.00128	-0.00211	0.00044
	(A2 * !B1 * C1 * D1 * X)	0.00496	0.00457	0.00455
	(A2 * !B1 * C1 * D1 * X)	-0.00321	-0.00365	-0.00357
	(A2 * !B1 * C1 * !D1 * X)	0.00752	0.00667	0.00909
	(A2 * !B1 * C1 * !D1 * X)	-0.00104	-0.00193	0.00076
	(A2 * !B1 * !C1 * D1 * X)	0.00837	0.00766	0.01277
	(A2 * !B1 * !C1 * D1 * X)	-0.00045	-0.00120	0.00429
	(!A2 * B1 * D1 * X)	0.00417	0.00420	0.00419
	(!A2 * B1 * D1 * X)	-0.00386	-0.00389	-0.00388
	(!A2 * B1 * C1 * !D1 * X)	0.00446	0.00446	0.00446
	(!A2 * B1 * C1 * !D1 * X)	-0.00362	-0.00363	-0.00362
	(!A2 * B1 * !C1 * !D1 * X)	0.00888	0.00887	0.00888
	(!A2 * B1 * !C1 * !D1 * X)	0.00080	0.00078	0.00080
	(!A2 * !B1 * C1 * D1 * X)	0.00448	0.00450	0.00449
	(!A2 * !B1 * C1 * D1 * X)	-0.00360	-0.00360	-0.00359
	(!A2 * !B1 * C1 * !D1 * X)	0.00931	0.00930	0.00931
	(!A2 * !B1 * C1 * !D1 * X)	0.00123	0.00121	0.00124
	(!A2 * !B1 * !C1 * D1 * X)	0.01368	0.01369	0.01371
	(!A2 * !B1 * !C1 * D1 * X)	0.00560	0.00558	0.00564
	(!A2 * !B1 * !C1 * !D1 * !X)	0.02061	0.02062	0.02044
	(!A2 * !B1 * !C1 * !D1 * !X)	0.01424	0.01419	0.01397

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)**	-0.00170	-0.00172	-0.00171
	(A2 * B1 * D1 * X)	0.00260	0.00262	0.00260
	(A2 * B1 * C1 * !D1 * X)	-0.00159	-0.00160	-0.00160
	(A2 * B1 * C1 * !D1 * X)	0.00274	0.00275	0.00272
	(A2 * B1 * !C1 * !D1 * X)	0.00047	0.00041	0.00011
	(A2 * B1 * !C1 * !D1 * X)	0.00492	0.00489	0.00456
	(A2 * !B1 * C1 * D1 * X)	-0.00157	-0.00158	-0.00158
	(A2 * !B1 * C1 * D1 * X)	0.00276	0.00277	0.00275
	(A2 * !B1 * C1 * !D1 * X)	0.00077	0.00070	0.00036
	(A2 * !B1 * C1 * !D1 * X)	0.00526	0.00523	0.00486
	(A2 * !B1 * !C1 * D1 * X)	0.00302	0.00290	0.00210
	(A2 * !B1 * !C1 * D1 * X)	0.00762	0.00753	0.00671
	(!A2 * B1 * D1 * X)	-0.00170	-0.00172	-0.00169
	(!A2 * B1 * D1 * X)	0.00259	0.00262	0.00260
	(!A2 * B1 * C1 * !D1 * X)	-0.00156	-0.00158	-0.00155
	(!A2 * B1 * C1 * !D1 * X)	0.00272	0.00276	0.00273
	(!A2 * B1 * !C1 * !D1 * X)	0.00064	0.00062	0.00065
	(!A2 * B1 * !C1 * !D1 * X)	0.00493	0.00496	0.00493
	(!A2 * !B1 * C1 * D1 * X)	-0.00155	-0.00157	-0.00154
	(!A2 * !B1 * C1 * D1 * X)	0.00273	0.00277	0.00274
	(!A2 * !B1 * C1 * !D1 * X)	0.00086	0.00085	0.00087
	(!A2 * !B1 * C1 * !D1 * X)	0.00516	0.00519	0.00516
	(!A2 * !B1 * !C1 * D1 * X)	0.00310	0.00308	0.00310
	(!A2 * !B1 * !C1 * D1 * X)	0.00740	0.00743	0.00739
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00442	0.00440	0.00443
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00781	0.00786	0.00783

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00160	-0.00162	-0.00161
	(A2 * B1 * D1 * X)	0.00303	0.00306	0.00303
	(A2 * B1 * C1 * !D1 * X)	-0.00146	-0.00148	-0.00148
	(A2 * B1 * C1 * !D1 * X)	0.00319	0.00321	0.00317
	(A2 * B1 * !C1 * !D1 * X)	0.00052	0.00046	0.00020
	(A2 * B1 * !C1 * !D1 * X)	0.00530	0.00527	0.00498
	(A2 * !B1 * C1 * D1 * X)	-0.00144	-0.00146	-0.00146
	(A2 * !B1 * C1 * D1 * X)	0.00321	0.00324	0.00320
	(A2 * !B1 * C1 * !D1 * X)	0.00079	0.00073	0.00043
	(A2 * !B1 * C1 * !D1 * X)	0.00560	0.00558	0.00526
	(A2 * !B1 * !C1 * D1 * X)	0.00254	0.00245	0.00182
	(A2 * !B1 * !C1 * D1 * X)	0.00746	0.00739	0.00675
	(!A2 * B1 * D1 * X)	-0.00158	-0.00160	-0.00158
	(!A2 * B1 * D1 * X)	0.00301	0.00304	0.00303
	(!A2 * B1 * C1 * !D1 * X)	-0.00144	-0.00145	-0.00143
	(!A2 * B1 * C1 * !D1 * X)	0.00318	0.00319	0.00318
	(!A2 * B1 * !C1 * !D1 * X)	0.00070	0.00068	0.00071
	(!A2 * B1 * !C1 * !D1 * X)	0.00532	0.00535	0.00531
	(!A2 * !B1 * C1 * D1 * X)	-0.00142	-0.00143	-0.00141
	(!A2 * !B1 * C1 * D1 * X)	0.00319	0.00320	0.00319
	(!A2 * !B1 * C1 * !D1 * X)	0.00088	0.00086	0.00089
	(!A2 * !B1 * C1 * !D1 * X)	0.00550	0.00553	0.00550
	(!A2 * !B1 * !C1 * D1 * X)	0.00261	0.00259	0.00261
	(!A2 * !B1 * !C1 * D1 * X)	0.00723	0.00725	0.00722
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00885	0.00884	0.00886
	(!A2 * !B1 * !C1 * !D1 * !X)	0.01245	0.01247	0.01246

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00262	-0.00266	-0.00265
	(A2 * B1 * D1 * X)	0.00548	0.00554	0.00549
	(A2 * B1 * C1 * !D1 * X)	-0.00238	-0.00241	-0.00241
	(A2 * B1 * C1 * !D1 * X)	0.00577	0.00581	0.00574
	(A2 * B1 * !C1 * !D1 * X)	0.00164	0.00151	0.00092
	(A2 * B1 * !C1 * !D1 * X)	0.01007	0.01001	0.00935
	(A2 * !B1 * C1 * D1 * X)	-0.00235	-0.00236	-0.00238
	(A2 * !B1 * C1 * D1 * X)	0.00581	0.00582	0.00579
	(A2 * !B1 * C1 * !D1 * X)	0.00226	0.00212	0.00144
	(A2 * !B1 * C1 * !D1 * X)	0.01077	0.01070	0.00996
	(A2 * !B1 * !C1 * D1 * X)	0.00675	0.00651	0.00491
	(A2 * !B1 * !C1 * D1 * X)	0.01547	0.01528	0.01364
	(!A2 * B1 * D1 * X)	-0.00259	-0.00265	-0.00260
	(!A2 * B1 * D1 * X)	0.00545	0.00554	0.00548
	(!A2 * B1 * C1 * !D1 * X)	-0.00234	-0.00238	-0.00234
	(!A2 * B1 * C1 * !D1 * X)	0.00574	0.00580	0.00574
	(!A2 * B1 * !C1 * !D1 * X)	0.00207	0.00202	0.00206
	(!A2 * B1 * !C1 * !D1 * X)	0.01015	0.01021	0.01014
	(!A2 * !B1 * C1 * D1 * X)	-0.00231	-0.00235	-0.00231
	(!A2 * !B1 * C1 * D1 * X)	0.00577	0.00583	0.00577
	(!A2 * !B1 * C1 * !D1 * X)	0.00250	0.00246	0.00249
	(!A2 * !B1 * C1 * !D1 * X)	0.01058	0.01064	0.01057
	(!A2 * !B1 * !C1 * D1 * X)	0.00692	0.00687	0.00688
	(!A2 * !B1 * !C1 * D1 * X)	0.01500	0.01505	0.01496
	(!A2 * !B1 * !C1 * !D1 * !X)	0.01842	0.01842	0.01846
	(!A2 * !B1 * !C1 * !D1 * !X)	0.02482	0.02485	0.02483

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)**	0.00226	0.00214	0.00214
	(A1 * B1 * D1 * X)	-0.00197	-0.00209	-0.00209
	(A1 * B1 * C1 * !D1 * X)	0.00246	0.00226	0.00227
	(A1 * B1 * C1 * !D1 * X)	-0.00178	-0.00198	-0.00196
	(A1 * B1 * !C1 * !D1 * X)	0.00352	0.00314	0.00437
	(A1 * B1 * !C1 * !D1 * X)	-0.00084	-0.00123	0.00006
	(A1 * !B1 * C1 * D1 * X)	0.00249	0.00229	0.00228
	(A1 * !B1 * C1 * D1 * X)	-0.00176	-0.00198	-0.00194
	(A1 * !B1 * C1 * !D1 * X)	0.00372	0.00330	0.00456
	(A1 * !B1 * C1 * !D1 * X)	-0.00072	-0.00115	0.00023
	(A1 * !B1 * !C1 * D1 * X)	0.00414	0.00378	0.00642
	(A1 * !B1 * !C1 * D1 * X)	-0.00043	-0.00079	0.00202
	(!A1 * B1 * X)	0.00211	0.00213	0.00212
	(!A1 * B1 * X)	-0.00209	-0.00210	-0.00209
	(!A1 * !B1 * C1 * X)	0.00226	0.00228	0.00226
	(!A1 * !B1 * C1 * X)	-0.00194	-0.00196	-0.00195
	(!A1 * !B1 * !C1 * D1 * X)	0.00692	0.00693	0.00692
	(!A1 * !B1 * !C1 * D1 * X)	0.00269	0.00268	0.00271
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00691	0.00692	0.00689
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00267	0.00266	0.00264

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00262	0.00250	0.00250
	(A1 * B1 * D1 * X)	-0.00204	-0.00217	-0.00216
	(A1 * B1 * C1 * !D1 * X)	0.00285	0.00264	0.00265
	(A1 * B1 * C1 * !D1 * X)	-0.00183	-0.00204	-0.00201
	(A1 * B1 * !C1 * !D1 * X)	0.00397	0.00355	0.00470
	(A1 * B1 * !C1 * !D1 * X)	-0.00083	-0.00125	-0.00003
	(A1 * !B1 * C1 * D1 * X)	0.00288	0.00266	0.00266
	(A1 * !B1 * C1 * D1 * X)	-0.00181	-0.00204	-0.00199
	(A1 * !B1 * C1 * !D1 * X)	0.00417	0.00371	0.00486
	(A1 * !B1 * C1 * !D1 * X)	-0.00070	-0.00117	0.00010
	(A1 * !B1 * !C1 * D1 * X)	0.00459	0.00417	0.00635
	(A1 * !B1 * !C1 * D1 * X)	-0.00041	-0.00084	0.00153
	(!A1 * B1 * X)	0.00247	0.00248	0.00247
	(!A1 * B1 * X)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * C1 * X)	0.00264	0.00266	0.00264
	(!A1 * !B1 * C1 * X)	-0.00199	-0.00201	-0.00200
	(!A1 * !B1 * !C1 * D1 * X)	0.00666	0.00668	0.00667
	(!A1 * !B1 * !C1 * D1 * X)	0.00203	0.00201	0.00204
	(!A1 * !B1 * !C1 * !D1 * !X)	0.01137	0.01139	0.01137
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00672	0.00671	0.00670

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00457	0.00438	0.00435
	(A1 * B1 * D1 * X)	-0.00367	-0.00392	-0.00389
	(A1 * B1 * C1 * !D1 * X)	0.00502	0.00463	0.00461
	(A1 * B1 * C1 * !D1 * X)	-0.00326	-0.00369	-0.00363
	(A1 * B1 * !C1 * !D1 * X)	0.00725	0.00647	0.00881
	(A1 * B1 * !C1 * !D1 * X)	-0.00131	-0.00212	0.00041
	(A1 * !B1 * C1 * D1 * X)	0.00505	0.00466	0.00464
	(A1 * !B1 * C1 * D1 * X)	-0.00325	-0.00368	-0.00360
	(A1 * !B1 * C1 * !D1 * X)	0.00760	0.00677	0.00917
	(A1 * !B1 * C1 * !D1 * X)	-0.00109	-0.00195	0.00073
	(A1 * !B1 * !C1 * D1 * X)	0.00844	0.00775	0.01285
	(A1 * !B1 * !C1 * D1 * X)	-0.00050	-0.00122	0.00425
	(!A1 * B1 * X)	0.00427	0.00430	0.00428
	(!A1 * B1 * X)	-0.00390	-0.00392	-0.00391
	(!A1 * !B1 * C1 * X)	0.00456	0.00460	0.00457
	(!A1 * !B1 * C1 * X)	-0.00360	-0.00364	-0.00362
	(!A1 * !B1 * !C1 * D1 * X)	0.01377	0.01381	0.01381
	(!A1 * !B1 * !C1 * D1 * X)	0.00560	0.00556	0.00561
	(!A1 * !B1 * !C1 * !D1 * !X)	0.02319	0.02324	0.02315
	(!A1 * !B1 * !C1 * !D1 * !X)	0.01494	0.01489	0.01488

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)**	-0.00153	-0.00155	-0.00154
	(A1 * B1 * D1 * X)	0.00269	0.00272	0.00269
	(A1 * B1 * C1 * !D1 * X)	-0.00142	-0.00143	-0.00143
	(A1 * B1 * C1 * !D1 * X)	0.00284	0.00285	0.00281
	(A1 * B1 * !C1 * !D1 * X)	0.00064	0.00058	0.00028
	(A1 * B1 * !C1 * !D1 * X)	0.00502	0.00498	0.00465
	(A1 * !B1 * C1 * D1 * X)	-0.00139	-0.00140	-0.00141
	(A1 * !B1 * C1 * D1 * X)	0.00285	0.00285	0.00284
	(A1 * !B1 * C1 * !D1 * X)	0.00095	0.00088	0.00053
	(A1 * !B1 * C1 * !D1 * X)	0.00535	0.00532	0.00495
	(A1 * !B1 * !C1 * D1 * X)	0.00321	0.00309	0.00227
	(A1 * !B1 * !C1 * D1 * X)	0.00772	0.00763	0.00680
	(!A1 * B1 * X)	-0.00153	-0.00153	-0.00152
	(!A1 * B1 * X)	0.00268	0.00270	0.00269
	(!A1 * !B1 * C1 * X)	-0.00139	-0.00139	-0.00137
	(!A1 * !B1 * C1 * X)	0.00284	0.00284	0.00283
	(!A1 * !B1 * !C1 * D1 * X)	0.00327	0.00326	0.00327
	(!A1 * !B1 * !C1 * D1 * X)	0.00750	0.00749	0.00747
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00378	0.00363	0.00371
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00805	0.00792	0.00793

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00161	-0.00163	-0.00163
	(A1 * B1 * D1 * X)	0.00304	0.00307	0.00304
	(A1 * B1 * C1 * !D1 * X)	-0.00148	-0.00150	-0.00150
	(A1 * B1 * C1 * !D1 * X)	0.00320	0.00323	0.00318
	(A1 * B1 * !C1 * !D1 * X)	0.00051	0.00045	0.00019
	(A1 * B1 * !C1 * !D1 * X)	0.00531	0.00529	0.00499
	(A1 * !B1 * C1 * D1 * X)	-0.00145	-0.00146	-0.00147
	(A1 * !B1 * C1 * D1 * X)	0.00322	0.00322	0.00321
	(A1 * !B1 * C1 * !D1 * X)	0.00078	0.00072	0.00042
	(A1 * !B1 * C1 * !D1 * X)	0.00562	0.00559	0.00527
	(A1 * !B1 * !C1 * D1 * X)	0.00254	0.00244	0.00181
	(A1 * !B1 * !C1 * D1 * X)	0.00748	0.00741	0.00676
	(!A1 * B1 * X)	-0.00160	-0.00161	-0.00159
	(!A1 * B1 * X)	0.00303	0.00305	0.00304
	(!A1 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00142
	(!A1 * !B1 * C1 * X)	0.00319	0.00322	0.00321
	(!A1 * !B1 * !C1 * D1 * X)	0.00260	0.00258	0.00259
	(!A1 * !B1 * !C1 * D1 * X)	0.00722	0.00724	0.00722
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00781	0.00764	0.00764
	(!A1 * !B1 * !C1 * !D1 * !X)	0.01247	0.01235	0.01228

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00271	-0.00273	-0.00273
	(A1 * B1 * D1 * X)	0.00551	0.00555	0.00552
	(A1 * B1 * C1 * !D1 * X)	-0.00247	-0.00249	-0.00250
	(A1 * B1 * C1 * !D1 * X)	0.00580	0.00582	0.00577
	(A1 * B1 * !C1 * !D1 * X)	0.00154	0.00143	0.00083
	(A1 * B1 * !C1 * !D1 * X)	0.01010	0.01002	0.00937
	(A1 * !B1 * C1 * D1 * X)	-0.00243	-0.00245	-0.00247
	(A1 * !B1 * C1 * D1 * X)	0.00583	0.00586	0.00582
	(A1 * !B1 * C1 * !D1 * X)	0.00216	0.00203	0.00134
	(A1 * !B1 * C1 * !D1 * X)	0.01078	0.01072	0.00998
	(A1 * !B1 * !C1 * D1 * X)	0.00664	0.00641	0.00481
	(A1 * !B1 * !C1 * D1 * X)	0.01548	0.01528	0.01366
	(!A1 * B1 * X)	-0.00268	-0.00272	-0.00268
	(!A1 * B1 * X)	0.00548	0.00556	0.00551
	(!A1 * !B1 * C1 * X)	-0.00239	-0.00243	-0.00239
	(!A1 * !B1 * C1 * X)	0.00578	0.00585	0.00580
	(!A1 * !B1 * !C1 * D1 * X)	0.00684	0.00679	0.00680
	(!A1 * !B1 * !C1 * D1 * X)	0.01501	0.01507	0.01500
	(!A1 * !B1 * !C1 * !D1 * !X)	0.01658	0.01614	0.01624
	(!A1 * !B1 * !C1 * !D1 * !X)	0.02484	0.02451	0.02446

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)**	0.00238	0.00237	0.00224
	(A1 * A2 * C1 * D1 * X)	-0.00126	-0.00132	-0.00133
	(A1 * A2 * C1 * !D1 * X)	0.00267	0.00266	0.00293
	(A1 * A2 * C1 * !D1 * X)	-0.00095	-0.00097	-0.00063
	(A1 * A2 * !C1 * D1 * X)	0.00277	0.00291	0.00307
	(A1 * A2 * !C1 * D1 * X)	-0.00087	-0.00075	-0.00045
	(A1 * A2 * !C1 * !D1 * X)	0.00263	0.00269	0.00347
	(A1 * A2 * !C1 * !D1 * X)	-0.00030	-0.00030	0.00054
	(A1 * !A2 * C1 * D1 * X)	0.00257	0.00230	0.00232
	(A1 * !A2 * C1 * D1 * X)	-0.00157	-0.00188	-0.00180
	(A1 * !A2 * C1 * !D1 * X)	0.00321	0.00286	0.00454
	(A1 * !A2 * C1 * !D1 * X)	-0.00102	-0.00140	0.00036
	(A1 * !A2 * !C1 * D1 * X)	0.00369	0.00333	0.00637
	(A1 * !A2 * !C1 * D1 * X)	-0.00068	-0.00107	0.00212
	(!A1 * C1 * D1 * X)	0.00258	0.00230	0.00232
	(!A1 * C1 * D1 * X)	-0.00156	-0.00188	-0.00180
	(!A1 * C1 * !D1 * X)	0.00323	0.00286	0.00454
	(!A1 * C1 * !D1 * X)	-0.00100	-0.00140	0.00035
	(!A1 * !C1 * D1 * X)	0.00371	0.00333	0.00636
	(!A1 * !C1 * D1 * X)	-0.00066	-0.00107	0.00211

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00263	0.00261	0.00250
	(A1 * A2 * C1 * D1 * X)	-0.00132	-0.00136	-0.00139
	(A1 * A2 * C1 * !D1 * X)	0.00297	0.00297	0.00324
	(A1 * A2 * C1 * !D1 * X)	-0.00097	-0.00098	-0.00062
	(A1 * A2 * !C1 * D1 * X)	0.00308	0.00323	0.00343
	(A1 * A2 * !C1 * D1 * X)	-0.00084	-0.00073	-0.00040
	(A1 * A2 * !C1 * !D1 * X)	0.00289	0.00292	0.00372
	(A1 * A2 * !C1 * !D1 * X)	-0.00017	-0.00016	0.00065
	(A1 * !A2 * C1 * D1 * X)	0.00288	0.00256	0.00259
	(A1 * !A2 * C1 * D1 * X)	-0.00167	-0.00198	-0.00190
	(A1 * !A2 * C1 * !D1 * X)	0.00357	0.00315	0.00474
	(A1 * !A2 * C1 * !D1 * X)	-0.00106	-0.00147	0.00019
	(A1 * !A2 * !C1 * D1 * X)	0.00406	0.00358	0.00620
	(A1 * !A2 * !C1 * D1 * X)	-0.00070	-0.00118	0.00158
	(!A1 * C1 * D1 * X)	0.00289	0.00256	0.00259
	(!A1 * C1 * D1 * X)	-0.00165	-0.00198	-0.00190
	(!A1 * C1 * !D1 * X)	0.00359	0.00316	0.00474
	(!A1 * C1 * !D1 * X)	-0.00103	-0.00147	0.00019
	(!A1 * !C1 * D1 * X)	0.00409	0.00359	0.00620
	(!A1 * !C1 * D1 * X)	-0.00068	-0.00117	0.00158

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00495	0.00492	0.00463
	(A1 * A2 * C1 * D1 * X)	-0.00237	-0.00248	-0.00255
	(A1 * A2 * C1 * !D1 * X)	0.00557	0.00555	0.00592
	(A1 * A2 * C1 * !D1 * X)	-0.00175	-0.00178	-0.00121
	(A1 * A2 * !C1 * D1 * X)	0.00567	0.00606	0.00627
	(A1 * A2 * !C1 * D1 * X)	-0.00164	-0.00133	-0.00085
	(A1 * A2 * !C1 * !D1 * X)	0.00586	0.00592	0.00739
	(A1 * A2 * !C1 * !D1 * X)	-0.00014	-0.00011	0.00141
	(A1 * !A2 * C1 * D1 * X)	0.00544	0.00478	0.00478
	(A1 * !A2 * C1 * D1 * X)	-0.00301	-0.00368	-0.00356
	(A1 * !A2 * C1 * !D1 * X)	0.00692	0.00609	0.00925
	(A1 * !A2 * C1 * !D1 * X)	-0.00173	-0.00258	0.00078
	(A1 * !A2 * !C1 * D1 * X)	0.00781	0.00705	0.01286
	(A1 * !A2 * !C1 * D1 * X)	-0.00103	-0.00187	0.00426
	(!A1 * C1 * D1 * X)	0.00542	0.00478	0.00478
	(!A1 * C1 * D1 * X)	-0.00302	-0.00367	-0.00356
	(!A1 * C1 * !D1 * X)	0.00690	0.00609	0.00925
	(!A1 * C1 * !D1 * X)	-0.00175	-0.00258	0.00078
	(!A1 * !C1 * D1 * X)	0.00777	0.00704	0.01286
	(!A1 * !C1 * D1 * X)	-0.00106	-0.00188	0.00427

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)**	-0.00166	-0.00167	-0.00163
	(A1 * A2 * C1 * D1 * X)	0.00205	0.00206	0.00196
	(A1 * A2 * C1 * !D1 * X)	-0.00167	-0.00167	-0.00152
	(A1 * A2 * C1 * !D1 * X)	0.00205	0.00206	0.00203
	(A1 * A2 * !C1 * D1 * X)	-0.00173	-0.00173	-0.00152
	(A1 * A2 * !C1 * D1 * X)	0.00193	0.00195	0.00197
	(A1 * A2 * !C1 * !D1 * X)	0.00314	0.00296	0.00074
	(A1 * A2 * !C1 * !D1 * X)	0.00612	0.00596	0.00373
	(A1 * !A2 * C1 * D1 * X)	-0.00145	-0.00146	-0.00147
	(A1 * !A2 * C1 * D1 * X)	0.00268	0.00269	0.00267
	(A1 * !A2 * C1 * !D1 * X)	0.00086	0.00079	0.00044
	(A1 * !A2 * C1 * !D1 * X)	0.00509	0.00505	0.00466
	(A1 * !A2 * !C1 * D1 * X)	0.00316	0.00302	0.00219
	(A1 * !A2 * !C1 * D1 * X)	0.00749	0.00738	0.00653
	(!A1 * C1 * D1 * X)	-0.00145	-0.00145	-0.00147
	(!A1 * C1 * D1 * X)	0.00268	0.00268	0.00267
	(!A1 * C1 * !D1 * X)	0.00087	0.00078	0.00043
	(!A1 * C1 * !D1 * X)	0.00508	0.00505	0.00466
	(!A1 * !C1 * D1 * X)	0.00315	0.00301	0.00218
	(!A1 * !C1 * D1 * X)	0.00748	0.00737	0.00652

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00166	-0.00167	-0.00162
	(A1 * A2 * C1 * D1 * X)	0.00239	0.00240	0.00229
	(A1 * A2 * C1 * !D1 * X)	-0.00165	-0.00166	-0.00149
	(A1 * A2 * C1 * !D1 * X)	0.00237	0.00239	0.00237
	(A1 * A2 * !C1 * D1 * X)	-0.00173	-0.00173	-0.00149
	(A1 * A2 * !C1 * D1 * X)	0.00225	0.00227	0.00231
	(A1 * A2 * !C1 * !D1 * X)	0.00330	0.00312	0.00099
	(A1 * A2 * !C1 * !D1 * X)	0.00641	0.00626	0.00414
	(A1 * !A2 * C1 * D1 * X)	-0.00139	-0.00142	-0.00143
	(A1 * !A2 * C1 * D1 * X)	0.00309	0.00312	0.00308
	(A1 * !A2 * C1 * !D1 * X)	0.00081	0.00074	0.00042
	(A1 * !A2 * C1 * !D1 * X)	0.00540	0.00535	0.00502
	(A1 * !A2 * !C1 * D1 * X)	0.00260	0.00249	0.00182
	(A1 * !A2 * !C1 * D1 * X)	0.00731	0.00721	0.00653
	(!A1 * C1 * D1 * X)	-0.00140	-0.00142	-0.00143
	(!A1 * C1 * D1 * X)	0.00311	0.00312	0.00308
	(!A1 * C1 * !D1 * X)	0.00080	0.00074	0.00042
	(!A1 * C1 * !D1 * X)	0.00540	0.00535	0.00501
	(!A1 * !C1 * D1 * X)	0.00259	0.00248	0.00181
	(!A1 * !C1 * D1 * X)	0.00730	0.00720	0.00652

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00305	-0.00306	-0.00297
	(A1 * A2 * C1 * D1 * X)	0.00442	0.00443	0.00424
	(A1 * A2 * C1 * !D1 * X)	-0.00301	-0.00302	-0.00275
	(A1 * A2 * C1 * !D1 * X)	0.00445	0.00447	0.00439
	(A1 * A2 * !C1 * D1 * X)	-0.00319	-0.00318	-0.00278
	(A1 * A2 * !C1 * D1 * X)	0.00420	0.00420	0.00428
	(A1 * A2 * !C1 * !D1 * X)	0.00624	0.00587	0.00145
	(A1 * A2 * !C1 * !D1 * X)	0.01233	0.01200	0.00756
	(A1 * !A2 * C1 * D1 * X)	-0.00260	-0.00265	-0.00266
	(A1 * !A2 * C1 * D1 * X)	0.00574	0.00579	0.00572
	(A1 * !A2 * C1 * !D1 * X)	0.00192	0.00176	0.00102
	(A1 * !A2 * C1 * !D1 * X)	0.01047	0.01037	0.00961
	(A1 * !A2 * !C1 * D1 * X)	0.00647	0.00621	0.00454
	(A1 * !A2 * !C1 * D1 * X)	0.01527	0.01505	0.01333
	(!A1 * C1 * D1 * X)	-0.00260	-0.00265	-0.00266
	(!A1 * C1 * D1 * X)	0.00575	0.00579	0.00572
	(!A1 * C1 * !D1 * X)	0.00192	0.00177	0.00103
	(!A1 * C1 * !D1 * X)	0.01047	0.01038	0.00961
	(!A1 * !C1 * D1 * X)	0.00649	0.00622	0.00455
	(!A1 * !C1 * D1 * X)	0.01529	0.01507	0.01334

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)**	0.00246	0.00250	0.00254
	(A1 * B1 * D1 * X)	-0.00092	-0.00092	-0.00082
	(A1 * B1 * !D1 * X)	0.00226	0.00228	0.00228
	(A1 * B1 * !D1 * X)	-0.00063	-0.00064	-0.00059
	(A1 * A2 * !B1 * D1 * X)	0.00284	0.00270	0.00322
	(A1 * A2 * !B1 * D1 * X)	-0.00073	-0.00084	-0.00035
	(A1 * A2 * !B1 * !D1 * X)	0.00241	0.00245	0.00291
	(A1 * A2 * !B1 * !D1 * X)	0.00017	0.00018	0.00063
	(A1 * !A2 * !B1 * D1 * X)	0.00328	0.00299	0.00630
	(A1 * !A2 * !B1 * D1 * X)	-0.00090	-0.00123	0.00214
	(!A1 * B1 * D1 * X)	0.00257	0.00262	0.00276
	(!A1 * B1 * D1 * X)	-0.00088	-0.00087	-0.00067
	(!A1 * B1 * !D1 * X)	0.00235	0.00237	0.00292
	(!A1 * B1 * !D1 * X)	-0.00058	-0.00057	-0.00002
	(!A1 * !B1 * D1 * X)	0.00328	0.00299	0.00630
	(!A1 * !B1 * D1 * X)	-0.00089	-0.00123	0.00214

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00271	0.00274	0.00280
	(A1 * B1 * D1 * X)	-0.00103	-0.00103	-0.00092
	(A1 * B1 * !D1 * X)	0.00247	0.00248	0.00250
	(A1 * B1 * !D1 * X)	-0.00069	-0.00069	-0.00064
	(A1 * A2 * !B1 * D1 * X)	0.00310	0.00300	0.00355
	(A1 * A2 * !B1 * D1 * X)	-0.00080	-0.00095	-0.00036
	(A1 * A2 * !B1 * !D1 * X)	0.00261	0.00264	0.00309
	(A1 * A2 * !B1 * !D1 * X)	0.00022	0.00024	0.00066
	(A1 * !A2 * !B1 * D1 * X)	0.00357	0.00319	0.00611
	(A1 * !A2 * !B1 * D1 * X)	-0.00107	-0.00146	0.00151
	(!A1 * B1 * D1 * X)	0.00282	0.00286	0.00303
	(!A1 * B1 * D1 * X)	-0.00100	-0.00099	-0.00077
	(!A1 * B1 * !D1 * X)	0.00256	0.00261	0.00308
	(!A1 * B1 * !D1 * X)	-0.00064	-0.00065	-0.00012
	(!A1 * !B1 * D1 * X)	0.00357	0.00319	0.00611
	(!A1 * !B1 * D1 * X)	-0.00107	-0.00146	0.00151

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00503	0.00512	0.00510
	(A1 * B1 * D1 * X)	-0.00191	-0.00183	-0.00175
	(A1 * B1 * !D1 * X)	0.00480	0.00484	0.00476
	(A1 * B1 * !D1 * X)	-0.00101	-0.00102	-0.00097
	(A1 * A2 * !B1 * D1 * X)	0.00590	0.00564	0.00644
	(A1 * A2 * !B1 * D1 * X)	-0.00125	-0.00159	-0.00073
	(A1 * A2 * !B1 * !D1 * X)	0.00521	0.00533	0.00612
	(A1 * A2 * !B1 * !D1 * X)	0.00072	0.00070	0.00156
	(A1 * !A2 * !B1 * D1 * X)	0.00712	0.00629	0.01265
	(A1 * !A2 * !B1 * D1 * X)	-0.00141	-0.00229	0.00420
	(!A1 * B1 * D1 * X)	0.00520	0.00531	0.00547
	(!A1 * B1 * D1 * X)	-0.00183	-0.00174	-0.00148
	(!A1 * B1 * !D1 * X)	0.00509	0.00515	0.00599
	(!A1 * B1 * !D1 * X)	-0.00072	-0.00072	0.00017
	(!A1 * !B1 * D1 * X)	0.00713	0.00628	0.01265
	(!A1 * !B1 * D1 * X)	-0.00144	-0.00230	0.00421

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)**	-0.00176	-0.00177	-0.00170
	(A1 * B1 * D1 * X)	0.00163	0.00164	0.00162
	(A1 * B1 * !D1 * X)	-0.00110	-0.00111	-0.00130
	(A1 * B1 * !D1 * X)	0.00180	0.00180	0.00164
	(A1 * A2 * !B1 * D1 * X)	-0.00171	-0.00172	-0.00142
	(A1 * A2 * !B1 * D1 * X)	0.00188	0.00190	0.00199
	(A1 * A2 * !B1 * !D1 * X)	0.00379	0.00364	0.00154
	(A1 * A2 * !B1 * !D1 * X)	0.00627	0.00612	0.00404
	(A1 * !A2 * !B1 * D1 * X)	0.00314	0.00300	0.00223
	(A1 * !A2 * !B1 * D1 * X)	0.00731	0.00720	0.00641
	(!A1 * B1 * D1 * X)	-0.00176	-0.00177	-0.00168
	(!A1 * B1 * D1 * X)	0.00178	0.00179	0.00172
	(!A1 * B1 * !D1 * X)	0.00085	0.00074	-0.00055
	(!A1 * B1 * !D1 * X)	0.00380	0.00371	0.00241
	(!A1 * !B1 * D1 * X)	0.00313	0.00299	0.00222
	(!A1 * !B1 * D1 * X)	0.00730	0.00719	0.00640

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00175	-0.00176	-0.00167
	(A1 * B1 * D1 * X)	0.00202	0.00203	0.00201
	(A1 * B1 * !D1 * X)	-0.00096	-0.00098	-0.00118
	(A1 * B1 * !D1 * X)	0.00221	0.00221	0.00203
	(A1 * A2 * !B1 * D1 * X)	-0.00168	-0.00169	-0.00136
	(A1 * A2 * !B1 * D1 * X)	0.00226	0.00229	0.00239
	(A1 * A2 * !B1 * !D1 * X)	0.00397	0.00384	0.00185
	(A1 * A2 * !B1 * !D1 * X)	0.00665	0.00650	0.00455
	(A1 * !A2 * !B1 * D1 * X)	0.00261	0.00249	0.00188
	(A1 * !A2 * !B1 * D1 * X)	0.00721	0.00713	0.00650
	(!A1 * B1 * D1 * X)	-0.00175	-0.00176	-0.00164
	(!A1 * B1 * D1 * X)	0.00219	0.00219	0.00213
	(!A1 * B1 * !D1 * X)	0.00093	0.00084	-0.00038
	(!A1 * B1 * !D1 * X)	0.00417	0.00408	0.00286
	(!A1 * !B1 * D1 * X)	0.00261	0.00248	0.00187
	(!A1 * !B1 * D1 * X)	0.00720	0.00713	0.00649

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00318	-0.00316	-0.00304
	(A1 * B1 * D1 * X)	0.00370	0.00369	0.00370
	(A1 * B1 * !D1 * X)	-0.00201	-0.00203	-0.00245
	(A1 * B1 * !D1 * X)	0.00380	0.00379	0.00345
	(A1 * A2 * !B1 * D1 * X)	-0.00304	-0.00306	-0.00252
	(A1 * A2 * !B1 * D1 * X)	0.00416	0.00420	0.00435
	(A1 * A2 * !B1 * !D1 * X)	0.00765	0.00736	0.00318
	(A1 * A2 * !B1 * !D1 * X)	0.01267	0.01237	0.00824
	(A1 * !A2 * !B1 * D1 * X)	0.00657	0.00629	0.00467
	(A1 * !A2 * !B1 * D1 * X)	0.01505	0.01477	0.01316
	(!A1 * B1 * D1 * X)	-0.00317	-0.00316	-0.00299
	(!A1 * B1 * D1 * X)	0.00397	0.00396	0.00390
	(!A1 * B1 * !D1 * X)	0.00188	0.00167	-0.00090
	(!A1 * B1 * !D1 * X)	0.00778	0.00759	0.00501
	(!A1 * !B1 * D1 * X)	0.00659	0.00631	0.00468
	(!A1 * !B1 * D1 * X)	0.01506	0.01479	0.01318

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00213	0.00216	0.00215
	(A1 * C1 * X)	-0.00078	-0.00079	-0.00076
	(A1 * B1 * !C1 * X)	0.00214	0.00217	0.00217
	(A1 * B1 * !C1 * X)	-0.00058	-0.00060	-0.00055
	(A1 * A2 * !B1 * !C1 * X)	0.00217	0.00222	0.00264
	(A1 * A2 * !B1 * !C1 * X)	0.00033	0.00033	0.00073
	(!A1 * C1 * X)	0.00213	0.00216	0.00216
	(!A1 * C1 * X)	-0.00076	-0.00077	-0.00074
	(!A1 * B1 * !C1 * X)	0.00216	0.00218	0.00242
	(!A1 * B1 * !C1 * X)	-0.00024	-0.00023	0.00001

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00261	0.00266	0.00264
	(A1 * C1 * X)	-0.00073	-0.00074	-0.00071
	(A1 * B1 * !C1 * X)	0.00262	0.00266	0.00267
	(A1 * B1 * !C1 * X)	-0.00051	-0.00052	-0.00048
	(A1 * A2 * !B1 * !C1 * X)	0.00264	0.00270	0.00309
	(A1 * A2 * !B1 * !C1 * X)	0.00049	0.00049	0.00086
	(!A1 * C1 * X)	0.00262	0.00264	0.00265
	(!A1 * C1 * X)	-0.00071	-0.00072	-0.00068
	(!A1 * B1 * !C1 * X)	0.00264	0.00268	0.00288
	(!A1 * B1 * !C1 * X)	-0.00016	-0.00015	0.00008
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00438	0.00442	0.00441
	(A1 * C1 * X)	-0.00138	-0.00139	-0.00135
	(A1 * B1 * !C1 * X)	0.00438	0.00446	0.00446
	(A1 * B1 * !C1 * X)	-0.00101	-0.00104	-0.00096
	(A1 * A2 * !B1 * !C1 * X)	0.00447	0.00452	0.00531
	(A1 * A2 * !B1 * !C1 * X)	0.00087	0.00089	0.00159
	(!A1 * C1 * X)	0.00441	0.00443	0.00443
	(!A1 * C1 * X)	-0.00137	-0.00136	-0.00131
	(!A1 * B1 * !C1 * X)	0.00444	0.00447	0.00489
	(!A1 * B1 * !C1 * X)	-0.00027	-0.00025	0.00013

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00150	-0.00151	-0.00158
	(A1 * C1 * X)	0.00142	0.00142	0.00135
	(A1 * B1 * !C1 * X)	-0.00094	-0.00096	-0.00112
	(A1 * B1 * !C1 * X)	0.00184	0.00184	0.00171
	(A1 * A2 * !B1 * !C1 * X)	0.00428	0.00415	0.00229
	(A1 * A2 * !B1 * !C1 * X)	0.00647	0.00636	0.00452
	(!A1 * C1 * X)	-0.00139	-0.00139	-0.00148
	(!A1 * C1 * X)	0.00151	0.00151	0.00145
	(!A1 * B1 * !C1 * X)	0.00147	0.00138	0.00026
	(!A1 * B1 * !C1 * X)	0.00402	0.00395	0.00283
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00170	-0.00172	-0.00179
	(A1 * C1 * X)	0.00166	0.00166	0.00159
	(A1 * B1 * !C1 * X)	-0.00105	-0.00107	-0.00126
	(A1 * B1 * !C1 * X)	0.00216	0.00216	0.00201
	(A1 * A2 * !B1 * !C1 * X)	0.00421	0.00409	0.00236
	(A1 * A2 * !B1 * !C1 * X)	0.00678	0.00667	0.00497
	(!A1 * C1 * X)	-0.00157	-0.00158	-0.00167
	(!A1 * C1 * X)	0.00176	0.00177	0.00169
	(!A1 * B1 * !C1 * X)	0.00126	0.00118	0.00015
	(!A1 * B1 * !C1 * X)	0.00423	0.00417	0.00315
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00269	-0.00271	-0.00294
	(A1 * C1 * X)	0.00309	0.00309	0.00290
	(A1 * B1 * !C1 * X)	-0.00158	-0.00162	-0.00203
	(A1 * B1 * !C1 * X)	0.00394	0.00395	0.00363
	(A1 * A2 * !B1 * !C1 * X)	0.00896	0.00871	0.00507
	(A1 * A2 * !B1 * !C1 * X)	0.01329	0.01308	0.00949
	(!A1 * C1 * X)	-0.00247	-0.00250	-0.00271
	(!A1 * C1 * X)	0.00331	0.00331	0.00311
	(!A1 * B1 * !C1 * X)	0.00335	0.00321	0.00104
	(!A1 * B1 * !C1 * X)	0.00844	0.00830	0.00617

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00278	0.00289	0.00294	0.60138
sky130_fd_sc_hs__a211oi_2	0.00533	0.00563	0.00447	0.00425	1.05667
sky130_fd_sc_hs__a211oi_4	0.01072	0.01085	0.00854	0.00864	1.82266

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	215.41900	545.16300
sky130_fd_sc_hs__a211oi_2	0.00000	425.23100	1090.11000
sky130_fd_sc_hs__a211oi_4	0.00000	847.94200	2178.83000

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)	0.07587	0.68307	7.66568
	A2->Y (FR)	0.09063	0.71935	7.95470
	B1->Y (FR)	0.07988	0.76960	8.76212
	C1->Y (FR)	0.06060	0.78417	9.14503
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.06856	0.56880	7.45558
	A2->Y (FR)	0.08747	0.58843	7.52618
	B1->Y (FR)	0.05594	0.60948	8.13433
	C1->Y (FR)	0.02942	0.62167	8.57609
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.06660	0.46889	7.04060
	A2->Y (FR)	0.08897	0.50477	7.35008
	B1->Y (FR)	0.07407	0.53877	7.97652
	C1->Y (FR)	0.04670	0.56023	8.51516

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02857	0.32604	3.48346
	A2->Y (RF)	0.03133	0.28542	2.92355
	B1->Y (RF)	0.02013	0.24412	2.57924
	C1->Y (RF)	0.01686	0.23622	2.53339
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02549	0.27918	3.50092
	A2->Y (RF)	0.03069	0.24033	2.90152
	B1->Y (RF)	0.03089	0.34772	4.53837
	C1->Y (RF)	0.02052	0.32324	4.36438
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02655	0.23689	3.41999
	A2->Y (RF)	0.03068	0.18043	2.53282
	B1->Y (RF)	0.02934	0.28860	4.31173
	C1->Y (RF)	0.01974	0.26877	4.22562

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00135	0.00766	0.13577
	A1	0.01068	0.01699	0.14489
	A2	0.00177	0.00834	0.14138
	A2	0.01257	0.01910	0.15206
	B1	0.00087	0.00915	0.14676
	B1	0.00859	0.01689	0.15457
	C1	0.00066	0.01032	0.15423
	C1	0.00703	0.01668	0.16064
sky130_fd_sc_hs__a211oi_2	A1	0.00080	0.01399	0.25289
	A1	0.01874	0.03191	0.27029
	A2	0.00290	0.01616	0.26543
	A2	0.02408	0.03729	0.28595
	B1	0.00136	0.01277	0.19408
	B1	0.01438	0.02575	0.20732
	C1	0.00120	0.01558	0.21167
	C1	0.01089	0.02527	0.22124
sky130_fd_sc_hs__a211oi_4	A1	0.00099	0.02754	0.47107
	A1	0.03666	0.06321	0.50486
	A2	0.00440	0.03138	0.49723
	A2	0.04639	0.07327	0.53724
	B1	0.00228	0.02628	0.37313
	B1	0.02771	0.05171	0.39850
	C1	0.00202	0.03100	0.39431
	C1	0.02103	0.04996	0.41257

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.02106	0.02670	0.13311
	A1	0.01172	0.01737	0.12365
	A2	0.02191	0.02736	0.13635
	A2	0.01112	0.01653	0.12551
	B1	0.01305	0.02063	0.14464
	B1	0.00535	0.01292	0.13689
	C1	0.01308	0.02051	0.13530
	C1	0.00674	0.01416	0.12892
sky130_fd_sc_hs__a211oi_2	A1	0.04096	0.05280	0.25063
	A1	0.02303	0.03480	0.23237
	A2	0.04307	0.05456	0.26328
	A2	0.02191	0.03340	0.24215
	B1	0.02605	0.03653	0.19304
	B1	0.01304	0.02350	0.17889
	C1	0.02518	0.03610	0.18104
	C1	0.01549	0.02631	0.17031
sky130_fd_sc_hs__a211oi_4	A1	0.08196	0.10648	0.48386
	A1	0.04632	0.07086	0.44713
	A2	0.08572	0.11099	0.52453
	A2	0.04369	0.06883	0.48268
	B1	0.04971	0.07162	0.37387
	B1	0.02436	0.04618	0.34845
	C1	0.04887	0.07146	0.34314
	C1	0.02991	0.05241	0.32277

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)**	0.00254	0.00232	0.00236
	(A2 * B1 * C1 * !Y)	-0.00197	-0.00219	-0.00215
	(A2 * B1 * !C1 * !Y)	0.00357	0.00317	0.00454
	(A2 * B1 * !C1 * !Y)	-0.00104	-0.00143	-0.00003
	(A2 * !B1 * C1 * !Y)	0.00402	0.00360	0.00602
	(A2 * !B1 * C1 * !Y)	-0.00070	-0.00113	0.00140
	(!A2 * B1 * C1 * !Y)	0.00233	0.00234	0.00233
	(!A2 * B1 * C1 * !Y)	-0.00214	-0.00216	-0.00215
	(!A2 * B1 * !C1 * !Y)	0.00465	0.00466	0.00465
	(!A2 * B1 * !C1 * !Y)	0.00018	0.00016	0.00017
	(!A2 * !B1 * C1 * !Y)	0.00639	0.00641	0.00640
	(!A2 * !B1 * C1 * !Y)	0.00192	0.00190	0.00192
	(!A2 * !B1 * !C1 * Y)	0.00083	0.00083	0.00078
	(!A2 * !B1 * !C1 * Y)	-0.00264	-0.00266	-0.00271
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00511	0.00476	0.00479
	(A2 * B1 * C1 * !Y)	-0.00393	-0.00432	-0.00422
	(A2 * B1 * !C1 * !Y)	0.00709	0.00644	0.00914
	(A2 * B1 * !C1 * !Y)	-0.00212	-0.00281	0.00001
	(A2 * !B1 * C1 * !Y)	0.00793	0.00730	0.01206
	(A2 * !B1 * C1 * !Y)	-0.00151	-0.00220	0.00282
	(!A2 * B1 * C1 * !Y)	0.00471	0.00473	0.00472
	(!A2 * B1 * C1 * !Y)	-0.00421	-0.00423	-0.00422
	(!A2 * B1 * !C1 * !Y)	0.00935	0.00935	0.00935
	(!A2 * B1 * !C1 * !Y)	0.00041	0.00040	0.00042
	(!A2 * !B1 * C1 * !Y)	0.01280	0.01280	0.01282
	(!A2 * !B1 * C1 * !Y)	0.00386	0.00385	0.00388
	(!A2 * !B1 * !C1 * Y)	0.00169	0.00169	0.00157
	(!A2 * !B1 * !C1 * Y)	-0.00529	-0.00531	-0.00551

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.01014	0.00931	0.00937
	(A2 * B1 * C1 * !Y)	-0.00789	-0.00880	-0.00860
	(A2 * B1 * !C1 * !Y)	0.01428	0.01273	0.01808
	(A2 * B1 * !C1 * !Y)	-0.00412	-0.00576	-0.00015
	(A2 * !B1 * C1 * !Y)	0.01601	0.01445	0.02390
	(A2 * !B1 * C1 * !Y)	-0.00286	-0.00453	0.00543
	(!A2 * B1 * C1 * !Y)	0.00923	0.00926	0.00923
	(!A2 * B1 * C1 * !Y)	-0.00862	-0.00863	-0.00860
	(!A2 * B1 * !C1 * !Y)	0.01845	0.01847	0.01848
	(!A2 * B1 * !C1 * !Y)	0.00072	0.00061	0.00065
	(!A2 * !B1 * C1 * !Y)	0.02530	0.02531	0.02534
	(!A2 * !B1 * C1 * !Y)	0.00744	0.00741	0.00750
	(!A2 * !B1 * !C1 * Y)	0.00300	0.00301	0.00279
	(!A2 * !B1 * !C1 * Y)	-0.01086	-0.01091	-0.01128

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)**	-0.00157	-0.00158	-0.00159
	(A2 * B1 * C1 * !Y)	0.00296	0.00298	0.00294
	(A2 * B1 * !C1 * !Y)	0.00067	0.00062	0.00032
	(A2 * B1 * !C1 * !Y)	0.00528	0.00524	0.00493
	(A2 * !B1 * C1 * !Y)	0.00248	0.00237	0.00174
	(A2 * !B1 * C1 * !Y)	0.00717	0.00712	0.00645
	(!A2 * B1 * C1 * !Y)	-0.00154	-0.00155	-0.00152
	(!A2 * B1 * C1 * !Y)	0.00296	0.00298	0.00295
	(!A2 * B1 * !C1 * !Y)	0.00078	0.00076	0.00079
	(!A2 * B1 * !C1 * !Y)	0.00526	0.00529	0.00526
	(!A2 * !B1 * C1 * !Y)	0.00253	0.00251	0.00253
	(!A2 * !B1 * C1 * !Y)	0.00701	0.00704	0.00700
	(!A2 * !B1 * !C1 * Y)	-0.00029	-0.00029	-0.00027
	(!A2 * !B1 * !C1 * Y)	0.00318	0.00323	0.00319
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00319	-0.00324	-0.00325
	(A2 * B1 * C1 * !Y)	0.00581	0.00588	0.00580
	(A2 * B1 * !C1 * !Y)	0.00120	0.00109	0.00052
	(A2 * B1 * !C1 * !Y)	0.01044	0.01037	0.00974
	(A2 * !B1 * C1 * !Y)	0.00484	0.00464	0.00339
	(A2 * !B1 * C1 * !Y)	0.01423	0.01408	0.01281
	(!A2 * B1 * C1 * !Y)	-0.00313	-0.00315	-0.00312
	(!A2 * B1 * C1 * !Y)	0.00580	0.00583	0.00582
	(!A2 * B1 * !C1 * !Y)	0.00150	0.00147	0.00149
	(!A2 * B1 * !C1 * !Y)	0.01043	0.01046	0.01044
	(!A2 * !B1 * C1 * !Y)	0.00498	0.00493	0.00495
	(!A2 * !B1 * C1 * !Y)	0.01390	0.01397	0.01389
	(!A2 * !B1 * !C1 * Y)	-0.00097	-0.00100	-0.00096
	(!A2 * !B1 * !C1 * Y)	0.00602	0.00614	0.00606

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00623	-0.00624	-0.00629
	(A2 * B1 * C1 * !Y)	0.01187	0.01185	0.01176
	(A2 * B1 * !C1 * !Y)	0.00262	0.00239	0.00123
	(A2 * B1 * !C1 * !Y)	0.02108	0.02092	0.01965
	(A2 * !B1 * C1 * !Y)	0.00978	0.00938	0.00689
	(A2 * !B1 * C1 * !Y)	0.02856	0.02825	0.02571
	(!A2 * B1 * C1 * !Y)	-0.00606	-0.00611	-0.00604
	(!A2 * B1 * C1 * !Y)	0.01177	0.01186	0.01180
	(!A2 * B1 * !C1 * !Y)	0.00319	0.00313	0.00317
	(!A2 * B1 * !C1 * !Y)	0.02101	0.02107	0.02101
	(!A2 * !B1 * C1 * !Y)	0.01007	0.01000	0.01001
	(!A2 * !B1 * C1 * !Y)	0.02788	0.02796	0.02786
	(!A2 * !B1 * !C1 * Y)	-0.00159	-0.00164	-0.00157
	(!A2 * !B1 * !C1 * Y)	0.01229	0.01254	0.01237

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)**	0.00256	0.00234	0.00238
	(A1 * B1 * C1 * !Y)	-0.00200	-0.00221	-0.00217
	(A1 * B1 * !C1 * !Y)	0.00358	0.00320	0.00456
	(A1 * B1 * !C1 * !Y)	-0.00106	-0.00145	-0.00005
	(A1 * !B1 * C1 * !Y)	0.00403	0.00362	0.00604
	(A1 * !B1 * C1 * !Y)	-0.00074	-0.00114	0.00137
	(!A1 * B1 * !Y)	0.00236	0.00237	0.00235
	(!A1 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * C1 * !Y)	0.00642	0.00644	0.00643
	(!A1 * !B1 * C1 * !Y)	0.00191	0.00189	0.00191
	(!A1 * !B1 * !C1 * Y)	0.00228	0.00230	0.00227
	(!A1 * !B1 * !C1 * Y)	-0.00226	-0.00228	-0.00228

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00524	0.00484	0.00488
	(A1 * B1 * C1 * !Y)	-0.00405	-0.00447	-0.00438
	(A1 * B1 * !C1 * !Y)	0.00727	0.00654	0.00925
	(A1 * B1 * !C1 * !Y)	-0.00220	-0.00295	-0.00014
	(A1 * !B1 * C1 * !Y)	0.00816	0.00743	0.01218
	(A1 * !B1 * C1 * !Y)	-0.00156	-0.00232	0.00267
	(!A1 * B1 * !Y)	0.00481	0.00483	0.00482
	(!A1 * B1 * !Y)	-0.00437	-0.00439	-0.00438
	(!A1 * !B1 * C1 * !Y)	0.01290	0.01293	0.01292
	(!A1 * !B1 * C1 * !Y)	0.00371	0.00367	0.00372
	(!A1 * !B1 * !C1 * Y)	0.00420	0.00423	0.00418
	(!A1 * !B1 * !C1 * Y)	-0.00507	-0.00510	-0.00508
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.01036	0.00954	0.00957
	(A1 * B1 * C1 * !Y)	-0.00799	-0.00891	-0.00870
	(A1 * B1 * !C1 * !Y)	0.01451	0.01297	0.01828
	(A1 * B1 * !C1 * !Y)	-0.00422	-0.00584	-0.00025
	(A1 * !B1 * C1 * !Y)	0.01621	0.01467	0.02409
	(A1 * !B1 * C1 * !Y)	-0.00299	-0.00459	0.00532
	(!A1 * B1 * !Y)	0.00938	0.00952	0.00943
	(!A1 * B1 * !Y)	-0.00866	-0.00877	-0.00871
	(!A1 * !B1 * C1 * !Y)	0.02549	0.02550	0.02555
	(!A1 * !B1 * C1 * !Y)	0.00744	0.00738	0.00742
	(!A1 * !B1 * !C1 * Y)	0.00876	0.00887	0.00874
	(!A1 * !B1 * !C1 * Y)	-0.00946	-0.00955	-0.00952

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)**	-0.00159	-0.00161	-0.00161
	(A1 * B1 * C1 * !Y)	0.00298	0.00300	0.00296
	(A1 * B1 * !C1 * !Y)	0.00065	0.00058	0.00029
	(A1 * B1 * !C1 * !Y)	0.00530	0.00527	0.00495
	(A1 * !B1 * C1 * !Y)	0.00245	0.00234	0.00171
	(A1 * !B1 * C1 * !Y)	0.00718	0.00713	0.00647
	(!A1 * B1 * !Y)	-0.00156	-0.00157	-0.00155
	(!A1 * B1 * !Y)	0.00297	0.00298	0.00297
	(!A1 * !B1 * C1 * !Y)	0.00250	0.00250	0.00251
	(!A1 * !B1 * C1 * !Y)	0.00704	0.00704	0.00703
	(!A1 * !B1 * !C1 * Y)	-0.00148	-0.00163	-0.00162
	(!A1 * !B1 * !C1 * Y)	0.00309	0.00294	0.00290
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00329	-0.00332	-0.00334
	(A1 * B1 * C1 * !Y)	0.00598	0.00602	0.00596
	(A1 * B1 * !C1 * !Y)	0.00113	0.00098	0.00041
	(A1 * B1 * !C1 * !Y)	0.01056	0.01054	0.00989
	(A1 * !B1 * C1 * !Y)	0.00475	0.00453	0.00329
	(A1 * !B1 * C1 * !Y)	0.01440	0.01429	0.01296
	(!A1 * B1 * !Y)	-0.00322	-0.00326	-0.00323
	(!A1 * B1 * !Y)	0.00596	0.00604	0.00599
	(!A1 * !B1 * C1 * !Y)	0.00488	0.00483	0.00484
	(!A1 * !B1 * C1 * !Y)	0.01406	0.01413	0.01406
	(!A1 * !B1 * !C1 * Y)	-0.00285	-0.00332	-0.00330
	(!A1 * !B1 * !C1 * Y)	0.00640	0.00605	0.00593

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00637	-0.00643	-0.00649
	(A1 * B1 * C1 * !Y)	0.01188	0.01193	0.01187
	(A1 * B1 * !C1 * !Y)	0.00241	0.00217	0.00101
	(A1 * B1 * !C1 * !Y)	0.02117	0.02104	0.01974
	(A1 * !B1 * C1 * !Y)	0.00954	0.00917	0.00665
	(A1 * !B1 * C1 * !Y)	0.02862	0.02827	0.02577
	(!A1 * B1 * !Y)	-0.00625	-0.00633	-0.00623
	(!A1 * B1 * !Y)	0.01187	0.01202	0.01191
	(!A1 * !B1 * C1 * !Y)	0.00986	0.00977	0.00984
	(!A1 * !B1 * C1 * !Y)	0.02799	0.02812	0.02797
	(!A1 * !B1 * !C1 * Y)	-0.00606	-0.00699	-0.00695
	(!A1 * !B1 * !C1 * Y)	0.01221	0.01149	0.01122

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)	0.00294	0.00295	0.00343
	(A1 * A2 * C1 * !Y)	-0.00110	-0.00109	-0.00057
	(A1 * A2 * !C1 * !Y)	0.00253	0.00256	0.00343
	(A1 * A2 * !C1 * !Y)	-0.00052	-0.00051	0.00035
	(A1 * !A2 * C1 * !Y)	0.00344	0.00309	0.00601
	(A1 * !A2 * C1 * !Y)	-0.00121	-0.00157	0.00141
	(!A1 * C1 * !Y)	0.00342	0.00308	0.00601
	(!A1 * C1 * !Y)	-0.00123	-0.00157	0.00141
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00422	0.00430	0.00509
	(A1 * A2 * C1 * !Y)	-0.00201	-0.00199	-0.00111
	(A1 * A2 * !C1 * !Y)	0.00367	0.00376	0.00555
	(A1 * A2 * !C1 * !Y)	-0.00068	-0.00068	0.00113
	(A1 * !A2 * C1 * !Y)	0.00555	0.00458	0.01030
	(A1 * !A2 * C1 * !Y)	-0.00198	-0.00295	0.00287
	(!A1 * C1 * !Y)	0.00555	0.00458	0.01030
	(!A1 * C1 * !Y)	-0.00197	-0.00295	0.00287
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00792	0.00803	0.00974
	(A1 * A2 * C1 * !Y)	-0.00426	-0.00425	-0.00237
	(A1 * A2 * !C1 * !Y)	0.00670	0.00687	0.01039
	(A1 * A2 * !C1 * !Y)	-0.00165	-0.00167	0.00190
	(A1 * !A2 * C1 * !Y)	0.01054	0.00862	0.02007
	(A1 * !A2 * C1 * !Y)	-0.00438	-0.00631	0.00534
	(!A1 * C1 * !Y)	0.01047	0.00860	0.02007
	(!A1 * C1 * !Y)	-0.00444	-0.00633	0.00535

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)	-0.00204	-0.00204	-0.00183
	(A1 * A2 * C1 * !Y)	0.00210	0.00211	0.00213
	(A1 * A2 * !C1 * !Y)	0.00341	0.00322	0.00093
	(A1 * A2 * !C1 * !Y)	0.00654	0.00637	0.00408
	(A1 * !A2 * C1 * !Y)	0.00234	0.00223	0.00162
	(A1 * !A2 * C1 * !Y)	0.00697	0.00688	0.00624
	(!A1 * C1 * !Y)	0.00236	0.00224	0.00163
	(!A1 * C1 * !Y)	0.00697	0.00690	0.00625
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00237	-0.00236	-0.00199
	(A1 * A2 * C1 * !Y)	0.00415	0.00416	0.00416
	(A1 * A2 * !C1 * !Y)	0.00815	0.00778	0.00318
	(A1 * A2 * !C1 * !Y)	0.01267	0.01232	0.00771
	(A1 * !A2 * C1 * !Y)	0.00642	0.00619	0.00491
	(A1 * !A2 * C1 * !Y)	0.01388	0.01370	0.01240
	(!A1 * C1 * !Y)	0.00642	0.00619	0.00491
	(!A1 * C1 * !Y)	0.01388	0.01370	0.01239
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00425	-0.00424	-0.00347
	(A1 * A2 * C1 * !Y)	0.00855	0.00856	0.00852
	(A1 * A2 * !C1 * !Y)	0.01694	0.01619	0.00702
	(A1 * A2 * !C1 * !Y)	0.02560	0.02495	0.01576
	(A1 * !A2 * C1 * !Y)	0.01316	0.01269	0.01017
	(A1 * !A2 * C1 * !Y)	0.02796	0.02758	0.02500
	(!A1 * C1 * !Y)	0.01319	0.01273	0.01021
	(!A1 * C1 * !Y)	0.02800	0.02763	0.02504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00245	0.00246	0.00251
	(A1 * B1 * !Y)	-0.00085	-0.00084	-0.00078
	(A1 * A2 * !B1 * !Y)	0.00247	0.00253	0.00303
	(A1 * A2 * !B1 * !Y)	0.00001	0.00001	0.00050
	(!A1 * B1 * !Y)	0.00245	0.00252	0.00309
	(!A1 * B1 * !Y)	-0.00081	-0.00082	-0.00022
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00267	0.00269	0.00276
	(A1 * B1 * !Y)	-0.00169	-0.00169	-0.00160
	(A1 * A2 * !B1 * !Y)	0.00275	0.00281	0.00380
	(A1 * A2 * !B1 * !Y)	0.00003	0.00006	0.00096
	(!A1 * B1 * !Y)	0.00272	0.00280	0.00356
	(!A1 * B1 * !Y)	-0.00156	-0.00159	-0.00077
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00536	0.00539	0.00554
	(A1 * B1 * !Y)	-0.00342	-0.00340	-0.00319
	(A1 * A2 * !B1 * !Y)	0.00540	0.00554	0.00756
	(A1 * A2 * !B1 * !Y)	0.00009	0.00013	0.00198
	(!A1 * B1 * !Y)	0.00541	0.00558	0.00734
	(!A1 * B1 * !Y)	-0.00319	-0.00324	-0.00138

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00134	-0.00135	-0.00153
	(A1 * B1 * !Y)	0.00197	0.00196	0.00180
	(A1 * A2 * !B1 * !Y)	0.00397	0.00382	0.00179
	(A1 * A2 * !B1 * !Y)	0.00673	0.00660	0.00455
	(!A1 * B1 * !Y)	0.00083	0.00071	-0.00061
	(!A1 * B1 * !Y)	0.00414	0.00405	0.00270
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00043	-0.00048	-0.00079
	(A1 * B1 * !Y)	0.00396	0.00400	0.00369
	(A1 * A2 * !B1 * !Y)	0.01021	0.00993	0.00589
	(A1 * A2 * !B1 * !Y)	0.01351	0.01327	0.00922
	(!A1 * B1 * !Y)	0.00415	0.00395	0.00135
	(!A1 * B1 * !Y)	0.00855	0.00836	0.00575
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00093	-0.00098	-0.00163
	(A1 * B1 * !Y)	0.00792	0.00793	0.00734
	(A1 * A2 * !B1 * !Y)	0.02038	0.01984	0.01174
	(A1 * A2 * !B1 * !Y)	0.02697	0.02646	0.01835
	(!A1 * B1 * !Y)	0.00808	0.00767	0.00243
	(!A1 * B1 * !Y)	0.01693	0.01655	0.01129

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00269	0.00256	0.00273	0.00269	1.71056
sky130_fd_sc_hs__a211o_2	0.00293	0.00293	0.00288	0.00278	3.16265
sky130_fd_sc_hs__a211o_4	0.00501	0.00516	0.00541	0.00490	6.11796

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	337.83400	593.00200
sky130_fd_sc_hs__a211o_2	0.00000	440.12400	1077.53000
sky130_fd_sc_hs__a211o_4	0.00000	889.31700	2213.18000

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)	0.06092	0.43217	5.66445
	A2->X (RR)	0.06392	0.41207	5.36511
	B1->X (RR)	0.04919	0.38148	4.95813
	C1->X (RR)	0.04391	0.36270	4.80205
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.06232	0.35736	5.28879
	A2->X (RR)	0.06566	0.33543	5.00556
	B1->X (RR)	0.04927	0.30897	4.64914
	C1->X (RR)	0.04463	0.29419	4.52492
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.06693	0.30846	5.57150
	A2->X (RR)	0.07147	0.29258	5.35274
	B1->X (RR)	0.04861	0.24627	4.79551
	C1->X (RR)	0.04515	0.23929	4.75226

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.11240	0.49496	5.94463
	A2->X (FF)	0.12780	0.52564	6.17579
	B1->X (FF)	0.11544	0.55417	6.64369
	C1->X (FF)	0.09540	0.55992	6.76421
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.14289	0.49410	5.90081
	A2->X (FF)	0.16293	0.52888	6.14026
	B1->X (FF)	0.15010	0.56034	6.58915
	C1->X (FF)	0.12815	0.56769	6.69839
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.13650	0.43850	6.04467
	A2->X (FF)	0.14497	0.45887	6.18058
	B1->X (FF)	0.12390	0.47969	6.47991
	C1->X (FF)	0.10039	0.48130	6.61215

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.03094	0.04358	0.27366
	A1	0.02244	0.03506	0.26503
	A2	0.03205	0.04361	0.27176
	A2	0.02232	0.03388	0.26190
	B1	0.02134	0.03637	0.27581
	B1	0.01415	0.02918	0.26812
	C1	0.02559	0.04093	0.27650
	C1	0.01971	0.03504	0.27832
sky130_fd_sc_hs__a211o_2	A1	0.03629	0.04877	0.27869
	A1	0.02713	0.03964	0.26913
	A2	0.03772	0.04864	0.27495
	A2	0.02701	0.03799	0.26312
	B1	0.02599	0.04099	0.27469
	B1	0.01825	0.03322	0.26589
	C1	0.02987	0.04508	0.27469
	C1	0.02344	0.03866	0.26770
sky130_fd_sc_hs__a211o_4	A1	0.07232	0.09932	0.58463
	A1	0.05555	0.08261	0.56758
	A2	0.07524	0.09958	0.57780
	A2	0.05548	0.07989	0.55721
	B1	0.04979	0.08145	0.55918
	B1	0.03562	0.06728	0.54293
	C1	0.05667	0.08857	0.55453
	C1	0.04580	0.07766	0.54182

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01754	0.02662	0.23622
	A1	0.02605	0.03510	0.24326
	A2	0.01873	0.02740	0.23791
	A2	0.02845	0.03711	0.24584
	B1	0.01628	0.02830	0.25942
	B1	0.02346	0.03546	0.26582
	C1	0.01621	0.02942	0.25908
	C1	0.02208	0.03529	0.26497
sky130_fd_sc_hs__a211o_2	A1	0.03667	0.03910	0.23417
	A1	0.04583	0.04813	0.24301
	A2	0.03934	0.04021	0.23986
	A2	0.05007	0.05085	0.24723
	B1	0.03471	0.04060	0.26077
	B1	0.04246	0.04824	0.26496
	C1	0.03466	0.04175	0.26003
	C1	0.04111	0.04818	0.26484
sky130_fd_sc_hs__a211o_4	A1	0.07458	0.08167	0.52661
	A1	0.09136	0.09821	0.54122
	A2	0.07615	0.08263	0.53767
	A2	0.09591	0.10211	0.54962
	B1	0.06885	0.08194	0.51338
	B1	0.08297	0.09580	0.51985
	C1	0.06912	0.08493	0.52355
	C1	0.07999	0.09553	0.53017

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)**	0.00238	0.00217	0.00219
	(A2 * B1 * C1 * X)	-0.00174	-0.00197	-0.00193
	(A2 * B1 * !C1 * X)	0.00339	0.00300	0.00445
	(A2 * B1 * !C1 * X)	-0.00083	-0.00123	0.00026
	(A2 * !B1 * C1 * X)	0.00384	0.00347	0.00632
	(A2 * !B1 * C1 * X)	-0.00051	-0.00089	0.00207
	(!A2 * B1 * C1 * X)	0.00216	0.00218	0.00217
	(!A2 * B1 * C1 * X)	-0.00193	-0.00195	-0.00193
	(!A2 * B1 * !C1 * X)	0.00461	0.00462	0.00461
	(!A2 * B1 * !C1 * X)	0.00051	0.00048	0.00050
	(!A2 * !B1 * C1 * X)	0.00687	0.00687	0.00688
	(!A2 * !B1 * C1 * X)	0.00278	0.00276	0.00278
	(!A2 * !B1 * !C1 * !X)	0.00550	0.00550	0.00542
	(!A2 * !B1 * !C1 * !X)	0.00224	0.00223	0.00215
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00283	0.00264	0.00265
	(A2 * B1 * C1 * X)	-0.00156	-0.00177	-0.00173
	(A2 * B1 * !C1 * X)	0.00381	0.00344	0.00490
	(A2 * B1 * !C1 * X)	-0.00067	-0.00105	0.00046
	(A2 * !B1 * C1 * X)	0.00425	0.00389	0.00677
	(A2 * !B1 * C1 * X)	-0.00034	-0.00071	0.00226
	(!A2 * B1 * C1 * X)	0.00262	0.00262	0.00262
	(!A2 * B1 * C1 * X)	-0.00172	-0.00173	-0.00173
	(!A2 * B1 * !C1 * X)	0.00506	0.00507	0.00506
	(!A2 * B1 * !C1 * X)	0.00072	0.00069	0.00071
	(!A2 * !B1 * C1 * X)	0.00732	0.00733	0.00733
	(!A2 * !B1 * C1 * X)	0.00297	0.00294	0.00298
	(!A2 * !B1 * !C1 * !X)	0.00987	0.00988	0.00982
	(!A2 * !B1 * !C1 * !X)	0.00655	0.00651	0.00645

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00486	0.00448	0.00450
	(A2 * B1 * C1 * X)	-0.00330	-0.00371	-0.00363
	(A2 * B1 * !C1 * X)	0.00683	0.00614	0.00901
	(A2 * B1 * !C1 * X)	-0.00151	-0.00224	0.00075
	(A2 * !B1 * C1 * X)	0.00768	0.00706	0.01274
	(A2 * !B1 * C1 * X)	-0.00090	-0.00155	0.00434
	(!A2 * B1 * C1 * X)	0.00443	0.00448	0.00445
	(!A2 * B1 * C1 * X)	-0.00362	-0.00367	-0.00364
	(!A2 * B1 * !C1 * X)	0.00932	0.00934	0.00932
	(!A2 * B1 * !C1 * X)	0.00125	0.00119	0.00123
	(!A2 * !B1 * C1 * X)	0.01383	0.01386	0.01386
	(!A2 * !B1 * C1 * X)	0.00577	0.00572	0.00577
	(!A2 * !B1 * !C1 * !X)	0.02003	0.02003	0.01988
	(!A2 * !B1 * !C1 * !X)	0.01368	0.01362	0.01346

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)**	-0.00130	-0.00132	-0.00132
	(A2 * B1 * C1 * X)	0.00284	0.00286	0.00282
	(A2 * B1 * !C1 * X)	0.00105	0.00098	0.00064
	(A2 * B1 * !C1 * X)	0.00528	0.00524	0.00487
	(A2 * !B1 * C1 * X)	0.00337	0.00324	0.00242
	(A2 * !B1 * C1 * X)	0.00769	0.00759	0.00675
	(!A2 * B1 * C1 * X)	-0.00128	-0.00129	-0.00127
	(!A2 * B1 * C1 * X)	0.00282	0.00283	0.00282
	(!A2 * B1 * !C1 * X)	0.00115	0.00113	0.00115
	(!A2 * B1 * !C1 * X)	0.00525	0.00528	0.00525
	(!A2 * !B1 * C1 * X)	0.00343	0.00341	0.00342
	(!A2 * !B1 * C1 * X)	0.00753	0.00757	0.00752
	(!A2 * !B1 * !C1 * !X)	0.00454	0.00453	0.00455
	(!A2 * !B1 * !C1 * !X)	0.00777	0.00782	0.00778
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00156	-0.00158	-0.00158
	(A2 * B1 * C1 * X)	0.00283	0.00285	0.00281
	(A2 * B1 * !C1 * X)	0.00080	0.00073	0.00039
	(A2 * B1 * !C1 * X)	0.00527	0.00524	0.00487
	(A2 * !B1 * C1 * X)	0.00311	0.00298	0.00217
	(A2 * !B1 * C1 * X)	0.00768	0.00759	0.00675
	(!A2 * B1 * C1 * X)	-0.00154	-0.00154	-0.00152
	(!A2 * B1 * C1 * X)	0.00282	0.00283	0.00282
	(!A2 * B1 * !C1 * X)	0.00089	0.00087	0.00090
	(!A2 * B1 * !C1 * X)	0.00525	0.00527	0.00524
	(!A2 * !B1 * C1 * X)	0.00317	0.00314	0.00316
	(!A2 * !B1 * C1 * X)	0.00752	0.00755	0.00750
	(!A2 * !B1 * !C1 * !X)	0.00882	0.00881	0.00882
	(!A2 * !B1 * !C1 * !X)	0.01216	0.01218	0.01216

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00231	-0.00234	-0.00236
	(A2 * B1 * C1 * X)	0.00582	0.00585	0.00580
	(A2 * B1 * !C1 * X)	0.00235	0.00223	0.00153
	(A2 * B1 * !C1 * X)	0.01072	0.01062	0.00989
	(A2 * !B1 * C1 * X)	0.00697	0.00671	0.00509
	(A2 * !B1 * C1 * X)	0.01551	0.01534	0.01365
	(!A2 * B1 * C1 * X)	-0.00227	-0.00231	-0.00226
	(!A2 * B1 * C1 * X)	0.00580	0.00588	0.00582
	(!A2 * B1 * !C1 * X)	0.00258	0.00255	0.00259
	(!A2 * B1 * !C1 * X)	0.01068	0.01074	0.01067
	(!A2 * !B1 * C1 * X)	0.00713	0.00709	0.00712
	(!A2 * !B1 * C1 * X)	0.01523	0.01528	0.01520
	(!A2 * !B1 * !C1 * !X)	0.01816	0.01815	0.01820
	(!A2 * !B1 * !C1 * !X)	0.02455	0.02456	0.02454

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)**	0.00241	0.00220	0.00222
	(A1 * B1 * C1 * X)	-0.00173	-0.00194	-0.00190
	(A1 * B1 * !C1 * X)	0.00340	0.00302	0.00448
	(A1 * B1 * !C1 * X)	-0.00084	-0.00121	0.00028
	(A1 * !B1 * C1 * X)	0.00382	0.00351	0.00635
	(A1 * !B1 * C1 * X)	-0.00053	-0.00089	0.00209
	(!A1 * B1 * X)	0.00220	0.00222	0.00220
	(!A1 * B1 * X)	-0.00190	-0.00192	-0.00191
	(!A1 * !B1 * C1 * X)	0.00691	0.00693	0.00692
	(!A1 * !B1 * C1 * X)	0.00281	0.00278	0.00281
	(!A1 * !B1 * !C1 * !X)	0.00672	0.00673	0.00669
	(!A1 * !B1 * !C1 * !X)	0.00257	0.00256	0.00255

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00298	0.00279	0.00280
	(A1 * B1 * C1 * X)	-0.00158	-0.00179	-0.00174
	(A1 * B1 * !C1 * X)	0.00395	0.00359	0.00504
	(A1 * B1 * !C1 * X)	-0.00069	-0.00107	0.00044
	(A1 * !B1 * C1 * X)	0.00437	0.00404	0.00690
	(A1 * !B1 * C1 * X)	-0.00039	-0.00073	0.00224
	(!A1 * B1 * X)	0.00277	0.00279	0.00277
	(!A1 * B1 * X)	-0.00174	-0.00176	-0.00174
	(!A1 * !B1 * C1 * X)	0.00748	0.00749	0.00748
	(!A1 * !B1 * C1 * X)	0.00297	0.00295	0.00297
	(!A1 * !B1 * !C1 * !X)	0.01128	0.01130	0.01127
	(!A1 * !B1 * !C1 * !X)	0.00675	0.00673	0.00673
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00548	0.00515	0.00515
	(A1 * B1 * C1 * X)	-0.00318	-0.00357	-0.00348
	(A1 * B1 * !C1 * X)	0.00742	0.00682	0.00966
	(A1 * B1 * !C1 * X)	-0.00142	-0.00209	0.00089
	(A1 * !B1 * C1 * X)	0.00828	0.00774	0.01339
	(A1 * !B1 * C1 * X)	-0.00081	-0.00142	0.00449
	(!A1 * B1 * X)	0.00510	0.00515	0.00510
	(!A1 * B1 * X)	-0.00348	-0.00351	-0.00349
	(!A1 * !B1 * C1 * X)	0.01449	0.01448	0.01451
	(!A1 * !B1 * C1 * X)	0.00590	0.00587	0.00591
	(!A1 * !B1 * !C1 * !X)	0.02323	0.02324	0.02319
	(!A1 * !B1 * !C1 * !X)	0.01459	0.01457	0.01452

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)**	-0.00134	-0.00136	-0.00136
	(A1 * B1 * C1 * X)	0.00281	0.00282	0.00279
	(A1 * B1 * !C1 * X)	0.00101	0.00094	0.00060
	(A1 * B1 * !C1 * X)	0.00525	0.00521	0.00484
	(A1 * !B1 * C1 * X)	0.00332	0.00319	0.00238
	(A1 * !B1 * C1 * X)	0.00765	0.00757	0.00672
	(!A1 * B1 * X)	-0.00132	-0.00132	-0.00131
	(!A1 * B1 * X)	0.00280	0.00280	0.00280
	(!A1 * !B1 * C1 * X)	0.00339	0.00338	0.00339
	(!A1 * !B1 * C1 * X)	0.00751	0.00751	0.00749
	(!A1 * !B1 * !C1 * !X)	0.00360	0.00346	0.00352
	(!A1 * !B1 * !C1 * !X)	0.00776	0.00764	0.00764
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00171	-0.00172	-0.00173
	(A1 * B1 * C1 * X)	0.00285	0.00286	0.00283
	(A1 * B1 * !C1 * X)	0.00064	0.00057	0.00024
	(A1 * B1 * !C1 * X)	0.00529	0.00525	0.00488
	(A1 * !B1 * C1 * X)	0.00295	0.00282	0.00201
	(A1 * !B1 * C1 * X)	0.00768	0.00758	0.00676
	(!A1 * B1 * X)	-0.00169	-0.00169	-0.00167
	(!A1 * B1 * X)	0.00284	0.00284	0.00284
	(!A1 * !B1 * C1 * X)	0.00302	0.00301	0.00302
	(!A1 * !B1 * C1 * X)	0.00755	0.00754	0.00753
	(!A1 * !B1 * !C1 * !X)	0.00767	0.00751	0.00752
	(!A1 * !B1 * !C1 * !X)	0.01224	0.01208	0.01204

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00297	-0.00301	-0.00302
	(A1 * B1 * C1 * X)	0.00567	0.00572	0.00566
	(A1 * B1 * !C1 * X)	0.00171	0.00156	0.00090
	(A1 * B1 * !C1 * X)	0.01054	0.01050	0.00976
	(A1 * !B1 * C1 * X)	0.00634	0.00609	0.00447
	(A1 * !B1 * C1 * X)	0.01538	0.01518	0.01353
	(!A1 * B1 * X)	-0.00293	-0.00295	-0.00292
	(!A1 * B1 * X)	0.00565	0.00569	0.00567
	(!A1 * !B1 * C1 * X)	0.00648	0.00644	0.00645
	(!A1 * !B1 * C1 * X)	0.01506	0.01509	0.01504
	(!A1 * !B1 * !C1 * !X)	0.01557	0.01522	0.01538
	(!A1 * !B1 * !C1 * !X)	0.02423	0.02395	0.02400

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)	0.00294	0.00293	0.00339
	(A1 * A2 * C1 * X)	-0.00087	-0.00088	-0.00042
	(A1 * A2 * !C1 * X)	0.00263	0.00266	0.00346
	(A1 * A2 * !C1 * X)	-0.00036	-0.00035	0.00046
	(A1 * !A2 * C1 * X)	0.00341	0.00315	0.00650
	(A1 * !A2 * C1 * X)	-0.00097	-0.00127	0.00213
	(!A1 * C1 * X)	0.00339	0.00315	0.00650
	(!A1 * C1 * X)	-0.00099	-0.00127	0.00214
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00314	0.00314	0.00357
	(A1 * A2 * C1 * X)	-0.00079	-0.00078	-0.00032
	(A1 * A2 * !C1 * X)	0.00285	0.00289	0.00372
	(A1 * A2 * !C1 * X)	-0.00027	-0.00026	0.00058
	(A1 * !A2 * C1 * X)	0.00361	0.00333	0.00666
	(A1 * !A2 * C1 * X)	-0.00086	-0.00114	0.00224
	(!A1 * C1 * X)	0.00359	0.00332	0.00666
	(!A1 * C1 * X)	-0.00088	-0.00114	0.00224
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00582	0.00583	0.00664
	(A1 * A2 * C1 * X)	-0.00168	-0.00166	-0.00078
	(A1 * A2 * !C1 * X)	0.00531	0.00543	0.00701
	(A1 * A2 * !C1 * X)	-0.00050	-0.00051	0.00115
	(A1 * !A2 * C1 * X)	0.00684	0.00626	0.01289
	(A1 * !A2 * C1 * X)	-0.00172	-0.00238	0.00434
	(!A1 * C1 * X)	0.00691	0.00627	0.01288
	(!A1 * C1 * X)	-0.00174	-0.00238	0.00433

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)	-0.00195	-0.00195	-0.00175
	(A1 * A2 * C1 * X)	0.00198	0.00199	0.00201
	(A1 * A2 * !C1 * X)	0.00344	0.00324	0.00082
	(A1 * A2 * !C1 * X)	0.00648	0.00630	0.00389
	(A1 * !A2 * C1 * X)	0.00302	0.00289	0.00210
	(A1 * !A2 * C1 * X)	0.00740	0.00729	0.00649
	(!A1 * C1 * X)	0.00303	0.00290	0.00211
	(!A1 * C1 * X)	0.00741	0.00730	0.00650
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00192	-0.00192	-0.00174
	(A1 * A2 * C1 * X)	0.00209	0.00209	0.00211
	(A1 * A2 * !C1 * X)	0.00339	0.00319	0.00078
	(A1 * A2 * !C1 * X)	0.00656	0.00639	0.00397
	(A1 * !A2 * C1 * X)	0.00305	0.00291	0.00213
	(A1 * !A2 * C1 * X)	0.00749	0.00738	0.00657
	(!A1 * C1 * X)	0.00307	0.00293	0.00215
	(!A1 * C1 * X)	0.00749	0.00740	0.00659
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00335	-0.00338	-0.00299
	(A1 * A2 * C1 * X)	0.00431	0.00434	0.00434
	(A1 * A2 * !C1 * X)	0.00719	0.00680	0.00197
	(A1 * A2 * !C1 * X)	0.01313	0.01278	0.00794
	(A1 * !A2 * C1 * X)	0.00657	0.00631	0.00471
	(A1 * !A2 * C1 * X)	0.01517	0.01494	0.01331
	(!A1 * C1 * X)	0.00655	0.00628	0.00469
	(!A1 * C1 * X)	0.01515	0.01491	0.01329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00236	0.00241	0.00243
	(A1 * B1 * X)	-0.00070	-0.00072	-0.00065
	(A1 * A2 * !B1 * X)	0.00242	0.00244	0.00300
	(A1 * A2 * !B1 * X)	0.00008	0.00010	0.00060
	(!A1 * B1 * X)	0.00240	0.00243	0.00306
	(!A1 * B1 * X)	-0.00068	-0.00067	-0.00005
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00249	0.00251	0.00255
	(A1 * B1 * X)	-0.00065	-0.00065	-0.00059
	(A1 * A2 * !B1 * X)	0.00258	0.00265	0.00317
	(A1 * A2 * !B1 * X)	0.00013	0.00013	0.00066
	(!A1 * B1 * X)	0.00251	0.00257	0.00316
	(!A1 * B1 * X)	-0.00062	-0.00062	-0.00000
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00412	0.00418	0.00424
	(A1 * B1 * X)	-0.00121	-0.00124	-0.00114
	(A1 * A2 * !B1 * X)	0.00424	0.00433	0.00541
	(A1 * A2 * !B1 * X)	0.00036	0.00037	0.00138
	(!A1 * B1 * X)	0.00415	0.00425	0.00532
	(!A1 * B1 * X)	-0.00121	-0.00122	-0.00011

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00122	-0.00124	-0.00139
	(A1 * B1 * X)	0.00188	0.00188	0.00173
	(A1 * A2 * !B1 * X)	0.00408	0.00393	0.00176
	(A1 * A2 * !B1 * X)	0.00669	0.00653	0.00436
	(!A1 * B1 * X)	0.00106	0.00094	-0.00050
	(!A1 * B1 * X)	0.00418	0.00407	0.00261
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00113	-0.00115	-0.00131
	(A1 * B1 * X)	0.00202	0.00202	0.00188
	(A1 * A2 * !B1 * X)	0.00413	0.00396	0.00179
	(A1 * A2 * !B1 * X)	0.00682	0.00668	0.00449
	(!A1 * B1 * X)	0.00116	0.00104	-0.00040
	(!A1 * B1 * X)	0.00434	0.00422	0.00277
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00146	-0.00149	-0.00177
	(A1 * B1 * X)	0.00395	0.00396	0.00370
	(A1 * A2 * !B1 * X)	0.00917	0.00885	0.00451
	(A1 * A2 * !B1 * X)	0.01358	0.01330	0.00895
	(!A1 * B1 * X)	0.00326	0.00303	0.00016
	(!A1 * B1 * X)	0.00873	0.00851	0.00562

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00285	0.00279	0.00262	0.85898
sky130_fd_sc_hs__a21boi_2	0.00541	0.00530	0.00258	1.64272
sky130_fd_sc_hs__a21boi_4	0.01073	0.01078	0.00378	2.87779

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	952.24800	1915.98000
sky130_fd_sc_hs__a21boi_2	0.00000	876.78100	1773.56000
sky130_fd_sc_hs__a21boi_4	0.00000	2467.27000	5006.54000

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)	0.04340	0.61914	7.95013
	A2->Y (FR)	0.05471	0.65233	8.27695
	B1_N->Y (RR)	0.06128	0.52963	5.87663
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.04010	0.53341	8.14906
	A2->Y (FR)	0.05162	0.54167	8.13381
	B1_N->Y (RR)	0.06010	0.41430	5.58825
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.04071	0.44459	7.84837
	A2->Y (FR)	0.05132	0.45024	7.70061
	B1_N->Y (RR)	0.06058	0.40876	6.44571

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02516	0.37489	4.72410
	A2->Y (RF)	0.02792	0.33108	4.07526
	B1_N->Y (FF)	0.04637	0.32803	3.43557
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02333	0.33148	5.01684
	A2->Y (RF)	0.02743	0.28717	4.30071
	B1_N->Y (FF)	0.04990	0.32300	3.61345
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02410	0.28291	4.97022
	A2->Y (RF)	0.02808	0.22418	3.98205
	B1_N->Y (FF)	0.05088	0.25627	2.76396

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.03642	0.04372	0.16235
	A1	0.04182	0.04909	0.16754
	A2	0.03888	0.04626	0.16886
	A2	0.04566	0.05304	0.17518
	B1_N	0.04428	0.06397	0.36544
	B1_N	0.04107	0.06074	0.36207
sky130_fd_sc_hs__a21boi_2	A1	0.02028	0.03509	0.24720
	A1	0.03073	0.04554	0.25659
	A2	0.02248	0.03779	0.26449
	A2	0.03584	0.05111	0.27679
	B1_N	0.02550	0.04836	0.39213
	B1_N	0.02148	0.04434	0.38781
sky130_fd_sc_hs__a21boi_4	A1	0.08059	0.11159	0.50886
	A1	0.10185	0.13277	0.52743
	A2	0.08105	0.11309	0.53543
	A2	0.10820	0.14015	0.55964
	B1_N	0.07886	0.11532	0.66282
	B1_N	0.07376	0.11024	0.65822

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.04121	0.04744	0.14432
	A1	0.03582	0.04206	0.13837
	A2	0.04058	0.04646	0.14525
	A2	0.03378	0.03967	0.13851
	B1_N	0.01080	0.03051	0.31534
	B1_N	0.01542	0.03510	0.31978
sky130_fd_sc_hs__a21boi_2	A1	0.04642	0.05933	0.23127
	A1	0.03595	0.04877	0.21965
	A2	0.04732	0.05999	0.24420
	A2	0.03401	0.04662	0.23008
	B1_N	0.02203	0.04194	0.34698
	B1_N	0.02608	0.04596	0.35053
sky130_fd_sc_hs__a21boi_4	A1	0.12121	0.14865	0.47193
	A1	0.09996	0.12742	0.45045
	A2	0.12123	0.15048	0.52829
	A2	0.09417	0.12331	0.49937
	B1_N	0.04368	0.07678	0.57561
	B1_N	0.04877	0.08189	0.58066

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)	0.00376	0.00342	0.00610
	(A2 * !B1_N * !Y)	-0.00091	-0.00125	0.00144
	(!A2 * B1_N * Y)	0.01243	0.01243	0.01238
	(!A2 * B1_N * Y)	0.00880	0.00879	0.00873
	(!A2 * !B1_N * !Y)	0.00654	0.00656	0.00655
	(!A2 * !B1_N * !Y)	0.00195	0.00192	0.00195
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00765	0.00690	0.01220
	(A2 * !B1_N * !Y)	-0.00146	-0.00224	0.00309
	(!A2 * B1_N * Y)	0.00678	0.00678	0.00667
	(!A2 * B1_N * Y)	-0.00025	-0.00028	-0.00047
	(!A2 * !B1_N * !Y)	0.01306	0.01306	0.01307
	(!A2 * !B1_N * !Y)	0.00408	0.00406	0.00410
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.01472	0.01337	0.02395
	(A2 * !B1_N * !Y)	-0.00348	-0.00491	0.00577
	(!A2 * B1_N * Y)	0.02611	0.02610	0.02590
	(!A2 * B1_N * Y)	0.01211	0.01209	0.01171
	(!A2 * !B1_N * !Y)	0.02568	0.02575	0.02574
	(!A2 * !B1_N * !Y)	0.00781	0.00771	0.00781

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)	0.00255	0.00244	0.00184
	(A2 * !B1_N * !Y)	0.00722	0.00716	0.00652
	(!A2 * B1_N * Y)	0.01099	0.01098	0.01100
	(!A2 * B1_N * Y)	0.01461	0.01467	0.01462
	(!A2 * !B1_N * !Y)	0.00260	0.00257	0.00259
	(!A2 * !B1_N * !Y)	0.00721	0.00725	0.00720
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00516	0.00495	0.00374
	(A2 * !B1_N * !Y)	0.01428	0.01412	0.01287
	(!A2 * B1_N * Y)	0.00424	0.00421	0.00425
	(!A2 * B1_N * Y)	0.01128	0.01141	0.01132
	(!A2 * !B1_N * !Y)	0.00530	0.00527	0.00527
	(!A2 * !B1_N * !Y)	0.01427	0.01428	0.01426
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.01002	0.00961	0.00724
	(A2 * !B1_N * !Y)	0.02832	0.02801	0.02548
	(!A2 * B1_N * Y)	0.02140	0.02135	0.02143
	(!A2 * B1_N * Y)	0.03543	0.03567	0.03549
	(!A2 * !B1_N * !Y)	0.01035	0.01029	0.01034
	(!A2 * !B1_N * !Y)	0.02834	0.02842	0.02828

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)	0.00386	0.00351	0.00618
	(A1 * !B1_N * !Y)	-0.00080	-0.00116	0.00152
	(!A1 * B1_N * Y)	0.01381	0.01381	0.01380
	(!A1 * B1_N * Y)	0.00919	0.00918	0.00917
	(!A1 * !B1_N * !Y)	0.00664	0.00664	0.00664
	(!A1 * !B1_N * !Y)	0.00204	0.00202	0.00204
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00754	0.00685	0.01213
	(A1 * !B1_N * !Y)	-0.00150	-0.00224	0.00310
	(!A1 * B1_N * Y)	0.00943	0.00948	0.00943
	(!A1 * B1_N * Y)	0.00050	0.00045	0.00046
	(!A1 * !B1_N * !Y)	0.01299	0.01302	0.01301
	(!A1 * !B1_N * !Y)	0.00412	0.00407	0.00411
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.01488	0.01346	0.02406
	(A1 * !B1_N * !Y)	-0.00337	-0.00488	0.00584
	(!A1 * B1_N * Y)	0.03139	0.03149	0.03138
	(!A1 * B1_N * Y)	0.01336	0.01327	0.01329
	(!A1 * !B1_N * !Y)	0.02578	0.02580	0.02582
	(!A1 * !B1_N * !Y)	0.00786	0.00775	0.00785

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)	0.00246	0.00235	0.00175
	(A1 * !B1_N * !Y)	0.00712	0.00706	0.00642
	(!A1 * B1_N * Y)	0.00987	0.00972	0.00972
	(!A1 * B1_N * Y)	0.01453	0.01440	0.01433
	(!A1 * !B1_N * !Y)	0.00251	0.00251	0.00252
	(!A1 * !B1_N * !Y)	0.00713	0.00713	0.00712
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00521	0.00502	0.00380
	(A1 * !B1_N * !Y)	0.01428	0.01410	0.01285
	(!A1 * B1_N * Y)	0.00220	0.00177	0.00176
	(!A1 * B1_N * Y)	0.01116	0.01084	0.01069
	(!A1 * !B1_N * !Y)	0.00537	0.00532	0.00534
	(!A1 * !B1_N * !Y)	0.01425	0.01432	0.01425
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00998	0.00956	0.00718
	(A1 * !B1_N * !Y)	0.02829	0.02800	0.02545
	(!A1 * B1_N * Y)	0.01729	0.01643	0.01649
	(!A1 * B1_N * Y)	0.03537	0.03474	0.03450
	(!A1 * !B1_N * !Y)	0.01029	0.01019	0.01022
	(!A1 * !B1_N * !Y)	0.02824	0.02837	0.02820

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)	0.02357	0.04261	0.33470
	(A1 * A2 * !Y)	0.01827	0.03731	0.32942
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.02416	0.04473	0.36712
	(A1 * A2 * !Y)	0.01885	0.03941	0.36182
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.05768	0.08777	0.58771
	(A1 * A2 * !Y)	0.04964	0.07972	0.57969

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)	0.00143	0.02245	0.32875
	(A1 * A2 * !Y)	0.00674	0.02777	0.33402
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00403	0.02601	0.36083
	(A1 * A2 * !Y)	0.00941	0.03140	0.36613
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00832	0.04395	0.58043
	(A1 * A2 * !Y)	0.01654	0.05221	0.58848

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00265	0.00257	0.00223	1.53864
sky130_fd_sc_hs__a21bo_2	0.00282	0.00269	0.00233	2.71065
sky130_fd_sc_hs__a21bo_4	0.00491	0.00523	0.00269	5.10766

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	1181.48000	1931.94000
sky130_fd_sc_hs__a21bo_2	0.00000	1377.87000	2379.24000
sky130_fd_sc_hs__a21bo_4	0.00000	1745.61000	2751.39000

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)	0.05961	0.45531	5.95582
	A2->X (RR)	0.06245	0.43729	5.68005
	B1_N->X (FR)	0.07265	0.57098	7.62802
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.05754	0.36121	5.31257
	A2->X (RR)	0.06054	0.33960	5.02684
	B1_N->X (FR)	0.07581	0.48756	7.24282
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.06061	0.31255	5.56924
	A2->X (RR)	0.06598	0.29796	5.33424
	B1_N->X (FR)	0.08667	0.46122	7.56089

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.07659	0.44633	5.52360
	A2->X (FF)	0.08753	0.47261	5.75990
	B1_N->X (RF)	0.09275	0.32860	3.32096
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.09374	0.42559	5.27676
	A2->X (FF)	0.10667	0.45418	5.52289
	B1_N->X (RF)	0.11635	0.31108	2.86635
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.09157	0.37527	5.16576
	A2->X (FF)	0.09911	0.39672	5.32572
	B1_N->X (RF)	0.10861	0.25370	2.52581

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.06220	0.07692	0.31686
	A1	0.05704	0.07172	0.31178
	A2	0.06324	0.07709	0.31640
	A2	0.05680	0.07062	0.30950
	B1_N	0.02593	0.04855	0.39776
	B1_N	0.02958	0.05221	0.40141
sky130_fd_sc_hs__a21bo_2	A1	0.06638	0.08129	0.32527
	A1	0.06102	0.07593	0.31938
	A2	0.06738	0.08114	0.32308
	A2	0.06070	0.07451	0.31522
	B1_N	0.03034	0.05225	0.40073
	B1_N	0.03425	0.05617	0.40431
sky130_fd_sc_hs__a21bo_4	A1	0.07881	0.11125	0.62295
	A1	0.06943	0.10182	0.61237
	A2	0.08198	0.11165	0.62321
	A2	0.06929	0.09894	0.60963
	B1_N	0.05930	0.08458	0.52513
	B1_N	0.06348	0.08868	0.52927

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.03909	0.05237	0.29418
	A1	0.04426	0.05749	0.29929
	A2	0.03968	0.05261	0.29443
	A2	0.04613	0.05907	0.30154
	B1_N	0.04237	0.06144	0.38393
	B1_N	0.03871	0.05773	0.37949
sky130_fd_sc_hs__a21bo_2	A1	0.05199	0.06118	0.29523
	A1	0.05736	0.06649	0.30107
	A2	0.05421	0.06255	0.29979
	A2	0.06089	0.06905	0.30554
	B1_N	0.05446	0.07044	0.38149
	B1_N	0.05056	0.06647	0.37763
sky130_fd_sc_hs__a21bo_4	A1	0.07281	0.09226	0.57326
	A1	0.08219	0.10164	0.58259
	A2	0.07390	0.09326	0.57848
	A2	0.08659	0.10580	0.59101
	B1_N	0.07422	0.09219	0.47271
	B1_N	0.07002	0.08791	0.46664

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)	0.00357	0.00326	0.00638
	(A2 * !B1_N * X)	-0.00070	-0.00103	0.00210
	(!A2 * B1_N * !X)	0.01687	0.01688	0.01681
	(!A2 * B1_N * !X)	0.01354	0.01351	0.01344
	(!A2 * !B1_N * X)	0.00701	0.00701	0.00702
	(!A2 * !B1_N * X)	0.00278	0.00276	0.00279
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00395	0.00365	0.00676
	(A2 * !B1_N * X)	-0.00058	-0.00090	0.00224
	(!A2 * B1_N * !X)	0.02139	0.02138	0.02133
	(!A2 * B1_N * !X)	0.01792	0.01791	0.01783
	(!A2 * !B1_N * X)	0.00740	0.00741	0.00741
	(!A2 * !B1_N * X)	0.00294	0.00290	0.00294
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00715	0.00661	0.01280
	(A2 * !B1_N * X)	-0.00092	-0.00152	0.00473
	(!A2 * B1_N * !X)	0.02475	0.02475	0.02459
	(!A2 * B1_N * !X)	0.01850	0.01844	0.01827
	(!A2 * !B1_N * X)	0.01405	0.01406	0.01408
	(!A2 * !B1_N * X)	0.00614	0.00609	0.00613

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)	0.00349	0.00336	0.00257
	(A2 * !B1_N * X)	0.00778	0.00769	0.00686
	(!A2 * B1_N * !X)	0.01566	0.01565	0.01568
	(!A2 * B1_N * !X)	0.01899	0.01904	0.01901
	(!A2 * !B1_N * X)	0.00356	0.00354	0.00355
	(!A2 * !B1_N * X)	0.00779	0.00781	0.00777
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00329	0.00316	0.00238
	(A2 * !B1_N * X)	0.00782	0.00773	0.00691
	(!A2 * B1_N * !X)	0.01997	0.01996	0.01998
	(!A2 * B1_N * !X)	0.02345	0.02347	0.02345
	(!A2 * !B1_N * X)	0.00336	0.00334	0.00335
	(!A2 * !B1_N * X)	0.00783	0.00785	0.00781
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00736	0.00711	0.00553
	(A2 * !B1_N * X)	0.01545	0.01527	0.01362
	(!A2 * B1_N * !X)	0.02284	0.02283	0.02288
	(!A2 * B1_N * !X)	0.02913	0.02915	0.02912
	(!A2 * !B1_N * X)	0.00752	0.00748	0.00750
	(!A2 * !B1_N * X)	0.01549	0.01554	0.01546

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)	0.00380	0.00353	0.00663
	(A1 * !B1_N * X)	-0.00057	-0.00085	0.00228
	(!A1 * B1_N * !X)	0.01837	0.01840	0.01835
	(!A1 * B1_N * !X)	0.01404	0.01402	0.01401
	(!A1 * !B1_N * X)	0.00730	0.00728	0.00729
	(!A1 * !B1_N * X)	0.00298	0.00297	0.00299
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00392	0.00360	0.00671
	(A1 * !B1_N * X)	-0.00051	-0.00084	0.00229
	(!A1 * B1_N * !X)	0.02268	0.02270	0.02268
	(!A1 * B1_N * !X)	0.01830	0.01829	0.01829
	(!A1 * !B1_N * X)	0.00736	0.00737	0.00736
	(!A1 * !B1_N * X)	0.00301	0.00297	0.00300
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00783	0.00736	0.01354
	(A1 * !B1_N * X)	-0.00095	-0.00149	0.00476
	(!A1 * B1_N * !X)	0.02801	0.02804	0.02797
	(!A1 * B1_N * !X)	0.01929	0.01926	0.01922
	(!A1 * !B1_N * X)	0.01480	0.01481	0.01483
	(!A1 * !B1_N * X)	0.00615	0.00611	0.00615

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)	0.00322	0.00308	0.00229
	(A1 * !B1_N * X)	0.00756	0.00747	0.00666
	(!A1 * B1_N * !X)	0.01444	0.01426	0.01437
	(!A1 * B1_N * !X)	0.01878	0.01866	0.01869
	(!A1 * !B1_N * X)	0.00329	0.00326	0.00328
	(!A1 * !B1_N * X)	0.00758	0.00762	0.00758
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00333	0.00320	0.00241
	(A1 * !B1_N * X)	0.00776	0.00767	0.00684
	(!A1 * B1_N * !X)	0.01894	0.01877	0.01878
	(!A1 * B1_N * !X)	0.02335	0.02321	0.02314
	(!A1 * !B1_N * X)	0.00340	0.00339	0.00340
	(!A1 * !B1_N * X)	0.00778	0.00778	0.00776
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00664	0.00637	0.00481
	(A1 * !B1_N * X)	0.01542	0.01526	0.01361
	(!A1 * B1_N * !X)	0.02023	0.01984	0.01998
	(!A1 * B1_N * !X)	0.02898	0.02866	0.02868
	(!A1 * !B1_N * X)	0.00678	0.00674	0.00675
	(!A1 * !B1_N * X)	0.01544	0.01547	0.01541

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)	0.02267	0.04120	0.32257
	(A1 * A2 * X)	0.01816	0.03667	0.31805
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.02342	0.04172	0.32510
	(A1 * A2 * X)	0.01869	0.03699	0.32039
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.02517	0.04493	0.35636
	(A1 * A2 * X)	0.01970	0.03944	0.35089

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)	0.00177	0.02221	0.31791
	(A1 * A2 * X)	0.00634	0.02679	0.32244
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00223	0.02253	0.32025
	(A1 * A2 * X)	0.00697	0.02732	0.32497
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00377	0.02491	0.34895
	(A1 * A2 * X)	0.00934	0.03049	0.35442

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00295	0.00279	0.00288	0.82475
sky130_fd_sc_hs__a21oi_2	0.00537	0.00562	0.00429	1.43655
sky130_fd_sc_hs__a21oi_4	0.01092	0.01077	0.00847	2.59285

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	285.39700	591.15900
sky130_fd_sc_hs__a21oi_2	0.00000	564.58400	1180.53000
sky130_fd_sc_hs__a21oi_4	0.00000	1127.41000	2361.53000

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)	0.04336	0.61083	7.75241
	A2->Y (FR)	0.05375	0.64233	8.06654
	B1->Y (FR)	0.04120	0.69718	8.97132
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.04253	0.55367	8.13241
	A2->Y (FR)	0.05512	0.55575	7.98106
	B1->Y (FR)	0.02331	0.58225	8.73634
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.03963	0.45256	7.70091
	A2->Y (FR)	0.05158	0.45237	7.52219
	B1->Y (FR)	0.02142	0.48090	8.34240

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02544	0.36749	4.56077
	A2->Y (RF)	0.02775	0.32460	3.93540
	B1->Y (RF)	0.01460	0.27181	3.42170
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02452	0.31573	4.56938
	A2->Y (RF)	0.02987	0.27276	3.86156
	B1->Y (RF)	0.01863	0.37213	5.57753
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02319	0.26619	4.54612
	A2->Y (RF)	0.02656	0.20650	3.56497
	B1->Y (RF)	0.01824	0.32019	5.61637

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00020	0.00758	0.12912
	A1	0.00764	0.01497	0.13610
	A2	0.00065	0.00815	0.13450
	A2	0.00950	0.01700	0.14306
	B1	-0.00041	0.01104	0.17156
	B1	0.00543	0.01689	0.17713
sky130_fd_sc_hs__a21oi_2	A1	0.00005	0.01407	0.22123
	A1	0.01400	0.02797	0.23399
	A2	0.00181	0.01601	0.23341
	A2	0.01928	0.03341	0.25006
	B1	0.00024	0.01662	0.22647
	B1	0.00928	0.02568	0.23536
sky130_fd_sc_hs__a21oi_4	A1	-0.00094	0.03096	0.44828
	A1	0.02762	0.05953	0.47487
	A2	0.00270	0.03702	0.50442
	A2	0.03744	0.07175	0.53768
	B1	0.00022	0.03340	0.41651
	B1	0.01829	0.05156	0.43388

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.01955	0.02580	0.12410
	A1	0.01212	0.01834	0.11646
	A2	0.02034	0.02631	0.12701
	A2	0.01148	0.01741	0.11781
	B1	0.01326	0.02168	0.14163
	B1	0.00744	0.01583	0.13563
sky130_fd_sc_hs__a21oi_2	A1	0.03809	0.05039	0.22320
	A1	0.02412	0.03637	0.20803
	A2	0.04041	0.05269	0.24055
	A2	0.02298	0.03521	0.22304
	B1	0.02629	0.03868	0.18698
	B1	0.01726	0.02952	0.17663
sky130_fd_sc_hs__a21oi_4	A1	0.07558	0.10188	0.43045
	A1	0.04702	0.07335	0.40110
	A2	0.07820	0.10681	0.49046
	A2	0.04350	0.07211	0.45496
	B1	0.05348	0.07847	0.34613
	B1	0.03541	0.06028	0.32814

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00375	0.00339	0.00607
	(A2 * B1 * !Y)	-0.00091	-0.00127	0.00143
	(!A2 * B1 * !Y)	0.00651	0.00652	0.00651
	(!A2 * B1 * !Y)	0.00197	0.00194	0.00197
	(!A2 * !B1 * Y)	0.00074	0.00073	0.00069
	(!A2 * !B1 * Y)	-0.00280	-0.00280	-0.00288
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00757	0.00680	0.01206
	(A2 * B1 * !Y)	-0.00158	-0.00242	0.00293
	(!A2 * B1 * !Y)	0.01292	0.01292	0.01293
	(!A2 * B1 * !Y)	0.00399	0.00396	0.00401
	(!A2 * !B1 * Y)	0.00147	0.00147	0.00135
	(!A2 * !B1 * Y)	-0.00541	-0.00544	-0.00565
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.01509	0.01361	0.02414
	(A2 * B1 * !Y)	-0.00330	-0.00490	0.00582
	(!A2 * B1 * !Y)	0.02589	0.02591	0.02593
	(!A2 * B1 * !Y)	0.00798	0.00788	0.00799
	(!A2 * !B1 * Y)	0.00281	0.00281	0.00259
	(!A2 * !B1 * Y)	-0.01119	-0.01124	-0.01161

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00244	0.00233	0.00173
	(A2 * B1 * !Y)	0.00711	0.00704	0.00640
	(!A2 * B1 * !Y)	0.00249	0.00247	0.00249
	(!A2 * B1 * !Y)	0.00705	0.00707	0.00703
	(!A2 * !B1 * Y)	-0.00040	-0.00041	-0.00039
	(!A2 * !B1 * Y)	0.00314	0.00319	0.00315
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00486	0.00463	0.00345
	(A2 * B1 * !Y)	0.01401	0.01387	0.01262
	(!A2 * B1 * !Y)	0.00504	0.00501	0.00500
	(!A2 * B1 * !Y)	0.01395	0.01395	0.01394
	(!A2 * !B1 * Y)	-0.00094	-0.00097	-0.00093
	(!A2 * !B1 * Y)	0.00596	0.00608	0.00600
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00960	0.00917	0.00682
	(A2 * B1 * !Y)	0.02805	0.02777	0.02525
	(!A2 * B1 * !Y)	0.00992	0.00985	0.00986
	(!A2 * B1 * !Y)	0.02786	0.02790	0.02782
	(!A2 * !B1 * Y)	-0.00180	-0.00184	-0.00177
	(!A2 * !B1 * Y)	0.01223	0.01247	0.01229

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00375	0.00340	0.00607
	(A1 * B1 * !Y)	-0.00091	-0.00127	0.00142
	(!A1 * B1 * !Y)	0.00652	0.00654	0.00653
	(!A1 * B1 * !Y)	0.00198	0.00195	0.00197
	(!A1 * !B1 * Y)	0.00225	0.00226	0.00224
	(!A1 * !B1 * Y)	-0.00234	-0.00235	-0.00235
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00773	0.00694	0.01221
	(A1 * B1 * !Y)	-0.00158	-0.00243	0.00293
	(!A1 * B1 * !Y)	0.01306	0.01305	0.01307
	(!A1 * B1 * !Y)	0.00400	0.00395	0.00399
	(!A1 * !B1 * Y)	0.00433	0.00435	0.00431
	(!A1 * !B1 * Y)	-0.00483	-0.00484	-0.00484
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.01478	0.01337	0.02396
	(A1 * B1 * !Y)	-0.00370	-0.00517	0.00555
	(!A1 * B1 * !Y)	0.02573	0.02574	0.02573
	(!A1 * B1 * !Y)	0.00769	0.00760	0.00771
	(!A1 * !B1 * Y)	0.00845	0.00857	0.00844
	(!A1 * !B1 * Y)	-0.00963	-0.00973	-0.00970

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00243	0.00231	0.00172
	(A1 * B1 * !Y)	0.00709	0.00703	0.00639
	(!A1 * B1 * !Y)	0.00248	0.00247	0.00248
	(!A1 * B1 * !Y)	0.00705	0.00705	0.00704
	(!A1 * !B1 * Y)	-0.00165	-0.00180	-0.00179
	(!A1 * !B1 * Y)	0.00297	0.00282	0.00277
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00472	0.00451	0.00332
	(A1 * B1 * !Y)	0.01406	0.01390	0.01265
	(!A1 * B1 * !Y)	0.00491	0.00483	0.00485
	(!A1 * B1 * !Y)	0.01396	0.01402	0.01394
	(!A1 * !B1 * Y)	-0.00311	-0.00364	-0.00362
	(!A1 * !B1 * Y)	0.00603	0.00562	0.00549
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00981	0.00939	0.00702
	(A1 * B1 * !Y)	0.02835	0.02805	0.02552
	(!A1 * B1 * !Y)	0.01013	0.01002	0.01007
	(!A1 * B1 * !Y)	0.02813	0.02825	0.02809
	(!A1 * !B1 * Y)	-0.00619	-0.00713	-0.00707
	(!A1 * !B1 * Y)	0.01196	0.01124	0.01099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00248	0.00256	0.00348
	(A1 * A2 * !Y)	-0.00058	-0.00058	0.00035
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00291	0.00295	0.00488
	(A1 * A2 * !Y)	-0.00134	-0.00129	0.00057
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00560	0.00570	0.00970
	(A1 * A2 * !Y)	-0.00234	-0.00225	0.00156

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00394	0.00373	0.00120
	(A1 * A2 * !Y)	0.00709	0.00691	0.00436
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00992	0.00952	0.00446
	(A1 * A2 * !Y)	0.01429	0.01392	0.00884
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.01993	0.01912	0.00899
	(A1 * A2 * !Y)	0.02820	0.02745	0.01728

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00248	0.00256	0.00254	1.71023
sky130_fd_sc_hs__a21o_2	0.00276	0.00268	0.00279	3.21347
sky130_fd_sc_hs__a21o_4	0.00502	0.00484	0.00510	6.16852

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	519.09700	611.40500
sky130_fd_sc_hs__a21o_2	0.00000	716.17300	1064.95000
sky130_fd_sc_hs__a21o_4	0.00000	1441.71000	2166.72000

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)	0.05607	0.43470	5.93097
	A2->X (RR)	0.05971	0.41722	5.65594
	B1->X (RR)	0.03997	0.36590	5.10377
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.05583	0.35279	5.57265
	A2->X (RR)	0.05887	0.33094	5.28659
	B1->X (RR)	0.04017	0.29031	4.80710
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.06537	0.32025	5.92700
	A2->X (RR)	0.06970	0.29880	5.63202
	B1->X (RR)	0.04192	0.23993	4.98727

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.07301	0.45753	5.92039
	A2->X (FF)	0.08527	0.48515	6.16189
	B1->X (FF)	0.07136	0.50302	6.26761
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.08706	0.42515	5.68569
	A2->X (FF)	0.09962	0.45293	5.93812
	B1->X (FF)	0.08717	0.48133	6.15035
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.09143	0.39172	5.77817
	A2->X (FF)	0.10412	0.41994	6.02569
	B1->X (FF)	0.08918	0.44994	6.34532

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.02899	0.04421	0.29184
	A1	0.02258	0.03777	0.28481
	A2	0.03047	0.04474	0.29174
	A2	0.02248	0.03674	0.28355
	B1	0.02450	0.04278	0.32168
	B1	0.01948	0.03774	0.31644
sky130_fd_sc_hs__a21o_2	A1	0.03418	0.04994	0.30987
	A1	0.02720	0.04292	0.30285
	A2	0.03557	0.05028	0.30913
	A2	0.02707	0.04181	0.30027
	B1	0.02895	0.04812	0.33971
	B1	0.02341	0.04261	0.33311
sky130_fd_sc_hs__a21o_4	A1	0.06915	0.09890	0.58516
	A1	0.05577	0.08558	0.56913
	A2	0.07145	0.09839	0.58602
	A2	0.05553	0.08244	0.56920
	B1	0.05673	0.09505	0.65915
	B1	0.04624	0.08449	0.64729

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01570	0.02915	0.27195
	A1	0.02213	0.03551	0.27690
	A2	0.01626	0.02922	0.27177
	A2	0.02425	0.03721	0.27927
	B1	0.01467	0.03152	0.27553
	B1	0.01971	0.03643	0.27852
sky130_fd_sc_hs__a21o_2	A1	0.03072	0.04070	0.28375
	A1	0.03771	0.04767	0.29078
	A2	0.03266	0.04181	0.28967
	A2	0.04116	0.05015	0.29600
	B1	0.02869	0.04411	0.30556
	B1	0.03423	0.04950	0.30995
sky130_fd_sc_hs__a21o_4	A1	0.06512	0.08293	0.54238
	A1	0.07851	0.09618	0.55107
	A2	0.06942	0.08542	0.55239
	A2	0.08534	0.10106	0.56045
	B1	0.06023	0.08916	0.60200
	B1	0.07074	0.09958	0.60709

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00338	0.00308	0.00620
	(A2 * B1 * X)	-0.00069	-0.00100	0.00215
	(!A2 * B1 * X)	0.00684	0.00684	0.00685
	(!A2 * B1 * X)	0.00288	0.00285	0.00288
	(!A2 * !B1 * !X)	0.00535	0.00535	0.00528
	(!A2 * !B1 * !X)	0.00223	0.00222	0.00215
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00380	0.00349	0.00661
	(A2 * B1 * X)	-0.00060	-0.00092	0.00222
	(!A2 * B1 * X)	0.00723	0.00724	0.00724
	(!A2 * B1 * X)	0.00295	0.00292	0.00295
	(!A2 * !B1 * !X)	0.00982	0.00983	0.00977
	(!A2 * !B1 * !X)	0.00654	0.00651	0.00644
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00730	0.00665	0.01284
	(A2 * B1 * X)	-0.00108	-0.00178	0.00449
	(!A2 * B1 * X)	0.01407	0.01407	0.01410
	(!A2 * B1 * X)	0.00593	0.00588	0.00594
	(!A2 * !B1 * !X)	0.01984	0.01983	0.01967
	(!A2 * !B1 * !X)	0.01337	0.01335	0.01312

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00352	0.00339	0.00260
	(A2 * B1 * X)	0.00760	0.00751	0.00668
	(!A2 * B1 * X)	0.00358	0.00356	0.00357
	(!A2 * B1 * X)	0.00755	0.00757	0.00753
	(!A2 * !B1 * !X)	0.00430	0.00429	0.00431
	(!A2 * !B1 * !X)	0.00739	0.00744	0.00741
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00333	0.00320	0.00240
	(A2 * B1 * X)	0.00774	0.00765	0.00682
	(!A2 * B1 * X)	0.00340	0.00338	0.00338
	(!A2 * B1 * X)	0.00769	0.00769	0.00767
	(!A2 * !B1 * !X)	0.00865	0.00864	0.00866
	(!A2 * !B1 * !X)	0.01195	0.01197	0.01195
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00697	0.00672	0.00512
	(A2 * B1 * X)	0.01536	0.01515	0.01353
	(!A2 * B1 * X)	0.00713	0.00707	0.00708
	(!A2 * B1 * X)	0.01529	0.01534	0.01525
	(!A2 * !B1 * !X)	0.01759	0.01757	0.01762
	(!A2 * !B1 * !X)	0.02409	0.02416	0.02409

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00376	0.00349	0.00659
	(A1 * B1 * X)	-0.00069	-0.00098	0.00217
	(!A1 * B1 * X)	0.00724	0.00726	0.00725
	(!A1 * B1 * X)	0.00292	0.00289	0.00291
	(!A1 * !B1 * !X)	0.00695	0.00696	0.00693
	(!A1 * !B1 * !X)	0.00260	0.00258	0.00256
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00389	0.00360	0.00670
	(A1 * B1 * X)	-0.00062	-0.00092	0.00222
	(!A1 * B1 * X)	0.00734	0.00736	0.00735
	(!A1 * B1 * X)	0.00296	0.00293	0.00296
	(!A1 * !B1 * !X)	0.01130	0.01133	0.01129
	(!A1 * !B1 * !X)	0.00689	0.00687	0.00688
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00721	0.00658	0.01276
	(A1 * B1 * X)	-0.00111	-0.00177	0.00448
	(!A1 * B1 * X)	0.01402	0.01403	0.01404
	(!A1 * B1 * X)	0.00596	0.00591	0.00596
	(!A1 * !B1 * !X)	0.02232	0.02237	0.02228
	(!A1 * !B1 * !X)	0.01418	0.01413	0.01412

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00311	0.00300	0.00220
	(A1 * B1 * X)	0.00755	0.00744	0.00664
	(!A1 * B1 * X)	0.00318	0.00316	0.00317
	(!A1 * B1 * X)	0.00751	0.00754	0.00750
	(!A1 * !B1 * !X)	0.00298	0.00280	0.00289
	(!A1 * !B1 * !X)	0.00735	0.00722	0.00724
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00322	0.00309	0.00229
	(A1 * B1 * X)	0.00772	0.00763	0.00681
	(!A1 * B1 * X)	0.00329	0.00328	0.00329
	(!A1 * B1 * X)	0.00769	0.00769	0.00767
	(!A1 * !B1 * !X)	0.00744	0.00728	0.00728
	(!A1 * !B1 * !X)	0.01188	0.01174	0.01167
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00701	0.00675	0.00518
	(A1 * B1 * X)	0.01535	0.01515	0.01351
	(!A1 * B1 * X)	0.00720	0.00715	0.00716
	(!A1 * B1 * X)	0.01526	0.01532	0.01524
	(!A1 * !B1 * !X)	0.01580	0.01538	0.01548
	(!A1 * !B1 * !X)	0.02395	0.02364	0.02360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00220	0.00226	0.00317
	(A1 * A2 * X)	-0.00050	-0.00049	0.00043
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00263	0.00271	0.00358
	(A1 * A2 * X)	-0.00034	-0.00034	0.00055
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00467	0.00480	0.00660
	(A1 * A2 * X)	-0.00086	-0.00086	0.00097

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00439	0.00418	0.00146
	(A1 * A2 * X)	0.00718	0.00697	0.00424
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00419	0.00397	0.00126
	(A1 * A2 * X)	0.00727	0.00706	0.00433
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00892	0.00849	0.00305
	(A1 * A2 * X)	0.01461	0.01422	0.00876

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00284	0.00282	0.00289	0.00300	0.00297	0.56036
sky130_fd_sc_hs__a221oi_2	0.00600	0.00547	0.00590	0.00542	0.00548	0.90525
sky130_fd_sc_hs__a221oi_4	0.01107	0.01112	0.01098	0.01078	0.01085	1.53427

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	278.42400	588.10600
sky130_fd_sc_hs__a221oi_2	0.00000	554.37000	1171.30000
sky130_fd_sc_hs__a221oi_4	0.00000	1102.70000	2338.36000

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)	0.11035	0.73291	7.74810
	A2->Y (FR)	0.12322	0.75025	7.85828
	B1->Y (FR)	0.09402	0.76545	8.38965
	B2->Y (FR)	0.10884	0.79055	8.54071
	C1->Y (FR)	0.08105	0.81720	9.15659
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.10454	0.59950	7.14889
	A2->Y (FR)	0.13337	0.66425	7.77547
	B1->Y (FR)	0.09270	0.66154	8.16285
	B2->Y (FR)	0.11505	0.70303	8.46683
	C1->Y (FR)	0.08124	0.73248	9.16284
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.11984	0.53948	7.19337
	A2->Y (FR)	0.14345	0.57461	7.45851
	B1->Y (FR)	0.09809	0.56749	7.77566
	B2->Y (FR)	0.12403	0.61473	8.15794
	C1->Y (FR)	0.08904	0.66816	9.20672

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.03130	0.32856	3.31466
	A2->Y (RF)	0.03404	0.28736	2.76310
	B1->Y (RF)	0.03014	0.31962	3.35077
	B2->Y (RF)	0.03376	0.28115	2.80260
	C1->Y (RF)	0.01776	0.23025	2.38051
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02767	0.26219	2.95833
	A2->Y (RF)	0.03255	0.22856	2.43487
	B1->Y (RF)	0.02627	0.24293	2.86225
	B2->Y (RF)	0.03010	0.21119	2.37260
	C1->Y (RF)	0.01537	0.16749	2.00833
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03011	0.22964	2.92342
	A2->Y (RF)	0.03396	0.17268	2.07856
	B1->Y (RF)	0.03050	0.21411	2.91334
	B2->Y (RF)	0.03446	0.16061	2.05067
	C1->Y (RF)	0.01403	0.10612	1.56242

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00190	0.00768	0.14218
	A1	0.01295	0.01871	0.15310
	A2	0.00221	0.00801	0.14797
	A2	0.01484	0.02065	0.16026
	B1	0.00192	0.00871	0.13240
	B1	0.00981	0.01658	0.13998
	B2	0.00238	0.00911	0.13372
	B2	0.01182	0.01852	0.14300
	C1	0.00133	0.01172	0.16736
	C1	0.00779	0.01817	0.17371
sky130_fd_sc_hs__a221oi_2	A1	0.00165	0.01468	0.28245
	A1	0.02422	0.03722	0.30432
	A2	0.00362	0.01567	0.27365
	A2	0.02850	0.04052	0.29809
	B1	0.00177	0.01611	0.25444
	B1	0.01776	0.03210	0.27021
	B2	0.00323	0.01769	0.26246
	B2	0.02169	0.03608	0.28024
	C1	0.00079	0.02218	0.31678
	C1	0.01330	0.03465	0.32927

sky130_fd_sc_hs__a221oi_4	**A1**	0.00258	0.02565	0.48559
	A1	0.04714	0.07026	0.52870
	A2	0.00560	0.02938	0.51445
	A2	0.05613	0.07979	0.56415
	B1	0.00237	0.02917	0.44526
	B1	0.03466	0.06143	0.47577
	B2	0.00563	0.03211	0.45194
	B2	0.04399	0.07033	0.48813
	C1	0.00038	0.04082	0.57153
	C1	0.02508	0.06557	0.59597

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.02521	0.03077	0.14307
	A1	0.01417	0.01968	0.13204
	A2	0.02617	0.03146	0.14756
	A2	0.01356	0.01881	0.13487
	B1	0.01890	0.02484	0.13055
	B1	0.01104	0.01697	0.12237
	B2	0.01984	0.02546	0.13138
	B2	0.01043	0.01603	0.12199
	C1	0.01288	0.02095	0.14484
	C1	0.00645	0.01448	0.13841

sky130_fd_sc_hs__a221oi_2	**A1**	0.04780	0.05997	0.28648
	A1	0.02523	0.03741	0.26378
	A2	0.04950	0.06031	0.27848
	A2	0.02462	0.03541	0.25337
	B1	0.03593	0.04894	0.25649
	B1	0.01997	0.03295	0.24025
	B2	0.03740	0.04952	0.25591
	B2	0.01897	0.03106	0.23729
	C1	0.02392	0.04116	0.28228
	C1	0.01142	0.02859	0.26974
sky130_fd_sc_hs__a221oi_4	**A1**	0.09687	0.11912	0.51825
	A1	0.05230	0.07460	0.47313
	A2	0.10017	0.12329	0.55802
	A2	0.04967	0.07264	0.50753
	B1	0.07335	0.09884	0.47719
	B1	0.04118	0.06652	0.44511
	B2	0.07702	0.10222	0.49955
	B2	0.03873	0.06382	0.46093
	C1	0.04742	0.08184	0.52859
	C1	0.02274	0.05703	0.50401

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)**	0.00288	0.00260	0.00267
	(A2 * B1 * B2 * C1 * !Y)	-0.00161	-0.00195	-0.00180
	(A2 * B1 * B2 * !C1 * !Y)	0.00412	0.00374	0.00661
	(A2 * B1 * B2 * !C1 * !Y)	-0.00053	-0.00093	0.00203
	(A2 * B1 * !B2 * C1 * !Y)	0.00418	0.00379	0.00602
	(A2 * B1 * !B2 * C1 * !Y)	-0.00054	-0.00097	0.00143
	(A2 * !B1 * C1 * !Y)	0.00420	0.00380	0.00602
	(A2 * !B1 * C1 * !Y)	-0.00052	-0.00097	0.00143
	(!A2 * B1 * B2 * C1 * !Y)	0.00264	0.00266	0.00265
	(!A2 * B1 * B2 * C1 * !Y)	-0.00178	-0.00180	-0.00179
	(!A2 * B1 * B2 * !C1 * !Y)	0.00702	0.00702	0.00703
	(!A2 * B1 * B2 * !C1 * !Y)	0.00260	0.00257	0.00259
	(!A2 * B1 * !B2 * C1 * !Y)	0.00635	0.00637	0.00636
	(!A2 * B1 * !B2 * C1 * !Y)	0.00193	0.00191	0.00193
	(!A2 * B1 * !B2 * !C1 * Y)	0.00083	0.00083	0.00078
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00267
	(!A2 * !B1 * C1 * !Y)	0.00635	0.00637	0.00637
	(!A2 * !B1 * C1 * !Y)	0.00194	0.00191	0.00194
	(!A2 * !B1 * !C1 * Y)	0.00085	0.00085	0.00080
	(!A2 * !B1 * !C1 * Y)	-0.00258	-0.00260	-0.00265

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00601	0.00539	0.00558
	(A2 * B1 * B2 * C1 * !Y)	-0.00351	-0.00418	-0.00388
	(A2 * B1 * B2 * !C1 * !Y)	0.00835	0.00761	0.01342
	(A2 * B1 * B2 * !C1 * !Y)	-0.00149	-0.00229	0.00372
	(A2 * B1 * !B2 * C1 * !Y)	0.00850	0.00770	0.01222
	(A2 * B1 * !B2 * C1 * !Y)	-0.00146	-0.00230	0.00251
	(A2 * !B1 * C1 * !Y)	0.00851	0.00771	0.01225
	(A2 * !B1 * C1 * !Y)	-0.00145	-0.00229	0.00254
	(!A2 * B1 * B2 * C1 * !Y)	0.00551	0.00553	0.00551
	(!A2 * B1 * B2 * C1 * !Y)	-0.00385	-0.00388	-0.00387
	(!A2 * B1 * B2 * !C1 * !Y)	0.01420	0.01419	0.01422
	(!A2 * B1 * B2 * !C1 * !Y)	0.00485	0.00480	0.00485
	(!A2 * B1 * !B2 * C1 * !Y)	0.01285	0.01285	0.01289
	(!A2 * B1 * !B2 * C1 * !Y)	0.00350	0.00348	0.00351
	(!A2 * B1 * !B2 * !C1 * Y)	0.00183	0.00183	0.00172
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00564	-0.00567	-0.00585
	(!A2 * !B1 * C1 * !Y)	0.01289	0.01290	0.01292
	(!A2 * !B1 * C1 * !Y)	0.00353	0.00350	0.00354
	(!A2 * !B1 * !C1 * Y)	0.00186	0.00186	0.00175
	(!A2 * !B1 * !C1 * Y)	-0.00560	-0.00563	-0.00581

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.01205	0.01075	0.01109
	(A2 * B1 * B2 * C1 * !Y)	-0.00634	-0.00775	-0.00717
	(A2 * B1 * B2 * !C1 * !Y)	0.01683	0.01524	0.02675
	(A2 * B1 * B2 * !C1 * !Y)	-0.00224	-0.00397	0.00798
	(A2 * B1 * !B2 * C1 * !Y)	0.01698	0.01520	0.02402
	(A2 * B1 * !B2 * C1 * !Y)	-0.00232	-0.00425	0.00524
	(A2 * !B1 * C1 * !Y)	0.01706	0.01520	0.02408
	(A2 * !B1 * C1 * !Y)	-0.00225	-0.00424	0.00529
	(!A2 * B1 * B2 * C1 * !Y)	0.01099	0.01107	0.01097
	(!A2 * B1 * B2 * C1 * !Y)	-0.00705	-0.00715	-0.00712
	(!A2 * B1 * B2 * !C1 * !Y)	0.02841	0.02837	0.02842
	(!A2 * B1 * B2 * !C1 * !Y)	0.01028	0.01018	0.01031
	(!A2 * B1 * !B2 * C1 * !Y)	0.02532	0.02532	0.02535
	(!A2 * B1 * !B2 * C1 * !Y)	0.00718	0.00714	0.00724
	(!A2 * B1 * !B2 * !C1 * Y)	0.00336	0.00336	0.00315
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01085	-0.01090	-0.01125
	(!A2 * !B1 * C1 * !Y)	0.02538	0.02537	0.02541
	(!A2 * !B1 * C1 * !Y)	0.00724	0.00719	0.00730
	(!A2 * !B1 * !C1 * Y)	0.00344	0.00344	0.00322
	(!A2 * !B1 * !C1 * Y)	-0.01077	-0.01083	-0.01117

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)**	-0.00123	-0.00125	-0.00128
	(A2 * B1 * B2 * C1 * !Y)	0.00326	0.00327	0.00322
	(A2 * B1 * B2 * !C1 * !Y)	0.00296	0.00283	0.00211
	(A2 * B1 * B2 * !C1 * !Y)	0.00761	0.00754	0.00677
	(A2 * B1 * !B2 * C1 * !Y)	0.00249	0.00239	0.00175
	(A2 * B1 * !B2 * C1 * !Y)	0.00716	0.00709	0.00644
	(A2 * !B1 * C1 * !Y)	0.00249	0.00239	0.00176
	(A2 * !B1 * C1 * !Y)	0.00717	0.00710	0.00645
	(!A2 * B1 * B2 * C1 * !Y)	-0.00118	-0.00119	-0.00117
	(!A2 * B1 * B2 * C1 * !Y)	0.00326	0.00329	0.00326
	(!A2 * B1 * B2 * !C1 * !Y)	0.00320	0.00318	0.00320
	(!A2 * B1 * B2 * !C1 * !Y)	0.00763	0.00767	0.00762
	(!A2 * B1 * !B2 * C1 * !Y)	0.00254	0.00252	0.00254
	(!A2 * B1 * !B2 * C1 * !Y)	0.00697	0.00700	0.00697
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00032	-0.00032	-0.00031
	(!A2 * B1 * !B2 * !C1 * Y)	0.00311	0.00313	0.00312
	(!A2 * !B1 * C1 * !Y)	0.00254	0.00252	0.00254
	(!A2 * !B1 * C1 * !Y)	0.00698	0.00701	0.00697
	(!A2 * !B1 * !C1 * Y)	-0.00030	-0.00031	-0.00029
	(!A2 * !B1 * !C1 * Y)	0.00312	0.00315	0.00313

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00272	-0.00274	-0.00281
	(A2 * B1 * B2 * C1 * !Y)	0.00684	0.00682	0.00672
	(A2 * B1 * B2 * !C1 * !Y)	0.00563	0.00538	0.00395
	(A2 * B1 * B2 * !C1 * !Y)	0.01548	0.01532	0.01380
	(A2 * B1 * !B2 * C1 * !Y)	0.00467	0.00446	0.00322
	(A2 * B1 * !B2 * C1 * !Y)	0.01456	0.01444	0.01312
	(A2 * !B1 * C1 * !Y)	0.00471	0.00449	0.00324
	(A2 * !B1 * C1 * !Y)	0.01460	0.01447	0.01315
	(!A2 * B1 * B2 * C1 * !Y)	-0.00258	-0.00263	-0.00258
	(!A2 * B1 * B2 * C1 * !Y)	0.00681	0.00687	0.00681
	(!A2 * B1 * B2 * !C1 * !Y)	0.00614	0.00610	0.00609
	(!A2 * B1 * B2 * !C1 * !Y)	0.01552	0.01555	0.01549
	(!A2 * B1 * !B2 * C1 * !Y)	0.00480	0.00474	0.00476
	(!A2 * B1 * !B2 * C1 * !Y)	0.01418	0.01425	0.01416
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00076	-0.00079	-0.00076
	(!A2 * B1 * !B2 * !C1 * Y)	0.00670	0.00683	0.00674
	(!A2 * !B1 * C1 * !Y)	0.00483	0.00480	0.00480
	(!A2 * !B1 * C1 * !Y)	0.01421	0.01422	0.01419
	(!A2 * !B1 * !C1 * Y)	-0.00073	-0.00076	-0.00072
	(!A2 * !B1 * !C1 * Y)	0.00673	0.00686	0.00678

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00538	-0.00548	-0.00556
	(A2 * B1 * B2 * C1 * !Y)	0.01301	0.01309	0.01284
	(A2 * B1 * B2 * !C1 * !Y)	0.01128	0.01076	0.00789
	(A2 * B1 * B2 * !C1 * !Y)	0.03032	0.02999	0.02697
	(A2 * B1 * !B2 * C1 * !Y)	0.00942	0.00901	0.00656
	(A2 * B1 * !B2 * C1 * !Y)	0.02860	0.02832	0.02576
	(A2 * !B1 * C1 * !Y)	0.00950	0.00907	0.00661
	(A2 * !B1 * C1 * !Y)	0.02867	0.02839	0.02581
	(!A2 * B1 * B2 * C1 * !Y)	-0.00515	-0.00518	-0.00510
	(!A2 * B1 * B2 * C1 * !Y)	0.01297	0.01295	0.01301
	(!A2 * B1 * B2 * !C1 * !Y)	0.01224	0.01216	0.01214
	(!A2 * B1 * B2 * !C1 * !Y)	0.03034	0.03037	0.03027
	(!A2 * B1 * !B2 * C1 * !Y)	0.00973	0.00964	0.00967
	(!A2 * B1 * !B2 * C1 * !Y)	0.02785	0.02795	0.02780
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00125	-0.00131	-0.00123
	(!A2 * B1 * !B2 * !C1 * Y)	0.01293	0.01319	0.01303
	(!A2 * !B1 * C1 * !Y)	0.00980	0.00973	0.00973
	(!A2 * !B1 * C1 * !Y)	0.02790	0.02794	0.02786
	(!A2 * !B1 * !C1 * Y)	-0.00120	-0.00125	-0.00118
	(!A2 * !B1 * !C1 * Y)	0.01299	0.01325	0.01309

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)**	0.00302	0.00269	0.00279
	(A1 * B1 * B2 * C1 * !Y)	-0.00165	-0.00198	-0.00184
	(A1 * B1 * B2 * !C1 * !Y)	0.00427	0.00387	0.00674
	(A1 * B1 * B2 * !C1 * !Y)	-0.00056	-0.00097	0.00198
	(A1 * B1 * !B2 * C1 * !Y)	0.00432	0.00393	0.00614
	(A1 * B1 * !B2 * C1 * !Y)	-0.00056	-0.00101	0.00138
	(A1 * !B1 * C1 * !Y)	0.00433	0.00393	0.00614
	(A1 * !B1 * C1 * !Y)	-0.00056	-0.00101	0.00138
	(!A1 * B1 * B2 * !Y)	0.00277	0.00279	0.00277
	(!A1 * B1 * B2 * !Y)	-0.00182	-0.00185	-0.00183
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00649	0.00649	0.00649
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00189	0.00187	0.00189
	(!A1 * B1 * !B2 * !C1 * Y)	0.00236	0.00237	0.00234
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00228	-0.00229	-0.00229
	(!A1 * !B1 * !C1 * Y)	0.00238	0.00239	0.00236
	(!A1 * !B1 * !C1 * Y)	-0.00226	-0.00227	-0.00227

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00586	0.00520	0.00538
	(A1 * B1 * B2 * C1 * !Y)	-0.00311	-0.00382	-0.00353
	(A1 * B1 * B2 * !C1 * !Y)	0.00824	0.00741	0.01319
	(A1 * B1 * B2 * !C1 * !Y)	-0.00106	-0.00193	0.00405
	(A1 * B1 * !B2 * C1 * !Y)	0.00839	0.00752	0.01200
	(A1 * B1 * !B2 * C1 * !Y)	-0.00104	-0.00194	0.00285
	(A1 * !B1 * C1 * !Y)	0.00840	0.00753	0.01203
	(A1 * !B1 * C1 * !Y)	-0.00103	-0.00193	0.00287
	(!A1 * B1 * B2 * !Y)	0.00533	0.00535	0.00532
	(!A1 * B1 * B2 * !Y)	-0.00350	-0.00352	-0.00350
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01270	0.01271	0.01271
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00387	0.00386	0.00388
	(!A1 * B1 * !B2 * !C1 * Y)	0.00433	0.00436	0.00432
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00455	-0.00457	-0.00456
	(!A1 * !B1 * !C1 * Y)	0.00437	0.00439	0.00435
	(!A1 * !B1 * !C1 * Y)	-0.00452	-0.00453	-0.00453

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.01217	0.01090	0.01123
	(A1 * B1 * B2 * C1 * !Y)	-0.00640	-0.00774	-0.00717
	(A1 * B1 * B2 * !C1 * !Y)	0.01691	0.01539	0.02687
	(A1 * B1 * B2 * !C1 * !Y)	-0.00234	-0.00396	0.00796
	(A1 * B1 * !B2 * C1 * !Y)	0.01704	0.01530	0.02410
	(A1 * B1 * !B2 * C1 * !Y)	-0.00243	-0.00429	0.00517
	(A1 * !B1 * C1 * !Y)	0.01710	0.01531	0.02414
	(A1 * !B1 * C1 * !Y)	-0.00243	-0.00429	0.00521
	(!A1 * B1 * B2 * !Y)	0.01115	0.01123	0.01111
	(!A1 * B1 * B2 * !Y)	-0.00706	-0.00714	-0.00712
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.02541	0.02547	0.02546
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00719	0.00709	0.00719
	(!A1 * B1 * !B2 * !C1 * Y)	0.00869	0.00878	0.00867
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00966	-0.00973	-0.00971
	(!A1 * !B1 * !C1 * Y)	0.00876	0.00885	0.00874
	(!A1 * !B1 * !C1 * Y)	-0.00959	-0.00967	-0.00964

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

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

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00135	-0.00137	-0.00141
	(A1 * B1 * B2 * C1 * !Y)	0.00331	0.00332	0.00327
	(A1 * B1 * B2 * !C1 * !Y)	0.00284	0.00271	0.00198
	(A1 * B1 * B2 * !C1 * !Y)	0.00765	0.00758	0.00681
	(A1 * B1 * !B2 * C1 * !Y)	0.00237	0.00226	0.00163
	(A1 * B1 * !B2 * C1 * !Y)	0.00720	0.00714	0.00649
	(A1 * !B1 * C1 * !Y)	0.00236	0.00226	0.00163
	(A1 * !B1 * C1 * !Y)	0.00722	0.00714	0.00649
	(!A1 * B1 * B2 * !Y)	-0.00131	-0.00131	-0.00129
	(!A1 * B1 * B2 * !Y)	0.00331	0.00332	0.00331
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00241	0.00240	0.00242
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00703	0.00703	0.00701
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00158	-0.00173	-0.00172
	(!A1 * B1 * !B2 * !C1 * Y)	0.00308	0.00293	0.00288
	(!A1 * !B1 * !C1 * Y)	-0.00156	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * Y)	0.00309	0.00294	0.00290

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00251	-0.00255	-0.00262
	(A1 * B1 * B2 * C1 * !Y)	0.00645	0.00646	0.00635
	(A1 * B1 * B2 * !C1 * !Y)	0.00579	0.00554	0.00412
	(A1 * B1 * B2 * !C1 * !Y)	0.01507	0.01490	0.01341
	(A1 * B1 * !B2 * C1 * !Y)	0.00483	0.00464	0.00339
	(A1 * B1 * !B2 * C1 * !Y)	0.01416	0.01400	0.01274
	(A1 * !B1 * C1 * !Y)	0.00486	0.00466	0.00342
	(A1 * !B1 * C1 * !Y)	0.01420	0.01405	0.01277
	(!A1 * B1 * B2 * !Y)	-0.00238	-0.00243	-0.00239
	(!A1 * B1 * B2 * !Y)	0.00642	0.00650	0.00644
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00500	0.00494	0.00497
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01380	0.01387	0.01380
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00266	-0.00310	-0.00309
	(!A1 * B1 * !B2 * !C1 * Y)	0.00621	0.00588	0.00575
	(!A1 * !B1 * !C1 * Y)	-0.00262	-0.00307	-0.00306
	(!A1 * !B1 * !C1 * Y)	0.00624	0.00591	0.00579

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00554	-0.00560	-0.00569
	(A1 * B1 * B2 * C1 * !Y)	0.01304	0.01303	0.01284
	(A1 * B1 * B2 * !C1 * !Y)	0.01108	0.01057	0.00771
	(A1 * B1 * B2 * !C1 * !Y)	0.03032	0.02994	0.02693
	(A1 * B1 * !B2 * C1 * !Y)	0.00930	0.00890	0.00645
	(A1 * B1 * !B2 * C1 * !Y)	0.02866	0.02835	0.02579
	(A1 * !B1 * C1 * !Y)	0.00935	0.00895	0.00649
	(A1 * !B1 * C1 * !Y)	0.02871	0.02840	0.02583
	(!A1 * B1 * B2 * !Y)	-0.00528	-0.00537	-0.00524
	(!A1 * B1 * B2 * !Y)	0.01295	0.01309	0.01301
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00965	0.00955	0.00960
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.02790	0.02802	0.02787
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00541	-0.00627	-0.00622
	(!A1 * B1 * !B2 * !C1 * Y)	0.01296	0.01232	0.01208
	(!A1 * !B1 * !C1 * Y)	-0.00535	-0.00622	-0.00615
	(!A1 * !B1 * !C1 * Y)	0.01303	0.01238	0.01215

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)**	0.00305	0.00307	0.00328
	(A1 * A2 * B2 * C1 * !Y)	-0.00096	-0.00097	-0.00070
	(A1 * A2 * B2 * !C1 * !Y)	0.00272	0.00275	0.00333
	(A1 * A2 * B2 * !C1 * !Y)	-0.00025	-0.00023	0.00036
	(A1 * A2 * !B2 * C1 * !Y)	0.00349	0.00350	0.00323
	(A1 * A2 * !B2 * C1 * !Y)	-0.00044	-0.00045	-0.00060
	(A1 * A2 * !B2 * !C1 * !Y)	0.00711	0.00713	0.00711
	(A1 * A2 * !B2 * !C1 * !Y)	0.00387	0.00385	0.00386
	(A1 * !A2 * B2 * C1 * !Y)	0.00381	0.00340	0.00598
	(A1 * !A2 * B2 * C1 * !Y)	-0.00078	-0.00123	0.00141
	(A1 * !A2 * !B2 * C1 * !Y)	0.00646	0.00643	0.00643
	(A1 * !A2 * !B2 * C1 * !Y)	0.00199	0.00192	0.00194
	(A1 * !A2 * !B2 * !C1 * Y)	0.00082	0.00082	0.00077
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00266	-0.00267	-0.00274
	(!A1 * B2 * C1 * !Y)	0.00379	0.00339	0.00599
	(!A1 * B2 * C1 * !Y)	-0.00081	-0.00123	0.00141
	(!A1 * !B2 * C1 * !Y)	0.00645	0.00643	0.00643
	(!A1 * !B2 * C1 * !Y)	0.00199	0.00192	0.00194
	(!A1 * !B2 * !C1 * Y)	0.00084	0.00084	0.00079
	(!A1 * !B2 * !C1 * Y)	-0.00264	-0.00265	-0.00272

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00613	0.00621	0.00661
	(A1 * A2 * B2 * C1 * !Y)	-0.00199	-0.00195	-0.00141
	(A1 * A2 * B2 * !C1 * !Y)	0.00543	0.00552	0.00702
	(A1 * A2 * B2 * !C1 * !Y)	-0.00059	-0.00058	0.00094
	(A1 * A2 * !B2 * C1 * !Y)	0.00699	0.00702	0.00650
	(A1 * A2 * !B2 * C1 * !Y)	-0.00093	-0.00096	-0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	0.01443	0.01446	0.01443
	(A1 * A2 * !B2 * !C1 * !Y)	0.00775	0.00772	0.00773
	(A1 * !A2 * B2 * C1 * !Y)	0.00781	0.00686	0.01199
	(A1 * !A2 * B2 * C1 * !Y)	-0.00165	-0.00262	0.00264
	(A1 * !A2 * !B2 * C1 * !Y)	0.01303	0.01286	0.01285
	(A1 * !A2 * !B2 * C1 * !Y)	0.00387	0.00361	0.00367
	(A1 * !A2 * !B2 * !C1 * Y)	0.00168	0.00168	0.00158
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00557	-0.00559	-0.00574
	(!A1 * B2 * C1 * !Y)	0.00775	0.00685	0.01200
	(!A1 * B2 * C1 * !Y)	-0.00161	-0.00263	0.00264
	(!A1 * !B2 * C1 * !Y)	0.01302	0.01285	0.01286
	(!A1 * !B2 * C1 * !Y)	0.00386	0.00364	0.00368
	(!A1 * !B2 * !C1 * Y)	0.00172	0.00171	0.00161
	(!A1 * !B2 * !C1 * Y)	-0.00554	-0.00556	-0.00570

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.01217	0.01222	0.01314
	(A1 * A2 * B2 * C1 * !Y)	-0.00372	-0.00372	-0.00254
	(A1 * A2 * B2 * !C1 * !Y)	0.01100	0.01123	0.01383
	(A1 * A2 * B2 * !C1 * !Y)	-0.00136	-0.00138	0.00144
	(A1 * A2 * !B2 * C1 * !Y)	0.01375	0.01384	0.01286
	(A1 * A2 * !B2 * C1 * !Y)	-0.00160	-0.00169	-0.00214
	(A1 * A2 * !B2 * !C1 * !Y)	0.02850	0.02854	0.02849
	(A1 * A2 * !B2 * !C1 * !Y)	0.01547	0.01544	0.01549
	(A1 * !A2 * B2 * C1 * !Y)	0.01527	0.01352	0.02376
	(A1 * !A2 * B2 * C1 * !Y)	-0.00333	-0.00514	0.00538
	(A1 * !A2 * !B2 * C1 * !Y)	0.02581	0.02543	0.02544
	(A1 * !A2 * !B2 * C1 * !Y)	0.00783	0.00738	0.00748
	(A1 * !A2 * !B2 * !C1 * Y)	0.00335	0.00335	0.00312
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01072	-0.01076	-0.01109
	(!A1 * B2 * C1 * !Y)	0.01520	0.01350	0.02377
	(!A1 * B2 * C1 * !Y)	-0.00339	-0.00516	0.00539
	(!A1 * !B2 * C1 * !Y)	0.02578	0.02544	0.02545
	(!A1 * !B2 * C1 * !Y)	0.00779	0.00739	0.00749
	(!A1 * !B2 * !C1 * Y)	0.00344	0.00343	0.00320
	(!A1 * !B2 * !C1 * Y)	-0.01064	-0.01068	-0.01102

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)**	-0.00193	-0.00194	-0.00168
	(A1 * A2 * B2 * C1 * !Y)	0.00214	0.00217	0.00225
	(A1 * A2 * B2 * !C1 * !Y)	0.00351	0.00333	0.00108
	(A1 * A2 * B2 * !C1 * !Y)	0.00656	0.00640	0.00415
	(A1 * A2 * !B2 * C1 * !Y)	-0.00191	-0.00191	-0.00162
	(A1 * A2 * !B2 * C1 * !Y)	0.00205	0.00208	0.00216
	(A1 * A2 * !B2 * !C1 * !Y)	0.00256	0.00253	0.00243
	(A1 * A2 * !B2 * !C1 * !Y)	0.00581	0.00581	0.00566
	(A1 * !A2 * B2 * C1 * !Y)	0.00244	0.00233	0.00173
	(A1 * !A2 * B2 * C1 * !Y)	0.00702	0.00695	0.00633
	(A1 * !A2 * !B2 * C1 * !Y)	0.00249	0.00246	0.00248
	(A1 * !A2 * !B2 * C1 * !Y)	0.00698	0.00700	0.00696
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00031	-0.00032	-0.00030
	(A1 * !A2 * !B2 * !C1 * Y)	0.00317	0.00321	0.00318
	(!A1 * B2 * C1 * !Y)	0.00245	0.00233	0.00174
	(!A1 * B2 * C1 * !Y)	0.00703	0.00697	0.00634
	(!A1 * !B2 * C1 * !Y)	0.00249	0.00246	0.00248
	(!A1 * !B2 * C1 * !Y)	0.00698	0.00700	0.00697
	(!A1 * !B2 * !C1 * Y)	-0.00029	-0.00030	-0.00028
	(!A1 * !B2 * !C1 * Y)	0.00319	0.00323	0.00320

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00393	-0.00392	-0.00348
	(A1 * A2 * B2 * C1 * !Y)	0.00435	0.00436	0.00448
	(A1 * A2 * B2 * !C1 * !Y)	0.00659	0.00621	0.00166
	(A1 * A2 * B2 * !C1 * !Y)	0.01280	0.01248	0.00792
	(A1 * A2 * !B2 * C1 * !Y)	-0.00388	-0.00388	-0.00335
	(A1 * A2 * !B2 * C1 * !Y)	0.00417	0.00421	0.00431
	(A1 * A2 * !B2 * !C1 * !Y)	0.00491	0.00484	0.00462
	(A1 * A2 * !B2 * !C1 * !Y)	0.01162	0.01161	0.01130
	(A1 * !A2 * B2 * C1 * !Y)	0.00478	0.00454	0.00335
	(A1 * !A2 * B2 * C1 * !Y)	0.01416	0.01400	0.01276
	(A1 * !A2 * !B2 * C1 * !Y)	0.00488	0.00481	0.00481
	(A1 * !A2 * !B2 * C1 * !Y)	0.01407	0.01407	0.01400
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00063	-0.00066	-0.00062
	(A1 * !A2 * !B2 * !C1 * Y)	0.00658	0.00669	0.00663
	(!A1 * B2 * C1 * !Y)	0.00481	0.00458	0.00339
	(!A1 * B2 * C1 * !Y)	0.01420	0.01404	0.01279
	(!A1 * !B2 * C1 * !Y)	0.00491	0.00485	0.00486
	(!A1 * !B2 * C1 * !Y)	0.01410	0.01411	0.01404
	(!A1 * !B2 * !C1 * Y)	-0.00060	-0.00063	-0.00059
	(!A1 * !B2 * !C1 * Y)	0.00662	0.00673	0.00666

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00775	-0.00775	-0.00681
	(A1 * A2 * B2 * C1 * !Y)	0.00850	0.00855	0.00873
	(A1 * A2 * B2 * !C1 * !Y)	0.01347	0.01273	0.00368
	(A1 * A2 * B2 * !C1 * !Y)	0.02611	0.02547	0.01641
	(A1 * A2 * !B2 * C1 * !Y)	-0.00761	-0.00761	-0.00654
	(A1 * A2 * !B2 * C1 * !Y)	0.00807	0.00815	0.00835
	(A1 * A2 * !B2 * !C1 * !Y)	0.01011	0.01001	0.00953
	(A1 * A2 * !B2 * !C1 * !Y)	0.02312	0.02309	0.02252
	(A1 * !A2 * B2 * C1 * !Y)	0.00947	0.00899	0.00666
	(A1 * !A2 * B2 * C1 * !Y)	0.02795	0.02763	0.02517
	(A1 * !A2 * !B2 * C1 * !Y)	0.00973	0.00963	0.00959
	(A1 * !A2 * !B2 * C1 * !Y)	0.02769	0.02759	0.02756
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00124	-0.00128	-0.00121
	(A1 * !A2 * !B2 * !C1 * Y)	0.01280	0.01299	0.01286
	(!A1 * B2 * C1 * !Y)	0.00952	0.00905	0.00671
	(!A1 * B2 * C1 * !Y)	0.02800	0.02768	0.02522
	(!A1 * !B2 * C1 * !Y)	0.00978	0.00967	0.00964
	(!A1 * !B2 * C1 * !Y)	0.02772	0.02766	0.02761
	(!A1 * !B2 * !C1 * Y)	-0.00119	-0.00123	-0.00116
	(!A1 * !B2 * !C1 * Y)	0.01286	0.01304	0.01292

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)**	0.00313	0.00314	0.00334
	(A1 * A2 * B1 * C1 * !Y)	-0.00101	-0.00102	-0.00075
	(A1 * A2 * B1 * !C1 * !Y)	0.00283	0.00286	0.00343
	(A1 * A2 * B1 * !C1 * !Y)	-0.00029	-0.00027	0.00033
	(A1 * A2 * !B1 * C1 * !Y)	0.00355	0.00357	0.00329
	(A1 * A2 * !B1 * C1 * !Y)	-0.00048	-0.00050	-0.00065
	(A1 * A2 * !B1 * !C1 * !Y)	0.00723	0.00724	0.00723
	(A1 * A2 * !B1 * !C1 * !Y)	0.00385	0.00384	0.00385
	(A1 * !A2 * B1 * C1 * !Y)	0.00392	0.00347	0.00605
	(A1 * !A2 * B1 * C1 * !Y)	-0.00084	-0.00129	0.00134
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00654	0.00649	0.00649
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00192	0.00185	0.00187
	(A1 * !A2 * !B1 * !C1 * Y)	0.00218	0.00220	0.00218
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * B1 * C1 * !Y)	0.00392	0.00347	0.00605
	(!A1 * B1 * C1 * !Y)	-0.00084	-0.00129	0.00134
	(!A1 * !B1 * !C1 * Y)	0.00220	0.00222	0.00220
	(!A1 * !B1 * !C1 * Y)	-0.00244	-0.00246	-0.00246

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00598	0.00607	0.00649
	(A1 * A2 * B1 * C1 * !Y)	-0.00180	-0.00175	-0.00121
	(A1 * A2 * B1 * !C1 * !Y)	0.00525	0.00537	0.00677
	(A1 * A2 * B1 * !C1 * !Y)	-0.00036	-0.00037	0.00109
	(A1 * A2 * !B1 * C1 * !Y)	0.00683	0.00687	0.00638
	(A1 * A2 * !B1 * C1 * !Y)	-0.00076	-0.00078	-0.00102
	(A1 * A2 * !B1 * !C1 * !Y)	0.01407	0.01410	0.01407
	(A1 * A2 * !B1 * !C1 * !Y)	0.00778	0.00776	0.00778
	(A1 * !A2 * B1 * C1 * !Y)	0.00756	0.00673	0.01185
	(A1 * !A2 * B1 * C1 * !Y)	-0.00147	-0.00233	0.00291
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01290	0.01278	0.01275
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00416	0.00395	0.00399
	(A1 * !A2 * !B1 * !C1 * Y)	0.00434	0.00439	0.00433
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00447	-0.00451	-0.00450
	(!A1 * B1 * C1 * !Y)	0.00754	0.00672	0.01186
	(!A1 * B1 * C1 * !Y)	-0.00149	-0.00234	0.00292
	(!A1 * !B1 * !C1 * Y)	0.00437	0.00443	0.00436
	(!A1 * !B1 * !C1 * Y)	-0.00443	-0.00448	-0.00447

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.01217	0.01225	0.01315
	(A1 * A2 * B1 * C1 * !Y)	-0.00370	-0.00374	-0.00255
	(A1 * A2 * B1 * !C1 * !Y)	0.01100	0.01122	0.01382
	(A1 * A2 * B1 * !C1 * !Y)	-0.00141	-0.00141	0.00142
	(A1 * A2 * !B1 * C1 * !Y)	0.01378	0.01386	0.01287
	(A1 * A2 * !B1 * C1 * !Y)	-0.00162	-0.00169	-0.00214
	(A1 * A2 * !B1 * !C1 * !Y)	0.02849	0.02853	0.02850
	(A1 * A2 * !B1 * !C1 * !Y)	0.01550	0.01545	0.01548
	(A1 * !A2 * B1 * C1 * !Y)	0.01527	0.01355	0.02375
	(A1 * !A2 * B1 * C1 * !Y)	-0.00322	-0.00512	0.00535
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.02587	0.02553	0.02548
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00787	0.00743	0.00751
	(A1 * !A2 * !B1 * !C1 * Y)	0.00901	0.00913	0.00901
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00903	-0.00912	-0.00910
	(!A1 * B1 * C1 * !Y)	0.01523	0.01354	0.02376
	(!A1 * B1 * C1 * !Y)	-0.00326	-0.00514	0.00536
	(!A1 * !B1 * !C1 * Y)	0.00908	0.00920	0.00907
	(!A1 * !B1 * !C1 * Y)	-0.00897	-0.00906	-0.00903

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)**	-0.00200	-0.00200	-0.00175
	(A1 * A2 * B1 * C1 * !Y)	0.00220	0.00222	0.00230
	(A1 * A2 * B1 * !C1 * !Y)	0.00340	0.00322	0.00097
	(A1 * A2 * B1 * !C1 * !Y)	0.00658	0.00642	0.00417
	(A1 * A2 * !B1 * C1 * !Y)	-0.00197	-0.00197	-0.00169
	(A1 * A2 * !B1 * C1 * !Y)	0.00209	0.00212	0.00220
	(A1 * A2 * !B1 * !C1 * !Y)	0.00245	0.00242	0.00231
	(A1 * A2 * !B1 * !C1 * !Y)	0.00583	0.00583	0.00568
	(A1 * !A2 * B1 * C1 * !Y)	0.00238	0.00226	0.00166
	(A1 * !A2 * B1 * C1 * !Y)	0.00710	0.00702	0.00640
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00244	0.00240	0.00242
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00704	0.00707	0.00703
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00140	-0.00159	-0.00156
	(A1 * !A2 * !B1 * !C1 * Y)	0.00324	0.00311	0.00307
	(!A1 * B1 * C1 * !Y)	0.00238	0.00226	0.00166
	(!A1 * B1 * C1 * !Y)	0.00710	0.00702	0.00640
	(!A1 * !B1 * !C1 * Y)	-0.00138	-0.00158	-0.00154
	(!A1 * !B1 * !C1 * Y)	0.00326	0.00312	0.00308

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00381	-0.00381	-0.00333
	(A1 * A2 * B1 * C1 * !Y)	0.00411	0.00414	0.00428
	(A1 * A2 * B1 * !C1 * !Y)	0.00690	0.00652	0.00197
	(A1 * A2 * B1 * !C1 * !Y)	0.01271	0.01239	0.00783
	(A1 * A2 * !B1 * C1 * !Y)	-0.00375	-0.00375	-0.00320
	(A1 * A2 * !B1 * C1 * !Y)	0.00395	0.00400	0.00413
	(A1 * A2 * !B1 * !C1 * !Y)	0.00526	0.00519	0.00498
	(A1 * A2 * !B1 * !C1 * !Y)	0.01154	0.01154	0.01125
	(A1 * !A2 * B1 * C1 * !Y)	0.00485	0.00462	0.00344
	(A1 * !A2 * B1 * C1 * !Y)	0.01381	0.01365	0.01243
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00499	0.00491	0.00494
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01374	0.01377	0.01371
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00271	-0.00316	-0.00310
	(A1 * !A2 * !B1 * !C1 * Y)	0.00611	0.00576	0.00568
	(!A1 * B1 * C1 * !Y)	0.00488	0.00465	0.00348
	(!A1 * B1 * C1 * !Y)	0.01385	0.01370	0.01246
	(!A1 * !B1 * !C1 * Y)	-0.00268	-0.00313	-0.00306
	(!A1 * !B1 * !C1 * Y)	0.00614	0.00580	0.00572

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00776	-0.00775	-0.00683
	(A1 * A2 * B1 * C1 * !Y)	0.00850	0.00853	0.00873
	(A1 * A2 * B1 * !C1 * !Y)	0.01347	0.01275	0.00368
	(A1 * A2 * B1 * !C1 * !Y)	0.02612	0.02546	0.01642
	(A1 * A2 * !B1 * C1 * !Y)	-0.00762	-0.00763	-0.00655
	(A1 * A2 * !B1 * C1 * !Y)	0.00806	0.00816	0.00835
	(A1 * A2 * !B1 * !C1 * !Y)	0.01011	0.00997	0.00954
	(A1 * A2 * !B1 * !C1 * !Y)	0.02313	0.02313	0.02254
	(A1 * !A2 * B1 * C1 * !Y)	0.00940	0.00891	0.00659
	(A1 * !A2 * B1 * C1 * !Y)	0.02788	0.02756	0.02511
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00972	0.00953	0.00961
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.02767	0.02772	0.02758
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00566	-0.00663	-0.00653
	(A1 * !A2 * !B1 * !C1 * Y)	0.01245	0.01167	0.01147
	(!A1 * B1 * C1 * !Y)	0.00943	0.00895	0.00663
	(!A1 * B1 * C1 * !Y)	0.02791	0.02760	0.02514
	(!A1 * !B1 * !C1 * Y)	-0.00559	-0.00657	-0.00647
	(!A1 * !B1 * !C1 * Y)	0.01251	0.01173	0.01154

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)	0.00240	0.00242	0.00245
	(A1 * B1 * B2 * !Y)	-0.00091	-0.00091	-0.00087
	(A1 * A2 * B1 * !B2 * !Y)	0.00242	0.00249	0.00286
	(A1 * A2 * B1 * !B2 * !Y)	-0.00009	-0.00009	0.00029
	(A1 * A2 * !B1 * !Y)	0.00242	0.00245	0.00286
	(A1 * A2 * !B1 * !Y)	-0.00009	-0.00008	0.00029
	(!A1 * B1 * B2 * !Y)	0.00247	0.00253	0.00340
	(!A1 * B1 * B2 * !Y)	-0.00076	-0.00075	0.00015
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00453	0.00456	0.00461
	(A1 * B1 * B2 * !Y)	-0.00163	-0.00163	-0.00154
	(A1 * A2 * B1 * !B2 * !Y)	0.00456	0.00462	0.00547
	(A1 * A2 * B1 * !B2 * !Y)	0.00012	0.00014	0.00091
	(A1 * A2 * !B1 * !Y)	0.00456	0.00463	0.00547
	(A1 * A2 * !B1 * !Y)	0.00012	0.00014	0.00091
	(!A1 * B1 * B2 * !Y)	0.00462	0.00476	0.00656
	(!A1 * B1 * B2 * !Y)	-0.00130	-0.00130	0.00054
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00886	0.00898	0.00908
	(A1 * B1 * B2 * !Y)	-0.00288	-0.00292	-0.00274
	(A1 * A2 * B1 * !B2 * !Y)	0.00897	0.00915	0.01089
	(A1 * A2 * B1 * !B2 * !Y)	0.00036	0.00039	0.00201
	(A1 * A2 * !B1 * !Y)	0.00897	0.00914	0.01088
	(A1 * A2 * !B1 * !Y)	0.00036	0.00039	0.00201
	(!A1 * B1 * B2 * !Y)	0.00912	0.00924	0.01332
	(!A1 * B1 * B2 * !Y)	-0.00193	-0.00183	0.00205

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)	-0.00114	-0.00116	-0.00133
	(A1 * B1 * B2 * !Y)	0.00221	0.00222	0.00207
	(A1 * A2 * B1 * !B2 * !Y)	0.00420	0.00407	0.00214
	(A1 * A2 * B1 * !B2 * !Y)	0.00703	0.00692	0.00500
	(A1 * A2 * !B1 * !Y)	0.00420	0.00407	0.00214
	(A1 * A2 * !B1 * !Y)	0.00703	0.00691	0.00500
	(!A1 * B1 * B2 * !Y)	0.00392	0.00373	0.00123
	(!A1 * B1 * B2 * !Y)	0.00720	0.00702	0.00452
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00199	-0.00202	-0.00237
	(A1 * B1 * B2 * !Y)	0.00420	0.00421	0.00393
	(A1 * A2 * B1 * !B2 * !Y)	0.00859	0.00834	0.00442
	(A1 * A2 * B1 * !B2 * !Y)	0.01370	0.01343	0.00955
	(A1 * A2 * !B1 * !Y)	0.00860	0.00834	0.00442
	(A1 * A2 * !B1 * !Y)	0.01371	0.01344	0.00956
	(!A1 * B1 * B2 * !Y)	0.00807	0.00766	0.00270
	(!A1 * B1 * B2 * !Y)	0.01415	0.01379	0.00880
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00397	-0.00403	-0.00462
	(A1 * B1 * B2 * !Y)	0.00814	0.00814	0.00763
	(A1 * A2 * B1 * !B2 * !Y)	0.01713	0.01660	0.00874
	(A1 * A2 * B1 * !B2 * !Y)	0.02715	0.02665	0.01881
	(A1 * A2 * !B1 * !Y)	0.01713	0.01661	0.00875
	(A1 * A2 * !B1 * !Y)	0.02716	0.02665	0.01881
	(!A1 * B1 * B2 * !Y)	0.01584	0.01504	0.00514
	(!A1 * B1 * B2 * !Y)	0.02734	0.02659	0.01661

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00280	0.00266	0.00268	0.00263	1.76974
sky130_fd_sc_hs__a221o_2	0.00279	0.00289	0.00287	0.00290	0.00277	3.16713
sky130_fd_sc_hs__a221o_4	0.00495	0.00500	0.00512	0.00526	0.00505	4.55422

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	455.77900	607.29000
sky130_fd_sc_hs__a221o_2	0.00000	604.74400	1077.79000
sky130_fd_sc_hs__a221o_4	0.00000	1217.17000	2209.71000

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)	0.06836	0.45364	5.77610
	A2->X (RR)	0.07188	0.43071	5.41134
	B1->X (RR)	0.06417	0.42797	5.34301
	B2->X (RR)	0.06762	0.41276	5.13724
	C1->X (RR)	0.04630	0.37374	4.84797
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.07131	0.38373	5.39677
	A2->X (RR)	0.07491	0.35933	5.04953
	B1->X (RR)	0.06765	0.36165	4.98532
	B2->X (RR)	0.07086	0.34378	4.79798
	C1->X (RR)	0.04836	0.30946	4.54774
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.09013	0.37325	5.36562
	A2->X (RR)	0.09464	0.32595	4.76379
	B1->X (RR)	0.07618	0.32130	4.79781
	B2->X (RR)	0.08194	0.29271	4.45678
	C1->X (RR)	0.04594	0.23569	4.01865

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.12804	0.51769	6.16544
	A2->X (FF)	0.13960	0.53919	6.31815
	B1->X (FF)	0.11413	0.54331	6.53899
	B2->X (FF)	0.12312	0.56518	6.67366
	C1->X (FF)	0.08265	0.55734	6.92661
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.16467	0.51697	5.95467
	A2->X (FF)	0.17728	0.54094	6.13025
	B1->X (FF)	0.16645	0.56519	6.46603
	B2->X (FF)	0.16994	0.58213	6.58141
	C1->X (FF)	0.13470	0.58743	6.83510
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.16775	0.43775	4.96572
	A2->X (FF)	0.18355	0.47460	5.33854
	B1->X (FF)	0.17064	0.50150	5.49495
	B2->X (FF)	0.18291	0.53036	5.72946
	C1->X (FF)	0.13118	0.52399	5.92707

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.03508	0.04718	0.28258
	A1	0.02475	0.03685	0.27185
	A2	0.03639	0.04605	0.24921
	A2	0.02466	0.03431	0.23748
	B1	0.03000	0.04212	0.24692
	B1	0.02254	0.03464	0.23948
	B2	0.03127	0.04254	0.24539
	B2	0.02258	0.03385	0.23658
	C1	0.02574	0.04127	0.27810
	C1	0.01955	0.03509	0.27142
sky130_fd_sc_hs__a221o_2	A1	0.04084	0.05218	0.28673
	A1	0.03003	0.04133	0.27572
	A2	0.04228	0.05115	0.25481
	A2	0.02991	0.03880	0.24119
	B1	0.03563	0.04786	0.25316
	B1	0.02751	0.03971	0.24381
	B2	0.03707	0.04819	0.25286
	B2	0.02763	0.03884	0.24218
	C1	0.03037	0.04578	0.28034
	C1	0.02375	0.03917	0.27277

sky130_fd_sc_hs__a221o_4	**A1**	0.08508	0.10723	0.57723
	A1	0.06517	0.08734	0.55702
	A2	0.08730	0.10384	0.51526
	A2	0.06484	0.08133	0.49104
	B1	0.07166	0.09435	0.47799
	B1	0.05741	0.08006	0.46185
	B2	0.07450	0.09478	0.48079
	B2	0.05735	0.07759	0.46247
	C1	0.05756	0.08847	0.53176
	C1	0.04640	0.07731	0.51980

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.01762	0.02634	0.24255
	A1	0.02796	0.03666	0.25289
	A2	0.01797	0.02594	0.23841
	A2	0.02972	0.03767	0.24855
	B1	0.01748	0.02726	0.23726
	B1	0.02494	0.03469	0.24391
	B2	0.01806	0.02775	0.23810
	B2	0.02675	0.03642	0.24630
	C1	0.01598	0.03044	0.27366
	C1	0.02217	0.03662	0.27993

sky130_fd_sc_hs__a221o_2	**A1**	0.03719	0.03974	0.23562
	A1	0.04801	0.05046	0.24474
	A2	0.03834	0.03977	0.23351
	A2	0.05072	0.05215	0.24443
	B1	0.03756	0.04077	0.24587
	B1	0.04569	0.04889	0.25024
	B2	0.03807	0.04165	0.24545
	B2	0.04751	0.05101	0.25500
	C1	0.03431	0.04386	0.27850
	C1	0.04094	0.05033	0.28346
sky130_fd_sc_hs__a221o_4	**A1**	0.06832	0.07247	0.47062
	A1	0.08821	0.09223	0.49051
	A2	0.07228	0.07441	0.48082
	A2	0.09472	0.09664	0.49999
	B1	0.06887	0.07402	0.44363
	B1	0.08311	0.08798	0.45579
	B2	0.07107	0.07603	0.45978
	B2	0.08822	0.09291	0.47367
	C1	0.06268	0.07910	0.50609
	C1	0.07384	0.09024	0.51357

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)**	0.00272	0.00244	0.00249
	(A2 * B1 * B2 * C1 * X)	-0.00149	-0.00180	-0.00167
	(A2 * B1 * B2 * !C1 * X)	0.00386	0.00354	0.00652
	(A2 * B1 * B2 * !C1 * X)	-0.00052	-0.00087	0.00223
	(A2 * B1 * !B2 * C1 * X)	0.00396	0.00365	0.00636
	(A2 * B1 * !B2 * C1 * X)	-0.00044	-0.00082	0.00206
	(A2 * !B1 * C1 * X)	0.00396	0.00365	0.00635
	(A2 * !B1 * C1 * X)	-0.00044	-0.00082	0.00205
	(!A2 * B1 * B2 * C1 * X)	0.00247	0.00248	0.00247
	(!A2 * B1 * B2 * C1 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * !C1 * X)	0.00701	0.00703	0.00702
	(!A2 * B1 * B2 * !C1 * X)	0.00289	0.00286	0.00289
	(!A2 * B1 * !B2 * C1 * X)	0.00688	0.00689	0.00689
	(!A2 * B1 * !B2 * C1 * X)	0.00275	0.00273	0.00276
	(!A2 * B1 * !B2 * !C1 * !X)	0.00552	0.00552	0.00545
	(!A2 * B1 * !B2 * !C1 * !X)	0.00225	0.00224	0.00217
	(!A2 * !B1 * C1 * X)	0.00686	0.00688	0.00688
	(!A2 * !B1 * C1 * X)	0.00274	0.00271	0.00275
	(!A2 * !B1 * !C1 * !X)	0.00556	0.00556	0.00549
	(!A2 * !B1 * !C1 * !X)	0.00229	0.00228	0.00221

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00304	0.00277	0.00282
	(A2 * B1 * B2 * C1 * X)	-0.00137	-0.00168	-0.00155
	(A2 * B1 * B2 * !C1 * X)	0.00418	0.00386	0.00684
	(A2 * B1 * B2 * !C1 * X)	-0.00040	-0.00075	0.00235
	(A2 * B1 * !B2 * C1 * X)	0.00428	0.00397	0.00669
	(A2 * B1 * !B2 * C1 * X)	-0.00032	-0.00070	0.00218
	(A2 * !B1 * C1 * X)	0.00429	0.00397	0.00667
	(A2 * !B1 * C1 * X)	-0.00035	-0.00070	0.00217
	(!A2 * B1 * B2 * C1 * X)	0.00279	0.00281	0.00279
	(!A2 * B1 * B2 * C1 * X)	-0.00154	-0.00156	-0.00154
	(!A2 * B1 * B2 * !C1 * X)	0.00734	0.00734	0.00735
	(!A2 * B1 * B2 * !C1 * X)	0.00301	0.00299	0.00301
	(!A2 * B1 * !B2 * C1 * X)	0.00720	0.00722	0.00721
	(!A2 * B1 * !B2 * C1 * X)	0.00287	0.00285	0.00288
	(!A2 * B1 * !B2 * !C1 * !X)	0.00988	0.00988	0.00982
	(!A2 * B1 * !B2 * !C1 * !X)	0.00655	0.00654	0.00647
	(!A2 * !B1 * C1 * X)	0.00718	0.00717	0.00719
	(!A2 * !B1 * C1 * X)	0.00285	0.00285	0.00286
	(!A2 * !B1 * !C1 * !X)	0.00990	0.00990	0.00984
	(!A2 * !B1 * !C1 * !X)	0.00656	0.00655	0.00648

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00593	0.00545	0.00557
	(A2 * B1 * B2 * C1 * X)	-0.00271	-0.00323	-0.00300
	(A2 * B1 * B2 * !C1 * X)	0.00821	0.00771	0.01358
	(A2 * B1 * B2 * !C1 * X)	-0.00078	-0.00131	0.00477
	(A2 * B1 * !B2 * C1 * X)	0.00839	0.00790	0.01324
	(A2 * B1 * !B2 * C1 * X)	-0.00070	-0.00122	0.00441
	(A2 * !B1 * C1 * X)	0.00839	0.00790	0.01322
	(A2 * !B1 * C1 * X)	-0.00070	-0.00122	0.00439
	(!A2 * B1 * B2 * C1 * X)	0.00552	0.00553	0.00552
	(!A2 * B1 * B2 * C1 * X)	-0.00298	-0.00300	-0.00298
	(!A2 * B1 * B2 * !C1 * X)	0.01457	0.01458	0.01458
	(!A2 * B1 * B2 * !C1 * X)	0.00607	0.00601	0.00608
	(!A2 * B1 * !B2 * C1 * X)	0.01425	0.01429	0.01428
	(!A2 * B1 * !B2 * C1 * X)	0.00576	0.00571	0.00578
	(!A2 * B1 * !B2 * !C1 * !X)	0.02067	0.02066	0.02049
	(!A2 * B1 * !B2 * !C1 * !X)	0.01386	0.01385	0.01363
	(!A2 * !B1 * C1 * X)	0.01423	0.01426	0.01426
	(!A2 * !B1 * C1 * X)	0.00573	0.00568	0.00575
	(!A2 * !B1 * !C1 * !X)	0.02075	0.02074	0.02057
	(!A2 * !B1 * !C1 * !X)	0.01395	0.01393	0.01371

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)**	-0.00106	-0.00108	-0.00111
	(A2 * B1 * B2 * C1 * X)	0.00313	0.00315	0.00309
	(A2 * B1 * B2 * !C1 * X)	0.00329	0.00316	0.00235
	(A2 * B1 * B2 * !C1 * X)	0.00765	0.00755	0.00671
	(A2 * B1 * !B2 * C1 * X)	0.00334	0.00321	0.00239
	(A2 * B1 * !B2 * C1 * X)	0.00772	0.00763	0.00678
	(A2 * !B1 * C1 * X)	0.00333	0.00320	0.00238
	(A2 * !B1 * C1 * X)	0.00771	0.00761	0.00677
	(!A2 * B1 * B2 * C1 * X)	-0.00102	-0.00102	-0.00101
	(!A2 * B1 * B2 * C1 * X)	0.00312	0.00313	0.00312
	(!A2 * B1 * B2 * !C1 * X)	0.00354	0.00351	0.00353
	(!A2 * B1 * B2 * !C1 * X)	0.00767	0.00770	0.00766
	(!A2 * B1 * !B2 * C1 * X)	0.00341	0.00339	0.00340
	(!A2 * B1 * !B2 * C1 * X)	0.00754	0.00757	0.00753
	(!A2 * B1 * !B2 * !C1 * !X)	0.00443	0.00443	0.00445
	(!A2 * B1 * !B2 * !C1 * !X)	0.00768	0.00770	0.00769
	(!A2 * !B1 * C1 * X)	0.00339	0.00338	0.00339
	(!A2 * !B1 * C1 * X)	0.00753	0.00756	0.00752
	(!A2 * !B1 * !C1 * !X)	0.00447	0.00447	0.00449
	(!A2 * !B1 * !C1 * !X)	0.00773	0.00775	0.00773

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00118	-0.00121	-0.00123
	(A2 * B1 * B2 * C1 * X)	0.00322	0.00323	0.00317
	(A2 * B1 * B2 * !C1 * X)	0.00317	0.00304	0.00223
	(A2 * B1 * B2 * !C1 * X)	0.00773	0.00763	0.00679
	(A2 * B1 * !B2 * C1 * X)	0.00322	0.00309	0.00227
	(A2 * B1 * !B2 * C1 * X)	0.00780	0.00771	0.00687
	(A2 * !B1 * C1 * X)	0.00320	0.00307	0.00225
	(A2 * !B1 * C1 * X)	0.00778	0.00769	0.00685
	(!A2 * B1 * B2 * C1 * X)	-0.00114	-0.00114	-0.00112
	(!A2 * B1 * B2 * C1 * X)	0.00320	0.00321	0.00321
	(!A2 * B1 * B2 * !C1 * X)	0.00342	0.00339	0.00341
	(!A2 * B1 * B2 * !C1 * X)	0.00776	0.00779	0.00774
	(!A2 * B1 * !B2 * C1 * X)	0.00329	0.00327	0.00329
	(!A2 * B1 * !B2 * C1 * X)	0.00763	0.00765	0.00762
	(!A2 * B1 * !B2 * !C1 * !X)	0.00878	0.00878	0.00879
	(!A2 * B1 * !B2 * !C1 * !X)	0.01211	0.01213	0.01212
	(!A2 * !B1 * C1 * X)	0.00327	0.00325	0.00326
	(!A2 * !B1 * C1 * X)	0.00761	0.00763	0.00759
	(!A2 * !B1 * !C1 * !X)	0.00880	0.00880	0.00882
	(!A2 * !B1 * !C1 * !X)	0.01213	0.01215	0.01214

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00228	-0.00234	-0.00239
	(A2 * B1 * B2 * C1 * X)	0.00630	0.00635	0.00624
	(A2 * B1 * B2 * !C1 * X)	0.00634	0.00609	0.00449
	(A2 * B1 * B2 * !C1 * X)	0.01530	0.01511	0.01344
	(A2 * B1 * !B2 * C1 * X)	0.00640	0.00616	0.00455
	(A2 * B1 * !B2 * C1 * X)	0.01540	0.01523	0.01356
	(A2 * !B1 * C1 * X)	0.00638	0.00613	0.00453
	(A2 * !B1 * C1 * X)	0.01537	0.01520	0.01354
	(!A2 * B1 * B2 * C1 * X)	-0.00221	-0.00222	-0.00219
	(!A2 * B1 * B2 * C1 * X)	0.00631	0.00632	0.00631
	(!A2 * B1 * B2 * !C1 * X)	0.00687	0.00683	0.00684
	(!A2 * B1 * B2 * !C1 * X)	0.01538	0.01542	0.01535
	(!A2 * B1 * !B2 * C1 * X)	0.00657	0.00654	0.00655
	(!A2 * B1 * !B2 * C1 * X)	0.01508	0.01512	0.01505
	(!A2 * B1 * !B2 * !C1 * !X)	0.01736	0.01736	0.01739
	(!A2 * B1 * !B2 * !C1 * !X)	0.02413	0.02414	0.02417
	(!A2 * !B1 * C1 * X)	0.00654	0.00651	0.00652
	(!A2 * !B1 * C1 * X)	0.01505	0.01509	0.01502
	(!A2 * !B1 * !C1 * !X)	0.01744	0.01744	0.01747
	(!A2 * !B1 * !C1 * !X)	0.02422	0.02423	0.02426

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)**	0.00296	0.00271	0.00276
	(A1 * B1 * B2 * C1 * X)	-0.00142	-0.00173	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00408	0.00380	0.00678
	(A1 * B1 * B2 * !C1 * X)	-0.00047	-0.00081	0.00229
	(A1 * B1 * !B2 * C1 * X)	0.00420	0.00391	0.00663
	(A1 * B1 * !B2 * C1 * X)	-0.00041	-0.00075	0.00213
	(A1 * !B1 * C1 * X)	0.00420	0.00391	0.00662
	(A1 * !B1 * C1 * X)	-0.00041	-0.00075	0.00212
	(!A1 * B1 * B2 * X)	0.00274	0.00276	0.00274
	(!A1 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00715	0.00717	0.00716
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00282	0.00280	0.00283
	(!A1 * B1 * !B2 * !C1 * !X)	0.00680	0.00680	0.00677
	(!A1 * B1 * !B2 * !C1 * !X)	0.00243	0.00243	0.00240
	(!A1 * !B1 * !C1 * !X)	0.00684	0.00684	0.00681
	(!A1 * !B1 * !C1 * !X)	0.00247	0.00247	0.00244

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00323	0.00299	0.00304
	(A1 * B1 * B2 * C1 * X)	-0.00131	-0.00162	-0.00148
	(A1 * B1 * B2 * !C1 * X)	0.00436	0.00407	0.00706
	(A1 * B1 * B2 * !C1 * X)	-0.00038	-0.00069	0.00241
	(A1 * B1 * !B2 * C1 * X)	0.00446	0.00418	0.00690
	(A1 * B1 * !B2 * C1 * X)	-0.00030	-0.00064	0.00225
	(A1 * !B1 * C1 * X)	0.00446	0.00418	0.00689
	(A1 * !B1 * C1 * X)	-0.00030	-0.00064	0.00223
	(!A1 * B1 * B2 * X)	0.00301	0.00304	0.00302
	(!A1 * B1 * B2 * X)	-0.00147	-0.00149	-0.00147
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00742	0.00744	0.00744
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00294	0.00293	0.00295
	(!A1 * B1 * !B2 * !C1 * !X)	0.01126	0.01128	0.01125
	(!A1 * B1 * !B2 * !C1 * !X)	0.00675	0.00674	0.00674
	(!A1 * !B1 * !C1 * !X)	0.01128	0.01129	0.01127
	(!A1 * !B1 * !C1 * !X)	0.00677	0.00676	0.00675

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00592	0.00541	0.00552
	(A1 * B1 * B2 * C1 * X)	-0.00266	-0.00319	-0.00297
	(A1 * B1 * B2 * !C1 * X)	0.00821	0.00768	0.01354
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00126	0.00481
	(A1 * B1 * !B2 * C1 * X)	0.00840	0.00788	0.01320
	(A1 * B1 * !B2 * C1 * X)	-0.00061	-0.00118	0.00445
	(A1 * !B1 * C1 * X)	0.00840	0.00788	0.01318
	(A1 * !B1 * C1 * X)	-0.00061	-0.00118	0.00443
	(!A1 * B1 * B2 * X)	0.00545	0.00548	0.00547
	(!A1 * B1 * B2 * X)	-0.00294	-0.00296	-0.00296
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.01419	0.01425	0.01424
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00580	0.00575	0.00581
	(!A1 * B1 * !B2 * !C1 * !X)	0.02289	0.02293	0.02286
	(!A1 * B1 * !B2 * !C1 * !X)	0.01441	0.01438	0.01435
	(!A1 * !B1 * !C1 * !X)	0.02297	0.02301	0.02294
	(!A1 * !B1 * !C1 * !X)	0.01450	0.01446	0.01443

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)**	-0.00133	-0.00136	-0.00138
	(A1 * B1 * B2 * C1 * X)	0.00306	0.00308	0.00302
	(A1 * B1 * B2 * !C1 * X)	0.00302	0.00289	0.00208
	(A1 * B1 * B2 * !C1 * X)	0.00757	0.00748	0.00664
	(A1 * B1 * !B2 * C1 * X)	0.00307	0.00294	0.00212
	(A1 * B1 * !B2 * C1 * X)	0.00765	0.00756	0.00672
	(A1 * !B1 * C1 * X)	0.00306	0.00293	0.00211
	(A1 * !B1 * C1 * X)	0.00764	0.00755	0.00671
	(!A1 * B1 * B2 * X)	-0.00129	-0.00129	-0.00128
	(!A1 * B1 * B2 * X)	0.00306	0.00306	0.00305
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00313	0.00312	0.00313
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00748	0.00748	0.00746
	(!A1 * B1 * !B2 * !C1 * !X)	0.00342	0.00329	0.00336
	(!A1 * B1 * !B2 * !C1 * !X)	0.00782	0.00771	0.00771
	(!A1 * !B1 * !C1 * !X)	0.00347	0.00333	0.00340
	(!A1 * !B1 * !C1 * !X)	0.00786	0.00775	0.00775

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00140	-0.00143	-0.00145
	(A1 * B1 * B2 * C1 * X)	0.00314	0.00316	0.00310
	(A1 * B1 * B2 * !C1 * X)	0.00295	0.00282	0.00202
	(A1 * B1 * B2 * !C1 * X)	0.00766	0.00757	0.00673
	(A1 * B1 * !B2 * C1 * X)	0.00300	0.00287	0.00205
	(A1 * B1 * !B2 * C1 * X)	0.00773	0.00764	0.00680
	(A1 * !B1 * C1 * X)	0.00298	0.00285	0.00204
	(A1 * !B1 * C1 * X)	0.00771	0.00762	0.00679
	(!A1 * B1 * B2 * X)	-0.00136	-0.00137	-0.00134
	(!A1 * B1 * B2 * X)	0.00314	0.00314	0.00314
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00306	0.00305	0.00306
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00757	0.00756	0.00754
	(!A1 * B1 * !B2 * !C1 * !X)	0.00766	0.00749	0.00751
	(!A1 * B1 * !B2 * !C1 * !X)	0.01220	0.01206	0.01200
	(!A1 * !B1 * !C1 * !X)	0.00768	0.00752	0.00753
	(!A1 * !B1 * !C1 * !X)	0.01223	0.01208	0.01202

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00225	-0.00229	-0.00234
	(A1 * B1 * B2 * C1 * X)	0.00629	0.00632	0.00621
	(A1 * B1 * B2 * !C1 * X)	0.00639	0.00614	0.00453
	(A1 * B1 * B2 * !C1 * X)	0.01526	0.01508	0.01341
	(A1 * B1 * !B2 * C1 * X)	0.00645	0.00620	0.00460
	(A1 * B1 * !B2 * C1 * X)	0.01538	0.01520	0.01353
	(A1 * !B1 * C1 * X)	0.00642	0.00618	0.00458
	(A1 * !B1 * C1 * X)	0.01535	0.01517	0.01351
	(!A1 * B1 * B2 * X)	-0.00215	-0.00217	-0.00214
	(!A1 * B1 * B2 * X)	0.00627	0.00628	0.00628
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00662	0.00660	0.00659
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.01504	0.01505	0.01502
	(!A1 * B1 * !B2 * !C1 * !X)	0.01576	0.01536	0.01550
	(!A1 * B1 * !B2 * !C1 * !X)	0.02428	0.02389	0.02395
	(!A1 * !B1 * !C1 * !X)	0.01585	0.01544	0.01558
	(!A1 * !B1 * !C1 * !X)	0.02436	0.02398	0.02404

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)**	0.00280	0.00285	0.00304
	(A1 * A2 * B2 * C1 * X)	-0.00082	-0.00080	-0.00057
	(A1 * A2 * B2 * !C1 * X)	0.00256	0.00260	0.00333
	(A1 * A2 * B2 * !C1 * X)	-0.00018	-0.00016	0.00058
	(A1 * A2 * !B2 * C1 * X)	0.00320	0.00322	0.00297
	(A1 * A2 * !B2 * C1 * X)	-0.00035	-0.00037	-0.00049
	(A1 * A2 * !B2 * !C1 * X)	0.00702	0.00702	0.00702
	(A1 * A2 * !B2 * !C1 * X)	0.00400	0.00399	0.00400
	(A1 * !A2 * B2 * C1 * X)	0.00361	0.00325	0.00628
	(A1 * !A2 * B2 * C1 * X)	-0.00062	-0.00100	0.00208
	(A1 * !A2 * !B2 * C1 * X)	0.00698	0.00691	0.00692
	(A1 * !A2 * !B2 * C1 * X)	0.00285	0.00280	0.00281
	(A1 * !A2 * !B2 * !C1 * !X)	0.00548	0.00547	0.00540
	(A1 * !A2 * !B2 * !C1 * !X)	0.00224	0.00222	0.00214
	(!A1 * B2 * C1 * X)	0.00361	0.00325	0.00627
	(!A1 * B2 * C1 * X)	-0.00062	-0.00100	0.00207
	(!A1 * !B2 * C1 * X)	0.00697	0.00693	0.00692
	(!A1 * !B2 * C1 * X)	0.00286	0.00278	0.00281
	(!A1 * !B2 * !C1 * !X)	0.00552	0.00550	0.00543
	(!A1 * !B2 * !C1 * !X)	0.00227	0.00225	0.00217

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00325	0.00330	0.00348
	(A1 * A2 * B2 * C1 * X)	-0.00074	-0.00072	-0.00048
	(A1 * A2 * B2 * !C1 * X)	0.00304	0.00308	0.00379
	(A1 * A2 * B2 * !C1 * X)	-0.00007	-0.00007	0.00066
	(A1 * A2 * !B2 * C1 * X)	0.00363	0.00365	0.00341
	(A1 * A2 * !B2 * C1 * X)	-0.00027	-0.00029	-0.00041
	(A1 * A2 * !B2 * !C1 * X)	0.00745	0.00746	0.00745
	(A1 * A2 * !B2 * !C1 * X)	0.00408	0.00407	0.00408
	(A1 * !A2 * B2 * C1 * X)	0.00404	0.00369	0.00671
	(A1 * !A2 * B2 * C1 * X)	-0.00057	-0.00093	0.00215
	(A1 * !A2 * !B2 * C1 * X)	0.00740	0.00736	0.00736
	(A1 * !A2 * !B2 * C1 * X)	0.00294	0.00287	0.00288
	(A1 * !A2 * !B2 * !C1 * !X)	0.00987	0.00985	0.00980
	(A1 * !A2 * !B2 * !C1 * !X)	0.00640	0.00638	0.00631
	(!A1 * B2 * C1 * X)	0.00404	0.00369	0.00671
	(!A1 * B2 * C1 * X)	-0.00057	-0.00092	0.00215
	(!A1 * !B2 * C1 * X)	0.00741	0.00735	0.00735
	(!A1 * !B2 * C1 * X)	0.00293	0.00286	0.00288
	(!A1 * !B2 * !C1 * !X)	0.00988	0.00986	0.00981
	(!A1 * !B2 * !C1 * !X)	0.00641	0.00639	0.00631

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00614	0.00619	0.00653
	(A1 * A2 * B2 * C1 * X)	-0.00144	-0.00149	-0.00103
	(A1 * A2 * B2 * !C1 * X)	0.00594	0.00604	0.00718
	(A1 * A2 * B2 * !C1 * X)	0.00005	0.00004	0.00126
	(A1 * A2 * !B2 * C1 * X)	0.00683	0.00685	0.00636
	(A1 * A2 * !B2 * C1 * X)	-0.00059	-0.00062	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.01437	0.01437	0.01438
	(A1 * A2 * !B2 * !C1 * X)	0.00812	0.00810	0.00811
	(A1 * !A2 * B2 * C1 * X)	0.00784	0.00702	0.01297
	(A1 * !A2 * B2 * C1 * X)	-0.00092	-0.00174	0.00433
	(A1 * !A2 * !B2 * C1 * X)	0.01432	0.01420	0.01421
	(A1 * !A2 * !B2 * C1 * X)	0.00588	0.00570	0.00574
	(A1 * !A2 * !B2 * !C1 * !X)	0.02024	0.02022	0.02003
	(A1 * !A2 * !B2 * !C1 * !X)	0.01345	0.01338	0.01315
	(!A1 * B2 * C1 * X)	0.00784	0.00703	0.01297
	(!A1 * B2 * C1 * X)	-0.00091	-0.00174	0.00433
	(!A1 * !B2 * C1 * X)	0.01432	0.01420	0.01421
	(!A1 * !B2 * C1 * X)	0.00588	0.00570	0.00574
	(!A1 * !B2 * !C1 * !X)	0.02030	0.02028	0.02009
	(!A1 * !B2 * !C1 * !X)	0.01351	0.01344	0.01321

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)**	-0.00163	-0.00164	-0.00143
	(A1 * A2 * B2 * C1 * X)	0.00205	0.00208	0.00212
	(A1 * A2 * B2 * !C1 * X)	0.00355	0.00336	0.00095
	(A1 * A2 * B2 * !C1 * X)	0.00637	0.00619	0.00378
	(A1 * A2 * !B2 * C1 * X)	-0.00162	-0.00161	-0.00138
	(A1 * A2 * !B2 * C1 * X)	0.00198	0.00199	0.00205
	(A1 * A2 * !B2 * !C1 * X)	0.00287	0.00284	0.00270
	(A1 * A2 * !B2 * !C1 * X)	0.00589	0.00589	0.00571
	(A1 * !A2 * B2 * C1 * X)	0.00331	0.00318	0.00240
	(A1 * !A2 * B2 * C1 * X)	0.00753	0.00743	0.00663
	(A1 * !A2 * !B2 * C1 * X)	0.00338	0.00335	0.00336
	(A1 * !A2 * !B2 * C1 * X)	0.00750	0.00751	0.00748
	(A1 * !A2 * !B2 * !C1 * !X)	0.00449	0.00447	0.00450
	(A1 * !A2 * !B2 * !C1 * !X)	0.00772	0.00775	0.00772
	(!A1 * B2 * C1 * X)	0.00331	0.00318	0.00240
	(!A1 * B2 * C1 * X)	0.00753	0.00743	0.00662
	(!A1 * !B2 * C1 * X)	0.00338	0.00335	0.00336
	(!A1 * !B2 * C1 * X)	0.00750	0.00751	0.00747
	(!A1 * !B2 * !C1 * !X)	0.00454	0.00451	0.00454
	(!A1 * !B2 * !C1 * !X)	0.00777	0.00777	0.00776

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00188	-0.00187	-0.00168
	(A1 * A2 * B2 * C1 * X)	0.00219	0.00219	0.00225
	(A1 * A2 * B2 * !C1 * X)	0.00329	0.00310	0.00070
	(A1 * A2 * B2 * !C1 * X)	0.00650	0.00632	0.00391
	(A1 * A2 * !B2 * C1 * X)	-0.00185	-0.00185	-0.00162
	(A1 * A2 * !B2 * C1 * X)	0.00211	0.00212	0.00217
	(A1 * A2 * !B2 * !C1 * X)	0.00264	0.00260	0.00247
	(A1 * A2 * !B2 * !C1 * X)	0.00602	0.00601	0.00583
	(A1 * !A2 * B2 * C1 * X)	0.00307	0.00294	0.00216
	(A1 * !A2 * B2 * C1 * X)	0.00764	0.00754	0.00674
	(A1 * !A2 * !B2 * C1 * X)	0.00315	0.00311	0.00314
	(A1 * !A2 * !B2 * C1 * X)	0.00763	0.00765	0.00760
	(A1 * !A2 * !B2 * !C1 * !X)	0.00884	0.00881	0.00882
	(A1 * !A2 * !B2 * !C1 * !X)	0.01231	0.01230	0.01228
	(!A1 * B2 * C1 * X)	0.00307	0.00293	0.00216
	(!A1 * B2 * C1 * X)	0.00764	0.00754	0.00674
	(!A1 * !B2 * C1 * X)	0.00315	0.00311	0.00313
	(!A1 * !B2 * C1 * X)	0.00763	0.00764	0.00760
	(!A1 * !B2 * !C1 * !X)	0.00886	0.00882	0.00884
	(!A1 * !B2 * !C1 * !X)	0.01232	0.01231	0.01230

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00333	-0.00333	-0.00290
	(A1 * A2 * B2 * C1 * X)	0.00439	0.00442	0.00456
	(A1 * A2 * B2 * !C1 * X)	0.00705	0.00668	0.00190
	(A1 * A2 * B2 * !C1 * X)	0.01310	0.01275	0.00797
	(A1 * A2 * !B2 * C1 * X)	-0.00325	-0.00327	-0.00279
	(A1 * A2 * !B2 * C1 * X)	0.00425	0.00430	0.00441
	(A1 * A2 * !B2 * !C1 * X)	0.00578	0.00573	0.00543
	(A1 * A2 * !B2 * !C1 * X)	0.01206	0.01204	0.01170
	(A1 * !A2 * B2 * C1 * X)	0.00648	0.00620	0.00465
	(A1 * !A2 * B2 * C1 * X)	0.01516	0.01495	0.01335
	(A1 * !A2 * !B2 * C1 * X)	0.00667	0.00661	0.00660
	(A1 * !A2 * !B2 * C1 * X)	0.01514	0.01511	0.01508
	(A1 * !A2 * !B2 * !C1 * !X)	0.01790	0.01782	0.01786
	(A1 * !A2 * !B2 * !C1 * !X)	0.02470	0.02468	0.02465
	(!A1 * B2 * C1 * X)	0.00648	0.00620	0.00465
	(!A1 * B2 * C1 * X)	0.01516	0.01495	0.01335
	(!A1 * !B2 * C1 * X)	0.00667	0.00661	0.00660
	(!A1 * !B2 * C1 * X)	0.01514	0.01510	0.01507
	(!A1 * !B2 * !C1 * !X)	0.01797	0.01789	0.01793
	(!A1 * !B2 * !C1 * !X)	0.02478	0.02475	0.02473

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)**	0.00289	0.00291	0.00309
	(A1 * A2 * B1 * C1 * X)	-0.00078	-0.00076	-0.00053
	(A1 * A2 * B1 * !C1 * X)	0.00267	0.00270	0.00339
	(A1 * A2 * B1 * !C1 * X)	-0.00010	-0.00008	0.00062
	(A1 * A2 * !B1 * C1 * X)	0.00325	0.00327	0.00303
	(A1 * A2 * !B1 * C1 * X)	-0.00033	-0.00034	-0.00046
	(A1 * A2 * !B1 * !C1 * X)	0.00704	0.00706	0.00705
	(A1 * A2 * !B1 * !C1 * X)	0.00402	0.00400	0.00401
	(A1 * !A2 * B1 * C1 * X)	0.00370	0.00332	0.00635
	(A1 * !A2 * B1 * C1 * X)	-0.00056	-0.00094	0.00213
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00704	0.00696	0.00698
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00290	0.00283	0.00285
	(A1 * !A2 * !B1 * !C1 * !X)	0.00671	0.00671	0.00668
	(A1 * !A2 * !B1 * !C1 * !X)	0.00254	0.00252	0.00250
	(!A1 * B1 * C1 * X)	0.00370	0.00332	0.00635
	(!A1 * B1 * C1 * X)	-0.00056	-0.00094	0.00213
	(!A1 * !B1 * !C1 * !X)	0.00675	0.00675	0.00671
	(!A1 * !B1 * !C1 * !X)	0.00257	0.00256	0.00254

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00332	0.00335	0.00353
	(A1 * A2 * B1 * C1 * X)	-0.00062	-0.00061	-0.00037
	(A1 * A2 * B1 * !C1 * X)	0.00309	0.00314	0.00381
	(A1 * A2 * B1 * !C1 * X)	0.00007	0.00007	0.00076
	(A1 * A2 * !B1 * C1 * X)	0.00368	0.00370	0.00346
	(A1 * A2 * !B1 * C1 * X)	-0.00018	-0.00019	-0.00031
	(A1 * A2 * !B1 * !C1 * X)	0.00742	0.00744	0.00743
	(A1 * A2 * !B1 * !C1 * X)	0.00414	0.00413	0.00414
	(A1 * !A2 * B1 * C1 * X)	0.00411	0.00375	0.00678
	(A1 * !A2 * B1 * C1 * X)	-0.00041	-0.00078	0.00231
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00747	0.00740	0.00741
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00307	0.00299	0.00302
	(A1 * !A2 * !B1 * !C1 * !X)	0.01121	0.01123	0.01120
	(A1 * !A2 * !B1 * !C1 * !X)	0.00681	0.00678	0.00678
	(!A1 * B1 * C1 * X)	0.00411	0.00375	0.00678
	(!A1 * B1 * C1 * X)	-0.00041	-0.00078	0.00231
	(!A1 * !B1 * !C1 * !X)	0.01123	0.01124	0.01121
	(!A1 * !B1 * !C1 * !X)	0.00682	0.00679	0.00679

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00654	0.00656	0.00692
	(A1 * A2 * B1 * C1 * X)	-0.00134	-0.00135	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00628	0.00635	0.00755
	(A1 * A2 * B1 * !C1 * X)	0.00014	0.00016	0.00137
	(A1 * A2 * !B1 * C1 * X)	0.00722	0.00725	0.00675
	(A1 * A2 * !B1 * C1 * X)	-0.00046	-0.00049	-0.00077
	(A1 * A2 * !B1 * !C1 * X)	0.01473	0.01477	0.01475
	(A1 * A2 * !B1 * !C1 * X)	0.00823	0.00821	0.00822
	(A1 * !A2 * B1 * C1 * X)	0.00817	0.00740	0.01338
	(A1 * !A2 * B1 * C1 * X)	-0.00079	-0.00159	0.00448
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.01470	0.01459	0.01459
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00600	0.00581	0.00587
	(A1 * !A2 * !B1 * !C1 * !X)	0.02315	0.02318	0.02309
	(A1 * !A2 * !B1 * !C1 * !X)	0.01436	0.01431	0.01428
	(!A1 * B1 * C1 * X)	0.00817	0.00740	0.01338
	(!A1 * B1 * C1 * X)	-0.00079	-0.00159	0.00448
	(!A1 * !B1 * !C1 * !X)	0.02322	0.02324	0.02315
	(!A1 * !B1 * !C1 * !X)	0.01443	0.01437	0.01434

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)**	-0.00169	-0.00169	-0.00149
	(A1 * A2 * B1 * C1 * X)	0.00202	0.00203	0.00209
	(A1 * A2 * B1 * !C1 * X)	0.00350	0.00331	0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00635	0.00616	0.00375
	(A1 * A2 * !B1 * C1 * X)	-0.00168	-0.00167	-0.00144
	(A1 * A2 * !B1 * C1 * X)	0.00196	0.00196	0.00202
	(A1 * A2 * !B1 * !C1 * X)	0.00283	0.00281	0.00267
	(A1 * A2 * !B1 * !C1 * X)	0.00588	0.00586	0.00569
	(A1 * !A2 * B1 * C1 * X)	0.00327	0.00313	0.00235
	(A1 * !A2 * B1 * C1 * X)	0.00749	0.00739	0.00659
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00332	0.00329	0.00330
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00747	0.00746	0.00742
	(A1 * !A2 * !B1 * !C1 * !X)	0.00354	0.00338	0.00346
	(A1 * !A2 * !B1 * !C1 * !X)	0.00773	0.00759	0.00761
	(!A1 * B1 * C1 * X)	0.00327	0.00313	0.00235
	(!A1 * B1 * C1 * X)	0.00749	0.00739	0.00658
	(!A1 * !B1 * !C1 * !X)	0.00358	0.00341	0.00350
	(!A1 * !B1 * !C1 * !X)	0.00777	0.00762	0.00765

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00193	-0.00194	-0.00172
	(A1 * A2 * B1 * C1 * X)	0.00207	0.00209	0.00214
	(A1 * A2 * B1 * !C1 * X)	0.00330	0.00311	0.00071
	(A1 * A2 * B1 * !C1 * X)	0.00642	0.00624	0.00383
	(A1 * A2 * !B1 * C1 * X)	-0.00191	-0.00190	-0.00166
	(A1 * A2 * !B1 * C1 * X)	0.00200	0.00200	0.00207
	(A1 * A2 * !B1 * !C1 * X)	0.00267	0.00263	0.00249
	(A1 * A2 * !B1 * !C1 * X)	0.00594	0.00594	0.00577
	(A1 * !A2 * B1 * C1 * X)	0.00304	0.00290	0.00212
	(A1 * !A2 * B1 * C1 * X)	0.00752	0.00742	0.00662
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00309	0.00306	0.00307
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00749	0.00749	0.00744
	(A1 * !A2 * !B1 * !C1 * !X)	0.00776	0.00755	0.00758
	(A1 * !A2 * !B1 * !C1 * !X)	0.01216	0.01201	0.01196
	(!A1 * B1 * C1 * X)	0.00304	0.00290	0.00212
	(!A1 * B1 * C1 * X)	0.00752	0.00742	0.00661
	(!A1 * !B1 * !C1 * !X)	0.00778	0.00757	0.00759
	(!A1 * !B1 * !C1 * !X)	0.01218	0.01203	0.01198

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00371	-0.00373	-0.00329
	(A1 * A2 * B1 * C1 * X)	0.00424	0.00429	0.00443
	(A1 * A2 * B1 * !C1 * X)	0.00669	0.00632	0.00154
	(A1 * A2 * B1 * !C1 * X)	0.01297	0.01263	0.00786
	(A1 * A2 * !B1 * C1 * X)	-0.00363	-0.00362	-0.00317
	(A1 * A2 * !B1 * C1 * X)	0.00410	0.00413	0.00428
	(A1 * A2 * !B1 * !C1 * X)	0.00542	0.00537	0.00506
	(A1 * A2 * !B1 * !C1 * X)	0.01193	0.01191	0.01158
	(A1 * !A2 * B1 * C1 * X)	0.00612	0.00585	0.00429
	(A1 * !A2 * B1 * C1 * X)	0.01504	0.01481	0.01324
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00629	0.00622	0.00620
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.01499	0.01497	0.01492
	(A1 * !A2 * !B1 * !C1 * !X)	0.01560	0.01521	0.01529
	(A1 * !A2 * !B1 * !C1 * !X)	0.02440	0.02407	0.02405
	(!A1 * B1 * C1 * X)	0.00612	0.00585	0.00429
	(!A1 * B1 * C1 * X)	0.01504	0.01480	0.01324
	(!A1 * !B1 * !C1 * !X)	0.01567	0.01529	0.01537
	(!A1 * !B1 * !C1 * !X)	0.02447	0.02414	0.02412

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)	0.00235	0.00240	0.00239
	(A1 * B1 * B2 * X)	-0.00068	-0.00070	-0.00065
	(A1 * A2 * B1 * !B2 * X)	0.00240	0.00243	0.00286
	(A1 * A2 * B1 * !B2 * X)	0.00011	0.00012	0.00052
	(A1 * A2 * !B1 * X)	0.00240	0.00243	0.00286
	(A1 * A2 * !B1 * X)	0.00011	0.00012	0.00052
	(!A1 * B1 * B2 * X)	0.00242	0.00245	0.00336
	(!A1 * B1 * B2 * X)	-0.00054	-0.00053	0.00036
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00256	0.00258	0.00260
	(A1 * B1 * B2 * X)	-0.00058	-0.00058	-0.00054
	(A1 * A2 * B1 * !B2 * X)	0.00261	0.00267	0.00308
	(A1 * A2 * B1 * !B2 * X)	0.00022	0.00022	0.00063
	(A1 * A2 * !B1 * X)	0.00261	0.00267	0.00308
	(A1 * A2 * !B1 * X)	0.00022	0.00022	0.00063
	(!A1 * B1 * B2 * X)	0.00262	0.00269	0.00357
	(!A1 * B1 * B2 * X)	-0.00044	-0.00044	0.00047
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00439	0.00441	0.00445
	(A1 * B1 * B2 * X)	-0.00137	-0.00137	-0.00129
	(A1 * A2 * B1 * !B2 * X)	0.00455	0.00461	0.00545
	(A1 * A2 * B1 * !B2 * X)	0.00020	0.00023	0.00102
	(A1 * A2 * !B1 * X)	0.00455	0.00461	0.00545
	(A1 * A2 * !B1 * X)	0.00020	0.00023	0.00102
	(!A1 * B1 * B2 * X)	0.00440	0.00452	0.00623
	(!A1 * B1 * B2 * X)	-0.00118	-0.00118	0.00058

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)	-0.00107	-0.00110	-0.00125
	(A1 * B1 * B2 * X)	0.00199	0.00200	0.00186
	(A1 * A2 * B1 * !B2 * X)	0.00429	0.00414	0.00204
	(A1 * A2 * B1 * !B2 * X)	0.00684	0.00671	0.00462
	(A1 * A2 * !B1 * X)	0.00429	0.00414	0.00204
	(A1 * A2 * !B1 * X)	0.00684	0.00671	0.00462
	(!A1 * B1 * B2 * X)	0.00413	0.00391	0.00124
	(!A1 * B1 * B2 * X)	0.00715	0.00696	0.00427
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00108	-0.00110	-0.00125
	(A1 * B1 * B2 * X)	0.00209	0.00209	0.00196
	(A1 * A2 * B1 * !B2 * X)	0.00427	0.00413	0.00203
	(A1 * A2 * B1 * !B2 * X)	0.00694	0.00680	0.00471
	(A1 * A2 * !B1 * X)	0.00426	0.00413	0.00203
	(A1 * A2 * !B1 * X)	0.00695	0.00680	0.00471
	(!A1 * B1 * B2 * X)	0.00411	0.00390	0.00123
	(!A1 * B1 * B2 * X)	0.00725	0.00705	0.00436
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00145	-0.00149	-0.00180
	(A1 * B1 * B2 * X)	0.00432	0.00435	0.00407
	(A1 * A2 * B1 * !B2 * X)	0.00924	0.00894	0.00479
	(A1 * A2 * B1 * !B2 * X)	0.01410	0.01385	0.00970
	(A1 * A2 * !B1 * X)	0.00923	0.00894	0.00479
	(A1 * A2 * !B1 * X)	0.01409	0.01384	0.00970
	(!A1 * B1 * B2 * X)	0.00905	0.00863	0.00332
	(!A1 * B1 * B2 * X)	0.01475	0.01437	0.00904

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00271	0.00258	0.00265	0.00268	0.00267	0.00276	0.49162
sky130_fd_sc_hs__a222oi_2	0.00543	0.00486	0.00536	0.00497	0.00487	0.00550	0.82128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	350.04800	1144.64000
sky130_fd_sc_hs__a222oi_2	0.00000	695.50500	2267.15000

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)	0.14175	0.79751	7.90492
	A2->Y (FR)	0.15451	0.81626	8.00781
	B1->Y (FR)	0.12378	0.83121	8.56915
	B2->Y (FR)	0.13882	0.85563	8.71009
	C1->Y (FR)	0.09244	0.85297	9.14580
	C2->Y (FR)	0.10577	0.86858	9.19224
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.12212	0.65190	7.50130
	A2->Y (FR)	0.14105	0.68361	7.74192
	B1->Y (FR)	0.10196	0.67682	8.05599
	B2->Y (FR)	0.12520	0.73566	8.58893
	C1->Y (FR)	0.08631	0.74345	9.03238
	C2->Y (FR)	0.10481	0.76112	9.06320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04790	0.34804	3.23632
	A2->Y (RF)	0.05097	0.31296	2.75882
	B1->Y (RF)	0.03972	0.32586	3.13236
	B2->Y (RF)	0.04326	0.29129	2.64495
	C1->Y (RF)	0.02672	0.30522	3.06164
	C2->Y (RF)	0.02978	0.27226	2.59296
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.04585	0.28707	2.96779
	A2->Y (RF)	0.04919	0.25617	2.51902
	B1->Y (RF)	0.03844	0.26680	2.89733
	B2->Y (RF)	0.04259	0.23719	2.43270
	C1->Y (RF)	0.02208	0.22426	2.59583
	C2->Y (RF)	0.02610	0.19776	2.17196

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00158	0.00649	0.12776
	A1	0.01342	0.01830	0.13940
	A2	0.00182	0.00695	0.13370
	A2	0.01494	0.02006	0.14651
	B1	0.00162	0.00760	0.12226
	B1	0.01047	0.01643	0.13103
	B2	0.00190	0.00790	0.12433
	B2	0.01212	0.01808	0.13435
	C1	0.00151	0.00920	0.13279
	C1	0.00768	0.01535	0.13834
	C2	0.00183	0.00974	0.13800
	C2	0.00932	0.01721	0.14484
sky130_fd_sc_hs__a222oi_2	A1	0.00178	0.01279	0.25090
	A1	0.02538	0.03633	0.27393
	A2	0.00291	0.01423	0.26176
	A2	0.02845	0.03976	0.28653
	B1	0.00185	0.01467	0.23736
	B1	0.01965	0.03236	0.25436
	B2	0.00286	0.01496	0.22920
	B2	0.02270	0.03494	0.24853
	C1	0.00175	0.01805	0.25344
	C1	0.01339	0.02964	0.26409
	C2	0.00251	0.01905	0.26304
	C2	0.01734	0.03380	0.27703

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.02795	0.03328	0.14311
	A1	0.01614	0.02143	0.13133
	A2	0.02858	0.03342	0.14376
	A2	0.01550	0.02034	0.13056
	B1	0.02225	0.02799	0.13306
	B1	0.01344	0.01915	0.12426
	B2	0.02297	0.02820	0.13158
	B2	0.01280	0.01801	0.12140
	C1	0.02414	0.02983	0.12514
	C1	0.01799	0.02366	0.11887
	C2	0.02417	0.02950	0.12670
	C2	0.01670	0.02202	0.11921
sky130_fd_sc_hs__a222oi_2	A1	0.05330	0.06489	0.28582
	A1	0.02977	0.04127	0.26230
	A2	0.05421	0.06500	0.28384
	A2	0.02872	0.03944	0.25828
	B1	0.04281	0.05525	0.26296
	B1	0.02508	0.03753	0.24503
	B2	0.04413	0.05498	0.24772
	B2	0.02431	0.03514	0.22773
	C1	0.04478	0.05753	0.24629
	C1	0.03314	0.04584	0.23441
	C2	0.04555	0.05770	0.25055
	C2	0.03068	0.04281	0.23568

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)**	0.00268	0.00235	0.00243
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00151	-0.00182	-0.00171
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00390	0.00351	0.00642
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00047	-0.00084	0.00216
	(A2 * B1 * B2 * !C1 * !Y)	0.00390	0.00351	0.00642
	(A2 * B1 * B2 * !C1 * !Y)	-0.00047	-0.00084	0.00216
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00445	0.00428	0.00996
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00010	-0.00028	0.00559
	(A2 * !B1 * C1 * C2 * !Y)	0.00447	0.00429	0.00999
	(A2 * !B1 * C1 * C2 * !Y)	-0.00008	-0.00028	0.00562
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00241	0.00241	0.00241
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00691	0.00690	0.00691
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00280	0.00278	0.00280
	(!A2 * B1 * B2 * !C1 * !Y)	0.00691	0.00691	0.00691
	(!A2 * B1 * B2 * !C1 * !Y)	0.00279	0.00277	0.00280
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.01147	0.01148	0.01152
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00737	0.00734	0.00741
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00098	0.00098	0.00091
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00226	-0.00228	-0.00235
	(!A2 * B1 * !B2 * !C1 * Y)	0.00102	0.00102	0.00095
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00222	-0.00224	-0.00231
	(!A2 * !B1 * C1 * C2 * !Y)	0.01149	0.01150	0.01154
	(!A2 * !B1 * C1 * C2 * !Y)	0.00737	0.00735	0.00743
	(!A2 * !B1 * C1 * !C2 * Y)	0.00102	0.00102	0.00095
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00222	-0.00224	-0.00231
	(!A2 * !B1 * !C1 * Y)	0.00106	0.00106	0.00099
	(!A2 * !B1 * !C1 * Y)	-0.00219	-0.00220	-0.00227

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00548	0.00483	0.00497
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00305	-0.00375	-0.00348
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00780	0.00705	0.01293
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00108	-0.00187	0.00422
	(A2 * B1 * B2 * !C1 * !Y)	0.00780	0.00705	0.01293
	(A2 * B1 * B2 * !C1 * !Y)	-0.00108	-0.00187	0.00422
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00887	0.00849	0.01984
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00036	-0.00075	0.01091
	(A2 * !B1 * C1 * C2 * !Y)	0.00893	0.00850	0.01996
	(A2 * !B1 * C1 * C2 * !Y)	-0.00030	-0.00073	0.01104
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00492	0.00494	0.00492
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00345	-0.00349	-0.00347
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.01390	0.01387	0.01389
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00552	0.00545	0.00550
	(!A2 * B1 * B2 * !C1 * !Y)	0.01389	0.01387	0.01389
	(!A2 * B1 * B2 * !C1 * !Y)	0.00554	0.00545	0.00550
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.02274	0.02276	0.02285
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.01438	0.01432	0.01446
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00194	0.00194	0.00181
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00474	-0.00477	-0.00495
	(!A2 * B1 * !B2 * !C1 * Y)	0.00202	0.00202	0.00189
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00467	-0.00469	-0.00488
	(!A2 * !B1 * C1 * C2 * !Y)	0.02290	0.02291	0.02302
	(!A2 * !B1 * C1 * C2 * !Y)	0.01452	0.01447	0.01462
	(!A2 * !B1 * C1 * !C2 * Y)	0.00202	0.00202	0.00189
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00466	-0.00470	-0.00488
	(!A2 * !B1 * !C1 * Y)	0.00209	0.00210	0.00197
	(!A2 * !B1 * !C1 * Y)	-0.00459	-0.00462	-0.00480

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)	-0.00109	-0.00111	-0.00115
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00307	0.00308	0.00302
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00321	0.00307	0.00225
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00753	0.00745	0.00659
	(A2 * B1 * B2 * !C1 * !Y)	0.00320	0.00308	0.00225
	(A2 * B1 * B2 * !C1 * !Y)	0.00755	0.00743	0.00659
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00790	0.00765	0.00570
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.01240	0.01216	0.01019
	(A2 * !B1 * C1 * C2 * !Y)	0.00795	0.00769	0.00573
	(A2 * !B1 * C1 * C2 * !Y)	0.01244	0.01220	0.01022
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00105	-0.00106	-0.00104
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00306	0.00309	0.00306
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00345	0.00343	0.00344
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00756	0.00760	0.00755
	(!A2 * B1 * B2 * !C1 * !Y)	0.00345	0.00343	0.00344
	(!A2 * B1 * B2 * !C1 * !Y)	0.00756	0.00760	0.00755
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00809	0.00806	0.00804
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.01220	0.01223	0.01214
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00019	-0.00020	-0.00017
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00303	0.00306	0.00305
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00015	-0.00016	-0.00014
	(!A2 * B1 * !B2 * !C1 * Y)	0.00306	0.00310	0.00308
	(!A2 * !B1 * C1 * C2 * !Y)	0.00812	0.00809	0.00806
	(!A2 * !B1 * C1 * C2 * !Y)	0.01223	0.01226	0.01216
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00015	-0.00016	-0.00014
	(!A2 * !B1 * C1 * !C2 * Y)	0.00307	0.00310	0.00308
	(!A2 * !B1 * !C1 * Y)	-0.00012	-0.00012	-0.00010
	(!A2 * !B1 * !C1 * Y)	0.00311	0.00313	0.00312

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00231	-0.00235	-0.00242
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00621	0.00621	0.00610
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00625	0.00598	0.00435
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.01511	0.01492	0.01322
	(A2 * B1 * B2 * !C1 * !Y)	0.00625	0.00598	0.00436
	(A2 * B1 * B2 * !C1 * !Y)	0.01511	0.01492	0.01322
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.01541	0.01490	0.01109
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.02455	0.02411	0.02026
	(A2 * !B1 * C1 * C2 * !Y)	0.01560	0.01509	0.01122
	(A2 * !B1 * C1 * C2 * !Y)	0.02474	0.02427	0.02039
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00221	-0.00225	-0.00220
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00618	0.00625	0.00619
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00676	0.00673	0.00672
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.01515	0.01515	0.01511
	(!A2 * B1 * B2 * !C1 * !Y)	0.00676	0.00671	0.00672
	(!A2 * B1 * B2 * !C1 * !Y)	0.01515	0.01519	0.01511
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.01578	0.01573	0.01565
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.02417	0.02421	0.02405
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00036	-0.00036	-0.00032
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00635	0.00639	0.00637
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00028	-0.00029	-0.00025
	(!A2 * B1 * !B2 * !C1 * Y)	0.00643	0.00647	0.00644
	(!A2 * !B1 * C1 * C2 * !Y)	0.01595	0.01592	0.01581
	(!A2 * !B1 * C1 * C2 * !Y)	0.02434	0.02431	0.02420
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00028	-0.00029	-0.00025
	(!A2 * !B1 * C1 * !C2 * Y)	0.00643	0.00647	0.00644
	(!A2 * !B1 * !C1 * Y)	-0.00021	-0.00022	-0.00017
	(!A2 * !B1 * !C1 * Y)	0.00650	0.00658	0.00652

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)	0.00273	0.00242	0.00249
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00150	-0.00183	-0.00170
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00393	0.00357	0.00648
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00047	-0.00084	0.00216
	(A1 * B1 * B2 * !C1 * !Y)	0.00393	0.00357	0.00648
	(A1 * B1 * B2 * !C1 * !Y)	-0.00048	-0.00084	0.00216
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00448	0.00434	0.01002
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00010	-0.00029	0.00559
	(A1 * !B1 * C1 * C2 * !Y)	0.00449	0.00434	0.01002
	(A1 * !B1 * C1 * C2 * !Y)	-0.00009	-0.00029	0.00560
	(!A1 * B1 * B2 * !Y)	0.00248	0.00249	0.00247
	(!A1 * B1 * B2 * !Y)	-0.00170	-0.00171	-0.00170
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01155	0.01156	0.01159
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00737	0.00736	0.00742
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00230	0.00232	0.00227
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00191	-0.00193	-0.00193
	(!A1 * B1 * !B2 * !C1 * Y)	0.00234	0.00236	0.00231
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00187	-0.00189	-0.00190
	(!A1 * !B1 * C1 * !C2 * Y)	0.00234	0.00233	0.00231
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00187	-0.00187	-0.00190
	(!A1 * !B1 * !C1 * Y)	0.00238	0.00237	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00183	-0.00183	-0.00186

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00516	0.00460	0.00476
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00284	-0.00344	-0.00316
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00738	0.00678	0.01268
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00096	-0.00161	0.00450
	(A1 * B1 * B2 * !C1 * !Y)	0.00738	0.00678	0.01268
	(A1 * B1 * B2 * !C1 * !Y)	-0.00096	-0.00161	0.00450
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00842	0.00825	0.01954
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00027	-0.00053	0.01115
	(A1 * !B1 * C1 * C2 * !Y)	0.00846	0.00826	0.01965
	(A1 * !B1 * C1 * C2 * !Y)	-0.00023	-0.00052	0.01125
	(!A1 * B1 * B2 * !Y)	0.00471	0.00474	0.00471
	(!A1 * B1 * B2 * !Y)	-0.00313	-0.00316	-0.00314
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.02260	0.02263	0.02268
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01476	0.01471	0.01483
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00427	0.00432	0.00423
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00364	-0.00369	-0.00370
	(!A1 * B1 * !B2 * !C1 * Y)	0.00435	0.00440	0.00431
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00356	-0.00361	-0.00362
	(!A1 * !B1 * C1 * !C2 * Y)	0.00435	0.00439	0.00431
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00356	-0.00360	-0.00362
	(!A1 * !B1 * !C1 * Y)	0.00442	0.00447	0.00439
	(!A1 * !B1 * !C1 * Y)	-0.00348	-0.00353	-0.00354

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

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

	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00115	-0.00118	-0.00121
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00306	0.00308	0.00302
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00314	0.00301	0.00218
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00752	0.00743	0.00658
	(A1 * B1 * B2 * !C1 * !Y)	0.00314	0.00301	0.00218
	(A1 * B1 * B2 * !C1 * !Y)	0.00752	0.00743	0.00658
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00783	0.00758	0.00563
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.01238	0.01214	0.01019
	(A1 * !B1 * C1 * C2 * !Y)	0.00784	0.00759	0.00564
	(A1 * !B1 * C1 * C2 * !Y)	0.01239	0.01216	0.01019
	(!A1 * B1 * B2 * !Y)	-0.00112	-0.00112	-0.00110
sky130_fd_sc_hs__a222oi_1	**(!A1 * B1 * B2 * !Y)**	0.00306	0.00307	0.00306
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00802	0.00801	0.00798
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01220	0.01219	0.01214
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00123	-0.00136	-0.00130
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00299	0.00288	0.00288
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00119	-0.00132	-0.00126
	(!A1 * B1 * !B2 * !C1 * Y)	0.00303	0.00292	0.00292
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00119	-0.00132	-0.00126
	(!A1 * !B1 * C1 * !C2 * Y)	0.00303	0.00292	0.00292
	(!A1 * !B1 * !C1 * Y)	-0.00116	-0.00128	-0.00122
	(!A1 * !B1 * !C1 * Y)	0.00307	0.00296	0.00296

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00211	-0.00214	-0.00221
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00587	0.00588	0.00578
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00643	0.00618	0.00457
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.01475	0.01456	0.01290
	(A1 * B1 * B2 * !C1 * !Y)	0.00644	0.00618	0.00457
	(A1 * B1 * B2 * !C1 * !Y)	0.01475	0.01456	0.01290
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.01555	0.01506	0.01128
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.02415	0.02369	0.01991
	(A1 * !B1 * C1 * C2 * !Y)	0.01570	0.01521	0.01139
	(A1 * !B1 * C1 * C2 * !Y)	0.02431	0.02383	0.02002
	(!A1 * B1 * B2 * !Y)	-0.00200	-0.00203	-0.00199
	(!A1 * B1 * B2 * !Y)	0.00584	0.00590	0.00586
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01599	0.01594	0.01589
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.02383	0.02388	0.02375
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00206	-0.00242	-0.00229
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00587	0.00560	0.00559
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00199	-0.00234	-0.00221
	(!A1 * B1 * !B2 * !C1 * Y)	0.00594	0.00567	0.00567
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00199	-0.00234	-0.00221
	(!A1 * !B1 * C1 * !C2 * Y)	0.00594	0.00567	0.00567
	(!A1 * !B1 * !C1 * Y)	-0.00191	-0.00227	-0.00214
	(!A1 * !B1 * !C1 * Y)	0.00602	0.00575	0.00574

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)**	0.00276	0.00280	0.00304
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00085	-0.00083	-0.00055
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00247	0.00250	0.00306
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00023	-0.00022	0.00036
	(A1 * A2 * B2 * !C1 * !Y)	0.00247	0.00250	0.00306
	(A1 * A2 * B2 * !C1 * !Y)	-0.00023	-0.00022	0.00036
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00319	0.00320	0.00293
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00034	-0.00036	-0.00052
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00683	0.00684	0.00683
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00388	0.00388	0.00388
	(A1 * A2 * !B2 * !C1 * !Y)	0.00684	0.00684	0.00683
	(A1 * A2 * !B2 * !C1 * !Y)	0.00388	0.00387	0.00388
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00381	0.00365	0.00978
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00042	-0.00060	0.00559
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.01158	0.01152	0.01155
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00754	0.00745	0.00751
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00094	0.00094	0.00087
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00223	-0.00225	-0.00233
	(A1 * !A2 * !B2 * !C1 * Y)	0.00097	0.00097	0.00091
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00220	-0.00221	-0.00229
	(!A1 * B2 * C1 * C2 * !Y)	0.00379	0.00364	0.00980
	(!A1 * B2 * C1 * C2 * !Y)	-0.00044	-0.00061	0.00561
	(!A1 * !B2 * C1 * C2 * !Y)	0.01157	0.01152	0.01157
	(!A1 * !B2 * C1 * C2 * !Y)	0.00753	0.00744	0.00752
	(!A1 * !B2 * C1 * !C2 * Y)	0.00097	0.00097	0.00091
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00220	-0.00221	-0.00229
	(!A1 * !B2 * !C1 * Y)	0.00101	0.00101	0.00095
	(!A1 * !B2 * !C1 * Y)	-0.00216	-0.00217	-0.00225

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00560	0.00573	0.00619
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00180	-0.00171	-0.00116
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00502	0.00510	0.00646
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00063	-0.00062	0.00078
	(A1 * A2 * B2 * !C1 * !Y)	0.00502	0.00510	0.00646
	(A1 * A2 * B2 * !C1 * !Y)	-0.00063	-0.00062	0.00078
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00647	0.00653	0.00597
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00075	-0.00080	-0.00107
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.01388	0.01391	0.01388
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00775	0.00771	0.00773
	(A1 * A2 * !B2 * !C1 * !Y)	0.01388	0.01391	0.01388
	(A1 * A2 * !B2 * !C1 * !Y)	0.00775	0.00771	0.00773
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00778	0.00743	0.01958
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00097	-0.00135	0.01093
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.02304	0.02287	0.02299
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.01472	0.01447	0.01464
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00191	0.00191	0.00178
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00478	-0.00480	-0.00496
	(A1 * !A2 * !B2 * !C1 * Y)	0.00199	0.00199	0.00185
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00470	-0.00472	-0.00488
	(!A1 * B2 * C1 * C2 * !Y)	0.00774	0.00741	0.01963
	(!A1 * B2 * C1 * C2 * !Y)	-0.00101	-0.00137	0.01098
	(!A1 * !B2 * C1 * C2 * !Y)	0.02306	0.02292	0.02306
	(!A1 * !B2 * C1 * C2 * !Y)	0.01474	0.01452	0.01470
	(!A1 * !B2 * C1 * !C2 * Y)	0.00199	0.00199	0.00185
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00470	-0.00472	-0.00488
	(!A1 * !B2 * !C1 * Y)	0.00207	0.00206	0.00193
	(!A1 * !B2 * !C1 * Y)	-0.00463	-0.00464	-0.00480

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)	-0.00169	-0.00168	-0.00140
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00197	0.00197	0.00210
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00362	0.00344	0.00107
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00642	0.00624	0.00386
	(A1 * A2 * B2 * !C1 * !Y)	0.00362	0.00344	0.00107
	(A1 * A2 * B2 * !C1 * !Y)	0.00642	0.00624	0.00386
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00167	-0.00166	-0.00139
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00188	0.00191	0.00200
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00284	0.00281	0.00267
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00579	0.00579	0.00561
	(A1 * A2 * !B2 * !C1 * !Y)	0.00284	0.00281	0.00267
	(A1 * A2 * !B2 * !C1 * !Y)	0.00579	0.00579	0.00561
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00790	0.00764	0.00579
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.01213	0.01189	0.01002
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00808	0.00803	0.00801
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.01213	0.01214	0.01205
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00015	-0.00016	-0.00013
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00301	0.00304	0.00303
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00011	-0.00012	-0.00009
	(A1 * !A2 * !B2 * !C1 * Y)	0.00305	0.00308	0.00307
	(!A1 * B2 * C1 * C2 * !Y)	0.00794	0.00768	0.00582
	(!A1 * B2 * C1 * C2 * !Y)	0.01217	0.01193	0.01005
	(!A1 * !B2 * C1 * C2 * !Y)	0.00811	0.00806	0.00803
	(!A1 * !B2 * C1 * C2 * !Y)	0.01215	0.01216	0.01207
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00011	-0.00012	-0.00009
	(!A1 * !B2 * C1 * !C2 * Y)	0.00305	0.00308	0.00307
	(!A1 * !B2 * !C1 * Y)	-0.00007	-0.00008	-0.00006
	(!A1 * !B2 * !C1 * Y)	0.00309	0.00312	0.00311

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00351	-0.00351	-0.00300
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00398	0.00401	0.00420
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00683	0.00646	0.00167
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.01268	0.01231	0.00752
	(A1 * A2 * B2 * !C1 * !Y)	0.00683	0.00646	0.00167
	(A1 * A2 * B2 * !C1 * !Y)	0.01267	0.01231	0.00752
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00347	-0.00347	-0.00295
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00383	0.00388	0.00401
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00544	0.00537	0.00509
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.01160	0.01159	0.01123
	(A1 * A2 * !B2 * !C1 * !Y)	0.00544	0.00537	0.00509
	(A1 * A2 * !B2 * !C1 * !Y)	0.01160	0.01159	0.01123
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.01548	0.01493	0.01130
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.02417	0.02371	0.02002
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.01581	0.01570	0.01559
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.02416	0.02413	0.02394
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00033	-0.00033	-0.00028
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00637	0.00642	0.00637
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00025	-0.00026	-0.00021
	(A1 * !A2 * !B2 * !C1 * Y)	0.00645	0.00650	0.00645
	(!A1 * B2 * C1 * C2 * !Y)	0.01558	0.01505	0.01139
	(!A1 * B2 * C1 * C2 * !Y)	0.02429	0.02382	0.02011
	(!A1 * !B2 * C1 * C2 * !Y)	0.01591	0.01584	0.01569
	(!A1 * !B2 * C1 * C2 * !Y)	0.02426	0.02418	0.02404
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00025	-0.00026	-0.00021
	(!A1 * !B2 * C1 * !C2 * Y)	0.00645	0.00650	0.00645
	(!A1 * !B2 * !C1 * Y)	-0.00017	-0.00018	-0.00013
	(!A1 * !B2 * !C1 * Y)	0.00650	0.00658	0.00652

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)	0.00292	0.00295	0.00320
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00085	-0.00083	-0.00055
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00264	0.00267	0.00322
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00023	-0.00021	0.00036
	(A1 * A2 * B1 * !C1 * !Y)	0.00264	0.00267	0.00322
	(A1 * A2 * B1 * !C1 * !Y)	-0.00023	-0.00021	0.00036
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00334	0.00336	0.00308
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00034	-0.00036	-0.00052
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00699	0.00701	0.00700
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00390	0.00388	0.00389
	(A1 * A2 * !B1 * !C1 * !Y)	0.00699	0.00701	0.00700
	(A1 * A2 * !B1 * !C1 * !Y)	0.00390	0.00388	0.00389
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00399	0.00381	0.00993
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00041	-0.00061	0.00558
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01176	0.01169	0.01172
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00754	0.00745	0.00751
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00217	0.00218	0.00215
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00207	-0.00208	-0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	0.00221	0.00221	0.00218
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00203	-0.00204	-0.00206
	(!A1 * B1 * C1 * C2 * !Y)	0.00399	0.00380	0.00993
	(!A1 * B1 * C1 * C2 * !Y)	-0.00042	-0.00061	0.00558
	(!A1 * !B1 * C1 * !C2 * Y)	0.00221	0.00221	0.00218
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00203	-0.00204	-0.00206
	(!A1 * !B1 * !C1 * Y)	0.00224	0.00225	0.00222
	(!A1 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00202

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00553	0.00563	0.00609
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00149	-0.00148	-0.00093
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00493	0.00504	0.00630
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00034	-0.00034	0.00099
	(A1 * A2 * B1 * !C1 * !Y)	0.00493	0.00503	0.00630
	(A1 * A2 * B1 * !C1 * !Y)	-0.00034	-0.00034	0.00099
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00635	0.00636	0.00587
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00057	-0.00058	-0.00086
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.01360	0.01359	0.01360
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00783	0.00783	0.00784
	(A1 * A2 * !B1 * !C1 * !Y)	0.01360	0.01359	0.01360
	(A1 * A2 * !B1 * !C1 * !Y)	0.00783	0.00783	0.00784
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00776	0.00737	0.01942
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00054	-0.00102	0.01116
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.02310	0.02295	0.02298
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01515	0.01492	0.01503
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00434	0.00436	0.00430
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00368	-0.00370	-0.00374
	(A1 * !A2 * !B1 * !C1 * Y)	0.00442	0.00446	0.00438
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00360	-0.00364	-0.00366
	(!A1 * B1 * C1 * C2 * !Y)	0.00775	0.00736	0.01945
	(!A1 * B1 * C1 * C2 * !Y)	-0.00057	-0.00103	0.01119
	(!A1 * !B1 * C1 * !C2 * Y)	0.00442	0.00444	0.00438
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00360	-0.00363	-0.00366
	(!A1 * !B1 * !C1 * Y)	0.00449	0.00454	0.00445
	(!A1 * !B1 * !C1 * Y)	-0.00352	-0.00357	-0.00359

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)	-0.00183	-0.00183	-0.00156
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00197	0.00198	0.00210
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00346	0.00328	0.00090
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00641	0.00623	0.00386
	(A1 * A2 * B1 * !C1 * !Y)	0.00346	0.00328	0.00090
	(A1 * A2 * B1 * !C1 * !Y)	0.00641	0.00623	0.00386
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00183	-0.00181	-0.00154
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00189	0.00190	0.00200
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00267	0.00265	0.00251
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00579	0.00577	0.00561
	(A1 * A2 * !B1 * !C1 * !Y)	0.00267	0.00265	0.00251
	(A1 * A2 * !B1 * !C1 * !Y)	0.00579	0.00578	0.00561
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00773	0.00747	0.00563
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.01213	0.01188	0.01001
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00792	0.00788	0.00786
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01215	0.01213	0.01206
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00111	-0.00125	-0.00117
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00315	0.00304	0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00107	-0.00121	-0.00113
	(A1 * !A2 * !B1 * !C1 * Y)	0.00319	0.00308	0.00308
	(!A1 * B1 * C1 * C2 * !Y)	0.00774	0.00748	0.00563
	(!A1 * B1 * C1 * C2 * !Y)	0.01214	0.01189	0.01002
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00107	-0.00121	-0.00113
	(!A1 * !B1 * C1 * !C2 * Y)	0.00319	0.00307	0.00308
	(!A1 * !B1 * !C1 * Y)	-0.00104	-0.00117	-0.00110
	(!A1 * !B1 * !C1 * Y)	0.00323	0.00311	0.00312

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00341	-0.00340	-0.00287
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00374	0.00377	0.00398
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00706	0.00669	0.00190
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.01252	0.01216	0.00738
	(A1 * A2 * B1 * !C1 * !Y)	0.00706	0.00669	0.00190
	(A1 * A2 * B1 * !C1 * !Y)	0.01252	0.01216	0.00738
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00336	-0.00336	-0.00283
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00359	0.00365	0.00381
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00571	0.00565	0.00538
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.01147	0.01147	0.01112
	(A1 * A2 * !B1 * !C1 * !Y)	0.00571	0.00565	0.00538
	(A1 * A2 * !B1 * !C1 * !Y)	0.01147	0.01147	0.01112
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.01540	0.01486	0.01126
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.02370	0.02323	0.01958
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.01590	0.01579	0.01575
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.02384	0.02383	0.02370
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00213	-0.00252	-0.00235
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00590	0.00560	0.00563
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00206	-0.00245	-0.00228
	(A1 * !A2 * !B1 * !C1 * Y)	0.00598	0.00567	0.00571
	(!A1 * B1 * C1 * C2 * !Y)	0.01548	0.01493	0.01132
	(!A1 * B1 * C1 * C2 * !Y)	0.02377	0.02330	0.01965
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00206	-0.00245	-0.00228
	(!A1 * !B1 * C1 * !C2 * Y)	0.00598	0.00567	0.00571
	(!A1 * !B1 * !C1 * Y)	-0.00198	-0.00237	-0.00220
	(!A1 * !B1 * !C1 * Y)	0.00605	0.00575	0.00579

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)	0.00212	0.00214	0.00216
	(A1 * B1 * B2 * C2 * !Y)	-0.00079	-0.00080	-0.00076
	(A1 * B1 * B2 * !C2 * !Y)	0.00277	0.00279	0.00276
	(A1 * B1 * B2 * !C2 * !Y)	-0.00024	-0.00025	-0.00026
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00219	0.00225	0.00261
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00000	-0.00000	0.00036
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00687	0.00688	0.00687
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00384	0.00383	0.00384
	(A1 * A2 * !B1 * C2 * !Y)	0.00219	0.00225	0.00261
	(A1 * A2 * !B1 * C2 * !Y)	0.00000	-0.00000	0.00036
	(A1 * A2 * !B1 * !C2 * !Y)	0.00686	0.00690	0.00687
	(A1 * A2 * !B1 * !C2 * !Y)	0.00384	0.00382	0.00384
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00101	0.00100	0.00094
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00231	-0.00232	-0.00239
	(A1 * !A2 * !B1 * !C2 * Y)	0.00105	0.00104	0.00098
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00227	-0.00228	-0.00235
	(!A1 * B1 * B2 * C2 * !Y)	0.00218	0.00224	0.00303
	(!A1 * B1 * B2 * C2 * !Y)	-0.00060	-0.00060	0.00021
	(!A1 * B1 * B2 * !C2 * !Y)	0.00733	0.00736	0.00735
	(!A1 * B1 * B2 * !C2 * !Y)	0.00428	0.00426	0.00429
	(!A1 * B1 * !B2 * !C2 * Y)	0.00105	0.00104	0.00098
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00227	-0.00228	-0.00235
	(!A1 * !B1 * !C2 * Y)	0.00109	0.00108	0.00101
	(!A1 * !B1 * !C2 * Y)	-0.00223	-0.00224	-0.00232

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00374	0.00380	0.00384
	(A1 * B1 * B2 * C2 * !Y)	-0.00150	-0.00152	-0.00145
	(A1 * B1 * B2 * !C2 * !Y)	0.00511	0.00518	0.00509
	(A1 * B1 * B2 * !C2 * !Y)	-0.00038	-0.00042	-0.00042
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00387	0.00393	0.00475
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00009	0.00011	0.00087
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.01329	0.01337	0.01332
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00777	0.00773	0.00777
	(A1 * A2 * !B1 * C2 * !Y)	0.00387	0.00393	0.00475
	(A1 * A2 * !B1 * C2 * !Y)	0.00009	0.00011	0.00087
	(A1 * A2 * !B1 * !C2 * !Y)	0.01331	0.01337	0.01332
	(A1 * A2 * !B1 * !C2 * !Y)	0.00777	0.00773	0.00777
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00188	0.00188	0.00174
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00426	-0.00428	-0.00444
	(A1 * !A2 * !B1 * !C2 * Y)	0.00196	0.00195	0.00181
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00418	-0.00420	-0.00436
	(!A1 * B1 * B2 * C2 * !Y)	0.00387	0.00399	0.00565
	(!A1 * B1 * B2 * C2 * !Y)	-0.00113	-0.00113	0.00056
	(!A1 * B1 * B2 * !C2 * !Y)	0.01421	0.01427	0.01424
	(!A1 * B1 * B2 * !C2 * !Y)	0.00862	0.00859	0.00865
	(!A1 * B1 * !B2 * !C2 * Y)	0.00196	0.00195	0.00181
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00418	-0.00421	-0.00436
	(!A1 * !B1 * !C2 * Y)	0.00203	0.00203	0.00189
	(!A1 * !B1 * !C2 * Y)	-0.00411	-0.00413	-0.00429

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)**	-0.00098	-0.00100	-0.00120
	(A1 * B1 * B2 * C2 * !Y)	0.00196	0.00196	0.00179
	(A1 * B1 * B2 * !C2 * !Y)	-0.00148	-0.00150	-0.00150
	(A1 * B1 * B2 * !C2 * !Y)	0.00154	0.00155	0.00152
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00439	0.00425	0.00222
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00687	0.00674	0.00472
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00268	0.00267	0.00260
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00571	0.00571	0.00563
	(A1 * A2 * !B1 * C2 * !Y)	0.00439	0.00425	0.00222
	(A1 * A2 * !B1 * C2 * !Y)	0.00686	0.00674	0.00472
	(A1 * A2 * !B1 * !C2 * !Y)	0.00268	0.00267	0.00260
	(A1 * A2 * !B1 * !C2 * !Y)	0.00571	0.00572	0.00563
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00022	-0.00023	-0.00020
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00308	0.00311	0.00309
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00018	-0.00019	-0.00016
	(A1 * !A2 * !B1 * !C2 * Y)	0.00311	0.00315	0.00313
	(!A1 * B1 * B2 * C2 * !Y)	0.00424	0.00404	0.00138
	(!A1 * B1 * B2 * C2 * !Y)	0.00712	0.00692	0.00425
	(!A1 * B1 * B2 * !C2 * !Y)	0.00333	0.00330	0.00303
	(!A1 * B1 * B2 * !C2 * !Y)	0.00638	0.00636	0.00607
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00018	-0.00019	-0.00016
	(!A1 * B1 * !B2 * !C2 * Y)	0.00311	0.00315	0.00313
	(!A1 * !B1 * !C2 * Y)	-0.00014	-0.00015	-0.00012
	(!A1 * !B1 * !C2 * Y)	0.00315	0.00319	0.00317

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00155	-0.00159	-0.00195
	(A1 * B1 * B2 * C2 * !Y)	0.00378	0.00379	0.00349
	(A1 * B1 * B2 * !C2 * !Y)	-0.00255	-0.00257	-0.00257
	(A1 * B1 * B2 * !C2 * !Y)	0.00297	0.00299	0.00295
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00913	0.00884	0.00471
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.01348	0.01322	0.00911
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00575	0.00575	0.00559
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.01131	0.01129	0.01113
	(A1 * A2 * !B1 * C2 * !Y)	0.00913	0.00885	0.00471
	(A1 * A2 * !B1 * C2 * !Y)	0.01349	0.01324	0.00911
	(A1 * A2 * !B1 * !C2 * !Y)	0.00576	0.00574	0.00559
	(A1 * A2 * !B1 * !C2 * !Y)	0.01131	0.01130	0.01114
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00030	-0.00031	-0.00026
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00581	0.00588	0.00584
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00022	-0.00023	-0.00018
	(A1 * !A2 * !B1 * !C2 * Y)	0.00589	0.00595	0.00592
	(!A1 * B1 * B2 * C2 * !Y)	0.00885	0.00843	0.00312
	(!A1 * B1 * B2 * C2 * !Y)	0.01402	0.01364	0.00831
	(!A1 * B1 * B2 * !C2 * !Y)	0.00704	0.00699	0.00644
	(!A1 * B1 * B2 * !C2 * !Y)	0.01263	0.01258	0.01201
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00022	-0.00024	-0.00018
	(!A1 * B1 * !B2 * !C2 * Y)	0.00589	0.00595	0.00591
	(!A1 * !B1 * !C2 * Y)	-0.00014	-0.00016	-0.00011
	(!A1 * !B1 * !C2 * Y)	0.00596	0.00603	0.00599

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)**	0.00220	0.00223	0.00224
	(A1 * B1 * B2 * C1 * !Y)	-0.00081	-0.00082	-0.00078
	(A1 * B1 * B2 * !C1 * !Y)	0.00289	0.00291	0.00287
	(A1 * B1 * B2 * !C1 * !Y)	-0.00023	-0.00024	-0.00025
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00229	0.00230	0.00269
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00003	-0.00001	0.00035
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00699	0.00701	0.00700
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00385	0.00384	0.00385
	(A1 * A2 * !B1 * C1 * !Y)	0.00229	0.00230	0.00269
	(A1 * A2 * !B1 * C1 * !Y)	-0.00003	-0.00001	0.00035
	(A1 * A2 * !B1 * !C1 * !Y)	0.00698	0.00701	0.00700
	(A1 * A2 * !B1 * !C1 * !Y)	0.00385	0.00384	0.00385
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00220	0.00222	0.00218
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00212	-0.00215	-0.00215
	(A1 * !A2 * !B1 * !C1 * Y)	0.00224	0.00226	0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00208	-0.00211	-0.00211
	(!A1 * B1 * B2 * C1 * !Y)	0.00228	0.00233	0.00313
	(!A1 * B1 * B2 * C1 * !Y)	-0.00064	-0.00063	0.00020
	(!A1 * B1 * B2 * !C1 * !Y)	0.00744	0.00747	0.00747
	(!A1 * B1 * B2 * !C1 * !Y)	0.00430	0.00428	0.00430
	(!A1 * B1 * !B2 * !C1 * Y)	0.00224	0.00226	0.00221
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00208	-0.00211	-0.00211
	(!A1 * !B1 * !C1 * Y)	0.00228	0.00230	0.00225
	(!A1 * !B1 * !C1 * Y)	-0.00205	-0.00207	-0.00208

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00440	0.00446	0.00449
	(A1 * B1 * B2 * C1 * !Y)	-0.00159	-0.00161	-0.00153
	(A1 * B1 * B2 * !C1 * !Y)	0.00578	0.00581	0.00574
	(A1 * B1 * B2 * !C1 * !Y)	-0.00047	-0.00049	-0.00050
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00452	0.00459	0.00540
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00001	0.00003	0.00078
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.01395	0.01399	0.01397
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00768	0.00767	0.00769
	(A1 * A2 * !B1 * C1 * !Y)	0.00452	0.00459	0.00540
	(A1 * A2 * !B1 * C1 * !Y)	0.00001	0.00003	0.00078
	(A1 * A2 * !B1 * !C1 * !Y)	0.01396	0.01399	0.01397
	(A1 * A2 * !B1 * !C1 * !Y)	0.00769	0.00767	0.00769
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00439	0.00442	0.00435
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00424	-0.00428	-0.00430
	(A1 * !A2 * !B1 * !C1 * Y)	0.00447	0.00450	0.00442
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00417	-0.00420	-0.00423
	(!A1 * B1 * B2 * C1 * !Y)	0.00452	0.00457	0.00630
	(!A1 * B1 * B2 * C1 * !Y)	-0.00121	-0.00117	0.00048
	(!A1 * B1 * B2 * !C1 * !Y)	0.01485	0.01488	0.01489
	(!A1 * B1 * B2 * !C1 * !Y)	0.00855	0.00853	0.00857
	(!A1 * B1 * !B2 * !C1 * Y)	0.00447	0.00449	0.00442
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00417	-0.00420	-0.00423
	(!A1 * !B1 * !C1 * Y)	0.00454	0.00457	0.00450
	(!A1 * !B1 * !C1 * Y)	-0.00409	-0.00412	-0.00415

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)**	-0.00107	-0.00108	-0.00128
	(A1 * B1 * B2 * C1 * !Y)	0.00198	0.00198	0.00181
	(A1 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * B1 * B2 * !C1 * !Y)	0.00154	0.00153	0.00152
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00428	0.00415	0.00211
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00688	0.00674	0.00472
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00255	0.00255	0.00248
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00571	0.00571	0.00562
	(A1 * A2 * !B1 * C1 * !Y)	0.00428	0.00415	0.00211
	(A1 * A2 * !B1 * C1 * !Y)	0.00688	0.00674	0.00472
	(A1 * A2 * !B1 * !C1 * !Y)	0.00255	0.00255	0.00248
	(A1 * A2 * !B1 * !C1 * !Y)	0.00571	0.00571	0.00562
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00115	-0.00130	-0.00120
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00320	0.00307	0.00309
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00111	-0.00126	-0.00117
	(A1 * !A2 * !B1 * !C1 * Y)	0.00324	0.00311	0.00313
	(!A1 * B1 * B2 * C1 * !Y)	0.00413	0.00393	0.00127
	(!A1 * B1 * B2 * C1 * !Y)	0.00712	0.00692	0.00425
	(!A1 * B1 * B2 * !C1 * !Y)	0.00320	0.00318	0.00291
	(!A1 * B1 * B2 * !C1 * !Y)	0.00638	0.00636	0.00606
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00111	-0.00126	-0.00117
	(!A1 * B1 * !B2 * !C1 * Y)	0.00324	0.00311	0.00313
	(!A1 * !B1 * !C1 * Y)	-0.00107	-0.00122	-0.00113
	(!A1 * !B1 * !C1 * Y)	0.00328	0.00314	0.00317

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00219	-0.00223	-0.00260
	(A1 * B1 * B2 * C1 * !Y)	0.00385	0.00387	0.00357
	(A1 * B1 * B2 * !C1 * !Y)	-0.00320	-0.00321	-0.00322
	(A1 * B1 * B2 * !C1 * !Y)	0.00307	0.00306	0.00303
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00849	0.00820	0.00407
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.01356	0.01331	0.00919
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00509	0.00508	0.00494
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.01140	0.01139	0.01122
	(A1 * A2 * !B1 * C1 * !Y)	0.00850	0.00820	0.00407
	(A1 * A2 * !B1 * C1 * !Y)	0.01357	0.01331	0.00920
	(A1 * A2 * !B1 * !C1 * !Y)	0.00510	0.00508	0.00495
	(A1 * A2 * !B1 * !C1 * !Y)	0.01141	0.01139	0.01122
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00225	-0.00259	-0.00240
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00643	0.00614	0.00619
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00217	-0.00251	-0.00233
	(A1 * !A2 * !B1 * !C1 * Y)	0.00651	0.00622	0.00626
	(!A1 * B1 * B2 * C1 * !Y)	0.00821	0.00778	0.00247
	(!A1 * B1 * B2 * C1 * !Y)	0.01410	0.01372	0.00839
	(!A1 * B1 * B2 * !C1 * !Y)	0.00638	0.00633	0.00579
	(!A1 * B1 * B2 * !C1 * !Y)	0.01272	0.01268	0.01210
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00217	-0.00251	-0.00233
	(!A1 * B1 * !B2 * !C1 * Y)	0.00651	0.00621	0.00626
	(!A1 * !B1 * !C1 * Y)	-0.00210	-0.00244	-0.00225
	(!A1 * !B1 * !C1 * Y)	0.00659	0.00629	0.00634

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00269	0.00271	0.00263	0.00269	0.00275	1.71205
sky130_fd_sc_hs__a222o_2	0.00267	0.00252	0.00265	0.00261	0.00267	0.00281	2.73902

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	577.28600	1159.38000
sky130_fd_sc_hs__a222o_2	0.00000	803.13800	1170.03000

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)	0.08183	0.48888	5.92115
	A2->X (RR)	0.08668	0.46318	5.47663
	B1->X (RR)	0.07538	0.45699	5.34960
	B2->X (RR)	0.07844	0.43865	5.12918
	C1->X (RR)	0.06055	0.42164	5.08898
	C2->X (RR)	0.06357	0.40812	4.92888
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.09998	0.45178	5.51025
	A2->X (RR)	0.10454	0.42358	5.45906
	B1->X (RR)	0.08639	0.41312	5.15736
	B2->X (RR)	0.08951	0.39582	5.03104
	C1->X (RR)	0.07068	0.38225	4.94275
	C2->X (RR)	0.07425	0.36316	4.71656

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.15885	0.55837	6.12505
	A2->X (FF)	0.16937	0.57781	6.27557
	B1->X (FF)	0.14398	0.58875	6.67332
	B2->X (FF)	0.15027	0.60928	6.80568
	C1->X (FF)	0.10316	0.58714	6.80513
	C2->X (FF)	0.10098	0.59614	6.93800
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.20265	0.54318	5.69529
	A2->X (FF)	0.20153	0.55532	5.93848
	B1->X (FF)	0.18900	0.58422	6.05732
	B2->X (FF)	0.17941	0.58307	6.18175
	C1->X (FF)	0.13945	0.57162	5.94276
	C2->X (FF)	0.15357	0.59970	6.12045

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.03966	0.05038	0.28393
	A1	0.02758	0.03830	0.27131
	A2	0.04090	0.04932	0.25302
	A2	0.02749	0.03591	0.23958
	B1	0.03492	0.04655	0.25694
	B1	0.02560	0.03726	0.24760
	B2	0.03602	0.04681	0.25534
	B2	0.02567	0.03645	0.24481
	C1	0.04095	0.05451	0.26948
	C1	0.03447	0.04803	0.26284
	C2	0.04202	0.05487	0.27169
	C2	0.03440	0.04724	0.26352
sky130_fd_sc_hs__a222o_2	A1	0.04579	0.05374	0.22526
	A1	0.03406	0.04200	0.21308
	A2	0.04809	0.05753	0.30550
	A2	0.03497	0.04435	0.29219
	B1	0.03993	0.05126	0.24949
	B1	0.03109	0.04241	0.24009
	B2	0.04107	0.05135	0.25344
	B2	0.03102	0.04124	0.24227
	C1	0.04584	0.05826	0.25660
	C1	0.03977	0.05221	0.24940
	C2	0.04699	0.05790	0.25233
	C2	0.03955	0.05050	0.24406

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01827	0.02615	0.23168
	A1	0.03035	0.03821	0.24233
	A2	0.01856	0.02594	0.22846
	A2	0.03195	0.03934	0.23998
	B1	0.01800	0.02730	0.24394
	B1	0.02733	0.03661	0.25254
	B2	0.01860	0.02807	0.24475
	B2	0.02897	0.03842	0.25516
	C1	0.01729	0.02984	0.25557
	C1	0.02379	0.03631	0.26173
	C2	0.01792	0.03078	0.26438
	C2	0.02557	0.03840	0.26771
sky130_fd_sc_hs__a222o_2	A1	0.03450	0.03650	0.24721
	A1	0.04623	0.04810	0.25687
	A2	0.03701	0.04024	0.27663
	A2	0.05017	0.05329	0.28901
	B1	0.03384	0.03871	0.24980
	B1	0.04269	0.04752	0.25867
	B2	0.03497	0.03970	0.25299
	B2	0.04503	0.04975	0.26323
	C1	0.03232	0.03984	0.23098
	C1	0.03839	0.04593	0.23538
	C2	0.03371	0.04088	0.23215
	C2	0.04114	0.04825	0.23812

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)**	0.00277	0.00247	0.00255
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00139	-0.00170	-0.00158
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00396	0.00362	0.00655
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00038	-0.00073	0.00229
	(A2 * B1 * B2 * !C1 * X)	0.00396	0.00362	0.00655
	(A2 * B1 * B2 * !C1 * X)	-0.00038	-0.00073	0.00229
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00454	0.00442	0.01011
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00002	-0.00014	0.00575
	(A2 * !B1 * C1 * C2 * X)	0.00454	0.00441	0.01009
	(A2 * !B1 * C1 * C2 * X)	0.00002	-0.00015	0.00573
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00252	0.00254	0.00252
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00156	-0.00159	-0.00157
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00701	0.00702	0.00702
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00293	0.00290	0.00293
	(!A2 * B1 * B2 * !C1 * X)	0.00702	0.00702	0.00702
	(!A2 * B1 * B2 * !C1 * X)	0.00292	0.00290	0.00293
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.01164	0.01164	0.01169
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00754	0.00753	0.00759
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00549	0.00549	0.00542
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00228	0.00225	0.00218
	(!A2 * B1 * !B2 * !C1 * !X)	0.00553	0.00553	0.00546
	(!A2 * B1 * !B2 * !C1 * !X)	0.00232	0.00229	0.00221
	(!A2 * !B1 * C1 * C2 * X)	0.01161	0.01161	0.01166
	(!A2 * !B1 * C1 * C2 * X)	0.00751	0.00750	0.00756
	(!A2 * !B1 * C1 * !C2 * !X)	0.00553	0.00553	0.00546
	(!A2 * !B1 * C1 * !C2 * !X)	0.00232	0.00229	0.00221
	(!A2 * !B1 * !C1 * !X)	0.00557	0.00557	0.00550
	(!A2 * !B1 * !C1 * !X)	0.00235	0.00233	0.00225

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00304	0.00273	0.00281
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00124	-0.00153	-0.00141
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00420	0.00386	0.00681
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00025	-0.00058	0.00246
	(A2 * B1 * B2 * !C1 * X)	0.00420	0.00386	0.00681
	(A2 * B1 * B2 * !C1 * X)	-0.00025	-0.00058	0.00246
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00473	0.00457	0.01026
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00010	-0.00007	0.00580
	(A2 * !B1 * C1 * C2 * X)	0.00476	0.00458	0.01030
	(A2 * !B1 * C1 * C2 * X)	0.00013	-0.00007	0.00585
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00280	0.00281	0.00279
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00140	-0.00141	-0.00140
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00730	0.00730	0.00731
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00311	0.00309	0.00312
	(!A2 * B1 * B2 * !C1 * X)	0.00730	0.00730	0.00731
	(!A2 * B1 * B2 * !C1 * X)	0.00311	0.00309	0.00312
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.01184	0.01184	0.01189
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00766	0.00764	0.00770
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.01011	0.01011	0.01001
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00673	0.00671	0.00659
	(!A2 * B1 * !B2 * !C1 * !X)	0.01015	0.01015	0.01005
	(!A2 * B1 * !B2 * !C1 * !X)	0.00677	0.00675	0.00663
	(!A2 * !B1 * C1 * C2 * X)	0.01179	0.01178	0.01186
	(!A2 * !B1 * C1 * C2 * X)	0.00760	0.00758	0.00766
	(!A2 * !B1 * C1 * !C2 * !X)	0.01015	0.01015	0.01004
	(!A2 * !B1 * C1 * !C2 * !X)	0.00676	0.00675	0.00662
	(!A2 * !B1 * !C1 * !X)	0.01019	0.01019	0.01008
	(!A2 * !B1 * !C1 * !X)	0.00680	0.00679	0.00666

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)	-0.00101	-0.00104	-0.00107
	(A2 * B1 * B2 * C1 * C2 * X)	0.00314	0.00316	0.00309
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00322	0.00310	0.00228
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00755	0.00746	0.00662
	(A2 * B1 * B2 * !C1 * X)	0.00323	0.00309	0.00228
	(A2 * B1 * B2 * !C1 * X)	0.00755	0.00746	0.00662
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00802	0.00777	0.00581
	(A2 * B1 * !B2 * C1 * C2 * X)	0.01251	0.01227	0.01029
	(A2 * !B1 * C1 * C2 * X)	0.00800	0.00774	0.00579
	(A2 * !B1 * C1 * C2 * X)	0.01246	0.01224	0.01027
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00096	-0.00097	-0.00095
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00313	0.00315	0.00314
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00354	0.00351	0.00353
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00763	0.00767	0.00762
	(!A2 * B1 * B2 * !C1 * X)	0.00354	0.00351	0.00353
	(!A2 * B1 * B2 * !C1 * X)	0.00763	0.00767	0.00762
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00823	0.00821	0.00819
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.01233	0.01237	0.01228
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00438	0.00437	0.00440
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00760	0.00762	0.00761
	(!A2 * B1 * !B2 * !C1 * !X)	0.00442	0.00441	0.00444
	(!A2 * B1 * !B2 * !C1 * !X)	0.00764	0.00766	0.00765
	(!A2 * !B1 * C1 * C2 * X)	0.00820	0.00818	0.00816
	(!A2 * !B1 * C1 * C2 * X)	0.01230	0.01234	0.01225
	(!A2 * !B1 * C1 * !C2 * !X)	0.00442	0.00442	0.00444
	(!A2 * !B1 * C1 * !C2 * !X)	0.00764	0.00766	0.00765
	(!A2 * !B1 * !C1 * !X)	0.00446	0.00445	0.00448
	(!A2 * !B1 * !C1 * !X)	0.00768	0.00770	0.00769

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00109	-0.00110	-0.00113
	(A2 * B1 * B2 * C1 * C2 * X)	0.00317	0.00317	0.00313
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00320	0.00307	0.00225
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00761	0.00752	0.00667
	(A2 * B1 * B2 * !C1 * X)	0.00320	0.00307	0.00225
	(A2 * B1 * B2 * !C1 * X)	0.00761	0.00752	0.00667
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00792	0.00766	0.00574
	(A2 * B1 * !B2 * C1 * C2 * X)	0.01248	0.01226	0.01031
	(A2 * !B1 * C1 * C2 * X)	0.00799	0.00772	0.00578
	(A2 * !B1 * C1 * C2 * X)	0.01255	0.01232	0.01035
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00102	-0.00104	-0.00102
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00316	0.00319	0.00317
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00349	0.00345	0.00346
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00767	0.00770	0.00765
	(!A2 * B1 * B2 * !C1 * X)	0.00349	0.00345	0.00346
	(!A2 * B1 * B2 * !C1 * X)	0.00767	0.00770	0.00765
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00821	0.00817	0.00815
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.01238	0.01241	0.01234
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00887	0.00886	0.00888
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.01225	0.01226	0.01225
	(!A2 * B1 * !B2 * !C1 * !X)	0.00891	0.00890	0.00891
	(!A2 * B1 * !B2 * !C1 * !X)	0.01228	0.01230	0.01229
	(!A2 * !B1 * C1 * C2 * X)	0.00820	0.00816	0.00811
	(!A2 * !B1 * C1 * C2 * X)	0.01238	0.01240	0.01231
	(!A2 * !B1 * C1 * !C2 * !X)	0.00891	0.00891	0.00892
	(!A2 * !B1 * C1 * !C2 * !X)	0.01229	0.01231	0.01230
	(!A2 * !B1 * !C1 * !X)	0.00895	0.00895	0.00896
	(!A2 * !B1 * !C1 * !X)	0.01233	0.01235	0.01233

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)	0.00294	0.00269	0.00274
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00134	-0.00164	-0.00150
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00412	0.00384	0.00674
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00035	-0.00067	0.00237
	(A1 * B1 * B2 * !C1 * X)	0.00412	0.00384	0.00674
	(A1 * B1 * B2 * !C1 * X)	-0.00035	-0.00067	0.00237
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00469	0.00460	0.01031
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00005	-0.00008	0.00583
	(A1 * !B1 * C1 * C2 * X)	0.00468	0.00460	0.01029
	(A1 * !B1 * C1 * C2 * X)	0.00005	-0.00008	0.00581
	(!A1 * B1 * B2 * X)	0.00272	0.00274	0.00272
	(!A1 * B1 * B2 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01183	0.01185	0.01188
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00762	0.00760	0.00767
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00671	0.00672	0.00668
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00245	0.00244	0.00242
	(!A1 * B1 * !B2 * !C1 * !X)	0.00675	0.00677	0.00672
	(!A1 * B1 * !B2 * !C1 * !X)	0.00249	0.00247	0.00246
	(!A1 * !B1 * C1 * !C2 * !X)	0.00675	0.00677	0.00672
	(!A1 * !B1 * C1 * !C2 * !X)	0.00249	0.00247	0.00246
	(!A1 * !B1 * !C1 * !X)	0.00679	0.00680	0.00676
	(!A1 * !B1 * !C1 * !X)	0.00253	0.00251	0.00250

	(A1 * B1 * B2 * C1 * C2 * X)	0.00293	0.00266	0.00273
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00130	-0.00160	-0.00145
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00407	0.00378	0.00671
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00032	-0.00065	0.00242
	(A1 * B1 * B2 * !C1 * X)	0.00407	0.00374	0.00671
	(A1 * B1 * B2 * !C1 * X)	-0.00032	-0.00062	0.00242
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00463	0.00452	0.01026
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00006	-0.00008	0.00586
	(A1 * !B1 * C1 * C2 * X)	0.00459	0.00451	0.01021
	(A1 * !B1 * C1 * C2 * X)	0.00004	-0.00008	0.00581
	(!A1 * B1 * B2 * X)	0.00269	0.00270	0.00270
sky130_fd_sc_hs__a222o_2	**(!A1 * B1 * B2 * X)**	-0.00143	-0.00144	-0.00144
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01172	0.01173	0.01181
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00760	0.00758	0.00767
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.01139	0.01142	0.01137
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00723	0.00720	0.00719
	(!A1 * B1 * !B2 * !C1 * !X)	0.01143	0.01143	0.01141
	(!A1 * B1 * !B2 * !C1 * !X)	0.00727	0.00727	0.00723
	(!A1 * !B1 * C1 * !C2 * !X)	0.01143	0.01145	0.01141
	(!A1 * !B1 * C1 * !C2 * !X)	0.00727	0.00725	0.00724
	(!A1 * !B1 * !C1 * !X)	0.01147	0.01149	0.01145
	(!A1 * !B1 * !C1 * !X)	0.00731	0.00729	0.00728

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

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

	(A1 * B1 * B2 * C1 * C2 * X)	-0.00122	-0.00124	-0.00127
	(A1 * B1 * B2 * C1 * C2 * X)	0.00306	0.00308	0.00301
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00303	0.00290	0.00209
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00748	0.00739	0.00655
	(A1 * B1 * B2 * !C1 * X)	0.00303	0.00290	0.00209
	(A1 * B1 * B2 * !C1 * X)	0.00748	0.00739	0.00655
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00784	0.00758	0.00562
	(A1 * B1 * !B2 * C1 * C2 * X)	0.01242	0.01218	0.01023
	(A1 * !B1 * C1 * C2 * X)	0.00781	0.00756	0.00560
	(A1 * !B1 * C1 * C2 * X)	0.01239	0.01215	0.01021
	(!A1 * B1 * B2 * X)	-0.00117	-0.00117	-0.00115
sky130_fd_sc_hs__a222o_1	**(!A1 * B1 * B2 * X)**	0.00307	0.00307	0.00306
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00802	0.00802	0.00798
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01226	0.01226	0.01220
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00345	0.00331	0.00338
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00773	0.00761	0.00761
	(!A1 * B1 * !B2 * !C1 * !X)	0.00349	0.00335	0.00342
	(!A1 * B1 * !B2 * !C1 * !X)	0.00777	0.00765	0.00765
	(!A1 * !B1 * C1 * !C2 * !X)	0.00349	0.00335	0.00342
	(!A1 * !B1 * C1 * !C2 * !X)	0.00777	0.00765	0.00765
	(!A1 * !B1 * !C1 * !X)	0.00353	0.00339	0.00346
	(!A1 * !B1 * !C1 * !X)	0.00781	0.00769	0.00769

	(A1 * B1 * B2 * C1 * C2 * X)	-0.00099	-0.00100	-0.00104
	(A1 * B1 * B2 * C1 * C2 * X)	0.00321	0.00321	0.00316
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00330	0.00317	0.00236
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00766	0.00757	0.00673
	(A1 * B1 * B2 * !C1 * X)	0.00330	0.00317	0.00236
	(A1 * B1 * B2 * !C1 * X)	0.00766	0.00757	0.00673
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00805	0.00779	0.00585
	(A1 * B1 * !B2 * C1 * C2 * X)	0.01256	0.01232	0.01037
	(A1 * !B1 * C1 * C2 * X)	0.00798	0.00772	0.00580
	(A1 * !B1 * C1 * C2 * X)	0.01249	0.01226	0.01032
	(!A1 * B1 * B2 * X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__a222o_2	**(!A1 * B1 * B2 * X)**	0.00322	0.00322	0.00321
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00824	0.00821	0.00815
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01239	0.01239	0.01229
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00797	0.00775	0.00777
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.01217	0.01197	0.01192
	(!A1 * B1 * !B2 * !C1 * !X)	0.00801	0.00779	0.00781
	(!A1 * B1 * !B2 * !C1 * !X)	0.01221	0.01201	0.01196
	(!A1 * !B1 * C1 * !C2 * !X)	0.00801	0.00779	0.00780
	(!A1 * !B1 * C1 * !C2 * !X)	0.01221	0.01201	0.01195
	(!A1 * !B1 * !C1 * !X)	0.00805	0.00783	0.00784
	(!A1 * !B1 * !C1 * !X)	0.01225	0.01205	0.01199

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)**	0.00294	0.00303	0.00319
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00083	-0.00075	-0.00053
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00274	0.00277	0.00345
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00013	-0.00012	0.00056
	(A1 * A2 * B2 * !C1 * X)	0.00274	0.00277	0.00345
	(A1 * A2 * B2 * !C1 * X)	-0.00013	-0.00012	0.00056
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00339	0.00339	0.00311
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00029	-0.00031	-0.00048
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00711	0.00711	0.00710
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00398	0.00398	0.00398
	(A1 * A2 * !B2 * !C1 * X)	0.00711	0.00711	0.00710
	(A1 * A2 * !B2 * !C1 * X)	0.00398	0.00398	0.00398
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00419	0.00397	0.01003
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00024	-0.00047	0.00566
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.01184	0.01176	0.01180
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00763	0.00753	0.00758
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00551	0.00550	0.00543
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00215	0.00214	0.00205
	(A1 * !A2 * !B2 * !C1 * !X)	0.00555	0.00554	0.00547
	(A1 * !A2 * !B2 * !C1 * !X)	0.00219	0.00217	0.00209
	(!A1 * B2 * C1 * C2 * X)	0.00419	0.00397	0.01002
	(!A1 * B2 * C1 * C2 * X)	-0.00024	-0.00047	0.00566
	(!A1 * !B2 * C1 * C2 * X)	0.01184	0.01176	0.01179
	(!A1 * !B2 * C1 * C2 * X)	0.00761	0.00751	0.00757
	(!A1 * !B2 * C1 * !C2 * !X)	0.00554	0.00553	0.00546
	(!A1 * !B2 * C1 * !C2 * !X)	0.00218	0.00217	0.00209
	(!A1 * !B2 * !C1 * !X)	0.00558	0.00557	0.00550
	(!A1 * !B2 * !C1 * !X)	0.00222	0.00221	0.00213

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00298	0.00302	0.00325
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00062	-0.00059	-0.00032
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00270	0.00273	0.00335
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00013	-0.00012	0.00053
	(A1 * A2 * B2 * !C1 * X)	0.00270	0.00273	0.00335
	(A1 * A2 * B2 * !C1 * X)	-0.00013	-0.00012	0.00053
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00341	0.00341	0.00315
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00012	-0.00012	-0.00027
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00706	0.00707	0.00706
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00412	0.00412	0.00413
	(A1 * A2 * !B2 * !C1 * X)	0.00706	0.00707	0.00706
	(A1 * A2 * !B2 * !C1 * X)	0.00412	0.00412	0.00413
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00409	0.00390	0.01000
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00013	-0.00035	0.00582
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.01184	0.01178	0.01181
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00782	0.00773	0.00778
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00996	0.00995	0.00988
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00680	0.00679	0.00671
	(A1 * !A2 * !B2 * !C1 * !X)	0.01000	0.00999	0.00992
	(A1 * !A2 * !B2 * !C1 * !X)	0.00684	0.00683	0.00675
	(!A1 * B2 * C1 * C2 * X)	0.00406	0.00389	0.01002
	(!A1 * B2 * C1 * C2 * X)	-0.00016	-0.00036	0.00584
	(!A1 * !B2 * C1 * C2 * X)	0.01177	0.01170	0.01176
	(!A1 * !B2 * C1 * C2 * X)	0.00775	0.00765	0.00773
	(!A1 * !B2 * C1 * !C2 * !X)	0.01004	0.01003	0.00996
	(!A1 * !B2 * C1 * !C2 * !X)	0.00688	0.00687	0.00678
	(!A1 * !B2 * !C1 * !X)	0.01008	0.01007	0.01000
	(!A1 * !B2 * !C1 * !X)	0.00692	0.00691	0.00682

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)	-0.00167	-0.00167	-0.00141
	(A1 * A2 * B2 * C1 * C2 * X)	0.00213	0.00215	0.00224
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00341	0.00323	0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00638	0.00619	0.00379
	(A1 * A2 * B2 * !C1 * X)	0.00341	0.00324	0.00082
	(A1 * A2 * B2 * !C1 * X)	0.00638	0.00619	0.00379
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00165	-0.00164	-0.00138
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00205	0.00206	0.00216
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00279	0.00275	0.00262
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00591	0.00591	0.00573
	(A1 * A2 * !B2 * !C1 * X)	0.00279	0.00275	0.00262
	(A1 * A2 * !B2 * !C1 * X)	0.00591	0.00591	0.00573
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00793	0.00767	0.00578
	(A1 * !A2 * B2 * C1 * C2 * X)	0.01234	0.01209	0.01019
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00814	0.00808	0.00807
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.01235	0.01236	0.01228
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00439	0.00437	0.00440
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00773	0.00774	0.00773
	(A1 * !A2 * !B2 * !C1 * !X)	0.00443	0.00441	0.00444
	(A1 * !A2 * !B2 * !C1 * !X)	0.00777	0.00778	0.00777
	(!A1 * B2 * C1 * C2 * X)	0.00792	0.00766	0.00577
	(!A1 * B2 * C1 * C2 * X)	0.01233	0.01208	0.01018
	(!A1 * !B2 * C1 * C2 * X)	0.00813	0.00807	0.00806
	(!A1 * !B2 * C1 * C2 * X)	0.01234	0.01235	0.01227
	(!A1 * !B2 * C1 * !C2 * !X)	0.00443	0.00441	0.00444
	(!A1 * !B2 * C1 * !C2 * !X)	0.00777	0.00778	0.00777
	(!A1 * !B2 * !C1 * !X)	0.00447	0.00445	0.00448
	(!A1 * !B2 * !C1 * !X)	0.00781	0.00782	0.00781

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00150	-0.00149	-0.00123
	(A1 * A2 * B2 * C1 * C2 * X)	0.00216	0.00216	0.00227
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00374	0.00356	0.00116
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00663	0.00645	0.00405
	(A1 * A2 * B2 * !C1 * X)	0.00374	0.00356	0.00116
	(A1 * A2 * B2 * !C1 * X)	0.00663	0.00645	0.00405
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00149	-0.00148	-0.00122
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00205	0.00207	0.00216
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00302	0.00301	0.00286
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00596	0.00594	0.00578
	(A1 * A2 * !B2 * !C1 * X)	0.00302	0.00299	0.00286
	(A1 * A2 * !B2 * !C1 * X)	0.00596	0.00596	0.00578
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00805	0.00779	0.00594
	(A1 * !A2 * B2 * C1 * C2 * X)	0.01228	0.01203	0.01016
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00828	0.00824	0.00822
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.01231	0.01231	0.01224
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00898	0.00896	0.00898
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.01213	0.01213	0.01211
	(A1 * !A2 * !B2 * !C1 * !X)	0.00902	0.00900	0.00902
	(A1 * !A2 * !B2 * !C1 * !X)	0.01217	0.01217	0.01215
	(!A1 * B2 * C1 * C2 * X)	0.00811	0.00784	0.00598
	(!A1 * B2 * C1 * C2 * X)	0.01232	0.01208	0.01020
	(!A1 * !B2 * C1 * C2 * X)	0.00826	0.00821	0.00817
	(!A1 * !B2 * C1 * C2 * X)	0.01229	0.01228	0.01219
	(!A1 * !B2 * C1 * !C2 * !X)	0.00901	0.00899	0.00901
	(!A1 * !B2 * C1 * !C2 * !X)	0.01215	0.01216	0.01215
	(!A1 * !B2 * !C1 * !X)	0.00905	0.00903	0.00905
	(!A1 * !B2 * !C1 * !X)	0.01219	0.01220	0.01219

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)	0.00288	0.00295	0.00312
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00074	-0.00067	-0.00046
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00269	0.00271	0.00335
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00004	-0.00002	0.00063
	(A1 * A2 * B1 * !C1 * X)	0.00269	0.00271	0.00335
	(A1 * A2 * B1 * !C1 * X)	-0.00004	-0.00002	0.00063
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00330	0.00332	0.00304
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00023	-0.00025	-0.00041
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00696	0.00697	0.00696
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00401	0.00400	0.00401
	(A1 * A2 * !B1 * !C1 * X)	0.00696	0.00698	0.00696
	(A1 * A2 * !B1 * !C1 * X)	0.00401	0.00400	0.00401
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00414	0.00390	0.00998
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00013	-0.00037	0.00579
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01176	0.01168	0.01172
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00770	0.00760	0.00767
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00670	0.00671	0.00666
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00260	0.00258	0.00257
	(A1 * !A2 * !B1 * !C1 * !X)	0.00674	0.00674	0.00670
	(A1 * !A2 * !B1 * !C1 * !X)	0.00264	0.00263	0.00261
	(!A1 * B1 * C1 * C2 * X)	0.00414	0.00390	0.00998
	(!A1 * B1 * C1 * C2 * X)	-0.00013	-0.00036	0.00578
	(!A1 * !B1 * C1 * !C2 * !X)	0.00673	0.00674	0.00670
	(!A1 * !B1 * C1 * !C2 * !X)	0.00264	0.00262	0.00261
	(!A1 * !B1 * !C1 * !X)	0.00677	0.00678	0.00674
	(!A1 * !B1 * !C1 * !X)	0.00268	0.00266	0.00265

	(A1 * A2 * B1 * C1 * C2 * X)	0.00300	0.00304	0.00327
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00062	-0.00059	-0.00032
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00271	0.00273	0.00336
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00016	-0.00014	0.00052
	(A1 * A2 * B1 * !C1 * X)	0.00271	0.00273	0.00336
	(A1 * A2 * B1 * !C1 * X)	-0.00016	-0.00014	0.00052
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00342	0.00344	0.00317
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00010	-0.00012	-0.00027
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00709	0.00710	0.00709
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00413	0.00412	0.00413
	(A1 * A2 * !B1 * !C1 * X)	0.00708	0.00710	0.00709
	(A1 * A2 * !B1 * !C1 * X)	0.00414	0.00412	0.00413
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00407	0.00390	0.01005
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00018	-0.00037	0.00585
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01180	0.01175	0.01180
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00778	0.00767	0.00775
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.01120	0.01121	0.01118
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00712	0.00711	0.00712
	(A1 * !A2 * !B1 * !C1 * !X)	0.01124	0.01125	0.01122
	(A1 * !A2 * !B1 * !C1 * !X)	0.00716	0.00715	0.00716
	(!A1 * B1 * C1 * C2 * X)	0.00411	0.00392	0.01001
	(!A1 * B1 * C1 * C2 * X)	-0.00014	-0.00035	0.00581
	(!A1 * !B1 * C1 * !C2 * !X)	0.01134	0.01136	0.01132
	(!A1 * !B1 * C1 * !C2 * !X)	0.00727	0.00725	0.00723
	(!A1 * !B1 * !C1 * !X)	0.01138	0.01140	0.01136
	(!A1 * !B1 * !C1 * !X)	0.00731	0.00728	0.00727

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)	-0.00160	-0.00158	-0.00133
	(A1 * A2 * B1 * C1 * C2 * X)	0.00206	0.00205	0.00217
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00353	0.00336	0.00094
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00634	0.00615	0.00375
	(A1 * A2 * B1 * !C1 * X)	0.00353	0.00336	0.00094
	(A1 * A2 * B1 * !C1 * X)	0.00634	0.00615	0.00375
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00158	-0.00157	-0.00130
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00198	0.00199	0.00210
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00292	0.00290	0.00276
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00588	0.00587	0.00570
	(A1 * A2 * !B1 * !C1 * X)	0.00292	0.00290	0.00276
	(A1 * A2 * !B1 * !C1 * X)	0.00588	0.00587	0.00570
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00802	0.00776	0.00587
	(A1 * !A2 * B1 * C1 * C2 * X)	0.01227	0.01202	0.01011
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00820	0.00815	0.00812
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01226	0.01224	0.01216
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00347	0.00333	0.00340
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00758	0.00746	0.00746
	(A1 * !A2 * !B1 * !C1 * !X)	0.00351	0.00337	0.00344
	(A1 * !A2 * !B1 * !C1 * !X)	0.00762	0.00750	0.00750
	(!A1 * B1 * C1 * C2 * X)	0.00801	0.00775	0.00586
	(!A1 * B1 * C1 * C2 * X)	0.01227	0.01201	0.01010
	(!A1 * !B1 * C1 * !C2 * !X)	0.00352	0.00337	0.00344
	(!A1 * !B1 * C1 * !C2 * !X)	0.00762	0.00750	0.00750
	(!A1 * !B1 * !C1 * !X)	0.00356	0.00341	0.00348
	(!A1 * !B1 * !C1 * !X)	0.00766	0.00754	0.00754

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00152	-0.00151	-0.00125
	(A1 * A2 * B1 * C1 * C2 * X)	0.00215	0.00216	0.00227
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00373	0.00354	0.00114
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00663	0.00645	0.00405
	(A1 * A2 * B1 * !C1 * X)	0.00373	0.00354	0.00115
	(A1 * A2 * B1 * !C1 * X)	0.00663	0.00645	0.00405
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00152	-0.00150	-0.00124
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00205	0.00206	0.00215
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00300	0.00298	0.00284
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00597	0.00595	0.00578
	(A1 * A2 * !B1 * !C1 * X)	0.00300	0.00298	0.00284
	(A1 * A2 * !B1 * !C1 * X)	0.00597	0.00595	0.00578
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00811	0.00784	0.00598
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.01234	0.01211	0.01022
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00825	0.00821	0.00817
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.01232	0.01230	0.01221
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00802	0.00787	0.00793
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.01212	0.01198	0.01196
	(A1 * !A2 * !B1 * !C1 * !X)	0.00806	0.00791	0.00797
	(A1 * !A2 * !B1 * !C1 * !X)	0.01215	0.01202	0.01200
	(!A1 * B1 * C1 * C2 * X)	0.00802	0.00775	0.00591
	(!A1 * B1 * C1 * C2 * X)	0.01224	0.01201	0.01015
	(!A1 * !B1 * C1 * !C2 * !X)	0.00798	0.00782	0.00790
	(!A1 * !B1 * C1 * !C2 * !X)	0.01209	0.01195	0.01196
	(!A1 * !B1 * !C1 * !X)	0.00802	0.00786	0.00794
	(!A1 * !B1 * !C1 * !X)	0.01213	0.01199	0.01200

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)	0.00225	0.00227	0.00229
	(A1 * B1 * B2 * C2 * X)	-0.00076	-0.00076	-0.00073
	(A1 * B1 * B2 * !C2 * X)	0.00296	0.00298	0.00293
	(A1 * B1 * B2 * !C2 * X)	-0.00015	-0.00017	-0.00018
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00230	0.00235	0.00270
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00001	0.00001	0.00037
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00707	0.00708	0.00708
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00394	0.00393	0.00394
	(A1 * A2 * !B1 * C2 * X)	0.00230	0.00235	0.00270
	(A1 * A2 * !B1 * C2 * X)	0.00001	0.00001	0.00037
	(A1 * A2 * !B1 * !C2 * X)	0.00707	0.00708	0.00708
	(A1 * A2 * !B1 * !C2 * X)	0.00394	0.00393	0.00394
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00554	0.00552	0.00545
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00211	0.00209	0.00201
	(A1 * !A2 * !B1 * !C2 * !X)	0.00558	0.00556	0.00548
	(A1 * !A2 * !B1 * !C2 * !X)	0.00215	0.00213	0.00204
	(!A1 * B1 * B2 * C2 * X)	0.00233	0.00238	0.00301
	(!A1 * B1 * B2 * C2 * X)	-0.00054	-0.00053	0.00012
	(!A1 * B1 * B2 * !C2 * X)	0.00752	0.00752	0.00753
	(!A1 * B1 * B2 * !C2 * X)	0.00436	0.00436	0.00438
	(!A1 * B1 * !B2 * !C2 * !X)	0.00557	0.00555	0.00548
	(!A1 * B1 * !B2 * !C2 * !X)	0.00215	0.00212	0.00204
	(!A1 * !B1 * !C2 * !X)	0.00561	0.00559	0.00552
	(!A1 * !B1 * !C2 * !X)	0.00218	0.00216	0.00208

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00232	0.00234	0.00236
	(A1 * B1 * B2 * C2 * X)	-0.00054	-0.00055	-0.00051
	(A1 * B1 * B2 * !C2 * X)	0.00295	0.00296	0.00294
	(A1 * B1 * B2 * !C2 * X)	-0.00003	-0.00004	-0.00005
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00239	0.00244	0.00280
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00019	0.00020	0.00057
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00705	0.00707	0.00706
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00405	0.00404	0.00406
	(A1 * A2 * !B1 * C2 * X)	0.00237	0.00244	0.00280
	(A1 * A2 * !B1 * C2 * X)	0.00021	0.00019	0.00057
	(A1 * A2 * !B1 * !C2 * X)	0.00705	0.00707	0.00706
	(A1 * A2 * !B1 * !C2 * X)	0.00405	0.00404	0.00406
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.01001	0.00998	0.00990
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00672	0.00670	0.00660
	(A1 * !A2 * !B1 * !C2 * !X)	0.01005	0.01002	0.00993
	(A1 * !A2 * !B1 * !C2 * !X)	0.00676	0.00672	0.00663
	(!A1 * B1 * B2 * C2 * X)	0.00244	0.00249	0.00324
	(!A1 * B1 * B2 * C2 * X)	-0.00026	-0.00025	0.00052
	(!A1 * B1 * B2 * !C2 * X)	0.00750	0.00752	0.00752
	(!A1 * B1 * B2 * !C2 * X)	0.00449	0.00447	0.00450
	(!A1 * B1 * !B2 * !C2 * !X)	0.01006	0.01003	0.00995
	(!A1 * B1 * !B2 * !C2 * !X)	0.00677	0.00674	0.00665
	(!A1 * !B1 * !C2 * !X)	0.01011	0.01008	0.01000
	(!A1 * !B1 * !C2 * !X)	0.00682	0.00679	0.00670

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)**	-0.00092	-0.00094	-0.00117
	(A1 * B1 * B2 * C2 * X)	0.00212	0.00212	0.00192
	(A1 * B1 * B2 * !C2 * X)	-0.00147	-0.00149	-0.00148
	(A1 * B1 * B2 * !C2 * X)	0.00166	0.00167	0.00164
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00447	0.00434	0.00231
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00705	0.00692	0.00490
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00268	0.00267	0.00260
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00583	0.00583	0.00574
	(A1 * A2 * !B1 * C2 * X)	0.00447	0.00434	0.00231
	(A1 * A2 * !B1 * C2 * X)	0.00705	0.00692	0.00490
	(A1 * A2 * !B1 * !C2 * X)	0.00269	0.00268	0.00260
	(A1 * A2 * !B1 * !C2 * X)	0.00583	0.00582	0.00574
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00440	0.00435	0.00438
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00780	0.00779	0.00778
	(A1 * !A2 * !B1 * !C2 * !X)	0.00444	0.00440	0.00442
	(A1 * !A2 * !B1 * !C2 * !X)	0.00785	0.00783	0.00782
	(!A1 * B1 * B2 * C2 * X)	0.00443	0.00424	0.00163
	(!A1 * B1 * B2 * C2 * X)	0.00739	0.00721	0.00458
	(!A1 * B1 * B2 * !C2 * X)	0.00333	0.00331	0.00303
	(!A1 * B1 * B2 * !C2 * X)	0.00649	0.00647	0.00618
	(!A1 * B1 * !B2 * !C2 * !X)	0.00444	0.00439	0.00442
	(!A1 * B1 * !B2 * !C2 * !X)	0.00785	0.00783	0.00782
	(!A1 * !B1 * !C2 * !X)	0.00449	0.00444	0.00446
	(!A1 * !B1 * !C2 * !X)	0.00789	0.00787	0.00786

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00079	-0.00080	-0.00100
	(A1 * B1 * B2 * C2 * X)	0.00211	0.00211	0.00195
	(A1 * B1 * B2 * !C2 * X)	-0.00125	-0.00127	-0.00127
	(A1 * B1 * B2 * !C2 * X)	0.00174	0.00175	0.00172
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00460	0.00445	0.00239
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00704	0.00692	0.00487
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00291	0.00290	0.00283
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00592	0.00592	0.00583
	(A1 * A2 * !B1 * C2 * X)	0.00459	0.00445	0.00240
	(A1 * A2 * !B1 * C2 * X)	0.00705	0.00692	0.00487
	(A1 * A2 * !B1 * !C2 * X)	0.00291	0.00290	0.00283
	(A1 * A2 * !B1 * !C2 * X)	0.00592	0.00592	0.00583
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00900	0.00894	0.00896
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.01227	0.01223	0.01222
	(A1 * !A2 * !B1 * !C2 * !X)	0.00906	0.00899	0.00901
	(A1 * !A2 * !B1 * !C2 * !X)	0.01233	0.01228	0.01228
	(!A1 * B1 * B2 * C2 * X)	0.00445	0.00424	0.00158
	(!A1 * B1 * B2 * C2 * X)	0.00722	0.00703	0.00437
	(!A1 * B1 * B2 * !C2 * X)	0.00355	0.00352	0.00325
	(!A1 * B1 * B2 * !C2 * X)	0.00657	0.00656	0.00626
	(!A1 * B1 * !B2 * !C2 * !X)	0.00907	0.00900	0.00902
	(!A1 * B1 * !B2 * !C2 * !X)	0.01234	0.01230	0.01229
	(!A1 * !B1 * !C2 * !X)	0.00909	0.00903	0.00905
	(!A1 * !B1 * !C2 * !X)	0.01236	0.01232	0.01231

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)**	0.00226	0.00227	0.00229
	(A1 * B1 * B2 * C1 * X)	-0.00072	-0.00071	-0.00068
	(A1 * B1 * B2 * !C1 * X)	0.00294	0.00295	0.00291
	(A1 * B1 * B2 * !C1 * X)	-0.00013	-0.00014	-0.00015
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00230	0.00235	0.00269
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00007	0.00006	0.00042
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00704	0.00706	0.00705
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00397	0.00396	0.00396
	(A1 * A2 * !B1 * C1 * X)	0.00230	0.00235	0.00269
	(A1 * A2 * !B1 * C1 * X)	0.00007	0.00006	0.00042
	(A1 * A2 * !B1 * !C1 * X)	0.00704	0.00706	0.00705
	(A1 * A2 * !B1 * !C1 * X)	0.00397	0.00395	0.00396
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00672	0.00673	0.00667
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00245	0.00242	0.00241
	(A1 * !A2 * !B1 * !C1 * !X)	0.00676	0.00676	0.00671
	(A1 * !A2 * !B1 * !C1 * !X)	0.00248	0.00245	0.00244
	(!A1 * B1 * B2 * C1 * X)	0.00233	0.00238	0.00300
	(!A1 * B1 * B2 * C1 * X)	-0.00047	-0.00047	0.00017
	(!A1 * B1 * B2 * !C1 * X)	0.00749	0.00751	0.00751
	(!A1 * B1 * B2 * !C1 * X)	0.00439	0.00438	0.00440
	(!A1 * B1 * !B2 * !C1 * !X)	0.00676	0.00676	0.00671
	(!A1 * B1 * !B2 * !C1 * !X)	0.00248	0.00245	0.00244
	(!A1 * !B1 * !C1 * !X)	0.00680	0.00680	0.00675
	(!A1 * !B1 * !C1 * !X)	0.00252	0.00249	0.00248

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00244	0.00246	0.00248
	(A1 * B1 * B2 * C1 * X)	-0.00057	-0.00057	-0.00054
	(A1 * B1 * B2 * !C1 * X)	0.00311	0.00312	0.00308
	(A1 * B1 * B2 * !C1 * X)	-0.00004	-0.00004	-0.00005
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00249	0.00255	0.00292
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00017	0.00016	0.00054
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00721	0.00723	0.00722
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00406	0.00405	0.00406
	(A1 * A2 * !B1 * C1 * X)	0.00249	0.00255	0.00292
	(A1 * A2 * !B1 * C1 * X)	0.00017	0.00016	0.00054
	(A1 * A2 * !B1 * !C1 * X)	0.00721	0.00723	0.00722
	(A1 * A2 * !B1 * !C1 * X)	0.00406	0.00405	0.00406
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.01118	0.01117	0.01112
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00683	0.00679	0.00677
	(A1 * !A2 * !B1 * !C1 * !X)	0.01121	0.01120	0.01115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00686	0.00683	0.00681
	(!A1 * B1 * B2 * C1 * X)	0.00256	0.00261	0.00337
	(!A1 * B1 * B2 * C1 * X)	-0.00030	-0.00028	0.00050
	(!A1 * B1 * B2 * !C1 * X)	0.00766	0.00768	0.00768
	(!A1 * B1 * B2 * !C1 * X)	0.00449	0.00448	0.00450
	(!A1 * B1 * !B2 * !C1 * !X)	0.01123	0.01122	0.01116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00688	0.00684	0.00682
	(!A1 * !B1 * !C1 * !X)	0.01127	0.01126	0.01121
	(!A1 * !B1 * !C1 * !X)	0.00692	0.00689	0.00687

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)**	-0.00093	-0.00093	-0.00117
	(A1 * B1 * B2 * C1 * X)	0.00207	0.00207	0.00188
	(A1 * B1 * B2 * !C1 * X)	-0.00144	-0.00145	-0.00145
	(A1 * B1 * B2 * !C1 * X)	0.00163	0.00163	0.00161
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00448	0.00436	0.00232
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00702	0.00689	0.00486
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00271	0.00270	0.00263
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00581	0.00580	0.00571
	(A1 * A2 * !B1 * C1 * X)	0.00448	0.00436	0.00232
	(A1 * A2 * !B1 * C1 * X)	0.00702	0.00689	0.00486
	(A1 * A2 * !B1 * !C1 * X)	0.00271	0.00270	0.00263
	(A1 * A2 * !B1 * !C1 * X)	0.00581	0.00580	0.00571
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00348	0.00331	0.00339
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00777	0.00762	0.00763
	(A1 * !A2 * !B1 * !C1 * !X)	0.00352	0.00335	0.00343
	(A1 * !A2 * !B1 * !C1 * !X)	0.00781	0.00766	0.00767
	(!A1 * B1 * B2 * C1 * X)	0.00445	0.00426	0.00165
	(!A1 * B1 * B2 * C1 * X)	0.00736	0.00716	0.00455
	(!A1 * B1 * B2 * !C1 * X)	0.00335	0.00333	0.00306
	(!A1 * B1 * B2 * !C1 * X)	0.00647	0.00644	0.00615
	(!A1 * B1 * !B2 * !C1 * !X)	0.00352	0.00335	0.00343
	(!A1 * B1 * !B2 * !C1 * !X)	0.00781	0.00766	0.00767
	(!A1 * !B1 * !C1 * !X)	0.00357	0.00339	0.00347
	(!A1 * !B1 * !C1 * !X)	0.00785	0.00770	0.00771

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00091	-0.00092	-0.00112
	(A1 * B1 * B2 * C1 * X)	0.00213	0.00213	0.00197
	(A1 * B1 * B2 * !C1 * X)	-0.00141	-0.00141	-0.00141
	(A1 * B1 * B2 * !C1 * X)	0.00174	0.00174	0.00172
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00446	0.00432	0.00226
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00706	0.00693	0.00488
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00275	0.00274	0.00267
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00592	0.00591	0.00583
	(A1 * A2 * !B1 * C1 * X)	0.00446	0.00432	0.00226
	(A1 * A2 * !B1 * C1 * X)	0.00706	0.00693	0.00488
	(A1 * A2 * !B1 * !C1 * X)	0.00275	0.00274	0.00267
	(A1 * A2 * !B1 * !C1 * X)	0.00592	0.00591	0.00583
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00812	0.00790	0.00799
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.01248	0.01229	0.01230
	(A1 * !A2 * !B1 * !C1 * !X)	0.00818	0.00796	0.00804
	(A1 * !A2 * !B1 * !C1 * !X)	0.01254	0.01234	0.01236
	(!A1 * B1 * B2 * C1 * X)	0.00431	0.00409	0.00144
	(!A1 * B1 * B2 * C1 * X)	0.00722	0.00704	0.00437
	(!A1 * B1 * B2 * !C1 * X)	0.00339	0.00337	0.00310
	(!A1 * B1 * B2 * !C1 * X)	0.00658	0.00656	0.00626
	(!A1 * B1 * !B2 * !C1 * !X)	0.00819	0.00798	0.00805
	(!A1 * B1 * !B2 * !C1 * !X)	0.01255	0.01236	0.01237
	(!A1 * !B1 * !C1 * !X)	0.00820	0.00800	0.00808
	(!A1 * !B1 * !C1 * !X)	0.01257	0.01239	0.01239

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00282	0.00283	0.00292	0.00293	0.81849
sky130_fd_sc_hs__a22oi_2	0.00616	0.00546	0.00588	0.00538	1.38617
sky130_fd_sc_hs__a22oi_4	0.01083	0.01079	0.01091	0.01077	2.45351

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	319.04000	1028.22000
sky130_fd_sc_hs__a22oi_2	0.00000	635.79300	2046.56000
sky130_fd_sc_hs__a22oi_4	0.00000	1268.39000	4081.06000

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)	0.05960	0.64459	7.99972
	A2->Y (FR)	0.06957	0.65965	8.09192
	B1->Y (FR)	0.04288	0.68237	8.73320
	B2->Y (FR)	0.05287	0.70161	8.92471
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.06349	0.54020	7.57381
	A2->Y (FR)	0.07630	0.56733	7.83295
	B1->Y (FR)	0.04425	0.59237	8.51757
	B2->Y (FR)	0.05821	0.62633	8.85387
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.05992	0.44612	7.17498
	A2->Y (FR)	0.07534	0.47536	7.46250
	B1->Y (FR)	0.04187	0.50396	8.18715
	B2->Y (FR)	0.05773	0.54261	8.59588

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.03284	0.37967	4.60244
	A2->Y (RF)	0.03630	0.33578	3.96051
	B1->Y (RF)	0.02009	0.36510	4.62944
	B2->Y (RF)	0.02342	0.32429	4.01106
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03304	0.31084	4.26694
	A2->Y (RF)	0.03644	0.27529	3.71225
	B1->Y (RF)	0.01943	0.28833	4.22548
	B2->Y (RF)	0.02383	0.25409	3.65299
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03358	0.27875	4.41914
	A2->Y (RF)	0.03739	0.21903	3.46635
	B1->Y (RF)	0.01857	0.25251	4.38864
	B2->Y (RF)	0.02244	0.19148	3.36767

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00001	0.00750	0.13431
	A1	0.00907	0.01655	0.14325
	A2	0.00060	0.00826	0.14054
	A2	0.01130	0.01893	0.15077
	B1	0.00000	0.00977	0.14910
	B1	0.00587	0.01558	0.15465
	B2	0.00031	0.00996	0.14993
	B2	0.00781	0.01739	0.15687
sky130_fd_sc_hs__a22oi_2	A1	0.00055	0.01697	0.26929
	A1	0.01956	0.03600	0.28823
	A2	0.00210	0.01891	0.28095
	A2	0.02330	0.04008	0.30184
	B1	0.00030	0.02126	0.29705
	B1	0.01250	0.03346	0.30805
	B2	0.00217	0.02268	0.29637
	B2	0.01686	0.03730	0.31000
sky130_fd_sc_hs__a22oi_4	A1	-0.00116	0.03268	0.50057
	A1	0.03485	0.06862	0.53533
	A2	0.00223	0.03761	0.53575
	A2	0.04446	0.07988	0.57609
	B1	-0.00117	0.04034	0.53596
	B1	0.02182	0.06329	0.55653
	B2	0.00211	0.04340	0.54762
	B2	0.03115	0.07229	0.57267

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.02349	0.03006	0.13445
	A1	0.01445	0.02096	0.12515
	A2	0.02439	0.03069	0.13882
	A2	0.01373	0.01989	0.12811
	B1	0.02349	0.03007	0.12542
	B1	0.01763	0.02416	0.11873
	B2	0.02406	0.03021	0.12592
	B2	0.01659	0.02266	0.11787
sky130_fd_sc_hs__a22oi_2	A1	0.04620	0.06049	0.26877
	A1	0.02725	0.04144	0.24924
	A2	0.04733	0.06085	0.27111
	A2	0.02617	0.03953	0.24919
	B1	0.04602	0.06092	0.25475
	B1	0.03383	0.04870	0.24178
	B2	0.04662	0.06026	0.25204
	B2	0.03194	0.04557	0.23655
sky130_fd_sc_hs__a22oi_4	A1	0.09112	0.12074	0.50731
	A1	0.05517	0.08468	0.46979
	A2	0.09419	0.12422	0.54820
	A2	0.05204	0.08196	0.50574
	B1	0.09176	0.12219	0.46733
	B1	0.06883	0.09915	0.44340
	B2	0.09262	0.12276	0.49095
	B2	0.06361	0.09369	0.46121

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)	0.00415	0.00394	0.00949
	(A2 * B1 * B2 * !Y)	-0.00046	-0.00073	0.00491
	(!A2 * B1 * B2 * !Y)	0.01080	0.01081	0.01083
	(!A2 * B1 * B2 * !Y)	0.00638	0.00635	0.00640
	(!A2 * B1 * !B2 * Y)	0.00077	0.00077	0.00072
	(!A2 * B1 * !B2 * Y)	-0.00269	-0.00270	-0.00277
	(!A2 * !B1 * Y)	0.00079	0.00079	0.00073
	(!A2 * !B1 * Y)	-0.00267	-0.00269	-0.00275
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00873	0.00816	0.01927
	(A2 * B1 * B2 * !Y)	-0.00119	-0.00180	0.00943
	(!A2 * B1 * B2 * !Y)	0.02186	0.02184	0.02191
	(!A2 * B1 * B2 * !Y)	0.01236	0.01226	0.01238
	(!A2 * B1 * !B2 * Y)	0.00153	0.00154	0.00144
	(!A2 * B1 * !B2 * Y)	-0.00601	-0.00605	-0.00621
	(!A2 * !B1 * Y)	0.00156	0.00157	0.00147
	(!A2 * !B1 * Y)	-0.00598	-0.00601	-0.00617
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.01646	0.01554	0.03775
	(A2 * B1 * B2 * !Y)	-0.00224	-0.00324	0.01919
	(!A2 * B1 * B2 * !Y)	0.04287	0.04284	0.04305
	(!A2 * B1 * B2 * !Y)	0.02494	0.02487	0.02514
	(!A2 * B1 * !B2 * Y)	0.00295	0.00295	0.00274
	(!A2 * B1 * !B2 * Y)	-0.01102	-0.01106	-0.01142
	(!A2 * !B1 * Y)	0.00303	0.00303	0.00282
	(!A2 * !B1 * Y)	-0.01094	-0.01098	-0.01134

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)	0.00689	0.00667	0.00514
	(A2 * B1 * B2 * !Y)	0.01151	0.01133	0.00977
	(!A2 * B1 * B2 * !Y)	0.00703	0.00700	0.00699
	(!A2 * B1 * B2 * !Y)	0.01146	0.01149	0.01142
	(!A2 * B1 * !B2 * Y)	-0.00046	-0.00047	-0.00045
	(!A2 * B1 * !B2 * Y)	0.00300	0.00305	0.00301
	(!A2 * !B1 * Y)	-0.00044	-0.00045	-0.00043
	(!A2 * !B1 * Y)	0.00301	0.00306	0.00302
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.01337	0.01293	0.00987
	(A2 * B1 * B2 * !Y)	0.02329	0.02289	0.01980
	(!A2 * B1 * B2 * !Y)	0.01363	0.01357	0.01353
	(!A2 * B1 * B2 * !Y)	0.02316	0.02320	0.02306
	(!A2 * B1 * !B2 * Y)	-0.00090	-0.00093	-0.00089
	(!A2 * B1 * !B2 * Y)	0.00665	0.00679	0.00669
	(!A2 * !B1 * Y)	-0.00087	-0.00090	-0.00086
	(!A2 * !B1 * Y)	0.00669	0.00682	0.00672
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.02713	0.02626	0.02026
	(A2 * B1 * B2 * !Y)	0.04582	0.04506	0.03898
	(!A2 * B1 * B2 * !Y)	0.02779	0.02768	0.02755
	(!A2 * B1 * B2 * !Y)	0.04569	0.04577	0.04548
	(!A2 * B1 * !B2 * Y)	-0.00167	-0.00171	-0.00164
	(!A2 * B1 * !B2 * Y)	0.01231	0.01256	0.01238
	(!A2 * !B1 * Y)	-0.00162	-0.00166	-0.00159
	(!A2 * !B1 * Y)	0.01237	0.01262	0.01243

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)	0.00429	0.00406	0.00959
	(A1 * B1 * B2 * !Y)	-0.00054	-0.00081	0.00481
	(!A1 * B1 * B2 * !Y)	0.01093	0.01094	0.01095
	(!A1 * B1 * B2 * !Y)	0.00631	0.00627	0.00632
	(!A1 * B1 * !B2 * Y)	0.00222	0.00223	0.00222
	(!A1 * B1 * !B2 * Y)	-0.00242	-0.00244	-0.00244
	(!A1 * !B1 * Y)	0.00223	0.00226	0.00223
	(!A1 * !B1 * Y)	-0.00241	-0.00243	-0.00243
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00814	0.00774	0.01884
	(A1 * B1 * B2 * !Y)	-0.00105	-0.00149	0.00972
	(!A1 * B1 * B2 * !Y)	0.02158	0.02158	0.02161
	(!A1 * B1 * B2 * !Y)	0.01280	0.01272	0.01281
	(!A1 * B1 * !B2 * Y)	0.00413	0.00418	0.00412
	(!A1 * B1 * !B2 * Y)	-0.00471	-0.00476	-0.00474
	(!A1 * !B1 * Y)	0.00416	0.00422	0.00415
	(!A1 * !B1 * Y)	-0.00468	-0.00472	-0.00471
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.01644	0.01558	0.03771
	(A1 * B1 * B2 * !Y)	-0.00236	-0.00330	0.01906
	(!A1 * B1 * B2 * !Y)	0.04308	0.04308	0.04318
	(!A1 * B1 * B2 * !Y)	0.02505	0.02496	0.02518
	(!A1 * B1 * !B2 * Y)	0.00861	0.00872	0.00859
	(!A1 * B1 * !B2 * Y)	-0.00949	-0.00957	-0.00954
	(!A1 * !B1 * Y)	0.00868	0.00878	0.00866
	(!A1 * !B1 * Y)	-0.00942	-0.00950	-0.00947

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)	0.00677	0.00655	0.00501
	(A1 * B1 * B2 * !Y)	0.01159	0.01139	0.00984
	(!A1 * B1 * B2 * !Y)	0.00691	0.00690	0.00689
	(!A1 * B1 * B2 * !Y)	0.01157	0.01156	0.01152
	(!A1 * B1 * !B2 * Y)	-0.00165	-0.00181	-0.00181
	(!A1 * B1 * !B2 * Y)	0.00304	0.00290	0.00283
	(!A1 * !B1 * Y)	-0.00163	-0.00179	-0.00179
	(!A1 * !B1 * Y)	0.00306	0.00292	0.00285
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.01362	0.01320	0.01019
	(A1 * B1 * B2 * !Y)	0.02283	0.02244	0.01940
	(!A1 * B1 * B2 * !Y)	0.01397	0.01391	0.01390
	(!A1 * B1 * B2 * !Y)	0.02276	0.02281	0.02270
	(!A1 * B1 * !B2 * Y)	-0.00291	-0.00333	-0.00329
	(!A1 * B1 * !B2 * Y)	0.00595	0.00563	0.00552
	(!A1 * !B1 * Y)	-0.00288	-0.00329	-0.00326
	(!A1 * !B1 * Y)	0.00598	0.00567	0.00556
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.02691	0.02610	0.02010
	(A1 * B1 * B2 * !Y)	0.04574	0.04490	0.03891
	(!A1 * B1 * B2 * !Y)	0.02773	0.02761	0.02757
	(!A1 * B1 * B2 * !Y)	0.04571	0.04582	0.04557
	(!A1 * B1 * !B2 * Y)	-0.00604	-0.00698	-0.00694
	(!A1 * B1 * !B2 * Y)	0.01209	0.01137	0.01110
	(!A1 * !B1 * Y)	-0.00597	-0.00691	-0.00687
	(!A1 * !B1 * Y)	0.01216	0.01144	0.01116

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)	0.00234	0.00239	0.00305
	(A1 * A2 * B2 * !Y)	-0.00056	-0.00054	0.00013
	(A1 * A2 * !B2 * !Y)	0.00748	0.00750	0.00750
	(A1 * A2 * !B2 * !Y)	0.00424	0.00423	0.00425
	(A1 * !A2 * !B2 * Y)	0.00071	0.00071	0.00066
	(A1 * !A2 * !B2 * Y)	-0.00281	-0.00282	-0.00288
	(!A1 * !B2 * Y)	0.00073	0.00072	0.00068
	(!A1 * !B2 * Y)	-0.00279	-0.00280	-0.00287
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00504	0.00515	0.00657
	(A1 * A2 * B2 * !Y)	-0.00094	-0.00091	0.00056
	(A1 * A2 * !B2 * !Y)	0.01521	0.01530	0.01525
	(A1 * A2 * !B2 * !Y)	0.00851	0.00847	0.00854
	(A1 * !A2 * !B2 * Y)	0.00164	0.00163	0.00152
	(A1 * !A2 * !B2 * Y)	-0.00560	-0.00562	-0.00578
	(!A1 * !B2 * Y)	0.00167	0.00167	0.00156
	(!A1 * !B2 * Y)	-0.00556	-0.00559	-0.00574
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00927	0.00939	0.01258
	(A1 * A2 * B2 * !Y)	-0.00197	-0.00190	0.00113
	(A1 * A2 * !B2 * !Y)	0.02978	0.02984	0.02985
	(A1 * A2 * !B2 * !Y)	0.01701	0.01697	0.01705
	(A1 * !A2 * !B2 * Y)	0.00292	0.00295	0.00272
	(A1 * !A2 * !B2 * Y)	-0.01102	-0.01115	-0.01146
	(!A1 * !B2 * Y)	0.00300	0.00302	0.00279
	(!A1 * !B2 * Y)	-0.01095	-0.01106	-0.01139

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)	0.00432	0.00413	0.00166
	(A1 * A2 * B2 * !Y)	0.00731	0.00713	0.00465
	(A1 * A2 * !B2 * !Y)	0.00311	0.00307	0.00284
	(A1 * A2 * !B2 * !Y)	0.00636	0.00634	0.00608
	(A1 * !A2 * !B2 * Y)	-0.00041	-0.00041	-0.00039
	(A1 * !A2 * !B2 * Y)	0.00311	0.00316	0.00312
	(!A1 * !B2 * Y)	-0.00039	-0.00040	-0.00038
	(!A1 * !B2 * Y)	0.00312	0.00318	0.00314
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00818	0.00779	0.00281
	(A1 * A2 * B2 * !Y)	0.01433	0.01397	0.00898
	(A1 * A2 * !B2 * !Y)	0.00593	0.00586	0.00539
	(A1 * A2 * !B2 * !Y)	0.01264	0.01262	0.01210
	(A1 * !A2 * !B2 * Y)	-0.00101	-0.00100	-0.00098
	(A1 * !A2 * !B2 * Y)	0.00623	0.00622	0.00625
	(!A1 * !B2 * Y)	-0.00097	-0.00099	-0.00095
	(!A1 * !B2 * Y)	0.00626	0.00636	0.00628
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.01691	0.01617	0.00615
	(A1 * A2 * B2 * !Y)	0.02866	0.02789	0.01788
	(A1 * A2 * !B2 * !Y)	0.01255	0.01240	0.01144
	(A1 * A2 * !B2 * !Y)	0.02534	0.02529	0.02425
	(A1 * !A2 * !B2 * Y)	-0.00168	-0.00166	-0.00162
	(A1 * !A2 * !B2 * Y)	0.01241	0.01241	0.01241
	(!A1 * !B2 * Y)	-0.00163	-0.00161	-0.00157
	(!A1 * !B2 * Y)	0.01246	0.01246	0.01247

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)	0.00252	0.00259	0.00324
	(A1 * A2 * B1 * !Y)	-0.00055	-0.00055	0.00012
	(A1 * A2 * !B1 * !Y)	0.00767	0.00769	0.00769
	(A1 * A2 * !B1 * !Y)	0.00422	0.00421	0.00423
	(A1 * !A2 * !B1 * Y)	0.00225	0.00227	0.00224
	(A1 * !A2 * !B1 * Y)	-0.00252	-0.00253	-0.00253
	(!A1 * !B1 * Y)	0.00227	0.00229	0.00225
	(!A1 * !B1 * Y)	-0.00250	-0.00251	-0.00251
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00447	0.00460	0.00603
	(A1 * A2 * B1 * !Y)	-0.00092	-0.00092	0.00054
	(A1 * A2 * !B1 * !Y)	0.01468	0.01477	0.01472
	(A1 * A2 * !B1 * !Y)	0.00850	0.00846	0.00852
	(A1 * !A2 * !B1 * Y)	0.00410	0.00416	0.00410
	(A1 * !A2 * !B1 * Y)	-0.00468	-0.00472	-0.00471
	(!A1 * !B1 * Y)	0.00414	0.00419	0.00413
	(!A1 * !B1 * Y)	-0.00465	-0.00469	-0.00468
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00929	0.00935	0.01258
	(A1 * A2 * B1 * !Y)	-0.00198	-0.00188	0.00112
	(A1 * A2 * !B1 * !Y)	0.02976	0.02984	0.02986
	(A1 * A2 * !B1 * !Y)	0.01703	0.01698	0.01705
	(A1 * !A2 * !B1 * Y)	0.00855	0.00859	0.00856
	(A1 * !A2 * !B1 * Y)	-0.00940	-0.00944	-0.00948
	(!A1 * !B1 * Y)	0.00862	0.00872	0.00863
	(!A1 * !B1 * Y)	-0.00933	-0.00942	-0.00941

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)	0.00414	0.00394	0.00147
	(A1 * A2 * B1 * !Y)	0.00732	0.00715	0.00467
	(A1 * A2 * !B1 * !Y)	0.00293	0.00288	0.00265
	(A1 * A2 * !B1 * !Y)	0.00637	0.00637	0.00610
	(A1 * !A2 * !B1 * Y)	-0.00167	-0.00187	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00309	0.00295	0.00291
	(!A1 * !B1 * Y)	-0.00165	-0.00185	-0.00181
	(!A1 * !B1 * Y)	0.00310	0.00296	0.00293
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00871	0.00832	0.00335
	(A1 * A2 * B1 * !Y)	0.01434	0.01399	0.00899
	(A1 * A2 * !B1 * !Y)	0.00647	0.00639	0.00592
	(A1 * A2 * !B1 * !Y)	0.01266	0.01264	0.01211
	(A1 * !A2 * !B1 * Y)	-0.00289	-0.00335	-0.00328
	(A1 * !A2 * !B1 * Y)	0.00592	0.00557	0.00549
	(!A1 * !B1 * Y)	-0.00285	-0.00331	-0.00324
	(!A1 * !B1 * Y)	0.00595	0.00560	0.00552
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.01691	0.01614	0.00615
	(A1 * A2 * B1 * !Y)	0.02867	0.02792	0.01789
	(A1 * A2 * !B1 * !Y)	0.01255	0.01238	0.01146
	(A1 * A2 * !B1 * !Y)	0.02535	0.02532	0.02426
	(A1 * !A2 * !B1 * Y)	-0.00604	-0.00703	-0.00691
	(A1 * !A2 * !B1 * Y)	0.01199	0.01123	0.01104
	(!A1 * !B1 * Y)	-0.00598	-0.00697	-0.00684
	(!A1 * !B1 * Y)	0.01206	0.01129	0.01110

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00277	0.00256	0.00268	0.00276	1.70086
sky130_fd_sc_hs__a22o_2	0.00288	0.00267	0.00282	0.00275	3.14439
sky130_fd_sc_hs__a22o_4	0.00490	0.00519	0.00489	0.00537	6.48063

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	649.85800	1179.38000
sky130_fd_sc_hs__a22o_2	0.00000	941.56500	1191.35000
sky130_fd_sc_hs__a22o_4	0.00000	1892.27000	2365.36000

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)	0.07004	0.47523	6.12465
	A2->X (RR)	0.07446	0.45496	5.98886
	B1->X (RR)	0.05381	0.42907	5.69600
	B2->X (RR)	0.05724	0.41847	5.55638
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.07093	0.39549	5.74700
	A2->X (RR)	0.07547	0.36894	5.56377
	B1->X (RR)	0.05617	0.35283	5.30916
	B2->X (RR)	0.05923	0.33797	5.16333
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.07093	0.32966	6.00129
	A2->X (RR)	0.07571	0.31253	5.76998
	B1->X (RR)	0.05655	0.28430	5.39739
	B2->X (RR)	0.06014	0.27502	5.34262

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.08960	0.46918	5.79462
	A2->X (FF)	0.09140	0.48792	6.09885
	B1->X (FF)	0.07753	0.50287	6.23767
	B2->X (FF)	0.07045	0.50286	6.36701
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.10739	0.44367	5.59340
	A2->X (FF)	0.10947	0.46400	5.90406
	B1->X (FF)	0.09624	0.48512	6.03156
	B2->X (FF)	0.08730	0.48181	6.15733
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.10295	0.41141	6.11521
	A2->X (FF)	0.11207	0.43244	6.27960
	B1->X (FF)	0.08617	0.44301	6.34062
	B2->X (FF)	0.08896	0.45051	6.39744

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.03335	0.04573	0.25117
	A1	0.02498	0.03735	0.24312
	A2	0.03487	0.04882	0.30716
	A2	0.02500	0.03894	0.29765
	B1	0.04049	0.05617	0.29661
	B1	0.03514	0.05081	0.29079
	B2	0.04165	0.05684	0.30132
	B2	0.03494	0.05011	0.29448
sky130_fd_sc_hs__a22o_2	A1	0.03877	0.05139	0.25981
	A1	0.03013	0.04282	0.25078
	A2	0.04027	0.05361	0.31587
	A2	0.03004	0.04343	0.30566
	B1	0.04487	0.06081	0.30430
	B1	0.03924	0.05530	0.29870
	B2	0.04613	0.06135	0.31018
	B2	0.03909	0.05427	0.30278
sky130_fd_sc_hs__a22o_4	A1	0.07780	0.10877	0.63512
	A1	0.06157	0.09263	0.61998
	A2	0.08083	0.10905	0.63664
	A2	0.06150	0.08984	0.61592
	B1	0.08963	0.12127	0.60503
	B1	0.07946	0.11111	0.59444
	B2	0.09219	0.12355	0.64082
	B2	0.07896	0.11032	0.62716

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01457	0.02706	0.26099
	A1	0.02294	0.03535	0.26837
	A2	0.01598	0.02966	0.28663
	A2	0.02585	0.03953	0.29517
	B1	0.01444	0.03112	0.29134
	B1	0.01981	0.03635	0.29568
	B2	0.01499	0.03174	0.29529
	B2	0.02172	0.03841	0.30086
sky130_fd_sc_hs__a22o_2	A1	0.02943	0.03908	0.26891
	A1	0.03808	0.04766	0.27763
	A2	0.03227	0.04251	0.29349
	A2	0.04250	0.05252	0.30384
	B1	0.02870	0.04276	0.29894
	B1	0.03433	0.04826	0.30444
	B2	0.02991	0.04406	0.30633
	B2	0.03695	0.05096	0.31145
sky130_fd_sc_hs__a22o_4	A1	0.06501	0.08502	0.58591
	A1	0.08126	0.10124	0.59644
	A2	0.06580	0.08603	0.59528
	A2	0.08513	0.10533	0.60694
	B1	0.06442	0.08541	0.52280
	B1	0.07462	0.09556	0.53108
	B2	0.06452	0.08954	0.57285
	B2	0.07774	0.10274	0.57840

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)	0.00408	0.00402	0.01035
	(A2 * B1 * B2 * X)	-0.00040	-0.00049	0.00592
	(!A2 * B1 * B2 * X)	0.01218	0.01219	0.01223
	(!A2 * B1 * B2 * X)	0.00790	0.00788	0.00796
	(!A2 * B1 * !B2 * !X)	0.00543	0.00543	0.00534
	(!A2 * B1 * !B2 * !X)	0.00199	0.00197	0.00186
	(!A2 * !B1 * !X)	0.00547	0.00547	0.00538
	(!A2 * !B1 * !X)	0.00203	0.00201	0.00190
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00438	0.00432	0.01066
	(A2 * B1 * B2 * X)	-0.00027	-0.00036	0.00605
	(!A2 * B1 * B2 * X)	0.01246	0.01245	0.01252
	(!A2 * B1 * B2 * X)	0.00802	0.00802	0.00808
	(!A2 * B1 * !B2 * !X)	0.00988	0.00988	0.00979
	(!A2 * B1 * !B2 * !X)	0.00639	0.00636	0.00625
	(!A2 * !B1 * !X)	0.00990	0.00990	0.00980
	(!A2 * !B1 * !X)	0.00640	0.00638	0.00626
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00774	0.00754	0.02011
	(A2 * B1 * B2 * X)	-0.00063	-0.00087	0.01182
	(!A2 * B1 * B2 * X)	0.02372	0.02372	0.02380
	(!A2 * B1 * B2 * X)	0.01577	0.01569	0.01583
	(!A2 * B1 * !B2 * !X)	0.01957	0.01958	0.01943
	(!A2 * B1 * !B2 * !X)	0.01334	0.01327	0.01312
	(!A2 * !B1 * !X)	0.01965	0.01965	0.01950
	(!A2 * !B1 * !X)	0.01341	0.01335	0.01320

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)	0.00802	0.00776	0.00584
	(A2 * B1 * B2 * X)	0.01248	0.01224	0.01031
	(!A2 * B1 * B2 * X)	0.00826	0.00823	0.00818
	(!A2 * B1 * B2 * X)	0.01251	0.01251	0.01245
	(!A2 * B1 * !B2 * !X)	0.00418	0.00417	0.00419
	(!A2 * B1 * !B2 * !X)	0.00761	0.00766	0.00762
	(!A2 * !B1 * !X)	0.00422	0.00421	0.00423
	(!A2 * !B1 * !X)	0.00765	0.00770	0.00766
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00793	0.00766	0.00575
	(A2 * B1 * B2 * X)	0.01256	0.01234	0.01039
	(!A2 * B1 * B2 * X)	0.00817	0.00812	0.00809
	(!A2 * B1 * B2 * X)	0.01259	0.01262	0.01253
	(!A2 * B1 * !B2 * !X)	0.00861	0.00859	0.00861
	(!A2 * B1 * !B2 * !X)	0.01212	0.01216	0.01212
	(!A2 * !B1 * !X)	0.00863	0.00861	0.00863
	(!A2 * !B1 * !X)	0.01214	0.01218	0.01214
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.01684	0.01632	0.01250
	(A2 * B1 * B2 * X)	0.02521	0.02474	0.02088
	(!A2 * B1 * B2 * X)	0.01728	0.01723	0.01718
	(!A2 * B1 * B2 * X)	0.02526	0.02529	0.02515
	(!A2 * B1 * !B2 * !X)	0.01769	0.01768	0.01772
	(!A2 * B1 * !B2 * !X)	0.02394	0.02398	0.02395
	(!A2 * !B1 * !X)	0.01778	0.01777	0.01781
	(!A2 * !B1 * !X)	0.02403	0.02406	0.02404

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)	0.00405	0.00397	0.01033
	(A1 * B1 * B2 * X)	-0.00040	-0.00048	0.00593
	(!A1 * B1 * B2 * X)	0.01213	0.01212	0.01219
	(!A1 * B1 * B2 * X)	0.00791	0.00788	0.00795
	(!A1 * B1 * !B2 * !X)	0.00688	0.00690	0.00686
	(!A1 * B1 * !B2 * !X)	0.00261	0.00258	0.00258
	(!A1 * !B1 * !X)	0.00692	0.00694	0.00690
	(!A1 * !B1 * !X)	0.00264	0.00262	0.00262
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00421	0.00415	0.01048
	(A1 * B1 * B2 * X)	-0.00036	-0.00046	0.00596
	(!A1 * B1 * B2 * X)	0.01229	0.01229	0.01235
	(!A1 * B1 * B2 * X)	0.00794	0.00792	0.00799
	(!A1 * B1 * !B2 * !X)	0.01128	0.01132	0.01128
	(!A1 * B1 * !B2 * !X)	0.00692	0.00690	0.00690
	(!A1 * !B1 * !X)	0.01131	0.01134	0.01131
	(!A1 * !B1 * !X)	0.00694	0.00692	0.00692
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00841	0.00827	0.02085
	(A1 * B1 * B2 * X)	-0.00058	-0.00079	0.01193
	(!A1 * B1 * B2 * X)	0.02439	0.02438	0.02448
	(!A1 * B1 * B2 * X)	0.01581	0.01574	0.01589
	(!A1 * B1 * !B2 * !X)	0.02273	0.02275	0.02269
	(!A1 * B1 * !B2 * !X)	0.01409	0.01407	0.01402
	(!A1 * !B1 * !X)	0.02281	0.02281	0.02277
	(!A1 * !B1 * !X)	0.01417	0.01416	0.01410

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)	0.00805	0.00780	0.00588
	(A1 * B1 * B2 * X)	0.01250	0.01226	0.01032
	(!A1 * B1 * B2 * X)	0.00829	0.00824	0.00820
	(!A1 * B1 * B2 * X)	0.01251	0.01254	0.01245
	(!A1 * B1 * !B2 * !X)	0.00307	0.00283	0.00290
	(!A1 * B1 * !B2 * !X)	0.00735	0.00717	0.00716
	(!A1 * !B1 * !X)	0.00311	0.00286	0.00294
	(!A1 * !B1 * !X)	0.00739	0.00721	0.00720
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00810	0.00784	0.00593
	(A1 * B1 * B2 * X)	0.01266	0.01244	0.01049
	(!A1 * B1 * B2 * X)	0.00834	0.00831	0.00827
	(!A1 * B1 * B2 * X)	0.01270	0.01270	0.01263
	(!A1 * B1 * !B2 * !X)	0.00752	0.00729	0.00726
	(!A1 * B1 * !B2 * !X)	0.01192	0.01172	0.01162
	(!A1 * !B1 * !X)	0.00753	0.00730	0.00727
	(!A1 * !B1 * !X)	0.01194	0.01173	0.01164
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.01620	0.01567	0.01185
	(A1 * B1 * B2 * X)	0.02517	0.02474	0.02085
	(!A1 * B1 * B2 * X)	0.01657	0.01652	0.01643
	(!A1 * B1 * B2 * X)	0.02516	0.02517	0.02502
	(!A1 * B1 * !B2 * !X)	0.01512	0.01479	0.01494
	(!A1 * B1 * !B2 * !X)	0.02379	0.02351	0.02356
	(!A1 * !B1 * !X)	0.01521	0.01487	0.01502
	(!A1 * !B1 * !X)	0.02388	0.02359	0.02364

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)	0.00220	0.00226	0.00308
	(A1 * A2 * B2 * X)	-0.00044	-0.00043	0.00041
	(A1 * A2 * !B2 * X)	0.00740	0.00743	0.00742
	(A1 * A2 * !B2 * X)	0.00449	0.00446	0.00450
	(A1 * !A2 * !B2 * !X)	0.00530	0.00529	0.00523
	(A1 * !A2 * !B2 * !X)	0.00213	0.00212	0.00205
	(!A1 * !B2 * !X)	0.00539	0.00538	0.00531
	(!A1 * !B2 * !X)	0.00222	0.00220	0.00212
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00249	0.00255	0.00337
	(A1 * A2 * B2 * X)	-0.00034	-0.00033	0.00051
	(A1 * A2 * !B2 * X)	0.00772	0.00774	0.00774
	(A1 * A2 * !B2 * X)	0.00461	0.00460	0.00462
	(A1 * !A2 * !B2 * !X)	0.00973	0.00972	0.00967
	(A1 * !A2 * !B2 * !X)	0.00650	0.00647	0.00640
	(!A1 * !B2 * !X)	0.00978	0.00976	0.00971
	(!A1 * !B2 * !X)	0.00653	0.00652	0.00644
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00433	0.00445	0.00599
	(A1 * A2 * B2 * X)	-0.00045	-0.00045	0.00111
	(A1 * A2 * !B2 * X)	0.01468	0.01471	0.01473
	(A1 * A2 * !B2 * X)	0.00920	0.00916	0.00921
	(A1 * !A2 * !B2 * !X)	0.01959	0.01955	0.01940
	(A1 * !A2 * !B2 * !X)	0.01350	0.01345	0.01328
	(!A1 * !B2 * !X)	0.01967	0.01963	0.01947
	(!A1 * !B2 * !X)	0.01358	0.01352	0.01335

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)	0.00448	0.00427	0.00156
	(A1 * A2 * B2 * X)	0.00721	0.00700	0.00428
	(A1 * A2 * !B2 * X)	0.00360	0.00356	0.00329
	(A1 * A2 * !B2 * X)	0.00652	0.00650	0.00620
	(A1 * !A2 * !B2 * !X)	0.00430	0.00426	0.00429
	(A1 * !A2 * !B2 * !X)	0.00745	0.00746	0.00742
	(!A1 * !B2 * !X)	0.00428	0.00425	0.00428
	(!A1 * !B2 * !X)	0.00744	0.00747	0.00744
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00438	0.00417	0.00146
	(A1 * A2 * B2 * X)	0.00730	0.00710	0.00438
	(A1 * A2 * !B2 * X)	0.00348	0.00344	0.00317
	(A1 * A2 * !B2 * X)	0.00660	0.00658	0.00628
	(A1 * !A2 * !B2 * !X)	0.00876	0.00870	0.00872
	(A1 * !A2 * !B2 * !X)	0.01200	0.01199	0.01196
	(!A1 * !B2 * !X)	0.00875	0.00870	0.00873
	(!A1 * !B2 * !X)	0.01199	0.01200	0.01197
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00953	0.00911	0.00372
	(A1 * A2 * B2 * X)	0.01452	0.01413	0.00872
	(A1 * A2 * !B2 * X)	0.00769	0.00762	0.00707
	(A1 * A2 * !B2 * X)	0.01321	0.01318	0.01258
	(A1 * !A2 * !B2 * !X)	0.01779	0.01769	0.01775
	(A1 * !A2 * !B2 * !X)	0.02385	0.02385	0.02380
	(!A1 * !B2 * !X)	0.01789	0.01778	0.01784
	(!A1 * !B2 * !X)	0.02395	0.02394	0.02389

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)	0.00230	0.00235	0.00318
	(A1 * A2 * B1 * X)	-0.00055	-0.00053	0.00032
	(A1 * A2 * !B1 * X)	0.00752	0.00754	0.00753
	(A1 * A2 * !B1 * X)	0.00441	0.00440	0.00443
	(A1 * !A2 * !B1 * !X)	0.00658	0.00659	0.00656
	(A1 * !A2 * !B1 * !X)	0.00234	0.00232	0.00235
	(!A1 * !B1 * !X)	0.00679	0.00680	0.00675
	(!A1 * !B1 * !X)	0.00251	0.00249	0.00248
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00245	0.00250	0.00335
	(A1 * A2 * B1 * X)	-0.00041	-0.00039	0.00047
	(A1 * A2 * !B1 * X)	0.00773	0.00777	0.00775
	(A1 * A2 * !B1 * X)	0.00461	0.00458	0.00461
	(A1 * !A2 * !B1 * !X)	0.01113	0.01114	0.01113
	(A1 * !A2 * !B1 * !X)	0.00687	0.00685	0.00687
	(!A1 * !B1 * !X)	0.01124	0.01126	0.01122
	(!A1 * !B1 * !X)	0.00695	0.00692	0.00693
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00463	0.00476	0.00638
	(A1 * A2 * B1 * X)	-0.00071	-0.00071	0.00094
	(A1 * A2 * !B1 * X)	0.01522	0.01526	0.01525
	(A1 * A2 * !B1 * X)	0.00912	0.00910	0.00914
	(A1 * !A2 * !B1 * !X)	0.02198	0.02200	0.02191
	(A1 * !A2 * !B1 * !X)	0.01357	0.01350	0.01347
	(!A1 * !B1 * !X)	0.02206	0.02207	0.02198
	(!A1 * !B1 * !X)	0.01364	0.01357	0.01354

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)	0.00438	0.00416	0.00145
	(A1 * A2 * B1 * X)	0.00727	0.00707	0.00436
	(A1 * A2 * !B1 * X)	0.00349	0.00345	0.00317
	(A1 * A2 * !B1 * X)	0.00659	0.00657	0.00627
	(A1 * !A2 * !B1 * !X)	0.00330	0.00312	0.00319
	(A1 * !A2 * !B1 * !X)	0.00752	0.00739	0.00737
	(!A1 * !B1 * !X)	0.00317	0.00299	0.00308
	(!A1 * !B1 * !X)	0.00744	0.00731	0.00733
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00440	0.00417	0.00147
	(A1 * A2 * B1 * X)	0.00731	0.00712	0.00440
	(A1 * A2 * !B1 * X)	0.00348	0.00344	0.00316
	(A1 * A2 * !B1 * X)	0.00661	0.00660	0.00629
	(A1 * !A2 * !B1 * !X)	0.00762	0.00740	0.00741
	(A1 * !A2 * !B1 * !X)	0.01189	0.01172	0.01165
	(!A1 * !B1 * !X)	0.00755	0.00733	0.00736
	(!A1 * !B1 * !X)	0.01184	0.01168	0.01163
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00908	0.00865	0.00326
	(A1 * A2 * B1 * X)	0.01464	0.01425	0.00883
	(A1 * A2 * !B1 * X)	0.00718	0.00711	0.00655
	(A1 * A2 * !B1 * X)	0.01331	0.01327	0.01265
	(A1 * !A2 * !B1 * !X)	0.01595	0.01555	0.01572
	(A1 * !A2 * !B1 * !X)	0.02443	0.02408	0.02411
	(!A1 * !B1 * !X)	0.01605	0.01564	0.01581
	(!A1 * !B1 * !X)	0.02453	0.02417	0.02420

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00239	0.00258	0.00279	0.00295	0.78824
sky130_fd_sc_hs__a2bb2oi_2	0.00261	0.00271	0.00543	0.00542	1.57495
sky130_fd_sc_hs__a2bb2oi_4	0.00411	0.00430	0.01081	0.01089	2.89904

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	463.72100	1175.12000
sky130_fd_sc_hs__a2bb2oi_2	0.00000	694.12000	1766.44000
sky130_fd_sc_hs__a2bb2oi_4	0.00000	1370.07000	3526.81000

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)	0.07260	0.55670	5.68547
	A2_N->Y (RR)	0.06685	0.52680	5.36861
	B1->Y (FR)	0.05830	0.66874	8.25625
	B2->Y (FR)	0.04525	0.62286	7.80742
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.06854	0.41870	5.24756
	A2_N->Y (RR)	0.06353	0.39783	5.00039
	B1->Y (FR)	0.05332	0.54918	8.12723
	B2->Y (FR)	0.03973	0.52607	7.92577
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.08954	0.43818	6.28084
	A2_N->Y (RR)	0.07762	0.40287	5.93963
	B1->Y (FR)	0.05370	0.46921	8.07027
	B2->Y (FR)	0.03877	0.43861	7.72140

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)	0.07130	0.36155	3.61466
	A2_N->Y (FF)	0.06082	0.37307	3.73965
	B1->Y (RF)	0.02787	0.31735	3.77118
	B2->Y (RF)	0.02523	0.36082	4.40913
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.08796	0.37805	4.08075
	A2_N->Y (FF)	0.07900	0.39181	4.01597
	B1->Y (RF)	0.02821	0.28423	4.18083
	B2->Y (RF)	0.02346	0.32810	4.89773
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.08957	0.30851	2.99968
	A2_N->Y (FF)	0.07213	0.33116	3.55599
	B1->Y (RF)	0.02700	0.22171	3.96870
	B2->Y (RF)	0.02312	0.28177	4.96406

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	0.01826	0.03378	0.27958
	A1_N	0.01242	0.02795	0.27379
	A2_N	0.02097	0.03612	0.27343
	A2_N	0.01642	0.03158	0.26885
	B1	0.00390	0.01119	0.13456
	B1	0.01064	0.01794	0.14092
	B2	0.00306	0.01028	0.13005
	B2	0.00856	0.01576	0.13545
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.02332	0.04215	0.33115
	A1_N	0.01747	0.03630	0.32474
	A2_N	0.02562	0.04324	0.31147
	A2_N	0.02124	0.03888	0.30699
	B1	0.00738	0.02243	0.24638
	B1	0.02094	0.03598	0.25892
	B2	0.00524	0.02024	0.23676
	B2	0.01568	0.03062	0.24658
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.04626	0.07303	0.50190
	A1_N	0.03695	0.06376	0.49283
	A2_N	0.05033	0.07869	0.50670
	A2_N	0.04352	0.07195	0.50050
	B1	0.01406	0.04715	0.48157
	B1	0.04141	0.07451	0.50599
	B2	0.01036	0.04268	0.45651
	B2	0.03155	0.06381	0.47533

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.01205	0.02604	0.26386
	A1_N	0.01788	0.03187	0.26955
	A2_N	0.01197	0.02633	0.24519
	A2_N	0.01652	0.03083	0.24954
	B1	0.01861	0.02447	0.12477
	B1	0.01185	0.01767	0.11771
	B2	0.01803	0.02439	0.12324
	B2	0.01255	0.01879	0.11750
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.02481	0.03788	0.30704
	A1_N	0.03067	0.04367	0.31251
	A2_N	0.02483	0.03761	0.26137
	A2_N	0.02921	0.04198	0.26522
	B1	0.03753	0.04986	0.23267
	B1	0.02400	0.03630	0.21866
	B2	0.03579	0.04868	0.22357
	B2	0.02534	0.03813	0.21127
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.04915	0.06558	0.40400
	A1_N	0.05847	0.07489	0.41301
	A2_N	0.04930	0.07022	0.47085
	A2_N	0.05614	0.07702	0.47703
	B1	0.07457	0.10266	0.46405
	B1	0.04730	0.07527	0.43583
	B2	0.07163	0.09936	0.42790
	B2	0.05042	0.07801	0.40470

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)	0.00783	0.00765	0.01109
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00382	0.00365	0.00710
	(!A2_N * B1 * B2 * !Y)	0.01702	0.03113	0.26323
	(!A2_N * B1 * B2 * !Y)	0.01052	0.02460	0.25671
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01347	0.01332	0.01673
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00903	0.00887	0.01231
	(!A2_N * B1 * B2 * !Y)	0.02484	0.04049	0.30126
	(!A2_N * B1 * B2 * !Y)	0.01773	0.03334	0.29412
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.02543	0.02485	0.03150
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01842	0.01780	0.02453
	(!A2_N * B1 * B2 * !Y)	0.04745	0.06831	0.45365
	(!A2_N * B1 * B2 * !Y)	0.03538	0.05623	0.44158

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)	0.00861	0.00848	0.00769
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01261	0.01252	0.01170
	(!A2_N * B1 * B2 * !Y)	0.00228	0.01698	0.25574
	(!A2_N * B1 * B2 * !Y)	0.00884	0.02356	0.26225
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01326	0.01313	0.01234
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01768	0.01760	0.01678
	(!A2_N * B1 * B2 * !Y)	0.00418	0.02002	0.29100
	(!A2_N * B1 * B2 * !Y)	0.01140	0.02725	0.29813
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.02849	0.02823	0.02658
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.03549	0.03530	0.03360
	(!A2_N * B1 * B2 * !Y)	0.00898	0.03192	0.43870
	(!A2_N * B1 * B2 * !Y)	0.02125	0.04422	0.45078

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)	0.00707	0.00707	0.00772
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00432	0.00435	0.00496
	(!A1_N * B1 * B2 * !Y)	0.01704	0.03142	0.25959
	(!A1_N * B1 * B2 * !Y)	0.01181	0.02620	0.25436
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.01242	0.01249	0.01310
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00949	0.00948	0.01012
	(!A1_N * B1 * B2 * !Y)	0.02467	0.04000	0.29076
	(!A1_N * B1 * B2 * !Y)	0.01901	0.03435	0.28513
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.02374	0.02381	0.02461
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.01907	0.01907	0.01993
	(!A1_N * B1 * B2 * !Y)	0.04636	0.06839	0.45130
	(!A1_N * B1 * B2 * !Y)	0.03680	0.05883	0.44175

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)	0.00649	0.00638	0.00492
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00927	0.00915	0.00769
	(!A1_N * B1 * B2 * !Y)	0.00222	0.01784	0.25446
	(!A1_N * B1 * B2 * !Y)	0.00749	0.02312	0.25969
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.01141	0.01129	0.00984
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.01441	0.01429	0.01283
	(!A1_N * B1 * B2 * !Y)	0.00445	0.02080	0.28351
	(!A1_N * B1 * B2 * !Y)	0.01018	0.02656	0.28914
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.02429	0.02406	0.02121
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.02903	0.02884	0.02597
	(!A1_N * B1 * B2 * !Y)	0.00834	0.03410	0.44196
	(!A1_N * B1 * B2 * !Y)	0.01808	0.04390	0.45151

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)	0.00259	0.00262	0.00259
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00199	-0.00201	-0.00200
	(!A1_N * !A2_N * B2 * !Y)	0.00392	0.00357	0.00622
	(!A1_N * !A2_N * B2 * !Y)	-0.00071	-0.00108	0.00160
	(!A1_N * !A2_N * !B2 * !Y)	0.00668	0.00670	0.00668
	(!A1_N * !A2_N * !B2 * !Y)	0.00213	0.00210	0.00212
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00469	0.00474	0.00469
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00435	-0.00440	-0.00439
	(!A1_N * !A2_N * B2 * !Y)	0.00784	0.00711	0.01239
	(!A1_N * !A2_N * B2 * !Y)	-0.00130	-0.00208	0.00325
	(!A1_N * !A2_N * !B2 * !Y)	0.01325	0.01328	0.01327
	(!A1_N * !A2_N * !B2 * !Y)	0.00427	0.00422	0.00426
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00939	0.00951	0.00938
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00874	-0.00883	-0.00881
	(!A1_N * !A2_N * B2 * !Y)	0.01501	0.01364	0.02419
	(!A1_N * !A2_N * B2 * !Y)	-0.00334	-0.00482	0.00586
	(!A1_N * !A2_N * !B2 * !Y)	0.02590	0.02601	0.02597
	(!A1_N * !A2_N * !B2 * !Y)	0.00795	0.00780	0.00791

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)	-0.00131	-0.00147	-0.00146
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00330	0.00317	0.00310
	(!A1_N * !A2_N * B2 * !Y)	0.00255	0.00244	0.00184
	(!A1_N * !A2_N * B2 * !Y)	0.00717	0.00710	0.00647
	(!A1_N * !A2_N * !B2 * !Y)	0.00260	0.00260	0.00261
	(!A1_N * !A2_N * !B2 * !Y)	0.00718	0.00718	0.00716
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00265	-0.00314	-0.00312
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00643	0.00605	0.00592
	(!A1_N * !A2_N * B2 * !Y)	0.00532	0.00511	0.00391
	(!A1_N * !A2_N * B2 * !Y)	0.01450	0.01436	0.01308
	(!A1_N * !A2_N * !B2 * !Y)	0.00548	0.00543	0.00546
	(!A1_N * !A2_N * !B2 * !Y)	0.01448	0.01455	0.01448
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00534	-0.00627	-0.00624
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.01286	0.01214	0.01186
	(!A1_N * !A2_N * B2 * !Y)	0.01002	0.00960	0.00722
	(!A1_N * !A2_N * B2 * !Y)	0.02843	0.02814	0.02560
	(!A1_N * !A2_N * !B2 * !Y)	0.01036	0.01026	0.01033
	(!A1_N * !A2_N * !B2 * !Y)	0.02841	0.02854	0.02839

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)	0.00128	0.00128	0.00123
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00243	-0.00244	-0.00251
	(!A1_N * !A2_N * B1 * !Y)	0.00391	0.00356	0.00621
	(!A1_N * !A2_N * B1 * !Y)	-0.00086	-0.00124	0.00145
	(!A1_N * !A2_N * !B1 * !Y)	0.00665	0.00666	0.00666
	(!A1_N * !A2_N * !B1 * !Y)	0.00196	0.00193	0.00196
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00196	0.00196	0.00184
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00504	-0.00507	-0.00527
	(!A1_N * !A2_N * B1 * !Y)	0.00781	0.00708	0.01238
	(!A1_N * !A2_N * B1 * !Y)	-0.00128	-0.00205	0.00329
	(!A1_N * !A2_N * !B1 * !Y)	0.01323	0.01324	0.01326
	(!A1_N * !A2_N * !B1 * !Y)	0.00429	0.00426	0.00430
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00375	0.00375	0.00354
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01034	-0.01037	-0.01076
	(!A1_N * !A2_N * B1 * !Y)	0.01497	0.01357	0.02416
	(!A1_N * !A2_N * B1 * !Y)	-0.00334	-0.00486	0.00585
	(!A1_N * !A2_N * !B1 * !Y)	0.02586	0.02587	0.02589
	(!A1_N * !A2_N * !B1 * !Y)	0.00779	0.00776	0.00785

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)	-0.00026	-0.00028	-0.00025
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00346	0.00351	0.00346
	(!A1_N * !A2_N * B1 * !Y)	0.00257	0.00246	0.00186
	(!A1_N * !A2_N * B1 * !Y)	0.00734	0.00728	0.00664
	(!A1_N * !A2_N * !B1 * !Y)	0.00262	0.00259	0.00262
	(!A1_N * !A2_N * !B1 * !Y)	0.00733	0.00737	0.00732
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00056	-0.00059	-0.00055
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00645	0.00658	0.00649
	(!A1_N * !A2_N * B1 * !Y)	0.00536	0.00515	0.00393
	(!A1_N * !A2_N * B1 * !Y)	0.01446	0.01430	0.01305
	(!A1_N * !A2_N * !B1 * !Y)	0.00549	0.00546	0.00546
	(!A1_N * !A2_N * !B1 * !Y)	0.01445	0.01445	0.01443
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00097	-0.00103	-0.00095
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01312	0.01339	0.01321
	(!A1_N * !A2_N * B1 * !Y)	0.01013	0.00970	0.00731
	(!A1_N * !A2_N * B1 * !Y)	0.02848	0.02821	0.02567
	(!A1_N * !A2_N * !B1 * !Y)	0.01040	0.01032	0.01035
	(!A1_N * !A2_N * !B1 * !Y)	0.02846	0.02856	0.02841

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00237	0.00243	0.00260	0.00250	1.70487
sky130_fd_sc_hs__a2bb2o_2	0.00249	0.00253	0.00272	0.00288	2.74928
sky130_fd_sc_hs__a2bb2o_4	0.00272	0.00286	0.00494	0.00493	6.10309

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	783.69500	1195.36000
sky130_fd_sc_hs__a2bb2o_2	0.00000	1071.85000	1644.72000
sky130_fd_sc_hs__a2bb2o_4	0.00000	1894.46000	2650.63000

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)	0.09670	0.58459	7.73883
	A2_N->X (FR)	0.08782	0.60144	8.00987
	B1->X (RR)	0.06204	0.42753	5.77228
	B2->X (RR)	0.05824	0.44589	6.04959
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.10262	0.51731	7.44765
	A2_N->X (FR)	0.09354	0.53508	7.75255
	B1->X (RR)	0.06227	0.34618	5.13120
	B2->X (RR)	0.05977	0.36800	5.41549
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.12701	0.47955	7.63712
	A2_N->X (FR)	0.11971	0.49532	7.90264
	B1->X (RR)	0.07205	0.30260	5.60565
	B2->X (RR)	0.06740	0.32507	5.91970

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)	0.10254	0.34877	3.32301
	A2_N->X (RF)	0.09585	0.31979	2.95349
	B1->X (FF)	0.08898	0.47942	6.00211
	B2->X (FF)	0.07620	0.45218	5.75578
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.11862	0.30944	2.69965
	A2_N->X (RF)	0.11175	0.27527	2.22744
	B1->X (FF)	0.10428	0.44796	5.46974
	B2->X (FF)	0.09261	0.42062	5.22549
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.11874	0.28707	3.29568
	A2_N->X (RF)	0.11127	0.25644	2.83996
	B1->X (FF)	0.10833	0.42331	5.97606
	B2->X (FF)	0.09433	0.39359	5.70983

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	0.02736	0.04377	0.32263
	A1_N	0.03266	0.04904	0.32813
	A2_N	0.02736	0.04440	0.31890
	A2_N	0.03132	0.04832	0.32278
	B1	0.03031	0.04443	0.29211
	B1	0.02367	0.03777	0.28517
	B2	0.02894	0.04404	0.29220
	B2	0.02377	0.03888	0.28739
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.03177	0.04784	0.33041
	A1_N	0.03754	0.05355	0.33575
	A2_N	0.03191	0.04900	0.33440
	A2_N	0.03618	0.05322	0.33925
	B1	0.03527	0.04987	0.30689
	B1	0.02854	0.04314	0.29928
	B2	0.03408	0.04973	0.30854
	B2	0.02865	0.04432	0.30292
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.06116	0.07918	0.44144
	A1_N	0.06710	0.08515	0.44795
	A2_N	0.06127	0.07898	0.43323
	A2_N	0.06573	0.08351	0.43783
	B1	0.06960	0.09662	0.58561
	B1	0.05699	0.08411	0.57259
	B2	0.06707	0.09715	0.58857
	B2	0.05721	0.08727	0.57650

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.03035	0.04595	0.31654
	A1_N	0.02506	0.04067	0.31006
	A2_N	0.03173	0.04715	0.29958
	A2_N	0.02776	0.04310	0.29501
	B1	0.01868	0.03136	0.27558
	B1	0.02533	0.03800	0.28078
	B2	0.01788	0.03108	0.27297
	B2	0.02307	0.03617	0.27762
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.04224	0.05488	0.32004
	A1_N	0.03649	0.04910	0.31298
	A2_N	0.04282	0.05543	0.30087
	A2_N	0.03853	0.05113	0.29614
	B1	0.03348	0.04238	0.28725
	B1	0.04021	0.04897	0.29270
	B2	0.03169	0.04131	0.28614
	B2	0.03713	0.04666	0.28811
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.07865	0.09488	0.47596
	A1_N	0.07272	0.08885	0.46731
	A2_N	0.07802	0.09350	0.42683
	A2_N	0.07356	0.08902	0.42070
	B1	0.07352	0.08887	0.55412
	B1	0.08614	0.10135	0.56082
	B2	0.06934	0.08684	0.54609
	B2	0.07921	0.09650	0.55395

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)	0.00813	0.00795	0.01138
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00413	0.00396	0.00740
	(!A2_N * B1 * B2 * X)	0.01685	0.03083	0.26092
	(!A2_N * B1 * B2 * X)	0.01059	0.02456	0.25467
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00831	0.00811	0.01154
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00414	0.00395	0.00738
	(!A2_N * B1 * B2 * X)	0.01719	0.03089	0.25675
	(!A2_N * B1 * B2 * X)	0.01062	0.02429	0.25016
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.01398	0.01375	0.01677
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00942	0.00920	0.01223
	(!A2_N * B1 * B2 * X)	0.02551	0.04352	0.33297
	(!A2_N * B1 * B2 * X)	0.01807	0.03605	0.32552

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)	0.00867	0.00854	0.00775
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.01267	0.01258	0.01176
	(!A2_N * B1 * B2 * X)	0.00232	0.01691	0.25379
	(!A2_N * B1 * B2 * X)	0.00861	0.02321	0.26005
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00872	0.00858	0.00780
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.01288	0.01279	0.01197
	(!A2_N * B1 * B2 * X)	0.00234	0.01666	0.24927
	(!A2_N * B1 * B2 * X)	0.00898	0.02331	0.25585
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.01334	0.01323	0.01262
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.01789	0.01783	0.01718
	(!A2_N * B1 * B2 * X)	0.00262	0.02098	0.32109
	(!A2_N * B1 * B2 * X)	0.01016	0.02855	0.32856

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)	0.00724	0.00729	0.00789
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00456	0.00457	0.00520
	(!A1_N * B1 * B2 * X)	0.01674	0.03095	0.25505
	(!A1_N * B1 * B2 * X)	0.01182	0.02603	0.25014
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00737	0.00741	0.00801
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00466	0.00467	0.00530
	(!A1_N * B1 * B2 * X)	0.01703	0.03116	0.25506
	(!A1_N * B1 * B2 * X)	0.01194	0.02606	0.24997
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.01312	0.01317	0.01376
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.01001	0.01002	0.01065
	(!A1_N * B1 * B2 * X)	0.02472	0.04263	0.32380
	(!A1_N * B1 * B2 * X)	0.01874	0.03664	0.31782

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)	0.00668	0.00656	0.00511
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00939	0.00928	0.00781
	(!A1_N * B1 * B2 * X)	0.00228	0.01764	0.25033
	(!A1_N * B1 * B2 * X)	0.00724	0.02261	0.25525
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00676	0.00664	0.00519
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00949	0.00938	0.00791
	(!A1_N * B1 * B2 * X)	0.00240	0.01776	0.25014
	(!A1_N * B1 * B2 * X)	0.00753	0.02290	0.25522
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.01187	0.01176	0.01042
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.01500	0.01489	0.01354
	(!A1_N * B1 * B2 * X)	0.00262	0.02162	0.31461
	(!A1_N * B1 * B2 * X)	0.00868	0.02771	0.32058

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)	0.00738	0.00740	0.00735
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00293	0.00290	0.00290
	(!A1_N * !A2_N * B2 * X)	0.00396	0.00370	0.00681
	(!A1_N * !A2_N * B2 * X)	-0.00051	-0.00079	0.00234
	(!A1_N * !A2_N * !B2 * X)	0.00746	0.00747	0.00747
	(!A1_N * !A2_N * !B2 * X)	0.00306	0.00303	0.00305
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.01165	0.01166	0.01164
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00722	0.00721	0.00721
	(!A1_N * !A2_N * B2 * X)	0.00404	0.00375	0.00686
	(!A1_N * !A2_N * B2 * X)	-0.00042	-0.00072	0.00241
	(!A1_N * !A2_N * !B2 * X)	0.00750	0.00752	0.00751
	(!A1_N * !A2_N * !B2 * X)	0.00312	0.00309	0.00312
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.02250	0.02256	0.02247
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.01426	0.01421	0.01420
	(!A1_N * !A2_N * B2 * X)	0.00765	0.00702	0.01320
	(!A1_N * !A2_N * B2 * X)	-0.00066	-0.00133	0.00490
	(!A1_N * !A2_N * !B2 * X)	0.01444	0.01446	0.01447
	(!A1_N * !A2_N * !B2 * X)	0.00629	0.00624	0.00629

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)	0.00325	0.00306	0.00315
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00770	0.00756	0.00758
	(!A1_N * !A2_N * B2 * X)	0.00318	0.00306	0.00226
	(!A1_N * !A2_N * B2 * X)	0.00764	0.00753	0.00674
	(!A1_N * !A2_N * !B2 * X)	0.00325	0.00322	0.00324
	(!A1_N * !A2_N * !B2 * X)	0.00766	0.00769	0.00765
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00774	0.00758	0.00759
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.01218	0.01203	0.01198
	(!A1_N * !A2_N * B2 * X)	0.00334	0.00321	0.00242
	(!A1_N * !A2_N * B2 * X)	0.00780	0.00771	0.00689
	(!A1_N * !A2_N * !B2 * X)	0.00341	0.00341	0.00341
	(!A1_N * !A2_N * !B2 * X)	0.00782	0.00782	0.00780
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.01588	0.01544	0.01556
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.02413	0.02381	0.02377
	(!A1_N * !A2_N * B2 * X)	0.00731	0.00706	0.00548
	(!A1_N * !A2_N * B2 * X)	0.01565	0.01545	0.01381
	(!A1_N * !A2_N * !B2 * X)	0.00752	0.00747	0.00748
	(!A1_N * !A2_N * !B2 * X)	0.01568	0.01574	0.01566

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)	0.00589	0.00590	0.00583
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00261	0.00257	0.00250
	(!A1_N * !A2_N * B1 * X)	0.00351	0.00323	0.00636
	(!A1_N * !A2_N * B1 * X)	-0.00067	-0.00097	0.00216
	(!A1_N * !A2_N * !B1 * X)	0.00699	0.00699	0.00700
	(!A1_N * !A2_N * !B1 * X)	0.00285	0.00283	0.00285
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.01022	0.01022	0.01017
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00674	0.00671	0.00665
	(!A1_N * !A2_N * B1 * X)	0.00404	0.00373	0.00684
	(!A1_N * !A2_N * B1 * X)	-0.00052	-0.00085	0.00228
	(!A1_N * !A2_N * !B1 * X)	0.00746	0.00747	0.00747
	(!A1_N * !A2_N * !B1 * X)	0.00296	0.00294	0.00297
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.02001	0.02002	0.01985
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.01361	0.01355	0.01336
	(!A1_N * !A2_N * B1 * X)	0.00763	0.00701	0.01321
	(!A1_N * !A2_N * B1 * X)	-0.00067	-0.00133	0.00491
	(!A1_N * !A2_N * !B1 * X)	0.01442	0.01443	0.01446
	(!A1_N * !A2_N * !B1 * X)	0.00627	0.00623	0.00629

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)	0.00443	0.00442	0.00444
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00772	0.00775	0.00773
	(!A1_N * !A2_N * B1 * X)	0.00364	0.00352	0.00273
	(!A1_N * !A2_N * B1 * X)	0.00785	0.00776	0.00694
	(!A1_N * !A2_N * !B1 * X)	0.00371	0.00369	0.00370
	(!A1_N * !A2_N * !B1 * X)	0.00786	0.00789	0.00784
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00890	0.00889	0.00891
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.01239	0.01241	0.01239
	(!A1_N * !A2_N * B1 * X)	0.00339	0.00326	0.00246
	(!A1_N * !A2_N * B1 * X)	0.00796	0.00787	0.00703
	(!A1_N * !A2_N * !B1 * X)	0.00345	0.00343	0.00344
	(!A1_N * !A2_N * !B1 * X)	0.00796	0.00798	0.00794
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.01766	0.01764	0.01769
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.02408	0.02412	0.02409
	(!A1_N * !A2_N * B1 * X)	0.00734	0.00708	0.00550
	(!A1_N * !A2_N * B1 * X)	0.01565	0.01547	0.01382
	(!A1_N * !A2_N * !B1 * X)	0.00751	0.00748	0.00747
	(!A1_N * !A2_N * !B1 * X)	0.01569	0.01569	0.01565

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00295	0.00302	0.00293	0.00308	0.00293	0.57611
sky130_fd_sc_hs__a311oi_2	0.00560	0.00546	0.00526	0.00447	0.00435	1.02527
sky130_fd_sc_hs__a311oi_4	0.01084	0.01064	0.01066	0.00841	0.00851	1.75783

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	229.56100	787.16100
sky130_fd_sc_hs__a311oi_2	0.00000	452.89300	1574.64000
sky130_fd_sc_hs__a311oi_4	0.00000	903.01300	3147.52000

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)	0.08458	0.69032	7.52393
	A2->Y (FR)	0.10524	0.73655	7.88394
	A3->Y (FR)	0.11285	0.72925	7.71329
	B1->Y (FR)	0.09083	0.79696	8.87528
	C1->Y (FR)	0.06869	0.80756	9.22634
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.07201	0.55603	7.09910
	A2->Y (FR)	0.08939	0.57952	7.26663
	A3->Y (FR)	0.10537	0.59853	7.34579
	B1->Y (FR)	0.09029	0.64382	8.11770
	C1->Y (FR)	0.06316	0.65634	8.55604
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.06864	0.44863	6.58311
	A2->Y (FR)	0.08949	0.48068	6.85142
	A3->Y (FR)	0.10912	0.51202	7.09509
	B1->Y (FR)	0.09276	0.56463	8.01299
	C1->Y (FR)	0.06457	0.58009	8.47544

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.04091	0.40221	4.28956
	A2->Y (RF)	0.04707	0.37070	3.80774
	A3->Y (RF)	0.04956	0.32424	3.16348
	B1->Y (RF)	0.02135	0.24219	2.49425
	C1->Y (RF)	0.01806	0.23457	2.44944
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.03878	0.37659	4.68984
	A2->Y (RF)	0.04463	0.31766	3.82265
	A3->Y (RF)	0.04890	0.27504	3.15161
	B1->Y (RF)	0.02931	0.33517	4.33392
	C1->Y (RF)	0.02066	0.31868	4.25999
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03984	0.32356	4.55704
	A2->Y (RF)	0.04632	0.26637	3.66044
	A3->Y (RF)	0.05014	0.21344	2.83001
	B1->Y (RF)	0.02624	0.26122	3.86865
	C1->Y (RF)	0.01950	0.26477	4.11981

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00157	0.00687	0.11958
	A1	0.01150	0.01675	0.12902
	A2	0.00236	0.00760	0.12408
	A2	0.01378	0.01897	0.13493
	A3	0.00266	0.00841	0.13225
	A3	0.01560	0.02130	0.14458
	B1	0.00092	0.00939	0.15274
	B1	0.00932	0.01780	0.16110
	C1	0.00085	0.01067	0.15861
	C1	0.00772	0.01757	0.16554
sky130_fd_sc_hs__a311oi_2	A1	0.00114	0.01207	0.21929
	A1	0.01956	0.03040	0.23591
	A2	0.00271	0.01396	0.23448
	A2	0.02392	0.03503	0.25417
	A3	0.00455	0.01609	0.24702
	A3	0.02854	0.03996	0.26943
	B1	0.00146	0.01352	0.20498
	B1	0.01440	0.02641	0.21835
	C1	0.00131	0.01623	0.22040
	C1	0.01091	0.02584	0.22957

sky130_fd_sc_hs__a311oi_4	**A1**	0.00133	0.02441	0.41644
	A1	0.03740	0.06022	0.44933
	A2	0.00465	0.02828	0.44478
	A2	0.04645	0.06989	0.48275
	A3	0.00781	0.03200	0.47172
	A3	0.05574	0.07974	0.51579
	B1	0.00215	0.02876	0.41117
	B1	0.02722	0.05381	0.43666
	C1	0.00192	0.03171	0.40905
	C1	0.02070	0.05043	0.42681

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.02678	0.03127	0.12042
	A1	0.01687	0.02130	0.11017
	A2	0.02761	0.03158	0.12056
	A2	0.01619	0.02017	0.10905
	A3	0.02852	0.03309	0.13574
	A3	0.01558	0.02013	0.12285
	B1	0.01381	0.02153	0.15005
	B1	0.00545	0.01314	0.14167
	C1	0.01366	0.02118	0.13995
	C1	0.00680	0.01429	0.13314

sky130_fd_sc_hs__a311oi_2	**A1**	0.05372	0.06244	0.22039
	A1	0.03529	0.04403	0.20097
	A2	0.05479	0.06377	0.23755
	A2	0.03360	0.04254	0.21632
	A3	0.05670	0.06647	0.26577
	A3	0.03269	0.04241	0.24111
	B1	0.02544	0.03645	0.20286
	B1	0.01255	0.02350	0.18959
	C1	0.02468	0.03593	0.18635
	C1	0.01511	0.02628	0.17681
sky130_fd_sc_hs__a311oi_4	**A1**	0.10584	0.12472	0.42905
	A1	0.06975	0.08851	0.39260
	A2	0.10822	0.12739	0.46461
	A2	0.06647	0.08560	0.42290
	A3	0.11231	0.13391	0.52964
	A3	0.06444	0.08594	0.48120
	B1	0.04835	0.07248	0.40932
	B1	0.02328	0.04742	0.38306
	C1	0.04840	0.07163	0.35381
	C1	0.02970	0.05284	0.33513

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)**	0.00259	0.00243	0.00245
	(A2 * A3 * B1 * C1 * !Y)	-0.00196	-0.00214	-0.00210
	(A2 * A3 * B1 * !C1 * !Y)	0.00381	0.00344	0.00463
	(A2 * A3 * B1 * !C1 * !Y)	-0.00082	-0.00120	0.00003
	(A2 * A3 * !B1 * C1 * !Y)	0.00428	0.00388	0.00612
	(A2 * A3 * !B1 * C1 * !Y)	-0.00045	-0.00087	0.00146
	(A2 * !A3 * B1 * C1 * !Y)	0.00238	0.00239	0.00239
	(A2 * !A3 * B1 * C1 * !Y)	-0.00209	-0.00210	-0.00210
	(A2 * !A3 * B1 * !C1 * !Y)	0.00470	0.00470	0.00471
	(A2 * !A3 * B1 * !C1 * !Y)	0.00023	0.00022	0.00022
	(A2 * !A3 * !B1 * C1 * !Y)	0.00644	0.00644	0.00645
	(A2 * !A3 * !B1 * C1 * !Y)	0.00196	0.00195	0.00197
	(A2 * !A3 * !B1 * !C1 * Y)	0.00084	0.00084	0.00078
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00259	-0.00261	-0.00276
	(!A2 * B1 * C1 * !Y)	0.00242	0.00244	0.00242
	(!A2 * B1 * C1 * !Y)	-0.00209	-0.00211	-0.00210
	(!A2 * B1 * !C1 * !Y)	0.00474	0.00475	0.00474
	(!A2 * B1 * !C1 * !Y)	0.00024	0.00021	0.00022
	(!A2 * !B1 * C1 * !Y)	0.00648	0.00649	0.00648
	(!A2 * !B1 * C1 * !Y)	0.00197	0.00195	0.00197
	(!A2 * !B1 * !C1 * Y)	0.00086	0.00086	0.00081
	(!A2 * !B1 * !C1 * Y)	-0.00268	-0.00268	-0.00276

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00511	0.00478	0.00482
	(A2 * A3 * B1 * C1 * !Y)	-0.00412	-0.00446	-0.00439
	(A2 * A3 * B1 * !C1 * !Y)	0.00762	0.00689	0.00921
	(A2 * A3 * B1 * !C1 * !Y)	-0.00179	-0.00253	-0.00013
	(A2 * A3 * !B1 * C1 * !Y)	0.00853	0.00781	0.01216
	(A2 * A3 * !B1 * C1 * !Y)	-0.00109	-0.00185	0.00271
	(A2 * !A3 * B1 * C1 * !Y)	0.00468	0.00472	0.00469
	(A2 * !A3 * B1 * C1 * !Y)	-0.00438	-0.00442	-0.00439
	(A2 * !A3 * B1 * !C1 * !Y)	0.00931	0.00934	0.00931
	(A2 * !A3 * B1 * !C1 * !Y)	0.00025	0.00020	0.00024
	(A2 * !A3 * !B1 * C1 * !Y)	0.01274	0.01277	0.01277
	(A2 * !A3 * !B1 * C1 * !Y)	0.00368	0.00364	0.00370
	(A2 * !A3 * !B1 * !C1 * Y)	0.00161	0.00161	0.00146
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00539	-0.00541	-0.00576
	(!A2 * B1 * C1 * !Y)	0.00474	0.00478	0.00475
	(!A2 * B1 * C1 * !Y)	-0.00439	-0.00442	-0.00439
	(!A2 * B1 * !C1 * !Y)	0.00937	0.00940	0.00939
	(!A2 * B1 * !C1 * !Y)	0.00026	0.00021	0.00024
	(!A2 * !B1 * C1 * !Y)	0.01281	0.01285	0.01285
	(!A2 * !B1 * C1 * !Y)	0.00371	0.00365	0.00370
	(!A2 * !B1 * !C1 * Y)	0.00159	0.00159	0.00149
	(!A2 * !B1 * !C1 * Y)	-0.00558	-0.00560	-0.00579

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.01006	0.00942	0.00946
	(A2 * A3 * B1 * C1 * !Y)	-0.00818	-0.00884	-0.00869
	(A2 * A3 * B1 * !C1 * !Y)	0.01503	0.01362	0.01822
	(A2 * A3 * B1 * !C1 * !Y)	-0.00356	-0.00500	-0.00019
	(A2 * A3 * !B1 * C1 * !Y)	0.01682	0.01545	0.02409
	(A2 * A3 * !B1 * C1 * !Y)	-0.00219	-0.00364	0.00545
	(A2 * !A3 * B1 * C1 * !Y)	0.00906	0.00913	0.00909
	(A2 * !A3 * B1 * C1 * !Y)	-0.00865	-0.00873	-0.00869
	(A2 * !A3 * B1 * !C1 * !Y)	0.01831	0.01834	0.01833
	(A2 * !A3 * B1 * !C1 * !Y)	0.00060	0.00050	0.00056
	(A2 * !A3 * !B1 * C1 * !Y)	0.02509	0.02514	0.02516
	(A2 * !A3 * !B1 * C1 * !Y)	0.00739	0.00729	0.00741
	(A2 * !A3 * !B1 * !C1 * Y)	0.00307	0.00307	0.00277
	(A2 * !A3 * !B1 * !C1 * Y)	-0.01067	-0.01073	-0.01136
	(!A2 * B1 * C1 * !Y)	0.00932	0.00939	0.00933
	(!A2 * B1 * C1 * !Y)	-0.00867	-0.00873	-0.00869
	(!A2 * B1 * !C1 * !Y)	0.01858	0.01860	0.01859
	(!A2 * B1 * !C1 * !Y)	0.00059	0.00052	0.00056
	(!A2 * !B1 * C1 * !Y)	0.02538	0.02544	0.02544
	(!A2 * !B1 * C1 * !Y)	0.00740	0.00731	0.00742
	(!A2 * !B1 * !C1 * Y)	0.00307	0.00307	0.00286
	(!A2 * !B1 * !C1 * Y)	-0.01104	-0.01110	-0.01141

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)**	-0.00165	-0.00166	-0.00167
	(A2 * A3 * B1 * C1 * !Y)	0.00291	0.00291	0.00289
	(A2 * A3 * B1 * !C1 * !Y)	0.00061	0.00055	0.00029
	(A2 * A3 * B1 * !C1 * !Y)	0.00524	0.00521	0.00493
	(A2 * A3 * !B1 * C1 * !Y)	0.00239	0.00229	0.00171
	(A2 * A3 * !B1 * C1 * !Y)	0.00711	0.00705	0.00644
	(A2 * !A3 * B1 * C1 * !Y)	-0.00153	-0.00160	-0.00160
	(A2 * !A3 * B1 * C1 * !Y)	0.00289	0.00293	0.00290
	(A2 * !A3 * B1 * !C1 * !Y)	0.00079	0.00070	0.00071
	(A2 * !A3 * B1 * !C1 * !Y)	0.00521	0.00524	0.00521
	(A2 * !A3 * !B1 * C1 * !Y)	0.00252	0.00245	0.00246
	(A2 * !A3 * !B1 * C1 * !Y)	0.00698	0.00699	0.00695
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00026	-0.00026	-0.00025
	(A2 * !A3 * !B1 * !C1 * Y)	0.00322	0.00324	0.00324
	(!A2 * B1 * C1 * !Y)	-0.00163	-0.00164	-0.00162
	(!A2 * B1 * C1 * !Y)	0.00289	0.00292	0.00290
	(!A2 * B1 * !C1 * !Y)	0.00069	0.00067	0.00069
	(!A2 * B1 * !C1 * !Y)	0.00521	0.00524	0.00521
	(!A2 * !B1 * C1 * !Y)	0.00244	0.00241	0.00243
	(!A2 * !B1 * C1 * !Y)	0.00695	0.00698	0.00694
	(!A2 * !B1 * !C1 * Y)	-0.00031	-0.00032	-0.00030
	(!A2 * !B1 * !C1 * Y)	0.00323	0.00328	0.00324

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00323	-0.00326	-0.00326
	(A2 * A3 * B1 * C1 * !Y)	0.00603	0.00606	0.00599
	(A2 * A3 * B1 * !C1 * !Y)	0.00123	0.00110	0.00058
	(A2 * A3 * B1 * !C1 * !Y)	0.01064	0.01061	0.01001
	(A2 * A3 * !B1 * C1 * !Y)	0.00481	0.00461	0.00344
	(A2 * A3 * !B1 * C1 * !Y)	0.01440	0.01427	0.01306
	(A2 * !A3 * B1 * C1 * !Y)	-0.00296	-0.00315	-0.00312
	(A2 * !A3 * B1 * C1 * !Y)	0.00598	0.00606	0.00600
	(A2 * !A3 * B1 * !C1 * !Y)	0.00167	0.00150	0.00150
	(A2 * !A3 * B1 * !C1 * !Y)	0.01060	0.01064	0.01061
	(A2 * !A3 * !B1 * C1 * !Y)	0.00514	0.00497	0.00495
	(A2 * !A3 * !B1 * C1 * !Y)	0.01408	0.01412	0.01407
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00084	-0.00085	-0.00081
	(A2 * !A3 * !B1 * !C1 * Y)	0.00633	0.00641	0.00632
	(!A2 * B1 * C1 * !Y)	-0.00317	-0.00321	-0.00315
	(!A2 * B1 * C1 * !Y)	0.00599	0.00606	0.00600
	(!A2 * B1 * !C1 * !Y)	0.00146	0.00144	0.00146
	(!A2 * B1 * !C1 * !Y)	0.01060	0.01062	0.01061
	(!A2 * !B1 * C1 * !Y)	0.00494	0.00489	0.00492
	(!A2 * !B1 * C1 * !Y)	0.01407	0.01414	0.01407
	(!A2 * !B1 * !C1 * Y)	-0.00090	-0.00092	-0.00088
	(!A2 * !B1 * !C1 * Y)	0.00632	0.00642	0.00633

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00626	-0.00635	-0.00636
	(A2 * A3 * B1 * C1 * !Y)	0.01189	0.01202	0.01187
	(A2 * A3 * B1 * !C1 * !Y)	0.00262	0.00239	0.00136
	(A2 * A3 * B1 * !C1 * !Y)	0.02118	0.02110	0.01993
	(A2 * A3 * !B1 * C1 * !Y)	0.00970	0.00932	0.00700
	(A2 * A3 * !B1 * C1 * !Y)	0.02862	0.02836	0.02595
	(A2 * !A3 * B1 * C1 * !Y)	-0.00578	-0.00608	-0.00606
	(A2 * !A3 * B1 * C1 * !Y)	0.01191	0.01193	0.01189
	(A2 * !A3 * B1 * !C1 * !Y)	0.00349	0.00318	0.00315
	(A2 * !A3 * B1 * !C1 * !Y)	0.02112	0.02117	0.02110
	(A2 * !A3 * !B1 * C1 * !Y)	0.01038	0.01008	0.00998
	(A2 * !A3 * !B1 * C1 * !Y)	0.02799	0.02809	0.02794
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00149	-0.00151	-0.00148
	(A2 * !A3 * !B1 * !C1 * Y)	0.01240	0.01250	0.01248
	(!A2 * B1 * C1 * !Y)	-0.00619	-0.00620	-0.00614
	(!A2 * B1 * C1 * !Y)	0.01191	0.01191	0.01190
	(!A2 * B1 * !C1 * !Y)	0.00306	0.00300	0.00308
	(!A2 * B1 * !C1 * !Y)	0.02114	0.02123	0.02111
	(!A2 * !B1 * C1 * !Y)	0.00996	0.00991	0.00992
	(!A2 * !B1 * C1 * !Y)	0.02799	0.02802	0.02795
	(!A2 * !B1 * !C1 * Y)	-0.00167	-0.00172	-0.00164
	(!A2 * !B1 * !C1 * Y)	0.01244	0.01268	0.01250

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)**	0.00267	0.00251	0.00253
	(A1 * A3 * B1 * C1 * !Y)	-0.00197	-0.00214	-0.00210
	(A1 * A3 * B1 * !C1 * !Y)	0.00389	0.00353	0.00471
	(A1 * A3 * B1 * !C1 * !Y)	-0.00082	-0.00120	0.00002
	(A1 * A3 * !B1 * C1 * !Y)	0.00435	0.00396	0.00620
	(A1 * A3 * !B1 * C1 * !Y)	-0.00049	-0.00087	0.00145
	(A1 * !A3 * B1 * C1 * !Y)	0.00250	0.00253	0.00251
	(A1 * !A3 * B1 * C1 * !Y)	-0.00209	-0.00211	-0.00210
	(A1 * !A3 * B1 * !C1 * !Y)	0.00482	0.00484	0.00482
	(A1 * !A3 * B1 * !C1 * !Y)	0.00023	0.00020	0.00022
	(A1 * !A3 * !B1 * C1 * !Y)	0.00655	0.00658	0.00657
	(A1 * !A3 * !B1 * C1 * !Y)	0.00197	0.00194	0.00197
	(A1 * !A3 * !B1 * !C1 * Y)	0.00091	0.00092	0.00091
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00257	-0.00254
	(!A1 * A3 * B1 * !Y)	0.00250	0.00252	0.00250
	(!A1 * A3 * B1 * !Y)	-0.00209	-0.00211	-0.00210
	(!A1 * A3 * !B1 * C1 * !Y)	0.00657	0.00659	0.00657
	(!A1 * A3 * !B1 * C1 * !Y)	0.00198	0.00195	0.00197
	(!A1 * A3 * !B1 * !C1 * Y)	0.00218	0.00220	0.00217
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00244	-0.00246	-0.00246
	(!A1 * !A3 * B1 * !Y)	0.00161	0.00161	0.00159
	(!A1 * !A3 * B1 * !Y)	-0.00209	-0.00210	-0.00210
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00569	0.00569	0.00567
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00199	0.00197	0.00198
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00111	0.00111	0.00110
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00256	-0.00254

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00505	0.00472	0.00475
	(A1 * A3 * B1 * C1 * !Y)	-0.00407	-0.00441	-0.00434
	(A1 * A3 * B1 * !C1 * !Y)	0.00757	0.00684	0.00915
	(A1 * A3 * B1 * !C1 * !Y)	-0.00173	-0.00248	-0.00008
	(A1 * A3 * !B1 * C1 * !Y)	0.00849	0.00775	0.01210
	(A1 * A3 * !B1 * C1 * !Y)	-0.00103	-0.00179	0.00276
	(A1 * !A3 * B1 * C1 * !Y)	0.00468	0.00469	0.00468
	(A1 * !A3 * B1 * C1 * !Y)	-0.00436	-0.00436	-0.00435
	(A1 * !A3 * B1 * !C1 * !Y)	0.00932	0.00933	0.00931
	(A1 * !A3 * B1 * !C1 * !Y)	0.00028	0.00025	0.00028
	(A1 * !A3 * !B1 * C1 * !Y)	0.01276	0.01276	0.01277
	(A1 * !A3 * !B1 * C1 * !Y)	0.00372	0.00371	0.00375
	(A1 * !A3 * !B1 * !C1 * Y)	0.00181	0.00183	0.00180
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00495	-0.00500	-0.00495
	(!A1 * A3 * B1 * !Y)	0.00468	0.00472	0.00469
	(!A1 * A3 * B1 * !Y)	-0.00433	-0.00436	-0.00435
	(!A1 * A3 * !B1 * C1 * !Y)	0.01277	0.01281	0.01279
	(!A1 * A3 * !B1 * C1 * !Y)	0.00376	0.00370	0.00375
	(!A1 * A3 * !B1 * !C1 * Y)	0.00436	0.00440	0.00434
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00475	-0.00477	-0.00476
	(!A1 * !A3 * B1 * !Y)	0.00294	0.00296	0.00292
	(!A1 * !A3 * B1 * !Y)	-0.00433	-0.00437	-0.00435
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01106	0.01108	0.01104
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00378	0.00374	0.00377
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00222	0.00224	0.00221
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00497	-0.00500	-0.00497

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.01005	0.00943	0.00948
	(A1 * A3 * B1 * C1 * !Y)	-0.00808	-0.00878	-0.00862
	(A1 * A3 * B1 * !C1 * !Y)	0.01500	0.01361	0.01823
	(A1 * A3 * B1 * !C1 * !Y)	-0.00348	-0.00496	-0.00013
	(A1 * A3 * !B1 * C1 * !Y)	0.01676	0.01541	0.02409
	(A1 * A3 * !B1 * C1 * !Y)	-0.00216	-0.00363	0.00549
	(A1 * !A3 * B1 * C1 * !Y)	0.00929	0.00938	0.00932
	(A1 * !A3 * B1 * C1 * !Y)	-0.00859	-0.00868	-0.00862
	(A1 * !A3 * B1 * !C1 * !Y)	0.01854	0.01861	0.01856
	(A1 * !A3 * B1 * !C1 * !Y)	0.00067	0.00054	0.00062
	(A1 * !A3 * !B1 * C1 * !Y)	0.02534	0.02537	0.02540
	(A1 * !A3 * !B1 * C1 * !Y)	0.00746	0.00738	0.00746
	(A1 * !A3 * !B1 * !C1 * Y)	0.00347	0.00350	0.00345
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00983	-0.00990	-0.00981
	(!A1 * A3 * B1 * !Y)	0.00932	0.00941	0.00935
	(!A1 * A3 * B1 * !Y)	-0.00859	-0.00867	-0.00862
	(!A1 * A3 * !B1 * C1 * !Y)	0.02543	0.02549	0.02548
	(!A1 * A3 * !B1 * C1 * !Y)	0.00751	0.00742	0.00751
	(!A1 * A3 * !B1 * !C1 * Y)	0.00870	0.00878	0.00866
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00942	-0.00946	-0.00944
	(!A1 * !A3 * B1 * !Y)	0.00567	0.00572	0.00563
	(!A1 * !A3 * B1 * !Y)	-0.00860	-0.00868	-0.00863
	(!A1 * !A3 * !B1 * C1 * !Y)	0.02183	0.02187	0.02180
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00756	0.00747	0.00754
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00425	0.00430	0.00424
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00983	-0.00991	-0.00984

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)**	-0.00174	-0.00175	-0.00176
	(A1 * A3 * B1 * C1 * !Y)	0.00291	0.00291	0.00289
	(A1 * A3 * B1 * !C1 * !Y)	0.00051	0.00046	0.00020
	(A1 * A3 * B1 * !C1 * !Y)	0.00524	0.00521	0.00493
	(A1 * A3 * !B1 * C1 * !Y)	0.00229	0.00220	0.00162
	(A1 * A3 * !B1 * C1 * !Y)	0.00710	0.00703	0.00643
	(A1 * !A3 * B1 * C1 * !Y)	-0.00171	-0.00173	-0.00170
	(A1 * !A3 * B1 * C1 * !Y)	0.00289	0.00293	0.00290
	(A1 * !A3 * B1 * !C1 * !Y)	0.00060	0.00059	0.00061
	(A1 * !A3 * B1 * !C1 * !Y)	0.00521	0.00523	0.00521
	(A1 * !A3 * !B1 * C1 * !Y)	0.00235	0.00233	0.00235
	(A1 * !A3 * !B1 * C1 * !Y)	0.00695	0.00698	0.00695
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00037	-0.00037	-0.00038
	(A1 * !A3 * !B1 * !C1 * Y)	0.00311	0.00314	0.00305
	(!A1 * A3 * B1 * !Y)	-0.00170	-0.00173	-0.00170
	(!A1 * A3 * B1 * !Y)	0.00288	0.00293	0.00290
	(!A1 * A3 * !B1 * C1 * !Y)	0.00236	0.00232	0.00235
	(!A1 * A3 * !B1 * C1 * !Y)	0.00694	0.00698	0.00695
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00129	-0.00156	-0.00153
	(!A1 * A3 * !B1 * !C1 * Y)	0.00333	0.00313	0.00308
	(!A1 * !A3 * B1 * !Y)	-0.00091	-0.00091	-0.00083
	(!A1 * !A3 * B1 * !Y)	0.00290	0.00291	0.00290
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00316	0.00316	0.00324
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00697	0.00698	0.00697
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00067	-0.00067	-0.00069
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00311	0.00313	0.00301

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00316	-0.00320	-0.00320
	(A1 * A3 * B1 * C1 * !Y)	0.00597	0.00602	0.00594
	(A1 * A3 * B1 * !C1 * !Y)	0.00128	0.00119	0.00064
	(A1 * A3 * B1 * !C1 * !Y)	0.01061	0.01050	0.00996
	(A1 * A3 * !B1 * C1 * !Y)	0.00486	0.00467	0.00350
	(A1 * A3 * !B1 * C1 * !Y)	0.01434	0.01422	0.01300
	(A1 * !A3 * B1 * C1 * !Y)	-0.00309	-0.00313	-0.00308
	(A1 * !A3 * B1 * C1 * !Y)	0.00593	0.00600	0.00595
	(A1 * !A3 * B1 * !C1 * !Y)	0.00154	0.00151	0.00153
	(A1 * !A3 * B1 * !C1 * !Y)	0.01055	0.01058	0.01056
	(A1 * !A3 * !B1 * C1 * !Y)	0.00500	0.00497	0.00498
	(A1 * !A3 * !B1 * C1 * !Y)	0.01403	0.01406	0.01402
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00110	-0.00112	-0.00115
	(A1 * !A3 * !B1 * !C1 * Y)	0.00567	0.00574	0.00555
	(!A1 * A3 * B1 * !Y)	-0.00310	-0.00315	-0.00309
	(!A1 * A3 * B1 * !Y)	0.00594	0.00602	0.00595
	(!A1 * A3 * !B1 * C1 * !Y)	0.00499	0.00494	0.00498
	(!A1 * A3 * !B1 * C1 * !Y)	0.01403	0.01410	0.01402
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00293	-0.00352	-0.00345
	(!A1 * A3 * !B1 * !C1 * Y)	0.00619	0.00570	0.00561
	(!A1 * !A3 * B1 * !Y)	-0.00157	-0.00158	-0.00140
	(!A1 * !A3 * B1 * !Y)	0.00595	0.00599	0.00595
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00654	0.00653	0.00670
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01406	0.01409	0.01406
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00172	-0.00173	-0.00179
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00573	0.00576	0.00552

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00632	-0.00637	-0.00637
	(A1 * A3 * B1 * C1 * !Y)	0.01189	0.01194	0.01180
	(A1 * A3 * B1 * !C1 * !Y)	0.00258	0.00235	0.00133
	(A1 * A3 * B1 * !C1 * !Y)	0.02114	0.02104	0.01986
	(A1 * A3 * !B1 * C1 * !Y)	0.00965	0.00925	0.00696
	(A1 * A3 * !B1 * C1 * !Y)	0.02852	0.02827	0.02586
	(A1 * !A3 * B1 * C1 * !Y)	-0.00615	-0.00623	-0.00613
	(A1 * !A3 * B1 * C1 * !Y)	0.01178	0.01193	0.01182
	(A1 * !A3 * B1 * !C1 * !Y)	0.00308	0.00303	0.00308
	(A1 * !A3 * B1 * !C1 * !Y)	0.02101	0.02107	0.02103
	(A1 * !A3 * !B1 * C1 * !Y)	0.00994	0.00988	0.00990
	(A1 * !A3 * !B1 * C1 * !Y)	0.02787	0.02793	0.02785
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00207	-0.00211	-0.00216
	(A1 * !A3 * !B1 * !C1 * Y)	0.01126	0.01138	0.01100
	(!A1 * A3 * B1 * !Y)	-0.00618	-0.00622	-0.00616
	(!A1 * A3 * B1 * !Y)	0.01180	0.01184	0.01182
	(!A1 * A3 * !B1 * C1 * !Y)	0.00993	0.00988	0.00991
	(!A1 * A3 * !B1 * C1 * !Y)	0.02792	0.02794	0.02789
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00574	-0.00695	-0.00689
	(!A1 * A3 * !B1 * !C1 * Y)	0.01239	0.01124	0.01112
	(!A1 * !A3 * B1 * !Y)	-0.00297	-0.00295	-0.00259
	(!A1 * !A3 * B1 * !Y)	0.01188	0.01189	0.01183
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01320	0.01319	0.01354
	(!A1 * !A3 * !B1 * C1 * !Y)	0.02798	0.02804	0.02796
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00331	-0.00329	-0.00339
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01138	0.01140	0.01094

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)**	0.00279	0.00264	0.00266
	(A1 * A2 * B1 * C1 * !Y)	-0.00199	-0.00215	-0.00211
	(A1 * A2 * B1 * !C1 * !Y)	0.00398	0.00365	0.00484
	(A1 * A2 * B1 * !C1 * !Y)	-0.00087	-0.00122	0.00001
	(A1 * A2 * !B1 * C1 * !Y)	0.00442	0.00408	0.00632
	(A1 * A2 * !B1 * C1 * !Y)	-0.00053	-0.00089	0.00144
	(A1 * !A2 * !B1 * !C1 * Y)	0.00236	0.00236	0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00240	-0.00241	-0.00241
	(!A2 * B1 * !Y)	0.00263	0.00264	0.00263
	(!A2 * B1 * !Y)	-0.00210	-0.00211	-0.00211
	(!A2 * !B1 * C1 * !Y)	0.00668	0.00670	0.00669
	(!A2 * !B1 * C1 * !Y)	0.00195	0.00193	0.00195
	(!A1 * A2 * B1 * !Y)	0.00261	0.00260	0.00260
	(!A1 * A2 * B1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A1 * A2 * !B1 * C1 * !Y)	0.00667	0.00667	0.00667
	(!A1 * A2 * !B1 * C1 * !Y)	0.00195	0.00195	0.00196
	(!A1 * A2 * !B1 * !C1 * Y)	0.00236	0.00235	0.00234
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00240	-0.00240	-0.00240
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00225	0.00227	0.00225
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00495	0.00466	0.00468
	(A1 * A2 * B1 * C1 * !Y)	-0.00399	-0.00432	-0.00424
	(A1 * A2 * B1 * !C1 * !Y)	0.00742	0.00677	0.00906
	(A1 * A2 * B1 * !C1 * !Y)	-0.00169	-0.00239	0.00002
	(A1 * A2 * !B1 * C1 * !Y)	0.00831	0.00767	0.01201
	(A1 * A2 * !B1 * C1 * !Y)	-0.00102	-0.00171	0.00285
	(A1 * !A2 * !B1 * !C1 * Y)	0.00423	0.00429	0.00425
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00459	-0.00464	-0.00463
	(!A2 * B1 * !Y)	0.00458	0.00463	0.00460
	(!A2 * B1 * !Y)	-0.00421	-0.00426	-0.00424
	(!A2 * !B1 * C1 * !Y)	0.01269	0.01270	0.01270
	(!A2 * !B1 * C1 * !Y)	0.00384	0.00382	0.00386
	(!A1 * A2 * B1 * !Y)	0.00456	0.00459	0.00455
	(!A1 * A2 * B1 * !Y)	-0.00425	-0.00426	-0.00424
	(!A1 * A2 * !B1 * C1 * !Y)	0.01264	0.01262	0.01265
	(!A1 * A2 * !B1 * C1 * !Y)	0.00384	0.00384	0.00386
	(!A1 * A2 * !B1 * !C1 * Y)	0.00425	0.00428	0.00424
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00463	-0.00464	-0.00463
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00404	0.00408	0.00404
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00479	-0.00482	-0.00479

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.01001	0.00941	0.00945
	(A1 * A2 * B1 * C1 * !Y)	-0.00809	-0.00874	-0.00857
	(A1 * A2 * B1 * !C1 * !Y)	0.01491	0.01361	0.01820
	(A1 * A2 * B1 * !C1 * !Y)	-0.00354	-0.00493	-0.00010
	(A1 * A2 * !B1 * C1 * !Y)	0.01662	0.01535	0.02404
	(A1 * A2 * !B1 * C1 * !Y)	-0.00226	-0.00358	0.00551
	(A1 * !A2 * !B1 * !C1 * Y)	0.00858	0.00870	0.00859
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00930	-0.00939	-0.00935
	(!A2 * B1 * !Y)	0.00932	0.00938	0.00930
	(!A2 * B1 * !Y)	-0.00859	-0.00863	-0.00857
	(!A2 * !B1 * C1 * !Y)	0.02536	0.02543	0.02540
	(!A2 * !B1 * C1 * !Y)	0.00751	0.00743	0.00752
	(!A1 * A2 * B1 * !Y)	0.00920	0.00921	0.00918
	(!A1 * A2 * B1 * !Y)	-0.00860	-0.00860	-0.00857
	(!A1 * A2 * !B1 * C1 * !Y)	0.02529	0.02528	0.02530
	(!A1 * A2 * !B1 * C1 * !Y)	0.00750	0.00749	0.00755
	(!A1 * A2 * !B1 * !C1 * Y)	0.00853	0.00865	0.00856
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00930	-0.00939	-0.00936
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00816	0.00827	0.00818
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00966	-0.00974	-0.00968

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)**	-0.00186	-0.00187	-0.00188
	(A1 * A2 * B1 * C1 * !Y)	0.00292	0.00293	0.00290
	(A1 * A2 * B1 * !C1 * !Y)	0.00039	0.00034	0.00008
	(A1 * A2 * B1 * !C1 * !Y)	0.00525	0.00522	0.00494
	(A1 * A2 * !B1 * C1 * !Y)	0.00218	0.00207	0.00150
	(A1 * A2 * !B1 * C1 * !Y)	0.00712	0.00706	0.00645
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00156	-0.00173	-0.00173
	(A1 * !A2 * !B1 * !C1 * Y)	0.00320	0.00309	0.00301
	(!A2 * B1 * !Y)	-0.00183	-0.00184	-0.00182
	(!A2 * B1 * !Y)	0.00289	0.00292	0.00291
	(!A2 * !B1 * C1 * !Y)	0.00223	0.00221	0.00222
	(!A2 * !B1 * C1 * !Y)	0.00696	0.00698	0.00696
	(!A1 * A2 * B1 * !Y)	-0.00175	-0.00181	-0.00181
	(!A1 * A2 * B1 * !Y)	0.00290	0.00293	0.00291
	(!A1 * A2 * !B1 * C1 * !Y)	0.00232	0.00226	0.00225
	(!A1 * A2 * !B1 * C1 * !Y)	0.00697	0.00700	0.00697
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00145	-0.00169	-0.00170
	(!A1 * A2 * !B1 * !C1 * Y)	0.00328	0.00312	0.00303
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00171	-0.00180	-0.00179
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00298	0.00297	0.00294

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00309	-0.00311	-0.00312
	(A1 * A2 * B1 * C1 * !Y)	0.00587	0.00590	0.00583
	(A1 * A2 * B1 * !C1 * !Y)	0.00135	0.00124	0.00073
	(A1 * A2 * B1 * !C1 * !Y)	0.01049	0.01044	0.00986
	(A1 * A2 * !B1 * C1 * !Y)	0.00494	0.00475	0.00358
	(A1 * A2 * !B1 * C1 * !Y)	0.01423	0.01410	0.01290
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00298	-0.00340	-0.00341
	(A1 * !A2 * !B1 * !C1 * Y)	0.00591	0.00561	0.00544
	(!A2 * B1 * !Y)	-0.00301	-0.00305	-0.00301
	(!A2 * B1 * !Y)	0.00581	0.00589	0.00584
	(!A2 * !B1 * C1 * !Y)	0.00508	0.00503	0.00505
	(!A2 * !B1 * C1 * !Y)	0.01390	0.01397	0.01390
	(!A1 * A2 * B1 * !Y)	-0.00283	-0.00297	-0.00297
	(!A1 * A2 * B1 * !Y)	0.00582	0.00589	0.00584
	(!A1 * A2 * !B1 * C1 * !Y)	0.00526	0.00512	0.00510
	(!A1 * A2 * !B1 * C1 * !Y)	0.01392	0.01398	0.01391
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00275	-0.00332	-0.00336
	(!A1 * A2 * !B1 * !C1 * Y)	0.00609	0.00565	0.00547
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00336	-0.00357	-0.00356
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00540	0.00536	0.00529

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00629	-0.00633	-0.00635
	(A1 * A2 * B1 * C1 * !Y)	0.01184	0.01187	0.01176
	(A1 * A2 * B1 * !C1 * !Y)	0.00259	0.00239	0.00135
	(A1 * A2 * B1 * !C1 * !Y)	0.02108	0.02093	0.01981
	(A1 * A2 * !B1 * C1 * !Y)	0.00963	0.00927	0.00697
	(A1 * A2 * !B1 * C1 * !Y)	0.02847	0.02818	0.02580
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00604	-0.00690	-0.00692
	(A1 * !A2 * !B1 * !C1 * Y)	0.01197	0.01133	0.01099
	(!A2 * B1 * !Y)	-0.00613	-0.00621	-0.00611
	(!A2 * B1 * !Y)	0.01174	0.01188	0.01178
	(!A2 * !B1 * C1 * !Y)	0.00996	0.00987	0.00993
	(!A2 * !B1 * C1 * !Y)	0.02783	0.02796	0.02782
	(!A1 * A2 * B1 * !Y)	-0.00579	-0.00602	-0.00604
	(!A1 * A2 * B1 * !Y)	0.01179	0.01188	0.01178
	(!A1 * A2 * !B1 * C1 * !Y)	0.01035	0.01008	0.01003
	(!A1 * A2 * !B1 * C1 * !Y)	0.02787	0.02799	0.02785
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00557	-0.00672	-0.00681
	(!A1 * A2 * !B1 * !C1 * Y)	0.01234	0.01144	0.01105
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00679	-0.00723	-0.00720
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01095	0.01082	0.01068

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)**	0.00321	0.00324	0.00397
	(A1 * A2 * A3 * C1 * !Y)	-0.00103	-0.00101	-0.00023
	(A1 * A2 * A3 * !C1 * !Y)	0.00281	0.00285	0.00431
	(A1 * A2 * A3 * !C1 * !Y)	-0.00030	-0.00028	0.00113
	(A1 * A2 * !A3 * C1 * !Y)	0.00355	0.00319	0.00612
	(A1 * A2 * !A3 * C1 * !Y)	-0.00119	-0.00155	0.00142
	(A1 * !A2 * C1 * !Y)	0.00356	0.00320	0.00611
	(A1 * !A2 * C1 * !Y)	-0.00118	-0.00155	0.00142
	(!A1 * C1 * !Y)	0.00352	0.00319	0.00612
	(!A1 * C1 * !Y)	-0.00122	-0.00155	0.00143
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00433	0.00435	0.00568
	(A1 * A2 * A3 * C1 * !Y)	-0.00204	-0.00207	-0.00065
	(A1 * A2 * A3 * !C1 * !Y)	0.00359	0.00370	0.00639
	(A1 * A2 * A3 * !C1 * !Y)	-0.00038	-0.00037	0.00229
	(A1 * A2 * !A3 * C1 * !Y)	0.00538	0.00441	0.01011
	(A1 * A2 * !A3 * C1 * !Y)	-0.00215	-0.00311	0.00269
	(A1 * !A2 * C1 * !Y)	0.00537	0.00441	0.01011
	(A1 * !A2 * C1 * !Y)	-0.00215	-0.00312	0.00269
	(!A1 * C1 * !Y)	0.00536	0.00441	0.01011
	(!A1 * C1 * !Y)	-0.00216	-0.00312	0.00269
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00842	0.00850	0.01123
	(A1 * A2 * A3 * C1 * !Y)	-0.00402	-0.00404	-0.00112
	(A1 * A2 * A3 * !C1 * !Y)	0.00672	0.00692	0.01261
	(A1 * A2 * A3 * !C1 * !Y)	-0.00099	-0.00096	0.00465
	(A1 * A2 * !A3 * C1 * !Y)	0.01046	0.00850	0.01996
	(A1 * A2 * !A3 * C1 * !Y)	-0.00429	-0.00626	0.00541
	(A1 * !A2 * C1 * !Y)	0.01041	0.00849	0.01996
	(A1 * !A2 * C1 * !Y)	-0.00433	-0.00627	0.00542
	(!A1 * C1 * !Y)	0.01029	0.00847	0.01997
	(!A1 * C1 * !Y)	-0.00430	-0.00629	0.00543

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)	-0.00211	-0.00212	-0.00188
	(A1 * A2 * A3 * C1 * !Y)	0.00226	0.00227	0.00229
	(A1 * A2 * A3 * !C1 * !Y)	0.00565	0.00538	0.00204
	(A1 * A2 * A3 * !C1 * !Y)	0.00886	0.00861	0.00527
	(A1 * A2 * !A3 * C1 * !Y)	0.00223	0.00212	0.00151
	(A1 * A2 * !A3 * C1 * !Y)	0.00695	0.00686	0.00622
	(A1 * !A2 * C1 * !Y)	0.00223	0.00211	0.00150
	(A1 * !A2 * C1 * !Y)	0.00694	0.00685	0.00621
	(!A1 * C1 * !Y)	0.00225	0.00213	0.00152
	(!A1 * C1 * !Y)	0.00695	0.00687	0.00623
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00207	-0.00207	-0.00157
	(A1 * A2 * A3 * C1 * !Y)	0.00467	0.00468	0.00471
	(A1 * A2 * A3 * !C1 * !Y)	0.01344	0.01291	0.00625
	(A1 * A2 * A3 * !C1 * !Y)	0.01766	0.01717	0.01050
	(A1 * A2 * !A3 * C1 * !Y)	0.00660	0.00637	0.00508
	(A1 * A2 * !A3 * C1 * !Y)	0.01406	0.01386	0.01256
	(A1 * !A2 * C1 * !Y)	0.00660	0.00638	0.00509
	(A1 * !A2 * C1 * !Y)	0.01406	0.01387	0.01257
	(!A1 * C1 * !Y)	0.00661	0.00638	0.00509
	(!A1 * C1 * !Y)	0.01407	0.01387	0.01257

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00392	-0.00396	-0.00297
	(A1 * A2 * A3 * C1 * !Y)	0.00914	0.00922	0.00926
	(A1 * A2 * A3 * !C1 * !Y)	0.02706	0.02601	0.01267
	(A1 * A2 * A3 * !C1 * !Y)	0.03525	0.03424	0.02090
	(A1 * A2 * !A3 * C1 * !Y)	0.01325	0.01279	0.01026
	(A1 * A2 * !A3 * C1 * !Y)	0.02787	0.02746	0.02491
	(A1 * !A2 * C1 * !Y)	0.01328	0.01283	0.01029
	(A1 * !A2 * C1 * !Y)	0.02790	0.02750	0.02494
	(!A1 * C1 * !Y)	0.01331	0.01286	0.01033
	(!A1 * C1 * !Y)	0.02794	0.02754	0.02498

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)	0.00234	0.00235	0.00246
	(A1 * A2 * B1 * !Y)	-0.00088	-0.00087	-0.00075
	(A1 * A2 * A3 * !B1 * !Y)	0.00245	0.00252	0.00345
	(A1 * A2 * A3 * !B1 * !Y)	0.00025	0.00026	0.00113
	(A1 * !A2 * B1 * !Y)	0.00234	0.00240	0.00297
	(A1 * !A2 * B1 * !Y)	-0.00086	-0.00087	-0.00028
	(!A1 * B1 * !Y)	0.00234	0.00240	0.00297
	(!A1 * B1 * !Y)	-0.00086	-0.00087	-0.00028
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00271	0.00272	0.00285
	(A1 * A2 * B1 * !Y)	-0.00162	-0.00161	-0.00147
	(A1 * A2 * A3 * !B1 * !Y)	0.00275	0.00283	0.00452
	(A1 * A2 * A3 * !B1 * !Y)	0.00059	0.00063	0.00216
	(A1 * !A2 * B1 * !Y)	0.00273	0.00281	0.00357
	(A1 * !A2 * B1 * !Y)	-0.00156	-0.00158	-0.00077
	(!A1 * B1 * !Y)	0.00273	0.00281	0.00357
	(!A1 * B1 * !Y)	-0.00156	-0.00158	-0.00077
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00536	0.00543	0.00571
	(A1 * A2 * B1 * !Y)	-0.00314	-0.00317	-0.00283
	(A1 * A2 * A3 * !B1 * !Y)	0.00547	0.00565	0.00917
	(A1 * A2 * A3 * !B1 * !Y)	0.00124	0.00131	0.00453
	(A1 * !A2 * B1 * !Y)	0.00545	0.00560	0.00734
	(A1 * !A2 * B1 * !Y)	-0.00308	-0.00310	-0.00127
	(!A1 * B1 * !Y)	0.00545	0.00560	0.00734
	(!A1 * B1 * !Y)	-0.00307	-0.00310	-0.00127

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)	-0.00089	-0.00093	-0.00121
	(A1 * A2 * B1 * !Y)	0.00234	0.00234	0.00205
	(A1 * A2 * A3 * !B1 * !Y)	0.00666	0.00643	0.00338
	(A1 * A2 * A3 * !B1 * !Y)	0.00920	0.00899	0.00593
	(A1 * !A2 * B1 * !Y)	0.00095	0.00083	-0.00050
	(A1 * !A2 * B1 * !Y)	0.00419	0.00410	0.00276
	(!A1 * B1 * !Y)	0.00095	0.00083	-0.00050
	(!A1 * B1 * !Y)	0.00419	0.00410	0.00276
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00028	0.00025	-0.00029
	(A1 * A2 * B1 * !Y)	0.00466	0.00464	0.00415
	(A1 * A2 * A3 * !B1 * !Y)	0.01567	0.01524	0.00923
	(A1 * A2 * A3 * !B1 * !Y)	0.01857	0.01816	0.01215
	(A1 * !A2 * B1 * !Y)	0.00415	0.00395	0.00135
	(A1 * !A2 * B1 * !Y)	0.00854	0.00837	0.00576
	(!A1 * B1 * !Y)	0.00414	0.00395	0.00135
	(!A1 * B1 * !Y)	0.00856	0.00837	0.00576
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00053	0.00045	-0.00065
	(A1 * A2 * B1 * !Y)	0.00923	0.00920	0.00816
	(A1 * A2 * A3 * !B1 * !Y)	0.03114	0.03028	0.01819
	(A1 * A2 * A3 * !B1 * !Y)	0.03686	0.03596	0.02392
	(A1 * !A2 * B1 * !Y)	0.00808	0.00767	0.00244
	(A1 * !A2 * B1 * !Y)	0.01682	0.01644	0.01119
	(!A1 * B1 * !Y)	0.00809	0.00768	0.00245
	(!A1 * B1 * !Y)	0.01683	0.01645	0.01119

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00270	0.00257	0.00259	0.00266	0.00273	1.70176
sky130_fd_sc_hs__a311o_2	0.00278	0.00278	0.00296	0.00299	0.00283	2.74350
sky130_fd_sc_hs__a311o_4	0.00510	0.00478	0.00507	0.00494	0.00490	4.42536

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	371.08000	792.87700
sky130_fd_sc_hs__a311o_2	0.00000	488.76800	1076.09000
sky130_fd_sc_hs__a311o_4	0.00000	984.18200	2209.61000

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)	0.07568	0.47885	6.09668
	A2->X (RR)	0.08092	0.46409	5.85115
	A3->X (RR)	0.08452	0.43696	5.47681
	B1->X (RR)	0.04984	0.39077	4.90930
	C1->X (RR)	0.04439	0.37365	4.77131
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.08402	0.42017	5.59589
	A2->X (RR)	0.08957	0.40295	5.34430
	A3->X (RR)	0.09354	0.37222	4.82676
	B1->X (RR)	0.05391	0.33024	4.41129
	C1->X (RR)	0.04883	0.31680	4.30911
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.10725	0.40536	5.71070
	A2->X (RR)	0.11626	0.39431	5.50224
	A3->X (RR)	0.11974	0.33665	4.79536
	B1->X (RR)	0.05276	0.25522	4.07463
	C1->X (RR)	0.04665	0.23736	3.92582

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.11266	0.48466	5.61058
	A2->X (FF)	0.12832	0.51460	5.81653
	A3->X (FF)	0.13866	0.53475	6.03545
	B1->X (FF)	0.11442	0.56036	6.76182
	C1->X (FF)	0.09477	0.56638	6.87986
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.14697	0.47267	5.05994
	A2->X (FF)	0.16841	0.50785	5.29136
	A3->X (FF)	0.18122	0.52849	5.49644
	B1->X (FF)	0.15544	0.55349	6.10611
	C1->X (FF)	0.14574	0.57788	6.21510
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.16005	0.41363	4.54056
	A2->X (FF)	0.17957	0.44504	4.71439
	A3->X (FF)	0.19547	0.48190	5.20917
	B1->X (FF)	0.18194	0.53687	5.67702
	C1->X (FF)	0.15000	0.54345	5.91158

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.03775	0.04846	0.25773
	A1	0.02903	0.03972	0.24932
	A2	0.03865	0.04814	0.25566
	A2	0.02889	0.03839	0.24560
	A3	0.03975	0.04783	0.23749
	A3	0.02870	0.03677	0.22639
	B1	0.02101	0.03613	0.27442
	B1	0.01387	0.02899	0.26674
	C1	0.02543	0.04064	0.27441
	C1	0.01940	0.03462	0.26790
sky130_fd_sc_hs__a311o_2	A1	0.04475	0.05497	0.27190
	A1	0.03546	0.04565	0.26253
	A2	0.04602	0.05476	0.26725
	A2	0.03534	0.04406	0.25632
	A3	0.04737	0.05278	0.20522
	A3	0.03504	0.04042	0.19196
	B1	0.02662	0.04108	0.26283
	B1	0.01863	0.03306	0.25433
	C1	0.03046	0.04493	0.26092
	C1	0.02382	0.03826	0.25360

sky130_fd_sc_hs__a311o_4	**A1**	0.09439	0.11259	0.54465
	A1	0.07777	0.09607	0.52722
	A2	0.09643	0.11192	0.54073
	A2	0.07739	0.09287	0.52155
	A3	0.09888	0.11059	0.49662
	A3	0.07700	0.08867	0.47307
	B1	0.05145	0.07974	0.51220
	B1	0.03786	0.06613	0.49806
	C1	0.05721	0.08697	0.50759
	C1	0.04641	0.07617	0.49674

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.01708	0.02499	0.20501
	A1	0.02580	0.03369	0.21381
	A2	0.01861	0.02607	0.20775
	A2	0.02837	0.03580	0.21619
	A3	0.01940	0.02622	0.21207
	A3	0.03045	0.03725	0.22125
	B1	0.01596	0.02866	0.26696
	B1	0.02310	0.03579	0.27374
	C1	0.01575	0.02955	0.26501
	C1	0.02179	0.03558	0.27095

sky130_fd_sc_hs__a311o_2	**A1**	0.03524	0.03689	0.21366
	A1	0.04452	0.04604	0.22178
	A2	0.03831	0.03812	0.21708
	A2	0.04899	0.04880	0.22614
	A3	0.03957	0.03725	0.21121
	A3	0.05188	0.04953	0.21974
	B1	0.03222	0.03883	0.26310
	B1	0.04022	0.04683	0.26989
	C1	0.03219	0.04022	0.26165
	C1	0.03884	0.04671	0.26752
sky130_fd_sc_hs__a311o_4	**A1**	0.07245	0.07320	0.43946
	A1	0.08906	0.08964	0.45477
	A2	0.07885	0.07690	0.45108
	A2	0.09791	0.09569	0.46749
	A3	0.08276	0.07792	0.46420
	A3	0.10464	0.09954	0.48207
	B1	0.06578	0.07444	0.45948
	B1	0.07938	0.08801	0.47178
	C1	0.06597	0.07734	0.48039
	C1	0.07678	0.08810	0.49081

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)**	0.00252	0.00237	0.00238
	(A2 * A3 * B1 * C1 * X)	-0.00172	-0.00187	-0.00184
	(A2 * A3 * B1 * !C1 * X)	0.00368	0.00335	0.00465
	(A2 * A3 * B1 * !C1 * X)	-0.00065	-0.00098	0.00036
	(A2 * A3 * !B1 * C1 * X)	0.00413	0.00382	0.00653
	(A2 * A3 * !B1 * C1 * X)	-0.00030	-0.00063	0.00218
	(A2 * !A3 * B1 * C1 * X)	0.00233	0.00234	0.00232
	(A2 * !A3 * B1 * C1 * X)	-0.00184	-0.00185	-0.00184
	(A2 * !A3 * B1 * !C1 * X)	0.00477	0.00477	0.00476
	(A2 * !A3 * B1 * !C1 * X)	0.00059	0.00058	0.00060
	(A2 * !A3 * !B1 * C1 * X)	0.00703	0.00703	0.00703
	(A2 * !A3 * !B1 * C1 * X)	0.00286	0.00285	0.00287
	(A2 * !A3 * !B1 * !C1 * !X)	0.00574	0.00574	0.00566
	(A2 * !A3 * !B1 * !C1 * !X)	0.00247	0.00246	0.00232
	(!A2 * B1 * C1 * X)	0.00235	0.00237	0.00236
	(!A2 * B1 * C1 * X)	-0.00183	-0.00185	-0.00184
	(!A2 * B1 * !C1 * X)	0.00479	0.00481	0.00479
	(!A2 * B1 * !C1 * X)	0.00061	0.00058	0.00060
	(!A2 * !B1 * C1 * X)	0.00706	0.00707	0.00707
	(!A2 * !B1 * C1 * X)	0.00287	0.00285	0.00287
	(!A2 * !B1 * !C1 * !X)	0.00574	0.00574	0.00567
	(!A2 * !B1 * !C1 * !X)	0.00241	0.00240	0.00231

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00271	0.00256	0.00258
	(A2 * A3 * B1 * C1 * X)	-0.00159	-0.00175	-0.00172
	(A2 * A3 * B1 * !C1 * X)	0.00387	0.00353	0.00484
	(A2 * A3 * B1 * !C1 * X)	-0.00051	-0.00087	0.00048
	(A2 * A3 * !B1 * C1 * X)	0.00433	0.00399	0.00672
	(A2 * A3 * !B1 * C1 * X)	-0.00016	-0.00051	0.00229
	(A2 * !A3 * B1 * C1 * X)	0.00251	0.00251	0.00252
	(A2 * !A3 * B1 * C1 * X)	-0.00172	-0.00172	-0.00172
	(A2 * !A3 * B1 * !C1 * X)	0.00495	0.00494	0.00495
	(A2 * !A3 * B1 * !C1 * X)	0.00072	0.00071	0.00072
	(A2 * !A3 * !B1 * C1 * X)	0.00720	0.00720	0.00722
	(A2 * !A3 * !B1 * C1 * X)	0.00298	0.00297	0.00299
	(A2 * !A3 * !B1 * !C1 * !X)	0.00990	0.00990	0.00982
	(A2 * !A3 * !B1 * !C1 * !X)	0.00669	0.00669	0.00653
	(!A2 * B1 * C1 * X)	0.00254	0.00256	0.00255
	(!A2 * B1 * C1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * B1 * !C1 * X)	0.00499	0.00499	0.00498
	(!A2 * B1 * !C1 * X)	0.00073	0.00070	0.00072
	(!A2 * !B1 * C1 * X)	0.00724	0.00726	0.00725
	(!A2 * !B1 * C1 * X)	0.00298	0.00295	0.00299
	(!A2 * !B1 * !C1 * !X)	0.00990	0.00990	0.00983
	(!A2 * !B1 * !C1 * !X)	0.00660	0.00658	0.00651

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00492	0.00463	0.00462
	(A2 * A3 * B1 * C1 * X)	-0.00335	-0.00370	-0.00363
	(A2 * A3 * B1 * !C1 * X)	0.00734	0.00665	0.00917
	(A2 * A3 * B1 * !C1 * X)	-0.00111	-0.00183	0.00078
	(A2 * A3 * !B1 * C1 * X)	0.00824	0.00762	0.01287
	(A2 * A3 * !B1 * C1 * X)	-0.00043	-0.00108	0.00436
	(A2 * !A3 * B1 * C1 * X)	0.00448	0.00450	0.00448
	(A2 * !A3 * B1 * C1 * X)	-0.00363	-0.00365	-0.00364
	(A2 * !A3 * B1 * !C1 * X)	0.00934	0.00934	0.00933
	(A2 * !A3 * B1 * !C1 * X)	0.00123	0.00119	0.00122
	(A2 * !A3 * !B1 * C1 * X)	0.01377	0.01378	0.01380
	(A2 * !A3 * !B1 * C1 * X)	0.00566	0.00562	0.00568
	(A2 * !A3 * !B1 * !C1 * !X)	0.02020	0.02020	0.01997
	(A2 * !A3 * !B1 * !C1 * !X)	0.01389	0.01386	0.01348
	(!A2 * B1 * C1 * X)	0.00455	0.00456	0.00456
	(!A2 * B1 * C1 * X)	-0.00362	-0.00364	-0.00364
	(!A2 * B1 * !C1 * X)	0.00941	0.00939	0.00941
	(!A2 * B1 * !C1 * X)	0.00124	0.00122	0.00122
	(!A2 * !B1 * C1 * X)	0.01385	0.01384	0.01388
	(!A2 * !B1 * C1 * X)	0.00568	0.00565	0.00568
	(!A2 * !B1 * !C1 * !X)	0.02030	0.02031	0.02010
	(!A2 * !B1 * !C1 * !X)	0.01376	0.01371	0.01347

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)**	-0.00150	-0.00150	-0.00151
	(A2 * A3 * B1 * C1 * X)	0.00274	0.00274	0.00272
	(A2 * A3 * B1 * !C1 * X)	0.00087	0.00081	0.00050
	(A2 * A3 * B1 * !C1 * X)	0.00519	0.00516	0.00482
	(A2 * A3 * !B1 * C1 * X)	0.00318	0.00306	0.00228
	(A2 * A3 * !B1 * C1 * X)	0.00759	0.00750	0.00670
	(A2 * !A3 * B1 * C1 * X)	-0.00140	-0.00147	-0.00145
	(A2 * !A3 * B1 * C1 * X)	0.00272	0.00276	0.00273
	(A2 * !A3 * B1 * !C1 * X)	0.00103	0.00096	0.00098
	(A2 * !A3 * B1 * !C1 * X)	0.00516	0.00519	0.00516
	(A2 * !A3 * !B1 * C1 * X)	0.00332	0.00326	0.00325
	(A2 * !A3 * !B1 * C1 * X)	0.00744	0.00745	0.00743
	(A2 * !A3 * !B1 * !C1 * !X)	0.00433	0.00433	0.00435
	(A2 * !A3 * !B1 * !C1 * !X)	0.00761	0.00762	0.00762
	(!A2 * B1 * C1 * X)	-0.00147	-0.00150	-0.00146
	(!A2 * B1 * C1 * X)	0.00271	0.00276	0.00273
	(!A2 * B1 * !C1 * X)	0.00096	0.00093	0.00096
	(!A2 * B1 * !C1 * X)	0.00516	0.00519	0.00515
	(!A2 * !B1 * C1 * X)	0.00324	0.00321	0.00323
	(!A2 * !B1 * C1 * X)	0.00744	0.00747	0.00742
	(!A2 * !B1 * !C1 * !X)	0.00429	0.00427	0.00430
	(!A2 * !B1 * !C1 * !X)	0.00760	0.00766	0.00762

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00148	-0.00150	-0.00150
	(A2 * A3 * B1 * C1 * X)	0.00282	0.00283	0.00281
	(A2 * A3 * B1 * !C1 * X)	0.00088	0.00082	0.00051
	(A2 * A3 * B1 * !C1 * X)	0.00527	0.00524	0.00490
	(A2 * A3 * !B1 * C1 * X)	0.00319	0.00306	0.00229
	(A2 * A3 * !B1 * C1 * X)	0.00766	0.00758	0.00678
	(A2 * !A3 * B1 * C1 * X)	-0.00137	-0.00143	-0.00144
	(A2 * !A3 * B1 * C1 * X)	0.00280	0.00284	0.00281
	(A2 * !A3 * B1 * !C1 * X)	0.00106	0.00099	0.00099
	(A2 * !A3 * B1 * !C1 * X)	0.00524	0.00527	0.00524
	(A2 * !A3 * !B1 * C1 * X)	0.00335	0.00326	0.00325
	(A2 * !A3 * !B1 * C1 * X)	0.00752	0.00755	0.00750
	(A2 * !A3 * !B1 * !C1 * !X)	0.00883	0.00883	0.00884
	(A2 * !A3 * !B1 * !C1 * !X)	0.01207	0.01208	0.01208
	(!A2 * B1 * C1 * X)	-0.00147	-0.00147	-0.00145
	(!A2 * B1 * C1 * X)	0.00282	0.00282	0.00281
	(!A2 * B1 * !C1 * X)	0.00097	0.00095	0.00097
	(!A2 * B1 * !C1 * X)	0.00524	0.00526	0.00524
	(!A2 * !B1 * C1 * X)	0.00324	0.00322	0.00323
	(!A2 * !B1 * C1 * X)	0.00752	0.00754	0.00750
	(!A2 * !B1 * !C1 * !X)	0.00878	0.00877	0.00879
	(!A2 * !B1 * !C1 * !X)	0.01208	0.01209	0.01208

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00244	-0.00247	-0.00247
	(A2 * A3 * B1 * C1 * X)	0.00584	0.00588	0.00582
	(A2 * A3 * B1 * !C1 * X)	0.00222	0.00208	0.00146
	(A2 * A3 * B1 * !C1 * X)	0.01067	0.01062	0.00993
	(A2 * A3 * !B1 * C1 * X)	0.00677	0.00653	0.00500
	(A2 * A3 * !B1 * C1 * X)	0.01540	0.01524	0.01365
	(A2 * !A3 * B1 * C1 * X)	-0.00222	-0.00238	-0.00235
	(A2 * !A3 * B1 * C1 * X)	0.00581	0.00588	0.00582
	(A2 * !A3 * B1 * !C1 * X)	0.00262	0.00249	0.00248
	(A2 * !A3 * B1 * !C1 * X)	0.01065	0.01067	0.01065
	(A2 * !A3 * !B1 * C1 * X)	0.00710	0.00695	0.00693
	(A2 * !A3 * !B1 * C1 * X)	0.01512	0.01514	0.01510
	(A2 * !A3 * !B1 * !C1 * !X)	0.01808	0.01806	0.01810
	(A2 * !A3 * !B1 * !C1 * !X)	0.02445	0.02455	0.02448
	(!A2 * B1 * C1 * X)	-0.00238	-0.00243	-0.00239
	(!A2 * B1 * C1 * X)	0.00581	0.00588	0.00582
	(!A2 * B1 * !C1 * X)	0.00246	0.00244	0.00244
	(!A2 * B1 * !C1 * X)	0.01066	0.01066	0.01065
	(!A2 * !B1 * C1 * X)	0.00694	0.00691	0.00689
	(!A2 * !B1 * C1 * X)	0.01513	0.01513	0.01510
	(!A2 * !B1 * !C1 * !X)	0.01790	0.01788	0.01791
	(!A2 * !B1 * !C1 * !X)	0.02442	0.02448	0.02445

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)**	0.00228	0.00214	0.00213
	(A1 * A3 * B1 * C1 * X)	-0.00178	-0.00195	-0.00190
	(A1 * A3 * B1 * !C1 * X)	0.00346	0.00310	0.00440
	(A1 * A3 * B1 * !C1 * X)	-0.00069	-0.00104	0.00030
	(A1 * A3 * !B1 * C1 * X)	0.00389	0.00359	0.00628
	(A1 * A3 * !B1 * C1 * X)	-0.00033	-0.00069	0.00212
	(A1 * !A3 * B1 * C1 * X)	0.00211	0.00212	0.00211
	(A1 * !A3 * B1 * C1 * X)	-0.00189	-0.00191	-0.00190
	(A1 * !A3 * B1 * !C1 * X)	0.00454	0.00455	0.00455
	(A1 * !A3 * B1 * !C1 * X)	0.00055	0.00052	0.00054
	(A1 * !A3 * !B1 * C1 * X)	0.00680	0.00682	0.00682
	(A1 * !A3 * !B1 * C1 * X)	0.00281	0.00278	0.00281
	(A1 * !A3 * !B1 * !C1 * !X)	0.00555	0.00555	0.00552
	(A1 * !A3 * !B1 * !C1 * !X)	0.00246	0.00245	0.00246
	(!A1 * A3 * B1 * X)	0.00210	0.00211	0.00211
	(!A1 * A3 * B1 * X)	-0.00189	-0.00190	-0.00190
	(!A1 * A3 * !B1 * C1 * X)	0.00682	0.00682	0.00683
	(!A1 * A3 * !B1 * C1 * X)	0.00282	0.00280	0.00282
	(!A1 * A3 * !B1 * !C1 * !X)	0.00669	0.00670	0.00666
	(!A1 * A3 * !B1 * !C1 * !X)	0.00264	0.00263	0.00262
	(!A1 * !A3 * B1 * X)	0.00137	0.00138	0.00135
	(!A1 * !A3 * B1 * X)	-0.00189	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * C1 * X)	0.00610	0.00611	0.00608
	(!A1 * !A3 * !B1 * C1 * X)	0.00284	0.00282	0.00283
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00567	0.00567	0.00566
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00247	0.00247	0.00247

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00270	0.00255	0.00256
	(A1 * A3 * B1 * C1 * X)	-0.00159	-0.00175	-0.00172
	(A1 * A3 * B1 * !C1 * X)	0.00385	0.00352	0.00482
	(A1 * A3 * B1 * !C1 * X)	-0.00051	-0.00087	0.00048
	(A1 * A3 * !B1 * C1 * X)	0.00430	0.00400	0.00669
	(A1 * A3 * !B1 * C1 * X)	-0.00018	-0.00052	0.00228
	(A1 * !A3 * B1 * C1 * X)	0.00253	0.00255	0.00253
	(A1 * !A3 * B1 * C1 * X)	-0.00171	-0.00173	-0.00172
	(A1 * !A3 * B1 * !C1 * X)	0.00496	0.00498	0.00497
	(A1 * !A3 * B1 * !C1 * X)	0.00072	0.00069	0.00071
	(A1 * !A3 * !B1 * C1 * X)	0.00722	0.00723	0.00723
	(A1 * !A3 * !B1 * C1 * X)	0.00298	0.00295	0.00298
	(A1 * !A3 * !B1 * !C1 * !X)	0.00997	0.00998	0.00996
	(A1 * !A3 * !B1 * !C1 * !X)	0.00684	0.00684	0.00685
	(!A1 * A3 * B1 * X)	0.00253	0.00255	0.00253
	(!A1 * A3 * B1 * X)	-0.00171	-0.00173	-0.00172
	(!A1 * A3 * !B1 * C1 * X)	0.00724	0.00726	0.00724
	(!A1 * A3 * !B1 * C1 * X)	0.00299	0.00297	0.00299
	(!A1 * A3 * !B1 * !C1 * !X)	0.01122	0.01125	0.01122
	(!A1 * A3 * !B1 * !C1 * !X)	0.00695	0.00693	0.00694
	(!A1 * !A3 * B1 * X)	0.00164	0.00165	0.00163
	(!A1 * !A3 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * !B1 * C1 * X)	0.00637	0.00638	0.00636
	(!A1 * !A3 * !B1 * C1 * X)	0.00302	0.00300	0.00301
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01016	0.01016	0.01015
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00685	0.00684	0.00685

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00473	0.00447	0.00448
	(A1 * A3 * B1 * C1 * X)	-0.00333	-0.00363	-0.00356
	(A1 * A3 * B1 * !C1 * X)	0.00706	0.00647	0.00901
	(A1 * A3 * B1 * !C1 * X)	-0.00117	-0.00181	0.00083
	(A1 * A3 * !B1 * C1 * X)	0.00792	0.00742	0.01270
	(A1 * A3 * !B1 * C1 * X)	-0.00052	-0.00106	0.00440
	(A1 * !A3 * B1 * C1 * X)	0.00441	0.00442	0.00442
	(A1 * !A3 * B1 * C1 * X)	-0.00355	-0.00356	-0.00356
	(A1 * !A3 * B1 * !C1 * X)	0.00926	0.00928	0.00928
	(A1 * !A3 * B1 * !C1 * X)	0.00131	0.00126	0.00129
	(A1 * !A3 * !B1 * C1 * X)	0.01369	0.01373	0.01374
	(A1 * !A3 * !B1 * C1 * X)	0.00574	0.00568	0.00575
	(A1 * !A3 * !B1 * !C1 * !X)	0.02028	0.02030	0.02026
	(A1 * !A3 * !B1 * !C1 * !X)	0.01417	0.01414	0.01418
	(!A1 * A3 * B1 * X)	0.00442	0.00442	0.00442
	(!A1 * A3 * B1 * X)	-0.00357	-0.00356	-0.00356
	(!A1 * A3 * !B1 * C1 * X)	0.01370	0.01371	0.01374
	(!A1 * A3 * !B1 * C1 * X)	0.00574	0.00572	0.00575
	(!A1 * A3 * !B1 * !C1 * !X)	0.02259	0.02262	0.02256
	(!A1 * A3 * !B1 * !C1 * !X)	0.01456	0.01453	0.01450
	(!A1 * !A3 * B1 * X)	0.00306	0.00307	0.00302
	(!A1 * !A3 * B1 * X)	-0.00356	-0.00358	-0.00356
	(!A1 * !A3 * !B1 * C1 * X)	0.01240	0.01241	0.01238
	(!A1 * !A3 * !B1 * C1 * X)	0.00578	0.00576	0.00579
	(!A1 * !A3 * !B1 * !C1 * !X)	0.02067	0.02068	0.02066
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01416	0.01414	0.01416

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)**	-0.00125	-0.00126	-0.00126
	(A1 * A3 * B1 * C1 * X)	0.00280	0.00281	0.00278
	(A1 * A3 * B1 * !C1 * X)	0.00112	0.00106	0.00074
	(A1 * A3 * B1 * !C1 * X)	0.00525	0.00521	0.00488
	(A1 * A3 * !B1 * C1 * X)	0.00342	0.00329	0.00252
	(A1 * A3 * !B1 * C1 * X)	0.00764	0.00755	0.00675
	(A1 * !A3 * B1 * C1 * X)	-0.00123	-0.00124	-0.00122
	(A1 * !A3 * B1 * C1 * X)	0.00278	0.00282	0.00279
	(A1 * !A3 * B1 * !C1 * X)	0.00121	0.00119	0.00121
	(A1 * !A3 * B1 * !C1 * X)	0.00522	0.00525	0.00521
	(A1 * !A3 * !B1 * C1 * X)	0.00348	0.00347	0.00348
	(A1 * !A3 * !B1 * C1 * X)	0.00749	0.00750	0.00748
	(A1 * !A3 * !B1 * !C1 * !X)	0.00448	0.00447	0.00447
	(A1 * !A3 * !B1 * !C1 * !X)	0.00754	0.00756	0.00749
	(!A1 * A3 * B1 * X)	-0.00123	-0.00124	-0.00122
	(!A1 * A3 * B1 * X)	0.00279	0.00282	0.00279
	(!A1 * A3 * !B1 * C1 * X)	0.00348	0.00347	0.00348
	(!A1 * A3 * !B1 * C1 * X)	0.00750	0.00752	0.00749
	(!A1 * A3 * !B1 * !C1 * !X)	0.00368	0.00345	0.00354
	(!A1 * A3 * !B1 * !C1 * !X)	0.00774	0.00755	0.00757
	(!A1 * !A3 * B1 * X)	-0.00055	-0.00056	-0.00048
	(!A1 * !A3 * B1 * X)	0.00278	0.00280	0.00279
	(!A1 * !A3 * !B1 * C1 * X)	0.00417	0.00417	0.00424
	(!A1 * !A3 * !B1 * C1 * X)	0.00751	0.00753	0.00751
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00420	0.00420	0.00417
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00750	0.00752	0.00742

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00147	-0.00148	-0.00149
	(A1 * A3 * B1 * C1 * X)	0.00282	0.00283	0.00281
	(A1 * A3 * B1 * !C1 * X)	0.00089	0.00083	0.00052
	(A1 * A3 * B1 * !C1 * X)	0.00527	0.00524	0.00490
	(A1 * A3 * !B1 * C1 * X)	0.00318	0.00306	0.00230
	(A1 * A3 * !B1 * C1 * X)	0.00765	0.00756	0.00677
	(A1 * !A3 * B1 * C1 * X)	-0.00145	-0.00147	-0.00144
	(A1 * !A3 * B1 * C1 * X)	0.00281	0.00284	0.00281
	(A1 * !A3 * B1 * !C1 * X)	0.00098	0.00096	0.00099
	(A1 * !A3 * B1 * !C1 * X)	0.00524	0.00527	0.00524
	(A1 * !A3 * !B1 * C1 * X)	0.00325	0.00323	0.00325
	(A1 * !A3 * !B1 * C1 * X)	0.00751	0.00754	0.00750
	(A1 * !A3 * !B1 * !C1 * !X)	0.00871	0.00871	0.00870
	(A1 * !A3 * !B1 * !C1 * !X)	0.01185	0.01187	0.01178
	(!A1 * A3 * B1 * X)	-0.00144	-0.00147	-0.00144
	(!A1 * A3 * B1 * X)	0.00280	0.00284	0.00281
	(!A1 * A3 * !B1 * C1 * X)	0.00327	0.00323	0.00325
	(!A1 * A3 * !B1 * C1 * X)	0.00751	0.00754	0.00750
	(!A1 * A3 * !B1 * !C1 * !X)	0.00779	0.00751	0.00755
	(!A1 * A3 * !B1 * !C1 * !X)	0.01207	0.01185	0.01181
	(!A1 * !A3 * B1 * X)	-0.00066	-0.00066	-0.00057
	(!A1 * !A3 * B1 * X)	0.00281	0.00283	0.00281
	(!A1 * !A3 * !B1 * C1 * X)	0.00406	0.00406	0.00414
	(!A1 * !A3 * !B1 * C1 * X)	0.00753	0.00755	0.00753
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00840	0.00841	0.00838
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01184	0.01185	0.01174

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00230	-0.00233	-0.00233
	(A1 * A3 * B1 * C1 * X)	0.00577	0.00581	0.00574
	(A1 * A3 * B1 * !C1 * X)	0.00236	0.00223	0.00162
	(A1 * A3 * B1 * !C1 * X)	0.01060	0.01055	0.00987
	(A1 * A3 * !B1 * C1 * X)	0.00692	0.00669	0.00516
	(A1 * A3 * !B1 * C1 * X)	0.01534	0.01516	0.01360
	(A1 * !A3 * B1 * C1 * X)	-0.00225	-0.00227	-0.00224
	(A1 * !A3 * B1 * C1 * X)	0.00574	0.00576	0.00575
	(A1 * !A3 * B1 * !C1 * X)	0.00260	0.00257	0.00259
	(A1 * !A3 * B1 * !C1 * X)	0.01058	0.01061	0.01058
	(A1 * !A3 * !B1 * C1 * X)	0.00708	0.00705	0.00704
	(A1 * !A3 * !B1 * C1 * X)	0.01506	0.01508	0.01503
	(A1 * !A3 * !B1 * !C1 * !X)	0.01787	0.01786	0.01780
	(A1 * !A3 * !B1 * !C1 * !X)	0.02396	0.02400	0.02381
	(!A1 * A3 * B1 * X)	-0.00224	-0.00227	-0.00224
	(!A1 * A3 * B1 * X)	0.00574	0.00577	0.00575
	(!A1 * A3 * !B1 * C1 * X)	0.00708	0.00705	0.00704
	(!A1 * A3 * !B1 * C1 * X)	0.01506	0.01508	0.01503
	(!A1 * A3 * !B1 * !C1 * !X)	0.01658	0.01585	0.01594
	(!A1 * A3 * !B1 * !C1 * !X)	0.02465	0.02397	0.02396
	(!A1 * !A3 * B1 * X)	-0.00105	-0.00106	-0.00090
	(!A1 * !A3 * B1 * X)	0.00573	0.00579	0.00575
	(!A1 * !A3 * !B1 * C1 * X)	0.00831	0.00828	0.00843
	(!A1 * !A3 * !B1 * C1 * X)	0.01507	0.01514	0.01508
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01718	0.01717	0.01709
	(!A1 * !A3 * !B1 * !C1 * !X)	0.02386	0.02395	0.02369

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)**	0.00244	0.00230	0.00229
	(A1 * A2 * B1 * C1 * X)	-0.00175	-0.00190	-0.00185
	(A1 * A2 * B1 * !C1 * X)	0.00358	0.00327	0.00456
	(A1 * A2 * B1 * !C1 * X)	-0.00069	-0.00102	0.00034
	(A1 * A2 * !B1 * C1 * X)	0.00400	0.00374	0.00643
	(A1 * A2 * !B1 * C1 * X)	-0.00034	-0.00066	0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	0.00667	0.00667	0.00666
	(A1 * !A2 * !B1 * !C1 * !X)	0.00252	0.00252	0.00250
	(!A2 * B1 * X)	0.00227	0.00229	0.00227
	(!A2 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * C1 * X)	0.00697	0.00698	0.00698
	(!A2 * !B1 * C1 * X)	0.00285	0.00283	0.00285
	(!A1 * A2 * B1 * X)	0.00223	0.00226	0.00224
	(!A1 * A2 * B1 * X)	-0.00185	-0.00187	-0.00185
	(!A1 * A2 * !B1 * C1 * X)	0.00694	0.00696	0.00696
	(!A1 * A2 * !B1 * C1 * X)	0.00286	0.00284	0.00286
	(!A1 * A2 * !B1 * !C1 * !X)	0.00671	0.00673	0.00670
	(!A1 * A2 * !B1 * !C1 * !X)	0.00256	0.00255	0.00254
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00651	0.00654	0.00652
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00240	0.00238	0.00239

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00297	0.00282	0.00284
	(A1 * A2 * B1 * C1 * X)	-0.00158	-0.00174	-0.00170
	(A1 * A2 * B1 * !C1 * X)	0.00412	0.00379	0.00510
	(A1 * A2 * B1 * !C1 * X)	-0.00051	-0.00086	0.00049
	(A1 * A2 * !B1 * C1 * X)	0.00456	0.00425	0.00697
	(A1 * A2 * !B1 * C1 * X)	-0.00018	-0.00050	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	0.01123	0.01126	0.01123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00671	0.00668	0.00670
	(!A2 * B1 * X)	0.00281	0.00283	0.00281
	(!A2 * B1 * X)	-0.00170	-0.00172	-0.00170
	(!A2 * !B1 * C1 * X)	0.00750	0.00751	0.00751
	(!A2 * !B1 * C1 * X)	0.00299	0.00297	0.00300
	(!A1 * A2 * B1 * X)	0.00276	0.00279	0.00276
	(!A1 * A2 * B1 * X)	-0.00170	-0.00172	-0.00170
	(!A1 * A2 * !B1 * C1 * X)	0.00746	0.00749	0.00748
	(!A1 * A2 * !B1 * C1 * X)	0.00300	0.00298	0.00301
	(!A1 * A2 * !B1 * !C1 * !X)	0.01124	0.01125	0.01123
	(!A1 * A2 * !B1 * !C1 * !X)	0.00670	0.00669	0.00671
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01113	0.01115	0.01114
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00663	0.00662	0.00663

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00522	0.00494	0.00495
	(A1 * A2 * B1 * C1 * X)	-0.00319	-0.00350	-0.00343
	(A1 * A2 * B1 * !C1 * X)	0.00759	0.00695	0.00948
	(A1 * A2 * B1 * !C1 * X)	-0.00099	-0.00166	0.00096
	(A1 * A2 * !B1 * C1 * X)	0.00847	0.00791	0.01317
	(A1 * A2 * !B1 * C1 * X)	-0.00033	-0.00092	0.00453
	(A1 * !A2 * !B1 * !C1 * !X)	0.02258	0.02263	0.02255
	(A1 * !A2 * !B1 * !C1 * !X)	0.01419	0.01415	0.01415
	(!A2 * B1 * X)	0.00488	0.00493	0.00489
	(!A2 * B1 * X)	-0.00343	-0.00346	-0.00344
	(!A2 * !B1 * C1 * X)	0.01418	0.01422	0.01422
	(!A2 * !B1 * C1 * X)	0.00587	0.00583	0.00588
	(!A1 * A2 * B1 * X)	0.00483	0.00483	0.00482
	(!A1 * A2 * B1 * X)	-0.00345	-0.00345	-0.00344
	(!A1 * A2 * !B1 * C1 * X)	0.01413	0.01413	0.01414
	(!A1 * A2 * !B1 * C1 * X)	0.00585	0.00584	0.00588
	(!A1 * A2 * !B1 * !C1 * !X)	0.02265	0.02268	0.02262
	(!A1 * A2 * !B1 * !C1 * !X)	0.01425	0.01423	0.01423
	(!A1 * !A2 * !B1 * !C1 * !X)	0.02223	0.02228	0.02224
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01393	0.01388	0.01392

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)**	-0.00141	-0.00141	-0.00143
	(A1 * A2 * B1 * C1 * X)	0.00276	0.00276	0.00274
	(A1 * A2 * B1 * !C1 * X)	0.00095	0.00089	0.00059
	(A1 * A2 * B1 * !C1 * X)	0.00521	0.00518	0.00484
	(A1 * A2 * !B1 * C1 * X)	0.00326	0.00313	0.00237
	(A1 * A2 * !B1 * C1 * X)	0.00760	0.00751	0.00672
	(A1 * !A2 * !B1 * !C1 * !X)	0.00359	0.00344	0.00347
	(A1 * !A2 * !B1 * !C1 * !X)	0.00779	0.00766	0.00760
	(!A2 * B1 * X)	-0.00139	-0.00140	-0.00138
	(!A2 * B1 * X)	0.00275	0.00275	0.00274
	(!A2 * !B1 * C1 * X)	0.00332	0.00331	0.00331
	(!A2 * !B1 * C1 * X)	0.00746	0.00746	0.00744
	(!A1 * A2 * B1 * X)	-0.00132	-0.00136	-0.00136
	(!A1 * A2 * B1 * X)	0.00274	0.00277	0.00274
	(!A1 * A2 * !B1 * C1 * X)	0.00340	0.00335	0.00334
	(!A1 * A2 * !B1 * C1 * X)	0.00745	0.00748	0.00745
	(!A1 * A2 * !B1 * !C1 * !X)	0.00370	0.00348	0.00352
	(!A1 * A2 * !B1 * !C1 * !X)	0.00786	0.00770	0.00765
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00341	0.00334	0.00334
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00754	0.00750	0.00746

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00175	-0.00176	-0.00176
	(A1 * A2 * B1 * C1 * X)	0.00281	0.00281	0.00279
	(A1 * A2 * B1 * !C1 * X)	0.00061	0.00055	0.00025
	(A1 * A2 * B1 * !C1 * X)	0.00526	0.00522	0.00489
	(A1 * A2 * !B1 * C1 * X)	0.00291	0.00279	0.00202
	(A1 * A2 * !B1 * C1 * X)	0.00763	0.00755	0.00676
	(A1 * !A2 * !B1 * !C1 * !X)	0.00768	0.00752	0.00752
	(A1 * !A2 * !B1 * !C1 * !X)	0.01225	0.01211	0.01203
	(!A2 * B1 * X)	-0.00173	-0.00173	-0.00171
	(!A2 * B1 * X)	0.00280	0.00281	0.00280
	(!A2 * !B1 * C1 * X)	0.00297	0.00296	0.00297
	(!A2 * !B1 * C1 * X)	0.00751	0.00750	0.00748
	(!A1 * A2 * B1 * X)	-0.00164	-0.00170	-0.00170
	(!A1 * A2 * B1 * X)	0.00279	0.00282	0.00280
	(!A1 * A2 * !B1 * C1 * X)	0.00308	0.00301	0.00300
	(!A1 * A2 * !B1 * C1 * X)	0.00750	0.00753	0.00749
	(!A1 * A2 * !B1 * !C1 * !X)	0.00780	0.00756	0.00754
	(!A1 * A2 * !B1 * !C1 * !X)	0.01231	0.01213	0.01205
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00751	0.00743	0.00743
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01202	0.01198	0.01194

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00277	-0.00279	-0.00280
	(A1 * A2 * B1 * C1 * X)	0.00565	0.00567	0.00562
	(A1 * A2 * B1 * !C1 * X)	0.00188	0.00176	0.00115
	(A1 * A2 * B1 * !C1 * X)	0.01048	0.01042	0.00974
	(A1 * A2 * !B1 * C1 * X)	0.00643	0.00619	0.00468
	(A1 * A2 * !B1 * C1 * X)	0.01521	0.01503	0.01346
	(A1 * !A2 * !B1 * !C1 * !X)	0.01612	0.01577	0.01581
	(A1 * !A2 * !B1 * !C1 * !X)	0.02453	0.02428	0.02415
	(!A2 * B1 * X)	-0.00271	-0.00275	-0.00271
	(!A2 * B1 * X)	0.00560	0.00567	0.00562
	(!A2 * !B1 * C1 * X)	0.00661	0.00656	0.00658
	(!A2 * !B1 * C1 * X)	0.01493	0.01499	0.01491
	(!A1 * A2 * B1 * X)	-0.00258	-0.00268	-0.00268
	(!A1 * A2 * B1 * X)	0.00562	0.00567	0.00562
	(!A1 * A2 * !B1 * C1 * X)	0.00675	0.00662	0.00660
	(!A1 * A2 * !B1 * C1 * X)	0.01493	0.01498	0.01490
	(!A1 * A2 * !B1 * !C1 * !X)	0.01631	0.01585	0.01590
	(!A1 * A2 * !B1 * !C1 * !X)	0.02472	0.02436	0.02424
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01568	0.01552	0.01553
	(!A1 * !A2 * !B1 * !C1 * !X)	0.02394	0.02392	0.02385

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)**	0.00289	0.00291	0.00360
	(A1 * A2 * A3 * C1 * X)	-0.00084	-0.00083	-0.00012
	(A1 * A2 * A3 * !C1 * X)	0.00253	0.00257	0.00396
	(A1 * A2 * A3 * !C1 * X)	-0.00023	-0.00021	0.00116
	(A1 * A2 * !A3 * C1 * X)	0.00323	0.00298	0.00633
	(A1 * A2 * !A3 * C1 * X)	-0.00098	-0.00127	0.00213
	(A1 * !A2 * C1 * X)	0.00323	0.00298	0.00633
	(A1 * !A2 * C1 * X)	-0.00098	-0.00127	0.00213
	(!A1 * C1 * X)	0.00321	0.00298	0.00633
	(!A1 * C1 * X)	-0.00100	-0.00127	0.00214
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00330	0.00334	0.00401
	(A1 * A2 * A3 * C1 * X)	-0.00073	-0.00073	-0.00002
	(A1 * A2 * A3 * !C1 * X)	0.00299	0.00303	0.00445
	(A1 * A2 * A3 * !C1 * X)	-0.00013	-0.00010	0.00128
	(A1 * A2 * !A3 * C1 * X)	0.00367	0.00340	0.00672
	(A1 * A2 * !A3 * C1 * X)	-0.00087	-0.00114	0.00224
	(A1 * !A2 * C1 * X)	0.00367	0.00340	0.00672
	(A1 * !A2 * C1 * X)	-0.00087	-0.00114	0.00224
	(!A1 * C1 * X)	0.00364	0.00339	0.00673
	(!A1 * C1 * X)	-0.00090	-0.00115	0.00224
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00585	0.00587	0.00706
	(A1 * A2 * A3 * C1 * X)	-0.00155	-0.00159	-0.00031
	(A1 * A2 * A3 * !C1 * X)	0.00531	0.00536	0.00799
	(A1 * A2 * A3 * !C1 * X)	-0.00018	-0.00012	0.00241
	(A1 * A2 * !A3 * C1 * X)	0.00687	0.00614	0.01261
	(A1 * A2 * !A3 * C1 * X)	-0.00144	-0.00228	0.00431
	(A1 * !A2 * C1 * X)	0.00691	0.00613	0.01261
	(A1 * !A2 * C1 * X)	-0.00149	-0.00228	0.00431
	(!A1 * C1 * X)	0.00687	0.00613	0.01261
	(!A1 * C1 * X)	-0.00144	-0.00228	0.00431

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)	-0.00173	-0.00174	-0.00151
	(A1 * A2 * A3 * C1 * X)	0.00214	0.00215	0.00216
	(A1 * A2 * A3 * !C1 * X)	0.00591	0.00563	0.00214
	(A1 * A2 * A3 * !C1 * X)	0.00875	0.00850	0.00499
	(A1 * A2 * !A3 * C1 * X)	0.00319	0.00306	0.00228
	(A1 * A2 * !A3 * C1 * X)	0.00740	0.00729	0.00649
	(A1 * !A2 * C1 * X)	0.00319	0.00306	0.00227
	(A1 * !A2 * C1 * X)	0.00740	0.00729	0.00649
	(!A1 * C1 * X)	0.00320	0.00307	0.00229
	(!A1 * C1 * X)	0.00741	0.00730	0.00650
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00193	-0.00194	-0.00172
	(A1 * A2 * A3 * C1 * X)	0.00224	0.00224	0.00226
	(A1 * A2 * A3 * !C1 * X)	0.00564	0.00536	0.00186
	(A1 * A2 * A3 * !C1 * X)	0.00884	0.00857	0.00507
	(A1 * A2 * !A3 * C1 * X)	0.00299	0.00285	0.00207
	(A1 * A2 * !A3 * C1 * X)	0.00749	0.00738	0.00657
	(A1 * !A2 * C1 * X)	0.00298	0.00285	0.00207
	(A1 * !A2 * C1 * X)	0.00749	0.00738	0.00657
	(!A1 * C1 * X)	0.00301	0.00286	0.00208
	(!A1 * C1 * X)	0.00750	0.00740	0.00659

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00299	-0.00302	-0.00254
	(A1 * A2 * A3 * C1 * X)	0.00463	0.00467	0.00475
	(A1 * A2 * A3 * !C1 * X)	0.01213	0.01158	0.00460
	(A1 * A2 * A3 * !C1 * X)	0.01779	0.01727	0.01028
	(A1 * A2 * !A3 * C1 * X)	0.00671	0.00644	0.00484
	(A1 * A2 * !A3 * C1 * X)	0.01507	0.01482	0.01318
	(A1 * !A2 * C1 * X)	0.00673	0.00645	0.00485
	(A1 * !A2 * C1 * X)	0.01508	0.01483	0.01319
	(!A1 * C1 * X)	0.00673	0.00645	0.00485
	(!A1 * C1 * X)	0.01508	0.01483	0.01319

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)	0.00241	0.00245	0.00253
	(A1 * A2 * B1 * X)	-0.00068	-0.00069	-0.00057
	(A1 * A2 * A3 * !B1 * X)	0.00249	0.00257	0.00353
	(A1 * A2 * A3 * !B1 * X)	0.00031	0.00032	0.00124
	(A1 * !A2 * B1 * X)	0.00244	0.00247	0.00310
	(A1 * !A2 * B1 * X)	-0.00068	-0.00066	-0.00005
	(!A1 * B1 * X)	0.00244	0.00247	0.00310
	(!A1 * B1 * X)	-0.00068	-0.00066	-0.00005
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00248	0.00251	0.00260
	(A1 * A2 * B1 * X)	-0.00064	-0.00065	-0.00054
	(A1 * A2 * A3 * !B1 * X)	0.00261	0.00269	0.00365
	(A1 * A2 * A3 * !B1 * X)	0.00034	0.00036	0.00128
	(A1 * !A2 * B1 * X)	0.00250	0.00257	0.00316
	(A1 * !A2 * B1 * X)	-0.00064	-0.00064	-0.00002
	(!A1 * B1 * X)	0.00250	0.00257	0.00316
	(!A1 * B1 * X)	-0.00064	-0.00064	-0.00002
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00418	0.00423	0.00433
	(A1 * A2 * B1 * X)	-0.00146	-0.00149	-0.00135
	(A1 * A2 * A3 * !B1 * X)	0.00436	0.00446	0.00619
	(A1 * A2 * A3 * !B1 * X)	0.00042	0.00046	0.00209
	(A1 * !A2 * B1 * X)	0.00419	0.00429	0.00513
	(A1 * !A2 * B1 * X)	-0.00148	-0.00150	-0.00058
	(!A1 * B1 * X)	0.00419	0.00429	0.00513
	(!A1 * B1 * X)	-0.00148	-0.00150	-0.00058

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)	-0.00098	-0.00100	-0.00125
	(A1 * A2 * B1 * X)	0.00216	0.00215	0.00189
	(A1 * A2 * A3 * !B1 * X)	0.00654	0.00631	0.00308
	(A1 * A2 * A3 * !B1 * X)	0.00903	0.00879	0.00557
	(A1 * !A2 * B1 * X)	0.00102	0.00089	-0.00054
	(A1 * !A2 * B1 * X)	0.00417	0.00407	0.00261
	(!A1 * B1 * X)	0.00102	0.00090	-0.00054
	(!A1 * B1 * X)	0.00417	0.00407	0.00261
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00084	-0.00086	-0.00111
	(A1 * A2 * B1 * X)	0.00233	0.00232	0.00207
	(A1 * A2 * A3 * !B1 * X)	0.00664	0.00639	0.00317
	(A1 * A2 * A3 * !B1 * X)	0.00919	0.00896	0.00573
	(A1 * !A2 * B1 * X)	0.00116	0.00104	-0.00040
	(A1 * !A2 * B1 * X)	0.00435	0.00424	0.00279
	(!A1 * B1 * X)	0.00116	0.00104	-0.00040
	(!A1 * B1 * X)	0.00436	0.00424	0.00279
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00081	-0.00084	-0.00132
	(A1 * A2 * B1 * X)	0.00491	0.00489	0.00446
	(A1 * A2 * A3 * !B1 * X)	0.01436	0.01389	0.00754
	(A1 * A2 * A3 * !B1 * X)	0.01888	0.01844	0.01206
	(A1 * !A2 * B1 * X)	0.00340	0.00317	0.00034
	(A1 * !A2 * B1 * X)	0.00915	0.00895	0.00610
	(!A1 * B1 * X)	0.00340	0.00317	0.00034
	(!A1 * B1 * X)	0.00915	0.00895	0.00610

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00300	0.00289	0.00293	0.86290
sky130_fd_sc_hs__a31oi_2	0.00554	0.00545	0.00579	0.00440	1.59021
sky130_fd_sc_hs__a31oi_4	0.01121	0.01075	0.01073	0.00886	2.45190

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	294.77800	857.77400
sky130_fd_sc_hs__a31oi_2	0.00000	583.82100	1714.97000
sky130_fd_sc_hs__a31oi_4	0.00000	1162.90000	3426.27000

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)	0.04734	0.61747	7.86749
	A2->Y (FR)	0.06030	0.64856	8.14182
	A3->Y (FR)	0.06600	0.64806	8.06101
	B1->Y (FR)	0.04444	0.70604	9.14769
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.04287	0.52282	7.84307
	A2->Y (FR)	0.05217	0.52765	7.81590
	A3->Y (FR)	0.05878	0.52497	7.63215
	B1->Y (FR)	0.03430	0.57077	8.63923
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.04382	0.43163	7.15662
	A2->Y (FR)	0.05639	0.43387	7.03071
	A3->Y (FR)	0.06914	0.45847	7.24666
	B1->Y (FR)	0.05040	0.51783	8.32770

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03539	0.46263	5.83644
	A2->Y (RF)	0.04153	0.42879	5.27890
	A3->Y (RF)	0.04391	0.38079	4.56427
	B1->Y (RF)	0.01574	0.28165	3.59575
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03476	0.42588	6.29853
	A2->Y (RF)	0.03883	0.35328	5.19250
	A3->Y (RF)	0.04294	0.31643	4.59037
	B1->Y (RF)	0.01927	0.40190	6.19225
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.03693	0.36635	5.95607
	A2->Y (RF)	0.04319	0.30238	4.91189
	A3->Y (RF)	0.04685	0.24795	4.03790
	B1->Y (RF)	0.01771	0.29069	5.02393

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00060	0.00681	0.10967
	A1	0.00836	0.01450	0.11637
	A2	0.00142	0.00764	0.11420
	A2	0.01073	0.01688	0.12232
	A3	0.00177	0.00820	0.11977
	A3	0.01261	0.01898	0.12949
	B1	-0.00024	0.01141	0.17510
	B1	0.00603	0.01769	0.18142
sky130_fd_sc_hs__a31oi_2	A1	0.00089	0.01359	0.19929
	A1	0.01553	0.02808	0.21147
	A2	0.00231	0.01585	0.22045
	A2	0.01979	0.03321	0.23533
	A3	0.00361	0.01744	0.23050
	A3	0.02430	0.03798	0.24898
	B1	0.00104	0.01835	0.23180
	B1	0.01005	0.02739	0.24074
sky130_fd_sc_hs__a31oi_4	A1	-0.00029	0.02572	0.37473
	A1	0.02973	0.05538	0.39926
	A2	0.00397	0.03162	0.42125
	A2	0.03963	0.06704	0.45146
	A3	0.00708	0.03586	0.44857
	A3	0.04889	0.07734	0.48493
	B1	0.00029	0.03671	0.46350
	B1	0.01926	0.05557	0.48128

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.02761	0.03263	0.11314
	A1	0.01986	0.02485	0.10438
	A2	0.02844	0.03291	0.11292
	A2	0.01914	0.02362	0.10338
	A3	0.02931	0.03436	0.12733
	A3	0.01848	0.02350	0.11627
	B1	0.01412	0.02289	0.14664
	B1	0.00787	0.01664	0.14010
sky130_fd_sc_hs__a31oi_2	A1	0.05546	0.06529	0.20038
	A1	0.04084	0.05059	0.18584
	A2	0.05609	0.06646	0.22434
	A2	0.03865	0.04902	0.20589
	A3	0.05856	0.06999	0.25306
	A3	0.03789	0.04926	0.23239
	B1	0.02757	0.03964	0.18651
	B1	0.01859	0.03065	0.17620
sky130_fd_sc_hs__a31oi_4	A1	0.10963	0.12923	0.38574
	A1	0.07970	0.09927	0.35422
	A2	0.11104	0.13186	0.42949
	A2	0.07541	0.09626	0.39405
	A3	0.11511	0.13871	0.49630
	A3	0.07338	0.09679	0.45422
	B1	0.05174	0.07936	0.38940
	B1	0.03285	0.06037	0.36749

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)**	0.00397	0.00363	0.00607
	(A2 * A3 * B1 * !Y)	-0.00062	-0.00097	0.00150
	(A2 * !A3 * B1 * !Y)	0.00645	0.00647	0.00646
	(A2 * !A3 * B1 * !Y)	0.00201	0.00199	0.00201
	(A2 * !A3 * !B1 * Y)	0.00076	0.00076	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00265	-0.00266	-0.00281
	(!A2 * B1 * !Y)	0.00649	0.00649	0.00649
	(!A2 * B1 * !Y)	0.00202	0.00199	0.00201
	(!A2 * !B1 * Y)	0.00078	0.00077	0.00073
	(!A2 * !B1 * Y)	-0.00274	-0.00273	-0.00282
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00815	0.00740	0.01220
	(A2 * A3 * B1 * !Y)	-0.00118	-0.00196	0.00291
	(A2 * !A3 * B1 * !Y)	0.01287	0.01288	0.01289
	(A2 * !A3 * B1 * !Y)	0.00392	0.00388	0.00392
	(A2 * !A3 * !B1 * Y)	0.00140	0.00140	0.00126
	(A2 * !A3 * !B1 * Y)	-0.00553	-0.00557	-0.00589
	(!A2 * B1 * !Y)	0.01297	0.01299	0.01300
	(!A2 * B1 * !Y)	0.00392	0.00387	0.00391
	(!A2 * !B1 * Y)	0.00136	0.00137	0.00127
	(!A2 * !B1 * Y)	-0.00572	-0.00576	-0.00593
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.01667	0.01512	0.02459
	(A2 * A3 * B1 * !Y)	-0.00219	-0.00381	0.00587
	(A2 * !A3 * B1 * !Y)	0.02588	0.02592	0.02594
	(A2 * !A3 * B1 * !Y)	0.00791	0.00776	0.00788
	(A2 * !A3 * !B1 * Y)	0.00298	0.00297	0.00264
	(A2 * !A3 * !B1 * Y)	-0.01109	-0.01114	-0.01179
	(!A2 * B1 * !Y)	0.02617	0.02624	0.02621
	(!A2 * B1 * !Y)	0.00789	0.00775	0.00789
	(!A2 * !B1 * Y)	0.00303	0.00302	0.00278
	(!A2 * !B1 * Y)	-0.01147	-0.01150	-0.01185

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)	0.00247	0.00236	0.00181
	(A2 * A3 * B1 * !Y)	0.00705	0.00700	0.00640
	(A2 * !A3 * B1 * !Y)	0.00261	0.00253	0.00253
	(A2 * !A3 * B1 * !Y)	0.00699	0.00703	0.00699
	(A2 * !A3 * !B1 * Y)	-0.00038	-0.00038	-0.00037
	(A2 * !A3 * !B1 * Y)	0.00307	0.00310	0.00309
	(!A2 * B1 * !Y)	0.00251	0.00249	0.00251
	(!A2 * B1 * !Y)	0.00700	0.00703	0.00699
	(!A2 * !B1 * Y)	-0.00043	-0.00044	-0.00042
	(!A2 * !B1 * Y)	0.00308	0.00313	0.00309
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	0.00486	0.00466	0.00352
	(A2 * A3 * B1 * !Y)	0.01418	0.01404	0.01286
	(A2 * !A3 * B1 * !Y)	0.00521	0.00504	0.00502
	(A2 * !A3 * B1 * !Y)	0.01409	0.01411	0.01407
	(A2 * !A3 * !B1 * Y)	-0.00083	-0.00083	-0.00082
	(A2 * !A3 * !B1 * Y)	0.00622	0.00623	0.00625
	(!A2 * B1 * !Y)	0.00500	0.00495	0.00497
	(!A2 * B1 * !Y)	0.01408	0.01414	0.01406
	(!A2 * !B1 * Y)	-0.00086	-0.00089	-0.00085
	(!A2 * !B1 * Y)	0.00624	0.00637	0.00628

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00936	0.00896	0.00672
	(A2 * A3 * B1 * !Y)	0.02815	0.02786	0.02553
	(A2 * !A3 * B1 * !Y)	0.01007	0.00973	0.00965
	(A2 * !A3 * B1 * !Y)	0.02796	0.02802	0.02790
	(A2 * !A3 * !B1 * Y)	-0.00179	-0.00178	-0.00176
	(A2 * !A3 * !B1 * Y)	0.01247	0.01249	0.01251
	(!A2 * B1 * !Y)	0.00962	0.00961	0.00958
	(!A2 * B1 * !Y)	0.02799	0.02794	0.02791
	(!A2 * !B1 * Y)	-0.00200	-0.00201	-0.00197
	(!A2 * !B1 * Y)	0.01247	0.01254	0.01253

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)**	0.00409	0.00375	0.00620
	(A1 * A3 * B1 * !Y)	-0.00062	-0.00097	0.00149
	(A1 * !A3 * B1 * !Y)	0.00661	0.00663	0.00662
	(A1 * !A3 * B1 * !Y)	0.00201	0.00198	0.00201
	(A1 * !A3 * !B1 * Y)	0.00083	0.00083	0.00082
	(A1 * !A3 * !B1 * Y)	-0.00265	-0.00267	-0.00265
	(!A1 * A3 * B1 * !Y)	0.00662	0.00664	0.00663
	(!A1 * A3 * B1 * !Y)	0.00202	0.00200	0.00202
	(!A1 * A3 * !B1 * Y)	0.00209	0.00211	0.00208
	(!A1 * A3 * !B1 * Y)	-0.00254	-0.00256	-0.00255
	(!A1 * !A3 * B1 * !Y)	0.00576	0.00576	0.00574
	(!A1 * !A3 * B1 * !Y)	0.00203	0.00202	0.00203
	(!A1 * !A3 * !B1 * Y)	0.00103	0.00103	0.00102
	(!A1 * !A3 * !B1 * Y)	-0.00265	-0.00266	-0.00265

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00778	0.00709	0.01190
	(A1 * A3 * B1 * !Y)	-0.00127	-0.00200	0.00287
	(A1 * !A3 * B1 * !Y)	0.01269	0.01272	0.01271
	(A1 * !A3 * B1 * !Y)	0.00391	0.00384	0.00389
	(A1 * !A3 * !B1 * Y)	0.00156	0.00158	0.00154
	(A1 * !A3 * !B1 * Y)	-0.00501	-0.00506	-0.00502
	(!A1 * A3 * B1 * !Y)	0.01269	0.01270	0.01271
	(!A1 * A3 * B1 * !Y)	0.00388	0.00385	0.00389
	(!A1 * A3 * !B1 * Y)	0.00407	0.00410	0.00406
	(!A1 * A3 * !B1 * Y)	-0.00480	-0.00483	-0.00483
	(!A1 * !A3 * B1 * !Y)	0.01099	0.01101	0.01097
	(!A1 * !A3 * B1 * !Y)	0.00392	0.00388	0.00391
	(!A1 * !A3 * !B1 * Y)	0.00192	0.00194	0.00191
	(!A1 * !A3 * !B1 * Y)	-0.00506	-0.00510	-0.00506
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.01611	0.01463	0.02418
	(A1 * A3 * B1 * !Y)	-0.00247	-0.00404	0.00565
	(A1 * !A3 * B1 * !Y)	0.02567	0.02571	0.02572
	(A1 * !A3 * B1 * !Y)	0.00764	0.00753	0.00763
	(A1 * !A3 * !B1 * Y)	0.00330	0.00335	0.00332
	(A1 * !A3 * !B1 * Y)	-0.01013	-0.01023	-0.01012
	(!A1 * A3 * B1 * !Y)	0.02576	0.02577	0.02579
	(!A1 * A3 * B1 * !Y)	0.00767	0.00759	0.00767
	(!A1 * A3 * !B1 * Y)	0.00851	0.00859	0.00849
	(!A1 * A3 * !B1 * Y)	-0.00970	-0.00976	-0.00975
	(!A1 * !A3 * B1 * !Y)	0.02230	0.02234	0.02226
	(!A1 * !A3 * B1 * !Y)	0.00773	0.00763	0.00771
	(!A1 * !A3 * !B1 * Y)	0.00421	0.00423	0.00420
	(!A1 * !A3 * !B1 * Y)	-0.01017	-0.01021	-0.01018

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)	0.00233	0.00222	0.00167
	(A1 * A3 * B1 * !Y)	0.00705	0.00699	0.00640
	(A1 * !A3 * B1 * !Y)	0.00238	0.00236	0.00238
	(A1 * !A3 * B1 * !Y)	0.00699	0.00702	0.00699
	(A1 * !A3 * !B1 * Y)	-0.00048	-0.00049	-0.00050
	(A1 * !A3 * !B1 * Y)	0.00301	0.00304	0.00294
	(!A1 * A3 * B1 * !Y)	0.00238	0.00236	0.00238
	(!A1 * A3 * B1 * !Y)	0.00700	0.00703	0.00699
	(!A1 * A3 * !B1 * Y)	-0.00141	-0.00168	-0.00164
	(!A1 * A3 * !B1 * Y)	0.00324	0.00302	0.00297
	(!A1 * !A3 * B1 * !Y)	0.00317	0.00317	0.00325
	(!A1 * !A3 * B1 * !Y)	0.00701	0.00703	0.00701
	(!A1 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00081
	(!A1 * !A3 * !B1 * Y)	0.00300	0.00303	0.00291
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	0.00514	0.00495	0.00381
	(A1 * A3 * B1 * !Y)	0.01423	0.01407	0.01289
	(A1 * !A3 * B1 * !Y)	0.00528	0.00525	0.00527
	(A1 * !A3 * B1 * !Y)	0.01410	0.01413	0.01410
	(A1 * !A3 * !B1 * Y)	-0.00106	-0.00108	-0.00109
	(A1 * !A3 * !B1 * Y)	0.00556	0.00562	0.00542
	(!A1 * A3 * B1 * !Y)	0.00529	0.00523	0.00527
	(!A1 * A3 * B1 * !Y)	0.01412	0.01418	0.01410
	(!A1 * A3 * !B1 * Y)	-0.00290	-0.00345	-0.00338
	(!A1 * A3 * !B1 * Y)	0.00601	0.00556	0.00547
	(!A1 * !A3 * B1 * !Y)	0.00682	0.00682	0.00700
	(!A1 * !A3 * B1 * !Y)	0.01417	0.01417	0.01413
	(!A1 * !A3 * !B1 * Y)	-0.00166	-0.00164	-0.00169
	(!A1 * !A3 * !B1 * Y)	0.00562	0.00564	0.00540

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00975	0.00939	0.00711
	(A1 * A3 * B1 * !Y)	0.02841	0.02806	0.02574
	(A1 * !A3 * B1 * !Y)	0.01006	0.01000	0.01001
	(A1 * !A3 * B1 * !Y)	0.02814	0.02819	0.02811
	(A1 * !A3 * !B1 * Y)	-0.00232	-0.00233	-0.00243
	(A1 * !A3 * !B1 * Y)	0.01121	0.01126	0.01093
	(!A1 * A3 * B1 * !Y)	0.01006	0.00999	0.01000
	(!A1 * A3 * B1 * !Y)	0.02818	0.02822	0.02814
	(!A1 * A3 * !B1 * Y)	-0.00588	-0.00717	-0.00714
	(!A1 * A3 * !B1 * Y)	0.01239	0.01119	0.01103
	(!A1 * !A3 * B1 * !Y)	0.01315	0.01314	0.01349
	(!A1 * !A3 * B1 * !Y)	0.02826	0.02831	0.02823
	(!A1 * !A3 * !B1 * Y)	-0.00368	-0.00365	-0.00376
	(!A1 * !A3 * !B1 * Y)	0.01131	0.01136	0.01087

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)**	0.00414	0.00382	0.00627
	(A1 * A2 * B1 * !Y)	-0.00072	-0.00105	0.00142
	(A1 * !A2 * !B1 * Y)	0.00227	0.00227	0.00225
	(A1 * !A2 * !B1 * Y)	-0.00252	-0.00252	-0.00252
	(!A2 * B1 * !Y)	0.00669	0.00669	0.00670
	(!A2 * B1 * !Y)	0.00194	0.00192	0.00194
	(!A1 * A2 * B1 * !Y)	0.00668	0.00666	0.00667
	(!A1 * A2 * B1 * !Y)	0.00194	0.00194	0.00195
	(!A1 * A2 * !B1 * Y)	0.00226	0.00226	0.00225
	(!A1 * A2 * !B1 * Y)	-0.00252	-0.00252	-0.00251
	(!A1 * !A2 * !B1 * Y)	0.00216	0.00218	0.00216
	(!A1 * !A2 * !B1 * Y)	-0.00259	-0.00261	-0.00259

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00819	0.00749	0.01229
	(A1 * A2 * B1 * !Y)	-0.00121	-0.00196	0.00293
	(A1 * !A2 * !B1 * Y)	0.00429	0.00435	0.00430
	(A1 * !A2 * !B1 * Y)	-0.00486	-0.00490	-0.00484
	(!A2 * B1 * !Y)	0.01307	0.01311	0.01309
	(!A2 * B1 * !Y)	0.00395	0.00388	0.00393
	(!A1 * A2 * B1 * !Y)	0.01303	0.01301	0.01302
	(!A1 * A2 * B1 * !Y)	0.00392	0.00390	0.00394
	(!A1 * A2 * !B1 * Y)	0.00443	0.00442	0.00440
	(!A1 * A2 * !B1 * Y)	-0.00477	-0.00477	-0.00477
	(!A1 * !A2 * !B1 * Y)	0.00412	0.00418	0.00414
	(!A1 * !A2 * !B1 * Y)	-0.00493	-0.00498	-0.00494
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.01597	0.01458	0.02410
	(A1 * A2 * B1 * !Y)	-0.00255	-0.00401	0.00567
	(A1 * !A2 * !B1 * Y)	0.00847	0.00853	0.00847
	(A1 * !A2 * !B1 * Y)	-0.00957	-0.00962	-0.00961
	(!A2 * B1 * !Y)	0.02569	0.02572	0.02569
	(!A2 * B1 * !Y)	0.00766	0.00759	0.00769
	(!A1 * A2 * B1 * !Y)	0.02556	0.02556	0.02556
	(!A1 * A2 * B1 * !Y)	0.00767	0.00761	0.00771
	(!A1 * A2 * !B1 * Y)	0.00839	0.00848	0.00843
	(!A1 * A2 * !B1 * Y)	-0.00956	-0.00964	-0.00961
	(!A1 * !A2 * !B1 * Y)	0.00802	0.00814	0.00805
	(!A1 * !A2 * !B1 * Y)	-0.00992	-0.01001	-0.00994

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)**	0.00226	0.00216	0.00160
	(A1 * A2 * B1 * !Y)	0.00712	0.00706	0.00647
	(A1 * !A2 * !B1 * Y)	-0.00168	-0.00183	-0.00184
	(A1 * !A2 * !B1 * Y)	0.00313	0.00301	0.00292
	(!A2 * B1 * !Y)	0.00230	0.00229	0.00230
	(!A2 * B1 * !Y)	0.00708	0.00708	0.00706
	(!A1 * A2 * B1 * !Y)	0.00240	0.00234	0.00233
	(!A1 * A2 * B1 * !Y)	0.00707	0.00710	0.00706
	(!A1 * A2 * !B1 * Y)	-0.00157	-0.00180	-0.00181
	(!A1 * A2 * !B1 * Y)	0.00318	0.00302	0.00294
	(!A1 * !A2 * !B1 * Y)	-0.00184	-0.00191	-0.00191
	(!A1 * !A2 * !B1 * Y)	0.00291	0.00286	0.00285
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00477	0.00459	0.00344
	(A1 * A2 * B1 * !Y)	0.01419	0.01403	0.01286
	(A1 * !A2 * !B1 * Y)	-0.00327	-0.00363	-0.00367
	(A1 * !A2 * !B1 * Y)	0.00591	0.00566	0.00544
	(!A2 * B1 * !Y)	0.00491	0.00486	0.00488
	(!A2 * B1 * !Y)	0.01404	0.01408	0.01404
	(!A1 * A2 * B1 * !Y)	0.00510	0.00497	0.00494
	(!A1 * A2 * B1 * !Y)	0.01406	0.01412	0.01405
	(!A1 * A2 * !B1 * Y)	-0.00312	-0.00367	-0.00372
	(!A1 * A2 * !B1 * Y)	0.00604	0.00561	0.00541
	(!A1 * !A2 * !B1 * Y)	-0.00364	-0.00384	-0.00385
	(!A1 * !A2 * !B1 * Y)	0.00541	0.00535	0.00524

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00979	0.00942	0.00715
	(A1 * A2 * B1 * !Y)	0.02834	0.02800	0.02569
	(A1 * !A2 * !B1 * Y)	-0.00629	-0.00718	-0.00718
	(A1 * !A2 * !B1 * Y)	0.01182	0.01118	0.01085
	(!A2 * B1 * !Y)	0.01012	0.01001	0.01007
	(!A2 * B1 * !Y)	0.02809	0.02823	0.02809
	(!A1 * A2 * B1 * !Y)	0.01050	0.01021	0.01016
	(!A1 * A2 * B1 * !Y)	0.02814	0.02825	0.02810
	(!A1 * A2 * !B1 * Y)	-0.00583	-0.00700	-0.00708
	(!A1 * A2 * !B1 * Y)	0.01219	0.01129	0.01090
	(!A1 * !A2 * !B1 * Y)	-0.00708	-0.00751	-0.00747
	(!A1 * !A2 * !B1 * Y)	0.01076	0.01067	0.01053

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)**	0.00269	0.00273	0.00424
	(A1 * A2 * A3 * !Y)	-0.00042	-0.00039	0.00109
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00284	0.00289	0.00578
	(A1 * A2 * A3 * !Y)	-0.00091	-0.00083	0.00193
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00598	0.00614	0.01206
	(A1 * A2 * A3 * !Y)	-0.00178	-0.00168	0.00401

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)	0.00657	0.00628	0.00257
	(A1 * A2 * A3 * !Y)	0.00975	0.00946	0.00575
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	0.01576	0.01518	0.00779
	(A1 * A2 * A3 * !Y)	0.01970	0.01916	0.01174
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	0.03101	0.02988	0.01507
	(A1 * A2 * A3 * !Y)	0.03923	0.03806	0.02330

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00259	0.00260	0.00278	1.69836
sky130_fd_sc_hs__a31o_2	0.00287	0.00279	0.00282	0.00271	3.19970
sky130_fd_sc_hs__a31o_4	0.00510	0.00501	0.00499	0.00507	6.31883

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	564.74300	878.20600
sky130_fd_sc_hs__a31o_2	0.00000	793.15500	1065.02000
sky130_fd_sc_hs__a31o_4	0.00000	1596.74000	2168.07000

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)	0.06755	0.47167	6.25540
	A2->X (RR)	0.07292	0.45785	6.02549
	A3->X (RR)	0.07604	0.43111	5.65380
	B1->X (RR)	0.04306	0.38282	5.08790
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.07138	0.39398	5.86139
	A2->X (RR)	0.07652	0.37699	5.61054
	A3->X (RR)	0.07958	0.35165	5.29853
	B1->X (RR)	0.04266	0.30298	4.74871
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.08522	0.37348	6.33809
	A2->X (RR)	0.09111	0.34745	6.01360
	A3->X (RR)	0.09515	0.31904	5.71176
	B1->X (RR)	0.04285	0.24869	4.93446

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.07466	0.43382	5.34156
	A2->X (FF)	0.08678	0.46064	5.55602
	A3->X (FF)	0.09271	0.47688	5.77468
	B1->X (FF)	0.07236	0.50316	6.40343
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.09596	0.42825	5.38560
	A2->X (FF)	0.11157	0.45822	5.62143
	A3->X (FF)	0.11491	0.46697	5.77100
	B1->X (FF)	0.09467	0.50188	6.37942
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.09557	0.38084	5.43101
	A2->X (FF)	0.10750	0.40969	5.72692
	A3->X (FF)	0.11826	0.43303	6.02659
	B1->X (FF)	0.10049	0.47175	6.51975

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.03664	0.04986	0.27725
	A1	0.02973	0.04294	0.27059
	A2	0.03772	0.04985	0.27612
	A2	0.02964	0.04175	0.26842
	A3	0.03882	0.04957	0.25861
	A3	0.02941	0.04015	0.24911
	B1	0.02529	0.04454	0.33310
	B1	0.01947	0.03872	0.32731
sky130_fd_sc_hs__a31o_2	A1	0.04285	0.05544	0.28528
	A1	0.03539	0.04798	0.27718
	A2	0.04406	0.05544	0.28465
	A2	0.03528	0.04661	0.27576
	A3	0.04536	0.05543	0.27137
	A3	0.03507	0.04516	0.26069
	B1	0.02956	0.04858	0.33574
	B1	0.02361	0.04264	0.32869
sky130_fd_sc_hs__a31o_4	A1	0.08849	0.11274	0.56296
	A1	0.07460	0.09880	0.54874
	A2	0.09077	0.11236	0.56775
	A2	0.07434	0.09587	0.55239
	A3	0.09323	0.11447	0.59470
	A3	0.07408	0.09537	0.57429
	B1	0.05675	0.09743	0.69671
	B1	0.04623	0.08687	0.68518

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01525	0.02689	0.23650
	A1	0.02215	0.03374	0.24291
	A2	0.01634	0.02758	0.23654
	A2	0.02444	0.03567	0.24471
	A3	0.01681	0.02775	0.24309
	A3	0.02621	0.03714	0.25185
	B1	0.01365	0.03268	0.32669
	B1	0.01946	0.03848	0.33107
sky130_fd_sc_hs__a31o_2	A1	0.03153	0.03910	0.24364
	A1	0.03898	0.04640	0.24969
	A2	0.03407	0.04019	0.24458
	A2	0.04287	0.04897	0.25347
	A3	0.03472	0.04080	0.25618
	A3	0.04502	0.05108	0.26618
	B1	0.02868	0.04476	0.32866
	B1	0.03464	0.05067	0.33470
sky130_fd_sc_hs__a31o_4	A1	0.06606	0.08086	0.50039
	A1	0.07994	0.09454	0.51417
	A2	0.06999	0.08297	0.51647
	A2	0.08641	0.09939	0.52926
	A3	0.07405	0.08645	0.54855
	A3	0.09320	0.10540	0.56205
	B1	0.05989	0.09249	0.66886
	B1	0.07042	0.10283	0.67386

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)**	0.00365	0.00335	0.00628
	(A2 * A3 * B1 * X)	-0.00050	-0.00079	0.00216
	(A2 * !A3 * B1 * X)	0.00685	0.00684	0.00686
	(A2 * !A3 * B1 * X)	0.00287	0.00286	0.00287
	(A2 * !A3 * !B1 * !X)	0.00531	0.00531	0.00524
	(A2 * !A3 * !B1 * !X)	0.00223	0.00219	0.00206
	(!A2 * B1 * X)	0.00688	0.00689	0.00689
	(!A2 * B1 * X)	0.00287	0.00284	0.00287
	(!A2 * !B1 * !X)	0.00533	0.00533	0.00526
	(!A2 * !B1 * !X)	0.00215	0.00213	0.00206
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00416	0.00387	0.00679
	(A2 * A3 * B1 * X)	-0.00030	-0.00062	0.00234
	(A2 * !A3 * B1 * X)	0.00736	0.00737	0.00737
	(A2 * !A3 * B1 * X)	0.00305	0.00302	0.00306
	(A2 * !A3 * !B1 * !X)	0.00982	0.00982	0.00974
	(A2 * !A3 * !B1 * !X)	0.00653	0.00652	0.00636
	(!A2 * B1 * X)	0.00740	0.00741	0.00741
	(!A2 * B1 * X)	0.00305	0.00302	0.00305
	(!A2 * !B1 * !X)	0.00983	0.00981	0.00976
	(!A2 * !B1 * !X)	0.00644	0.00644	0.00635
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00797	0.00728	0.01302
	(A2 * A3 * B1 * X)	-0.00055	-0.00129	0.00453
	(A2 * !A3 * B1 * X)	0.01410	0.01412	0.01413
	(A2 * !A3 * B1 * X)	0.00591	0.00584	0.00591
	(A2 * !A3 * !B1 * !X)	0.01985	0.01986	0.01966
	(A2 * !A3 * !B1 * !X)	0.01345	0.01337	0.01304
	(!A2 * B1 * X)	0.01417	0.01419	0.01419
	(!A2 * B1 * X)	0.00591	0.00584	0.00591
	(!A2 * !B1 * !X)	0.01986	0.01986	0.01970
	(!A2 * !B1 * !X)	0.01325	0.01321	0.01304

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)	0.00347	0.00335	0.00259
	(A2 * A3 * B1 * X)	0.00761	0.00752	0.00674
	(A2 * !A3 * B1 * X)	0.00360	0.00355	0.00354
	(A2 * !A3 * B1 * X)	0.00757	0.00759	0.00754
	(A2 * !A3 * !B1 * !X)	0.00438	0.00438	0.00439
	(A2 * !A3 * !B1 * !X)	0.00749	0.00751	0.00750
	(!A2 * B1 * X)	0.00353	0.00351	0.00352
	(!A2 * B1 * X)	0.00756	0.00758	0.00754
	(!A2 * !B1 * !X)	0.00433	0.00432	0.00434
	(!A2 * !B1 * !X)	0.00749	0.00754	0.00750
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	0.00315	0.00303	0.00228
	(A2 * A3 * B1 * X)	0.00762	0.00752	0.00675
	(A2 * !A3 * B1 * X)	0.00331	0.00324	0.00322
	(A2 * !A3 * B1 * X)	0.00759	0.00760	0.00756
	(A2 * !A3 * !B1 * !X)	0.00871	0.00870	0.00871
	(A2 * !A3 * !B1 * !X)	0.01204	0.01205	0.01205
	(!A2 * B1 * X)	0.00321	0.00319	0.00319
	(!A2 * B1 * X)	0.00757	0.00759	0.00755
	(!A2 * !B1 * !X)	0.00867	0.00865	0.00867
	(!A2 * !B1 * !X)	0.01205	0.01209	0.01205

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00688	0.00664	0.00510
	(A2 * A3 * B1 * X)	0.01542	0.01521	0.01365
	(A2 * !A3 * B1 * X)	0.00721	0.00704	0.00702
	(A2 * !A3 * B1 * X)	0.01532	0.01537	0.01528
	(A2 * !A3 * !B1 * !X)	0.01769	0.01767	0.01771
	(A2 * !A3 * !B1 * !X)	0.02417	0.02425	0.02419
	(!A2 * B1 * X)	0.00703	0.00698	0.00699
	(!A2 * B1 * X)	0.01532	0.01537	0.01528
	(!A2 * !B1 * !X)	0.01758	0.01757	0.01761
	(!A2 * !B1 * !X)	0.02419	0.02422	0.02420

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)**	0.00361	0.00332	0.00625
	(A1 * A3 * B1 * X)	-0.00048	-0.00079	0.00216
	(A1 * !A3 * B1 * X)	0.00685	0.00687	0.00686
	(A1 * !A3 * B1 * X)	0.00287	0.00284	0.00288
	(A1 * !A3 * !B1 * !X)	0.00535	0.00535	0.00532
	(A1 * !A3 * !B1 * !X)	0.00230	0.00229	0.00230
	(!A1 * A3 * B1 * X)	0.00686	0.00688	0.00687
	(!A1 * A3 * B1 * X)	0.00289	0.00286	0.00288
	(!A1 * A3 * !B1 * !X)	0.00650	0.00652	0.00648
	(!A1 * A3 * !B1 * !X)	0.00249	0.00246	0.00245
	(!A1 * !A3 * B1 * X)	0.00613	0.00614	0.00611
	(!A1 * !A3 * B1 * X)	0.00291	0.00289	0.00290
	(!A1 * !A3 * !B1 * !X)	0.00548	0.00549	0.00547
	(!A1 * !A3 * !B1 * !X)	0.00231	0.00229	0.00230

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00408	0.00378	0.00671
	(A1 * A3 * B1 * X)	-0.00030	-0.00061	0.00233
	(A1 * !A3 * B1 * X)	0.00731	0.00733	0.00733
	(A1 * !A3 * B1 * X)	0.00305	0.00302	0.00305
	(A1 * !A3 * !B1 * !X)	0.00988	0.00989	0.00987
	(A1 * !A3 * !B1 * !X)	0.00674	0.00672	0.00674
	(!A1 * A3 * B1 * X)	0.00733	0.00733	0.00733
	(!A1 * A3 * B1 * X)	0.00306	0.00304	0.00306
	(!A1 * A3 * !B1 * !X)	0.01113	0.01114	0.01113
	(!A1 * A3 * !B1 * !X)	0.00684	0.00683	0.00682
	(!A1 * !A3 * B1 * X)	0.00648	0.00648	0.00647
	(!A1 * !A3 * B1 * X)	0.00308	0.00307	0.00308
	(!A1 * !A3 * !B1 * !X)	0.01008	0.01009	0.01008
	(!A1 * !A3 * !B1 * !X)	0.00674	0.00673	0.00673
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00795	0.00724	0.01298
	(A1 * A3 * B1 * X)	-0.00057	-0.00133	0.00448
	(A1 * !A3 * B1 * X)	0.01412	0.01410	0.01413
	(A1 * !A3 * B1 * X)	0.00584	0.00581	0.00586
	(A1 * !A3 * !B1 * !X)	0.02003	0.02005	0.01999
	(A1 * !A3 * !B1 * !X)	0.01370	0.01366	0.01369
	(!A1 * A3 * B1 * X)	0.01414	0.01416	0.01416
	(!A1 * A3 * B1 * X)	0.00587	0.00582	0.00588
	(!A1 * A3 * !B1 * !X)	0.02246	0.02247	0.02241
	(!A1 * A3 * !B1 * !X)	0.01408	0.01408	0.01404
	(!A1 * !A3 * B1 * X)	0.01269	0.01270	0.01266
	(!A1 * !A3 * B1 * X)	0.00591	0.00587	0.00591
	(!A1 * !A3 * !B1 * !X)	0.02035	0.02038	0.02034
	(!A1 * !A3 * !B1 * !X)	0.01369	0.01365	0.01368

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)	0.00349	0.00337	0.00261
	(A1 * A3 * B1 * X)	0.00760	0.00750	0.00672
	(A1 * !A3 * B1 * X)	0.00355	0.00353	0.00355
	(A1 * !A3 * B1 * X)	0.00755	0.00757	0.00753
	(A1 * !A3 * !B1 * !X)	0.00430	0.00429	0.00429
	(A1 * !A3 * !B1 * !X)	0.00732	0.00735	0.00727
	(!A1 * A3 * B1 * X)	0.00356	0.00354	0.00355
	(!A1 * A3 * B1 * X)	0.00755	0.00758	0.00754
	(!A1 * A3 * !B1 * !X)	0.00349	0.00325	0.00335
	(!A1 * A3 * !B1 * !X)	0.00754	0.00733	0.00735
	(!A1 * !A3 * B1 * X)	0.00426	0.00425	0.00433
	(!A1 * !A3 * B1 * X)	0.00756	0.00758	0.00756
	(!A1 * !A3 * !B1 * !X)	0.00401	0.00401	0.00399
	(!A1 * !A3 * !B1 * !X)	0.00727	0.00729	0.00720
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	0.00321	0.00309	0.00235
	(A1 * A3 * B1 * X)	0.00760	0.00751	0.00674
	(A1 * !A3 * B1 * X)	0.00329	0.00326	0.00328
	(A1 * !A3 * B1 * X)	0.00757	0.00759	0.00755
	(A1 * !A3 * !B1 * !X)	0.00859	0.00859	0.00858
	(A1 * !A3 * !B1 * !X)	0.01178	0.01179	0.01170
	(!A1 * A3 * B1 * X)	0.00328	0.00326	0.00328
	(!A1 * A3 * B1 * X)	0.00758	0.00759	0.00755
	(!A1 * A3 * !B1 * !X)	0.00768	0.00741	0.00744
	(!A1 * A3 * !B1 * !X)	0.01200	0.01177	0.01173
	(!A1 * !A3 * B1 * X)	0.00408	0.00407	0.00415
	(!A1 * !A3 * B1 * X)	0.00758	0.00760	0.00758
	(!A1 * !A3 * !B1 * !X)	0.00828	0.00828	0.00826
	(!A1 * !A3 * !B1 * !X)	0.01174	0.01177	0.01166

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00690	0.00667	0.00513
	(A1 * A3 * B1 * X)	0.01545	0.01524	0.01368
	(A1 * !A3 * B1 * X)	0.00708	0.00704	0.00704
	(A1 * !A3 * B1 * X)	0.01535	0.01537	0.01531
	(A1 * !A3 * !B1 * !X)	0.01738	0.01738	0.01735
	(A1 * !A3 * !B1 * !X)	0.02373	0.02373	0.02359
	(!A1 * A3 * B1 * X)	0.00707	0.00702	0.00704
	(!A1 * A3 * B1 * X)	0.01536	0.01542	0.01533
	(!A1 * A3 * !B1 * !X)	0.01576	0.01520	0.01538
	(!A1 * A3 * !B1 * !X)	0.02415	0.02367	0.02369
	(!A1 * !A3 * B1 * X)	0.00842	0.00842	0.00857
	(!A1 * !A3 * B1 * X)	0.01541	0.01542	0.01539
	(!A1 * !A3 * !B1 * !X)	0.01675	0.01675	0.01670
	(!A1 * !A3 * !B1 * !X)	0.02369	0.02369	0.02348

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)**	0.00373	0.00350	0.00641
	(A1 * A2 * B1 * X)	-0.00049	-0.00078	0.00219
	(A1 * !A2 * !B1 * !X)	0.00650	0.00652	0.00648
	(A1 * !A2 * !B1 * !X)	0.00235	0.00233	0.00233
	(!A2 * B1 * X)	0.00702	0.00702	0.00703
	(!A2 * B1 * X)	0.00290	0.00289	0.00291
	(!A1 * A2 * B1 * X)	0.00699	0.00701	0.00700
	(!A1 * A2 * B1 * X)	0.00292	0.00289	0.00292
	(!A1 * A2 * !B1 * !X)	0.00655	0.00654	0.00652
	(!A1 * A2 * !B1 * !X)	0.00239	0.00239	0.00238
	(!A1 * !A2 * !B1 * !X)	0.00634	0.00636	0.00635
	(!A1 * !A2 * !B1 * !X)	0.00223	0.00221	0.00223

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00417	0.00391	0.00685
	(A1 * A2 * B1 * X)	-0.00033	-0.00059	0.00236
	(A1 * !A2 * !B1 * !X)	0.01114	0.01113	0.01113
	(A1 * !A2 * !B1 * !X)	0.00673	0.00673	0.00672
	(!A2 * B1 * X)	0.00744	0.00746	0.00747
	(!A2 * B1 * X)	0.00308	0.00305	0.00307
	(!A1 * A2 * B1 * X)	0.00742	0.00743	0.00743
	(!A1 * A2 * B1 * X)	0.00308	0.00306	0.00309
	(!A1 * A2 * !B1 * !X)	0.01113	0.01115	0.01113
	(!A1 * A2 * !B1 * !X)	0.00673	0.00672	0.00674
	(!A1 * !A2 * !B1 * !X)	0.01105	0.01104	0.01105
	(!A1 * !A2 * !B1 * !X)	0.00665	0.00665	0.00665
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00790	0.00721	0.01294
	(A1 * A2 * B1 * X)	-0.00062	-0.00134	0.00446
	(A1 * !A2 * !B1 * !X)	0.02233	0.02238	0.02231
	(A1 * !A2 * !B1 * !X)	0.01403	0.01398	0.01399
	(!A2 * B1 * X)	0.01408	0.01409	0.01410
	(!A2 * B1 * X)	0.00585	0.00580	0.00585
	(!A1 * A2 * B1 * X)	0.01404	0.01403	0.01406
	(!A1 * A2 * B1 * X)	0.00586	0.00583	0.00586
	(!A1 * A2 * !B1 * !X)	0.02241	0.02242	0.02237
	(!A1 * A2 * !B1 * !X)	0.01407	0.01407	0.01405
	(!A1 * !A2 * !B1 * !X)	0.02198	0.02204	0.02200
	(!A1 * !A2 * !B1 * !X)	0.01378	0.01373	0.01376

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)**	0.00332	0.00321	0.00246
	(A1 * A2 * B1 * X)	0.00757	0.00747	0.00670
	(A1 * !A2 * !B1 * !X)	0.00337	0.00324	0.00327
	(A1 * !A2 * !B1 * !X)	0.00756	0.00744	0.00739
	(!A2 * B1 * X)	0.00338	0.00338	0.00338
	(!A2 * B1 * X)	0.00752	0.00752	0.00749
	(!A1 * A2 * B1 * X)	0.00347	0.00342	0.00341
	(!A1 * A2 * B1 * X)	0.00751	0.00754	0.00750
	(!A1 * A2 * !B1 * !X)	0.00348	0.00328	0.00331
	(!A1 * A2 * !B1 * !X)	0.00764	0.00748	0.00743
	(!A1 * !A2 * !B1 * !X)	0.00320	0.00314	0.00314
	(!A1 * !A2 * !B1 * !X)	0.00732	0.00727	0.00725
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00308	0.00296	0.00221
	(A1 * A2 * B1 * X)	0.00758	0.00748	0.00672
	(A1 * !A2 * !B1 * !X)	0.00757	0.00742	0.00741
	(A1 * !A2 * !B1 * !X)	0.01202	0.01189	0.01180
	(!A2 * B1 * X)	0.00314	0.00313	0.00313
	(!A2 * B1 * X)	0.00755	0.00754	0.00752
	(!A1 * A2 * B1 * X)	0.00324	0.00318	0.00316
	(!A1 * A2 * B1 * X)	0.00754	0.00756	0.00753
	(!A1 * A2 * !B1 * !X)	0.00768	0.00745	0.00744
	(!A1 * A2 * !B1 * !X)	0.01207	0.01191	0.01182
	(!A1 * !A2 * !B1 * !X)	0.00740	0.00733	0.00733
	(!A1 * !A2 * !B1 * !X)	0.01178	0.01173	0.01172

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00694	0.00669	0.00516
	(A1 * A2 * B1 * X)	0.01546	0.01525	0.01369
	(A1 * !A2 * !B1 * !X)	0.01572	0.01533	0.01534
	(A1 * !A2 * !B1 * !X)	0.02406	0.02377	0.02360
	(!A2 * B1 * X)	0.00712	0.00707	0.00708
	(!A2 * B1 * X)	0.01535	0.01541	0.01533
	(!A1 * A2 * B1 * X)	0.00728	0.00716	0.00712
	(!A1 * A2 * B1 * X)	0.01537	0.01542	0.01534
	(!A1 * A2 * !B1 * !X)	0.01592	0.01541	0.01543
	(!A1 * A2 * !B1 * !X)	0.02426	0.02384	0.02369
	(!A1 * !A2 * !B1 * !X)	0.01527	0.01507	0.01507
	(!A1 * !A2 * !B1 * !X)	0.02345	0.02339	0.02332

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)**	0.00274	0.00279	0.00432
	(A1 * A2 * A3 * X)	-0.00029	-0.00026	0.00123
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00274	0.00278	0.00432
	(A1 * A2 * A3 * X)	-0.00020	-0.00017	0.00133
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00467	0.00479	0.00752
	(A1 * A2 * A3 * X)	-0.00056	-0.00050	0.00221

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)	0.00657	0.00625	0.00229
	(A1 * A2 * A3 * X)	0.00968	0.00938	0.00540
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	0.00677	0.00645	0.00250
	(A1 * A2 * A3 * X)	0.00979	0.00949	0.00551
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	0.01458	0.01396	0.00607
	(A1 * A2 * A3 * X)	0.01997	0.01938	0.01148

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00295	0.00297	0.00270	0.00301	0.00279	0.83127
sky130_fd_sc_hs__a32oi_2	0.00557	0.00548	0.00539	0.00561	0.00548	1.49163
sky130_fd_sc_hs__a32oi_4	0.01102	0.01081	0.01077	0.01120	0.01087	2.28034

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	318.92700	1032.19000
sky130_fd_sc_hs__a32oi_2	0.00000	636.07700	2058.16000
sky130_fd_sc_hs__a32oi_4	0.00000	1263.20000	4086.07000

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)	0.06640	0.64782	7.96443
	A2->Y (FR)	0.06536	0.64828	7.99471
	A3->Y (FR)	0.07221	0.65204	7.96549
	B1->Y (FR)	0.04692	0.69750	8.91831
	B2->Y (FR)	0.04445	0.69605	8.95440
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.05972	0.51563	7.34947
	A2->Y (FR)	0.07711	0.55833	7.80401
	A3->Y (FR)	0.08403	0.56065	7.72216
	B1->Y (FR)	0.04054	0.58707	8.63653
	B2->Y (FR)	0.05391	0.60996	8.80881
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.07130	0.46568	7.22718
	A2->Y (FR)	0.08535	0.47473	7.19664
	A3->Y (FR)	0.09671	0.48953	7.25468
	B1->Y (FR)	0.05786	0.52642	8.16970
	B2->Y (FR)	0.07655	0.56740	8.56777

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.04629	0.46828	5.69445
	A2->Y (RF)	0.05126	0.43428	5.16908
	A3->Y (RF)	0.05385	0.38448	4.43313
	B1->Y (RF)	0.02161	0.36450	4.62322
	B2->Y (RF)	0.02418	0.32199	3.99458
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.04814	0.43341	6.10451
	A2->Y (RF)	0.05661	0.39959	5.50500
	A3->Y (RF)	0.05915	0.32500	4.40128
	B1->Y (RF)	0.01861	0.31384	4.73986
	B2->Y (RF)	0.02349	0.26935	3.99845
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.04772	0.35829	5.45336
	A2->Y (RF)	0.05507	0.31758	4.75700
	A3->Y (RF)	0.05749	0.24282	3.62795
	B1->Y (RF)	0.01910	0.24595	4.16911
	B2->Y (RF)	0.02321	0.18523	3.15464

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00070	0.00729	0.12061
	A1	0.01019	0.01669	0.12937
	A2	0.00123	0.00787	0.12545
	A2	0.01222	0.01876	0.13554
	A3	0.00197	0.00892	0.13295
	A3	0.01425	0.02111	0.14430
	B1	0.00055	0.01094	0.15946
	B1	0.00677	0.01713	0.16557
	B2	0.00102	0.01156	0.16405
	B2	0.00864	0.01917	0.17105
sky130_fd_sc_hs__a32oi_2	A1	-0.00045	0.01304	0.21502
	A1	0.01808	0.03144	0.23140
	A2	0.00220	0.01494	0.21784
	A2	0.02373	0.03638	0.23711
	A3	0.00314	0.01707	0.23935
	A3	0.02765	0.04149	0.26195
	B1	-0.00067	0.02014	0.28644
	B1	0.01108	0.03177	0.29679
	B2	0.00142	0.02224	0.29521
	B2	0.01630	0.03706	0.30914

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00062	0.02674	0.41601
	A1	0.03655	0.06371	0.44917
	A2	0.00331	0.03102	0.45087
	A2	0.04633	0.07395	0.48998
	A3	0.00542	0.03619	0.50063
	A3	0.05463	0.08509	0.54464
	B1	-0.00130	0.04003	0.54892
	B1	0.02258	0.06396	0.56962
	B2	0.00233	0.04374	0.55867
	B2	0.03221	0.07349	0.58639

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.03170	0.03711	0.12564
	A1	0.02224	0.02761	0.11567
	A2	0.03246	0.03736	0.12589
	A2	0.02150	0.02625	0.11496
	A3	0.03308	0.03856	0.14259
	A3	0.02083	0.02627	0.12959
	B1	0.02404	0.03109	0.13283
	B1	0.01783	0.02482	0.12603
	B2	0.02434	0.03103	0.13598
	B2	0.01674	0.02335	0.12769

sky130_fd_sc_hs__a32oi_2	**A1**	0.06496	0.07577	0.23306
	A1	0.04641	0.05722	0.21389
	A2	0.06663	0.07608	0.23056
	A2	0.04510	0.05439	0.20857
	A3	0.06799	0.07968	0.27859
	A3	0.04346	0.05514	0.25379
	B1	0.04806	0.06310	0.24992
	B1	0.03633	0.05122	0.23656
	B2	0.04904	0.06315	0.25654
	B2	0.03417	0.04830	0.24159
sky130_fd_sc_hs__a32oi_4	**A1**	0.12341	0.14416	0.43458
	A1	0.08625	0.10692	0.39651
	A2	0.12573	0.14580	0.45704
	A2	0.08268	0.10269	0.41358
	A3	0.12852	0.15369	0.55643
	A3	0.07939	0.10447	0.50609
	B1	0.09174	0.12218	0.47831
	B1	0.06788	0.09822	0.45409
	B2	0.09280	0.12299	0.50442
	B2	0.06289	0.09301	0.47458

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)**	0.00462	0.00438	0.00970
	(A2 * A3 * B1 * B2 * !Y)	-0.00015	-0.00037	0.00499
	(A2 * !A3 * B1 * B2 * !Y)	0.01093	0.01093	0.01096
	(A2 * !A3 * B1 * B2 * !Y)	0.00640	0.00638	0.00644
	(A2 * !A3 * B1 * !B2 * Y)	0.00078	0.00078	0.00071
	(A2 * !A3 * B1 * !B2 * Y)	-0.00271	-0.00274	-0.00287
	(A2 * !A3 * !B1 * Y)	0.00079	0.00079	0.00073
	(A2 * !A3 * !B1 * Y)	-0.00268	-0.00270	-0.00285
	(!A2 * B1 * B2 * !Y)	0.01096	0.01097	0.01099
	(!A2 * B1 * B2 * !Y)	0.00641	0.00637	0.00643
	(!A2 * B1 * !B2 * Y)	0.00076	0.00076	0.00071
	(!A2 * B1 * !B2 * Y)	-0.00280	-0.00282	-0.00287
	(!A2 * !B1 * Y)	0.00078	0.00077	0.00073
	(!A2 * !B1 * Y)	-0.00278	-0.00278	-0.00286
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00915	0.00872	0.01932
	(A2 * A3 * B1 * B2 * !Y)	-0.00030	-0.00077	0.00993
	(A2 * !A3 * B1 * B2 * !Y)	0.02166	0.02165	0.02174
	(A2 * !A3 * B1 * B2 * !Y)	0.01271	0.01268	0.01281
	(A2 * !A3 * B1 * !B2 * Y)	0.00162	0.00163	0.00145
	(A2 * !A3 * B1 * !B2 * Y)	-0.00531	-0.00536	-0.00569
	(A2 * !A3 * !B1 * Y)	0.00166	0.00167	0.00149
	(A2 * !A3 * !B1 * Y)	-0.00526	-0.00531	-0.00565
	(!A2 * B1 * B2 * !Y)	0.02175	0.02175	0.02186
	(!A2 * B1 * B2 * !Y)	0.01272	0.01269	0.01280
	(!A2 * B1 * !B2 * Y)	0.00165	0.00165	0.00153
	(!A2 * B1 * !B2 * Y)	-0.00548	-0.00551	-0.00571
	(!A2 * !B1 * Y)	0.00170	0.00171	0.00157
	(!A2 * !B1 * Y)	-0.00543	-0.00548	-0.00567

sky130_fd_sc_hs__a32oi_4	(A2 * A3 * B1 * B2 * !Y)	0.01837	0.01732	0.03824
	(A2 * A3 * B1 * B2 * !Y)	-0.00047	-0.00165	0.01953
	(A2 * !A3 * B1 * B2 * !Y)	0.04289	0.04284	0.04307
	(A2 * !A3 * B1 * B2 * !Y)	0.02506	0.02496	0.02528
	(A2 * !A3 * B1 * !B2 * Y)	0.00294	0.00294	0.00265
	(A2 * !A3 * B1 * !B2 * Y)	-0.01080	-0.01087	-0.01152
	(A2 * !A3 * !B1 * Y)	0.00302	0.00302	0.00272
	(A2 * !A3 * !B1 * Y)	-0.01072	-0.01079	-0.01144
	(!A2 * B1 * B2 * !Y)	0.04317	0.04314	0.04335
	(!A2 * B1 * B2 * !Y)	0.02509	0.02501	0.02530
	(!A2 * B1 * !B2 * Y)	0.00300	0.00301	0.00278
	(!A2 * B1 * !B2 * Y)	-0.01116	-0.01122	-0.01157
	(!A2 * !B1 * Y)	0.00308	0.00309	0.00286
	(!A2 * !B1 * Y)	-0.01108	-0.01114	-0.01149

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)**	0.00673	0.00653	0.00504
	(A2 * A3 * B1 * B2 * !Y)	0.01150	0.01130	0.00980
	(A2 * !A3 * B1 * B2 * !Y)	0.00698	0.00690	0.00686
	(A2 * !A3 * B1 * B2 * !Y)	0.01146	0.01145	0.01141
	(A2 * !A3 * B1 * !B2 * Y)	-0.00043	-0.00043	-0.00042
	(A2 * !A3 * B1 * !B2 * Y)	0.00310	0.00312	0.00311
	(A2 * !A3 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(A2 * !A3 * !B1 * Y)	0.00311	0.00314	0.00313
	(!A2 * B1 * B2 * !Y)	0.00687	0.00686	0.00683
	(!A2 * B1 * B2 * !Y)	0.01143	0.01143	0.01139
	(!A2 * B1 * !B2 * Y)	-0.00045	-0.00046	-0.00044
	(!A2 * B1 * !B2 * Y)	0.00310	0.00316	0.00311
	(!A2 * !B1 * Y)	-0.00044	-0.00045	-0.00043
	(!A2 * !B1 * Y)	0.00312	0.00317	0.00313
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.01346	0.01303	0.01009
	(A2 * A3 * B1 * B2 * !Y)	0.02291	0.02257	0.01957
	(A2 * !A3 * B1 * B2 * !Y)	0.01399	0.01381	0.01370
	(A2 * !A3 * B1 * B2 * !Y)	0.02282	0.02287	0.02273
	(A2 * !A3 * B1 * !B2 * Y)	-0.00089	-0.00091	-0.00088
	(A2 * !A3 * B1 * !B2 * Y)	0.00616	0.00628	0.00619
	(A2 * !A3 * !B1 * Y)	-0.00086	-0.00088	-0.00085
	(A2 * !A3 * !B1 * Y)	0.00619	0.00630	0.00621
	(!A2 * B1 * B2 * !Y)	0.01377	0.01371	0.01365
	(!A2 * B1 * B2 * !Y)	0.02281	0.02285	0.02272
	(!A2 * B1 * !B2 * Y)	-0.00099	-0.00102	-0.00099
	(!A2 * B1 * !B2 * Y)	0.00616	0.00628	0.00619
	(!A2 * !B1 * Y)	-0.00097	-0.00100	-0.00096
	(!A2 * !B1 * Y)	0.00618	0.00631	0.00622

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.02657	0.02572	0.01995
	(A2 * A3 * B1 * B2 * !Y)	0.04538	0.04465	0.03882
	(A2 * !A3 * B1 * B2 * !Y)	0.02775	0.02740	0.02715
	(A2 * !A3 * B1 * B2 * !Y)	0.04535	0.04543	0.04514
	(A2 * !A3 * B1 * !B2 * Y)	-0.00154	-0.00155	-0.00149
	(A2 * !A3 * B1 * !B2 * Y)	0.01251	0.01267	0.01250
	(A2 * !A3 * !B1 * Y)	-0.00148	-0.00150	-0.00144
	(A2 * !A3 * !B1 * Y)	0.01257	0.01273	0.01256
	(!A2 * B1 * B2 * !Y)	0.02732	0.02723	0.02709
	(!A2 * B1 * B2 * !Y)	0.04536	0.04538	0.04516
	(!A2 * B1 * !B2 * Y)	-0.00172	-0.00177	-0.00170
	(!A2 * B1 * !B2 * Y)	0.01245	0.01270	0.01253
	(!A2 * !B1 * Y)	-0.00167	-0.00172	-0.00165
	(!A2 * !B1 * Y)	0.01251	0.01276	0.01258

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)**	0.00468	0.00444	0.00975
	(A1 * A3 * B1 * B2 * !Y)	-0.00015	-0.00037	0.00497
	(A1 * !A3 * B1 * B2 * !Y)	0.01101	0.01103	0.01105
	(A1 * !A3 * B1 * B2 * !Y)	0.00639	0.00637	0.00642
	(A1 * !A3 * B1 * !B2 * Y)	0.00096	0.00097	0.00094
	(A1 * !A3 * B1 * !B2 * Y)	-0.00253	-0.00256	-0.00253
	(A1 * !A3 * !B1 * Y)	0.00098	0.00099	0.00096
	(A1 * !A3 * !B1 * Y)	-0.00252	-0.00254	-0.00252
	(!A1 * A3 * B1 * B2 * !Y)	0.01104	0.01105	0.01106
	(!A1 * A3 * B1 * B2 * !Y)	0.00642	0.00639	0.00644
	(!A1 * A3 * B1 * !B2 * Y)	0.00222	0.00224	0.00221
	(!A1 * A3 * B1 * !B2 * Y)	-0.00244	-0.00246	-0.00245
	(!A1 * A3 * !B1 * Y)	0.00224	0.00225	0.00222
	(!A1 * A3 * !B1 * Y)	-0.00243	-0.00244	-0.00243
	(!A1 * !A3 * B1 * B2 * !Y)	0.01020	0.01020	0.01019
	(!A1 * !A3 * B1 * B2 * !Y)	0.00649	0.00647	0.00649
	(!A1 * !A3 * B1 * !B2 * Y)	0.00114	0.00114	0.00113
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A3 * !B1 * Y)	-0.00251	-0.00252	-0.00251

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00919	0.00862	0.01914
	(A1 * A3 * B1 * B2 * !Y)	-0.00029	-0.00091	0.00974
	(A1 * !A3 * B1 * B2 * !Y)	0.02161	0.02163	0.02169
	(A1 * !A3 * B1 * B2 * !Y)	0.01256	0.01249	0.01261
	(A1 * !A3 * B1 * !B2 * Y)	0.00173	0.00176	0.00175
	(A1 * !A3 * B1 * !B2 * Y)	-0.00506	-0.00511	-0.00505
	(A1 * !A3 * !B1 * Y)	0.00177	0.00180	0.00179
	(A1 * !A3 * !B1 * Y)	-0.00501	-0.00507	-0.00501
	(!A1 * A3 * B1 * B2 * !Y)	0.02169	0.02169	0.02174
	(!A1 * A3 * B1 * B2 * !Y)	0.01263	0.01258	0.01266
	(!A1 * A3 * B1 * !B2 * Y)	0.00429	0.00432	0.00428
	(!A1 * A3 * B1 * !B2 * Y)	-0.00482	-0.00485	-0.00485
	(!A1 * A3 * !B1 * Y)	0.00432	0.00436	0.00432
	(!A1 * A3 * !B1 * Y)	-0.00479	-0.00482	-0.00482
	(!A1 * !A3 * B1 * B2 * !Y)	0.02013	0.02013	0.02012
	(!A1 * !A3 * B1 * B2 * !Y)	0.01272	0.01270	0.01273
	(!A1 * !A3 * B1 * !B2 * Y)	0.00223	0.00222	0.00222
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00508	-0.00507	-0.00508
	(!A1 * !A3 * !B1 * Y)	0.00227	0.00227	0.00227
	(!A1 * !A3 * !B1 * Y)	-0.00504	-0.00503	-0.00504

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.01819	0.01710	0.03804
	(A1 * A3 * B1 * B2 * !Y)	-0.00070	-0.00189	0.01927
	(A1 * !A3 * B1 * B2 * !Y)	0.04287	0.04287	0.04305
	(A1 * !A3 * B1 * B2 * !Y)	0.02482	0.02468	0.02496
	(A1 * !A3 * B1 * !B2 * Y)	0.00335	0.00339	0.00335
	(A1 * !A3 * B1 * !B2 * Y)	-0.01001	-0.01010	-0.00999
	(A1 * !A3 * !B1 * Y)	0.00342	0.00346	0.00342
	(A1 * !A3 * !B1 * Y)	-0.00994	-0.01003	-0.00992
	(!A1 * A3 * B1 * B2 * !Y)	0.04305	0.04302	0.04319
	(!A1 * A3 * B1 * B2 * !Y)	0.02490	0.02479	0.02507
	(!A1 * A3 * B1 * !B2 * Y)	0.00864	0.00872	0.00863
	(!A1 * A3 * B1 * !B2 * Y)	-0.00956	-0.00962	-0.00961
	(!A1 * A3 * !B1 * Y)	0.00871	0.00879	0.00869
	(!A1 * A3 * !B1 * Y)	-0.00950	-0.00956	-0.00954
	(!A1 * !A3 * B1 * B2 * !Y)	0.03972	0.03970	0.03970
	(!A1 * !A3 * B1 * B2 * !Y)	0.02527	0.02521	0.02530
	(!A1 * !A3 * B1 * !B2 * Y)	0.00419	0.00420	0.00416
	(!A1 * !A3 * B1 * !B2 * Y)	-0.01006	-0.01009	-0.01005
	(!A1 * !A3 * !B1 * Y)	0.00427	0.00428	0.00424
	(!A1 * !A3 * !B1 * Y)	-0.00998	-0.01002	-0.00998

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)**	0.00666	0.00645	0.00497
	(A1 * A3 * B1 * B2 * !Y)	0.01147	0.01130	0.00979
	(A1 * !A3 * B1 * B2 * !Y)	0.00681	0.00679	0.00678
	(A1 * !A3 * B1 * B2 * !Y)	0.01143	0.01146	0.01140
	(A1 * !A3 * B1 * !B2 * Y)	-0.00064	-0.00065	-0.00065
	(A1 * !A3 * B1 * !B2 * Y)	0.00287	0.00290	0.00280
	(A1 * !A3 * !B1 * Y)	-0.00062	-0.00063	-0.00064
	(A1 * !A3 * !B1 * Y)	0.00288	0.00292	0.00282
	(!A1 * A3 * B1 * B2 * !Y)	0.00681	0.00678	0.00678
	(!A1 * A3 * B1 * B2 * !Y)	0.01144	0.01147	0.01141
	(!A1 * A3 * B1 * !B2 * Y)	-0.00160	-0.00183	-0.00179
	(!A1 * A3 * B1 * !B2 * Y)	0.00309	0.00288	0.00284
	(!A1 * A3 * !B1 * Y)	-0.00158	-0.00182	-0.00178
	(!A1 * A3 * !B1 * Y)	0.00311	0.00290	0.00286
	(!A1 * !A3 * B1 * B2 * !Y)	0.00765	0.00764	0.00772
	(!A1 * !A3 * B1 * B2 * !Y)	0.01148	0.01149	0.01147
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00092	-0.00093	-0.00096
	(!A1 * !A3 * B1 * !B2 * Y)	0.00287	0.00288	0.00277
	(!A1 * !A3 * !B1 * Y)	-0.00091	-0.00092	-0.00094
	(!A1 * !A3 * !B1 * Y)	0.00289	0.00290	0.00279

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.01354	0.01311	0.01017
	(A1 * A3 * B1 * B2 * !Y)	0.02301	0.02266	0.01966
	(A1 * !A3 * B1 * B2 * !Y)	0.01389	0.01385	0.01381
	(A1 * !A3 * B1 * B2 * !Y)	0.02296	0.02299	0.02289
	(A1 * !A3 * B1 * !B2 * Y)	-0.00109	-0.00111	-0.00117
	(A1 * !A3 * B1 * !B2 * Y)	0.00573	0.00577	0.00559
	(A1 * !A3 * !B1 * Y)	-0.00109	-0.00108	-0.00114
	(A1 * !A3 * !B1 * Y)	0.00582	0.00580	0.00562
	(!A1 * A3 * B1 * B2 * !Y)	0.01392	0.01388	0.01384
	(!A1 * A3 * B1 * B2 * !Y)	0.02300	0.02298	0.02293
	(!A1 * A3 * B1 * !B2 * Y)	-0.00279	-0.00348	-0.00347
	(!A1 * A3 * B1 * !B2 * Y)	0.00636	0.00568	0.00563
	(!A1 * A3 * !B1 * Y)	-0.00276	-0.00345	-0.00344
	(!A1 * A3 * !B1 * Y)	0.00640	0.00571	0.00566
	(!A1 * !A3 * B1 * B2 * !Y)	0.01543	0.01542	0.01558
	(!A1 * !A3 * B1 * B2 * !Y)	0.02309	0.02311	0.02306
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00180	-0.00179	-0.00186
	(!A1 * !A3 * B1 * !B2 * Y)	0.00577	0.00582	0.00556
	(!A1 * !A3 * !B1 * Y)	-0.00178	-0.00177	-0.00184
	(!A1 * !A3 * !B1 * Y)	0.00579	0.00584	0.00559

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.02672	0.02589	0.02011
	(A1 * A3 * B1 * B2 * !Y)	0.04562	0.04488	0.03904
	(A1 * !A3 * B1 * B2 * !Y)	0.02745	0.02734	0.02726
	(A1 * !A3 * B1 * B2 * !Y)	0.04554	0.04564	0.04535
	(A1 * !A3 * B1 * !B2 * Y)	-0.00211	-0.00214	-0.00220
	(A1 * !A3 * B1 * !B2 * Y)	0.01136	0.01146	0.01107
	(A1 * !A3 * !B1 * Y)	-0.00207	-0.00208	-0.00214
	(A1 * !A3 * !B1 * Y)	0.01147	0.01153	0.01113
	(!A1 * A3 * B1 * B2 * !Y)	0.02749	0.02741	0.02730
	(!A1 * A3 * B1 * B2 * !Y)	0.04567	0.04565	0.04543
	(!A1 * A3 * B1 * !B2 * Y)	-0.00568	-0.00702	-0.00699
	(!A1 * A3 * B1 * !B2 * Y)	0.01259	0.01135	0.01116
	(!A1 * A3 * !B1 * Y)	-0.00561	-0.00696	-0.00693
	(!A1 * A3 * !B1 * Y)	0.01265	0.01141	0.01123
	(!A1 * !A3 * B1 * B2 * !Y)	0.03087	0.03085	0.03116
	(!A1 * !A3 * B1 * B2 * !Y)	0.04581	0.04585	0.04572
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00340	-0.00336	-0.00346
	(!A1 * !A3 * B1 * !B2 * Y)	0.01141	0.01147	0.01100
	(!A1 * !A3 * !B1 * Y)	-0.00334	-0.00331	-0.00341
	(!A1 * !A3 * !B1 * Y)	0.01147	0.01152	0.01106

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)**	0.00451	0.00434	0.00962
	(A1 * A2 * B1 * B2 * !Y)	-0.00019	-0.00042	0.00495
	(A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00222	0.00219
	(A1 * !A2 * B1 * !B2 * Y)	-0.00232	-0.00235	-0.00234
	(A1 * !A2 * !B1 * Y)	0.00220	0.00224	0.00221
	(A1 * !A2 * !B1 * Y)	-0.00231	-0.00234	-0.00233
	(!A2 * B1 * B2 * !Y)	0.01089	0.01089	0.01092
	(!A2 * B1 * B2 * !Y)	0.00638	0.00636	0.00640
	(!A1 * A2 * B1 * B2 * !Y)	0.01086	0.01087	0.01089
	(!A1 * A2 * B1 * B2 * !Y)	0.00639	0.00637	0.00642
	(!A1 * A2 * B1 * !B2 * Y)	0.00219	0.00221	0.00219
	(!A1 * A2 * B1 * !B2 * Y)	-0.00233	-0.00234	-0.00233
	(!A1 * A2 * !B1 * Y)	0.00221	0.00222	0.00220
	(!A1 * A2 * !B1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * B1 * !B2 * Y)	0.00209	0.00212	0.00210
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00241	-0.00243	-0.00242
	(!A1 * !A2 * !B1 * Y)	0.00211	0.00214	0.00212
	(!A1 * !A2 * !B1 * Y)	-0.00239	-0.00241	-0.00240

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00919	0.00870	0.01923
	(A1 * A2 * B1 * B2 * !Y)	-0.00033	-0.00086	0.00979
	(A1 * !A2 * B1 * !B2 * Y)	0.00441	0.00447	0.00441
	(A1 * !A2 * B1 * !B2 * Y)	-0.00472	-0.00476	-0.00474
	(A1 * !A2 * !B1 * Y)	0.00444	0.00450	0.00444
	(A1 * !A2 * !B1 * Y)	-0.00469	-0.00473	-0.00471
	(!A2 * B1 * B2 * !Y)	0.02171	0.02173	0.02178
	(!A2 * B1 * B2 * !Y)	0.01262	0.01255	0.01267
	(!A1 * A2 * B1 * B2 * !Y)	0.02169	0.02169	0.02173
	(!A1 * A2 * B1 * B2 * !Y)	0.01266	0.01263	0.01272
	(!A1 * A2 * B1 * !B2 * Y)	0.00436	0.00441	0.00438
	(!A1 * A2 * B1 * !B2 * Y)	-0.00470	-0.00474	-0.00472
	(!A1 * A2 * !B1 * Y)	0.00440	0.00444	0.00442
	(!A1 * A2 * !B1 * Y)	-0.00467	-0.00470	-0.00468
	(!A1 * !A2 * B1 * !B2 * Y)	0.00420	0.00426	0.00421
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00488	-0.00492	-0.00489
	(!A1 * !A2 * !B1 * Y)	0.00423	0.00429	0.00424
	(!A1 * !A2 * !B1 * Y)	-0.00485	-0.00489	-0.00486

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.01794	0.01701	0.03792
	(A1 * A2 * B1 * B2 * !Y)	-0.00103	-0.00196	0.01917
	(A1 * !A2 * B1 * !B2 * Y)	0.00859	0.00870	0.00858
	(A1 * !A2 * B1 * !B2 * Y)	-0.00953	-0.00961	-0.00956
	(A1 * !A2 * !B1 * Y)	0.00866	0.00877	0.00865
	(A1 * !A2 * !B1 * Y)	-0.00946	-0.00954	-0.00950
	(!A2 * B1 * B2 * !Y)	0.04286	0.04290	0.04301
	(!A2 * B1 * B2 * !Y)	0.02482	0.02468	0.02494
	(!A1 * A2 * B1 * B2 * !Y)	0.04276	0.04278	0.04294
	(!A1 * A2 * B1 * B2 * !Y)	0.02488	0.02474	0.02501
	(!A1 * A2 * B1 * !B2 * Y)	0.00853	0.00860	0.00855
	(!A1 * A2 * B1 * !B2 * Y)	-0.00951	-0.00957	-0.00955
	(!A1 * A2 * !B1 * Y)	0.00859	0.00866	0.00862
	(!A1 * A2 * !B1 * Y)	-0.00945	-0.00951	-0.00949
	(!A1 * !A2 * B1 * !B2 * Y)	0.00815	0.00822	0.00818
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00986	-0.00991	-0.00988
	(!A1 * !A2 * !B1 * Y)	0.00822	0.00829	0.00824
	(!A1 * !A2 * !B1 * Y)	-0.00979	-0.00985	-0.00981

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)**	0.00680	0.00659	0.00511
	(A1 * A2 * B1 * B2 * !Y)	0.01150	0.01133	0.00982
	(A1 * !A2 * B1 * !B2 * Y)	-0.00164	-0.00179	-0.00181
	(A1 * !A2 * B1 * !B2 * Y)	0.00292	0.00279	0.00270
	(A1 * !A2 * !B1 * Y)	-0.00163	-0.00178	-0.00180
	(A1 * !A2 * !B1 * Y)	0.00294	0.00281	0.00272
	(!A2 * B1 * B2 * !Y)	0.00693	0.00692	0.00690
	(!A2 * B1 * B2 * !Y)	0.01147	0.01146	0.01142
	(!A1 * A2 * B1 * B2 * !Y)	0.00704	0.00698	0.00694
	(!A1 * A2 * B1 * B2 * !Y)	0.01147	0.01149	0.01144
	(!A1 * A2 * B1 * !B2 * Y)	-0.00155	-0.00178	-0.00179
	(!A1 * A2 * B1 * !B2 * Y)	0.00297	0.00280	0.00272
	(!A1 * A2 * !B1 * Y)	-0.00153	-0.00176	-0.00177
	(!A1 * A2 * !B1 * Y)	0.00299	0.00281	0.00274
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00181	-0.00188	-0.00189
	(!A1 * !A2 * B1 * !B2 * Y)	0.00269	0.00266	0.00263
	(!A1 * !A2 * !B1 * Y)	-0.00179	-0.00186	-0.00187
	(!A1 * !A2 * !B1 * Y)	0.00271	0.00268	0.00265

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.01346	0.01303	0.01009
	(A1 * A2 * B1 * B2 * !Y)	0.02296	0.02263	0.01962
	(A1 * !A2 * B1 * !B2 * Y)	-0.00328	-0.00365	-0.00364
	(A1 * !A2 * B1 * !B2 * Y)	0.00592	0.00563	0.00548
	(A1 * !A2 * !B1 * Y)	-0.00325	-0.00362	-0.00361
	(A1 * !A2 * !B1 * Y)	0.00595	0.00566	0.00551
	(!A2 * B1 * B2 * !Y)	0.01378	0.01373	0.01370
	(!A2 * B1 * B2 * !Y)	0.02292	0.02295	0.02281
	(!A1 * A2 * B1 * B2 * !Y)	0.01402	0.01385	0.01379
	(!A1 * A2 * B1 * B2 * !Y)	0.02294	0.02299	0.02287
	(!A1 * A2 * B1 * !B2 * Y)	-0.00309	-0.00358	-0.00359
	(!A1 * A2 * B1 * !B2 * Y)	0.00601	0.00567	0.00550
	(!A1 * A2 * !B1 * Y)	-0.00305	-0.00355	-0.00356
	(!A1 * A2 * !B1 * Y)	0.00605	0.00570	0.00553
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00365	-0.00381	-0.00379
	(!A1 * !A2 * B1 * !B2 * Y)	0.00542	0.00538	0.00532
	(!A1 * !A2 * !B1 * Y)	-0.00362	-0.00378	-0.00375
	(!A1 * !A2 * !B1 * Y)	0.00545	0.00541	0.00535

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.02674	0.02591	0.02016
	(A1 * A2 * B1 * B2 * !Y)	0.04566	0.04493	0.03907
	(A1 * !A2 * B1 * !B2 * Y)	-0.00625	-0.00699	-0.00703
	(A1 * !A2 * B1 * !B2 * Y)	0.01196	0.01141	0.01106
	(A1 * !A2 * !B1 * Y)	-0.00619	-0.00692	-0.00697
	(A1 * !A2 * !B1 * Y)	0.01202	0.01149	0.01112
	(!A2 * B1 * B2 * !Y)	0.02752	0.02743	0.02735
	(!A2 * B1 * B2 * !Y)	0.04559	0.04562	0.04542
	(!A1 * A2 * B1 * B2 * !Y)	0.02794	0.02767	0.02748
	(!A1 * A2 * B1 * B2 * !Y)	0.04572	0.04577	0.04549
	(!A1 * A2 * B1 * !B2 * Y)	-0.00586	-0.00687	-0.00693
	(!A1 * A2 * B1 * !B2 * Y)	0.01229	0.01148	0.01111
	(!A1 * A2 * !B1 * Y)	-0.00580	-0.00679	-0.00687
	(!A1 * A2 * !B1 * Y)	0.01235	0.01155	0.01118
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00697	-0.00733	-0.00732
	(!A1 * !A2 * B1 * !B2 * Y)	0.01097	0.01088	0.01074
	(!A1 * !A2 * !B1 * Y)	-0.00691	-0.00727	-0.00725
	(!A1 * !A2 * !B1 * Y)	0.01103	0.01095	0.01081

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)**	0.00253	0.00259	0.00371
	(A1 * A2 * A3 * B2 * !Y)	-0.00039	-0.00037	0.00076
	(A1 * A2 * A3 * !B2 * !Y)	0.00990	0.00995	0.00993
	(A1 * A2 * A3 * !B2 * !Y)	0.00657	0.00655	0.00659
	(A1 * A2 * !A3 * !B2 * Y)	0.00076	0.00075	0.00071
	(A1 * A2 * !A3 * !B2 * Y)	-0.00286	-0.00288	-0.00294
	(A1 * !A2 * !B2 * Y)	0.00076	0.00075	0.00071
	(A1 * !A2 * !B2 * Y)	-0.00286	-0.00287	-0.00294
	(!A1 * !B2 * Y)	0.00077	0.00077	0.00073
	(!A1 * !B2 * Y)	-0.00285	-0.00286	-0.00292
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00473	0.00480	0.00719
	(A1 * A2 * A3 * B2 * !Y)	-0.00072	-0.00068	0.00159
	(A1 * A2 * A3 * !B2 * !Y)	0.01958	0.01966	0.01963
	(A1 * A2 * A3 * !B2 * !Y)	0.01314	0.01310	0.01317
	(A1 * A2 * !A3 * !B2 * Y)	0.00158	0.00158	0.00145
	(A1 * A2 * !A3 * !B2 * Y)	-0.00553	-0.00555	-0.00573
	(A1 * !A2 * !B2 * Y)	0.00158	0.00158	0.00145
	(A1 * !A2 * !B2 * Y)	-0.00552	-0.00555	-0.00573
	(!A1 * !B2 * Y)	0.00163	0.00163	0.00150
	(!A1 * !B2 * Y)	-0.00548	-0.00550	-0.00568
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00960	0.00977	0.01484
	(A1 * A2 * A3 * B2 * !Y)	-0.00143	-0.00133	0.00351
	(A1 * A2 * A3 * !B2 * !Y)	0.03922	0.03936	0.03932
	(A1 * A2 * A3 * !B2 * !Y)	0.02616	0.02609	0.02624
	(A1 * A2 * !A3 * !B2 * Y)	0.00302	0.00302	0.00278
	(A1 * A2 * !A3 * !B2 * Y)	-0.01126	-0.01131	-0.01164
	(A1 * !A2 * !B2 * Y)	0.00303	0.00303	0.00279
	(A1 * !A2 * !B2 * Y)	-0.01125	-0.01130	-0.01163
	(!A1 * !B2 * Y)	0.00312	0.00311	0.00287
	(!A1 * !B2 * Y)	-0.01117	-0.01122	-0.01155

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)	0.00703	0.00674	0.00309
	(A1 * A2 * A3 * B2 * !Y)	0.01005	0.00979	0.00613
	(A1 * A2 * A3 * !B2 * !Y)	0.00546	0.00540	0.00507
	(A1 * A2 * A3 * !B2 * !Y)	0.00880	0.00879	0.00841
	(A1 * A2 * !A3 * !B2 * Y)	-0.00045	-0.00046	-0.00044
	(A1 * A2 * !A3 * !B2 * Y)	0.00316	0.00322	0.00318
	(A1 * !A2 * !B2 * Y)	-0.00045	-0.00046	-0.00044
	(A1 * !A2 * !B2 * Y)	0.00316	0.00322	0.00318
	(!A1 * !B2 * Y)	-0.00043	-0.00044	-0.00042
	(!A1 * !B2 * Y)	0.00318	0.00324	0.00320
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	0.01428	0.01370	0.00640
	(A1 * A2 * A3 * B2 * !Y)	0.02002	0.01950	0.01217
	(A1 * A2 * A3 * !B2 * !Y)	0.01114	0.01106	0.01034
	(A1 * A2 * A3 * !B2 * !Y)	0.01760	0.01755	0.01681
	(A1 * A2 * !A3 * !B2 * Y)	-0.00093	-0.00092	-0.00091
	(A1 * A2 * !A3 * !B2 * Y)	0.00618	0.00617	0.00620
	(A1 * !A2 * !B2 * Y)	-0.00092	-0.00092	-0.00091
	(A1 * !A2 * !B2 * Y)	0.00618	0.00618	0.00620
	(!A1 * !B2 * Y)	-0.00090	-0.00089	-0.00088
	(!A1 * !B2 * Y)	0.00620	0.00620	0.00623

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.02805	0.02693	0.01229
	(A1 * A2 * A3 * B2 * !Y)	0.03971	0.03860	0.02393
	(A1 * A2 * A3 * !B2 * !Y)	0.02213	0.02192	0.02054
	(A1 * A2 * A3 * !B2 * !Y)	0.03520	0.03515	0.03362
	(A1 * A2 * !A3 * !B2 * Y)	-0.00177	-0.00175	-0.00171
	(A1 * A2 * !A3 * !B2 * Y)	0.01258	0.01256	0.01257
	(A1 * !A2 * !B2 * Y)	-0.00176	-0.00173	-0.00170
	(A1 * !A2 * !B2 * Y)	0.01259	0.01257	0.01258
	(!A1 * !B2 * Y)	-0.00171	-0.00168	-0.00165
	(!A1 * !B2 * Y)	0.01264	0.01261	0.01263

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)**	0.00242	0.00250	0.00364
	(A1 * A2 * A3 * B1 * !Y)	-0.00044	-0.00044	0.00071
	(A1 * A2 * A3 * !B1 * !Y)	0.00989	0.00991	0.00991
	(A1 * A2 * A3 * !B1 * !Y)	0.00654	0.00654	0.00657
	(A1 * A2 * !A3 * !B1 * Y)	0.00221	0.00222	0.00220
	(A1 * A2 * !A3 * !B1 * Y)	-0.00242	-0.00243	-0.00243
	(A1 * !A2 * !B1 * Y)	0.00221	0.00222	0.00221
	(A1 * !A2 * !B1 * Y)	-0.00241	-0.00242	-0.00243
	(!A1 * !B1 * Y)	0.00223	0.00224	0.00222
	(!A1 * !B1 * Y)	-0.00240	-0.00241	-0.00241

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00472	0.00478	0.00719
	(A1 * A2 * A3 * B1 * !Y)	-0.00079	-0.00074	0.00154
	(A1 * A2 * A3 * !B1 * !Y)	0.01961	0.01971	0.01967
	(A1 * A2 * A3 * !B1 * !Y)	0.01312	0.01308	0.01315
	(A1 * A2 * !A3 * !B1 * Y)	0.00440	0.00440	0.00438
	(A1 * A2 * !A3 * !B1 * Y)	-0.00474	-0.00474	-0.00475
	(A1 * !A2 * !B1 * Y)	0.00440	0.00441	0.00438
	(A1 * !A2 * !B1 * Y)	-0.00473	-0.00474	-0.00475
	(!A1 * !B1 * Y)	0.00443	0.00441	0.00441
	(!A1 * !B1 * Y)	-0.00470	-0.00468	-0.00471
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00941	0.00958	0.01468
	(A1 * A2 * A3 * B1 * !Y)	-0.00144	-0.00135	0.00350
	(A1 * A2 * A3 * !B1 * !Y)	0.03911	0.03926	0.03918
	(A1 * A2 * A3 * !B1 * !Y)	0.02616	0.02611	0.02626
	(A1 * A2 * !A3 * !B1 * Y)	0.00865	0.00877	0.00864
	(A1 * A2 * !A3 * !B1 * Y)	-0.00945	-0.00954	-0.00951
	(A1 * !A2 * !B1 * Y)	0.00865	0.00878	0.00865
	(A1 * !A2 * !B1 * Y)	-0.00944	-0.00953	-0.00950
	(!A1 * !B1 * Y)	0.00872	0.00884	0.00872
	(!A1 * !B1 * Y)	-0.00937	-0.00946	-0.00944

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)**	0.00707	0.00679	0.00315
	(A1 * A2 * A3 * B1 * !Y)	0.01009	0.00981	0.00616
	(A1 * A2 * A3 * !B1 * !Y)	0.00548	0.00545	0.00510
	(A1 * A2 * A3 * !B1 * !Y)	0.00883	0.00880	0.00843
	(A1 * A2 * !A3 * !B1 * Y)	-0.00165	-0.00183	-0.00180
	(A1 * A2 * !A3 * !B1 * Y)	0.00301	0.00285	0.00281
	(A1 * !A2 * !B1 * Y)	-0.00165	-0.00183	-0.00179
	(A1 * !A2 * !B1 * Y)	0.00301	0.00286	0.00282
	(!A1 * !B1 * Y)	-0.00163	-0.00181	-0.00178
	(!A1 * !B1 * Y)	0.00303	0.00288	0.00283
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.01424	0.01368	0.00638
	(A1 * A2 * A3 * B1 * !Y)	0.02007	0.01952	0.01220
	(A1 * A2 * A3 * !B1 * !Y)	0.01111	0.01101	0.01032
	(A1 * A2 * A3 * !B1 * !Y)	0.01762	0.01759	0.01684
	(A1 * A2 * !A3 * !B1 * Y)	-0.00308	-0.00361	-0.00356
	(A1 * A2 * !A3 * !B1 * Y)	0.00604	0.00563	0.00552
	(A1 * !A2 * !B1 * Y)	-0.00307	-0.00360	-0.00356
	(A1 * !A2 * !B1 * Y)	0.00605	0.00563	0.00553
	(!A1 * !B1 * Y)	-0.00304	-0.00357	-0.00353
	(!A1 * !B1 * Y)	0.00608	0.00567	0.00556
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.02819	0.02707	0.01244
	(A1 * A2 * A3 * B1 * !Y)	0.03971	0.03860	0.02393
	(A1 * A2 * A3 * !B1 * !Y)	0.02228	0.02207	0.02071
	(A1 * A2 * A3 * !B1 * !Y)	0.03520	0.03514	0.03363
	(A1 * A2 * !A3 * !B1 * Y)	-0.00610	-0.00712	-0.00700
	(A1 * A2 * !A3 * !B1 * Y)	0.01205	0.01124	0.01105
	(A1 * !A2 * !B1 * Y)	-0.00609	-0.00711	-0.00699
	(A1 * !A2 * !B1 * Y)	0.01206	0.01125	0.01106
	(!A1 * !B1 * Y)	-0.00603	-0.00704	-0.00693
	(!A1 * !B1 * Y)	0.01212	0.01132	0.01112

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00265	0.00263	0.00273	0.00265	0.00246	1.68374
sky130_fd_sc_hs__a32o_2	0.00282	0.00279	0.00289	0.00278	0.00265	2.74480
sky130_fd_sc_hs__a32o_4	0.00485	0.00549	0.00494	0.00503	0.00573	6.15707

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	699.70500	1180.06000
sky130_fd_sc_hs__a32o_2	0.00000	1038.60000	1191.53000
sky130_fd_sc_hs__a32o_4	0.00000	2087.57000	2376.57000

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)	0.08469	0.50942	6.40687
	A2->X (RR)	0.09015	0.49444	6.18510
	A3->X (RR)	0.09369	0.46617	5.80943
	B1->X (RR)	0.05584	0.43042	5.45901
	B2->X (RR)	0.05838	0.41279	5.23517
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.08681	0.43773	5.92037
	A2->X (RR)	0.09243	0.42076	5.69385
	A3->X (RR)	0.09620	0.38751	5.15447
	B1->X (RR)	0.05941	0.36131	4.89481
	B2->X (RR)	0.06259	0.34160	4.66843
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.09896	0.39945	6.48819
	A2->X (RR)	0.10675	0.39039	6.32305
	A3->X (RR)	0.11084	0.35842	6.01196
	B1->X (RR)	0.05987	0.30591	5.43022
	B2->X (RR)	0.06337	0.29035	5.26845

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.10055	0.47769	5.46063
	A2->X (FF)	0.11078	0.50108	5.63645
	A3->X (FF)	0.11418	0.50840	5.78552
	B1->X (FF)	0.07979	0.51511	6.31519
	B2->X (FF)	0.08723	0.53859	6.49013
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.11972	0.44654	4.87786
	A2->X (FF)	0.13098	0.47082	5.06975
	A3->X (FF)	0.13870	0.48681	5.26969
	B1->X (FF)	0.09733	0.48313	5.67664
	B2->X (FF)	0.10782	0.51113	5.87905
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.10565	0.39431	5.48942
	A2->X (FF)	0.11368	0.41117	5.60529
	A3->X (FF)	0.12667	0.43977	5.93088
	B1->X (FF)	0.10625	0.47029	6.16161
	B2->X (FF)	0.11119	0.48376	6.27514

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.04231	0.05388	0.27590
	A1	0.03367	0.04521	0.26725
	A2	0.04337	0.05373	0.27483
	A2	0.03355	0.04389	0.26509
	A3	0.04448	0.05330	0.24918
	A3	0.03329	0.04210	0.23766
	B1	0.04086	0.05718	0.31111
	B1	0.03521	0.05152	0.30513
	B2	0.04190	0.05716	0.30637
	B2	0.03501	0.05026	0.29947
sky130_fd_sc_hs__a32o_2	A1	0.04855	0.06014	0.29028
	A1	0.03966	0.05122	0.28043
	A2	0.04981	0.05991	0.29034
	A2	0.03955	0.04962	0.27966
	A3	0.05103	0.05798	0.22866
	A3	0.03920	0.04617	0.21585
	B1	0.04560	0.06155	0.30904
	B1	0.03969	0.05568	0.30285
	B2	0.04689	0.06140	0.30211
	B2	0.03949	0.05399	0.29373

sky130_fd_sc_hs__a32o_4	**A1**	0.09979	0.12280	0.58900
	A1	0.08321	0.10650	0.57149
	A2	0.09485	0.11510	0.56645
	A2	0.07755	0.09777	0.54906
	A3	0.10497	0.12431	0.61239
	A3	0.08287	0.10216	0.59131
	B1	0.09080	0.12426	0.64032
	B1	0.08012	0.11352	0.62815
	B2	0.09425	0.12667	0.66185
	B2	0.07980	0.11223	0.64657

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.01560	0.02634	0.22288
	A1	0.02427	0.03489	0.23093
	A2	0.01662	0.02711	0.22344
	A2	0.02646	0.03693	0.23335
	A3	0.01670	0.02697	0.22892
	A3	0.02789	0.03816	0.23987
	B1	0.01493	0.03182	0.29967
	B1	0.02061	0.03741	0.30451
	B2	0.01545	0.03208	0.29808
	B2	0.02236	0.03895	0.30324

sky130_fd_sc_hs__a32o_2	**A1**	0.02920	0.03720	0.23156
	A1	0.03810	0.04597	0.23972
	A2	0.03117	0.03869	0.23682
	A2	0.04143	0.04864	0.24486
	A3	0.03155	0.03743	0.23191
	A3	0.04341	0.04924	0.24064
	B1	0.02748	0.04165	0.30539
	B1	0.03338	0.04749	0.30891
	B2	0.02908	0.04244	0.30257
	B2	0.03650	0.04981	0.30770
sky130_fd_sc_hs__a32o_4	**A1**	0.06377	0.08034	0.51949
	A1	0.08033	0.09672	0.53615
	A2	0.06512	0.08154	0.52328
	A2	0.08476	0.10102	0.54206
	A3	0.06983	0.08498	0.55632
	A3	0.09193	0.10693	0.57500
	B1	0.06005	0.08604	0.56787
	B1	0.07073	0.09657	0.57660
	B2	0.05999	0.08796	0.59478
	B2	0.07446	0.10230	0.60561

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)**	0.00429	0.00412	0.01021
	(A2 * A3 * B1 * B2 * X)	0.00001	-0.00015	0.00598
	(A2 * !A3 * B1 * B2 * X)	0.01190	0.01190	0.01196
	(A2 * !A3 * B1 * B2 * X)	0.00787	0.00784	0.00792
	(A2 * !A3 * B1 * !B2 * !X)	0.00534	0.00534	0.00527
	(A2 * !A3 * B1 * !B2 * !X)	0.00218	0.00219	0.00204
	(A2 * !A3 * !B1 * !X)	0.00538	0.00538	0.00531
	(A2 * !A3 * !B1 * !X)	0.00222	0.00223	0.00208
	(!A2 * B1 * B2 * X)	0.01192	0.01192	0.01197
	(!A2 * B1 * B2 * X)	0.00787	0.00782	0.00790
	(!A2 * B1 * !B2 * !X)	0.00536	0.00534	0.00528
	(!A2 * B1 * !B2 * !X)	0.00213	0.00213	0.00203
	(!A2 * !B1 * !X)	0.00539	0.00538	0.00532
	(!A2 * !B1 * !X)	0.00216	0.00217	0.00207
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00461	0.00445	0.01054
	(A2 * A3 * B1 * B2 * X)	0.00010	-0.00005	0.00608
	(A2 * !A3 * B1 * B2 * X)	0.01222	0.01222	0.01228
	(A2 * !A3 * B1 * B2 * X)	0.00796	0.00793	0.00802
	(A2 * !A3 * B1 * !B2 * !X)	0.00979	0.00978	0.00971
	(A2 * !A3 * B1 * !B2 * !X)	0.00655	0.00655	0.00639
	(A2 * !A3 * !B1 * !X)	0.00981	0.00980	0.00973
	(A2 * !A3 * !B1 * !X)	0.00656	0.00657	0.00640
	(!A2 * B1 * B2 * X)	0.01226	0.01225	0.01230
	(!A2 * B1 * B2 * X)	0.00798	0.00793	0.00801
	(!A2 * B1 * !B2 * !X)	0.00978	0.00978	0.00972
	(!A2 * B1 * !B2 * !X)	0.00646	0.00644	0.00636
	(!A2 * !B1 * !X)	0.00980	0.00980	0.00974
	(!A2 * !B1 * !X)	0.00647	0.00645	0.00638

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00840	0.00817	0.02022
	(A2 * A3 * B1 * B2 * X)	0.00019	-0.00008	0.01207
	(A2 * !A3 * B1 * B2 * X)	0.02355	0.02355	0.02367
	(A2 * !A3 * B1 * B2 * X)	0.01585	0.01578	0.01596
	(A2 * !A3 * B1 * !B2 * !X)	0.01966	0.01965	0.01946
	(A2 * !A3 * B1 * !B2 * !X)	0.01367	0.01369	0.01331
	(A2 * !A3 * !B1 * !X)	0.01974	0.01973	0.01954
	(A2 * !A3 * !B1 * !X)	0.01376	0.01377	0.01339
	(!A2 * B1 * B2 * X)	0.02370	0.02369	0.02378
	(!A2 * B1 * B2 * X)	0.01593	0.01586	0.01598
	(!A2 * B1 * !B2 * !X)	0.01960	0.01961	0.01945
	(!A2 * B1 * !B2 * !X)	0.01352	0.01345	0.01329
	(!A2 * !B1 * !X)	0.01968	0.01968	0.01953
	(!A2 * !B1 * !X)	0.01359	0.01353	0.01337

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)**	0.00821	0.00796	0.00607
	(A2 * A3 * B1 * B2 * X)	0.01248	0.01224	0.01034
	(A2 * !A3 * B1 * B2 * X)	0.00850	0.00842	0.00838
	(A2 * !A3 * B1 * B2 * X)	0.01251	0.01252	0.01243
	(A2 * !A3 * B1 * !B2 * !X)	0.00428	0.00427	0.00429
	(A2 * !A3 * B1 * !B2 * !X)	0.00743	0.00745	0.00744
	(A2 * !A3 * !B1 * !X)	0.00432	0.00431	0.00433
	(A2 * !A3 * !B1 * !X)	0.00747	0.00749	0.00748
	(!A2 * B1 * B2 * X)	0.00839	0.00835	0.00832
	(!A2 * B1 * B2 * X)	0.01246	0.01249	0.01239
	(!A2 * B1 * !B2 * !X)	0.00422	0.00421	0.00424
	(!A2 * B1 * !B2 * !X)	0.00744	0.00748	0.00745
	(!A2 * !B1 * !X)	0.00426	0.00425	0.00428
	(!A2 * !B1 * !X)	0.00747	0.00752	0.00749
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00809	0.00783	0.00594
	(A2 * A3 * B1 * B2 * X)	0.01257	0.01234	0.01044
	(A2 * !A3 * B1 * B2 * X)	0.00838	0.00829	0.00824
	(A2 * !A3 * B1 * B2 * X)	0.01260	0.01261	0.01252
	(A2 * !A3 * B1 * !B2 * !X)	0.00869	0.00868	0.00870
	(A2 * !A3 * B1 * !B2 * !X)	0.01196	0.01198	0.01197
	(A2 * !A3 * !B1 * !X)	0.00871	0.00870	0.00871
	(A2 * !A3 * !B1 * !X)	0.01197	0.01199	0.01199
	(!A2 * B1 * B2 * X)	0.00827	0.00823	0.00819
	(!A2 * B1 * B2 * X)	0.01256	0.01258	0.01249
	(!A2 * B1 * !B2 * !X)	0.00864	0.00863	0.00865
	(!A2 * B1 * !B2 * !X)	0.01197	0.01199	0.01197
	(!A2 * !B1 * !X)	0.00866	0.00865	0.00866
	(!A2 * !B1 * !X)	0.01198	0.01200	0.01199

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.01679	0.01628	0.01254
	(A2 * A3 * B1 * B2 * X)	0.02499	0.02456	0.02077
	(A2 * !A3 * B1 * B2 * X)	0.01747	0.01730	0.01718
	(A2 * !A3 * B1 * B2 * X)	0.02508	0.02510	0.02496
	(A2 * !A3 * B1 * !B2 * !X)	0.01771	0.01769	0.01772
	(A2 * !A3 * B1 * !B2 * !X)	0.02372	0.02380	0.02374
	(A2 * !A3 * !B1 * !X)	0.01779	0.01777	0.01781
	(A2 * !A3 * !B1 * !X)	0.02380	0.02388	0.02382
	(!A2 * B1 * B2 * X)	0.01726	0.01721	0.01715
	(!A2 * B1 * B2 * X)	0.02506	0.02509	0.02495
	(!A2 * B1 * !B2 * !X)	0.01765	0.01763	0.01768
	(!A2 * B1 * !B2 * !X)	0.02375	0.02378	0.02376
	(!A2 * !B1 * !X)	0.01774	0.01772	0.01776
	(!A2 * !B1 * !X)	0.02380	0.02386	0.02384

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)**	0.00425	0.00409	0.01015
	(A1 * A3 * B1 * B2 * X)	0.00000	-0.00015	0.00596
	(A1 * !A3 * B1 * B2 * X)	0.01189	0.01189	0.01194
	(A1 * !A3 * B1 * B2 * X)	0.00787	0.00784	0.00791
	(A1 * !A3 * B1 * !B2 * !X)	0.00536	0.00537	0.00533
	(A1 * !A3 * B1 * !B2 * !X)	0.00227	0.00225	0.00226
	(A1 * !A3 * !B1 * !X)	0.00540	0.00541	0.00537
	(A1 * !A3 * !B1 * !X)	0.00231	0.00229	0.00230
	(!A1 * A3 * B1 * B2 * X)	0.01192	0.01191	0.01195
	(!A1 * A3 * B1 * B2 * X)	0.00789	0.00786	0.00792
	(!A1 * A3 * B1 * !B2 * !X)	0.00651	0.00653	0.00649
	(!A1 * A3 * B1 * !B2 * !X)	0.00245	0.00243	0.00242
	(!A1 * A3 * !B1 * !X)	0.00655	0.00657	0.00653
	(!A1 * A3 * !B1 * !X)	0.00249	0.00247	0.00246
	(!A1 * !A3 * B1 * B2 * X)	0.01129	0.01129	0.01128
	(!A1 * !A3 * B1 * B2 * X)	0.00801	0.00798	0.00801
	(!A1 * !A3 * B1 * !B2 * !X)	0.00550	0.00550	0.00548
	(!A1 * !A3 * B1 * !B2 * !X)	0.00226	0.00225	0.00226
	(!A1 * !A3 * !B1 * !X)	0.00554	0.00554	0.00552
	(!A1 * !A3 * !B1 * !X)	0.00230	0.00229	0.00230

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00457	0.00441	0.01049
	(A1 * A3 * B1 * B2 * X)	0.00010	-0.00005	0.00606
	(A1 * !A3 * B1 * B2 * X)	0.01220	0.01220	0.01226
	(A1 * !A3 * B1 * B2 * X)	0.00796	0.00793	0.00800
	(A1 * !A3 * B1 * !B2 * !X)	0.00985	0.00986	0.00984
	(A1 * !A3 * B1 * !B2 * !X)	0.00673	0.00671	0.00672
	(A1 * !A3 * !B1 * !X)	0.00987	0.00988	0.00986
	(A1 * !A3 * !B1 * !X)	0.00673	0.00672	0.00674
	(!A1 * A3 * B1 * B2 * X)	0.01225	0.01225	0.01228
	(!A1 * A3 * B1 * B2 * X)	0.00800	0.00796	0.00802
	(!A1 * A3 * B1 * !B2 * !X)	0.01109	0.01112	0.01109
	(!A1 * A3 * B1 * !B2 * !X)	0.00682	0.00679	0.00680
	(!A1 * A3 * !B1 * !X)	0.01111	0.01114	0.01110
	(!A1 * A3 * !B1 * !X)	0.00684	0.00681	0.00682
	(!A1 * !A3 * B1 * B2 * X)	0.01149	0.01149	0.01148
	(!A1 * !A3 * B1 * B2 * X)	0.00811	0.00809	0.00811
	(!A1 * !A3 * B1 * !B2 * !X)	0.01005	0.01006	0.01005
	(!A1 * !A3 * B1 * !B2 * !X)	0.00672	0.00671	0.00672
	(!A1 * !A3 * !B1 * !X)	0.01007	0.01007	0.01006
	(!A1 * !A3 * !B1 * !X)	0.00674	0.00673	0.00674

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00890	0.00846	0.02053
	(A1 * A3 * B1 * B2 * X)	0.00008	-0.00038	0.01180
	(A1 * !A3 * B1 * B2 * X)	0.02383	0.02383	0.02396
	(A1 * !A3 * B1 * B2 * X)	0.01549	0.01539	0.01558
	(A1 * !A3 * B1 * !B2 * !X)	0.01984	0.01986	0.01978
	(A1 * !A3 * B1 * !B2 * !X)	0.01324	0.01319	0.01323
	(A1 * !A3 * !B1 * !X)	0.01992	0.01994	0.01986
	(A1 * !A3 * !B1 * !X)	0.01331	0.01327	0.01331
	(!A1 * A3 * B1 * B2 * X)	0.02386	0.02383	0.02395
	(!A1 * A3 * B1 * B2 * X)	0.01550	0.01539	0.01555
	(!A1 * A3 * B1 * !B2 * !X)	0.02206	0.02211	0.02202
	(!A1 * A3 * B1 * !B2 * !X)	0.01362	0.01356	0.01355
	(!A1 * A3 * !B1 * !X)	0.02214	0.02219	0.02210
	(!A1 * A3 * !B1 * !X)	0.01370	0.01364	0.01363
	(!A1 * !A3 * B1 * B2 * X)	0.02277	0.02275	0.02274
	(!A1 * !A3 * B1 * B2 * X)	0.01572	0.01568	0.01575
	(!A1 * !A3 * B1 * !B2 * !X)	0.02015	0.02016	0.02013
	(!A1 * !A3 * B1 * !B2 * !X)	0.01322	0.01319	0.01322
	(!A1 * !A3 * !B1 * !X)	0.02023	0.02024	0.02021
	(!A1 * !A3 * !B1 * !X)	0.01330	0.01327	0.01330

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)**	0.00822	0.00797	0.00608
	(A1 * A3 * B1 * B2 * X)	0.01244	0.01221	0.01032
	(A1 * !A3 * B1 * B2 * X)	0.00844	0.00841	0.00838
	(A1 * !A3 * B1 * B2 * X)	0.01247	0.01249	0.01242
	(A1 * !A3 * B1 * !B2 * !X)	0.00420	0.00420	0.00420
	(A1 * !A3 * B1 * !B2 * !X)	0.00730	0.00731	0.00723
	(A1 * !A3 * !B1 * !X)	0.00425	0.00424	0.00423
	(A1 * !A3 * !B1 * !X)	0.00731	0.00735	0.00727
	(!A1 * A3 * B1 * B2 * X)	0.00843	0.00840	0.00837
	(!A1 * A3 * B1 * B2 * X)	0.01247	0.01248	0.01241
	(!A1 * A3 * B1 * !B2 * !X)	0.00341	0.00317	0.00326
	(!A1 * A3 * B1 * !B2 * !X)	0.00749	0.00729	0.00731
	(!A1 * A3 * !B1 * !X)	0.00345	0.00321	0.00330
	(!A1 * A3 * !B1 * !X)	0.00753	0.00733	0.00735
	(!A1 * !A3 * B1 * B2 * X)	0.00917	0.00916	0.00922
	(!A1 * !A3 * B1 * B2 * X)	0.01253	0.01254	0.01252
	(!A1 * !A3 * B1 * !B2 * !X)	0.00392	0.00392	0.00390
	(!A1 * !A3 * B1 * !B2 * !X)	0.00723	0.00726	0.00717
	(!A1 * !A3 * !B1 * !X)	0.00396	0.00396	0.00394
	(!A1 * !A3 * !B1 * !X)	0.00727	0.00730	0.00721

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00809	0.00783	0.00596
	(A1 * A3 * B1 * B2 * X)	0.01254	0.01231	0.01042
	(A1 * !A3 * B1 * B2 * X)	0.00830	0.00828	0.00824
	(A1 * !A3 * B1 * B2 * X)	0.01257	0.01258	0.01250
	(A1 * !A3 * B1 * !B2 * !X)	0.00858	0.00857	0.00856
	(A1 * !A3 * B1 * !B2 * !X)	0.01172	0.01175	0.01166
	(A1 * !A3 * !B1 * !X)	0.00860	0.00859	0.00858
	(A1 * !A3 * !B1 * !X)	0.01173	0.01177	0.01168
	(!A1 * A3 * B1 * B2 * X)	0.00830	0.00826	0.00824
	(!A1 * A3 * B1 * B2 * X)	0.01257	0.01258	0.01250
	(!A1 * A3 * B1 * !B2 * !X)	0.00766	0.00739	0.00742
	(!A1 * A3 * B1 * !B2 * !X)	0.01196	0.01173	0.01169
	(!A1 * A3 * !B1 * !X)	0.00768	0.00740	0.00744
	(!A1 * A3 * !B1 * !X)	0.01198	0.01175	0.01170
	(!A1 * !A3 * B1 * B2 * X)	0.00913	0.00913	0.00920
	(!A1 * !A3 * B1 * B2 * X)	0.01263	0.01264	0.01261
	(!A1 * !A3 * B1 * !B2 * !X)	0.00826	0.00826	0.00824
	(!A1 * !A3 * B1 * !B2 * !X)	0.01171	0.01173	0.01162
	(!A1 * !A3 * !B1 * !X)	0.00828	0.00828	0.00825
	(!A1 * !A3 * !B1 * !X)	0.01173	0.01175	0.01164

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.01669	0.01616	0.01237
	(A1 * A3 * B1 * B2 * X)	0.02549	0.02502	0.02118
	(A1 * !A3 * B1 * B2 * X)	0.01714	0.01708	0.01696
	(A1 * !A3 * B1 * B2 * X)	0.02550	0.02551	0.02535
	(A1 * !A3 * B1 * !B2 * !X)	0.01743	0.01741	0.01740
	(A1 * !A3 * B1 * !B2 * !X)	0.02399	0.02405	0.02387
	(A1 * !A3 * !B1 * !X)	0.01751	0.01749	0.01748
	(A1 * !A3 * !B1 * !X)	0.02407	0.02413	0.02395
	(!A1 * A3 * B1 * B2 * X)	0.01705	0.01698	0.01690
	(!A1 * A3 * B1 * B2 * X)	0.02546	0.02548	0.02529
	(!A1 * A3 * B1 * !B2 * !X)	0.01594	0.01540	0.01559
	(!A1 * A3 * B1 * !B2 * !X)	0.02443	0.02397	0.02401
	(!A1 * A3 * !B1 * !X)	0.01603	0.01548	0.01567
	(!A1 * A3 * !B1 * !X)	0.02451	0.02406	0.02409
	(!A1 * !A3 * B1 * B2 * X)	0.01838	0.01836	0.01847
	(!A1 * !A3 * B1 * B2 * X)	0.02560	0.02561	0.02553
	(!A1 * !A3 * B1 * !B2 * !X)	0.01683	0.01680	0.01674
	(!A1 * !A3 * B1 * !B2 * !X)	0.02403	0.02400	0.02378
	(!A1 * !A3 * !B1 * !X)	0.01691	0.01688	0.01682
	(!A1 * !A3 * !B1 * !X)	0.02411	0.02408	0.02386

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)**	0.00439	0.00431	0.01037
	(A1 * A2 * B1 * B2 * X)	-0.00001	-0.00014	0.00600
	(A1 * !A2 * B1 * !B2 * !X)	0.00649	0.00651	0.00648
	(A1 * !A2 * B1 * !B2 * !X)	0.00225	0.00223	0.00223
	(A1 * !A2 * !B1 * !X)	0.00653	0.00655	0.00652
	(A1 * !A2 * !B1 * !X)	0.00229	0.00227	0.00227
	(!A2 * B1 * B2 * X)	0.01209	0.01210	0.01214
	(!A2 * B1 * B2 * X)	0.00788	0.00785	0.00793
	(!A1 * A2 * B1 * B2 * X)	0.01207	0.01208	0.01213
	(!A1 * A2 * B1 * B2 * X)	0.00791	0.00788	0.00796
	(!A1 * A2 * B1 * !B2 * !X)	0.00654	0.00654	0.00651
	(!A1 * A2 * B1 * !B2 * !X)	0.00228	0.00227	0.00227
	(!A1 * A2 * !B1 * !X)	0.00657	0.00659	0.00655
	(!A1 * A2 * !B1 * !X)	0.00232	0.00231	0.00231
	(!A1 * !A2 * B1 * !B2 * !X)	0.00634	0.00636	0.00634
	(!A1 * !A2 * B1 * !B2 * !X)	0.00213	0.00211	0.00212
	(!A1 * !A2 * !B1 * !X)	0.00638	0.00640	0.00638
	(!A1 * !A2 * !B1 * !X)	0.00217	0.00215	0.00216

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00474	0.00462	0.01070
	(A1 * A2 * B1 * B2 * X)	0.00011	-0.00003	0.00608
	(A1 * !A2 * B1 * !B2 * !X)	0.01112	0.01115	0.01112
	(A1 * !A2 * B1 * !B2 * !X)	0.00665	0.00663	0.00665
	(A1 * !A2 * !B1 * !X)	0.01114	0.01117	0.01114
	(A1 * !A2 * !B1 * !X)	0.00667	0.00665	0.00666
	(!A2 * B1 * B2 * X)	0.01243	0.01244	0.01248
	(!A2 * B1 * B2 * X)	0.00797	0.00794	0.00802
	(!A1 * A2 * B1 * B2 * X)	0.01242	0.01241	0.01248
	(!A1 * A2 * B1 * B2 * X)	0.00801	0.00799	0.00805
	(!A1 * A2 * B1 * !B2 * !X)	0.01112	0.01114	0.01112
	(!A1 * A2 * B1 * !B2 * !X)	0.00665	0.00664	0.00665
	(!A1 * A2 * !B1 * !X)	0.01114	0.01116	0.01114
	(!A1 * A2 * !B1 * !X)	0.00667	0.00666	0.00667
	(!A1 * !A2 * B1 * !B2 * !X)	0.01102	0.01103	0.01103
	(!A1 * !A2 * B1 * !B2 * !X)	0.00658	0.00657	0.00658
	(!A1 * !A2 * !B1 * !X)	0.01104	0.01106	0.01105
	(!A1 * !A2 * !B1 * !X)	0.00660	0.00658	0.00659

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00877	0.00840	0.02045
	(A1 * A2 * B1 * B2 * X)	0.00016	-0.00025	0.01191
	(A1 * !A2 * B1 * !B2 * !X)	0.02218	0.02222	0.02215
	(A1 * !A2 * B1 * !B2 * !X)	0.01392	0.01389	0.01389
	(A1 * !A2 * !B1 * !X)	0.02226	0.02230	0.02223
	(A1 * !A2 * !B1 * !X)	0.01400	0.01397	0.01397
	(!A2 * B1 * B2 * X)	0.02386	0.02386	0.02396
	(!A2 * B1 * B2 * X)	0.01570	0.01564	0.01577
	(!A1 * A2 * B1 * B2 * X)	0.02370	0.02370	0.02382
	(!A1 * A2 * B1 * B2 * X)	0.01561	0.01554	0.01572
	(!A1 * A2 * B1 * !B2 * !X)	0.02224	0.02226	0.02221
	(!A1 * A2 * B1 * !B2 * !X)	0.01399	0.01398	0.01396
	(!A1 * A2 * !B1 * !X)	0.02232	0.02234	0.02230
	(!A1 * A2 * !B1 * !X)	0.01407	0.01406	0.01404
	(!A1 * !A2 * B1 * !B2 * !X)	0.02183	0.02186	0.02185
	(!A1 * !A2 * B1 * !B2 * !X)	0.01368	0.01366	0.01367
	(!A1 * !A2 * !B1 * !X)	0.02191	0.02194	0.02193
	(!A1 * !A2 * !B1 * !X)	0.01376	0.01374	0.01375

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)**	0.00803	0.00778	0.00590
	(A1 * A2 * B1 * B2 * X)	0.01244	0.01221	0.01031
	(A1 * !A2 * B1 * !B2 * !X)	0.00331	0.00315	0.00320
	(A1 * !A2 * B1 * !B2 * !X)	0.00759	0.00746	0.00741
	(A1 * !A2 * !B1 * !X)	0.00334	0.00319	0.00324
	(A1 * !A2 * !B1 * !X)	0.00763	0.00750	0.00745
	(!A2 * B1 * B2 * X)	0.00821	0.00820	0.00816
	(!A2 * B1 * B2 * X)	0.01245	0.01244	0.01237
	(!A1 * A2 * B1 * B2 * X)	0.00832	0.00826	0.00820
	(!A1 * A2 * B1 * B2 * X)	0.01247	0.01248	0.01240
	(!A1 * A2 * B1 * !B2 * !X)	0.00343	0.00320	0.00324
	(!A1 * A2 * B1 * !B2 * !X)	0.00767	0.00751	0.00746
	(!A1 * A2 * !B1 * !X)	0.00346	0.00324	0.00328
	(!A1 * A2 * !B1 * !X)	0.00771	0.00755	0.00750
	(!A1 * !A2 * B1 * !B2 * !X)	0.00313	0.00306	0.00307
	(!A1 * !A2 * B1 * !B2 * !X)	0.00735	0.00731	0.00728
	(!A1 * !A2 * !B1 * !X)	0.00317	0.00309	0.00311
	(!A1 * !A2 * !B1 * !X)	0.00739	0.00735	0.00732

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00788	0.00762	0.00575
	(A1 * A2 * B1 * B2 * X)	0.01253	0.01230	0.01041
	(A1 * !A2 * B1 * !B2 * !X)	0.00755	0.00737	0.00737
	(A1 * !A2 * B1 * !B2 * !X)	0.01203	0.01191	0.01183
	(A1 * !A2 * !B1 * !X)	0.00756	0.00739	0.00739
	(A1 * !A2 * !B1 * !X)	0.01204	0.01193	0.01184
	(!A2 * B1 * B2 * X)	0.00809	0.00806	0.00802
	(!A2 * B1 * B2 * X)	0.01254	0.01254	0.01248
	(!A1 * A2 * B1 * B2 * X)	0.00820	0.00813	0.00807
	(!A1 * A2 * B1 * B2 * X)	0.01257	0.01259	0.01251
	(!A1 * A2 * B1 * !B2 * !X)	0.00765	0.00741	0.00740
	(!A1 * A2 * B1 * !B2 * !X)	0.01211	0.01193	0.01184
	(!A1 * A2 * !B1 * !X)	0.00767	0.00743	0.00741
	(!A1 * A2 * !B1 * !X)	0.01213	0.01195	0.01186
	(!A1 * !A2 * B1 * !B2 * !X)	0.00737	0.00728	0.00729
	(!A1 * !A2 * B1 * !B2 * !X)	0.01179	0.01178	0.01174
	(!A1 * !A2 * !B1 * !X)	0.00739	0.00730	0.00731
	(!A1 * !A2 * !B1 * !X)	0.01181	0.01179	0.01176

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.01665	0.01613	0.01237
	(A1 * A2 * B1 * B2 * X)	0.02526	0.02480	0.02100
	(A1 * !A2 * B1 * !B2 * !X)	0.01575	0.01530	0.01531
	(A1 * !A2 * B1 * !B2 * !X)	0.02401	0.02367	0.02351
	(A1 * !A2 * !B1 * !X)	0.01584	0.01539	0.01539
	(A1 * !A2 * !B1 * !X)	0.02409	0.02376	0.02359
	(!A2 * B1 * B2 * X)	0.01717	0.01709	0.01702
	(!A2 * B1 * B2 * X)	0.02532	0.02537	0.02522
	(!A1 * A2 * B1 * B2 * X)	0.01728	0.01714	0.01700
	(!A1 * A2 * B1 * B2 * X)	0.02531	0.02534	0.02516
	(!A1 * A2 * B1 * !B2 * !X)	0.01597	0.01539	0.01541
	(!A1 * A2 * B1 * !B2 * !X)	0.02423	0.02375	0.02361
	(!A1 * A2 * !B1 * !X)	0.01605	0.01547	0.01549
	(!A1 * A2 * !B1 * !X)	0.02431	0.02383	0.02369
	(!A1 * !A2 * B1 * !B2 * !X)	0.01527	0.01504	0.01504
	(!A1 * !A2 * B1 * !B2 * !X)	0.02337	0.02329	0.02322
	(!A1 * !A2 * !B1 * !X)	0.01535	0.01512	0.01512
	(!A1 * !A2 * !B1 * !X)	0.02345	0.02337	0.02330

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)**	0.00224	0.00231	0.00352
	(A1 * A2 * A3 * B2 * X)	-0.00026	-0.00024	0.00097
	(A1 * A2 * A3 * !B2 * X)	0.00972	0.00975	0.00975
	(A1 * A2 * A3 * !B2 * X)	0.00682	0.00680	0.00684
	(A1 * A2 * !A3 * !B2 * !X)	0.00532	0.00530	0.00524
	(A1 * A2 * !A3 * !B2 * !X)	0.00215	0.00213	0.00205
	(A1 * !A2 * !B2 * !X)	0.00532	0.00530	0.00523
	(A1 * !A2 * !B2 * !X)	0.00215	0.00213	0.00205
	(!A1 * !B2 * !X)	0.00536	0.00534	0.00527
	(!A1 * !B2 * !X)	0.00219	0.00217	0.00209
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00257	0.00264	0.00386
	(A1 * A2 * A3 * B2 * X)	-0.00016	-0.00014	0.00108
	(A1 * A2 * A3 * !B2 * X)	0.01001	0.01002	0.01004
	(A1 * A2 * A3 * !B2 * X)	0.00691	0.00690	0.00692
	(A1 * A2 * !A3 * !B2 * !X)	0.00982	0.00980	0.00974
	(A1 * A2 * !A3 * !B2 * !X)	0.00655	0.00653	0.00644
	(A1 * !A2 * !B2 * !X)	0.00980	0.00979	0.00973
	(A1 * !A2 * !B2 * !X)	0.00653	0.00651	0.00642
	(!A1 * !B2 * !X)	0.00982	0.00981	0.00975
	(!A1 * !B2 * !X)	0.00655	0.00653	0.00644
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00457	0.00471	0.00708
	(A1 * A2 * A3 * B2 * X)	-0.00024	-0.00023	0.00212
	(A1 * A2 * A3 * !B2 * X)	0.01961	0.01964	0.01967
	(A1 * A2 * A3 * !B2 * X)	0.01381	0.01378	0.01385
	(A1 * A2 * !A3 * !B2 * !X)	0.01953	0.01948	0.01933
	(A1 * A2 * !A3 * !B2 * !X)	0.01322	0.01317	0.01299
	(A1 * !A2 * !B2 * !X)	0.01955	0.01950	0.01935
	(A1 * !A2 * !B2 * !X)	0.01323	0.01319	0.01302
	(!A1 * !B2 * !X)	0.01962	0.01957	0.01942
	(!A1 * !B2 * !X)	0.01330	0.01326	0.01308

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)	0.00731	0.00701	0.00309
	(A1 * A2 * A3 * B2 * X)	0.00993	0.00963	0.00570
	(A1 * A2 * A3 * !B2 * X)	0.00605	0.00601	0.00560
	(A1 * A2 * A3 * !B2 * X)	0.00896	0.00893	0.00851
	(A1 * A2 * !A3 * !B2 * !X)	0.00428	0.00424	0.00427
	(A1 * A2 * !A3 * !B2 * !X)	0.00742	0.00745	0.00742
	(A1 * !A2 * !B2 * !X)	0.00429	0.00425	0.00428
	(A1 * !A2 * !B2 * !X)	0.00744	0.00745	0.00743
	(!A1 * !B2 * !X)	0.00432	0.00429	0.00432
	(!A1 * !B2 * !X)	0.00747	0.00749	0.00746
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	0.00718	0.00688	0.00296
	(A1 * A2 * A3 * B2 * X)	0.01003	0.00973	0.00580
	(A1 * A2 * A3 * !B2 * X)	0.00596	0.00591	0.00551
	(A1 * A2 * A3 * !B2 * X)	0.00908	0.00905	0.00863
	(A1 * A2 * !A3 * !B2 * !X)	0.00867	0.00862	0.00865
	(A1 * A2 * !A3 * !B2 * !X)	0.01194	0.01195	0.01192
	(A1 * !A2 * !B2 * !X)	0.00867	0.00862	0.00864
	(A1 * !A2 * !B2 * !X)	0.01194	0.01193	0.01191
	(!A1 * !B2 * !X)	0.00868	0.00864	0.00865
	(!A1 * !B2 * !X)	0.01195	0.01194	0.01193

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.01499	0.01437	0.00655
	(A1 * A2 * A3 * B2 * X)	0.02008	0.01951	0.01167
	(A1 * A2 * A3 * !B2 * X)	0.01234	0.01226	0.01145
	(A1 * A2 * A3 * !B2 * X)	0.01817	0.01811	0.01726
	(A1 * A2 * !A3 * !B2 * !X)	0.01784	0.01772	0.01778
	(A1 * A2 * !A3 * !B2 * !X)	0.02411	0.02408	0.02403
	(A1 * !A2 * !B2 * !X)	0.01783	0.01772	0.01778
	(A1 * !A2 * !B2 * !X)	0.02410	0.02408	0.02403
	(!A1 * !B2 * !X)	0.01794	0.01782	0.01788
	(!A1 * !B2 * !X)	0.02421	0.02418	0.02413

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)**	0.00221	0.00226	0.00350
	(A1 * A2 * A3 * B1 * X)	-0.00032	-0.00030	0.00093
	(A1 * A2 * A3 * !B1 * X)	0.00974	0.00975	0.00975
	(A1 * A2 * A3 * !B1 * X)	0.00679	0.00679	0.00682
	(A1 * A2 * !A3 * !B1 * !X)	0.00663	0.00665	0.00661
	(A1 * A2 * !A3 * !B1 * !X)	0.00256	0.00253	0.00251
	(A1 * !A2 * !B1 * !X)	0.00663	0.00666	0.00661
	(A1 * !A2 * !B1 * !X)	0.00256	0.00252	0.00251
	(!A1 * !B1 * !X)	0.00667	0.00670	0.00665
	(!A1 * !B1 * !X)	0.00260	0.00256	0.00255

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00260	0.00266	0.00391
	(A1 * A2 * A3 * B1 * X)	-0.00023	-0.00021	0.00103
	(A1 * A2 * A3 * !B1 * X)	0.01011	0.01013	0.01013
	(A1 * A2 * A3 * !B1 * X)	0.00689	0.00689	0.00691
	(A1 * A2 * !A3 * !B1 * !X)	0.01127	0.01129	0.01125
	(A1 * A2 * !A3 * !B1 * !X)	0.00690	0.00688	0.00688
	(A1 * !A2 * !B1 * !X)	0.01125	0.01127	0.01123
	(A1 * !A2 * !B1 * !X)	0.00689	0.00686	0.00687
	(!A1 * !B1 * !X)	0.01127	0.01129	0.01125
	(!A1 * !B1 * !X)	0.00691	0.00688	0.00689
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00561	0.00571	0.00812
	(A1 * A2 * A3 * B1 * X)	-0.00035	-0.00031	0.00203
	(A1 * A2 * A3 * !B1 * X)	0.02067	0.02077	0.02072
	(A1 * A2 * A3 * !B1 * X)	0.01373	0.01369	0.01377
	(A1 * A2 * !A3 * !B1 * !X)	0.02311	0.02312	0.02303
	(A1 * A2 * !A3 * !B1 * !X)	0.01383	0.01377	0.01373
	(A1 * !A2 * !B1 * !X)	0.02313	0.02316	0.02305
	(A1 * !A2 * !B1 * !X)	0.01385	0.01378	0.01376
	(!A1 * !B1 * !X)	0.02320	0.02321	0.02312
	(!A1 * !B1 * !X)	0.01392	0.01386	0.01382

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)**	0.00732	0.00701	0.00310
	(A1 * A2 * A3 * B1 * X)	0.00995	0.00966	0.00573
	(A1 * A2 * A3 * !B1 * X)	0.00604	0.00601	0.00560
	(A1 * A2 * A3 * !B1 * X)	0.00899	0.00895	0.00853
	(A1 * A2 * !A3 * !B1 * !X)	0.00321	0.00306	0.00314
	(A1 * A2 * !A3 * !B1 * !X)	0.00733	0.00719	0.00720
	(A1 * !A2 * !B1 * !X)	0.00323	0.00306	0.00314
	(A1 * !A2 * !B1 * !X)	0.00734	0.00720	0.00721
	(!A1 * !B1 * !X)	0.00326	0.00310	0.00318
	(!A1 * !B1 * !X)	0.00737	0.00723	0.00725
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00711	0.00681	0.00289
	(A1 * A2 * A3 * B1 * X)	0.01005	0.00976	0.00582
	(A1 * A2 * A3 * !B1 * X)	0.00587	0.00583	0.00543
	(A1 * A2 * A3 * !B1 * X)	0.00910	0.00907	0.00864
	(A1 * A2 * !A3 * !B1 * !X)	0.00747	0.00729	0.00728
	(A1 * A2 * !A3 * !B1 * !X)	0.01186	0.01169	0.01163
	(A1 * !A2 * !B1 * !X)	0.00747	0.00728	0.00728
	(A1 * !A2 * !B1 * !X)	0.01186	0.01169	0.01162
	(!A1 * !B1 * !X)	0.00748	0.00728	0.00729
	(!A1 * !B1 * !X)	0.01187	0.01170	0.01163
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.01395	0.01332	0.00550
	(A1 * A2 * A3 * B1 * X)	0.02016	0.01960	0.01175
	(A1 * A2 * A3 * !B1 * X)	0.01128	0.01116	0.01039
	(A1 * A2 * A3 * !B1 * X)	0.01823	0.01820	0.01732
	(A1 * A2 * !A3 * !B1 * !X)	0.01486	0.01442	0.01458
	(A1 * A2 * !A3 * !B1 * !X)	0.02416	0.02373	0.02381
	(A1 * !A2 * !B1 * !X)	0.01485	0.01441	0.01457
	(A1 * !A2 * !B1 * !X)	0.02415	0.02373	0.02381
	(!A1 * !B1 * !X)	0.01495	0.01451	0.01467
	(!A1 * !B1 * !X)	0.02425	0.02382	0.02390

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00297	0.00292	0.00295	0.00295	0.76683
sky130_fd_sc_hs__a41oi_2	0.00562	0.00555	0.00545	0.00544	0.00432	1.42227
sky130_fd_sc_hs__a41oi_4	0.01099	0.01076	0.01088	0.01078	0.00855	2.38430

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	289.32600	1116.03000
sky130_fd_sc_hs__a41oi_2	0.00000	572.25300	2231.80000
sky130_fd_sc_hs__a41oi_4	0.00000	1140.98000	4460.50000

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)	0.05662	0.63475	7.70005
	A2->Y (FR)	0.07009	0.66065	7.89646
	A3->Y (FR)	0.07646	0.64860	7.66586
	A4->Y (FR)	0.07601	0.61879	7.29266
	B1->Y (FR)	0.04864	0.72750	9.12109
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.04655	0.53255	7.67299
	A2->Y (FR)	0.05821	0.51996	7.35481
	A3->Y (FR)	0.06805	0.53644	7.46449
	A4->Y (FR)	0.07746	0.55129	7.52985
	B1->Y (FR)	0.05430	0.59634	8.42162
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.04317	0.42506	6.97587
	A2->Y (FR)	0.05808	0.42195	6.74177
	A3->Y (FR)	0.07106	0.44631	6.97335
	A4->Y (FR)	0.08337	0.47366	7.22802
	B1->Y (FR)	0.06080	0.54212	8.45912

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.04553	0.51426	6.20435
	A2->Y (RF)	0.05357	0.48813	5.74467
	A3->Y (RF)	0.05851	0.44913	5.14430
	A4->Y (RF)	0.06211	0.41392	4.58319
	B1->Y (RF)	0.01594	0.26339	3.20895
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.04413	0.48801	6.94986
	A2->Y (RF)	0.05488	0.46486	6.49884
	A3->Y (RF)	0.06076	0.40638	5.57974
	A4->Y (RF)	0.06527	0.37374	5.02350
	B1->Y (RF)	0.01815	0.37448	5.59810
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.04300	0.41590	6.67784
	A2->Y (RF)	0.05562	0.39106	6.15389
	A3->Y (RF)	0.06232	0.33677	5.28044
	A4->Y (RF)	0.06570	0.29279	4.56528
	B1->Y (RF)	0.01701	0.29587	5.07391

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00094	0.00646	0.10264
	A1	0.00920	0.01462	0.10930
	A2	0.00188	0.00731	0.10629
	A2	0.01148	0.01681	0.11430
	A3	0.00267	0.00833	0.11399
	A3	0.01361	0.01917	0.12334
	A4	0.00308	0.00894	0.11967
	A4	0.01551	0.02125	0.13045
	B1	0.00017	0.01265	0.18997
	B1	0.00653	0.01923	0.19608
sky130_fd_sc_hs__a41oi_2	A1	-0.00017	0.01078	0.17305
	A1	0.01499	0.02569	0.18421
	A2	0.00226	0.01317	0.18821
	A2	0.02043	0.03106	0.20233
	A3	0.00373	0.01495	0.20024
	A3	0.02459	0.03559	0.21689
	A4	0.00558	0.01691	0.20954
	A4	0.02954	0.04059	0.22958
	B1	0.00004	0.01803	0.24535
	B1	0.00925	0.02734	0.25399

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00123	0.02365	0.35996
	A1	0.02887	0.05337	0.38149
	A2	0.00438	0.02894	0.39277
	A2	0.04044	0.06454	0.42105
	A3	0.00724	0.03233	0.41741
	A3	0.04939	0.07419	0.45104
	A4	0.01017	0.03600	0.43619
	A4	0.05814	0.08365	0.47614
	B1	-0.00035	0.03836	0.49861
	B1	0.01790	0.05655	0.51582

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.03513	0.03912	0.11166
	A1	0.02686	0.03084	0.10041
	A2	0.03570	0.03916	0.10882
	A2	0.02611	0.02954	0.09850
	A3	0.03641	0.04013	0.12019
	A3	0.02546	0.02916	0.10894
	A4	0.03746	0.04192	0.13759
	A4	0.02503	0.02945	0.12521
	B1	0.01347	0.02276	0.15650
	B1	0.00715	0.01640	0.14997

sky130_fd_sc_hs__a41oi_2	**A1**	0.07343	0.08101	0.19549
	A1	0.05832	0.06584	0.17989
	A2	0.07495	0.08184	0.20113
	A2	0.05681	0.06360	0.18218
	A3	0.07618	0.08405	0.22814
	A3	0.05530	0.06317	0.20689
	A4	0.07856	0.08703	0.25389
	A4	0.05455	0.06299	0.22865
	B1	0.02654	0.03935	0.19720
	B1	0.01733	0.03006	0.18750
sky130_fd_sc_hs__a41oi_4	**A1**	0.14245	0.16011	0.39824
	A1	0.11235	0.12990	0.36617
	A2	0.14504	0.16140	0.41064
	A2	0.10901	0.12534	0.37419
	A3	0.14830	0.16641	0.46516
	A3	0.10616	0.12425	0.42094
	A4	0.15261	0.17305	0.52562
	A4	0.10458	0.12497	0.47666
	B1	0.05136	0.08170	0.43039
	B1	0.03318	0.06338	0.41082

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)**	0.00439	0.00400	0.00618
	(A2 * A3 * A4 * B1 * !Y)	-0.00039	-0.00078	0.00144
	(A2 * A3 * !A4 * B1 * !Y)	0.00650	0.00651	0.00651
	(A2 * A3 * !A4 * B1 * !Y)	0.00193	0.00190	0.00193
	(A2 * A3 * !A4 * !B1 * Y)	0.00087	0.00087	0.00078
	(A2 * A3 * !A4 * !B1 * Y)	-0.00264	-0.00266	-0.00287
	(A2 * !A3 * B1 * !Y)	0.00651	0.00652	0.00652
	(A2 * !A3 * B1 * !Y)	0.00192	0.00189	0.00192
	(A2 * !A3 * !B1 * Y)	0.00086	0.00086	0.00079
	(A2 * !A3 * !B1 * Y)	-0.00273	-0.00273	-0.00289
	(!A2 * B1 * !Y)	0.00654	0.00655	0.00655
	(!A2 * B1 * !Y)	0.00192	0.00189	0.00191
	(!A2 * !B1 * Y)	0.00086	0.00085	0.00080
	(!A2 * !B1 * Y)	-0.00281	-0.00281	-0.00289
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00883	0.00803	0.01232
	(A2 * A3 * A4 * B1 * !Y)	-0.00053	-0.00141	0.00299
	(A2 * A3 * !A4 * B1 * !Y)	0.01288	0.01286	0.01288
	(A2 * A3 * !A4 * B1 * !Y)	0.00392	0.00390	0.00394
	(A2 * A3 * !A4 * !B1 * Y)	0.00154	0.00155	0.00132
	(A2 * A3 * !A4 * !B1 * Y)	-0.00530	-0.00535	-0.00585
	(A2 * !A3 * B1 * !Y)	0.01293	0.01293	0.01294
	(A2 * !A3 * B1 * !Y)	0.00392	0.00390	0.00394
	(A2 * !A3 * !B1 * Y)	0.00148	0.00148	0.00131
	(A2 * !A3 * !B1 * Y)	-0.00551	-0.00556	-0.00589
	(!A2 * B1 * !Y)	0.01303	0.01305	0.01306
	(!A2 * B1 * !Y)	0.00396	0.00390	0.00394
	(!A2 * !B1 * Y)	0.00148	0.00148	0.00136
	(!A2 * !B1 * Y)	-0.00570	-0.00573	-0.00592

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.01746	0.01599	0.02459
	(A2 * A3 * A4 * B1 * !Y)	-0.00120	-0.00280	0.00600
	(A2 * A3 * !A4 * B1 * !Y)	0.02567	0.02563	0.02568
	(A2 * A3 * !A4 * B1 * !Y)	0.00786	0.00779	0.00791
	(A2 * A3 * !A4 * !B1 * Y)	0.00310	0.00311	0.00267
	(A2 * A3 * !A4 * !B1 * Y)	-0.01042	-0.01051	-0.01149
	(A2 * !A3 * B1 * !Y)	0.02582	0.02579	0.02583
	(A2 * !A3 * B1 * !Y)	0.00787	0.00783	0.00792
	(A2 * !A3 * !B1 * Y)	0.00299	0.00299	0.00266
	(A2 * !A3 * !B1 * Y)	-0.01081	-0.01088	-0.01156
	(!A2 * B1 * !Y)	0.02603	0.02603	0.02607
	(!A2 * B1 * !Y)	0.00793	0.00785	0.00794
	(!A2 * !B1 * Y)	0.00310	0.00310	0.00284
	(!A2 * !B1 * Y)	-0.01116	-0.01120	-0.01161

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)**	0.00239	0.00229	0.00175
	(A2 * A3 * A4 * B1 * !Y)	0.00714	0.00708	0.00652
	(A2 * A3 * !A4 * B1 * !Y)	0.00264	0.00248	0.00248
	(A2 * A3 * !A4 * B1 * !Y)	0.00708	0.00712	0.00708
	(A2 * A3 * !A4 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(A2 * A3 * !A4 * !B1 * Y)	0.00315	0.00316	0.00317
	(A2 * !A3 * B1 * !Y)	0.00255	0.00245	0.00245
	(A2 * !A3 * B1 * !Y)	0.00707	0.00711	0.00707
	(A2 * !A3 * !B1 * Y)	-0.00047	-0.00047	-0.00046
	(A2 * !A3 * !B1 * Y)	0.00315	0.00317	0.00317
	(!A2 * B1 * !Y)	0.00244	0.00241	0.00243
	(!A2 * B1 * !Y)	0.00707	0.00710	0.00706
	(!A2 * !B1 * Y)	-0.00051	-0.00052	-0.00050
	(!A2 * !B1 * Y)	0.00316	0.00321	0.00317
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00477	0.00457	0.00351
	(A2 * A3 * A4 * B1 * !Y)	0.01414	0.01403	0.01290
	(A2 * A3 * !A4 * B1 * !Y)	0.00535	0.00500	0.00494
	(A2 * A3 * !A4 * B1 * !Y)	0.01403	0.01406	0.01401
	(A2 * A3 * !A4 * !B1 * Y)	-0.00087	-0.00088	-0.00086
	(A2 * A3 * !A4 * !B1 * Y)	0.00621	0.00632	0.00624
	(A2 * !A3 * B1 * !Y)	0.00513	0.00495	0.00492
	(A2 * !A3 * B1 * !Y)	0.01402	0.01406	0.01401
	(A2 * !A3 * !B1 * Y)	-0.00088	-0.00090	-0.00087
	(A2 * !A3 * !B1 * Y)	0.00622	0.00633	0.00624
	(!A2 * B1 * !Y)	0.00492	0.00487	0.00489
	(!A2 * B1 * !Y)	0.01403	0.01409	0.01401
	(!A2 * !B1 * Y)	-0.00096	-0.00099	-0.00095
	(!A2 * !B1 * Y)	0.00623	0.00636	0.00627

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00948	0.00907	0.00699
	(A2 * A3 * A4 * B1 * !Y)	0.02814	0.02792	0.02568
	(A2 * A3 * !A4 * B1 * !Y)	0.01065	0.00995	0.00980
	(A2 * A3 * !A4 * B1 * !Y)	0.02790	0.02797	0.02784
	(A2 * A3 * !A4 * !B1 * Y)	-0.00178	-0.00179	-0.00176
	(A2 * A3 * !A4 * !B1 * Y)	0.01223	0.01230	0.01226
	(A2 * !A3 * B1 * !Y)	0.01021	0.00987	0.00978
	(A2 * !A3 * B1 * !Y)	0.02791	0.02797	0.02786
	(A2 * !A3 * !B1 * Y)	-0.00182	-0.00185	-0.00179
	(A2 * !A3 * !B1 * Y)	0.01223	0.01244	0.01227
	(!A2 * B1 * !Y)	0.00979	0.00972	0.00971
	(!A2 * B1 * !Y)	0.02791	0.02795	0.02788
	(!A2 * !B1 * Y)	-0.00207	-0.00211	-0.00204
	(!A2 * !B1 * Y)	0.01222	0.01247	0.01229

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)**	0.00431	0.00392	0.00610
	(A1 * A3 * A4 * B1 * !Y)	-0.00039	-0.00078	0.00144
	(A1 * A3 * !A4 * B1 * !Y)	0.00644	0.00645	0.00645
	(A1 * A3 * !A4 * B1 * !Y)	0.00193	0.00190	0.00193
	(A1 * A3 * !A4 * !B1 * Y)	0.00082	0.00083	0.00082
	(A1 * A3 * !A4 * !B1 * Y)	-0.00258	-0.00261	-0.00259
	(A1 * !A3 * B1 * !Y)	0.00646	0.00647	0.00647
	(A1 * !A3 * B1 * !Y)	0.00192	0.00190	0.00192
	(A1 * !A3 * !B1 * Y)	0.00086	0.00088	0.00086
	(A1 * !A3 * !B1 * Y)	-0.00259	-0.00262	-0.00259
	(!A1 * A3 * A4 * B1 * !Y)	0.00647	0.00647	0.00647
	(!A1 * A3 * A4 * B1 * !Y)	0.00193	0.00190	0.00192
	(!A1 * A3 * A4 * !B1 * Y)	0.00209	0.00211	0.00208
	(!A1 * A3 * A4 * !B1 * Y)	-0.00248	-0.00250	-0.00250
	(!A1 * A3 * !A4 * B1 * !Y)	0.00562	0.00562	0.00561
	(!A1 * A3 * !A4 * B1 * !Y)	0.00194	0.00193	0.00194
	(!A1 * A3 * !A4 * !B1 * Y)	0.00105	0.00105	0.00104
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00260	-0.00260	-0.00259
	(!A1 * !A3 * B1 * !Y)	0.00566	0.00567	0.00566
	(!A1 * !A3 * B1 * !Y)	0.00195	0.00192	0.00193
	(!A1 * !A3 * !B1 * Y)	0.00109	0.00108	0.00108
	(!A1 * !A3 * !B1 * Y)	-0.00260	-0.00259	-0.00260

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00870	0.00790	0.01223
	(A1 * A3 * A4 * B1 * !Y)	-0.00066	-0.00150	0.00290
	(A1 * A3 * !A4 * B1 * !Y)	0.01282	0.01281	0.01283
	(A1 * A3 * !A4 * B1 * !Y)	0.00384	0.00381	0.00384
	(A1 * A3 * !A4 * !B1 * Y)	0.00168	0.00171	0.00170
	(A1 * A3 * !A4 * !B1 * Y)	-0.00506	-0.00511	-0.00508
	(A1 * !A3 * B1 * !Y)	0.01293	0.01295	0.01296
	(A1 * !A3 * B1 * !Y)	0.00386	0.00380	0.00384
	(A1 * !A3 * !B1 * Y)	0.00178	0.00180	0.00178
	(A1 * !A3 * !B1 * Y)	-0.00509	-0.00514	-0.00509
	(!A1 * A3 * A4 * B1 * !Y)	0.01296	0.01295	0.01296
	(!A1 * A3 * A4 * B1 * !Y)	0.00383	0.00380	0.00385
	(!A1 * A3 * A4 * !B1 * Y)	0.00427	0.00431	0.00427
	(!A1 * A3 * A4 * !B1 * Y)	-0.00487	-0.00491	-0.00490
	(!A1 * A3 * !A4 * B1 * !Y)	0.01124	0.01125	0.01123
	(!A1 * A3 * !A4 * B1 * !Y)	0.00388	0.00384	0.00388
	(!A1 * A3 * !A4 * !B1 * Y)	0.00217	0.00219	0.00218
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00508	-0.00512	-0.00509
	(!A1 * !A3 * B1 * !Y)	0.01133	0.01135	0.01131
	(!A1 * !A3 * B1 * !Y)	0.00388	0.00384	0.00388
	(!A1 * !A3 * !B1 * Y)	0.00223	0.00224	0.00222
	(!A1 * !A3 * !B1 * Y)	-0.00512	-0.00514	-0.00512

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.01711	0.01565	0.02430
	(A1 * A3 * A4 * B1 * !Y)	-0.00144	-0.00301	0.00581
	(A1 * A3 * !A4 * B1 * !Y)	0.02541	0.02541	0.02544
	(A1 * A3 * !A4 * B1 * !Y)	0.00766	0.00756	0.00768
	(A1 * A3 * !A4 * !B1 * Y)	0.00318	0.00323	0.00327
	(A1 * A3 * !A4 * !B1 * Y)	-0.01000	-0.01009	-0.01001
	(A1 * !A3 * B1 * !Y)	0.02569	0.02574	0.02573
	(A1 * !A3 * B1 * !Y)	0.00769	0.00757	0.00769
	(A1 * !A3 * !B1 * Y)	0.00329	0.00334	0.00332
	(A1 * !A3 * !B1 * Y)	-0.01004	-0.01013	-0.01002
	(!A1 * A3 * A4 * B1 * !Y)	0.02574	0.02573	0.02578
	(!A1 * A3 * A4 * B1 * !Y)	0.00774	0.00765	0.00773
	(!A1 * A3 * A4 * !B1 * Y)	0.00849	0.00851	0.00849
	(!A1 * A3 * A4 * !B1 * Y)	-0.00962	-0.00964	-0.00968
	(!A1 * A3 * !A4 * B1 * !Y)	0.02218	0.02222	0.02216
	(!A1 * A3 * !A4 * B1 * !Y)	0.00779	0.00769	0.00777
	(!A1 * A3 * !A4 * !B1 * Y)	0.00423	0.00421	0.00420
	(!A1 * A3 * !A4 * !B1 * Y)	-0.01008	-0.01005	-0.01003
	(!A1 * !A3 * B1 * !Y)	0.02232	0.02234	0.02227
	(!A1 * !A3 * B1 * !Y)	0.00777	0.00770	0.00778
	(!A1 * !A3 * !B1 * Y)	0.00426	0.00427	0.00424
	(!A1 * !A3 * !B1 * Y)	-0.01008	-0.01010	-0.01007

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)**	0.00246	0.00236	0.00182
	(A1 * A3 * A4 * B1 * !Y)	0.00713	0.00708	0.00651
	(A1 * A3 * !A4 * B1 * !Y)	0.00263	0.00255	0.00255
	(A1 * A3 * !A4 * B1 * !Y)	0.00708	0.00709	0.00708
	(A1 * A3 * !A4 * !B1 * Y)	-0.00047	-0.00047	-0.00049
	(A1 * A3 * !A4 * !B1 * Y)	0.00297	0.00297	0.00289
	(A1 * !A3 * B1 * !Y)	0.00252	0.00251	0.00251
	(A1 * !A3 * B1 * !Y)	0.00707	0.00707	0.00707
	(A1 * !A3 * !B1 * Y)	-0.00051	-0.00052	-0.00054
	(A1 * !A3 * !B1 * Y)	0.00295	0.00299	0.00289
	(!A1 * A3 * A4 * B1 * !Y)	0.00252	0.00251	0.00251
	(!A1 * A3 * A4 * B1 * !Y)	0.00707	0.00706	0.00706
	(!A1 * A3 * A4 * !B1 * Y)	-0.00136	-0.00167	-0.00164
	(!A1 * A3 * A4 * !B1 * Y)	0.00323	0.00297	0.00292
	(!A1 * A3 * !A4 * B1 * !Y)	0.00322	0.00322	0.00334
	(!A1 * A3 * !A4 * B1 * !Y)	0.00708	0.00711	0.00709
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00074	-0.00079	-0.00080
	(!A1 * A3 * !A4 * !B1 * Y)	0.00310	0.00308	0.00295
	(!A1 * !A3 * B1 * !Y)	0.00324	0.00324	0.00332
	(!A1 * !A3 * B1 * !Y)	0.00709	0.00710	0.00708
	(!A1 * !A3 * !B1 * Y)	-0.00084	-0.00084	-0.00087
	(!A1 * !A3 * !B1 * Y)	0.00297	0.00299	0.00287

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00488	0.00468	0.00361
	(A1 * A3 * A4 * B1 * !Y)	0.01424	0.01413	0.01300
	(A1 * A3 * !A4 * B1 * !Y)	0.00523	0.00506	0.00502
	(A1 * A3 * !A4 * B1 * !Y)	0.01411	0.01415	0.01410
	(A1 * A3 * !A4 * !B1 * Y)	-0.00119	-0.00119	-0.00124
	(A1 * A3 * !A4 * !B1 * Y)	0.00567	0.00565	0.00548
	(A1 * !A3 * B1 * !Y)	0.00501	0.00498	0.00498
	(A1 * !A3 * B1 * !Y)	0.01411	0.01413	0.01410
	(A1 * !A3 * !B1 * Y)	-0.00127	-0.00129	-0.00133
	(A1 * !A3 * !B1 * Y)	0.00564	0.00570	0.00549
	(!A1 * A3 * A4 * B1 * !Y)	0.00502	0.00498	0.00498
	(!A1 * A3 * A4 * B1 * !Y)	0.01412	0.01415	0.01410
	(!A1 * A3 * A4 * !B1 * Y)	-0.00279	-0.00355	-0.00359
	(!A1 * A3 * A4 * !B1 * Y)	0.00638	0.00568	0.00554
	(!A1 * A3 * !A4 * B1 * !Y)	0.00638	0.00638	0.00662
	(!A1 * A3 * !A4 * B1 * !Y)	0.01414	0.01419	0.01415
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00171	-0.00183	-0.00189
	(!A1 * A3 * !A4 * !B1 * Y)	0.00602	0.00592	0.00565
	(!A1 * !A3 * B1 * !Y)	0.00647	0.00646	0.00662
	(!A1 * !A3 * B1 * !Y)	0.01415	0.01419	0.01415
	(!A1 * !A3 * !B1 * Y)	-0.00193	-0.00194	-0.00200
	(!A1 * !A3 * !B1 * Y)	0.00566	0.00572	0.00547

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00980	0.00943	0.00729
	(A1 * A3 * A4 * B1 * !Y)	0.02835	0.02805	0.02589
	(A1 * A3 * !A4 * B1 * !Y)	0.01049	0.01018	0.01008
	(A1 * A3 * !A4 * B1 * !Y)	0.02809	0.02819	0.02805
	(A1 * A3 * !A4 * !B1 * Y)	-0.00223	-0.00227	-0.00236
	(A1 * A3 * !A4 * !B1 * Y)	0.01112	0.01128	0.01082
	(A1 * !A3 * B1 * !Y)	0.01007	0.00999	0.01002
	(A1 * !A3 * B1 * !Y)	0.02809	0.02818	0.02807
	(A1 * !A3 * !B1 * Y)	-0.00230	-0.00233	-0.00244
	(A1 * !A3 * !B1 * Y)	0.01110	0.01117	0.01083
	(!A1 * A3 * A4 * B1 * !Y)	0.01009	0.01000	0.01001
	(!A1 * A3 * A4 * B1 * !Y)	0.02813	0.02821	0.02809
	(!A1 * A3 * A4 * !B1 * Y)	-0.00547	-0.00703	-0.00714
	(!A1 * A3 * A4 * !B1 * Y)	0.01271	0.01130	0.01096
	(!A1 * A3 * !A4 * B1 * !Y)	0.01293	0.01293	0.01342
	(!A1 * A3 * !A4 * B1 * !Y)	0.02817	0.02825	0.02816
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00329	-0.00352	-0.00362
	(!A1 * A3 * !A4 * !B1 * Y)	0.01185	0.01169	0.01112
	(!A1 * !A3 * B1 * !Y)	0.01315	0.01314	0.01349
	(!A1 * !A3 * B1 * !Y)	0.02819	0.02825	0.02817
	(!A1 * !A3 * !B1 * Y)	-0.00374	-0.00369	-0.00382
	(!A1 * !A3 * !B1 * Y)	0.01118	0.01125	0.01076

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)**	0.00423	0.00388	0.00606
	(A1 * A2 * A4 * B1 * !Y)	-0.00042	-0.00078	0.00144
	(A1 * A2 * !A4 * B1 * !Y)	0.00644	0.00646	0.00645
	(A1 * A2 * !A4 * B1 * !Y)	0.00193	0.00191	0.00193
	(A1 * A2 * !A4 * !B1 * Y)	0.00086	0.00086	0.00085
	(A1 * A2 * !A4 * !B1 * Y)	-0.00251	-0.00252	-0.00249
	(A1 * !A2 * A4 * !B1 * Y)	0.00207	0.00210	0.00207
	(A1 * !A2 * A4 * !B1 * Y)	-0.00245	-0.00247	-0.00245
	(A1 * !A2 * !A4 * !B1 * Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00255	-0.00256	-0.00255
	(!A2 * A4 * B1 * !Y)	0.00642	0.00644	0.00643
	(!A2 * A4 * B1 * !Y)	0.00192	0.00189	0.00192
	(!A2 * !A4 * B1 * !Y)	0.00558	0.00558	0.00557
	(!A2 * !A4 * B1 * !Y)	0.00195	0.00193	0.00194
	(!A1 * A2 * A4 * B1 * !Y)	0.00640	0.00641	0.00641
	(!A1 * A2 * A4 * B1 * !Y)	0.00192	0.00190	0.00192
	(!A1 * A2 * A4 * !B1 * Y)	0.00207	0.00209	0.00207
	(!A1 * A2 * A4 * !B1 * Y)	-0.00245	-0.00246	-0.00245
	(!A1 * A2 * !A4 * B1 * !Y)	0.00558	0.00558	0.00557
	(!A1 * A2 * !A4 * B1 * !Y)	0.00194	0.00193	0.00194
	(!A1 * A2 * !A4 * !B1 * Y)	0.00103	0.00104	0.00103
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00255	-0.00257	-0.00256
	(!A1 * !A2 * A4 * !B1 * Y)	0.00197	0.00200	0.00198
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00253	-0.00255	-0.00254
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00105	0.00106	0.00104
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00256	-0.00257	-0.00256

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00861	0.00784	0.01215
	(A1 * A2 * A4 * B1 * !Y)	-0.00066	-0.00148	0.00292
	(A1 * A2 * !A4 * B1 * !Y)	0.01286	0.01286	0.01287
	(A1 * A2 * !A4 * B1 * !Y)	0.00385	0.00383	0.00387
	(A1 * A2 * !A4 * !B1 * Y)	0.00178	0.00180	0.00177
	(A1 * A2 * !A4 * !B1 * Y)	-0.00489	-0.00493	-0.00486
	(A1 * !A2 * A4 * !B1 * Y)	0.00422	0.00428	0.00422
	(A1 * !A2 * A4 * !B1 * Y)	-0.00481	-0.00485	-0.00483
	(A1 * !A2 * !A4 * !B1 * Y)	0.00215	0.00216	0.00214
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00500	-0.00501	-0.00499
	(!A2 * A4 * B1 * !Y)	0.01287	0.01290	0.01289
	(!A2 * A4 * B1 * !Y)	0.00388	0.00383	0.00388
	(!A2 * !A4 * B1 * !Y)	0.01116	0.01118	0.01114
	(!A2 * !A4 * B1 * !Y)	0.00390	0.00386	0.00390
	(!A1 * A2 * A4 * B1 * !Y)	0.01278	0.01278	0.01278
	(!A1 * A2 * A4 * B1 * !Y)	0.00386	0.00383	0.00388
	(!A1 * A2 * A4 * !B1 * Y)	0.00419	0.00422	0.00420
	(!A1 * A2 * A4 * !B1 * Y)	-0.00481	-0.00482	-0.00480
	(!A1 * A2 * !A4 * B1 * !Y)	0.01116	0.01116	0.01114
	(!A1 * A2 * !A4 * B1 * !Y)	0.00390	0.00387	0.00390
	(!A1 * A2 * !A4 * !B1 * Y)	0.00213	0.00214	0.00213
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00502	-0.00504	-0.00502
	(!A1 * !A2 * A4 * !B1 * Y)	0.00402	0.00404	0.00404
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00497	-0.00498	-0.00498
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00220	0.00219	0.00217
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00502	-0.00501	-0.00500

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.01702	0.01557	0.02420
	(A1 * A2 * A4 * B1 * !Y)	-0.00157	-0.00311	0.00568
	(A1 * A2 * !A4 * B1 * !Y)	0.02560	0.02558	0.02562
	(A1 * A2 * !A4 * B1 * !Y)	0.00751	0.00746	0.00755
	(A1 * A2 * !A4 * !B1 * Y)	0.00343	0.00347	0.00338
	(A1 * A2 * !A4 * !B1 * Y)	-0.00988	-0.00995	-0.00981
	(A1 * !A2 * A4 * !B1 * Y)	0.00841	0.00853	0.00843
	(A1 * !A2 * A4 * !B1 * Y)	-0.00965	-0.00976	-0.00972
	(A1 * !A2 * !A4 * !B1 * Y)	0.00402	0.00403	0.00400
	(A1 * !A2 * !A4 * !B1 * Y)	-0.01008	-0.01010	-0.01007
	(!A2 * A4 * B1 * !Y)	0.02566	0.02571	0.02567
	(!A2 * A4 * B1 * !Y)	0.00757	0.00749	0.00760
	(!A2 * !A4 * B1 * !Y)	0.02198	0.02198	0.02193
	(!A2 * !A4 * B1 * !Y)	0.00764	0.00759	0.00764
	(!A1 * A2 * A4 * B1 * !Y)	0.02551	0.02551	0.02553
	(!A1 * A2 * A4 * B1 * !Y)	0.00761	0.00752	0.00761
	(!A1 * A2 * A4 * !B1 * Y)	0.00837	0.00843	0.00838
	(!A1 * A2 * A4 * !B1 * Y)	-0.00970	-0.00974	-0.00971
	(!A1 * A2 * !A4 * B1 * !Y)	0.02208	0.02209	0.02205
	(!A1 * A2 * !A4 * B1 * !Y)	0.00766	0.00761	0.00766
	(!A1 * A2 * !A4 * !B1 * Y)	0.00415	0.00413	0.00412
	(!A1 * A2 * !A4 * !B1 * Y)	-0.01015	-0.01011	-0.01011
	(!A1 * !A2 * A4 * !B1 * Y)	0.00797	0.00810	0.00801
	(!A1 * !A2 * A4 * !B1 * Y)	-0.01000	-0.01011	-0.01003
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00409	0.00408	0.00406
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.01010	-0.01008	-0.01009

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)**	0.00250	0.00240	0.00187
	(A1 * A2 * A4 * B1 * !Y)	0.00713	0.00707	0.00651
	(A1 * A2 * !A4 * B1 * !Y)	0.00256	0.00254	0.00256
	(A1 * A2 * !A4 * B1 * !Y)	0.00708	0.00711	0.00707
	(A1 * A2 * !A4 * !B1 * Y)	-0.00047	-0.00048	-0.00050
	(A1 * A2 * !A4 * !B1 * Y)	0.00295	0.00296	0.00285
	(A1 * !A2 * A4 * !B1 * Y)	-0.00142	-0.00168	-0.00166
	(A1 * !A2 * A4 * !B1 * Y)	0.00310	0.00293	0.00286
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00081	-0.00081	-0.00082
	(A1 * !A2 * !A4 * !B1 * Y)	0.00289	0.00291	0.00282
	(!A2 * A4 * B1 * !Y)	0.00256	0.00253	0.00254
	(!A2 * A4 * B1 * !Y)	0.00706	0.00710	0.00706
	(!A2 * !A4 * B1 * !Y)	0.00334	0.00334	0.00342
	(!A2 * !A4 * B1 * !Y)	0.00709	0.00711	0.00709
	(!A1 * A2 * A4 * B1 * !Y)	0.00265	0.00257	0.00257
	(!A1 * A2 * A4 * B1 * !Y)	0.00707	0.00711	0.00707
	(!A1 * A2 * A4 * !B1 * Y)	-0.00128	-0.00164	-0.00163
	(!A1 * A2 * A4 * !B1 * Y)	0.00323	0.00295	0.00288
	(!A1 * A2 * !A4 * B1 * !Y)	0.00325	0.00326	0.00337
	(!A1 * A2 * !A4 * B1 * !Y)	0.00709	0.00711	0.00709
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00081	-0.00079	-0.00082
	(!A1 * A2 * !A4 * !B1 * Y)	0.00297	0.00303	0.00287
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00162	-0.00175	-0.00173
	(!A1 * !A2 * A4 * !B1 * Y)	0.00285	0.00282	0.00279
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00089	-0.00089	-0.00086
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00287	0.00289	0.00282

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00494	0.00476	0.00368
	(A1 * A2 * A4 * B1 * !Y)	0.01423	0.01407	0.01297
	(A1 * A2 * !A4 * B1 * !Y)	0.00509	0.00504	0.00506
	(A1 * A2 * !A4 * B1 * !Y)	0.01409	0.01414	0.01407
	(A1 * A2 * !A4 * !B1 * Y)	-0.00118	-0.00119	-0.00126
	(A1 * A2 * !A4 * !B1 * Y)	0.00561	0.00562	0.00542
	(A1 * !A2 * A4 * !B1 * Y)	-0.00309	-0.00361	-0.00360
	(A1 * !A2 * A4 * !B1 * Y)	0.00600	0.00549	0.00542
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00186	-0.00188	-0.00192
	(A1 * !A2 * !A4 * !B1 * Y)	0.00558	0.00560	0.00535
	(!A2 * A4 * B1 * !Y)	0.00506	0.00505	0.00506
	(!A2 * A4 * B1 * !Y)	0.01411	0.01409	0.01408
	(!A2 * !A4 * B1 * !Y)	0.00661	0.00661	0.00679
	(!A2 * !A4 * B1 * !Y)	0.01414	0.01417	0.01411
	(!A1 * A2 * A4 * B1 * !Y)	0.00528	0.00511	0.00509
	(!A1 * A2 * A4 * B1 * !Y)	0.01410	0.01410	0.01408
	(!A1 * A2 * A4 * !B1 * Y)	-0.00275	-0.00358	-0.00355
	(!A1 * A2 * A4 * !B1 * Y)	0.00626	0.00552	0.00545
	(!A1 * A2 * !A4 * B1 * !Y)	0.00644	0.00645	0.00670
	(!A1 * A2 * !A4 * B1 * !Y)	0.01414	0.01418	0.01412
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00191	-0.00182	-0.00189
	(!A1 * A2 * !A4 * !B1 * Y)	0.00567	0.00584	0.00547
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00353	-0.00375	-0.00375
	(!A1 * !A2 * A4 * !B1 * Y)	0.00542	0.00527	0.00526
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00203	-0.00205	-0.00200
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00548	0.00552	0.00535

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00983	0.00946	0.00734
	(A1 * A2 * A4 * B1 * !Y)	0.02848	0.02821	0.02597
	(A1 * A2 * !A4 * B1 * !Y)	0.01012	0.01002	0.01006
	(A1 * A2 * !A4 * B1 * !Y)	0.02817	0.02830	0.02815
	(A1 * A2 * !A4 * !B1 * Y)	-0.00221	-0.00222	-0.00237
	(A1 * A2 * !A4 * !B1 * Y)	0.01135	0.01137	0.01089
	(A1 * !A2 * A4 * !B1 * Y)	-0.00595	-0.00713	-0.00714
	(A1 * !A2 * A4 * !B1 * Y)	0.01228	0.01117	0.01095
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00345	-0.00347	-0.00355
	(A1 * !A2 * !A4 * !B1 * Y)	0.01129	0.01126	0.01079
	(!A2 * A4 * B1 * !Y)	0.01013	0.01008	0.01012
	(!A2 * A4 * B1 * !Y)	0.02822	0.02825	0.02819
	(!A2 * !A4 * B1 * !Y)	0.01344	0.01343	0.01379
	(!A2 * !A4 * B1 * !Y)	0.02828	0.02833	0.02825
	(!A1 * A2 * A4 * B1 * !Y)	0.01058	0.01022	0.01019
	(!A1 * A2 * A4 * B1 * !Y)	0.02824	0.02827	0.02820
	(!A1 * A2 * A4 * !B1 * Y)	-0.00521	-0.00707	-0.00705
	(!A1 * A2 * A4 * !B1 * Y)	0.01286	0.01119	0.01099
	(!A1 * A2 * !A4 * B1 * !Y)	0.01298	0.01300	0.01350
	(!A1 * A2 * !A4 * B1 * !Y)	0.02831	0.02838	0.02827
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00367	-0.00350	-0.00366
	(!A1 * A2 * !A4 * !B1 * Y)	0.01143	0.01173	0.01099
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00691	-0.00745	-0.00743
	(!A1 * !A2 * A4 * !B1 * Y)	0.01102	0.01067	0.01062
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00379	-0.00381	-0.00371
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01107	0.01110	0.01079

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)**	0.00436	0.00401	0.00620
	(A1 * A2 * A3 * B1 * !Y)	-0.00039	-0.00077	0.00146
	(A1 * A2 * !A3 * !B1 * Y)	0.00210	0.00212	0.00210
	(A1 * A2 * !A3 * !B1 * Y)	-0.00255	-0.00258	-0.00256
	(A1 * !A2 * A3 * !B1 * Y)	0.00209	0.00210	0.00209
	(A1 * !A2 * A3 * !B1 * Y)	-0.00255	-0.00255	-0.00254
	(A1 * !A2 * !A3 * !B1 * Y)	0.00201	0.00203	0.00201
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00262	-0.00264	-0.00262
	(!A3 * B1 * !Y)	0.00657	0.00656	0.00657
	(!A3 * B1 * !Y)	0.00194	0.00192	0.00194
	(!A2 * A3 * B1 * !Y)	0.00654	0.00652	0.00654
	(!A2 * A3 * B1 * !Y)	0.00193	0.00192	0.00194
	(!A1 * A2 * A3 * B1 * !Y)	0.00651	0.00651	0.00652
	(!A1 * A2 * A3 * B1 * !Y)	0.00194	0.00192	0.00194
	(!A1 * A2 * A3 * !B1 * Y)	0.00209	0.00211	0.00209
	(!A1 * A2 * A3 * !B1 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * Y)	0.00201	0.00203	0.00201
	(!A1 * !A3 * !B1 * Y)	-0.00262	-0.00264	-0.00262
	(!A1 * !A2 * A3 * !B1 * Y)	0.00198	0.00198	0.00198
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00262	-0.00262	-0.00262

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00860	0.00785	0.01218
	(A1 * A2 * A3 * B1 * !Y)	-0.00070	-0.00150	0.00290
	(A1 * A2 * !A3 * !B1 * Y)	0.00423	0.00427	0.00422
	(A1 * A2 * !A3 * !B1 * Y)	-0.00489	-0.00491	-0.00489
	(A1 * !A2 * A3 * !B1 * Y)	0.00420	0.00422	0.00419
	(A1 * !A2 * A3 * !B1 * Y)	-0.00483	-0.00485	-0.00482
	(A1 * !A2 * !A3 * !B1 * Y)	0.00404	0.00408	0.00404
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00500	-0.00503	-0.00500
	(!A3 * B1 * !Y)	0.01290	0.01291	0.01290
	(!A3 * B1 * !Y)	0.00385	0.00381	0.00386
	(!A2 * A3 * B1 * !Y)	0.01279	0.01281	0.01280
	(!A2 * A3 * B1 * !Y)	0.00386	0.00382	0.00386
	(!A1 * A2 * A3 * B1 * !Y)	0.01275	0.01279	0.01277
	(!A1 * A2 * A3 * B1 * !Y)	0.00387	0.00380	0.00386
	(!A1 * A2 * A3 * !B1 * Y)	0.00417	0.00420	0.00418
	(!A1 * A2 * A3 * !B1 * Y)	-0.00481	-0.00483	-0.00481
	(!A1 * !A3 * !B1 * Y)	0.00402	0.00408	0.00405
	(!A1 * !A3 * !B1 * Y)	-0.00498	-0.00502	-0.00500
	(!A1 * !A2 * A3 * !B1 * Y)	0.00394	0.00396	0.00395
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00499	-0.00501	-0.00499

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.01696	0.01558	0.02420
	(A1 * A2 * A3 * B1 * !Y)	-0.00161	-0.00306	0.00572
	(A1 * A2 * !A3 * !B1 * Y)	0.00837	0.00844	0.00838
	(A1 * A2 * !A3 * !B1 * Y)	-0.00974	-0.00979	-0.00977
	(A1 * !A2 * A3 * !B1 * Y)	0.00835	0.00838	0.00833
	(A1 * !A2 * A3 * !B1 * Y)	-0.00973	-0.00974	-0.00969
	(A1 * !A2 * !A3 * !B1 * Y)	0.00800	0.00811	0.00802
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00999	-0.01007	-0.01000
	(!A3 * B1 * !Y)	0.02566	0.02570	0.02566
	(!A3 * B1 * !Y)	0.00761	0.00753	0.00764
	(!A2 * A3 * B1 * !Y)	0.02555	0.02558	0.02555
	(!A2 * A3 * B1 * !Y)	0.00763	0.00756	0.00766
	(!A1 * A2 * A3 * B1 * !Y)	0.02549	0.02545	0.02548
	(!A1 * A2 * A3 * B1 * !Y)	0.00764	0.00760	0.00767
	(!A1 * A2 * A3 * !B1 * Y)	0.00836	0.00841	0.00834
	(!A1 * A2 * A3 * !B1 * Y)	-0.00966	-0.00968	-0.00963
	(!A1 * !A3 * !B1 * Y)	0.00800	0.00812	0.00803
	(!A1 * !A3 * !B1 * Y)	-0.00998	-0.01006	-0.00999
	(!A1 * !A2 * A3 * !B1 * Y)	0.00789	0.00791	0.00788
	(!A1 * !A2 * A3 * !B1 * Y)	-0.01003	-0.01002	-0.01000

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)**	0.00239	0.00229	0.00175
	(A1 * A2 * A3 * B1 * !Y)	0.00714	0.00707	0.00651
	(A1 * A2 * !A3 * !B1 * Y)	-0.00155	-0.00170	-0.00169
	(A1 * A2 * !A3 * !B1 * Y)	0.00313	0.00301	0.00295
	(A1 * !A2 * A3 * !B1 * Y)	-0.00146	-0.00167	-0.00168
	(A1 * !A2 * A3 * !B1 * Y)	0.00314	0.00301	0.00294
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00172	-0.00177	-0.00176
	(A1 * !A2 * !A3 * !B1 * Y)	0.00288	0.00287	0.00286
	(!A3 * B1 * !Y)	0.00243	0.00242	0.00243
	(!A3 * B1 * !Y)	0.00708	0.00707	0.00705
	(!A2 * A3 * B1 * !Y)	0.00252	0.00246	0.00244
	(!A2 * A3 * B1 * !Y)	0.00707	0.00709	0.00705
	(!A1 * A2 * A3 * B1 * !Y)	0.00259	0.00248	0.00245
	(!A1 * A2 * A3 * B1 * !Y)	0.00707	0.00709	0.00706
	(!A1 * A2 * A3 * !B1 * Y)	-0.00141	-0.00165	-0.00166
	(!A1 * A2 * A3 * !B1 * Y)	0.00317	0.00303	0.00296
	(!A1 * !A3 * !B1 * Y)	-0.00171	-0.00176	-0.00176
	(!A1 * !A3 * !B1 * Y)	0.00289	0.00287	0.00286
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00163	-0.00174	-0.00175
	(!A1 * !A2 * A3 * !B1 * Y)	0.00288	0.00289	0.00286

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00490	0.00472	0.00365
	(A1 * A2 * A3 * B1 * !Y)	0.01424	0.01411	0.01298
	(A1 * A2 * !A3 * !B1 * Y)	-0.00318	-0.00362	-0.00362
	(A1 * A2 * !A3 * !B1 * Y)	0.00587	0.00558	0.00545
	(A1 * !A2 * A3 * !B1 * Y)	-0.00299	-0.00357	-0.00360
	(A1 * !A2 * A3 * !B1 * Y)	0.00600	0.00559	0.00543
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00361	-0.00379	-0.00377
	(A1 * !A2 * !A3 * !B1 * Y)	0.00528	0.00533	0.00527
	(!A3 * B1 * !Y)	0.00507	0.00501	0.00504
	(!A3 * B1 * !Y)	0.01409	0.01416	0.01409
	(!A2 * A3 * B1 * !Y)	0.00525	0.00510	0.00508
	(!A2 * A3 * B1 * !Y)	0.01410	0.01417	0.01409
	(!A1 * A2 * A3 * B1 * !Y)	0.00541	0.00514	0.00509
	(!A1 * A2 * A3 * B1 * !Y)	0.01411	0.01417	0.01409
	(!A1 * A2 * A3 * !B1 * Y)	-0.00290	-0.00353	-0.00356
	(!A1 * A2 * A3 * !B1 * Y)	0.00605	0.00562	0.00546
	(!A1 * !A3 * !B1 * Y)	-0.00359	-0.00379	-0.00377
	(!A1 * !A3 * !B1 * Y)	0.00529	0.00533	0.00527
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00343	-0.00372	-0.00374
	(!A1 * !A2 * A3 * !B1 * Y)	0.00534	0.00533	0.00527

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	0.00977	0.00942	0.00730
	(A1 * A2 * A3 * B1 * !Y)	0.02838	0.02808	0.02589
	(A1 * A2 * !A3 * !B1 * Y)	-0.00634	-0.00718	-0.00716
	(A1 * A2 * !A3 * !B1 * Y)	0.01175	0.01119	0.01092
	(A1 * !A2 * A3 * !B1 * Y)	-0.00599	-0.00705	-0.00712
	(A1 * !A2 * A3 * !B1 * Y)	0.01193	0.01118	0.01086
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00717	-0.00751	-0.00747
	(A1 * !A2 * !A3 * !B1 * Y)	0.01057	0.01066	0.01055
	(!A3 * B1 * !Y)	0.01009	0.01000	0.01006
	(!A3 * B1 * !Y)	0.02811	0.02824	0.02809
	(!A2 * A3 * B1 * !Y)	0.01050	0.01023	0.01017
	(!A2 * A3 * B1 * !Y)	0.02815	0.02826	0.02812
	(!A1 * A2 * A3 * B1 * !Y)	0.01080	0.01034	0.01021
	(!A1 * A2 * A3 * B1 * !Y)	0.02820	0.02827	0.02813
	(!A1 * A2 * A3 * !B1 * Y)	-0.00584	-0.00694	-0.00705
	(!A1 * A2 * A3 * !B1 * Y)	0.01205	0.01127	0.01092
	(!A1 * !A3 * !B1 * Y)	-0.00714	-0.00751	-0.00747
	(!A1 * !A3 * !B1 * Y)	0.01060	0.01067	0.01055
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00682	-0.00735	-0.00740
	(!A1 * !A2 * A3 * !B1 * Y)	0.01066	0.01066	0.01054

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)	0.00260	0.00264	0.00457
	(A1 * A2 * A3 * A4 * !Y)	-0.00026	-0.00022	0.00163
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00289	0.00298	0.00679
	(A1 * A2 * A3 * A4 * !Y)	-0.00059	-0.00053	0.00311
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00586	0.00605	0.01388
	(A1 * A2 * A3 * A4 * !Y)	-0.00097	-0.00084	0.00666

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)	0.00948	0.00910	0.00427
	(A1 * A2 * A3 * A4 * !Y)	0.01247	0.01210	0.00727
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.02125	0.02050	0.01086
	(A1 * A2 * A3 * A4 * !Y)	0.02505	0.02434	0.01467
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.04224	0.04073	0.02144
	(A1 * A2 * A3 * A4 * !Y)	0.04968	0.04819	0.02888

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00273	0.00272	0.00275	0.00269	0.00280	1.73244
sky130_fd_sc_hs__a41o_2	0.00268	0.00278	0.00285	0.00268	0.00282	3.26182
sky130_fd_sc_hs__a41o_4	0.00532	0.00519	0.00535	0.00515	0.00524	5.12709

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	572.31700	1136.62000
sky130_fd_sc_hs__a41o_2	0.00000	822.37000	1148.63000
sky130_fd_sc_hs__a41o_4	0.00000	1640.30000	2296.10000

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)	0.07984	0.49976	6.46747
	A2->X (RR)	0.08716	0.49050	6.27241
	A3->X (RR)	0.09281	0.47477	6.08559
	A4->X (RR)	0.09601	0.45226	5.82272
	B1->X (RR)	0.04246	0.38282	5.03282
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.08793	0.44386	6.42588
	A2->X (RR)	0.09624	0.43234	6.22510
	A3->X (RR)	0.10168	0.41395	6.02527
	A4->X (RR)	0.10447	0.38951	5.76975
	B1->X (RR)	0.04219	0.31805	4.99287
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.10367	0.42013	6.31830
	A2->X (RR)	0.11460	0.41807	6.36068
	A3->X (RR)	0.11994	0.37782	5.96578
	A4->X (RR)	0.12379	0.35564	5.71924
	B1->X (RR)	0.03982	0.25835	4.64064

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.08147	0.44120	5.40842
	A2->X (FF)	0.09581	0.46826	5.61271
	A3->X (FF)	0.10515	0.48816	5.82274
	A4->X (FF)	0.11417	0.51062	6.09191
	B1->X (FF)	0.09625	0.54535	6.40420
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.09370	0.41310	5.24707
	A2->X (FF)	0.10902	0.44089	5.45665
	A3->X (FF)	0.11725	0.45847	5.65999
	A4->X (FF)	0.12521	0.47815	5.91472
	B1->X (FF)	0.10818	0.51804	6.23453
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.09923	0.35802	4.53971
	A2->X (FF)	0.11318	0.38241	4.70658
	A3->X (FF)	0.12338	0.41047	5.11984
	A4->X (FF)	0.13373	0.43304	5.39063
	B1->X (FF)	0.11439	0.48946	5.87352

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.04655	0.05865	0.27665
	A1	0.03929	0.05183	0.26935
	A2	0.04788	0.05903	0.27684
	A2	0.03920	0.05032	0.26842
	A3	0.04918	0.06033	0.29029
	A3	0.03909	0.05020	0.28060
	A4	0.05054	0.06170	0.30465
	A4	0.03895	0.05012	0.29275
	B1	0.02612	0.04598	0.34932
	B1	0.02056	0.04043	0.34369
sky130_fd_sc_hs__a41o_2	A1	0.05289	0.06427	0.29148
	A1	0.04562	0.05697	0.28418
	A2	0.05428	0.06439	0.28973
	A2	0.04552	0.05561	0.28155
	A3	0.05561	0.06537	0.30291
	A3	0.04541	0.05516	0.29292
	A4	0.05688	0.06649	0.31617
	A4	0.04527	0.05495	0.30395
	B1	0.02944	0.04973	0.35921
	B1	0.02384	0.04413	0.35339

sky130_fd_sc_hs__a41o_4	**A1**	0.10725	0.12326	0.48788
	A1	0.09272	0.10884	0.47303
	A2	0.11022	0.12636	0.54687
	A2	0.09289	0.10912	0.52916
	A3	0.11306	0.12932	0.58797
	A3	0.09254	0.10877	0.56828
	A4	0.11566	0.13128	0.61753
	A4	0.09229	0.10782	0.59299
	B1	0.05609	0.09387	0.64999
	B1	0.04533	0.08308	0.63708

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.01511	0.02652	0.24298
	A1	0.02236	0.03372	0.24963
	A2	0.01632	0.02713	0.24366
	A2	0.02502	0.03577	0.25237
	A3	0.01755	0.02833	0.25767
	A3	0.02765	0.03841	0.26770
	A4	0.01864	0.02947	0.27352
	A4	0.03022	0.04100	0.28335
	B1	0.01395	0.03319	0.31386
	B1	0.01950	0.03870	0.31741

sky130_fd_sc_hs__a41o_2	**A1**	0.03118	0.03906	0.25425
	A1	0.03844	0.04617	0.26005
	A2	0.03357	0.04013	0.25552
	A2	0.04234	0.04869	0.26354
	A3	0.03520	0.04123	0.26888
	A3	0.04542	0.05142	0.27912
	A4	0.03676	0.04250	0.28282
	A4	0.04836	0.05397	0.29419
	B1	0.02809	0.04523	0.31967
	B1	0.03370	0.05075	0.32532
sky130_fd_sc_hs__a41o_4	**A1**	0.06022	0.07212	0.45647
	A1	0.07478	0.08659	0.46745
	A2	0.06537	0.07634	0.48010
	A2	0.08271	0.09360	0.49350
	A3	0.06906	0.07962	0.52658
	A3	0.08956	0.10001	0.54109
	A4	0.07370	0.08324	0.55482
	A4	0.09703	0.10632	0.57654
	B1	0.05443	0.08544	0.60881
	B1	0.06516	0.09617	0.61843

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)**	0.00420	0.00387	0.00657
	(A2 * A3 * A4 * B1 * X)	-0.00021	-0.00053	0.00220
	(A2 * A3 * !A4 * B1 * X)	0.00705	0.00706	0.00707
	(A2 * A3 * !A4 * B1 * X)	0.00287	0.00284	0.00286
	(A2 * A3 * !A4 * !B1 * !X)	0.00532	0.00532	0.00522
	(A2 * A3 * !A4 * !B1 * !X)	0.00218	0.00217	0.00195
	(A2 * !A3 * B1 * X)	0.00707	0.00709	0.00709
	(A2 * !A3 * B1 * X)	0.00286	0.00283	0.00287
	(A2 * !A3 * !B1 * !X)	0.00529	0.00529	0.00522
	(A2 * !A3 * !B1 * !X)	0.00209	0.00207	0.00193
	(!A2 * B1 * X)	0.00710	0.00712	0.00712
	(!A2 * B1 * X)	0.00287	0.00283	0.00286
	(!A2 * !B1 * !X)	0.00528	0.00528	0.00523
	(!A2 * !B1 * !X)	0.00201	0.00199	0.00193
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00428	0.00395	0.00665
	(A2 * A3 * A4 * B1 * X)	-0.00012	-0.00044	0.00229
	(A2 * A3 * !A4 * B1 * X)	0.00713	0.00713	0.00714
	(A2 * A3 * !A4 * B1 * X)	0.00296	0.00293	0.00296
	(A2 * A3 * !A4 * !B1 * !X)	0.00985	0.00985	0.00975
	(A2 * A3 * !A4 * !B1 * !X)	0.00671	0.00671	0.00648
	(A2 * !A3 * B1 * X)	0.00716	0.00717	0.00717
	(A2 * !A3 * B1 * X)	0.00295	0.00292	0.00296
	(A2 * !A3 * !B1 * !X)	0.00984	0.00984	0.00975
	(A2 * !A3 * !B1 * !X)	0.00663	0.00662	0.00646
	(!A2 * B1 * X)	0.00719	0.00720	0.00720
	(!A2 * B1 * X)	0.00295	0.00293	0.00296
	(!A2 * !B1 * !X)	0.00983	0.00984	0.00977
	(!A2 * !B1 * !X)	0.00655	0.00653	0.00646

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00878	0.00816	0.01348
	(A2 * A3 * A4 * B1 * X)	-0.00025	-0.00092	0.00448
	(A2 * A3 * !A4 * B1 * X)	0.01436	0.01438	0.01439
	(A2 * A3 * !A4 * B1 * X)	0.00579	0.00573	0.00580
	(A2 * A3 * !A4 * !B1 * !X)	0.01978	0.01978	0.01954
	(A2 * A3 * !A4 * !B1 * !X)	0.01335	0.01331	0.01278
	(A2 * !A3 * B1 * X)	0.01441	0.01442	0.01444
	(A2 * !A3 * B1 * X)	0.00579	0.00574	0.00580
	(A2 * !A3 * !B1 * !X)	0.01969	0.01969	0.01952
	(A2 * !A3 * !B1 * !X)	0.01313	0.01309	0.01274
	(!A2 * B1 * X)	0.01454	0.01454	0.01456
	(!A2 * B1 * X)	0.00580	0.00575	0.00581
	(!A2 * !B1 * !X)	0.01973	0.01972	0.01960
	(!A2 * !B1 * !X)	0.01295	0.01295	0.01272

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)**	0.00325	0.00312	0.00239
	(A2 * A3 * A4 * B1 * X)	0.00763	0.00755	0.00679
	(A2 * A3 * !A4 * B1 * X)	0.00349	0.00335	0.00333
	(A2 * A3 * !A4 * B1 * X)	0.00757	0.00760	0.00755
	(A2 * A3 * !A4 * !B1 * !X)	0.00417	0.00417	0.00418
	(A2 * A3 * !A4 * !B1 * !X)	0.00740	0.00741	0.00741
	(A2 * !A3 * B1 * X)	0.00341	0.00333	0.00332
	(A2 * !A3 * B1 * X)	0.00757	0.00760	0.00756
	(A2 * !A3 * !B1 * !X)	0.00417	0.00416	0.00417
	(A2 * !A3 * !B1 * !X)	0.00740	0.00741	0.00741
	(!A2 * B1 * X)	0.00331	0.00329	0.00330
	(!A2 * B1 * X)	0.00757	0.00759	0.00755
	(!A2 * !B1 * !X)	0.00414	0.00413	0.00415
	(!A2 * !B1 * !X)	0.00741	0.00745	0.00741
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00336	0.00324	0.00251
	(A2 * A3 * A4 * B1 * X)	0.00774	0.00766	0.00690
	(A2 * A3 * !A4 * B1 * X)	0.00361	0.00347	0.00344
	(A2 * A3 * !A4 * B1 * X)	0.00768	0.00771	0.00766
	(A2 * A3 * !A4 * !B1 * !X)	0.00871	0.00869	0.00871
	(A2 * A3 * !A4 * !B1 * !X)	0.01192	0.01197	0.01194
	(A2 * !A3 * B1 * X)	0.00353	0.00345	0.00343
	(A2 * !A3 * B1 * X)	0.00768	0.00771	0.00767
	(A2 * !A3 * !B1 * !X)	0.00869	0.00869	0.00869
	(A2 * !A3 * !B1 * !X)	0.01192	0.01193	0.01194
	(!A2 * B1 * X)	0.00343	0.00341	0.00341
	(!A2 * B1 * X)	0.00768	0.00770	0.00766
	(!A2 * !B1 * !X)	0.00865	0.00864	0.00866
	(!A2 * !B1 * !X)	0.01193	0.01195	0.01194

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00647	0.00623	0.00477
	(A2 * A3 * A4 * B1 * X)	0.01551	0.01534	0.01382
	(A2 * A3 * !A4 * B1 * X)	0.00705	0.00670	0.00665
	(A2 * A3 * !A4 * B1 * X)	0.01539	0.01540	0.01536
	(A2 * A3 * !A4 * !B1 * !X)	0.01728	0.01726	0.01729
	(A2 * A3 * !A4 * !B1 * !X)	0.02396	0.02404	0.02397
	(A2 * !A3 * B1 * X)	0.00684	0.00666	0.00663
	(A2 * !A3 * B1 * X)	0.01539	0.01542	0.01536
	(A2 * !A3 * !B1 * !X)	0.01727	0.01727	0.01728
	(A2 * !A3 * !B1 * !X)	0.02398	0.02397	0.02397
	(!A2 * B1 * X)	0.00662	0.00660	0.00659
	(!A2 * B1 * X)	0.01541	0.01539	0.01536
	(!A2 * !B1 * !X)	0.01716	0.01713	0.01717
	(!A2 * !B1 * !X)	0.02397	0.02407	0.02399

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)**	0.00422	0.00391	0.00659
	(A1 * A3 * A4 * B1 * X)	-0.00017	-0.00052	0.00221
	(A1 * A3 * !A4 * B1 * X)	0.00710	0.00711	0.00711
	(A1 * A3 * !A4 * B1 * X)	0.00287	0.00285	0.00288
	(A1 * A3 * !A4 * !B1 * !X)	0.00541	0.00542	0.00540
	(A1 * A3 * !A4 * !B1 * !X)	0.00229	0.00227	0.00228
	(A1 * !A3 * B1 * X)	0.00713	0.00714	0.00715
	(A1 * !A3 * B1 * X)	0.00287	0.00285	0.00288
	(A1 * !A3 * !B1 * !X)	0.00544	0.00545	0.00543
	(A1 * !A3 * !B1 * !X)	0.00228	0.00226	0.00229
	(!A1 * A3 * A4 * B1 * X)	0.00715	0.00716	0.00716
	(!A1 * A3 * A4 * B1 * X)	0.00289	0.00286	0.00288
	(!A1 * A3 * A4 * !B1 * !X)	0.00668	0.00668	0.00667
	(!A1 * A3 * A4 * !B1 * !X)	0.00238	0.00237	0.00237
	(!A1 * A3 * !A4 * B1 * X)	0.00629	0.00630	0.00628
	(!A1 * A3 * !A4 * B1 * X)	0.00290	0.00288	0.00290
	(!A1 * A3 * !A4 * !B1 * !X)	0.00564	0.00565	0.00564
	(!A1 * A3 * !A4 * !B1 * !X)	0.00229	0.00228	0.00229
	(!A1 * !A3 * B1 * X)	0.00630	0.00631	0.00629
	(!A1 * !A3 * B1 * X)	0.00290	0.00288	0.00290
	(!A1 * !A3 * !B1 * !X)	0.00564	0.00565	0.00563
	(!A1 * !A3 * !B1 * !X)	0.00229	0.00228	0.00229

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00434	0.00403	0.00671
	(A1 * A3 * A4 * B1 * X)	-0.00008	-0.00043	0.00230
	(A1 * A3 * !A4 * B1 * X)	0.00722	0.00723	0.00723
	(A1 * A3 * !A4 * B1 * X)	0.00296	0.00294	0.00297
	(A1 * A3 * !A4 * !B1 * !X)	0.00993	0.00994	0.00994
	(A1 * A3 * !A4 * !B1 * !X)	0.00680	0.00678	0.00680
	(A1 * !A3 * B1 * X)	0.00726	0.00726	0.00727
	(A1 * !A3 * B1 * X)	0.00296	0.00295	0.00297
	(A1 * !A3 * !B1 * !X)	0.00998	0.01000	0.00998
	(A1 * !A3 * !B1 * !X)	0.00680	0.00678	0.00680
	(!A1 * A3 * A4 * B1 * X)	0.00726	0.00727	0.00727
	(!A1 * A3 * A4 * B1 * X)	0.00298	0.00295	0.00298
	(!A1 * A3 * A4 * !B1 * !X)	0.01122	0.01124	0.01121
	(!A1 * A3 * A4 * !B1 * !X)	0.00690	0.00688	0.00688
	(!A1 * A3 * !A4 * B1 * X)	0.00641	0.00641	0.00640
	(!A1 * A3 * !A4 * B1 * X)	0.00300	0.00298	0.00299
	(!A1 * A3 * !A4 * !B1 * !X)	0.01017	0.01018	0.01018
	(!A1 * A3 * !A4 * !B1 * !X)	0.00681	0.00680	0.00681
	(!A1 * !A3 * B1 * X)	0.00646	0.00647	0.00645
	(!A1 * !A3 * B1 * X)	0.00300	0.00298	0.00299
	(!A1 * !A3 * !B1 * !X)	0.01022	0.01024	0.01022
	(!A1 * !A3 * !B1 * !X)	0.00681	0.00679	0.00681

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00866	0.00805	0.01337
	(A1 * A3 * A4 * B1 * X)	-0.00020	-0.00085	0.00455
	(A1 * A3 * !A4 * B1 * X)	0.01430	0.01430	0.01433
	(A1 * A3 * !A4 * B1 * X)	0.00586	0.00582	0.00587
	(A1 * A3 * !A4 * !B1 * !X)	0.01974	0.01977	0.01976
	(A1 * A3 * !A4 * !B1 * !X)	0.01355	0.01351	0.01354
	(A1 * !A3 * B1 * X)	0.01443	0.01445	0.01446
	(A1 * !A3 * B1 * X)	0.00587	0.00581	0.00587
	(A1 * !A3 * !B1 * !X)	0.01976	0.01978	0.01977
	(A1 * !A3 * !B1 * !X)	0.01352	0.01349	0.01354
	(!A1 * A3 * A4 * B1 * X)	0.01446	0.01445	0.01447
	(!A1 * A3 * A4 * B1 * X)	0.00586	0.00584	0.00588
	(!A1 * A3 * A4 * !B1 * !X)	0.02239	0.02242	0.02238
	(!A1 * A3 * A4 * !B1 * !X)	0.01377	0.01374	0.01373
	(!A1 * A3 * !A4 * B1 * X)	0.01271	0.01270	0.01269
	(!A1 * A3 * !A4 * B1 * X)	0.00590	0.00588	0.00591
	(!A1 * A3 * !A4 * !B1 * !X)	0.02026	0.02026	0.02025
	(!A1 * A3 * !A4 * !B1 * !X)	0.01353	0.01353	0.01355
	(!A1 * !A3 * B1 * X)	0.01273	0.01272	0.01269
	(!A1 * !A3 * B1 * X)	0.00590	0.00589	0.00591
	(!A1 * !A3 * !B1 * !X)	0.02023	0.02024	0.02022
	(!A1 * !A3 * !B1 * !X)	0.01353	0.01351	0.01353

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)**	0.00320	0.00308	0.00235
	(A1 * A3 * A4 * B1 * X)	0.00761	0.00753	0.00676
	(A1 * A3 * !A4 * B1 * X)	0.00337	0.00330	0.00328
	(A1 * A3 * !A4 * B1 * X)	0.00756	0.00754	0.00754
	(A1 * A3 * !A4 * !B1 * !X)	0.00402	0.00401	0.00400
	(A1 * A3 * !A4 * !B1 * !X)	0.00714	0.00716	0.00708
	(A1 * !A3 * B1 * X)	0.00328	0.00325	0.00327
	(A1 * !A3 * B1 * X)	0.00755	0.00758	0.00754
	(A1 * !A3 * !B1 * !X)	0.00398	0.00397	0.00396
	(A1 * !A3 * !B1 * !X)	0.00715	0.00717	0.00708
	(!A1 * A3 * A4 * B1 * X)	0.00328	0.00327	0.00327
	(!A1 * A3 * A4 * B1 * X)	0.00755	0.00755	0.00754
	(!A1 * A3 * A4 * !B1 * !X)	0.00311	0.00282	0.00284
	(!A1 * A3 * A4 * !B1 * !X)	0.00742	0.00713	0.00712
	(!A1 * A3 * !A4 * B1 * X)	0.00398	0.00398	0.00409
	(!A1 * A3 * !A4 * B1 * X)	0.00756	0.00758	0.00757
	(!A1 * A3 * !A4 * !B1 * !X)	0.00373	0.00368	0.00367
	(!A1 * A3 * !A4 * !B1 * !X)	0.00729	0.00727	0.00715
	(!A1 * !A3 * B1 * X)	0.00406	0.00405	0.00414
	(!A1 * !A3 * B1 * X)	0.00757	0.00758	0.00757
	(!A1 * !A3 * !B1 * !X)	0.00367	0.00367	0.00364
	(!A1 * !A3 * !B1 * !X)	0.00715	0.00716	0.00705

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00328	0.00316	0.00243
	(A1 * A3 * A4 * B1 * X)	0.00772	0.00764	0.00688
	(A1 * A3 * !A4 * B1 * X)	0.00345	0.00336	0.00336
	(A1 * A3 * !A4 * B1 * X)	0.00767	0.00769	0.00765
	(A1 * A3 * !A4 * !B1 * !X)	0.00854	0.00854	0.00851
	(A1 * A3 * !A4 * !B1 * !X)	0.01170	0.01171	0.01163
	(A1 * !A3 * B1 * X)	0.00336	0.00333	0.00335
	(A1 * !A3 * B1 * X)	0.00766	0.00769	0.00765
	(A1 * !A3 * !B1 * !X)	0.00849	0.00848	0.00847
	(A1 * !A3 * !B1 * !X)	0.01169	0.01172	0.01162
	(!A1 * A3 * A4 * B1 * X)	0.00336	0.00335	0.00335
	(!A1 * A3 * A4 * B1 * X)	0.00766	0.00766	0.00765
	(!A1 * A3 * A4 * !B1 * !X)	0.00767	0.00735	0.00736
	(!A1 * A3 * A4 * !B1 * !X)	0.01200	0.01168	0.01167
	(!A1 * A3 * !A4 * B1 * X)	0.00407	0.00407	0.00418
	(!A1 * A3 * !A4 * B1 * X)	0.00767	0.00769	0.00768
	(!A1 * A3 * !A4 * !B1 * !X)	0.00824	0.00821	0.00819
	(!A1 * A3 * !A4 * !B1 * !X)	0.01186	0.01181	0.01168
	(!A1 * !A3 * B1 * X)	0.00409	0.00409	0.00417
	(!A1 * !A3 * B1 * X)	0.00768	0.00769	0.00768
	(!A1 * !A3 * !B1 * !X)	0.00815	0.00815	0.00811
	(!A1 * !A3 * !B1 * !X)	0.01170	0.01171	0.01159

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00657	0.00633	0.00487
	(A1 * A3 * A4 * B1 * X)	0.01544	0.01527	0.01375
	(A1 * A3 * !A4 * B1 * X)	0.00694	0.00678	0.00673
	(A1 * A3 * !A4 * B1 * X)	0.01531	0.01535	0.01528
	(A1 * A3 * !A4 * !B1 * !X)	0.01711	0.01710	0.01705
	(A1 * A3 * !A4 * !B1 * !X)	0.02334	0.02337	0.02321
	(A1 * !A3 * B1 * X)	0.00672	0.00670	0.00670
	(A1 * !A3 * B1 * X)	0.01531	0.01530	0.01528
	(A1 * !A3 * !B1 * !X)	0.01709	0.01709	0.01703
	(A1 * !A3 * !B1 * !X)	0.02337	0.02337	0.02322
	(!A1 * A3 * A4 * B1 * X)	0.00673	0.00669	0.00669
	(!A1 * A3 * A4 * B1 * X)	0.01531	0.01534	0.01528
	(!A1 * A3 * A4 * !B1 * !X)	0.01547	0.01472	0.01468
	(!A1 * A3 * A4 * !B1 * !X)	0.02413	0.02343	0.02329
	(!A1 * A3 * !A4 * B1 * X)	0.00815	0.00815	0.00839
	(!A1 * A3 * !A4 * B1 * X)	0.01535	0.01540	0.01535
	(!A1 * A3 * !A4 * !B1 * !X)	0.01659	0.01645	0.01641
	(!A1 * A3 * !A4 * !B1 * !X)	0.02377	0.02365	0.02337
	(!A1 * !A3 * B1 * X)	0.00833	0.00830	0.00848
	(!A1 * !A3 * B1 * X)	0.01534	0.01540	0.01535
	(!A1 * !A3 * !B1 * !X)	0.01641	0.01642	0.01636
	(!A1 * !A3 * !B1 * !X)	0.02340	0.02343	0.02318

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)**	0.00422	0.00387	0.00656
	(A1 * A2 * A4 * B1 * X)	-0.00022	-0.00055	0.00217
	(A1 * A2 * !A4 * B1 * X)	0.00711	0.00712	0.00712
	(A1 * A2 * !A4 * B1 * X)	0.00283	0.00280	0.00283
	(A1 * A2 * !A4 * !B1 * !X)	0.00546	0.00546	0.00545
	(A1 * A2 * !A4 * !B1 * !X)	0.00230	0.00229	0.00231
	(A1 * !A2 * A4 * !B1 * !X)	0.00663	0.00667	0.00664
	(A1 * !A2 * A4 * !B1 * !X)	0.00236	0.00234	0.00234
	(A1 * !A2 * !A4 * !B1 * !X)	0.00566	0.00567	0.00566
	(A1 * !A2 * !A4 * !B1 * !X)	0.00227	0.00225	0.00226
	(!A2 * A4 * B1 * X)	0.00710	0.00711	0.00711
	(!A2 * A4 * B1 * X)	0.00283	0.00280	0.00283
	(!A2 * !A4 * B1 * X)	0.00630	0.00631	0.00629
	(!A2 * !A4 * B1 * X)	0.00285	0.00283	0.00285
	(!A1 * A2 * A4 * B1 * X)	0.00708	0.00709	0.00709
	(!A1 * A2 * A4 * B1 * X)	0.00283	0.00281	0.00284
	(!A1 * A2 * A4 * !B1 * !X)	0.00663	0.00664	0.00663
	(!A1 * A2 * A4 * !B1 * !X)	0.00235	0.00234	0.00235
	(!A1 * A2 * !A4 * B1 * X)	0.00627	0.00627	0.00626
	(!A1 * A2 * !A4 * B1 * X)	0.00286	0.00284	0.00285
	(!A1 * A2 * !A4 * !B1 * !X)	0.00563	0.00563	0.00562
	(!A1 * A2 * !A4 * !B1 * !X)	0.00225	0.00225	0.00226
	(!A1 * !A2 * A4 * !B1 * !X)	0.00654	0.00657	0.00655
	(!A1 * !A2 * A4 * !B1 * !X)	0.00227	0.00225	0.00227
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00568	0.00569	0.00567
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00226	0.00224	0.00226

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00439	0.00405	0.00675
	(A1 * A2 * A4 * B1 * X)	-0.00012	-0.00044	0.00228
	(A1 * A2 * !A4 * B1 * X)	0.00729	0.00730	0.00730
	(A1 * A2 * !A4 * B1 * X)	0.00295	0.00292	0.00295
	(A1 * A2 * !A4 * !B1 * !X)	0.01001	0.01002	0.01001
	(A1 * A2 * !A4 * !B1 * !X)	0.00685	0.00683	0.00686
	(A1 * !A2 * A4 * !B1 * !X)	0.01124	0.01128	0.01125
	(A1 * !A2 * A4 * !B1 * !X)	0.00690	0.00688	0.00689
	(A1 * !A2 * !A4 * !B1 * !X)	0.01020	0.01021	0.01019
	(A1 * !A2 * !A4 * !B1 * !X)	0.00681	0.00679	0.00680
	(!A2 * A4 * B1 * X)	0.00728	0.00730	0.00729
	(!A2 * A4 * B1 * X)	0.00295	0.00292	0.00295
	(!A2 * !A4 * B1 * X)	0.00642	0.00642	0.00640
	(!A2 * !A4 * B1 * X)	0.00297	0.00296	0.00297
	(!A1 * A2 * A4 * B1 * X)	0.00727	0.00728	0.00727
	(!A1 * A2 * A4 * B1 * X)	0.00295	0.00293	0.00296
	(!A1 * A2 * A4 * !B1 * !X)	0.01124	0.01126	0.01124
	(!A1 * A2 * A4 * !B1 * !X)	0.00689	0.00688	0.00689
	(!A1 * A2 * !A4 * B1 * X)	0.00643	0.00644	0.00642
	(!A1 * A2 * !A4 * B1 * X)	0.00297	0.00296	0.00297
	(!A1 * A2 * !A4 * !B1 * !X)	0.01020	0.01021	0.01020
	(!A1 * A2 * !A4 * !B1 * !X)	0.00680	0.00679	0.00680
	(!A1 * !A2 * A4 * !B1 * !X)	0.01114	0.01117	0.01115
	(!A1 * !A2 * A4 * !B1 * !X)	0.00682	0.00680	0.00681
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01022	0.01022	0.01021
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00680	0.00679	0.00680

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00877	0.00812	0.01345
	(A1 * A2 * A4 * B1 * X)	-0.00024	-0.00089	0.00449
	(A1 * A2 * !A4 * B1 * X)	0.01450	0.01452	0.01452
	(A1 * A2 * !A4 * B1 * X)	0.00580	0.00574	0.00581
	(A1 * A2 * !A4 * !B1 * !X)	0.01994	0.01996	0.01991
	(A1 * A2 * !A4 * !B1 * !X)	0.01358	0.01354	0.01361
	(A1 * !A2 * A4 * !B1 * !X)	0.02243	0.02249	0.02243
	(A1 * !A2 * A4 * !B1 * !X)	0.01370	0.01366	0.01367
	(A1 * !A2 * !A4 * !B1 * !X)	0.02026	0.02028	0.02026
	(A1 * !A2 * !A4 * !B1 * !X)	0.01349	0.01347	0.01349
	(!A2 * A4 * B1 * X)	0.01453	0.01454	0.01453
	(!A2 * A4 * B1 * X)	0.00579	0.00575	0.00581
	(!A2 * !A4 * B1 * X)	0.01275	0.01276	0.01273
	(!A2 * !A4 * B1 * X)	0.00585	0.00581	0.00585
	(!A1 * A2 * A4 * B1 * X)	0.01444	0.01444	0.01447
	(!A1 * A2 * A4 * B1 * X)	0.00581	0.00578	0.00582
	(!A1 * A2 * A4 * !B1 * !X)	0.02243	0.02247	0.02243
	(!A1 * A2 * A4 * !B1 * !X)	0.01370	0.01367	0.01369
	(!A1 * A2 * !A4 * B1 * X)	0.01273	0.01274	0.01272
	(!A1 * A2 * !A4 * B1 * X)	0.00586	0.00581	0.00585
	(!A1 * A2 * !A4 * !B1 * !X)	0.02029	0.02028	0.02027
	(!A1 * A2 * !A4 * !B1 * !X)	0.01347	0.01347	0.01348
	(!A1 * !A2 * A4 * !B1 * !X)	0.02223	0.02229	0.02224
	(!A1 * !A2 * A4 * !B1 * !X)	0.01354	0.01350	0.01353
	(!A1 * !A2 * !A4 * !B1 * !X)	0.02032	0.02032	0.02030
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01349	0.01347	0.01349

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)**	0.00324	0.00312	0.00238
	(A1 * A2 * A4 * B1 * X)	0.00766	0.00758	0.00681
	(A1 * A2 * !A4 * B1 * X)	0.00331	0.00329	0.00330
	(A1 * A2 * !A4 * B1 * X)	0.00759	0.00760	0.00758
	(A1 * A2 * !A4 * !B1 * !X)	0.00399	0.00399	0.00396
	(A1 * A2 * !A4 * !B1 * !X)	0.00722	0.00723	0.00711
	(A1 * !A2 * A4 * !B1 * !X)	0.00307	0.00282	0.00284
	(A1 * !A2 * A4 * !B1 * !X)	0.00739	0.00719	0.00712
	(A1 * !A2 * !A4 * !B1 * !X)	0.00364	0.00364	0.00361
	(A1 * !A2 * !A4 * !B1 * !X)	0.00716	0.00717	0.00707
	(!A2 * A4 * B1 * X)	0.00331	0.00329	0.00330
	(!A2 * A4 * B1 * X)	0.00760	0.00762	0.00758
	(!A2 * !A4 * B1 * X)	0.00405	0.00404	0.00412
	(!A2 * !A4 * B1 * X)	0.00761	0.00763	0.00761
	(!A1 * A2 * A4 * B1 * X)	0.00341	0.00333	0.00333
	(!A1 * A2 * A4 * B1 * X)	0.00760	0.00763	0.00759
	(!A1 * A2 * A4 * !B1 * !X)	0.00323	0.00285	0.00287
	(!A1 * A2 * A4 * !B1 * !X)	0.00751	0.00721	0.00714
	(!A1 * A2 * !A4 * B1 * X)	0.00401	0.00401	0.00412
	(!A1 * A2 * !A4 * B1 * X)	0.00761	0.00763	0.00761
	(!A1 * A2 * !A4 * !B1 * !X)	0.00366	0.00369	0.00366
	(!A1 * A2 * !A4 * !B1 * !X)	0.00725	0.00728	0.00712
	(!A1 * !A2 * A4 * !B1 * !X)	0.00287	0.00275	0.00277
	(!A1 * !A2 * A4 * !B1 * !X)	0.00713	0.00708	0.00705
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00356	0.00355	0.00357
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00712	0.00714	0.00707

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00325	0.00313	0.00240
	(A1 * A2 * A4 * B1 * X)	0.00774	0.00766	0.00689
	(A1 * A2 * !A4 * B1 * X)	0.00333	0.00331	0.00332
	(A1 * A2 * !A4 * B1 * X)	0.00768	0.00768	0.00766
	(A1 * A2 * !A4 * !B1 * !X)	0.00849	0.00850	0.00846
	(A1 * A2 * !A4 * !B1 * !X)	0.01173	0.01172	0.01163
	(A1 * !A2 * A4 * !B1 * !X)	0.00754	0.00728	0.00729
	(A1 * !A2 * A4 * !B1 * !X)	0.01190	0.01171	0.01164
	(A1 * !A2 * !A4 * !B1 * !X)	0.00815	0.00815	0.00814
	(A1 * !A2 * !A4 * !B1 * !X)	0.01166	0.01168	0.01158
	(!A2 * A4 * B1 * X)	0.00334	0.00330	0.00332
	(!A2 * A4 * B1 * X)	0.00767	0.00771	0.00766
	(!A2 * !A4 * B1 * X)	0.00414	0.00413	0.00422
	(!A2 * !A4 * B1 * X)	0.00769	0.00771	0.00769
	(!A1 * A2 * A4 * B1 * X)	0.00343	0.00335	0.00334
	(!A1 * A2 * A4 * B1 * X)	0.00768	0.00771	0.00767
	(!A1 * A2 * A4 * !B1 * !X)	0.00770	0.00731	0.00732
	(!A1 * A2 * A4 * !B1 * !X)	0.01204	0.01173	0.01166
	(!A1 * A2 * !A4 * B1 * X)	0.00404	0.00404	0.00415
	(!A1 * A2 * !A4 * B1 * X)	0.00769	0.00771	0.00769
	(!A1 * A2 * !A4 * !B1 * !X)	0.00814	0.00817	0.00813
	(!A1 * A2 * !A4 * !B1 * !X)	0.01174	0.01180	0.01163
	(!A1 * !A2 * A4 * !B1 * !X)	0.00733	0.00720	0.00722
	(!A1 * !A2 * A4 * !B1 * !X)	0.01163	0.01159	0.01156
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00807	0.00807	0.00810
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01163	0.01165	0.01158

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00648	0.00624	0.00478
	(A1 * A2 * A4 * B1 * X)	0.01551	0.01533	0.01380
	(A1 * A2 * !A4 * B1 * X)	0.00665	0.00660	0.00661
	(A1 * A2 * !A4 * B1 * X)	0.01536	0.01542	0.01534
	(A1 * A2 * !A4 * !B1 * !X)	0.01705	0.01704	0.01697
	(A1 * A2 * !A4 * !B1 * !X)	0.02353	0.02355	0.02329
	(A1 * !A2 * A4 * !B1 * !X)	0.01510	0.01454	0.01458
	(A1 * !A2 * A4 * !B1 * !X)	0.02391	0.02345	0.02331
	(A1 * !A2 * !A4 * !B1 * !X)	0.01639	0.01637	0.01632
	(A1 * !A2 * !A4 * !B1 * !X)	0.02350	0.02348	0.02322
	(!A2 * A4 * B1 * X)	0.00664	0.00662	0.00662
	(!A2 * A4 * B1 * X)	0.01538	0.01536	0.01534
	(!A2 * !A4 * B1 * X)	0.00826	0.00826	0.00843
	(!A2 * !A4 * B1 * X)	0.01543	0.01544	0.01540
	(!A1 * A2 * A4 * B1 * X)	0.00686	0.00666	0.00666
	(!A1 * A2 * A4 * B1 * X)	0.01538	0.01544	0.01535
	(!A1 * A2 * A4 * !B1 * !X)	0.01544	0.01459	0.01463
	(!A1 * A2 * A4 * !B1 * !X)	0.02417	0.02347	0.02334
	(!A1 * A2 * !A4 * B1 * X)	0.00811	0.00811	0.00836
	(!A1 * A2 * !A4 * B1 * X)	0.01541	0.01545	0.01541
	(!A1 * A2 * !A4 * !B1 * !X)	0.01633	0.01642	0.01634
	(!A1 * A2 * !A4 * !B1 * !X)	0.02355	0.02370	0.02333
	(!A1 * !A2 * A4 * !B1 * !X)	0.01465	0.01442	0.01442
	(!A1 * !A2 * A4 * !B1 * !X)	0.02332	0.02312	0.02314
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01621	0.01619	0.01624
	(!A1 * !A2 * !A4 * !B1 * !X)	0.02337	0.02338	0.02322

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)**	0.00431	0.00400	0.00668
	(A1 * A2 * A3 * B1 * X)	-0.00021	-0.00055	0.00217
	(A1 * A2 * !A3 * !B1 * !X)	0.00675	0.00678	0.00675
	(A1 * A2 * !A3 * !B1 * !X)	0.00234	0.00232	0.00233
	(A1 * !A2 * A3 * !B1 * !X)	0.00675	0.00676	0.00674
	(A1 * !A2 * A3 * !B1 * !X)	0.00235	0.00235	0.00236
	(A1 * !A2 * !A3 * !B1 * !X)	0.00666	0.00670	0.00667
	(A1 * !A2 * !A3 * !B1 * !X)	0.00227	0.00225	0.00227
	(!A3 * B1 * X)	0.00723	0.00724	0.00724
	(!A3 * B1 * X)	0.00284	0.00281	0.00284
	(!A2 * A3 * B1 * X)	0.00720	0.00722	0.00721
	(!A2 * A3 * B1 * X)	0.00284	0.00281	0.00284
	(!A1 * A2 * A3 * B1 * X)	0.00717	0.00718	0.00718
	(!A1 * A2 * A3 * B1 * X)	0.00285	0.00282	0.00285
	(!A1 * A2 * A3 * !B1 * !X)	0.00674	0.00674	0.00674
	(!A1 * A2 * A3 * !B1 * !X)	0.00236	0.00236	0.00236
	(!A1 * !A3 * !B1 * !X)	0.00666	0.00670	0.00667
	(!A1 * !A3 * !B1 * !X)	0.00228	0.00225	0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	0.00664	0.00665	0.00664
	(!A1 * !A2 * A3 * !B1 * !X)	0.00227	0.00226	0.00227

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00440	0.00408	0.00677
	(A1 * A2 * A3 * B1 * X)	-0.00012	-0.00045	0.00227
	(A1 * A2 * !A3 * !B1 * !X)	0.01127	0.01129	0.01126
	(A1 * A2 * !A3 * !B1 * !X)	0.00685	0.00683	0.00684
	(A1 * !A2 * A3 * !B1 * !X)	0.01126	0.01128	0.01125
	(A1 * !A2 * A3 * !B1 * !X)	0.00686	0.00686	0.00687
	(A1 * !A2 * !A3 * !B1 * !X)	0.01118	0.01119	0.01118
	(A1 * !A2 * !A3 * !B1 * !X)	0.00679	0.00678	0.00679
	(!A3 * B1 * X)	0.00732	0.00734	0.00733
	(!A3 * B1 * X)	0.00294	0.00291	0.00294
	(!A2 * A3 * B1 * X)	0.00730	0.00728	0.00730
	(!A2 * A3 * B1 * X)	0.00293	0.00292	0.00294
	(!A1 * A2 * A3 * B1 * X)	0.00726	0.00727	0.00727
	(!A1 * A2 * A3 * B1 * X)	0.00295	0.00292	0.00295
	(!A1 * A2 * A3 * !B1 * !X)	0.01125	0.01128	0.01126
	(!A1 * A2 * A3 * !B1 * !X)	0.00689	0.00687	0.00688
	(!A1 * !A3 * !B1 * !X)	0.01118	0.01120	0.01118
	(!A1 * !A3 * !B1 * !X)	0.00680	0.00679	0.00680
	(!A1 * !A2 * A3 * !B1 * !X)	0.01115	0.01116	0.01115
	(!A1 * !A2 * A3 * !B1 * !X)	0.00679	0.00679	0.00679

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00862	0.00807	0.01339
	(A1 * A2 * A3 * B1 * X)	-0.00024	-0.00083	0.00458
	(A1 * A2 * !A3 * !B1 * !X)	0.02233	0.02240	0.02235
	(A1 * A2 * !A3 * !B1 * !X)	0.01374	0.01370	0.01372
	(A1 * !A2 * A3 * !B1 * !X)	0.02233	0.02236	0.02233
	(A1 * !A2 * A3 * !B1 * !X)	0.01378	0.01378	0.01380
	(A1 * !A2 * !A3 * !B1 * !X)	0.02217	0.02222	0.02218
	(A1 * !A2 * !A3 * !B1 * !X)	0.01363	0.01359	0.01361
	(!A3 * B1 * X)	0.01446	0.01448	0.01449
	(!A3 * B1 * X)	0.00591	0.00587	0.00592
	(!A2 * A3 * B1 * X)	0.01435	0.01435	0.01438
	(!A2 * A3 * B1 * X)	0.00591	0.00588	0.00592
	(!A1 * A2 * A3 * B1 * X)	0.01431	0.01435	0.01434
	(!A1 * A2 * A3 * B1 * X)	0.00591	0.00586	0.00592
	(!A1 * A2 * A3 * !B1 * !X)	0.02232	0.02235	0.02233
	(!A1 * A2 * A3 * !B1 * !X)	0.01381	0.01380	0.01381
	(!A1 * !A3 * !B1 * !X)	0.02218	0.02223	0.02220
	(!A1 * !A3 * !B1 * !X)	0.01364	0.01360	0.01363
	(!A1 * !A2 * A3 * !B1 * !X)	0.02207	0.02210	0.02209
	(!A1 * !A2 * A3 * !B1 * !X)	0.01363	0.01362	0.01363

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)**	0.00312	0.00299	0.00226
	(A1 * A2 * A3 * B1 * X)	0.00764	0.00756	0.00680
	(A1 * A2 * !A3 * !B1 * !X)	0.00288	0.00273	0.00272
	(A1 * A2 * !A3 * !B1 * !X)	0.00731	0.00719	0.00712
	(A1 * !A2 * A3 * !B1 * !X)	0.00296	0.00274	0.00273
	(A1 * !A2 * A3 * !B1 * !X)	0.00733	0.00718	0.00711
	(A1 * !A2 * !A3 * !B1 * !X)	0.00269	0.00264	0.00264
	(A1 * !A2 * !A3 * !B1 * !X)	0.00705	0.00705	0.00703
	(!A3 * B1 * X)	0.00318	0.00317	0.00317
	(!A3 * B1 * X)	0.00759	0.00759	0.00757
	(!A2 * A3 * B1 * X)	0.00327	0.00321	0.00319
	(!A2 * A3 * B1 * X)	0.00759	0.00761	0.00757
	(!A1 * A2 * A3 * B1 * X)	0.00335	0.00323	0.00321
	(!A1 * A2 * A3 * B1 * X)	0.00759	0.00761	0.00758
	(!A1 * A2 * A3 * !B1 * !X)	0.00300	0.00275	0.00275
	(!A1 * A2 * A3 * !B1 * !X)	0.00737	0.00718	0.00713
	(!A1 * !A3 * !B1 * !X)	0.00270	0.00264	0.00264
	(!A1 * !A3 * !B1 * !X)	0.00705	0.00706	0.00703
	(!A1 * !A2 * A3 * !B1 * !X)	0.00278	0.00266	0.00265
	(!A1 * !A2 * A3 * !B1 * !X)	0.00705	0.00705	0.00703

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00323	0.00310	0.00237
	(A1 * A2 * A3 * B1 * X)	0.00775	0.00767	0.00690
	(A1 * A2 * !A3 * !B1 * !X)	0.00742	0.00728	0.00727
	(A1 * A2 * !A3 * !B1 * !X)	0.01184	0.01173	0.01166
	(A1 * !A2 * A3 * !B1 * !X)	0.00750	0.00729	0.00728
	(A1 * !A2 * A3 * !B1 * !X)	0.01186	0.01172	0.01165
	(A1 * !A2 * !A3 * !B1 * !X)	0.00723	0.00718	0.00719
	(A1 * !A2 * !A3 * !B1 * !X)	0.01158	0.01157	0.01157
	(!A3 * B1 * X)	0.00329	0.00329	0.00329
	(!A3 * B1 * X)	0.00770	0.00769	0.00767
	(!A2 * A3 * B1 * X)	0.00339	0.00333	0.00331
	(!A2 * A3 * B1 * X)	0.00768	0.00771	0.00767
	(!A1 * A2 * A3 * B1 * X)	0.00346	0.00335	0.00332
	(!A1 * A2 * A3 * B1 * X)	0.00769	0.00771	0.00768
	(!A1 * A2 * A3 * !B1 * !X)	0.00755	0.00730	0.00730
	(!A1 * A2 * A3 * !B1 * !X)	0.01191	0.01172	0.01167
	(!A1 * !A3 * !B1 * !X)	0.00724	0.00717	0.00719
	(!A1 * !A3 * !B1 * !X)	0.01159	0.01159	0.01157
	(!A1 * !A2 * A3 * !B1 * !X)	0.00732	0.00721	0.00720
	(!A1 * !A2 * A3 * !B1 * !X)	0.01159	0.01159	0.01157

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00652	0.00630	0.00484
	(A1 * A2 * A3 * B1 * X)	0.01540	0.01520	0.01371
	(A1 * A2 * !A3 * !B1 * !X)	0.01504	0.01462	0.01462
	(A1 * A2 * !A3 * !B1 * !X)	0.02361	0.02334	0.02321
	(A1 * !A2 * A3 * !B1 * !X)	0.01520	0.01466	0.01464
	(A1 * !A2 * A3 * !B1 * !X)	0.02371	0.02333	0.02319
	(A1 * !A2 * !A3 * !B1 * !X)	0.01461	0.01443	0.01444
	(A1 * !A2 * !A3 * !B1 * !X)	0.02301	0.02306	0.02301
	(!A3 * B1 * X)	0.00670	0.00664	0.00665
	(!A3 * B1 * X)	0.01524	0.01531	0.01523
	(!A2 * A3 * B1 * X)	0.00689	0.00674	0.00671
	(!A2 * A3 * B1 * X)	0.01527	0.01532	0.01524
	(!A1 * A2 * A3 * B1 * X)	0.00704	0.00679	0.00673
	(!A1 * A2 * A3 * B1 * X)	0.01527	0.01532	0.01524
	(!A1 * A2 * A3 * !B1 * !X)	0.01528	0.01472	0.01468
	(!A1 * A2 * A3 * !B1 * !X)	0.02376	0.02338	0.02322
	(!A1 * !A3 * !B1 * !X)	0.01462	0.01444	0.01445
	(!A1 * !A3 * !B1 * !X)	0.02303	0.02307	0.02302
	(!A1 * !A2 * A3 * !B1 * !X)	0.01477	0.01450	0.01449
	(!A1 * !A2 * A3 * !B1 * !X)	0.02308	0.02307	0.02301

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)**	0.00255	0.00259	0.00444
	(A1 * A2 * A3 * A4 * X)	-0.00019	-0.00014	0.00163
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	0.00268	0.00271	0.00459
	(A1 * A2 * A3 * A4 * X)	-0.00010	-0.00004	0.00175
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	0.00516	0.00526	0.00884
	(A1 * A2 * A3 * A4 * X)	-0.00018	-0.00011	0.00333

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)	0.00963	0.00922	0.00408
	(A1 * A2 * A3 * A4 * X)	0.01247	0.01209	0.00695
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00967	0.00927	0.00413
	(A1 * A2 * A3 * A4 * X)	0.01257	0.01218	0.00703
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.01963	0.01882	0.00858
	(A1 * A2 * A3 * A4 * X)	0.02525	0.02449	0.01421

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00261	0.00249	1.75585
sky130_fd_sc_hs__and2b_2	0.00236	0.00289	2.74948
sky130_fd_sc_hs__and2b_4	0.00263	0.00519	6.07142

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	1731.77000	2664.08000
sky130_fd_sc_hs__and2b_2	0.00000	1748.81000	2367.05000
sky130_fd_sc_hs__and2b_4	0.00000	3217.36000	5342.90000

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)	0.07543	0.55554	7.55983
	B->X (RR)	0.04828	0.40717	5.92814
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.08498	0.50201	7.38769
	B->X (RR)	0.05248	0.32736	5.12607
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.08585	0.44576	7.56123
	B->X (RR)	0.05386	0.27804	5.71543

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)	0.06880	0.30983	3.46904
	B->X (FF)	0.04859	0.42691	5.63510
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.07684	0.25076	2.75688
	B->X (FF)	0.05592	0.38757	5.05194
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.07540	0.21071	2.91539
	B->X (FF)	0.05584	0.35641	5.52538

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	0.07940	0.10074	0.42763
	A_N	0.08413	0.10550	0.43182
	B	0.07981	0.09581	0.35394
	B	0.07511	0.09110	0.34959
sky130_fd_sc_hs__and2b_2	A_N	0.04595	0.06691	0.41311
	A_N	0.05023	0.07115	0.41686
	B	0.04616	0.05991	0.28133
	B	0.04067	0.05440	0.27485
sky130_fd_sc_hs__and2b_4	A_N	0.16846	0.19073	0.57737
	A_N	0.17306	0.19542	0.58165
	B	0.16774	0.20292	0.76423
	B	0.15807	0.19328	0.75319

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.04563	0.06665	0.39946
	A_N	0.04088	0.06193	0.39465
	B	0.01469	0.03371	0.30442
	B	0.01941	0.03838	0.30854
sky130_fd_sc_hs__and2b_2	A_N	0.05322	0.07073	0.38814
	A_N	0.04896	0.06649	0.38417
	B	0.02635	0.04207	0.30072
	B	0.03187	0.04756	0.30420
sky130_fd_sc_hs__and2b_4	A_N	0.07536	0.09785	0.50824
	A_N	0.07076	0.09326	0.50152
	B	0.05793	0.09437	0.67359
	B	0.06763	0.10404	0.68372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.02399	0.04281	0.33445
	(!B * !X)	0.01875	0.03757	0.32923
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.02821	0.04660	0.33047
	(!B * !X)	0.02332	0.04171	0.32560
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.03304	0.05390	0.37766
	(!B * !X)	0.02744	0.04830	0.37208

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00462	0.02512	0.32698
	(!B * !X)	0.00984	0.03034	0.33220
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00938	0.02924	0.32327
	(!B * !X)	0.01427	0.03412	0.32813
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.01907	0.04050	0.36846
	(!B * !X)	0.02463	0.04610	0.37404

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.01808	0.01810	0.01806
	(A_N * !X)	0.01402	0.01400	0.01399
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.02279	0.02280	0.02278
	(A_N * !X)	0.01805	0.01805	0.01805
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.02748	0.02754	0.02744
	(A_N * !X)	0.01911	0.01905	0.01904

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.01456	0.01441	0.01448
	(A_N * !X)	0.01865	0.01852	0.01853
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.01862	0.01846	0.01846
	(A_N * !X)	0.02337	0.02324	0.02318
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.02007	0.01971	0.01984
	(A_N * !X)	0.02844	0.02821	0.02823

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00253	0.00249	1.68347
sky130_fd_sc_hs__and2_2	0.00275	0.00304	3.12280
sky130_fd_sc_hs__and2_4	0.00449	0.00499	6.27349

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	1063.20000	2650.85000
sky130_fd_sc_hs__and2_2	0.00000	1087.77000	1205.37000
sky130_fd_sc_hs__and2_4	0.00000	2910.20000	5320.29000

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)	0.04459	0.43054	6.24531
	B->X (RR)	0.04849	0.40806	5.80539
sky130_fd_sc_hs__and2_2	A->X (RR)	0.04752	0.35551	5.92780
	B->X (RR)	0.05176	0.33067	5.47057
sky130_fd_sc_hs__and2_4	A->X (RR)	0.04784	0.29519	6.11612
	B->X (RR)	0.05412	0.28231	5.85304

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.04506	0.40105	5.29223
	B->X (FF)	0.04991	0.42359	5.47984
sky130_fd_sc_hs__and2_2	A->X (FF)	0.04876	0.36765	5.11780
	B->X (FF)	0.05476	0.39117	5.35706
sky130_fd_sc_hs__and2_4	A->X (FF)	0.05168	0.34186	5.45855
	B->X (FF)	0.05720	0.35839	5.59347

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.07852	0.09710	0.38183
	A	0.07348	0.09207	0.37703
	B	0.07877	0.09355	0.33264
	B	0.07278	0.08756	0.32629
sky130_fd_sc_hs__and2_2	A	0.04513	0.06398	0.35942
	A	0.03964	0.05853	0.35440
	B	0.04646	0.06141	0.30774
	B	0.03937	0.05425	0.30033
sky130_fd_sc_hs__and2_4	A	0.16565	0.20555	0.80108
	A	0.15699	0.19695	0.79234
	B	0.16808	0.20414	0.77262
	B	0.15607	0.19215	0.75897

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.01345	0.03226	0.30125
	A	0.01847	0.03724	0.30613
	B	0.01424	0.03243	0.29041
	B	0.02026	0.03838	0.29682
sky130_fd_sc_hs__and2_2	A	0.02730	0.04432	0.30258
	A	0.03278	0.04981	0.30732
	B	0.02793	0.04434	0.29344
	B	0.03505	0.05131	0.30021
sky130_fd_sc_hs__and2_4	A	0.05623	0.09297	0.67927
	A	0.06491	0.10157	0.68806
	B	0.05693	0.09494	0.69187
	B	0.06897	0.10696	0.70436

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00560	0.00560	0.00552
	(!B * !X)	0.00233	0.00231	0.00223
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00977	0.00976	0.00971
	(!B * !X)	0.00638	0.00636	0.00630
sky130_fd_sc_hs__and2_4	(!B * !X)	0.01934	0.01933	0.01918
	(!B * !X)	0.01381	0.01378	0.01361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00368	0.00367	0.00370
	(!B * !X)	0.00695	0.00699	0.00696
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00850	0.00849	0.00851
	(!B * !X)	0.01188	0.01191	0.01189
sky130_fd_sc_hs__and2_4	(!B * !X)	0.01733	0.01732	0.01736
	(!B * !X)	0.02284	0.02288	0.02286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00636	0.00638	0.00634
	(!A * !X)	0.00246	0.00244	0.00243
sky130_fd_sc_hs__and2_2	(!A * !X)	0.01104	0.01107	0.01104
	(!A * !X)	0.00644	0.00642	0.00642
sky130_fd_sc_hs__and2_4	(!A * !X)	0.02231	0.02233	0.02227
	(!A * !X)	0.01425	0.01423	0.01419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00320	0.00304	0.00311
	(!A * !X)	0.00714	0.00700	0.00700
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00747	0.00729	0.00732
	(!A * !X)	0.01211	0.01196	0.01191
sky130_fd_sc_hs__and2_4	(!A * !X)	0.01496	0.01465	0.01474
	(!A * !X)	0.02303	0.02278	0.02276

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00231	0.00243	0.00243	1.66203
sky130_fd_sc_hs__and3b_2	0.00238	0.00290	0.00281	2.74754
sky130_fd_sc_hs__and3b_4	0.00266	0.00499	0.00514	6.12964

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	1620.91000	3935.74000
sky130_fd_sc_hs__and3b_2	0.00000	1803.47000	2373.38000
sky130_fd_sc_hs__and3b_4	0.00000	2588.83000	3597.59000

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)	0.08641	0.57036	7.45189
	B->X (RR)	0.06241	0.45941	6.31774
	C->X (RR)	0.06599	0.43375	5.93143
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.09761	0.51639	7.26950
	B->X (RR)	0.06936	0.39521	5.94166
	C->X (RR)	0.07333	0.35859	5.29927
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.11003	0.48452	7.76122
	B->X (RR)	0.08231	0.36994	6.68845
	C->X (RR)	0.08572	0.32875	6.24025

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)	0.07073	0.29897	3.17689
	B->X (FF)	0.05493	0.41973	5.24638
	C->X (FF)	0.05674	0.43163	5.42265
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.07553	0.24200	2.49085
	B->X (FF)	0.05735	0.36902	4.58187
	C->X (FF)	0.06334	0.39536	4.89226
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.07567	0.21050	2.85579
	B->X (FF)	0.05539	0.32810	4.92993
	C->X (FF)	0.05807	0.35206	5.34732

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	0.11377	0.13434	0.45513
	A_N	0.11775	0.13834	0.45885
	B	0.11417	0.12930	0.38787
	B	0.10945	0.12456	0.38332
	C	0.11449	0.12763	0.36012
	C	0.10865	0.12178	0.35381
sky130_fd_sc_hs__and3b_2	A_N	0.06384	0.08340	0.40742
	A_N	0.06800	0.08750	0.41079
	B	0.06480	0.08015	0.35699
	B	0.05924	0.07460	0.35156
	C	0.06550	0.07651	0.28197
	C	0.05874	0.06978	0.27501
sky130_fd_sc_hs__and3b_4	A_N	0.12846	0.14757	0.53502
	A_N	0.13265	0.15199	0.53846
	B	0.13090	0.15891	0.68349
	B	0.12104	0.14899	0.67172
	C	0.13295	0.16130	0.71290
	C	0.12039	0.14875	0.70006

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.04302	0.06509	0.40709
	A_N	0.03903	0.06112	0.40288
	B	0.01472	0.03286	0.30406
	B	0.01947	0.03761	0.30842
	C	0.01501	0.03323	0.31184
	C	0.02086	0.03902	0.31720
sky130_fd_sc_hs__and3b_2	A_N	0.05184	0.07079	0.39234
	A_N	0.04767	0.06661	0.38771
	B	0.02627	0.04210	0.30105
	B	0.03183	0.04760	0.30549
	C	0.02718	0.04140	0.29019
	C	0.03395	0.04816	0.29692
sky130_fd_sc_hs__and3b_4	A_N	0.07708	0.09804	0.48602
	A_N	0.07290	0.09382	0.48181
	B	0.05925	0.09022	0.59227
	B	0.06912	0.10002	0.60237
	C	0.06090	0.09370	0.64914
	C	0.07346	0.10621	0.66192

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)	0.02303	0.04242	0.33474
	(B * !C * !X)	0.01824	0.03762	0.32998
	(!B * !X)	0.02294	0.04239	0.33469
	(!B * !X)	0.01825	0.03768	0.33001
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.02811	0.04671	0.33187
	(B * !C * !X)	0.02315	0.04174	0.32693
	(!B * !X)	0.02801	0.04663	0.33181
	(!B * !X)	0.02314	0.04176	0.32695
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.03386	0.05457	0.37802
	(B * !C * !X)	0.02825	0.04896	0.37245
	(!B * !X)	0.03364	0.05436	0.37786
	(!B * !X)	0.02826	0.04898	0.37250

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)	0.00469	0.02546	0.32803
	(B * !C * !X)	0.00947	0.03026	0.33279
	(!B * !X)	0.00468	0.02546	0.32802
	(!B * !X)	0.00935	0.03015	0.33269
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00930	0.02931	0.32471
	(B * !C * !X)	0.01429	0.03430	0.32966
	(!B * !X)	0.00926	0.02930	0.32470
	(!B * !X)	0.01412	0.03415	0.32955
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.01889	0.04014	0.36781
	(B * !C * !X)	0.02452	0.04577	0.37339
	(!B * !X)	0.01893	0.04019	0.36789
	(!B * !X)	0.02429	0.04556	0.37325

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)	0.01807	0.01809	0.01805
	(A_N * C * !X)	0.01417	0.01415	0.01414
	(A_N * !C * !X)	0.01719	0.01719	0.01718
	(A_N * !C * !X)	0.01398	0.01398	0.01399
	(!A_N * !C * !X)	0.00530	0.00530	0.00526
	(!A_N * !C * !X)	0.00229	0.00228	0.00227
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.02286	0.02289	0.02286
	(A_N * C * !X)	0.01819	0.01817	0.01817
	(A_N * !C * !X)	0.02195	0.02197	0.02195
	(A_N * !C * !X)	0.01811	0.01808	0.01810
	(!A_N * !C * !X)	0.00999	0.00999	0.00996
	(!A_N * !C * !X)	0.00638	0.00637	0.00636
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.02718	0.02722	0.02714
	(A_N * C * !X)	0.01891	0.01887	0.01885
	(A_N * !C * !X)	0.02541	0.02543	0.02540
	(A_N * !C * !X)	0.01851	0.01849	0.01850
	(!A_N * !C * !X)	0.01973	0.01973	0.01968
	(!A_N * !C * !X)	0.01332	0.01330	0.01329

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)	0.01459	0.01438	0.01447
	(A_N * C * !X)	0.01852	0.01834	0.01837
	(A_N * !C * !X)	0.01503	0.01501	0.01498
	(A_N * !C * !X)	0.01830	0.01832	0.01823
	(!A_N * !C * !X)	0.00412	0.00412	0.00412
	(!A_N * !C * !X)	0.00713	0.00713	0.00710
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.01869	0.01845	0.01848
	(A_N * C * !X)	0.02341	0.02320	0.02316
	(A_N * !C * !X)	0.01923	0.01921	0.01917
	(A_N * !C * !X)	0.02318	0.02320	0.02309
	(!A_N * !C * !X)	0.00843	0.00841	0.00841
	(!A_N * !C * !X)	0.01204	0.01208	0.01201
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.02069	0.02006	0.02014
	(A_N * C * !X)	0.02898	0.02835	0.02842
	(A_N * !C * !X)	0.02124	0.02125	0.02115
	(A_N * !C * !X)	0.02837	0.02840	0.02817
	(!A_N * !C * !X)	0.01730	0.01729	0.01725
	(!A_N * !C * !X)	0.02368	0.02369	0.02359

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)	0.01792	0.01793	0.01790
	(A_N * B * !X)	0.01409	0.01408	0.01407
	(A_N * !B * !X)	0.01772	0.01775	0.01773
	(A_N * !B * !X)	0.01392	0.01391	0.01392
	(!A_N * !B * !X)	0.00641	0.00642	0.00640
	(!A_N * !B * !X)	0.00258	0.00257	0.00256
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.02268	0.02269	0.02267
	(A_N * B * !X)	0.01819	0.01818	0.01819
	(A_N * !B * !X)	0.02257	0.02260	0.02258
	(A_N * !B * !X)	0.01812	0.01810	0.01812
	(!A_N * !B * !X)	0.01123	0.01122	0.01123
	(!A_N * !B * !X)	0.00675	0.00676	0.00674
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.02710	0.02714	0.02709
	(A_N * B * !X)	0.01876	0.01872	0.01872
	(A_N * !B * !X)	0.02672	0.02676	0.02674
	(A_N * !B * !X)	0.01843	0.01840	0.01842
	(!A_N * !B * !X)	0.02208	0.02213	0.02205
	(!A_N * !B * !X)	0.01370	0.01366	0.01366

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)	0.01481	0.01460	0.01463
	(A_N * B * !X)	0.01864	0.01849	0.01844
	(A_N * !B * !X)	0.01452	0.01446	0.01446
	(A_N * !B * !X)	0.01833	0.01829	0.01826
	(!A_N * !B * !X)	0.00324	0.00310	0.00312
	(!A_N * !B * !X)	0.00710	0.00698	0.00693
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.01893	0.01870	0.01868
	(A_N * B * !X)	0.02340	0.02323	0.02314
	(A_N * !B * !X)	0.01864	0.01857	0.01858
	(A_N * !B * !X)	0.02311	0.02307	0.02304
	(!A_N * !B * !X)	0.00739	0.00724	0.00722
	(!A_N * !B * !X)	0.01191	0.01178	0.01169
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.02066	0.02018	0.02022
	(A_N * B * !X)	0.02904	0.02868	0.02856
	(A_N * !B * !X)	0.02001	0.01985	0.01988
	(A_N * !B * !X)	0.02829	0.02825	0.02819
	(!A_N * !B * !X)	0.01549	0.01512	0.01517
	(!A_N * !B * !X)	0.02388	0.02362	0.02351

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00260	0.00240	0.00238	1.71039
sky130_fd_sc_hs__and3_2	0.00258	0.00237	0.00242	3.22176
sky130_fd_sc_hs__and3_4	0.00470	0.00457	0.00474	6.03679

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3_1	0.00000	954.40400	3928.54000
sky130_fd_sc_hs__and3_2	0.00000	1410.96000	3939.19000
sky130_fd_sc_hs__and3_4	0.00000	2820.14000	7878.65000

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)	0.05457	0.46004	6.46718
	B->X (RR)	0.05990	0.44937	6.25529
	C->X (RR)	0.06300	0.43045	6.01906
sky130_fd_sc_hs__and3_2	A->X (RR)	0.06472	0.40707	6.42199
	B->X (RR)	0.07003	0.39359	6.20752
	C->X (RR)	0.07316	0.36458	5.78362
sky130_fd_sc_hs__and3_4	A->X (RR)	0.07126	0.37841	6.82942
	B->X (RR)	0.07935	0.36927	6.66398
	C->X (RR)	0.08292	0.32543	6.16488

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.04873	0.39784	5.13965
	B->X (FF)	0.05430	0.42052	5.33119
	C->X (FF)	0.05467	0.42882	5.47768
sky130_fd_sc_hs__and3_2	A->X (FF)	0.05736	0.36968	4.98182
	B->X (FF)	0.06248	0.39033	5.17620
	C->X (FF)	0.06444	0.40247	5.38218
sky130_fd_sc_hs__and3_4	A->X (FF)	0.05344	0.30980	4.69199
	B->X (FF)	0.05916	0.33005	4.86926
	C->X (FF)	0.06245	0.35676	5.30900

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.11338	0.12945	0.38749
	A	0.10815	0.12424	0.38221
	B	0.11376	0.12902	0.38939
	B	0.10784	0.12308	0.38376
	C	0.11451	0.12950	0.39200
	C	0.10730	0.12227	0.38518
sky130_fd_sc_hs__and3_2	A	0.11862	0.13458	0.40037
	A	0.11340	0.12940	0.39521
	B	0.11895	0.13376	0.40023
	B	0.11309	0.12797	0.39503
	C	0.11919	0.13200	0.37016
	C	0.11199	0.12486	0.36250
sky130_fd_sc_hs__and3_4	A	0.24042	0.27093	0.78776
	A	0.23081	0.26129	0.79820
	B	0.24251	0.27055	0.79231
	B	0.23048	0.25845	0.77871
	C	0.24363	0.27143	0.80740
	C	0.22877	0.25660	0.79272

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.01333	0.03113	0.29636
	A	0.01855	0.03626	0.30066
	B	0.01466	0.03259	0.29980
	B	0.02056	0.03850	0.30512
	C	0.01501	0.03399	0.31919
	C	0.02225	0.04114	0.32659
sky130_fd_sc_hs__and3_2	A	0.02737	0.04351	0.31155
	A	0.03257	0.04863	0.31467
	B	0.02903	0.04505	0.31479
	B	0.03492	0.05093	0.31893
	C	0.02930	0.04570	0.32150
	C	0.03652	0.05275	0.32699
sky130_fd_sc_hs__and3_4	A	0.05536	0.08776	0.61874
	A	0.06495	0.09735	0.62435
	B	0.05818	0.09075	0.62780
	B	0.07027	0.10274	0.63939
	C	0.06002	0.09419	0.68181
	C	0.07487	0.10905	0.69267

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00566	0.00566	0.00558
	(B * !C * !X)	0.00240	0.00239	0.00224
	(!B * !X)	0.00567	0.00566	0.00560
	(!B * !X)	0.00234	0.00233	0.00224
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.01020	0.01020	0.01012
	(B * !C * !X)	0.00695	0.00694	0.00680
	(!B * !X)	0.01021	0.01020	0.01013
	(!B * !X)	0.00689	0.00688	0.00678
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.01949	0.01948	0.01929
	(B * !C * !X)	0.01374	0.01375	0.01338
	(!B * !X)	0.01954	0.01953	0.01936
	(!B * !X)	0.01359	0.01356	0.01336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00367	0.00366	0.00368
	(B * !C * !X)	0.00693	0.00696	0.00695
	(!B * !X)	0.00361	0.00359	0.00363
	(!B * !X)	0.00694	0.00698	0.00695
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00819	0.00817	0.00820
	(B * !C * !X)	0.01144	0.01148	0.01146
	(!B * !X)	0.00813	0.00811	0.00814
	(!B * !X)	0.01145	0.01148	0.01146
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.01729	0.01727	0.01730
	(B * !C * !X)	0.02305	0.02310	0.02308
	(!B * !X)	0.01715	0.01713	0.01717
	(!B * !X)	0.02308	0.02315	0.02309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00520	0.00520	0.00516
	(A * !C * !X)	0.00245	0.00245	0.00246
	(!A * C * !X)	0.00632	0.00634	0.00630
	(!A * C * !X)	0.00264	0.00261	0.00261
	(!A * !C * !X)	0.00535	0.00534	0.00533
	(!A * !C * !X)	0.00246	0.00246	0.00246
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00970	0.00970	0.00966
	(A * !C * !X)	0.00701	0.00701	0.00702
	(!A * C * !X)	0.01084	0.01085	0.01081
	(!A * C * !X)	0.00719	0.00717	0.00716
	(!A * !C * !X)	0.00983	0.00984	0.00982
	(!A * !C * !X)	0.00703	0.00701	0.00702
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.01960	0.01960	0.01956
	(A * !C * !X)	0.01404	0.01403	0.01406
	(!A * C * !X)	0.02195	0.02200	0.02191
	(!A * C * !X)	0.01442	0.01437	0.01436
	(!A * !C * !X)	0.01997	0.01998	0.01995
	(!A * !C * !X)	0.01404	0.01402	0.01403

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00409	0.00408	0.00407
	(A * !C * !X)	0.00679	0.00682	0.00674
	(!A * C * !X)	0.00331	0.00306	0.00315
	(!A * C * !X)	0.00701	0.00681	0.00683
	(!A * !C * !X)	0.00379	0.00379	0.00376
	(!A * !C * !X)	0.00675	0.00677	0.00668
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00864	0.00864	0.00863
	(A * !C * !X)	0.01130	0.01131	0.01124
	(!A * C * !X)	0.00785	0.00761	0.00770
	(!A * C * !X)	0.01151	0.01131	0.01133
	(!A * !C * !X)	0.00834	0.00835	0.00833
	(!A * !C * !X)	0.01125	0.01126	0.01117
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.01704	0.01705	0.01700
	(A * !C * !X)	0.02259	0.02259	0.02244
	(!A * C * !X)	0.01560	0.01492	0.01508
	(!A * C * !X)	0.02317	0.02258	0.02259
	(!A * !C * !X)	0.01635	0.01637	0.01631
	(!A * !C * !X)	0.02252	0.02255	0.02234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00634	0.00635	0.00632
	(A * !B * !X)	0.00254	0.00253	0.00252
	(!A * B * !X)	0.00637	0.00639	0.00636
	(!A * B * !X)	0.00259	0.00257	0.00257
	(!A * !B * !X)	0.00618	0.00621	0.00619
	(!A * !B * !X)	0.00242	0.00240	0.00242
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.01084	0.01086	0.01083
	(A * !B * !X)	0.00705	0.00703	0.00703
	(!A * B * !X)	0.01088	0.01089	0.01086
	(!A * B * !X)	0.00709	0.00707	0.00708
	(!A * !B * !X)	0.01069	0.01071	0.01069
	(!A * !B * !X)	0.00693	0.00691	0.00693
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.02186	0.02191	0.02184
	(A * !B * !X)	0.01414	0.01410	0.01410
	(!A * B * !X)	0.02192	0.02198	0.02191
	(!A * B * !X)	0.01422	0.01417	0.01417
	(!A * !B * !X)	0.02154	0.02157	0.02155
	(!A * !B * !X)	0.01389	0.01387	0.01388

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00317	0.00304	0.00306
	(A * !B * !X)	0.00701	0.00689	0.00682
	(!A * B * !X)	0.00328	0.00307	0.00310
	(!A * B * !X)	0.00708	0.00692	0.00687
	(!A * !B * !X)	0.00299	0.00293	0.00293
	(!A * !B * !X)	0.00676	0.00672	0.00669
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00772	0.00759	0.00761
	(A * !B * !X)	0.01155	0.01144	0.01137
	(!A * B * !X)	0.00782	0.00763	0.00766
	(!A * B * !X)	0.01165	0.01146	0.01142
	(!A * !B * !X)	0.00755	0.00748	0.00748
	(!A * !B * !X)	0.01130	0.01125	0.01124
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.01532	0.01499	0.01502
	(A * !B * !X)	0.02310	0.02285	0.02270
	(!A * B * !X)	0.01552	0.01506	0.01510
	(!A * B * !X)	0.02327	0.02291	0.02279
	(!A * !B * !X)	0.01491	0.01475	0.01475
	(!A * !B * !X)	0.02253	0.02249	0.02242

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00236	0.00239	0.00251	0.00245	1.46175
sky130_fd_sc_hs__and4bb_2	0.00239	0.00227	0.00275	0.00283	3.07621
sky130_fd_sc_hs__and4bb_4	0.00258	0.00273	0.00511	0.00498	5.86439

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	2146.98000	5221.19000
sky130_fd_sc_hs__and4bb_2	0.00000	2459.61000	3689.98000
sky130_fd_sc_hs__and4bb_4	0.00000	2868.16000	4774.72000

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)	0.10410	0.61303	7.68683
	B_N->X (FR)	0.10884	0.60628	7.35887
	C->X (RR)	0.08455	0.50731	6.53191
	D->X (RR)	0.08761	0.48706	6.29586
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.10414	0.51458	7.35710
	B_N->X (FR)	0.11600	0.52519	7.40048
	C->X (RR)	0.09016	0.41382	6.24526
	D->X (RR)	0.09440	0.38415	5.78164
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.13557	0.51561	7.68118
	B_N->X (FR)	0.15048	0.53301	7.71378
	C->X (RR)	0.11532	0.40062	6.81857
	D->X (RR)	0.11910	0.36654	6.40943

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)	0.07493	0.29180	2.92382
	B_N->X (RF)	0.07751	0.30076	2.87454
	C->X (FF)	0.06060	0.41432	4.88201
	D->X (FF)	0.06459	0.43423	5.15706
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.07649	0.26278	3.09250
	B_N->X (RF)	0.08380	0.28076	3.28417
	C->X (FF)	0.06383	0.39684	5.04623
	D->X (FF)	0.06744	0.41334	5.28260
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.08472	0.22278	2.74437
	B_N->X (RF)	0.08645	0.22772	2.72901
	C->X (FF)	0.05891	0.32755	4.68843
	D->X (FF)	0.06157	0.34868	5.05214

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	0.14982	0.16971	0.49784
	A_N	0.15393	0.17378	0.50195
	B_N	0.14982	0.16975	0.49874
	B_N	0.15440	0.17430	0.50321
	C	0.15102	0.16597	0.43828
	C	0.14634	0.16127	0.43344
	D	0.15181	0.16724	0.45737
	D	0.14615	0.16155	0.45187
sky130_fd_sc_hs__and4bb_2	A_N	0.08028	0.09889	0.42741
	A_N	0.08416	0.10273	0.43098
	B_N	0.08255	0.09977	0.42614
	B_N	0.08658	0.10372	0.42933
	C	0.08317	0.09531	0.36125
	C	0.07773	0.08985	0.35569
	D	0.08399	0.09384	0.32785
	D	0.07722	0.08712	0.32028
sky130_fd_sc_hs__and4bb_4	A_N	0.16727	0.18059	0.55061
	A_N	0.17087	0.18427	0.55477
	B_N	0.17034	0.18260	0.55364
	B_N	0.17456	0.18674	0.55841
	C	0.17231	0.19322	0.70533
	C	0.16216	0.18310	0.69289
	D	0.17375	0.19395	0.71381
	D	0.16127	0.18140	0.70094

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.04232	0.06226	0.39454
	A_N	0.03822	0.05809	0.39049
	B_N	0.04274	0.06459	0.40721
	B_N	0.03815	0.05996	0.40253
	C	0.01581	0.03436	0.32705
	C	0.02048	0.03896	0.33015
	D	0.01655	0.03563	0.34628
	D	0.02223	0.04128	0.35077
sky130_fd_sc_hs__and4bb_2	A_N	0.05728	0.07576	0.39840
	A_N	0.05339	0.07184	0.39417
	B_N	0.05872	0.07630	0.39805
	B_N	0.05469	0.07229	0.39298
	C	0.03030	0.04464	0.28426
	C	0.03574	0.04999	0.28858
	D	0.03103	0.04486	0.28778
	D	0.03782	0.05150	0.29380
sky130_fd_sc_hs__and4bb_4	A_N	0.07630	0.09659	0.48283
	A_N	0.07269	0.09293	0.47773
	B_N	0.07861	0.09884	0.49073
	B_N	0.07437	0.09451	0.48490
	C	0.05919	0.08792	0.59266
	C	0.06938	0.09795	0.59787
	D	0.06206	0.09126	0.63250
	D	0.07456	0.10364	0.64279

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)	0.03437	0.05299	0.33715
	(B_N * !X)	0.02988	0.04849	0.33266
	(!B_N * C * !D * !X)	0.02334	0.04194	0.32606
	(!B_N * C * !D * !X)	0.01874	0.03733	0.32148
	(!B_N * !C * !X)	0.02332	0.04192	0.32605
	(!B_N * !C * !X)	0.01879	0.03738	0.32153
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.03908	0.05825	0.35073
	(B_N * !X)	0.03453	0.05370	0.34619
	(!B_N * C * !D * !X)	0.02804	0.04720	0.33959
	(!B_N * C * !D * !X)	0.02338	0.04253	0.33496
	(!B_N * !C * !X)	0.02802	0.04718	0.33959
	(!B_N * !C * !X)	0.02343	0.04258	0.33502
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.03823	0.05821	0.37299
	(B_N * !X)	0.03352	0.05350	0.36830
	(!B_N * C * !D * !X)	0.03408	0.05405	0.36928
	(!B_N * C * !D * !X)	0.02913	0.04910	0.36438
	(!B_N * !C * !X)	0.03403	0.05400	0.36923
	(!B_N * !C * !X)	0.02924	0.04921	0.36447

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)	0.01668	0.03672	0.33101
	(B_N * !X)	0.02117	0.04121	0.33549
	(!B_N * C * !D * !X)	0.00494	0.02496	0.31926
	(!B_N * C * !D * !X)	0.00957	0.02959	0.32385
	(!B_N * !C * !X)	0.00492	0.02495	0.31925
	(!B_N * !C * !X)	0.00945	0.02947	0.32376
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.02096	0.04168	0.34441
	(B_N * !X)	0.02550	0.04622	0.34894
	(!B_N * C * !D * !X)	0.00929	0.02998	0.33266
	(!B_N * C * !D * !X)	0.01399	0.03469	0.33732
	(!B_N * !C * !X)	0.00926	0.02994	0.33265
	(!B_N * !C * !X)	0.01384	0.03454	0.33723
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.02510	0.04544	0.36437
	(B_N * !X)	0.02979	0.05013	0.36908
	(!B_N * C * !D * !X)	0.01962	0.04001	0.35943
	(!B_N * C * !D * !X)	0.02461	0.04501	0.36438
	(!B_N * !C * !X)	0.01955	0.03994	0.35939
	(!B_N * !C * !X)	0.02433	0.04472	0.36417

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)	0.03460	0.05330	0.34418
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.02961	0.04830	0.33920
	(!C * !X)	0.03452	0.05351	0.34451
	(!C * !X)	0.02945	0.04841	0.33941
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.03929	0.05770	0.34797
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.03461	0.05300	0.34330
	(!C * !X)	0.03921	0.05800	0.34847
	(!C * !X)	0.03440	0.05321	0.34366
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.03876	0.05828	0.37928
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.03343	0.05296	0.37397
	(!C * !X)	0.03846	0.05864	0.37996
	(!C * !X)	0.03291	0.05309	0.37442

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)	0.01761	0.03797	0.33926
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.02258	0.04295	0.34425
	(!C * !X)	0.01672	0.03723	0.33862
	(!C * !X)	0.02180	0.04232	0.34371
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.02272	0.04294	0.34372
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.02740	0.04762	0.34839
	(!C * !X)	0.02179	0.04212	0.34298
	(!C * !X)	0.02659	0.04693	0.34779
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.02787	0.04837	0.37383
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.03317	0.05370	0.37915
	(!C * !X)	0.02596	0.04666	0.37245
	(!C * !X)	0.03148	0.05222	0.37800

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)**	0.02955	0.02957	0.02955
	(A_N * B_N * D * !X)	0.02551	0.02549	0.02550
	(A_N * B_N * !D * !X)	0.02891	0.02890	0.02889
	(A_N * B_N * !D * !X)	0.02549	0.02550	0.02550
	(A_N * !B_N * D * !X)	0.01789	0.01791	0.01788
	(A_N * !B_N * D * !X)	0.01384	0.01382	0.01382
	(A_N * !B_N * !D * !X)	0.01694	0.01695	0.01694
	(A_N * !B_N * !D * !X)	0.01334	0.01332	0.01334
	(!A_N * B_N * D * !X)	0.01830	0.01833	0.01829
	(!A_N * B_N * D * !X)	0.01425	0.01423	0.01423
	(!A_N * B_N * !D * !X)	0.01751	0.01753	0.01750
	(!A_N * B_N * !D * !X)	0.01412	0.01411	0.01412
	(!A_N * !B_N * !D * !X)	0.00540	0.00540	0.00537
	(!A_N * !B_N * !D * !X)	0.00223	0.00222	0.00221
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.03424	0.03428	0.03425
	(A_N * B_N * D * !X)	0.02975	0.02973	0.02974
	(A_N * B_N * !D * !X)	0.03349	0.03350	0.03348
	(A_N * B_N * !D * !X)	0.02973	0.02972	0.02973
	(A_N * !B_N * D * !X)	0.02263	0.02265	0.02263
	(A_N * !B_N * D * !X)	0.01811	0.01810	0.01810
	(A_N * !B_N * !D * !X)	0.02165	0.02167	0.02165
	(A_N * !B_N * !D * !X)	0.01767	0.01764	0.01766
	(!A_N * B_N * D * !X)	0.02285	0.02288	0.02285
	(!A_N * B_N * D * !X)	0.01834	0.01832	0.01833
	(!A_N * B_N * !D * !X)	0.02201	0.02202	0.02200
	(!A_N * B_N * !D * !X)	0.01826	0.01825	0.01826
	(!A_N * !B_N * !D * !X)	0.00995	0.00995	0.00994
	(!A_N * !B_N * !D * !X)	0.00648	0.00647	0.00647

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.03202	0.03206	0.03204
	(A_N * B_N * D * !X)	0.02352	0.02348	0.02350
	(A_N * B_N * !D * !X)	0.03062	0.03064	0.03060
	(A_N * B_N * !D * !X)	0.02345	0.02342	0.02345
	(A_N * !B_N * D * !X)	0.02737	0.02741	0.02734
	(A_N * !B_N * D * !X)	0.01880	0.01876	0.01877
	(A_N * !B_N * !D * !X)	0.02540	0.02541	0.02538
	(A_N * !B_N * !D * !X)	0.01776	0.01773	0.01776
	(!A_N * B_N * D * !X)	0.02735	0.02739	0.02733
	(!A_N * B_N * D * !X)	0.01881	0.01877	0.01876
	(!A_N * B_N * !D * !X)	0.02564	0.02566	0.02562
	(!A_N * B_N * !D * !X)	0.01850	0.01846	0.01850
	(!A_N * !B_N * !D * !X)	0.02009	0.02011	0.02004
	(!A_N * !B_N * !D * !X)	0.01342	0.01337	0.01335

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)**	0.02561	0.02551	0.02552
	(A_N * B_N * D * !X)	0.02966	0.02960	0.02957
	(A_N * B_N * !D * !X)	0.02611	0.02612	0.02612
	(A_N * B_N * !D * !X)	0.02965	0.02965	0.02959
	(A_N * !B_N * D * !X)	0.01488	0.01457	0.01462
	(A_N * !B_N * D * !X)	0.01893	0.01868	0.01868
	(A_N * !B_N * !D * !X)	0.01517	0.01522	0.01518
	(A_N * !B_N * !D * !X)	0.01891	0.01897	0.01886
	(!A_N * B_N * D * !X)	0.01448	0.01424	0.01427
	(!A_N * B_N * D * !X)	0.01854	0.01835	0.01833
	(!A_N * B_N * !D * !X)	0.01482	0.01482	0.01477
	(!A_N * B_N * !D * !X)	0.01831	0.01832	0.01822
	(!A_N * !B_N * !D * !X)	0.00417	0.00417	0.00415
	(!A_N * !B_N * !D * !X)	0.00734	0.00735	0.00730
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.03010	0.02998	0.03000
	(A_N * B_N * D * !X)	0.03459	0.03455	0.03451
	(A_N * B_N * !D * !X)	0.03070	0.03069	0.03070
	(A_N * B_N * !D * !X)	0.03458	0.03460	0.03453
	(A_N * !B_N * D * !X)	0.01930	0.01895	0.01896
	(A_N * !B_N * D * !X)	0.02381	0.02352	0.02348
	(A_N * !B_N * !D * !X)	0.01968	0.01973	0.01969
	(A_N * !B_N * !D * !X)	0.02386	0.02392	0.02379
	(!A_N * B_N * D * !X)	0.01886	0.01860	0.01861
	(!A_N * B_N * D * !X)	0.02337	0.02318	0.02312
	(!A_N * B_N * !D * !X)	0.01930	0.01930	0.01925
	(!A_N * B_N * !D * !X)	0.02316	0.02317	0.02307
	(!A_N * !B_N * !D * !X)	0.00863	0.00863	0.00861
	(!A_N * !B_N * !D * !X)	0.01213	0.01215	0.01209

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	0.02499	0.02481	0.02481
	(A_N * B_N * D * !X)	0.03354	0.03336	0.03336
	(A_N * B_N * !D * !X)	0.02616	0.02615	0.02616
	(A_N * B_N * !D * !X)	0.03356	0.03358	0.03344
	(A_N * !B_N * D * !X)	0.02096	0.02018	0.02031
	(A_N * !B_N * D * !X)	0.02952	0.02886	0.02888
	(A_N * !B_N * !D * !X)	0.02152	0.02162	0.02153
	(A_N * !B_N * !D * !X)	0.02937	0.02957	0.02933
	(!A_N * B_N * D * !X)	0.02060	0.02012	0.02014
	(!A_N * B_N * D * !X)	0.02918	0.02870	0.02870
	(!A_N * B_N * !D * !X)	0.02138	0.02138	0.02128
	(!A_N * B_N * !D * !X)	0.02875	0.02875	0.02853
	(!A_N * !B_N * !D * !X)	0.01737	0.01733	0.01731
	(!A_N * !B_N * !D * !X)	0.02405	0.02416	0.02398

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)	0.02937	0.02940	0.02938
	(A_N * B_N * C * !X)	0.02555	0.02554	0.02555
	(A_N * !C * !X)	0.02939	0.02942	0.02940
	(A_N * !C * !X)	0.02554	0.02553	0.02554
	(A_N * !B_N * C * !X)	0.01789	0.01790	0.01789
	(A_N * !B_N * C * !X)	0.01405	0.01404	0.01403
	(!A_N * B_N * C * !X)	0.01816	0.01819	0.01817
	(!A_N * B_N * C * !X)	0.01431	0.01429	0.01430
	(!A_N * B_N * !C * !X)	0.01802	0.01804	0.01802
	(!A_N * B_N * !C * !X)	0.01417	0.01415	0.01417
	(!A_N * !B_N * !C * !X)	0.00649	0.00648	0.00647
	(!A_N * !B_N * !C * !X)	0.00260	0.00260	0.00258

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.03405	0.03405	0.03405
	(A_N * B_N * C * !X)	0.02961	0.02960	0.02960
	(A_N * !C * !X)	0.03406	0.03408	0.03406
	(A_N * !C * !X)	0.02960	0.02958	0.02960
	(A_N * !B_N * C * !X)	0.02265	0.02268	0.02265
	(A_N * !B_N * C * !X)	0.01818	0.01815	0.01817
	(!A_N * B_N * C * !X)	0.02268	0.02270	0.02268
	(!A_N * B_N * C * !X)	0.01820	0.01818	0.01820
	(!A_N * B_N * !C * !X)	0.02259	0.02262	0.02260
	(!A_N * B_N * !C * !X)	0.01813	0.01811	0.01813
	(!A_N * !B_N * !C * !X)	0.01117	0.01120	0.01117
	(!A_N * !B_N * !C * !X)	0.00668	0.00666	0.00668
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.03169	0.03173	0.03170
	(A_N * B_N * C * !X)	0.02353	0.02351	0.02353
	(A_N * !C * !X)	0.03171	0.03173	0.03172
	(A_N * !C * !X)	0.02353	0.02351	0.02352
	(A_N * !B_N * C * !X)	0.02716	0.02719	0.02715
	(A_N * !B_N * C * !X)	0.01891	0.01889	0.01889
	(!A_N * B_N * C * !X)	0.02712	0.02712	0.02709
	(!A_N * B_N * C * !X)	0.01884	0.01884	0.01884
	(!A_N * B_N * !C * !X)	0.02678	0.02683	0.02679
	(!A_N * B_N * !C * !X)	0.01860	0.01856	0.01859
	(!A_N * !B_N * !C * !X)	0.02212	0.02216	0.02211
	(!A_N * !B_N * !C * !X)	0.01386	0.01383	0.01383

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)**	0.02577	0.02568	0.02568
	(A_N * B_N * C * !X)	0.02956	0.02954	0.02952
	(A_N * !C * !X)	0.02567	0.02565	0.02566
	(A_N * !C * !X)	0.02952	0.02953	0.02951
	(A_N * !B_N * C * !X)	0.01479	0.01456	0.01460
	(A_N * !B_N * C * !X)	0.01869	0.01847	0.01846
	(!A_N * B_N * C * !X)	0.01463	0.01443	0.01442
	(!A_N * B_N * C * !X)	0.01852	0.01834	0.01828
	(!A_N * B_N * !C * !X)	0.01433	0.01428	0.01429
	(!A_N * B_N * !C * !X)	0.01819	0.01817	0.01814
	(!A_N * !B_N * !C * !X)	0.00329	0.00315	0.00317
	(!A_N * !B_N * !C * !X)	0.00720	0.00708	0.00702
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.03027	0.03018	0.03018
	(A_N * B_N * C * !X)	0.03467	0.03467	0.03464
	(A_N * !C * !X)	0.03019	0.03015	0.03016
	(A_N * !C * !X)	0.03462	0.03466	0.03463
	(A_N * !B_N * C * !X)	0.01919	0.01894	0.01894
	(A_N * !B_N * C * !X)	0.02365	0.02346	0.02341
	(!A_N * B_N * C * !X)	0.01903	0.01881	0.01879
	(!A_N * B_N * C * !X)	0.02349	0.02334	0.02326
	(!A_N * B_N * !C * !X)	0.01875	0.01869	0.01871
	(!A_N * B_N * !C * !X)	0.02320	0.02320	0.02318
	(!A_N * !B_N * !C * !X)	0.00761	0.00744	0.00743
	(!A_N * !B_N * !C * !X)	0.01209	0.01199	0.01191

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.02527	0.02511	0.02510
	(A_N * B_N * C * !X)	0.03336	0.03336	0.03330
	(A_N * !C * !X)	0.02510	0.02504	0.02507
	(A_N * !C * !X)	0.03330	0.03333	0.03328
	(A_N * !B_N * C * !X)	0.02092	0.02048	0.02051
	(A_N * !B_N * C * !X)	0.02917	0.02884	0.02875
	(!A_N * B_N * C * !X)	0.02086	0.02043	0.02042
	(!A_N * B_N * C * !X)	0.02912	0.02880	0.02864
	(!A_N * B_N * !C * !X)	0.02022	0.02013	0.02015
	(!A_N * B_N * !C * !X)	0.02844	0.02842	0.02836
	(!A_N * !B_N * !C * !X)	0.01575	0.01542	0.01545
	(!A_N * !B_N * !C * !X)	0.02408	0.02380	0.02368

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00249	0.00262	0.00252	0.00246	1.61589
sky130_fd_sc_hs__and4b_2	0.00232	0.00280	0.00279	0.00290	2.74491
sky130_fd_sc_hs__and4b_4	0.00253	0.00520	0.00559	0.00518	5.04940

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	1485.82000	5213.48000
sky130_fd_sc_hs__and4b_2	0.00000	1788.24000	2376.45000
sky130_fd_sc_hs__and4b_4	0.00000	2557.32000	4745.88000

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)	0.09466	0.58308	7.48103
	B->X (RR)	0.07602	0.50721	6.77293
	C->X (RR)	0.08088	0.49303	6.58960
	D->X (RR)	0.08515	0.46194	6.10926
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.11099	0.53696	7.49396
	B->X (RR)	0.08283	0.42968	6.24050
	C->X (RR)	0.08849	0.41234	6.02950
	D->X (RR)	0.09223	0.37879	5.44806
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.13901	0.53465	7.77021
	B->X (RR)	0.09883	0.40900	6.60324
	C->X (RR)	0.11051	0.38569	6.18570
	D->X (RR)	0.11094	0.36118	6.01437

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)	0.07055	0.29929	3.13285
	B->X (FF)	0.05546	0.39913	4.76114
	C->X (FF)	0.05993	0.41743	4.97642
	D->X (FF)	0.06284	0.43745	5.23672
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.08146	0.25690	2.70725
	B->X (FF)	0.06223	0.37359	4.50641
	C->X (FF)	0.06761	0.39318	4.73339
	D->X (FF)	0.06987	0.40613	4.95239
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.09250	0.22607	2.26414
	B->X (FF)	0.06193	0.32036	4.17231
	C->X (FF)	0.06667	0.34061	4.43055
	D->X (FF)	0.07543	0.37532	4.85160

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	0.14804	0.16730	0.47733
	A_N	0.15200	0.17123	0.48131
	B	0.14998	0.16241	0.39403
	B	0.14457	0.15699	0.38810
	C	0.15098	0.16378	0.40883
	C	0.14454	0.15732	0.40211
	D	0.15049	0.16100	0.37772
	D	0.14301	0.15352	0.37056
sky130_fd_sc_hs__and4b_2	A_N	0.08049	0.09855	0.42806
	A_N	0.08424	0.10228	0.43118
	B	0.08112	0.09398	0.34898
	B	0.07533	0.08816	0.34324
	C	0.08230	0.09513	0.36354
	C	0.07539	0.08817	0.35673
	D	0.08288	0.09209	0.30084
	D	0.07439	0.08361	0.29230
sky130_fd_sc_hs__and4b_4	A_N	0.16403	0.18003	0.57771
	A_N	0.16834	0.18429	0.58285
	B	0.16447	0.18854	0.68204
	B	0.15384	0.17794	0.67044
	C	0.16689	0.18784	0.64891
	C	0.15335	0.17427	0.63558
	D	0.16896	0.19162	0.72303
	D	0.15365	0.17627	0.70783

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.04323	0.06469	0.40294
	A_N	0.03926	0.06070	0.39898
	B	0.01470	0.03118	0.27214
	B	0.02010	0.03650	0.27729
	C	0.01512	0.03200	0.28566
	C	0.02156	0.03846	0.29188
	D	0.01598	0.03247	0.28801
	D	0.02345	0.03993	0.29508
sky130_fd_sc_hs__and4b_2	A_N	0.05383	0.07070	0.38413
	A_N	0.05009	0.06700	0.38021
	B	0.02771	0.04158	0.27975
	B	0.03350	0.04728	0.28569
	C	0.02907	0.04298	0.29517
	C	0.03598	0.04988	0.30136
	D	0.02921	0.04221	0.29338
	D	0.03769	0.05066	0.29961
sky130_fd_sc_hs__and4b_4	A_N	0.07416	0.09199	0.47143
	A_N	0.06983	0.08766	0.46647
	B	0.05385	0.08201	0.56958
	B	0.06451	0.09262	0.57787
	C	0.05565	0.08327	0.58827
	C	0.06922	0.09674	0.59994
	D	0.06110	0.08670	0.61550
	D	0.07639	0.10194	0.62743

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)	0.02320	0.04246	0.33515
	(B * C * !D * !X)	0.01802	0.03727	0.32999
	(B * !C * !X)	0.02319	0.04245	0.33515
	(B * !C * !X)	0.01802	0.03727	0.33000
	(!B * !X)	0.02308	0.04236	0.33514
	(!B * !X)	0.01802	0.03728	0.33008
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.02842	0.04680	0.33078
	(B * C * !D * !X)	0.02348	0.04186	0.32587
	(B * !C * !X)	0.02839	0.04677	0.33075
	(B * !C * !X)	0.02348	0.04186	0.32586
	(!B * !X)	0.02830	0.04669	0.33069
	(!B * !X)	0.02348	0.04187	0.32588
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.03565	0.05521	0.36754
	(B * C * !D * !X)	0.02958	0.04916	0.36153
	(B * !C * !X)	0.03558	0.05514	0.36749
	(B * !C * !X)	0.02959	0.04918	0.36153
	(!B * !X)	0.03534	0.05492	0.36731
	(!B * !X)	0.02959	0.04916	0.36157

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)	0.00481	0.02553	0.32848
	(B * C * !D * !X)	0.01001	0.03077	0.33365
	(B * !C * !X)	0.00477	0.02549	0.32847
	(B * !C * !X)	0.00992	0.03068	0.33361
	(!B * !X)	0.00479	0.02552	0.32854
	(!B * !X)	0.00982	0.03059	0.33358
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00935	0.02921	0.32333
	(B * C * !D * !X)	0.01437	0.03422	0.32827
	(B * !C * !X)	0.00932	0.02918	0.32332
	(B * !C * !X)	0.01427	0.03412	0.32821
	(!B * !X)	0.00932	0.02918	0.32334
	(!B * !X)	0.01414	0.03400	0.32812
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01907	0.03902	0.35543
	(B * C * !D * !X)	0.02522	0.04521	0.36150
	(B * !C * !X)	0.01907	0.03902	0.35545
	(B * !C * !X)	0.02508	0.04506	0.36142
	(!B * !X)	0.01906	0.03902	0.35548
	(!B * !X)	0.02478	0.04478	0.36122

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)**	0.01814	0.01816	0.01812
	(A_N * C * D * !X)	0.01399	0.01396	0.01395
	(A_N * C * !D * !X)	0.01723	0.01724	0.01723
	(A_N * C * !D * !X)	0.01379	0.01378	0.01379
	(A_N * !C * !X)	0.01725	0.01726	0.01723
	(A_N * !C * !X)	0.01378	0.01377	0.01379
	(!A_N * C * !D * !X)	0.00533	0.00533	0.00530
	(!A_N * C * !D * !X)	0.00212	0.00211	0.00207
	(!A_N * !C * !X)	0.00532	0.00532	0.00529
	(!A_N * !C * !X)	0.00207	0.00206	0.00205
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.02272	0.02275	0.02271
	(A_N * C * D * !X)	0.01820	0.01818	0.01819
	(A_N * C * !D * !X)	0.02179	0.02179	0.02178
	(A_N * C * !D * !X)	0.01810	0.01810	0.01811
	(A_N * !C * !X)	0.02185	0.02186	0.02184
	(A_N * !C * !X)	0.01809	0.01808	0.01810
	(!A_N * C * !D * !X)	0.00983	0.00983	0.00983
	(!A_N * C * !D * !X)	0.00645	0.00644	0.00640
	(!A_N * !C * !X)	0.00986	0.00986	0.00985
	(!A_N * !C * !X)	0.00639	0.00638	0.00637
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.02790	0.02796	0.02787
	(A_N * C * D * !X)	0.01899	0.01894	0.01893
	(A_N * C * !D * !X)	0.02606	0.02608	0.02607
	(A_N * C * !D * !X)	0.01863	0.01861	0.01863
	(A_N * !C * !X)	0.02623	0.02625	0.02623
	(A_N * !C * !X)	0.01863	0.01861	0.01863
	(!A_N * C * !D * !X)	0.01999	0.02002	0.01995
	(!A_N * C * !D * !X)	0.01308	0.01304	0.01293
	(!A_N * !C * !X)	0.02009	0.02011	0.02004
	(!A_N * !C * !X)	0.01300	0.01296	0.01291

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)	0.01461	0.01435	0.01441
	(A_N * C * D * !X)	0.01878	0.01852	0.01857
	(A_N * C * !D * !X)	0.01504	0.01501	0.01498
	(A_N * C * !D * !X)	0.01867	0.01862	0.01853
	(A_N * !C * !X)	0.01496	0.01496	0.01492
	(A_N * !C * !X)	0.01849	0.01851	0.01842
	(!A_N * C * !D * !X)	0.00412	0.00412	0.00411
	(!A_N * C * !D * !X)	0.00734	0.00735	0.00731
	(!A_N * !C * !X)	0.00408	0.00409	0.00408
	(!A_N * !C * !X)	0.00733	0.00733	0.00730
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	0.01880	0.01852	0.01851
	(A_N * C * D * !X)	0.02333	0.02303	0.02303
	(A_N * C * !D * !X)	0.01936	0.01931	0.01927
	(A_N * C * !D * !X)	0.02320	0.02318	0.02306
	(A_N * !C * !X)	0.01921	0.01920	0.01915
	(A_N * !C * !X)	0.02307	0.02308	0.02297
	(!A_N * C * !D * !X)	0.00858	0.00857	0.00856
	(!A_N * C * !D * !X)	0.01200	0.01202	0.01197
	(!A_N * !C * !X)	0.00853	0.00852	0.00851
	(!A_N * !C * !X)	0.01201	0.01203	0.01197

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.01968	0.01922	0.01927
	(A_N * C * D * !X)	0.02861	0.02823	0.02819
	(A_N * C * !D * !X)	0.02062	0.02053	0.02046
	(A_N * C * !D * !X)	0.02838	0.02833	0.02814
	(A_N * !C * !X)	0.02037	0.02033	0.02023
	(A_N * !C * !X)	0.02816	0.02818	0.02797
	(!A_N * C * !D * !X)	0.01700	0.01700	0.01696
	(!A_N * C * !D * !X)	0.02396	0.02396	0.02391
	(!A_N * !C * !X)	0.01690	0.01688	0.01686
	(!A_N * !C * !X)	0.02398	0.02401	0.02393

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)**	0.01822	0.01823	0.01820
	(A_N * B * D * !X)	0.01420	0.01419	0.01417
	(A_N * B * !D * !X)	0.01729	0.01730	0.01729
	(A_N * B * !D * !X)	0.01401	0.01399	0.01400
	(A_N * !B * D * !X)	0.01803	0.01805	0.01803
	(A_N * !B * D * !X)	0.01403	0.01401	0.01402
	(A_N * !B * !D * !X)	0.01727	0.01728	0.01725
	(A_N * !B * !D * !X)	0.01400	0.01399	0.01400
	(!A_N * B * !D * !X)	0.00566	0.00566	0.00562
	(!A_N * B * !D * !X)	0.00253	0.00253	0.00254
	(!A_N * !B * D * !X)	0.00670	0.00670	0.00668
	(!A_N * !B * D * !X)	0.00266	0.00265	0.00264
	(!A_N * !B * !D * !X)	0.00578	0.00578	0.00576
	(!A_N * !B * !D * !X)	0.00252	0.00251	0.00252

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.02248	0.02250	0.02248
	(A_N * B * D * !X)	0.01823	0.01822	0.01822
	(A_N * B * !D * !X)	0.02152	0.02152	0.02152
	(A_N * B * !D * !X)	0.01813	0.01812	0.01813
	(A_N * !B * D * !X)	0.02238	0.02241	0.02239
	(A_N * !B * D * !X)	0.01815	0.01812	0.01814
	(A_N * !B * !D * !X)	0.02146	0.02147	0.02145
	(A_N * !B * !D * !X)	0.01813	0.01812	0.01813
	(!A_N * B * !D * !X)	0.00987	0.00987	0.00986
	(!A_N * B * !D * !X)	0.00674	0.00673	0.00676
	(!A_N * !B * D * !X)	0.01107	0.01107	0.01107
	(!A_N * !B * D * !X)	0.00681	0.00681	0.00680
	(!A_N * !B * !D * !X)	0.01004	0.01003	0.01003
	(!A_N * !B * !D * !X)	0.00673	0.00673	0.00673
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.02772	0.02778	0.02772
	(A_N * B * D * !X)	0.01872	0.01868	0.01869
	(A_N * B * !D * !X)	0.02586	0.02589	0.02587
	(A_N * B * !D * !X)	0.01836	0.01833	0.01835
	(A_N * !B * D * !X)	0.02734	0.02737	0.02736
	(A_N * !B * D * !X)	0.01839	0.01837	0.01839
	(A_N * !B * !D * !X)	0.02585	0.02588	0.02585
	(A_N * !B * !D * !X)	0.01836	0.01832	0.01835
	(!A_N * B * !D * !X)	0.02047	0.02049	0.02046
	(!A_N * B * !D * !X)	0.01340	0.01338	0.01342
	(!A_N * !B * D * !X)	0.02268	0.02271	0.02267
	(!A_N * !B * D * !X)	0.01366	0.01364	0.01363
	(!A_N * !B * !D * !X)	0.02079	0.02080	0.02078
	(!A_N * !B * !D * !X)	0.01334	0.01332	0.01333

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)	0.01463	0.01426	0.01434
	(A_N * B * D * !X)	0.01867	0.01836	0.01835
	(A_N * B * !D * !X)	0.01490	0.01491	0.01488
	(A_N * B * !D * !X)	0.01834	0.01840	0.01825
	(A_N * !B * D * !X)	0.01426	0.01415	0.01417
	(A_N * !B * D * !X)	0.01825	0.01820	0.01817
	(A_N * !B * !D * !X)	0.01486	0.01485	0.01488
	(A_N * !B * !D * !X)	0.01825	0.01826	0.01819
	(!A_N * B * !D * !X)	0.00380	0.00379	0.00378
	(!A_N * B * !D * !X)	0.00692	0.00695	0.00685
	(!A_N * !B * D * !X)	0.00300	0.00278	0.00284
	(!A_N * !B * D * !X)	0.00704	0.00687	0.00685
	(!A_N * !B * !D * !X)	0.00350	0.00348	0.00347
	(!A_N * !B * !D * !X)	0.00685	0.00686	0.00675
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	0.01912	0.01875	0.01875
	(A_N * B * D * !X)	0.02336	0.02307	0.02300
	(A_N * B * !D * !X)	0.01951	0.01953	0.01948
	(A_N * B * !D * !X)	0.02309	0.02314	0.02298
	(A_N * !B * D * !X)	0.01875	0.01864	0.01866
	(A_N * !B * D * !X)	0.02297	0.02293	0.02290
	(A_N * !B * !D * !X)	0.01951	0.01950	0.01954
	(A_N * !B * !D * !X)	0.02298	0.02300	0.02294
	(!A_N * B * !D * !X)	0.00857	0.00856	0.00854
	(!A_N * B * !D * !X)	0.01173	0.01174	0.01165
	(!A_N * !B * D * !X)	0.00761	0.00736	0.00738
	(!A_N * !B * D * !X)	0.01188	0.01168	0.01163
	(!A_N * !B * !D * !X)	0.00823	0.00823	0.00822
	(!A_N * !B * !D * !X)	0.01166	0.01168	0.01158

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	0.02013	0.01944	0.01945
	(A_N * B * D * !X)	0.02917	0.02859	0.02846
	(A_N * B * !D * !X)	0.02061	0.02066	0.02055
	(A_N * B * !D * !X)	0.02846	0.02858	0.02826
	(A_N * !B * D * !X)	0.01932	0.01910	0.01910
	(A_N * !B * D * !X)	0.02825	0.02815	0.02808
	(A_N * !B * !D * !X)	0.02052	0.02050	0.02053
	(A_N * !B * !D * !X)	0.02826	0.02831	0.02815
	(!A_N * B * !D * !X)	0.01653	0.01650	0.01645
	(!A_N * B * !D * !X)	0.02365	0.02369	0.02347
	(!A_N * !B * D * !X)	0.01498	0.01448	0.01449
	(!A_N * !B * D * !X)	0.02403	0.02363	0.02349
	(!A_N * !B * !D * !X)	0.01583	0.01583	0.01577
	(!A_N * !B * !D * !X)	0.02350	0.02357	0.02333

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)	0.01791	0.01792	0.01790
	(A_N * B * C * !X)	0.01403	0.01402	0.01402
	(A_N * !C * !X)	0.01772	0.01774	0.01772
	(A_N * !C * !X)	0.01386	0.01384	0.01385
	(A_N * !B * C * !X)	0.01769	0.01770	0.01769
	(A_N * !B * C * !X)	0.01386	0.01385	0.01385
	(!A_N * B * !C * !X)	0.00638	0.00642	0.00638
	(!A_N * B * !C * !X)	0.00250	0.00247	0.00248
	(!A_N * !B * C * !X)	0.00640	0.00641	0.00639
	(!A_N * !B * C * !X)	0.00252	0.00250	0.00250
	(!A_N * !B * !C * !X)	0.00624	0.00625	0.00625
	(!A_N * !B * !C * !X)	0.00239	0.00238	0.00238

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.02249	0.02250	0.02249
	(A_N * B * C * !X)	0.01805	0.01804	0.01805
	(A_N * !C * !X)	0.02241	0.02242	0.02241
	(A_N * !C * !X)	0.01796	0.01795	0.01796
	(A_N * !B * C * !X)	0.02235	0.02237	0.02236
	(A_N * !B * C * !X)	0.01796	0.01795	0.01796
	(!A_N * B * !C * !X)	0.01109	0.01110	0.01109
	(!A_N * B * !C * !X)	0.00661	0.00660	0.00661
	(!A_N * !B * C * !X)	0.01108	0.01107	0.01108
	(!A_N * !B * C * !X)	0.00662	0.00663	0.00663
	(!A_N * !B * !C * !X)	0.01100	0.01101	0.01100
	(!A_N * !B * !C * !X)	0.00656	0.00655	0.00656
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.02709	0.02710	0.02705
	(A_N * B * C * !X)	0.01871	0.01871	0.01872
	(A_N * !C * !X)	0.02663	0.02667	0.02664
	(A_N * !C * !X)	0.01841	0.01838	0.01840
	(A_N * !B * C * !X)	0.02668	0.02667	0.02665
	(A_N * !B * C * !X)	0.01838	0.01839	0.01840
	(!A_N * B * !C * !X)	0.02187	0.02192	0.02186
	(!A_N * B * !C * !X)	0.01350	0.01346	0.01352
	(!A_N * !B * C * !X)	0.02206	0.02204	0.02202
	(!A_N * !B * C * !X)	0.01366	0.01367	0.01366
	(!A_N * !B * !C * !X)	0.02164	0.02167	0.02165
	(!A_N * !B * !C * !X)	0.01342	0.01339	0.01341

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)**	0.01486	0.01462	0.01464
	(A_N * B * C * !X)	0.01874	0.01856	0.01851
	(A_N * !C * !X)	0.01451	0.01446	0.01446
	(A_N * !C * !X)	0.01836	0.01835	0.01833
	(A_N * !B * C * !X)	0.01458	0.01448	0.01448
	(A_N * !B * C * !X)	0.01837	0.01835	0.01833
	(!A_N * B * !C * !X)	0.00326	0.00311	0.00312
	(!A_N * B * !C * !X)	0.00719	0.00706	0.00699
	(!A_N * !B * C * !X)	0.00334	0.00313	0.00313
	(!A_N * !B * C * !X)	0.00723	0.00707	0.00700
	(!A_N * !B * !C * !X)	0.00306	0.00300	0.00300
	(!A_N * !B * !C * !X)	0.00691	0.00689	0.00686
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.01899	0.01876	0.01874
	(A_N * B * C * !X)	0.02340	0.02326	0.02318
	(A_N * !C * !X)	0.01868	0.01863	0.01864
	(A_N * !C * !X)	0.02311	0.02309	0.02308
	(A_N * !B * C * !X)	0.01875	0.01866	0.01865
	(A_N * !B * C * !X)	0.02310	0.02310	0.02308
	(!A_N * B * !C * !X)	0.00751	0.00737	0.00736
	(!A_N * B * !C * !X)	0.01200	0.01189	0.01181
	(!A_N * !B * C * !X)	0.00759	0.00739	0.00737
	(!A_N * !B * C * !X)	0.01202	0.01189	0.01180
	(!A_N * !B * !C * !X)	0.00733	0.00726	0.00728
	(!A_N * !B * !C * !X)	0.01176	0.01177	0.01172

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.02073	0.02011	0.02011
	(A_N * B * C * !X)	0.02909	0.02859	0.02843
	(A_N * !C * !X)	0.01998	0.01983	0.01984
	(A_N * !C * !X)	0.02816	0.02816	0.02808
	(A_N * !B * C * !X)	0.02004	0.01978	0.01977
	(A_N * !B * C * !X)	0.02817	0.02811	0.02805
	(!A_N * B * !C * !X)	0.01560	0.01524	0.01528
	(!A_N * B * !C * !X)	0.02398	0.02373	0.02356
	(!A_N * !B * C * !X)	0.01573	0.01516	0.01515
	(!A_N * !B * C * !X)	0.02409	0.02364	0.02346
	(!A_N * !B * !C * !X)	0.01513	0.01496	0.01496
	(!A_N * !B * !C * !X)	0.02333	0.02330	0.02320

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00264	0.00260	0.00251	0.00255	1.65206
sky130_fd_sc_hs__and4_2	0.00284	0.00292	0.00277	0.00276	2.72593
sky130_fd_sc_hs__and4_4	0.00493	0.00510	0.00559	0.00499	6.01587

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4_1	0.00000	818.84600	5207.02000
sky130_fd_sc_hs__and4_2	0.00000	1126.41000	2373.09000
sky130_fd_sc_hs__and4_4	0.00000	2256.62000	4738.18000

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)	0.06828	0.51297	6.97168
	B->X (RR)	0.07503	0.50590	6.79665
	C->X (RR)	0.07909	0.49010	6.60127
	D->X (RR)	0.08392	0.46079	6.14749
sky130_fd_sc_hs__and4_2	A->X (RR)	0.07680	0.44974	6.50319
	B->X (RR)	0.08423	0.43928	6.30263
	C->X (RR)	0.08916	0.42118	6.09970
	D->X (RR)	0.09307	0.38382	5.43142
sky130_fd_sc_hs__and4_4	A->X (RR)	0.08358	0.40099	6.90605
	B->X (RR)	0.09365	0.40250	6.87854
	C->X (RR)	0.10378	0.38152	6.54931
	D->X (RR)	0.10373	0.36048	6.45825

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.05000	0.37719	4.66504
	B->X (FF)	0.05528	0.39842	4.82445
	C->X (FF)	0.05928	0.41790	5.06589
	D->X (FF)	0.06267	0.43556	5.30821
sky130_fd_sc_hs__and4_2	A->X (FF)	0.05380	0.33880	4.11897
	B->X (FF)	0.06031	0.36240	4.32767
	C->X (FF)	0.06460	0.38067	4.55904
	D->X (FF)	0.07022	0.40468	4.86454
sky130_fd_sc_hs__and4_4	A->X (FF)	0.05451	0.31397	4.68765
	B->X (FF)	0.05812	0.32041	4.70715
	C->X (FF)	0.06239	0.34063	4.96759
	D->X (FF)	0.06287	0.35548	5.23365

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.14909	0.16306	0.40062
	A	0.14372	0.15767	0.39509
	B	0.14977	0.16280	0.40033
	B	0.14337	0.15638	0.39346
	C	0.15066	0.16402	0.41492
	C	0.14308	0.15642	0.40711
	D	0.15056	0.16184	0.38670
	D	0.14165	0.15290	0.37815
sky130_fd_sc_hs__and4_2	A	0.08057	0.09421	0.34880
	A	0.07458	0.08823	0.34253
	B	0.08180	0.09439	0.34782
	B	0.07452	0.08709	0.34081
	C	0.08290	0.09551	0.36280
	C	0.07436	0.08693	0.35438
	D	0.08337	0.09197	0.29190
	D	0.07333	0.08193	0.28155
sky130_fd_sc_hs__and4_4	A	0.16170	0.18758	0.66878
	A	0.15138	0.17755	0.65595
	B	0.16443	0.18855	0.67997
	B	0.15121	0.17537	0.66458
	C	0.16698	0.18911	0.67038
	C	0.15048	0.17253	0.65267
	D	0.16872	0.19313	0.74882
	D	0.15069	0.17502	0.73011

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.01378	0.03084	0.28907
	A	0.01914	0.03618	0.29358
	B	0.01446	0.03185	0.29074
	B	0.02086	0.03811	0.29598
	C	0.01511	0.03284	0.30299
	C	0.02269	0.04037	0.31095
	D	0.01557	0.03289	0.30809
	D	0.02449	0.04174	0.31635
sky130_fd_sc_hs__and4_2	A	0.02544	0.04013	0.28147
	A	0.03143	0.04611	0.28685
	B	0.02664	0.04109	0.28311
	B	0.03392	0.04836	0.28941
	C	0.02797	0.04267	0.29690
	C	0.03650	0.05112	0.30567
	D	0.02877	0.04166	0.29341
	D	0.03879	0.05167	0.29829
sky130_fd_sc_hs__and4_4	A	0.05618	0.08492	0.57335
	A	0.06650	0.09512	0.58146
	B	0.05661	0.08666	0.58939
	B	0.06984	0.09986	0.59876
	C	0.05844	0.08842	0.61417
	C	0.07495	0.10482	0.62614
	D	0.06197	0.09274	0.65946
	D	0.08001	0.11075	0.67494

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)	0.00524	0.00524	0.00515
	(B * C * !D * !X)	0.00225	0.00224	0.00204
	(B * !C * !X)	0.00521	0.00521	0.00514
	(B * !C * !X)	0.00218	0.00216	0.00204
	(!B * !X)	0.00522	0.00521	0.00514
	(!B * !X)	0.00212	0.00210	0.00203
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00983	0.00983	0.00973
	(B * C * !D * !X)	0.00642	0.00640	0.00618
	(B * !C * !X)	0.00978	0.00978	0.00971
	(B * !C * !X)	0.00631	0.00631	0.00615
	(!B * !X)	0.00976	0.00976	0.00971
	(!B * !X)	0.00622	0.00621	0.00615
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.01933	0.01933	0.01912
	(B * C * !D * !X)	0.01335	0.01331	0.01286
	(B * !C * !X)	0.01932	0.01932	0.01914
	(B * !C * !X)	0.01321	0.01319	0.01285
	(!B * !X)	0.01927	0.01927	0.01913
	(!B * !X)	0.01303	0.01297	0.01283

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)	0.00411	0.00411	0.00412
	(B * C * !D * !X)	0.00713	0.00714	0.00715
	(B * !C * !X)	0.00411	0.00410	0.00412
	(B * !C * !X)	0.00713	0.00716	0.00715
	(!B * !X)	0.00406	0.00405	0.00408
	(!B * !X)	0.00713	0.00718	0.00715
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00850	0.00850	0.00851
	(B * C * !D * !X)	0.01201	0.01203	0.01202
	(B * !C * !X)	0.00849	0.00849	0.00850
	(B * !C * !X)	0.01199	0.01202	0.01201
	(!B * !X)	0.00847	0.00846	0.00848
	(!B * !X)	0.01200	0.01203	0.01201
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.01747	0.01746	0.01748
	(B * C * !D * !X)	0.02358	0.02361	0.02361
	(B * !C * !X)	0.01744	0.01743	0.01745
	(B * !C * !X)	0.02359	0.02362	0.02362
	(!B * !X)	0.01736	0.01735	0.01739
	(!B * !X)	0.02360	0.02364	0.02361

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)**	0.00524	0.00524	0.00521
	(A * C * !D * !X)	0.00242	0.00242	0.00242
	(A * !C * !X)	0.00524	0.00524	0.00520
	(A * !C * !X)	0.00241	0.00240	0.00242
	(!A * C * D * !X)	0.00641	0.00642	0.00638
	(!A * C * D * !X)	0.00259	0.00258	0.00257
	(!A * C * !D * !X)	0.00536	0.00537	0.00536
	(!A * C * !D * !X)	0.00243	0.00242	0.00243
	(!A * !C * !X)	0.00534	0.00535	0.00533
	(!A * !C * !X)	0.00242	0.00241	0.00243
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00981	0.00983	0.00980
	(A * C * !D * !X)	0.00656	0.00653	0.00655
	(A * !C * !X)	0.00983	0.00983	0.00981
	(A * !C * !X)	0.00652	0.00651	0.00653
	(!A * C * D * !X)	0.01107	0.01108	0.01106
	(!A * C * D * !X)	0.00664	0.00662	0.00662
	(!A * C * !D * !X)	0.01003	0.01004	0.01002
	(!A * C * !D * !X)	0.00656	0.00654	0.00656
	(!A * !C * !X)	0.01001	0.01002	0.01001
	(!A * !C * !X)	0.00655	0.00653	0.00654
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.01983	0.01985	0.01978
	(A * C * !D * !X)	0.01341	0.01338	0.01336
	(A * !C * !X)	0.01992	0.01994	0.01986
	(A * !C * !X)	0.01336	0.01333	0.01335
	(!A * C * D * !X)	0.02221	0.02224	0.02217
	(!A * C * D * !X)	0.01375	0.01371	0.01369
	(!A * C * !D * !X)	0.02011	0.02012	0.02010
	(!A * C * !D * !X)	0.01336	0.01333	0.01337
	(!A * !C * !X)	0.02018	0.02020	0.02017
	(!A * !C * !X)	0.01335	0.01332	0.01334

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)	0.00407	0.00407	0.00406
	(A * C * !D * !X)	0.00686	0.00687	0.00680
	(A * !C * !X)	0.00403	0.00402	0.00403
	(A * !C * !X)	0.00683	0.00685	0.00677
	(!A * C * D * !X)	0.00324	0.00299	0.00307
	(!A * C * D * !X)	0.00706	0.00681	0.00686
	(!A * C * !D * !X)	0.00380	0.00376	0.00376
	(!A * C * !D * !X)	0.00692	0.00689	0.00681
	(!A * !C * !X)	0.00378	0.00377	0.00376
	(!A * !C * !X)	0.00678	0.00679	0.00670
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	0.00846	0.00846	0.00844
	(A * C * !D * !X)	0.01172	0.01173	0.01166
	(A * !C * !X)	0.00842	0.00840	0.00840
	(A * !C * !X)	0.01170	0.01174	0.01165
	(!A * C * D * !X)	0.00752	0.00724	0.00727
	(!A * C * D * !X)	0.01197	0.01170	0.01169
	(!A * C * !D * !X)	0.00817	0.00812	0.00811
	(!A * C * !D * !X)	0.01186	0.01183	0.01171
	(!A * !C * !X)	0.00812	0.00811	0.00809
	(!A * !C * !X)	0.01171	0.01172	0.01161

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.01685	0.01685	0.01683
	(A * C * !D * !X)	0.02327	0.02328	0.02315
	(A * !C * !X)	0.01674	0.01673	0.01673
	(A * !C * !X)	0.02327	0.02330	0.02316
	(!A * C * D * !X)	0.01517	0.01472	0.01482
	(!A * C * D * !X)	0.02365	0.02327	0.02325
	(!A * C * !D * !X)	0.01632	0.01623	0.01622
	(!A * C * !D * !X)	0.02346	0.02339	0.02322
	(!A * !C * !X)	0.01618	0.01614	0.01610
	(!A * !C * !X)	0.02324	0.02324	0.02305

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)**	0.00536	0.00535	0.00532
	(A * B * !D * !X)	0.00254	0.00254	0.00254
	(A * !B * D * !X)	0.00644	0.00644	0.00641
	(A * !B * D * !X)	0.00262	0.00261	0.00261
	(A * !B * !D * !X)	0.00547	0.00546	0.00545
	(A * !B * !D * !X)	0.00250	0.00251	0.00251
	(!A * B * D * !X)	0.00647	0.00648	0.00645
	(!A * B * D * !X)	0.00267	0.00266	0.00266
	(!A * B * !D * !X)	0.00543	0.00543	0.00542
	(!A * B * !D * !X)	0.00250	0.00249	0.00250
	(!A * !B * D * !X)	0.00627	0.00628	0.00628
	(!A * !B * D * !X)	0.00251	0.00251	0.00251
	(!A * !B * !D * !X)	0.00548	0.00547	0.00546
	(!A * !B * !D * !X)	0.00250	0.00251	0.00250

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00987	0.00988	0.00986
	(A * B * !D * !X)	0.00675	0.00673	0.00675
	(A * !B * D * !X)	0.01105	0.01107	0.01105
	(A * !B * D * !X)	0.00679	0.00677	0.00677
	(A * !B * !D * !X)	0.01007	0.01009	0.01007
	(A * !B * !D * !X)	0.00671	0.00669	0.00670
	(!A * B * D * !X)	0.01106	0.01107	0.01105
	(!A * B * D * !X)	0.00678	0.00677	0.00678
	(!A * B * !D * !X)	0.01003	0.01003	0.01002
	(!A * B * !D * !X)	0.00669	0.00669	0.00670
	(!A * !B * D * !X)	0.01096	0.01097	0.01096
	(!A * !B * D * !X)	0.00671	0.00669	0.00670
	(!A * !B * !D * !X)	0.01009	0.01010	0.01008
	(!A * !B * !D * !X)	0.00670	0.00668	0.00670
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.02032	0.02034	0.02029
	(A * B * !D * !X)	0.01331	0.01328	0.01333
	(A * !B * D * !X)	0.02255	0.02257	0.02253
	(A * !B * D * !X)	0.01351	0.01349	0.01348
	(A * !B * !D * !X)	0.02061	0.02063	0.02060
	(A * !B * !D * !X)	0.01320	0.01318	0.01320
	(!A * B * D * !X)	0.02261	0.02264	0.02260
	(!A * B * D * !X)	0.01359	0.01356	0.01355
	(!A * B * !D * !X)	0.02053	0.02055	0.02053
	(!A * B * !D * !X)	0.01320	0.01317	0.01320
	(!A * !B * D * !X)	0.02222	0.02227	0.02224
	(!A * !B * D * !X)	0.01326	0.01323	0.01325
	(!A * !B * !D * !X)	0.02065	0.02068	0.02064
	(!A * !B * !D * !X)	0.01320	0.01316	0.01319

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)	0.00395	0.00393	0.00393
	(A * B * !D * !X)	0.00677	0.00681	0.00669
	(A * !B * D * !X)	0.00311	0.00290	0.00296
	(A * !B * D * !X)	0.00695	0.00676	0.00673
	(A * !B * !D * !X)	0.00365	0.00365	0.00363
	(A * !B * !D * !X)	0.00671	0.00671	0.00661
	(!A * B * D * !X)	0.00327	0.00294	0.00301
	(!A * B * D * !X)	0.00708	0.00680	0.00677
	(!A * B * !D * !X)	0.00366	0.00369	0.00367
	(!A * B * !D * !X)	0.00676	0.00679	0.00666
	(!A * !B * D * !X)	0.00292	0.00282	0.00284
	(!A * !B * D * !X)	0.00669	0.00663	0.00660
	(!A * !B * !D * !X)	0.00357	0.00357	0.00359
	(!A * !B * !D * !X)	0.00668	0.00667	0.00661
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	0.00842	0.00841	0.00839
	(A * B * !D * !X)	0.01160	0.01162	0.01151
	(A * !B * D * !X)	0.00748	0.00722	0.00725
	(A * !B * D * !X)	0.01178	0.01158	0.01151
	(A * !B * !D * !X)	0.00806	0.00806	0.00803
	(A * !B * !D * !X)	0.01155	0.01156	0.01146
	(!A * B * D * !X)	0.00763	0.00726	0.00727
	(!A * B * D * !X)	0.01190	0.01160	0.01153
	(!A * B * !D * !X)	0.00808	0.00812	0.00809
	(!A * B * !D * !X)	0.01164	0.01167	0.01151
	(!A * !B * D * !X)	0.00728	0.00715	0.00717
	(!A * !B * D * !X)	0.01152	0.01147	0.01143
	(!A * !B * !D * !X)	0.00797	0.00797	0.00799
	(!A * !B * !D * !X)	0.01151	0.01152	0.01145

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	0.01636	0.01634	0.01630
	(A * B * !D * !X)	0.02345	0.02349	0.02325
	(A * !B * D * !X)	0.01477	0.01431	0.01431
	(A * !B * D * !X)	0.02385	0.02347	0.02331
	(A * !B * !D * !X)	0.01569	0.01569	0.01563
	(A * !B * !D * !X)	0.02330	0.02336	0.02313
	(!A * B * D * !X)	0.01504	0.01436	0.01441
	(!A * B * D * !X)	0.02410	0.02353	0.02341
	(!A * B * !D * !X)	0.01574	0.01579	0.01573
	(!A * B * !D * !X)	0.02341	0.02352	0.02323
	(!A * !B * D * !X)	0.01430	0.01406	0.01405
	(!A * !B * D * !X)	0.02322	0.02310	0.02304
	(!A * !B * !D * !X)	0.01552	0.01551	0.01554
	(!A * !B * !D * !X)	0.02321	0.02326	0.02312

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)	0.00637	0.00637	0.00636
	(A * B * !C * !X)	0.00242	0.00242	0.00240
	(A * !B * C * !X)	0.00638	0.00639	0.00637
	(A * !B * C * !X)	0.00243	0.00242	0.00242
	(A * !B * !C * !X)	0.00622	0.00625	0.00623
	(A * !B * !C * !X)	0.00230	0.00228	0.00230
	(!A * B * C * !X)	0.00641	0.00642	0.00640
	(!A * B * C * !X)	0.00247	0.00246	0.00246
	(!A * !C * !X)	0.00622	0.00625	0.00623
	(!A * !C * !X)	0.00230	0.00228	0.00230
	(!A * !B * C * !X)	0.00620	0.00620	0.00620
	(!A * !B * C * !X)	0.00230	0.00230	0.00230

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.01108	0.01110	0.01109
	(A * B * !C * !X)	0.00668	0.00666	0.00667
	(A * !B * C * !X)	0.01108	0.01110	0.01108
	(A * !B * C * !X)	0.00669	0.00669	0.00670
	(A * !B * !C * !X)	0.01100	0.01103	0.01101
	(A * !B * !C * !X)	0.00662	0.00660	0.00662
	(!A * B * C * !X)	0.01107	0.01109	0.01108
	(!A * B * C * !X)	0.00671	0.00670	0.00671
	(!A * !C * !X)	0.01100	0.01102	0.01100
	(!A * !C * !X)	0.00662	0.00661	0.00662
	(!A * !B * C * !X)	0.01098	0.01099	0.01097
	(!A * !B * C * !X)	0.00662	0.00661	0.00662
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.02166	0.02170	0.02164
	(A * B * !C * !X)	0.01349	0.01345	0.01349
	(A * !B * C * !X)	0.02176	0.02177	0.02173
	(A * !B * C * !X)	0.01362	0.01360	0.01361
	(A * !B * !C * !X)	0.02140	0.02143	0.02141
	(A * !B * !C * !X)	0.01336	0.01333	0.01335
	(!A * B * C * !X)	0.02181	0.02183	0.02179
	(!A * B * C * !X)	0.01368	0.01366	0.01366
	(!A * !C * !X)	0.02139	0.02141	0.02140
	(!A * !C * !X)	0.01336	0.01334	0.01335
	(!A * !B * C * !X)	0.02136	0.02140	0.02137
	(!A * !B * C * !X)	0.01336	0.01332	0.01335

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)**	0.00313	0.00299	0.00300
	(A * B * !C * !X)	0.00712	0.00700	0.00693
	(A * !B * C * !X)	0.00320	0.00301	0.00302
	(A * !B * C * !X)	0.00715	0.00701	0.00693
	(A * !B * !C * !X)	0.00294	0.00288	0.00288
	(A * !B * !C * !X)	0.00683	0.00682	0.00680
	(!A * B * C * !X)	0.00325	0.00303	0.00306
	(!A * B * C * !X)	0.00720	0.00703	0.00698
	(!A * !C * !X)	0.00294	0.00288	0.00288
	(!A * !C * !X)	0.00683	0.00682	0.00680
	(!A * !B * C * !X)	0.00301	0.00290	0.00289
	(!A * !B * C * !X)	0.00684	0.00682	0.00680
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00737	0.00723	0.00721
	(A * B * !C * !X)	0.01179	0.01167	0.01160
	(A * !B * C * !X)	0.00746	0.00724	0.00722
	(A * !B * C * !X)	0.01181	0.01166	0.01159
	(A * !B * !C * !X)	0.00719	0.00713	0.00713
	(A * !B * !C * !X)	0.01152	0.01153	0.01151
	(!A * B * C * !X)	0.00750	0.00724	0.00724
	(!A * B * C * !X)	0.01185	0.01166	0.01161
	(!A * !C * !X)	0.00719	0.00713	0.00713
	(!A * !C * !X)	0.01153	0.01153	0.01150
	(!A * !B * C * !X)	0.00728	0.00716	0.00714
	(!A * !B * C * !X)	0.01153	0.01153	0.01151

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.01548	0.01513	0.01518
	(A * B * !C * !X)	0.02366	0.02341	0.02325
	(A * !B * C * !X)	0.01564	0.01511	0.01512
	(A * !B * C * !X)	0.02378	0.02337	0.02320
	(A * !B * !C * !X)	0.01504	0.01488	0.01489
	(A * !B * !C * !X)	0.02300	0.02300	0.02294
	(!A * B * C * !X)	0.01575	0.01518	0.01521
	(!A * B * C * !X)	0.02388	0.02344	0.02330
	(!A * !C * !X)	0.01505	0.01489	0.01490
	(!A * !C * !X)	0.02299	0.02301	0.02294
	(!A * !B * C * !X)	0.01516	0.01489	0.01487
	(!A * !B * C * !X)	0.02304	0.02299	0.02293

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00256	1.64785
sky130_fd_sc_hs__buf_16	0.01652	25.37728
sky130_fd_sc_hs__buf_2	0.00275	2.90143
sky130_fd_sc_hs__buf_4	0.00373	6.28339
sky130_fd_sc_hs__buf_8	0.00846	11.61188
sky130_fd_sc_hs__bufbuf_16	0.00302	25.41167
sky130_fd_sc_hs__bufbuf_8	0.00238	11.96752

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	933.37800	1337.55000
sky130_fd_sc_hs__buf_16	0.00000	5849.86000	8392.74000
sky130_fd_sc_hs__buf_2	0.00000	838.81100	1063.10000
sky130_fd_sc_hs__buf_4	0.00000	2391.69000	2690.85000
sky130_fd_sc_hs__buf_8	0.00000	2923.64000	4193.48000
sky130_fd_sc_hs__bufbuf_16	0.00000	6914.40000	9964.05000
sky130_fd_sc_hs__bufbuf_8	0.00000	3859.06000	4723.14000

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)	0.03919	0.40354	5.78133
sky130_fd_sc_hs__buf_16	A->X (RR)	0.04161	0.18699	5.94126
sky130_fd_sc_hs__buf_2	A->X (RR)	0.04216	0.31325	5.09438
sky130_fd_sc_hs__buf_4	A->X (RR)	0.05177	0.33519	6.53599
sky130_fd_sc_hs__buf_8	A->X (RR)	0.04127	0.22353	5.66124
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.11684	0.26275	5.65471
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.11901	0.28391	5.46231

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.04234	0.39353	5.22027
sky130_fd_sc_hs__buf_16	A->X (FF)	0.05060	0.28948	5.57499
sky130_fd_sc_hs__buf_2	A->X (FF)	0.05008	0.37330	5.04330
sky130_fd_sc_hs__buf_4	A->X (FF)	0.04922	0.30598	4.83974
sky130_fd_sc_hs__buf_8	A->X (FF)	0.05099	0.31705	5.49636
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.12817	0.36340	5.20645
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.11653	0.35646	5.09402

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.04321	0.05942	0.30351
	A	0.03838	0.05460	0.29843
sky130_fd_sc_hs__buf_16	A	0.18269	0.33072	2.38609
	A	0.15142	0.29930	2.35937
sky130_fd_sc_hs__buf_2	A	0.02907	0.04506	0.27424
	A	0.02389	0.03991	0.26811
sky130_fd_sc_hs__buf_4	A	0.09470	0.12676	0.60733
	A	0.08763	0.11964	0.59901
sky130_fd_sc_hs__buf_8	A	0.09071	0.15952	1.15240
	A	0.07468	0.14340	1.13208
sky130_fd_sc_hs__bufbuf_16	A	0.21983	0.25020	0.78192
	A	0.21412	0.24458	0.77175
sky130_fd_sc_hs__bufbuf_8	A	0.13855	0.15627	0.49639
	A	0.13403	0.15178	0.49004

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.01299	0.03164	0.30095
	A	0.01781	0.03647	0.30461
sky130_fd_sc_hs__buf_16	A	0.22954	0.35200	2.30698
	A	0.26084	0.38329	2.33885
sky130_fd_sc_hs__buf_2	A	0.02583	0.04181	0.29333
	A	0.03097	0.04688	0.29602
sky130_fd_sc_hs__buf_4	A	0.05603	0.08492	0.53140
	A	0.06309	0.09189	0.53225
sky130_fd_sc_hs__buf_8	A	0.11638	0.17604	1.13513
	A	0.13236	0.19197	1.14544
sky130_fd_sc_hs__bufbuf_16	A	0.29928	0.31358	0.76980
	A	0.30499	0.31910	0.77326
sky130_fd_sc_hs__bufbuf_8	A	0.14171	0.15544	0.48381
	A	0.14624	0.15979	0.48299

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00273	1.71329
sky130_fd_sc_hs__clkbuf_16	0.00922	25.27198
sky130_fd_sc_hs__clkbuf_2	0.00275	2.69911
sky130_fd_sc_hs__clkbuf_4	0.00252	6.09926
sky130_fd_sc_hs__clkbuf_8	0.00473	11.62998

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	524.35800	524.60500
sky130_fd_sc_hs__clkbuf_16	0.00000	5237.47000	8334.75000
sky130_fd_sc_hs__clkbuf_2	0.00000	785.91000	1044.33000
sky130_fd_sc_hs__clkbuf_4	0.00000	1310.01000	2084.16000
sky130_fd_sc_hs__clkbuf_8	0.00000	2618.49000	4165.86000

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)**	0.04313	0.45893	6.67227
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.06192	0.28634	6.76351
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.04917	0.39146	6.03185
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.06507	0.37681	6.58646
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.06146	0.32198	6.54347

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.04313	0.53460	7.92273
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.06246	0.33293	8.01945
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.04780	0.42558	6.56848
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.06124	0.41572	7.49058
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.05965	0.36057	7.43320

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.02232	0.03741	0.26624
	A	0.01718	0.03227	0.26037
sky130_fd_sc_hs__clkbuf_16	A	0.14253	0.21387	1.30262
	A	0.12507	0.19624	1.26803
sky130_fd_sc_hs__clkbuf_2	A	0.02587	0.03897	0.23661
	A	0.02086	0.03396	0.23105
sky130_fd_sc_hs__clkbuf_4	A	0.03594	0.05122	0.30478
	A	0.03119	0.04635	0.29721
sky130_fd_sc_hs__clkbuf_8	A	0.07067	0.10422	0.64082
	A	0.06171	0.09511	0.62488

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.01708	0.03465	0.29164
	A	0.02221	0.03980	0.29674
sky130_fd_sc_hs__clkbuf_16	A	0.29028	0.34950	1.34378
	A	0.30771	0.36660	1.35893
sky130_fd_sc_hs__clkbuf_2	A	0.02951	0.04470	0.27576
	A	0.03451	0.04959	0.28010
sky130_fd_sc_hs__clkbuf_4	A	0.06855	0.08291	0.32034
	A	0.07329	0.08765	0.32493
sky130_fd_sc_hs__clkbuf_8	A	0.13890	0.16854	0.66932
	A	0.14783	0.17747	0.67740

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00258	1.73245
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00261	1.72275
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00264	1.72562
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00257	1.70957
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00260	1.70789
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00264	1.73401

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	822.26900	1045.02000
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	526.08600	1042.79000
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	525.33000	1042.81000
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	1417.87000	1640.82000
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	529.38900	1046.03000
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	527.08000	1044.52000

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)**	0.06399	0.49294	6.72568
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.07286	0.50385	6.58755
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.08669	0.52800	6.55805
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.11889	0.54507	6.65708
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.16318	0.59484	6.63973
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.27154	0.71923	6.82859

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.07090	0.54121	7.49395
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.09157	0.58319	7.63871
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.14237	0.66888	7.88339
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.12485	0.58991	7.37937
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.18320	0.67171	7.62166
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.33667	0.86627	8.10166

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.02277	0.04334	0.35612
	A	0.02765	0.04816	0.36005
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00770	0.02673	0.32009
	A	0.01265	0.03161	0.32435
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00883	0.02635	0.31369
	A	0.01382	0.03135	0.31805
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.04661	0.06701	0.38233
	A	0.05147	0.07190	0.38641
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01756	0.03609	0.33008
	A	0.02249	0.04095	0.33427
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.02211	0.03872	0.32547
	A	0.02710	0.04371	0.32961

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.03962	0.05929	0.36777
	A	0.03472	0.05437	0.36266
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.04070	0.05797	0.34085
	A	0.03574	0.05302	0.33561
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.04410	0.05976	0.33597
	A	0.03910	0.05476	0.33076
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.06318	0.08282	0.39509
	A	0.05830	0.07787	0.39010
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.04997	0.06679	0.34993
	A	0.04503	0.06184	0.34470
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.05726	0.07216	0.34773
	A	0.05226	0.06715	0.34260

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00328	1.63354
sky130_fd_sc_hs__clkinv_16	0.04888	24.20960
sky130_fd_sc_hs__clkinv_2	0.00628	3.24896
sky130_fd_sc_hs__clkinv_4	0.01246	6.27716
sky130_fd_sc_hs__clkinv_8	0.02495	11.83579

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	1321.33000	2638.73000
sky130_fd_sc_hs__clkinv_16	0.00000	6264.60000	12468.20000
sky130_fd_sc_hs__clkinv_2	0.00000	782.98800	1558.26000
sky130_fd_sc_hs__clkinv_4	0.00000	1565.60000	3115.86000
sky130_fd_sc_hs__clkinv_8	0.00000	3130.11000	6229.38000

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)**	0.01400	0.42372	6.67383
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.00966	0.20159	6.59036
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.01306	0.37690	7.08210
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.01150	0.30993	6.97267
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.01181	0.25876	6.91484

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.02230	0.61313	9.61887
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.01547	0.31151	9.41323
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.01953	0.51271	9.55553
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.01709	0.43206	9.49155
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.01740	0.36513	9.31985

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00030	0.01207	0.16054
	A	0.00590	0.01809	0.16328
sky130_fd_sc_hs__clkinv_16	A	-0.01294	0.23034	1.97738
	A	0.07946	0.32296	2.05046
sky130_fd_sc_hs__clkinv_2	A	-0.00108	0.02103	0.24584
	A	0.01082	0.03284	0.25564
sky130_fd_sc_hs__clkinv_4	A	-0.00238	0.04774	0.50480
	A	0.02119	0.07113	0.52479
sky130_fd_sc_hs__clkinv_8	A	-0.00458	0.10650	1.08340
	A	0.04260	0.15341	1.12282

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.07805	0.08346	0.14077
	A	0.07184	0.07725	0.13446
sky130_fd_sc_hs__clkinv_16	A	0.41129	0.59557	1.71719
	A	0.31891	0.50305	1.62180
sky130_fd_sc_hs__clkinv_2	A	0.05267	0.06741	0.20787
	A	0.04079	0.05567	0.19575
sky130_fd_sc_hs__clkinv_4	A	0.10369	0.13908	0.42818
	A	0.08011	0.11513	0.40405
sky130_fd_sc_hs__clkinv_8	A	0.20622	0.28699	0.92139
	A	0.15909	0.23948	0.87230

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00169	1.72373
sky130_fd_sc_hs__dlymetal6s4s_1	0.00168	1.73611
sky130_fd_sc_hs__dlymetal6s6s_1	0.00168	1.72871

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	960.29600	1574.40000
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	960.29600	1574.40000
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	960.29600	1574.40000

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)**	0.04765	0.39600	5.45935
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.09359	0.44392	5.40473
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.13424	0.48228	5.42107

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.05987	0.45580	5.78965
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.11702	0.51065	5.72237
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.16932	0.56356	5.75795

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.03173	0.04946	0.35243
	A	0.02854	0.04625	0.34915
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.03174	0.05443	0.42691
	A	0.02854	0.05122	0.42357
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.03161	0.04447	0.24058
	A	0.02841	0.04127	0.23736

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.04898	0.06127	0.27387
	A	0.05218	0.06445	0.27710
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.04900	0.06508	0.34510
	A	0.05220	0.06826	0.34788
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.04887	0.05984	0.24000
	A	0.05207	0.06300	0.24196

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00183	0.00178	0.00547	0.00303	1.71661	1.56818
sky130_fd_sc_hs__dfbbn_2	0.00183	0.00180	0.00544	0.00303	3.17898	3.10826

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	3875.34000	7036.38000
sky130_fd_sc_hs__dfbbn_2	0.00000	3974.19000	6834.08000

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)	0.24359	0.73736	7.68152
	SET_B->Q (FR)	0.12579	0.66438	8.01805
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.26537	0.67037	7.51877
	SET_B->Q (FR)	0.13931	0.59187	7.80892

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)	0.23837	0.61178	5.47708
	RESET_B->Q (FF)	0.15608	0.54773	5.46818
	SET_B->Q (RF)	0.10220	0.34589	3.13467
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.26576	0.57805	5.19960
	RESET_B->Q (FF)	0.18232	0.51586	5.23814
	SET_B->Q (RF)	0.12798	0.32903	2.98737

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)	0.21684	0.73393	7.69882
	RESET_B->Q_N (FR)	0.13598	0.67209	7.70428
	SET_B->Q_N (RR)	0.08028	0.48351	5.89490
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.22418	0.65229	7.57000
	RESET_B->Q_N (FR)	0.14159	0.59117	7.60444
	SET_B->Q_N (RR)	0.08616	0.40888	5.77513

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)	0.19637	0.59293	5.13820
	SET_B->Q_N (FF)	0.08221	0.52188	5.80249
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.21183	0.56520	5.01909
	SET_B->Q_N (FF)	0.08927	0.48762	5.69372

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)	-0.00913	0.03658	2.14089
	setup	CLK_N (F)	0.06222	0.01218	-2.12359
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00712	0.03801	2.15272
	setup	CLK_N (F)	0.06011	0.00616	-2.13651

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)	-0.07529	-0.12069	-0.91505
	setup	CLK_N (F)	0.09454	0.13318	0.92291
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.07578	-0.12335	-0.92332
	setup	CLK_N (F)	0.09093	0.13317	0.92812

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)	-0.00913	0.03658	2.14089
	setup	CLK_N (F)	0.06222	0.01218	-2.12359
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00712	0.03801	2.15272
	setup	CLK_N (F)	0.06011	0.00616	-2.13651

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)	-0.07529	-0.12069	-0.91505
	setup	CLK_N (F)	0.09454	0.13318	0.92291
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.07578	-0.12335	-0.92332
	setup	CLK_N (F)	0.09093	0.13317	0.92812

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)	0.05687	0.00400	-1.75620
	removal	CLK_N (F)	0.00707	0.05805	1.90815
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.05446	0.00339	-1.76027
	removal	CLK_N (F)	0.00650	0.05906	1.91526

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)	0.05687	0.00400	-1.75620
	removal	CLK_N (F)	0.00707	0.05805	1.90815
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.05446	0.00339	-1.76027
	removal	CLK_N (F)	0.00650	0.05906	1.91526

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 ()	0.12347	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.11219	0.59937	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.13475	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.12121	0.59937	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)	-0.00528	-0.06860	-1.59295
	removal	CLK_N (F)	0.01492	0.08067	1.75409
	hold	RESET_B (R)	-0.03719	-0.05711	-0.49578
	setup	RESET_B (R)	0.06640	0.09071	1.07868
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.00651	-0.07260	-1.37552
	removal	CLK_N (F)	0.01492	0.08067	1.75995
	hold	RESET_B (R)	-0.05109	-0.08534	-0.68024
	setup	RESET_B (R)	0.08075	0.11042	1.12561

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)	-0.00528	-0.06860	-1.59295
	removal	CLK_N (F)	0.01492	0.08067	1.75409
	hold	RESET_B (R)	-0.03719	-0.05711	-0.51945
	hold	RESET_B (R)	-0.03878	-0.05797	-0.49578
	setup	RESET_B (R)	0.06640	0.09000	0.88749
	setup	RESET_B (R)	0.05763	0.09071	1.07868
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.00651	-0.07260	-1.37552
	removal	CLK_N (F)	0.01492	0.08067	1.75995
	hold	RESET_B (R)	-0.05356	-0.08839	-0.69986
	hold	RESET_B (R)	-0.05109	-0.08534	-0.68024
	setup	RESET_B (R)	0.08075	0.11042	1.12561
	setup	RESET_B (R)	0.06749	0.10774	1.10312

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 ()	0.09189	0.59937	16.50020
	min_pulse_width	SET_B ()	0.08287	0.59937	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.10768	0.59937	16.50020
	min_pulse_width	SET_B ()	0.09189	0.59937	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 ()	0.10542	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.09640	0.59937	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 ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.11670	0.59937	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.11445	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.12572	0.59937	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	0.07338	0.08400	0.28321
	CLK_N	0.07618	0.08680	0.28479
	SET_B	0.06478	0.08240	0.39303
	SET_B	0.07009	0.08768	0.39753
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.07943	0.08656	0.28697
	CLK_N	0.08225	0.08938	0.28884
	SET_B	0.06944	0.08515	0.40425
	SET_B	0.07472	0.09039	0.40632

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.06873	0.08057	0.27783
	CLK_N	0.07134	0.08317	0.28025
	RESET_B	0.05462	0.06201	0.19766
	RESET_B	0.05623	0.06359	0.19906
	SET_B	0.05143	0.06792	0.38808
	SET_B	0.04613	0.06258	0.38223
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.07770	0.08756	0.28252
	CLK_N	0.08027	0.09011	0.28465
	RESET_B	0.06411	0.06957	0.20540
	RESET_B	0.06571	0.07113	0.20609
	SET_B	0.06087	0.07604	0.39872
	SET_B	0.05559	0.07072	0.39266

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.09405	0.10590	0.30556
	CLK_N	0.09666	0.10851	0.30669
	RESET_B	0.07237	0.07976	0.21772
	RESET_B	0.07397	0.08135	0.21784
	SET_B	0.06742	0.08392	0.40458
	SET_B	0.06213	0.07861	0.39907
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.10741	0.11726	0.31508
	CLK_N	0.10999	0.11982	0.31560
	RESET_B	0.08572	0.09118	0.22689
	RESET_B	0.08733	0.09275	0.22770
	SET_B	0.08061	0.09583	0.41918
	SET_B	0.07534	0.09049	0.41326

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.05313	0.06375	0.26177
	CLK_N	0.05592	0.06655	0.26411
	SET_B	0.04847	0.06611	0.37670
	SET_B	0.05377	0.07139	0.38116
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.05959	0.06673	0.26733
	CLK_N	0.06242	0.06955	0.26902
	SET_B	0.05364	0.06945	0.38467
	SET_B	0.05893	0.07464	0.38941

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)	0.04056	0.05134	0.23176
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.03767	0.04845	0.22888
	(CLK_N * !SET_B * Q * !Q_N)	0.03783	0.04596	0.19043
	(CLK_N * !SET_B * Q * !Q_N)	0.03431	0.04243	0.18691
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.04123	0.04913	0.19129
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.03776	0.04564	0.18782
	!CLK_N	0.05443	0.06345	0.20977
	!CLK_N	0.05095	0.05999	0.20631
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.04541	0.05620	0.23690
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.04250	0.05329	0.23399
	(CLK_N * !SET_B * Q * !Q_N)	0.03610	0.04427	0.18910
	(CLK_N * !SET_B * Q * !Q_N)	0.03258	0.04073	0.18557
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.04600	0.05391	0.19645
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.04252	0.05045	0.19297
	!CLK_N	0.05921	0.06827	0.21494
	!CLK_N	0.05572	0.06480	0.21147

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)	0.06182	0.07035	0.22752
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.06471	0.07325	0.23041
	(CLK_N * !SET_B * Q * !Q_N)	0.03130	0.03969	0.18500
	(CLK_N * !SET_B * Q * !Q_N)	0.03483	0.04323	0.18853
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.03124	0.03991	0.18805
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.03470	0.04339	0.19153
	!CLK_N	0.04952	0.05893	0.20683
	!CLK_N	0.05299	0.06241	0.21031
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.06657	0.07514	0.23260
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.06947	0.07806	0.23551
	(CLK_N * !SET_B * Q * !Q_N)	0.02946	0.03789	0.18354
	(CLK_N * !SET_B * Q * !Q_N)	0.03299	0.04143	0.18707
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.03598	0.04470	0.19319
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.03945	0.04818	0.19667
	!CLK_N	0.05427	0.06373	0.21197
	!CLK_N	0.05774	0.06721	0.21545

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)	0.04198	0.05537	0.28725
	(CLK_N * D * SET_B * !Q * Q_N)	0.03860	0.05197	0.28387
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.05672	0.06743	0.26117
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.05276	0.06345	0.25720
	(!SET_B * Q * !Q_N)	0.03800	0.04952	0.24862
	(!SET_B * Q * !Q_N)	0.03393	0.04544	0.24455
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.04684	0.06031	0.29388
	(CLK_N * D * SET_B * !Q * Q_N)	0.04340	0.05686	0.29044
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.06149	0.07234	0.26781
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.05748	0.06832	0.26379
	(!SET_B * Q * !Q_N)	0.03626	0.04785	0.24790
	(!SET_B * Q * !Q_N)	0.03215	0.04372	0.24379

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)	0.04732	0.06040	0.28461
	(CLK_N * D * SET_B * !Q * Q_N)	0.05070	0.06379	0.28800
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.03194	0.04494	0.25760
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.03589	0.04891	0.26156
	(!SET_B * Q * !Q_N)	0.02596	0.03848	0.24265
	(!SET_B * Q * !Q_N)	0.03005	0.04258	0.24672
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.05214	0.06529	0.29121
	(CLK_N * D * SET_B * !Q * Q_N)	0.05558	0.06874	0.29466
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.03677	0.04988	0.26428
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.04077	0.05390	0.26828
	(!SET_B * Q * !Q_N)	0.02421	0.03679	0.24189
	(!SET_B * Q * !Q_N)	0.02834	0.04093	0.24601

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)	0.03354	0.03358	0.03352
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.02427	0.02425	0.02423
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.07517	0.08855	0.34394
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.06509	0.07842	0.33388
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.03174	0.03181	0.03172
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.02255	0.02250	0.02250
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.07340	0.08678	0.34180
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.06342	0.07674	0.33182

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)	0.02542	0.02499	0.02504
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.03475	0.03438	0.03431
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.03045	0.04819	0.33381
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.04055	0.05835	0.34389
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.02370	0.02327	0.02332
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.03296	0.03259	0.03253
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.02865	0.04639	0.33162
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.03867	0.05641	0.34162

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)**	0.05268	0.07847	0.49126
	(D * RESET_B * SET_B * !Q * Q_N)	0.04782	0.07361	0.48641
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.04504	0.06932	0.46525
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.03960	0.06388	0.45982
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05313	0.07785	0.47582
	(D * !RESET_B * SET_B * !Q * Q_N)	0.04769	0.07241	0.47038
	(!D * SET_B * !Q * Q_N)	0.06297	0.08719	0.48120
	(!D * SET_B * !Q * Q_N)	0.05754	0.08174	0.47577
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08855	0.11270	0.51018
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08254	0.10668	0.50417
	(!D * !SET_B * Q * !Q_N)	0.04486	0.07010	0.48000
	(!D * !SET_B * Q * !Q_N)	0.03947	0.06471	0.47462

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.05755	0.08334	0.49613
	(D * RESET_B * SET_B * !Q * Q_N)	0.05268	0.07849	0.49126
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.04326	0.06754	0.46348
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.03782	0.06210	0.45804
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05794	0.08266	0.48063
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05250	0.07722	0.47519
	(!D * SET_B * !Q * Q_N)	0.06778	0.09200	0.48601
	(!D * SET_B * !Q * Q_N)	0.06235	0.08655	0.48058
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08680	0.11095	0.50847
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08080	0.10494	0.50247
	(!D * !SET_B * Q * !Q_N)	0.04303	0.06827	0.47822
	(!D * !SET_B * Q * !Q_N)	0.03763	0.06288	0.47283

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)	0.04663	0.07089	0.46124
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.05204	0.07634	0.46666
	(D * !RESET_B * SET_B * !Q * Q_N)	0.04576	0.07025	0.46653
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05117	0.07569	0.47196
	(!D * SET_B * !Q * Q_N)	0.06125	0.08567	0.47809
	(!D * SET_B * !Q * Q_N)	0.06665	0.09112	0.48351
	(!D * !SET_B * Q * !Q_N)	0.05149	0.07647	0.47769
	(!D * !SET_B * Q * !Q_N)	0.05686	0.08188	0.48306
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.04490	0.06916	0.45950
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.05031	0.07462	0.46493
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05049	0.07499	0.47127
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05590	0.08042	0.47670
	(!D * SET_B * !Q * Q_N)	0.06601	0.09044	0.48285
	(!D * SET_B * !Q * Q_N)	0.07142	0.09589	0.48828
	(!D * !SET_B * Q * !Q_N)	0.04981	0.07480	0.47600
	(!D * !SET_B * Q * !Q_N)	0.05518	0.08021	0.48139

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00161	0.00194	0.00625	0.00299	1.71432	1.53292

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	3879.31000	7035.36000

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)	0.24171	0.61352	5.70566
	SET_B->Q (FR)	0.11330	0.64113	7.94301

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.18971	0.43896	3.45819
	RESET_B->Q (FF)	0.15286	0.54402	5.49531
	SET_B->Q (RF)	0.10379	0.34420	3.20474

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)	0.16882	0.55812	5.60244
	RESET_B->Q_N (FR)	0.13277	0.66665	7.66114
	SET_B->Q_N (RR)	0.08314	0.48051	5.85424

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)	0.19584	0.46315	3.05980
	SET_B->Q_N (FF)	0.07354	0.49365	5.60180

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)	-0.02911	-0.05647	-0.49889
	setup	CLK (R)	0.04382	0.06854	0.50274

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)	-0.04192	-0.12682	-2.52707
	setup	CLK (R)	0.07257	0.15794	2.59847

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)	-0.02911	-0.05647	-0.49889
	setup	CLK (R)	0.04382	0.06854	0.50274

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)	-0.04192	-0.12682	-2.52707
	setup	CLK (R)	0.07257	0.15794	2.59847

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)	0.04354	0.04806	0.22234
	removal	CLK (R)	-0.02234	-0.02824	-0.03089

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)	0.04354	0.04806	0.22234
	removal	CLK (R)	-0.02234	-0.02824	-0.03089

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 ()	0.10994	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.11219	0.59937	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)	0.00447	0.01279	1.68855
	removal	CLK (R)	0.03510	0.05244	-0.16004
	hold	RESET_B (R)	-0.03782	-0.06304	-0.62214
	setup	RESET_B (R)	0.06286	0.10018	1.08296

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)	0.00447	0.01279	1.68855
	removal	CLK (R)	0.03510	0.05244	-0.16004
	hold	RESET_B (R)	-0.03782	-0.06523	-0.63111
	hold	RESET_B (R)	-0.03790	-0.06304	-0.62214
	setup	RESET_B (R)	0.06286	0.10018	1.08296
	setup	RESET_B (R)	0.06265	0.09028	1.03314

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 ()	0.07385	0.59937	16.50020
	min_pulse_width	SET_B ()	0.08061	0.59937	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 ()	0.07385	0.59937	16.50020
	min_pulse_width	CLK ()	0.08287	0.59937	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 ()	0.08964	0.59937	16.50020
	min_pulse_width	CLK ()	0.11670	0.59937	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	0.07395	0.08477	0.28432
	CLK	0.07120	0.08199	0.28123
	SET_B	0.06380	0.08258	0.40058
	SET_B	0.06957	0.08832	0.40526

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.06733	0.08095	0.29984
	CLK	0.06435	0.07783	0.29643
	RESET_B	0.05300	0.06042	0.19628
	RESET_B	0.05448	0.06188	0.19756
	SET_B	0.05053	0.06701	0.39059
	SET_B	0.04480	0.06120	0.38443

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.09270	0.10630	0.32663
	CLK	0.08973	0.10322	0.32322
	RESET_B	0.07073	0.07817	0.21608
	RESET_B	0.07221	0.07963	0.21611
	SET_B	0.06647	0.08296	0.40709
	SET_B	0.06073	0.07718	0.40110

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.05309	0.06397	0.26275
	CLK	0.05034	0.06116	0.25982
	SET_B	0.04696	0.06575	0.38294
	SET_B	0.05274	0.07148	0.38817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.05309	0.06338	0.21340
	CLK	0.05003	0.06030	0.21034
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.03981	0.05123	0.23500
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.03700	0.04841	0.23218
	(!CLK * !SET_B * Q * !Q_N)	0.03658	0.04542	0.19410
	(!CLK * !SET_B * Q * !Q_N)	0.03318	0.04200	0.19070
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.03989	0.04851	0.19489
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.03650	0.04512	0.19151

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.04786	0.05850	0.21009
	CLK	0.05092	0.06157	0.21315
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.05879	0.06809	0.22906
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.06159	0.07091	0.23187
	(!CLK * !SET_B * Q * !Q_N)	0.03024	0.03939	0.18890
	(!CLK * !SET_B * Q * !Q_N)	0.03364	0.04280	0.19230
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.03024	0.03966	0.19211
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.03361	0.04306	0.19549

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)	0.05808	0.06900	0.26342
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.05433	0.06525	0.25967
	(!SET_B * Q * !Q_N)	0.04285	0.05460	0.25447
	(!SET_B * Q * !Q_N)	0.03900	0.05074	0.25062
	(!CLK * D * SET_B * !Q * Q_N)	0.04209	0.05549	0.28769
	(!CLK * D * SET_B * !Q * Q_N)	0.03891	0.05232	0.28451

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)	0.03364	0.04680	0.26032
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.03738	0.05056	0.26407
	(!SET_B * Q * !Q_N)	0.03022	0.04291	0.24779
	(!SET_B * Q * !Q_N)	0.03408	0.04680	0.25165
	(!CLK * D * SET_B * !Q * Q_N)	0.04538	0.05848	0.28265
	(!CLK * D * SET_B * !Q * Q_N)	0.04855	0.06168	0.28583

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)	0.03864	0.03870	0.03860
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.02808	0.02805	0.02806
	(!CLK * !D * RESET_B * Q * !Q_N)	0.07289	0.08648	0.34117
	(!CLK * !D * RESET_B * Q * !Q_N)	0.06162	0.07512	0.32990

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)	0.03038	0.02994	0.03000
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.04091	0.04052	0.04053
	(!CLK * !D * RESET_B * Q * !Q_N)	0.03171	0.04958	0.33431
	(!CLK * !D * RESET_B * Q * !Q_N)	0.04301	0.06091	0.34562

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)	0.05311	0.07812	0.48310
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.04736	0.07237	0.47737
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05076	0.07700	0.50011
	(D * !RESET_B * SET_B * !Q * Q_N)	0.04534	0.07158	0.49471
	(!D * SET_B * !Q * Q_N)	0.06691	0.09220	0.49950
	(!D * SET_B * !Q * Q_N)	0.06117	0.08646	0.49378
	(!D * !SET_B * Q * !Q_N)	0.05798	0.08314	0.48842
	(!D * !SET_B * Q * !Q_N)	0.05190	0.07706	0.48235

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)	0.04738	0.07494	0.50354
	(D * RESET_B * SET_B * !Q * Q_N)	0.05336	0.08093	0.50952
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.03903	0.06478	0.47319
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.04474	0.07054	0.47893
	(D * !RESET_B * SET_B * !Q * Q_N)	0.04695	0.07315	0.48893
	(D * !RESET_B * SET_B * !Q * Q_N)	0.05235	0.07855	0.49434
	(!D * SET_B * !Q * Q_N)	0.05812	0.08367	0.48944
	(!D * SET_B * !Q * Q_N)	0.06385	0.08941	0.49515
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08314	0.10835	0.52034
	(!D * RESET_B * SET_B * Q * !Q_N)	0.08860	0.11386	0.52584
	(!D * !SET_B * Q * !Q_N)	0.04141	0.06796	0.48289
	(!D * !SET_B * Q * !Q_N)	0.04745	0.07406	0.48897

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00189	0.00589	0.00305	1.77276	1.75032
sky130_fd_sc_hs__dfrbp_2	0.00174	0.00566	0.00305	3.39896	3.35983

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	2270.07000	3848.33000
sky130_fd_sc_hs__dfrbp_2	0.00000	2559.93000	3629.25000

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)	0.14615	0.51277	5.59343
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.16829	0.46253	5.92472

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.14290	0.38123	3.25045
	RESET_B->Q (FF)	0.19115	0.59343	5.67191
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.16355	0.35662	3.33422
	RESET_B->Q (FF)	0.22694	0.58938	5.81260

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)	0.12102	0.50198	5.63766
	RESET_B->Q_N (FR)	0.16865	0.70932	8.03944
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.11948	0.41818	5.48613
	RESET_B->Q_N (FR)	0.18305	0.64797	7.95563

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)	0.11277	0.38744	3.23400
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.11274	0.35813	3.25131

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)	-0.04147	-0.10384	-1.07099
	setup	CLK (R)	0.08211	0.13986	1.09361
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.03985	-0.10518	-1.13242
	setup	CLK (R)	0.09710	0.15080	1.14762

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)	-0.03257	-0.11349	-2.36124
	setup	CLK (R)	0.08269	0.17504	2.43600
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04105	-0.12523	-2.36978
	setup	CLK (R)	0.09035	0.18454	2.42093

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)	-0.04147	-0.10384	-1.07099
	setup	CLK (R)	0.08211	0.13986	1.09361
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.03985	-0.10518	-1.13242
	setup	CLK (R)	0.09710	0.15080	1.14762

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)	-0.03257	-0.11349	-2.36124
	setup	CLK (R)	0.08269	0.17504	2.43600
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04105	-0.12523	-2.36978
	setup	CLK (R)	0.09035	0.18454	2.42093

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)	0.09026	0.14521	1.98243
	removal	CLK (R)	-0.07388	-0.13512	-1.96754
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.10426	0.15431	1.94871
	removal	CLK (R)	-0.08194	-0.14117	-1.94444

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)	0.09026	0.14521	1.98243
	removal	CLK (R)	-0.07388	-0.13512	-1.96754
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.10426	0.15431	1.94871
	removal	CLK (R)	-0.08194	-0.14117	-1.94444

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 ()	0.09415	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.08513	0.59937	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.10091	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.09640	0.59937	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 ()	0.08061	0.59937	16.50020
	min_pulse_width	CLK ()	0.06257	0.59937	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.07385	0.59937	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 ()	0.10542	0.59937	16.50020
	min_pulse_width	CLK ()	0.11219	0.59937	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK ()	0.11445	0.59937	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	0.06083	0.07120	0.27104
	CLK	0.05796	0.06832	0.26754
sky130_fd_sc_hs__dfrbp_2	CLK	0.06683	0.07399	0.27531
	CLK	0.06399	0.07106	0.27107

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.03457	0.04637	0.24628
	CLK	0.03163	0.04336	0.24289
	RESET_B	0.03177	0.04300	0.22207
	RESET_B	0.03767	0.04888	0.22782
sky130_fd_sc_hs__dfrbp_2	CLK	0.04448	0.05439	0.25145
	CLK	0.04165	0.05149	0.24766
	RESET_B	0.04306	0.05406	0.23315
	RESET_B	0.04862	0.05953	0.23715

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.04281	0.05453	0.25566
	CLK	0.03988	0.05159	0.25229
	RESET_B	0.04021	0.05145	0.23242
	RESET_B	0.04611	0.05731	0.23739
sky130_fd_sc_hs__dfrbp_2	CLK	0.05510	0.06500	0.26400
	CLK	0.05227	0.06211	0.25978
	RESET_B	0.05360	0.06462	0.24547
	RESET_B	0.05916	0.07010	0.24854

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.04629	0.05671	0.25533
	CLK	0.04342	0.05378	0.25191
sky130_fd_sc_hs__dfrbp_2	CLK	0.05207	0.05916	0.25914
	CLK	0.04923	0.05626	0.25538

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.03115	0.03946	0.17384
	(CLK * RESET_B)	0.02722	0.03551	0.16990
	(CLK * !RESET_B)	0.01525	0.01526	0.01524
	(CLK * !RESET_B)	0.01304	0.01302	0.01299
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04096	0.05229	0.23148
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.03684	0.04819	0.22738
	(!CLK * !RESET_B)	0.01576	0.01576	0.01574
	(!CLK * !RESET_B)	0.01354	0.01353	0.01350
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.03002	0.03804	0.17212
	(CLK * RESET_B)	0.02655	0.03456	0.16866
	(CLK * !RESET_B)	0.02007	0.02008	0.02005
	(CLK * !RESET_B)	0.01801	0.01800	0.01797
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04189	0.05298	0.23167
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.03862	0.04971	0.22839
	(!CLK * !RESET_B)	0.02058	0.02058	0.02056
	(!CLK * !RESET_B)	0.01852	0.01851	0.01848

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.02598	0.03463	0.16980
	(CLK * RESET_B)	0.02993	0.03856	0.17373
	(CLK * !RESET_B)	0.01426	0.01425	0.01426
	(CLK * !RESET_B)	0.01650	0.01652	0.01649
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04491	0.05511	0.22415
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04903	0.05922	0.22825
	(!CLK * !RESET_B)	0.01477	0.01477	0.01478
	(!CLK * !RESET_B)	0.01701	0.01702	0.01701
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.02456	0.03293	0.16785
	(CLK * RESET_B)	0.02803	0.03640	0.17131
	(CLK * !RESET_B)	0.01893	0.01892	0.01894
	(CLK * !RESET_B)	0.02101	0.02103	0.02101
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04454	0.05395	0.21722
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.04782	0.05723	0.22049
	(!CLK * !RESET_B)	0.01944	0.01944	0.01945
	(!CLK * !RESET_B)	0.02153	0.02153	0.02152

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)	0.02696	0.03508	0.17291
	(CLK * D * !Q * Q_N)	0.01531	0.02335	0.16127
	(CLK * !D * !Q * Q_N)	0.01939	0.01946	0.01939
	(CLK * !D * !Q * Q_N)	0.00970	0.00964	0.00968
	(!CLK * D * !Q * Q_N)	0.03849	0.05209	0.29649
	(!CLK * D * !Q * Q_N)	0.02669	0.04026	0.28472
	(!CLK * !D * !Q * Q_N)	0.01976	0.01981	0.01976
	(!CLK * !D * !Q * Q_N)	0.01006	0.01002	0.01005
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.03281	0.04073	0.17971
	(CLK * D * !Q * Q_N)	0.02171	0.02959	0.16856
	(CLK * !D * !Q * Q_N)	0.02452	0.02458	0.02451
	(CLK * !D * !Q * Q_N)	0.01499	0.01495	0.01498
	(!CLK * D * !Q * Q_N)	0.04613	0.05912	0.30046
	(!CLK * D * !Q * Q_N)	0.03524	0.04812	0.28950
	(!CLK * !D * !Q * Q_N)	0.02492	0.02499	0.02494
	(!CLK * !D * !Q * Q_N)	0.01542	0.01539	0.01541

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)	0.01232	0.02108	0.16126
	(CLK * D * !Q * Q_N)	0.02394	0.03277	0.17288
	(CLK * !D * !Q * Q_N)	0.01061	0.01033	0.01029
	(CLK * !D * !Q * Q_N)	0.02031	0.02013	0.01999
	(!CLK * D * !Q * Q_N)	0.02308	0.03820	0.28971
	(!CLK * D * !Q * Q_N)	0.03489	0.05008	0.30151
	(!CLK * !D * !Q * Q_N)	0.01113	0.01093	0.01089
	(!CLK * !D * !Q * Q_N)	0.02083	0.02064	0.02059
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.01693	0.02570	0.16711
	(CLK * D * !Q * Q_N)	0.02805	0.03692	0.17824
	(CLK * !D * !Q * Q_N)	0.01497	0.01467	0.01465
	(CLK * !D * !Q * Q_N)	0.02447	0.02424	0.02416
	(!CLK * D * !Q * Q_N)	0.02907	0.04289	0.28857
	(!CLK * D * !Q * Q_N)	0.03998	0.05389	0.29945
	(!CLK * !D * !Q * Q_N)	0.01545	0.01521	0.01520
	(!CLK * !D * !Q * Q_N)	0.02494	0.02483	0.02471

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)	0.04407	0.06654	0.44327
	(D * RESET_B * Q * !Q_N)	0.03824	0.06070	0.43744
	(D * !RESET_B * !Q * Q_N)	0.03257	0.05507	0.43221
	(D * !RESET_B * !Q * Q_N)	0.02674	0.04924	0.42638
	(!D * !Q * Q_N)	0.03262	0.05514	0.43227
	(!D * !Q * Q_N)	0.02679	0.04929	0.42645
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.04070	0.06326	0.43724
	(D * RESET_B * Q * !Q_N)	0.03504	0.05755	0.43156
	(D * !RESET_B * !Q * Q_N)	0.03531	0.05787	0.43225
	(D * !RESET_B * !Q * Q_N)	0.02966	0.05216	0.42658
	(!D * !Q * Q_N)	0.03536	0.05796	0.43231
	(!D * !Q * Q_N)	0.02970	0.05225	0.42664

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)	0.03554	0.05912	0.43698
	(D * RESET_B * Q * !Q_N)	0.04135	0.06497	0.44281
	(D * RESET_B * !Q * Q_N)	0.03786	0.06257	0.46516
	(D * RESET_B * !Q * Q_N)	0.04349	0.06822	0.47080
	(D * !RESET_B * !Q * Q_N)	0.02470	0.04826	0.42574
	(D * !RESET_B * !Q * Q_N)	0.03051	0.05411	0.43157
	(!D * RESET_B * Q * !Q_N)	0.05540	0.07939	0.47014
	(!D * RESET_B * Q * !Q_N)	0.06140	0.08539	0.47613
	(!D * !Q * Q_N)	0.02474	0.04831	0.42578
	(!D * !Q * Q_N)	0.03055	0.05417	0.43161
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.03364	0.05718	0.43251
	(D * RESET_B * Q * !Q_N)	0.03934	0.06289	0.43820
	(D * RESET_B * !Q * Q_N)	0.04583	0.07033	0.46693
	(D * RESET_B * !Q * Q_N)	0.05167	0.07620	0.47279
	(D * !RESET_B * !Q * Q_N)	0.03002	0.05352	0.42844
	(D * !RESET_B * !Q * Q_N)	0.03568	0.05923	0.43412
	(!D * RESET_B * Q * !Q_N)	0.05472	0.07860	0.46846
	(!D * RESET_B * Q * !Q_N)	0.06022	0.08409	0.47394
	(!D * !Q * Q_N)	0.03006	0.05357	0.42848
	(!D * !Q * Q_N)	0.03572	0.05928	0.43416

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00186	0.00558	0.00292	1.64435

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	2081.23000	3296.53000

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)	0.15334	0.66731	7.69065

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)	0.12982	0.49814	5.12487
	RESET_B->Q (FF)	0.17315	0.56384	5.34597

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)	-0.00492	0.02573	1.62342
	setup	CLK_N (F)	0.05778	0.02420	-1.55433

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)	-0.03370	-0.06273	-0.29992
	setup	CLK_N (F)	0.09539	0.11302	0.34564

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)	-0.00492	0.02573	1.62342
	setup	CLK_N (F)	0.05778	0.02420	-1.55433

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)	-0.03370	-0.06273	-0.29992
	setup	CLK_N (F)	0.09539	0.11302	0.34564

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)	0.06488	0.02420	-0.98690
	removal	CLK_N (F)	-0.04763	-0.01613	0.99103

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)	0.06488	0.02420	-0.98690
	removal	CLK_N (F)	-0.04763	-0.01613	0.99103

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 ()	0.07385	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.08964	0.59937	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 ()	0.08964	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.10317	0.59937	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 ()	0.08513	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.07836	0.59937	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	0.09890	0.12358	0.51278
	CLK_N	0.10436	0.12902	0.51850

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.05748	0.08386	0.49344
	CLK_N	0.06279	0.08915	0.49772
	RESET_B	0.05645	0.07966	0.43219
	RESET_B	0.06749	0.09063	0.44341

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)	0.03627	0.04753	0.22590
	(CLK_N * RESET_B)	0.03264	0.04389	0.22227
	(CLK_N * !RESET_B)	0.01566	0.01566	0.01564
	(CLK_N * !RESET_B)	0.01345	0.01344	0.01341
	(!CLK_N * RESET_B)	0.02640	0.03473	0.16907
	(!CLK_N * RESET_B)	0.02267	0.03098	0.16533
	(!CLK_N * !RESET_B)	0.01516	0.01516	0.01513
	(!CLK_N * !RESET_B)	0.01294	0.01293	0.01290

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)	0.04135	0.05128	0.21911
	(CLK_N * RESET_B)	0.04499	0.05492	0.22273
	(CLK_N * !RESET_B)	0.01466	0.01466	0.01467
	(CLK_N * !RESET_B)	0.01687	0.01689	0.01688
	(!CLK_N * RESET_B)	0.02147	0.03010	0.16525
	(!CLK_N * RESET_B)	0.02522	0.03385	0.16898
	(!CLK_N * !RESET_B)	0.01416	0.01414	0.01416
	(!CLK_N * !RESET_B)	0.01636	0.01640	0.01637

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)	0.03814	0.05167	0.29465
	(CLK_N * D * !Q)	0.02711	0.04059	0.28360
	(CLK_N * !D * !Q)	0.01998	0.02004	0.01999
	(CLK_N * !D * !Q)	0.01059	0.01057	0.01059
	(!CLK_N * D * !Q)	0.02645	0.03460	0.17250
	(!CLK_N * D * !Q)	0.01535	0.02341	0.16136
	(!CLK_N * !D * !Q)	0.01941	0.01943	0.01941
	(!CLK_N * !D * !Q)	0.01001	0.01000	0.01000

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)	0.02400	0.03889	0.28830
	(CLK_N * D * !Q)	0.03498	0.04999	0.29932
	(CLK_N * !D * !Q)	0.01070	0.01040	0.01044
	(CLK_N * !D * !Q)	0.02006	0.01992	0.01983
	(!CLK_N * D * !Q)	0.01249	0.02131	0.16154
	(!CLK_N * D * !Q)	0.02360	0.03250	0.17266
	(!CLK_N * !D * !Q)	0.01040	0.01004	0.01007
	(!CLK_N * !D * !Q)	0.01976	0.01956	0.01945

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)	0.03791	0.06227	0.45297
	(D * RESET_B * Q)	0.03253	0.05686	0.44757
	(D * RESET_B * !Q)	0.04628	0.07146	0.47671
	(D * RESET_B * !Q)	0.04101	0.06615	0.47142
	(D * !RESET_B * !Q)	0.03207	0.05646	0.44788
	(D * !RESET_B * !Q)	0.02669	0.05106	0.44248
	(!D * RESET_B * Q)	0.05697	0.08185	0.48583
	(!D * RESET_B * Q)	0.05149	0.07633	0.48032
	(!D * !Q)	0.03209	0.05645	0.44677
	(!D * !Q)	0.02672	0.05104	0.44136

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)	0.03447	0.05885	0.44504
	(D * RESET_B * Q)	0.03985	0.06425	0.45043
	(D * !RESET_B * !Q)	0.02716	0.05164	0.43965
	(D * !RESET_B * !Q)	0.03254	0.05702	0.44505
	(!D * !Q)	0.02718	0.05158	0.43852
	(!D * !Q)	0.03256	0.05701	0.44392

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00187	0.00583	0.00307	1.77337
sky130_fd_sc_hs__dfrtp_2	0.00187	0.00574	0.00305	3.26275
sky130_fd_sc_hs__dfrtp_4	0.00188	0.00594	0.00306	6.60197

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	2081.58000	3296.60000
sky130_fd_sc_hs__dfrtp_2	0.00000	2433.61000	3304.81000
sky130_fd_sc_hs__dfrtp_4	0.00000	3579.43000	4693.83000

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)	0.13214	0.49711	5.54275
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.13013	0.41017	5.33110
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.16975	0.39475	5.52896

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.13573	0.37539	3.25550
	RESET_B->Q (FF)	0.17777	0.58125	5.66745
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.14955	0.33536	2.96174
	RESET_B->Q (FF)	0.19043	0.53951	5.36350
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.14968	0.30630	3.24642
	RESET_B->Q (FF)	0.19543	0.51328	5.64344

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)	-0.04822	-0.10894	-1.08730
	setup	CLK (R)	0.08439	0.14521	1.11212
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04722	-0.11078	-1.08539
	setup	CLK (R)	0.08636	0.14321	1.10917
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04724	-0.10894	-1.09816
	setup	CLK (R)	0.08737	0.14321	1.11938

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)	-0.03408	-0.11059	-2.27668
	setup	CLK (R)	0.07817	0.16981	2.43536
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.03233	-0.11009	-2.27169
	setup	CLK (R)	0.07691	0.16902	2.43305
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.03738	-0.11627	-2.34574
	setup	CLK (R)	0.08296	0.17379	2.43645

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)	-0.04822	-0.10894	-1.08730
	setup	CLK (R)	0.08439	0.14521	1.11212
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04722	-0.11078	-1.08539
	setup	CLK (R)	0.08636	0.14321	1.10917
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04724	-0.10894	-1.09816
	setup	CLK (R)	0.08737	0.14321	1.11938

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)	-0.03408	-0.11059	-2.27668
	setup	CLK (R)	0.07817	0.16981	2.43536
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.03233	-0.11009	-2.27169
	setup	CLK (R)	0.07691	0.16902	2.43305
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.03738	-0.11627	-2.34574
	setup	CLK (R)	0.08296	0.17379	2.43645

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)	0.09368	0.15121	2.09351
	removal	CLK (R)	-0.07521	-0.13714	-1.96590
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.09147	0.15144	2.07446
	removal	CLK (R)	-0.07521	-0.13714	-1.96042
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.10013	0.15294	2.00030
	removal	CLK (R)	-0.08203	-0.13916	-1.96000

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)	0.09368	0.15121	2.09351
	removal	CLK (R)	-0.07521	-0.13714	-1.96590
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.09147	0.15144	2.07446
	removal	CLK (R)	-0.07521	-0.13714	-1.96042
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.10013	0.15294	2.00030
	removal	CLK (R)	-0.08203	-0.13916	-1.96000

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 ()	0.08964	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.07385	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.09189	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.07610	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.09415	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.08061	0.59937	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 ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.06934	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.08964	0.59937	16.50020
	min_pulse_width	CLK ()	0.06257	0.59937	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 ()	0.10994	0.59937	16.50020
	min_pulse_width	CLK ()	0.10994	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.10994	0.59937	16.50020
	min_pulse_width	CLK ()	0.10994	0.59937	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
	min_pulse_width	CLK ()	0.11670	0.59937	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	0.09959	0.12415	0.53093
	CLK	0.09386	0.11840	0.52519
sky130_fd_sc_hs__dfrtp_2	CLK	0.10444	0.12859	0.53722
	CLK	0.09873	0.12290	0.53129
sky130_fd_sc_hs__dfrtp_4	CLK	0.15542	0.17546	0.57794
	CLK	0.14949	0.16950	0.57164

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.06531	0.08968	0.48780
	CLK	0.05927	0.08346	0.48114
	RESET_B	0.05814	0.08193	0.43725
	RESET_B	0.06986	0.09359	0.44841
sky130_fd_sc_hs__dfrtp_2	CLK	0.07720	0.09904	0.49428
	CLK	0.07120	0.09301	0.48745
	RESET_B	0.07086	0.09250	0.44304
	RESET_B	0.08241	0.10386	0.45450
sky130_fd_sc_hs__dfrtp_4	CLK	0.11146	0.13138	0.52688
	CLK	0.10525	0.12506	0.51939
	RESET_B	0.10672	0.12554	0.47809
	RESET_B	0.11860	0.13736	0.48648

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.02648	0.03481	0.16919
	(CLK * RESET_B)	0.02257	0.03089	0.16528
	(CLK * !RESET_B)	0.01514	0.01514	0.01512
	(CLK * !RESET_B)	0.01296	0.01294	0.01292
	(!CLK * RESET_B)	0.03667	0.04803	0.22726
	(!CLK * RESET_B)	0.03254	0.04390	0.22313
	(!CLK * !RESET_B)	0.01565	0.01565	0.01563
	(!CLK * !RESET_B)	0.01346	0.01345	0.01342
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.02643	0.03479	0.16924
	(CLK * RESET_B)	0.02257	0.03092	0.16537
	(CLK * !RESET_B)	0.01970	0.01970	0.01968
	(CLK * !RESET_B)	0.01752	0.01750	0.01748
	(!CLK * RESET_B)	0.03631	0.04773	0.22709
	(!CLK * RESET_B)	0.03227	0.04368	0.22305
	(!CLK * !RESET_B)	0.02021	0.02021	0.02019
	(!CLK * !RESET_B)	0.01802	0.01801	0.01798
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.03830	0.04661	0.18091
	(CLK * RESET_B)	0.03440	0.04270	0.17701
	(CLK * !RESET_B)	0.02876	0.02877	0.02874
	(CLK * !RESET_B)	0.02656	0.02655	0.02652
	(!CLK * RESET_B)	0.04954	0.06059	0.23825
	(!CLK * RESET_B)	0.04542	0.05646	0.23412
	(!CLK * !RESET_B)	0.02927	0.02927	0.02925
	(!CLK * !RESET_B)	0.02707	0.02706	0.02703

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.02133	0.02999	0.16518
	(CLK * RESET_B)	0.02526	0.03391	0.16908
	(CLK * !RESET_B)	0.01416	0.01416	0.01417
	(CLK * !RESET_B)	0.01636	0.01639	0.01636
	(!CLK * RESET_B)	0.04061	0.05068	0.21913
	(!CLK * RESET_B)	0.04474	0.05482	0.22325
	(!CLK * !RESET_B)	0.01468	0.01468	0.01469
	(!CLK * !RESET_B)	0.01688	0.01689	0.01687
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.02141	0.03010	0.16534
	(CLK * RESET_B)	0.02528	0.03398	0.16919
	(CLK * !RESET_B)	0.01872	0.01872	0.01873
	(CLK * !RESET_B)	0.02093	0.02095	0.02092
	(!CLK * RESET_B)	0.04073	0.05084	0.21933
	(!CLK * RESET_B)	0.04478	0.05489	0.22337
	(!CLK * !RESET_B)	0.01924	0.01924	0.01925
	(!CLK * !RESET_B)	0.02144	0.02145	0.02144
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.03314	0.04180	0.17688
	(CLK * RESET_B)	0.03705	0.04570	0.18077
	(CLK * !RESET_B)	0.02777	0.02776	0.02778
	(CLK * !RESET_B)	0.02999	0.03001	0.02998
	(!CLK * RESET_B)	0.05293	0.06275	0.22924
	(!CLK * RESET_B)	0.05705	0.06687	0.23337
	(!CLK * !RESET_B)	0.02828	0.02828	0.02829
	(!CLK * !RESET_B)	0.03050	0.03051	0.03050

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)	0.02682	0.03491	0.17280
	(CLK * D * !Q)	0.01520	0.02327	0.16119
	(CLK * !D * !Q)	0.01928	0.01935	0.01928
	(CLK * !D * !Q)	0.00962	0.00956	0.00960
	(!CLK * D * !Q)	0.03866	0.05229	0.29612
	(!CLK * D * !Q)	0.02683	0.04040	0.28428
	(!CLK * !D * !Q)	0.01963	0.01966	0.01960
	(!CLK * !D * !Q)	0.00991	0.00990	0.00993
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.03120	0.03933	0.17725
	(CLK * D * !Q)	0.01973	0.02785	0.16579
	(CLK * !D * !Q)	0.02380	0.02387	0.02380
	(CLK * !D * !Q)	0.01424	0.01419	0.01423
	(!CLK * D * !Q)	0.04268	0.05638	0.30030
	(!CLK * D * !Q)	0.03104	0.04475	0.28867
	(!CLK * !D * !Q)	0.02416	0.02419	0.02414
	(!CLK * !D * !Q)	0.01455	0.01454	0.01457
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.04068	0.04874	0.18653
	(CLK * D * !Q)	0.02891	0.03699	0.17477
	(CLK * !D * !Q)	0.03313	0.03320	0.03313
	(CLK * !D * !Q)	0.02330	0.02325	0.02328
	(!CLK * D * !Q)	0.05318	0.06648	0.30867
	(!CLK * D * !Q)	0.04121	0.05450	0.29668
	(!CLK * !D * !Q)	0.03324	0.03329	0.03324
	(!CLK * !D * !Q)	0.02340	0.02337	0.02339

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)	0.01219	0.02096	0.16114
	(CLK * D * !Q)	0.02379	0.03263	0.17274
	(CLK * !D * !Q)	0.01051	0.01022	0.01019
	(CLK * !D * !Q)	0.02018	0.01991	0.01985
	(!CLK * D * !Q)	0.02324	0.03822	0.28830
	(!CLK * D * !Q)	0.03506	0.05008	0.30009
	(!CLK * !D * !Q)	0.01108	0.01084	0.01084
	(!CLK * !D * !Q)	0.02074	0.02061	0.02050
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.01680	0.02561	0.16582
	(CLK * D * !Q)	0.02824	0.03713	0.17727
	(CLK * !D * !Q)	0.01511	0.01481	0.01479
	(CLK * !D * !Q)	0.02467	0.02440	0.02435
	(!CLK * D * !Q)	0.02786	0.04295	0.29295
	(!CLK * D * !Q)	0.03950	0.05462	0.30456
	(!CLK * !D * !Q)	0.01566	0.01543	0.01542
	(!CLK * !D * !Q)	0.02522	0.02509	0.02498
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.02559	0.03436	0.17444
	(CLK * D * !Q)	0.03734	0.04617	0.18618
	(CLK * !D * !Q)	0.02389	0.02359	0.02357
	(CLK * !D * !Q)	0.03372	0.03348	0.03340
	(!CLK * D * !Q)	0.03723	0.05185	0.30004
	(!CLK * D * !Q)	0.04921	0.06389	0.31195
	(!CLK * !D * !Q)	0.02468	0.02444	0.02443
	(!CLK * !D * !Q)	0.03450	0.03438	0.03426

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)	0.04000	0.06236	0.43903
	(D * RESET_B * Q)	0.03409	0.05644	0.43312
	(D * !RESET_B * !Q)	0.03324	0.05563	0.43266
	(D * !RESET_B * !Q)	0.02733	0.04971	0.42676
	(!D * !Q)	0.03329	0.05568	0.43273
	(!D * !Q)	0.02738	0.04976	0.42682
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.03998	0.06234	0.43889
	(D * RESET_B * Q)	0.03410	0.05645	0.43302
	(D * !RESET_B * !Q)	0.03770	0.06007	0.43701
	(D * !RESET_B * !Q)	0.03182	0.05421	0.43114
	(!D * !Q)	0.03775	0.06014	0.43707
	(!D * !Q)	0.03187	0.05425	0.43120
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.05270	0.07486	0.45124
	(D * RESET_B * Q)	0.04661	0.06878	0.44515
	(D * !RESET_B * !Q)	0.04762	0.06980	0.44651
	(D * !RESET_B * !Q)	0.04153	0.06370	0.44043
	(!D * !Q)	0.04767	0.06984	0.44658
	(!D * !Q)	0.04158	0.06374	0.44049

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)**	0.03097	0.05449	0.43224
	(D * RESET_B * Q)	0.03686	0.06040	0.43814
	(D * RESET_B * !Q)	0.03809	0.06270	0.46538
	(D * RESET_B * !Q)	0.04375	0.06839	0.47106
	(D * !RESET_B * !Q)	0.02454	0.04800	0.42536
	(D * !RESET_B * !Q)	0.03042	0.05393	0.43127
	(!D * RESET_B * Q)	0.05120	0.07509	0.46498
	(!D * RESET_B * Q)	0.05731	0.08123	0.47110
	(!D * !Q)	0.02458	0.04806	0.42540
	(!D * !Q)	0.03046	0.05398	0.43131
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.03107	0.05457	0.43220
	(D * RESET_B * Q)	0.03693	0.06047	0.43807
	(D * RESET_B * !Q)	0.04237	0.06699	0.46963
	(D * RESET_B * !Q)	0.04804	0.07268	0.47532
	(D * !RESET_B * !Q)	0.02913	0.05260	0.42981
	(D * !RESET_B * !Q)	0.03499	0.05850	0.43568
	(!D * RESET_B * Q)	0.05135	0.07532	0.46496
	(!D * RESET_B * Q)	0.05740	0.08139	0.47101
	(!D * !Q)	0.02917	0.05265	0.42985
	(!D * !Q)	0.03503	0.05855	0.43573
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.04321	0.06657	0.44398
	(D * RESET_B * Q)	0.04928	0.07267	0.45007
	(D * RESET_B * !Q)	0.05341	0.07778	0.47893
	(D * RESET_B * !Q)	0.05926	0.08365	0.48479
	(D * !RESET_B * !Q)	0.03873	0.06205	0.43907
	(D * !RESET_B * !Q)	0.04480	0.06816	0.44516
	(!D * RESET_B * Q)	0.06385	0.08759	0.47843
	(!D * RESET_B * Q)	0.07014	0.09391	0.48474
	(!D * !Q)	0.03876	0.06210	0.43911
	(!D * !Q)	0.04484	0.06820	0.44520

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00185	0.00348	0.00303	1.64360	1.59812
sky130_fd_sc_hs__dfsbp_2	0.00185	0.00346	0.00303	3.37942	3.25784

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	2376.83000	2731.61000
sky130_fd_sc_hs__dfsbp_2	0.00000	2424.28000	2529.78000

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)	0.16976	0.52607	5.33981
	SET_B->Q (FR)	0.15657	0.70033	7.89164
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.19772	0.46349	5.41247
	SET_B->Q (FR)	0.18736	0.64554	7.96766

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.16800	0.39532	2.94412
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.19169	0.37315	3.08766

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)	0.14636	0.53685	5.55900
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.14990	0.44663	5.44634

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)	0.13171	0.39758	2.94699
	SET_B->Q_N (FF)	0.11642	0.56407	5.45243
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.14188	0.36812	3.00773
	SET_B->Q_N (FF)	0.12975	0.54307	5.52163

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)	-0.04598	-0.10081	-0.69666
	setup	CLK (R)	0.06758	0.11900	0.69864
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04403	-0.09681	-0.68928
	setup	CLK (R)	0.06571	0.11694	0.68857

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)	-0.03023	-0.11500	-2.79279
	setup	CLK (R)	0.08559	0.18723	2.85674
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03257	-0.11929	-2.80133
	setup	CLK (R)	0.08565	0.18661	2.85035

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)	-0.04598	-0.10081	-0.69666
	setup	CLK (R)	0.06758	0.11900	0.69864
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04403	-0.09681	-0.68928
	setup	CLK (R)	0.06571	0.11694	0.68857

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)	-0.03023	-0.11500	-2.79279
	setup	CLK (R)	0.08559	0.18723	2.85674
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03257	-0.11929	-2.80133
	setup	CLK (R)	0.08565	0.18661	2.85035

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)	-0.06002	-0.09003	-0.17158
	removal	CLK (R)	0.08309	0.11294	0.37383
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06338	-0.09023	-0.20365
	removal	CLK (R)	0.08332	0.11294	0.32405

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)	-0.06002	-0.09003	-0.17158
	removal	CLK (R)	0.08309	0.11294	0.37383
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06338	-0.09023	-0.20365
	removal	CLK (R)	0.08332	0.11294	0.32405

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 ()	0.12798	0.59937	16.50020
	min_pulse_width	SET_B ()	0.11896	0.59937	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.13475	0.59937	16.50020
	min_pulse_width	SET_B ()	0.14377	0.59937	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 ()	0.09866	0.59937	16.50020
	min_pulse_width	CLK ()	0.08061	0.59937	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	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 ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.13023	0.59937	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	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	0.05787	0.06759	0.26708
	CLK	0.05501	0.06466	0.26376
	SET_B	0.04895	0.05606	0.18040
	SET_B	0.05220	0.05928	0.18228
sky130_fd_sc_hs__dfsbp_2	CLK	0.06455	0.07059	0.27279
	CLK	0.06165	0.06760	0.26890
	SET_B	0.05579	0.05970	0.19044
	SET_B	0.05902	0.06289	0.19159

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.03525	0.04611	0.23746
	CLK	0.03253	0.04335	0.23446
sky130_fd_sc_hs__dfsbp_2	CLK	0.04589	0.05474	0.24444
	CLK	0.04311	0.05194	0.24095

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.04430	0.05521	0.24791
	CLK	0.04158	0.05241	0.24488
sky130_fd_sc_hs__dfsbp_2	CLK	0.05715	0.06602	0.25744
	CLK	0.05437	0.06323	0.25364

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.04447	0.05416	0.25284
	CLK	0.04160	0.05125	0.24963
	SET_B	0.03640	0.04353	0.16637
	SET_B	0.03965	0.04675	0.16924
sky130_fd_sc_hs__dfsbp_2	CLK	0.05190	0.05784	0.25935
	CLK	0.04900	0.05493	0.25558
	SET_B	0.04402	0.04793	0.17643
	SET_B	0.04725	0.05112	0.17908

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02793	0.03748	0.18549
	CLK	0.02439	0.03395	0.18197
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03676	0.04602	0.20730
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03291	0.04215	0.20345
	(!CLK * !SET_B * Q * !Q_N)	0.03356	0.04144	0.18615
	(!CLK * !SET_B * Q * !Q_N)	0.02955	0.03742	0.18214
sky130_fd_sc_hs__dfsbp_2	CLK	0.02616	0.03571	0.18374
	CLK	0.02262	0.03218	0.18021
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03487	0.04417	0.20551
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03090	0.04019	0.20153
	(!CLK * !SET_B * Q * !Q_N)	0.03178	0.03968	0.18446
	(!CLK * !SET_B * Q * !Q_N)	0.02767	0.03556	0.18034

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02382	0.03363	0.18149
	CLK	0.02734	0.03715	0.18501
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03440	0.04347	0.20270
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03825	0.04732	0.20655
	(!CLK * !SET_B * Q * !Q_N)	0.02727	0.03540	0.18103
	(!CLK * !SET_B * Q * !Q_N)	0.03129	0.03942	0.18504
sky130_fd_sc_hs__dfsbp_2	CLK	0.02206	0.03187	0.17974
	CLK	0.02559	0.03540	0.18327
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03225	0.04136	0.20059
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.03623	0.04534	0.20457
	(!CLK * !SET_B * Q * !Q_N)	0.02534	0.03349	0.17918
	(!CLK * !SET_B * Q * !Q_N)	0.02945	0.03760	0.18329

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)	0.02690	0.02693	0.02689
	(CLK * Q * !Q_N)	0.02055	0.02054	0.02055
	(!CLK * D * Q * !Q_N)	0.02655	0.02661	0.02657
	(!CLK * D * Q * !Q_N)	0.02023	0.02022	0.02023
	(!CLK * !D * Q * !Q_N)	0.03100	0.03912	0.17662
	(!CLK * !D * Q * !Q_N)	0.02439	0.03245	0.17002
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.02516	0.02520	0.02518
	(CLK * Q * !Q_N)	0.01889	0.01887	0.01888
	(!CLK * D * Q * !Q_N)	0.02477	0.02484	0.02479
	(!CLK * D * Q * !Q_N)	0.01848	0.01847	0.01849
	(!CLK * !D * Q * !Q_N)	0.02898	0.03713	0.17481
	(!CLK * !D * Q * !Q_N)	0.02244	0.03059	0.16827

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)	0.02031	0.02018	0.02017
	(CLK * Q * !Q_N)	0.02662	0.02654	0.02650
	(!CLK * D * Q * !Q_N)	0.01949	0.01931	0.01928
	(!CLK * D * Q * !Q_N)	0.02580	0.02568	0.02561
	(!CLK * !D * Q * !Q_N)	0.02177	0.03070	0.16981
	(!CLK * !D * Q * !Q_N)	0.02834	0.03733	0.17638
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.01851	0.01836	0.01838
	(CLK * Q * !Q_N)	0.02478	0.02472	0.02467
	(!CLK * D * Q * !Q_N)	0.01776	0.01756	0.01755
	(!CLK * D * Q * !Q_N)	0.02404	0.02393	0.02385
	(!CLK * !D * Q * !Q_N)	0.02006	0.02904	0.16826
	(!CLK * !D * Q * !Q_N)	0.02657	0.03562	0.17479

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)	0.04257	0.06490	0.44469
	(D * Q * !Q_N)	0.03702	0.05930	0.43913
	(!D * SET_B * !Q * Q_N)	0.03372	0.05601	0.43515
	(!D * SET_B * !Q * Q_N)	0.02817	0.05041	0.42958
	(!D * !SET_B * Q * !Q_N)	0.06419	0.08707	0.46821
	(!D * !SET_B * Q * !Q_N)	0.05814	0.08098	0.46213
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.04060	0.06299	0.44300
	(D * Q * !Q_N)	0.03495	0.05730	0.43735
	(!D * SET_B * !Q * Q_N)	0.03841	0.06076	0.44011
	(!D * SET_B * !Q * Q_N)	0.03276	0.05506	0.43445
	(!D * !SET_B * Q * !Q_N)	0.06203	0.08501	0.46647
	(!D * !SET_B * Q * !Q_N)	0.05580	0.07875	0.46023

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)	0.03708	0.06190	0.47088
	(D * SET_B * !Q * Q_N)	0.04231	0.06717	0.47614
	(D * Q * !Q_N)	0.03356	0.05740	0.44033
	(D * Q * !Q_N)	0.03911	0.06301	0.44591
	(!D * SET_B * Q * !Q_N)	0.04699	0.07149	0.46006
	(!D * SET_B * Q * !Q_N)	0.05287	0.07741	0.46598
	(!D * SET_B * !Q * Q_N)	0.02413	0.04806	0.43152
	(!D * SET_B * !Q * Q_N)	0.02969	0.05365	0.43710
	(!D * !SET_B * Q * !Q_N)	0.03991	0.06443	0.45358
	(!D * !SET_B * Q * !Q_N)	0.04601	0.07049	0.45966
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.04153	0.06639	0.47558
	(D * SET_B * !Q * Q_N)	0.04674	0.07165	0.48082
	(D * Q * !Q_N)	0.03163	0.05555	0.43864
	(D * Q * !Q_N)	0.03732	0.06125	0.44431
	(!D * SET_B * Q * !Q_N)	0.04461	0.06919	0.45799
	(!D * SET_B * Q * !Q_N)	0.05075	0.07533	0.46411
	(!D * SET_B * !Q * Q_N)	0.02861	0.05260	0.43629
	(!D * SET_B * !Q * Q_N)	0.03427	0.05829	0.44197
	(!D * !SET_B * Q * !Q_N)	0.03775	0.06233	0.45168
	(!D * !SET_B * Q * !Q_N)	0.04403	0.06859	0.45793

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00184	0.00359	0.00301	1.73806
sky130_fd_sc_hs__dfstp_2	0.00185	0.00339	0.00303	3.42609
sky130_fd_sc_hs__dfstp_4	0.00184	0.00342	0.00304	6.36661

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	2027.02000	2212.38000
sky130_fd_sc_hs__dfstp_2	0.00000	1722.74000	2505.33000
sky130_fd_sc_hs__dfstp_4	0.00000	3453.98000	3572.37000

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)	0.14393	0.50112	5.42809
	SET_B->Q (FR)	0.17643	0.70656	7.93871
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.14928	0.42360	5.44339
	SET_B->Q (FR)	0.18076	0.63028	7.96730
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.18014	0.39528	5.43118
	SET_B->Q (FR)	0.16572	0.56705	7.97167

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.15468	0.38857	3.15043
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.16434	0.35055	3.14630
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.16772	0.31316	2.99198

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)	-0.04339	-0.09681	-0.68619
	setup	CLK (R)	0.06616	0.11714	0.68632
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04283	-0.09681	-0.69389
	setup	CLK (R)	0.06807	0.11964	0.69133
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04352	-0.09681	-0.68531
	setup	CLK (R)	0.06313	0.11294	0.68591

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)	-0.02860	-0.11350	-2.75530
	setup	CLK (R)	0.08670	0.18571	2.84855
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.02995	-0.11493	-2.76918
	setup	CLK (R)	0.08729	0.18479	2.85563
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03350	-0.11671	-2.77633
	setup	CLK (R)	0.08211	0.18469	2.84818

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)	-0.04339	-0.09681	-0.68619
	setup	CLK (R)	0.06616	0.11714	0.68632
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04283	-0.09681	-0.69389
	setup	CLK (R)	0.06807	0.11964	0.69133
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04352	-0.09681	-0.68531
	setup	CLK (R)	0.06313	0.11294	0.68591

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)	-0.02860	-0.11350	-2.75530
	setup	CLK (R)	0.08670	0.18571	2.84855
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.02995	-0.11493	-2.76918
	setup	CLK (R)	0.08729	0.18479	2.85563
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03350	-0.11671	-2.77633
	setup	CLK (R)	0.08211	0.18469	2.84818

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)	-0.06290	-0.09479	-0.17701
	removal	CLK (R)	0.08129	0.11294	0.48059
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06458	-0.09281	-0.18093
	removal	CLK (R)	0.07997	0.11294	0.42574
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06403	-0.09052	-0.16943
	removal	CLK (R)	0.07825	0.10891	0.39278

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)	-0.06290	-0.09479	-0.17701
	removal	CLK (R)	0.08129	0.11294	0.48059
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06458	-0.09281	-0.18093
	removal	CLK (R)	0.07997	0.11294	0.42574
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06403	-0.09052	-0.16943
	removal	CLK (R)	0.07825	0.10891	0.39278

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 ()	0.11670	0.59937	16.50020
	min_pulse_width	SET_B ()	0.09189	0.59937	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.12121	0.59937	16.50020
	min_pulse_width	SET_B ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.12572	0.59937	16.50020
	min_pulse_width	SET_B ()	0.11219	0.59937	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 ()	0.07610	0.59937	16.50020
	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.07836	0.59937	16.50020
	min_pulse_width	CLK ()	0.07159	0.59937	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.09866	0.59937	16.50020
	min_pulse_width	CLK ()	0.07385	0.59937	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 ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.09866	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	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	0.09257	0.11587	0.51881
	CLK	0.08707	0.11037	0.51335
	SET_B	0.07407	0.09220	0.34103
	SET_B	0.08098	0.09905	0.34799
sky130_fd_sc_hs__dfstp_2	CLK	0.07959	0.10258	0.51258
	CLK	0.07384	0.09683	0.50672
	SET_B	0.06050	0.07867	0.34076
	SET_B	0.06688	0.08497	0.34688
sky130_fd_sc_hs__dfstp_4	CLK	0.14778	0.16725	0.57299
	CLK	0.14200	0.16139	0.56672
	SET_B	0.13096	0.14641	0.40317
	SET_B	0.13741	0.15273	0.40882

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.06568	0.08808	0.46908
	CLK	0.05993	0.08223	0.46254
sky130_fd_sc_hs__dfstp_2	CLK	0.07995	0.10061	0.47600
	CLK	0.07436	0.09495	0.46931
sky130_fd_sc_hs__dfstp_4	CLK	0.10943	0.12829	0.50618
	CLK	0.10383	0.12263	0.49820

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02342	0.03295	0.18096
	CLK	0.01991	0.02944	0.17745
	(!CLK * SET_B)	0.03209	0.04138	0.20270
	(!CLK * SET_B)	0.02826	0.03754	0.19887
	(!CLK * !SET_B * Q)	0.02898	0.03689	0.18169
	(!CLK * !SET_B * Q)	0.02496	0.03286	0.17766
sky130_fd_sc_hs__dfstp_2	CLK	0.01715	0.02669	0.17468
	CLK	0.01362	0.02315	0.17116
	(!CLK * SET_B)	0.02577	0.03504	0.19622
	(!CLK * SET_B)	0.02193	0.03118	0.19238
	(!CLK * !SET_B * Q)	0.02266	0.03054	0.17527
	(!CLK * !SET_B * Q)	0.01862	0.02649	0.17123
sky130_fd_sc_hs__dfstp_4	CLK	0.03526	0.04479	0.19278
	CLK	0.03176	0.04128	0.18927
	(!CLK * SET_B)	0.04386	0.05314	0.21437
	(!CLK * SET_B)	0.03999	0.04926	0.21050
	(!CLK * !SET_B * Q)	0.04070	0.04861	0.19343
	(!CLK * !SET_B * Q)	0.03667	0.04457	0.18940

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01941	0.02917	0.17703
	CLK	0.02291	0.03269	0.18054
	(!CLK * SET_B)	0.02948	0.03858	0.19789
	(!CLK * SET_B)	0.03331	0.04241	0.20172
	(!CLK * !SET_B * Q)	0.02257	0.03072	0.17644
	(!CLK * !SET_B * Q)	0.02660	0.03475	0.18046
sky130_fd_sc_hs__dfstp_2	CLK	0.01309	0.02284	0.17070
	CLK	0.01661	0.02637	0.17422
	(!CLK * SET_B)	0.02344	0.03249	0.19160
	(!CLK * SET_B)	0.02729	0.03635	0.19545
	(!CLK * !SET_B * Q)	0.01654	0.02464	0.17029
	(!CLK * !SET_B * Q)	0.02058	0.02868	0.17433
sky130_fd_sc_hs__dfstp_4	CLK	0.03124	0.04101	0.18884
	CLK	0.03475	0.04453	0.19235
	(!CLK * SET_B)	0.04118	0.05030	0.20953
	(!CLK * SET_B)	0.04504	0.05418	0.21340
	(!CLK * !SET_B * Q)	0.03438	0.04256	0.18828
	(!CLK * !SET_B * Q)	0.03842	0.04660	0.19231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.02224	0.02226	0.02224
	(CLK * Q)	0.01581	0.01580	0.01580
	(!CLK * D * Q)	0.02188	0.02192	0.02187
	(!CLK * D * Q)	0.01541	0.01541	0.01543
	(!CLK * !D * Q)	0.02618	0.03433	0.17176
	(!CLK * !D * Q)	0.01945	0.02753	0.16503
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.01589	0.01592	0.01590
	(CLK * Q)	0.00976	0.00975	0.00975
	(!CLK * D * Q)	0.01554	0.01559	0.01554
	(!CLK * D * Q)	0.00940	0.00938	0.00939
	(!CLK * !D * Q)	0.01984	0.02798	0.16546
	(!CLK * !D * Q)	0.01341	0.02148	0.15902
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.03415	0.03421	0.03416
	(CLK * Q)	0.02792	0.02790	0.02791
	(!CLK * D * Q)	0.03375	0.03380	0.03375
	(!CLK * D * Q)	0.02748	0.02749	0.02750
	(!CLK * !D * Q)	0.03797	0.04613	0.18362
	(!CLK * !D * Q)	0.03145	0.03955	0.17710

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.01592	0.01577	0.01579
	(CLK * Q)	0.02235	0.02228	0.02223
	(!CLK * D * Q)	0.01516	0.01495	0.01495
	(!CLK * D * Q)	0.02159	0.02147	0.02139
	(!CLK * !D * Q)	0.01738	0.02635	0.16537
	(!CLK * !D * Q)	0.02415	0.03312	0.17208
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00967	0.00953	0.00954
	(CLK * Q)	0.01579	0.01573	0.01568
	(!CLK * D * Q)	0.00891	0.00872	0.00869
	(!CLK * D * Q)	0.01503	0.01490	0.01483
	(!CLK * !D * Q)	0.01117	0.02011	0.15917
	(!CLK * !D * Q)	0.01765	0.02659	0.16559
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.02767	0.02754	0.02753
	(CLK * Q)	0.03388	0.03381	0.03377
	(!CLK * D * Q)	0.02693	0.02676	0.02673
	(!CLK * D * Q)	0.03315	0.03303	0.03297
	(!CLK * !D * Q)	0.02927	0.03823	0.17730
	(!CLK * !D * Q)	0.03580	0.04477	0.18379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.03785	0.06016	0.43971
	(D * Q)	0.03226	0.05453	0.43411
	(!D * SET_B * !Q)	0.03360	0.05588	0.43478
	(!D * SET_B * !Q)	0.02800	0.05023	0.42915
	(!D * !SET_B * Q)	0.05780	0.08072	0.46164
	(!D * !SET_B * Q)	0.05170	0.07460	0.45552
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.03180	0.05415	0.43417
	(D * Q)	0.02616	0.04847	0.42852
	(!D * SET_B * !Q)	0.03835	0.06066	0.44004
	(!D * SET_B * !Q)	0.03271	0.05497	0.43437
	(!D * !SET_B * Q)	0.05164	0.07455	0.45574
	(!D * !SET_B * Q)	0.04548	0.06835	0.44957
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.04973	0.07212	0.45219
	(D * Q)	0.04406	0.06640	0.44650
	(!D * SET_B * !Q)	0.04730	0.06964	0.44905
	(!D * SET_B * !Q)	0.04162	0.06391	0.44337
	(!D * !SET_B * Q)	0.07065	0.09366	0.47515
	(!D * !SET_B * Q)	0.06445	0.08742	0.46893

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)**	0.03688	0.06165	0.46996
	(D * SET_B * !Q)	0.04217	0.06699	0.47528
	(D * Q)	0.02910	0.05290	0.43520
	(D * Q)	0.03468	0.05854	0.44082
	(!D * SET_B * Q)	0.04189	0.06636	0.45453
	(!D * SET_B * Q)	0.04780	0.07231	0.46045
	(!D * SET_B * !Q)	0.02390	0.04778	0.43072
	(!D * SET_B * !Q)	0.02951	0.05343	0.43635
	(!D * !SET_B * Q)	0.03506	0.05952	0.44827
	(!D * !SET_B * Q)	0.04116	0.06565	0.45440
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.04141	0.06625	0.47522
	(D * SET_B * !Q)	0.04674	0.07162	0.48057
	(D * Q)	0.02262	0.04648	0.42956
	(D * Q)	0.02825	0.05217	0.43522
	(!D * SET_B * Q)	0.03574	0.06027	0.44909
	(!D * SET_B * Q)	0.04169	0.06627	0.45508
	(!D * SET_B * !Q)	0.02856	0.05252	0.43618
	(!D * SET_B * !Q)	0.03420	0.05820	0.44185
	(!D * !SET_B * Q)	0.02891	0.05343	0.44281
	(!D * !SET_B * Q)	0.03506	0.05961	0.44898
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.05028	0.07514	0.48424
	(D * SET_B * !Q)	0.05560	0.08051	0.48959
	(D * Q)	0.04081	0.06470	0.44778
	(D * Q)	0.04648	0.07043	0.45349
	(!D * SET_B * Q)	0.05342	0.07798	0.46676
	(!D * SET_B * Q)	0.05945	0.08406	0.47280
	(!D * SET_B * !Q)	0.03737	0.06134	0.44505
	(!D * SET_B * !Q)	0.04305	0.06706	0.45075
	(!D * !SET_B * Q)	0.04672	0.07127	0.46067
	(!D * !SET_B * Q)	0.05292	0.07749	0.46690

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00188	0.00302	1.67669	1.65427
sky130_fd_sc_hs__dfxbp_2	0.00183	0.00303	2.74656	3.24091

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	3169.86000	4264.98000
sky130_fd_sc_hs__dfxbp_2	0.00000	4373.20000	6983.21000

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)	0.13474	0.50779	5.61906
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.15553	0.45612	5.32466

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.14455	0.39808	3.32030
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.13916	0.31851	2.52662

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)	0.17058	0.54427	5.61351
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.17969	0.46466	5.49456

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)	0.15904	0.39396	3.15614
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.19266	0.38197	3.17320

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)	-0.01182	-0.04034	-0.39810
	setup	CLK (R)	0.05028	0.07751	0.43006
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01096	-0.03429	-0.37551
	setup	CLK (R)	0.03944	0.06454	0.40654

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)	-0.01924	-0.09270	-2.43038
	setup	CLK (R)	0.06236	0.14949	2.58925
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02020	-0.08953	-2.50501
	setup	CLK (R)	0.06160	0.14602	2.59719

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 ()	0.06483	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.08513	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	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 ()	0.08738	0.59937	16.50020
	min_pulse_width	CLK ()	0.10542	0.59937	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.10542	0.59937	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	0.04371	0.05629	0.27183
	CLK	0.04106	0.05364	0.26877
sky130_fd_sc_hs__dfxbp_2	CLK	0.08306	0.09405	0.30337
	CLK	0.08037	0.09133	0.30010

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.05122	0.06326	0.26621
	CLK	0.04857	0.06055	0.26339
sky130_fd_sc_hs__dfxbp_2	CLK	0.05135	0.06340	0.27420
	CLK	0.04866	0.06069	0.27137

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.06910	0.08112	0.28536
	CLK	0.06644	0.07842	0.28222
sky130_fd_sc_hs__dfxbp_2	CLK	0.07254	0.08464	0.29752
	CLK	0.06985	0.08189	0.29406

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.03428	0.04685	0.26113
	CLK	0.03162	0.04419	0.25827
sky130_fd_sc_hs__dfxbp_2	CLK	0.06105	0.07197	0.28022
	CLK	0.05835	0.06926	0.27638

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01957	0.02938	0.17418
	CLK	0.01601	0.02581	0.17061
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02800	0.04045	0.22865
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02441	0.03686	0.22508
sky130_fd_sc_hs__dfxbp_2	CLK	0.04188	0.05172	0.19589
	CLK	0.03841	0.04823	0.19241
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.05036	0.06286	0.25074
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.04686	0.05936	0.24726

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01612	0.02617	0.17086
	CLK	0.01968	0.02976	0.17444
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.04557	0.05542	0.21967
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.04915	0.05899	0.22325
sky130_fd_sc_hs__dfxbp_2	CLK	0.03861	0.04868	0.19271
	CLK	0.04207	0.05218	0.19619
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.06877	0.07859	0.24155
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.07225	0.08207	0.24503

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)	0.03325	0.05713	0.45084
	(D * Q * !Q_N)	0.02793	0.05180	0.44552
	(!D * !Q * Q_N)	0.04961	0.07352	0.46769
	(!D * !Q * Q_N)	0.04428	0.06818	0.46237
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.05590	0.07977	0.47406
	(D * Q * !Q_N)	0.05050	0.07437	0.46866
	(!D * !Q * Q_N)	0.04769	0.07161	0.46630
	(!D * !Q * Q_N)	0.04230	0.06619	0.46090

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)	0.02835	0.05264	0.44556
	(D * Q * !Q_N)	0.03368	0.05797	0.45088
	(D * !Q * Q_N)	0.05524	0.08096	0.50144
	(D * !Q * Q_N)	0.06056	0.08628	0.50677
	(!D * Q * !Q_N)	0.06032	0.08459	0.48468
	(!D * Q * !Q_N)	0.06565	0.08990	0.49000
	(!D * !Q * Q_N)	0.04567	0.06998	0.46245
	(!D * !Q * Q_N)	0.05099	0.07531	0.46777
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.05093	0.07525	0.46846
	(D * Q * !Q_N)	0.05633	0.08067	0.47386
	(D * !Q * Q_N)	0.05359	0.07931	0.50009
	(D * !Q * Q_N)	0.05898	0.08474	0.50550
	(!D * Q * !Q_N)	0.08339	0.10766	0.50947
	(!D * Q * !Q_N)	0.08879	0.11307	0.51486
	(!D * !Q * Q_N)	0.04402	0.06835	0.46120
	(!D * !Q * Q_N)	0.04941	0.07376	0.46659

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00184	0.00302	1.69973
sky130_fd_sc_hs__dfxtp_2	0.00188	0.00302	3.36750
sky130_fd_sc_hs__dfxtp_4	0.00187	0.00303	6.23229

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	2602.16000	4503.56000
sky130_fd_sc_hs__dfxtp_2	0.00000	2495.40000	3733.94000
sky130_fd_sc_hs__dfxtp_4	0.00000	4066.83000	5947.37000

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)**	0.12212	0.49780	5.66187
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.13083	0.41876	5.57522
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.15722	0.38988	5.63608

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.13690	0.38799	3.33766
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.14188	0.34354	3.32082
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.14459	0.30652	3.22183

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)	-0.01243	-0.03634	-0.36966
	setup	CLK (R)	0.04946	0.07654	0.40312
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01286	-0.03634	-0.38926
	setup	CLK (R)	0.04593	0.07408	0.42455
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01341	-0.03627	-0.38373
	setup	CLK (R)	0.04071	0.06854	0.41278

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)	-0.02330	-0.09374	-2.47635
	setup	CLK (R)	0.06540	0.15349	2.63043
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01749	-0.09062	-2.44721
	setup	CLK (R)	0.06060	0.14602	2.59933
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01822	-0.09008	-2.46394
	setup	CLK (R)	0.06143	0.14602	2.58675

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 ()	0.06032	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.08738	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	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 ()	0.09189	0.59937	16.50020
	min_pulse_width	CLK ()	0.10768	0.59937	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08738	0.59937	16.50020
	min_pulse_width	CLK ()	0.10768	0.59937	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.08513	0.59937	16.50020
	min_pulse_width	CLK ()	0.10768	0.59937	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	0.08344	0.10875	0.53129
	CLK	0.07807	0.10335	0.52569
sky130_fd_sc_hs__dfxtp_2	CLK	0.06950	0.09447	0.52471
	CLK	0.06410	0.08907	0.51911
sky130_fd_sc_hs__dfxtp_4	CLK	0.13695	0.15843	0.58264
	CLK	0.13162	0.15302	0.57587

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.07146	0.09712	0.51658
	CLK	0.06608	0.09157	0.51099
sky130_fd_sc_hs__dfxtp_2	CLK	0.08589	0.10929	0.52123
	CLK	0.08048	0.10385	0.51499
sky130_fd_sc_hs__dfxtp_4	CLK	0.11563	0.13756	0.55527
	CLK	0.11027	0.13207	0.54859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02103	0.03081	0.17569
	CLK	0.01753	0.02731	0.17220
	!CLK	0.02953	0.04191	0.23029
	!CLK	0.02603	0.03840	0.22680
sky130_fd_sc_hs__dfxtp_2	CLK	0.01491	0.02477	0.16964
	CLK	0.01134	0.02119	0.16606
	!CLK	0.02311	0.03557	0.22372
	!CLK	0.01952	0.03198	0.22014
sky130_fd_sc_hs__dfxtp_4	CLK	0.03283	0.04271	0.18737
	CLK	0.02929	0.03915	0.18381
	!CLK	0.04130	0.05379	0.24197
	!CLK	0.03773	0.05022	0.23841

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01818	0.02816	0.17292
	CLK	0.02168	0.03167	0.17641
	!CLK	0.04809	0.05782	0.22153
	!CLK	0.05159	0.06132	0.22503
sky130_fd_sc_hs__dfxtp_2	CLK	0.01144	0.02153	0.16628
	CLK	0.01500	0.02511	0.16986
	!CLK	0.04102	0.05087	0.21500
	!CLK	0.04460	0.05445	0.21858
sky130_fd_sc_hs__dfxtp_4	CLK	0.02960	0.03970	0.18424
	CLK	0.03314	0.04327	0.18779
	!CLK	0.06016	0.06995	0.23316
	!CLK	0.06373	0.07351	0.23672

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.03503	0.05880	0.45282
	(D * Q)	0.02964	0.05341	0.44744
	(!D * !Q)	0.03831	0.06213	0.45661
	(!D * !Q)	0.03293	0.05673	0.45122
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.02879	0.05260	0.44667
	(D * Q)	0.02337	0.04717	0.44124
	(!D * !Q)	0.04274	0.06659	0.46110
	(!D * !Q)	0.03732	0.06116	0.45569
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.04676	0.07047	0.46385
	(D * Q)	0.04140	0.06511	0.45849
	(!D * !Q)	0.05159	0.07535	0.46914
	(!D * !Q)	0.04624	0.06998	0.46378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.03059	0.05482	0.44759
	(D * Q)	0.03595	0.06022	0.45297
	(D * !Q)	0.04412	0.06976	0.48978
	(D * !Q)	0.04948	0.07513	0.49517
	(!D * Q)	0.06288	0.08707	0.48748
	(!D * Q)	0.06825	0.09244	0.49285
	(!D * !Q)	0.03432	0.05856	0.45092
	(!D * !Q)	0.03968	0.06395	0.45630
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.02402	0.04827	0.44112
	(D * Q)	0.02942	0.05371	0.44653
	(D * !Q)	0.04816	0.07383	0.49412
	(D * !Q)	0.05355	0.07927	0.49955
	(!D * Q)	0.05600	0.08024	0.48048
	(!D * Q)	0.06140	0.08568	0.48589
	(!D * !Q)	0.03874	0.06301	0.45542
	(!D * !Q)	0.04413	0.06843	0.46083
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.04267	0.06679	0.45871
	(D * Q)	0.04801	0.07216	0.46406
	(D * !Q)	0.05764	0.08317	0.50246
	(D * !Q)	0.06296	0.08853	0.50782
	(!D * Q)	0.07573	0.09980	0.50028
	(!D * Q)	0.08107	0.10514	0.50563
	(!D * !Q)	0.04815	0.07228	0.46383
	(!D * !Q)	0.05348	0.07764	0.46919

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00270	0.00457	1.76384
sky130_fd_sc_hs__dlclkp_2	0.00269	0.00490	3.26642
sky130_fd_sc_hs__dlclkp_4	0.00267	0.00516	6.61133

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	3039.62000	4663.93000
sky130_fd_sc_hs__dlclkp_2	0.00000	2901.52000	3220.96000
sky130_fd_sc_hs__dlclkp_4	0.00000	3554.29000	3976.12000

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)**	0.04878	0.41225	6.02931
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.05169	0.32774	5.56486
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.07457	0.33468	6.18449

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.05033	0.43926	5.90689
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.05507	0.40444	5.74138
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.07060	0.38856	5.67298

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)	-0.02622	-0.05647	-0.84789
	setup	CLK (R)	0.08764	0.15576	0.92877
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02468	-0.05445	-0.86411
	setup	CLK (R)	0.09658	0.15360	0.95253
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02309	-0.05042	-0.80152
	setup	CLK (R)	0.08955	0.12507	0.85227

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)	-0.01889	-0.07664	-1.78247
	setup	CLK (R)	0.06234	0.13916	1.98652
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.01943	-0.07260	-1.72375
	setup	CLK (R)	0.05472	0.12706	1.93912
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.01774	-0.07059	-1.80709
	setup	CLK (R)	0.03910	0.09681	2.00849

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 ()	0.03776	0.59937	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04227	0.59937	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.06483	0.59937	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 ()	0.11670	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.11670	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	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	0.12955	0.17152	0.82975
	CLK	0.12092	0.16288	0.82121
sky130_fd_sc_hs__dlclkp_2	CLK	0.09568	0.13725	0.80102
	CLK	0.08645	0.12797	0.79176
sky130_fd_sc_hs__dlclkp_4	CLK	0.10666	0.14681	0.83579
	CLK	0.09715	0.13733	0.82628

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.05335	0.09737	0.76594
	CLK	0.06195	0.10597	0.77343
sky130_fd_sc_hs__dlclkp_2	CLK	0.06684	0.10827	0.75880
	CLK	0.07612	0.11725	0.76816
sky130_fd_sc_hs__dlclkp_4	CLK	0.10170	0.13893	0.80468
	CLK	0.11118	0.14820	0.81076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.03869	0.03856	0.04196
	CLK	0.03415	0.03398	0.03742
	(!CLK * !GCLK)	0.03520	0.05201	0.33732
	(!CLK * !GCLK)	0.03038	0.04716	0.33249
sky130_fd_sc_hs__dlclkp_2	CLK	0.02741	0.02741	0.02739
	CLK	0.02287	0.02287	0.02284
	(!CLK * !GCLK)	0.03980	0.05648	0.34111
	(!CLK * !GCLK)	0.03501	0.05165	0.33630
sky130_fd_sc_hs__dlclkp_4	CLK	0.03639	0.03642	0.03638
	CLK	0.03193	0.03190	0.03189
	(!CLK * !GCLK)	0.04845	0.06515	0.35003
	(!CLK * !GCLK)	0.04389	0.06053	0.34546

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.03848	0.03835	0.03756
	CLK	0.04301	0.04292	0.04210
	(!CLK * !GCLK)	0.03241	0.04837	0.32776
	(!CLK * !GCLK)	0.03723	0.05319	0.33259
sky130_fd_sc_hs__dlclkp_2	CLK	0.02384	0.02370	0.02375
	CLK	0.02840	0.02827	0.02829
	(!CLK * !GCLK)	0.03736	0.05330	0.33211
	(!CLK * !GCLK)	0.04216	0.05810	0.33691
sky130_fd_sc_hs__dlclkp_4	CLK	0.03294	0.03279	0.03284
	CLK	0.03744	0.03730	0.03733
	(!CLK * !GCLK)	0.04719	0.06307	0.34212
	(!CLK * !GCLK)	0.05175	0.06766	0.34668

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.03425	0.05899	0.43744
	(!GATE * !GCLK)	0.02586	0.05058	0.42904
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.03935	0.06406	0.44329
	(!GATE * !GCLK)	0.03041	0.05506	0.43432
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.04829	0.07217	0.44265
	(!GATE * !GCLK)	0.03900	0.06285	0.43336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.03827	0.06521	0.53986
	(GATE * !GCLK)	0.04662	0.07362	0.54825
	(!GATE * !GCLK)	0.02761	0.05216	0.42646
	(!GATE * !GCLK)	0.03598	0.06061	0.43485
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.04342	0.07024	0.55129
	(GATE * !GCLK)	0.05247	0.07929	0.56032
	(!GATE * !GCLK)	0.03255	0.05707	0.43159
	(!GATE * !GCLK)	0.04153	0.06608	0.44056
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.05176	0.07802	0.55477
	(GATE * !GCLK)	0.06124	0.08753	0.56429
	(!GATE * !GCLK)	0.04118	0.06482	0.43177
	(!GATE * !GCLK)	0.05043	0.07415	0.44099

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00238	0.00261	0.00292	1.68441	1.71138
sky130_fd_sc_hs__dlrbn_2	0.00239	0.00260	0.00302	2.70457	3.26266

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	4015.91000	5194.43000
sky130_fd_sc_hs__dlrbn_2	0.00000	4028.68000	4972.88000

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)	0.16451	0.52290	5.74617
	GATE_N->Q (-R)	0.18876	0.70609	7.96467
	RESET_B->Q (RR)	0.06322	0.44437	5.93336
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.17263	0.45646	5.33548
	GATE_N->Q (-R)	0.19922	0.65015	7.69014
	RESET_B->Q (RR)	0.07091	0.38281	5.38911

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.13154	0.48499	5.03853
	GATE_N->Q (-F)	0.13644	0.52826	5.50245
	RESET_B->Q (FF)	0.05691	0.43733	5.36004
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.14251	0.44015	4.42475
	GATE_N->Q (-F)	0.14780	0.48232	4.87411
	RESET_B->Q (FF)	0.06474	0.39904	4.76506

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)	0.16008	0.63748	7.43973
	GATE_N->Q_N (-R)	0.16501	0.68047	7.90437
	RESET_B->Q_N (FR)	0.08766	0.58091	7.47746
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.18543	0.59047	7.63816
	GATE_N->Q_N (-R)	0.19078	0.63289	8.08806
	RESET_B->Q_N (FR)	0.11004	0.53892	7.68337

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)	0.18802	0.41194	3.42548
	GATE_N->Q_N (-F)	0.21223	0.59491	5.64262
	RESET_B->Q_N (RF)	0.08669	0.32150	3.15400
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.21738	0.40819	3.71098
	GATE_N->Q_N (-F)	0.24397	0.60157	6.06296
	RESET_B->Q_N (RF)	0.11543	0.33123	3.44878

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 ()**	0.06934	0.59937	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.08513	0.59937	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	0.07165	0.08115	0.24741
	D	0.06933	0.07877	0.24475
	GATE_N	0.07468	0.08603	0.27234
	GATE_N	0.07693	0.08826	0.27363
	RESET_B	0.06616	0.07534	0.22519
	RESET_B	0.06342	0.07253	0.22235
sky130_fd_sc_hs__dlrbn_2	D	0.08395	0.09194	0.25536
	D	0.08165	0.08954	0.25224
	GATE_N	0.08754	0.09719	0.28104
	GATE_N	0.08978	0.09940	0.28073
	RESET_B	0.07850	0.08561	0.21815
	RESET_B	0.07569	0.08273	0.21461

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.04328	0.05364	0.22148
	D	0.04559	0.05594	0.22259
	GATE_N	0.04671	0.05898	0.24806
	GATE_N	0.04919	0.06145	0.25035
	RESET_B	0.04615	0.05648	0.21389
	RESET_B	0.04892	0.05921	0.21593
sky130_fd_sc_hs__dlrbn_2	D	0.04427	0.05332	0.21937
	D	0.04656	0.05559	0.22100
	GATE_N	0.04767	0.05863	0.24618
	GATE_N	0.05013	0.06098	0.24774
	RESET_B	0.04585	0.05489	0.21116
	RESET_B	0.04867	0.05768	0.21358

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.06092	0.07133	0.23858
	D	0.06324	0.07361	0.24029
	GATE_N	0.06435	0.07664	0.26732
	GATE_N	0.06683	0.07911	0.26848
	RESET_B	0.06824	0.07858	0.23687
	RESET_B	0.07100	0.08129	0.23844
sky130_fd_sc_hs__dlrbn_2	D	0.06503	0.07408	0.24278
	D	0.06733	0.07634	0.24239
	GATE_N	0.06842	0.07937	0.26787
	GATE_N	0.07087	0.08167	0.26867
	RESET_B	0.07227	0.08132	0.23965
	RESET_B	0.07510	0.08405	0.23961

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.05147	0.06091	0.22581
	D	0.04915	0.05856	0.22338
	GATE_N	0.05451	0.06583	0.25126
	GATE_N	0.05675	0.06807	0.25303
	RESET_B	0.04500	0.05410	0.20400
	RESET_B	0.04226	0.05133	0.20081
sky130_fd_sc_hs__dlrbn_2	D	0.06375	0.07168	0.23452
	D	0.06145	0.06929	0.23114
	GATE_N	0.06734	0.07696	0.25953
	GATE_N	0.06958	0.07917	0.25990
	RESET_B	0.05752	0.06442	0.19529
	RESET_B	0.05471	0.06157	0.19150

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)	0.04408	0.06278	0.35593
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.03965	0.05837	0.35152
	(!GATE_N * !RESET_B * !Q * Q_N)	0.05234	0.07243	0.40003
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04820	0.06828	0.39589
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)	0.04868	0.06683	0.35180
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.04429	0.06246	0.34741
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04990	0.06948	0.38973
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04578	0.06536	0.38564

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)	0.02761	0.04803	0.35156
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.03203	0.05246	0.35598
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04075	0.06220	0.39644
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04489	0.06634	0.40059
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)	0.03221	0.05203	0.34720
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.03657	0.05642	0.35158
	(!GATE_N * !RESET_B * !Q * Q_N)	0.03924	0.06017	0.38688
	(!GATE_N * !RESET_B * !Q * Q_N)	0.04331	0.06429	0.39099

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)	0.04898	0.07323	0.44768
	(D * RESET_B * Q * !Q_N)	0.04424	0.06848	0.44295
	(D * !RESET_B * !Q * Q_N)	0.06427	0.08826	0.45893
	(D * !RESET_B * !Q * Q_N)	0.05925	0.08324	0.45393
	(!D * !Q * Q_N)	0.04177	0.06609	0.44209
	(!D * !Q * Q_N)	0.03703	0.06135	0.43736
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.05364	0.07724	0.44183
	(D * RESET_B * Q * !Q_N)	0.04893	0.07253	0.43713
	(D * !RESET_B * !Q * Q_N)	0.06258	0.08591	0.44665
	(D * !RESET_B * !Q * Q_N)	0.05760	0.08092	0.44168
	(!D * !Q * Q_N)	0.03982	0.06352	0.43033
	(!D * !Q * Q_N)	0.03511	0.05882	0.42563

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)	0.04701	0.07106	0.44076
	(D * RESET_B * Q * !Q_N)	0.05173	0.07581	0.44549
	(D * !RESET_B * !Q * Q_N)	0.05326	0.07722	0.44896
	(D * !RESET_B * !Q * Q_N)	0.05828	0.08223	0.45397
	(!D * !Q * Q_N)	0.04002	0.06418	0.43430
	(!D * !Q * Q_N)	0.04475	0.06893	0.43903
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.05164	0.07498	0.43506
	(D * RESET_B * Q * !Q_N)	0.05634	0.07968	0.43975
	(D * !RESET_B * !Q * Q_N)	0.05089	0.07412	0.43567
	(D * !RESET_B * !Q * Q_N)	0.05586	0.07910	0.44064
	(!D * !Q * Q_N)	0.03825	0.06174	0.42305
	(!D * !Q * Q_N)	0.04295	0.06646	0.42775

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)	0.04728	0.04728	0.04726
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04246	0.04245	0.04245
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04547	0.04549	0.04546
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04051	0.04048	0.04049

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)	0.04336	0.04321	0.04320
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04819	0.04807	0.04800
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04130	0.04115	0.04114
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.04629	0.04617	0.04610

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00221	0.00251	0.00301	1.66572	1.67328
sky130_fd_sc_hs__dlrbp_2	0.00222	0.00250	0.00300	3.28165	3.42298

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	4011.92000	5194.98000
sky130_fd_sc_hs__dlrbp_2	0.00000	4034.24000	4993.36000

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)	0.16051	0.51342	5.64581
	GATE->Q (-R)	0.14503	0.48571	5.16454
	RESET_B->Q (RR)	0.06424	0.44673	5.92117
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.16783	0.43763	5.57428
	GATE->Q (-R)	0.15110	0.40774	5.08976
	RESET_B->Q (RR)	0.06974	0.38114	5.93357

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.13023	0.48701	5.08433
	GATE->Q (-F)	0.14332	0.35544	2.76290
	RESET_B->Q (FF)	0.05772	0.43881	5.33579
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.14119	0.45890	5.15603
	GATE->Q (-F)	0.15396	0.32569	2.82364
	RESET_B->Q (FF)	0.06254	0.40938	5.40368

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)	0.16036	0.64424	7.51342
	GATE->Q_N (-R)	0.17349	0.51270	5.19524
	RESET_B->Q_N (FR)	0.09015	0.58695	7.47786
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.18243	0.57747	7.55353
	GATE->Q_N (-R)	0.19524	0.44438	5.22327
	RESET_B->Q_N (FR)	0.10413	0.51772	7.48330

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)	0.18521	0.39866	3.23468
	GATE->Q_N (-F)	0.16963	0.37091	2.75457
	RESET_B->Q_N (RF)	0.08884	0.32070	3.05706
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.20780	0.37787	3.41629
	GATE->Q_N (-F)	0.19104	0.34780	2.93213
	RESET_B->Q_N (RF)	0.10945	0.31501	3.37051

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 ()**	0.06934	0.59937	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.08061	0.59937	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	0.07060	0.07970	0.24045
	D	0.06841	0.07752	0.23789
	GATE	0.07193	0.08401	0.28102
	GATE	0.06949	0.08154	0.27853
	RESET_B	0.06614	0.07515	0.22518
	RESET_B	0.06331	0.07231	0.22229
sky130_fd_sc_hs__dlrbp_2	D	0.08345	0.09098	0.25020
	D	0.08127	0.08878	0.24691
	GATE	0.08465	0.09522	0.29023
	GATE	0.08221	0.09271	0.28730
	RESET_B	0.07899	0.08749	0.24920
	RESET_B	0.07616	0.08464	0.24587

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.04379	0.05380	0.21471
	D	0.04598	0.05597	0.21625
	GATE	0.04623	0.05774	0.23627
	GATE	0.04408	0.05553	0.23366
	RESET_B	0.04619	0.05642	0.21236
	RESET_B	0.04902	0.05922	0.21476
sky130_fd_sc_hs__dlrbp_2	D	0.04859	0.05718	0.22042
	D	0.05078	0.05933	0.22167
	GATE	0.05112	0.06119	0.24170
	GATE	0.04894	0.05898	0.23888
	RESET_B	0.05073	0.06064	0.22615
	RESET_B	0.05358	0.06339	0.22846

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.06114	0.07116	0.23227
	D	0.06333	0.07332	0.23384
	GATE	0.06356	0.07502	0.25360
	GATE	0.06142	0.07285	0.25131
	RESET_B	0.06777	0.07797	0.23520
	RESET_B	0.07060	0.08078	0.23693
sky130_fd_sc_hs__dlrbp_2	D	0.06484	0.07344	0.23669
	D	0.06703	0.07559	0.23804
	GATE	0.06738	0.07741	0.25823
	GATE	0.06521	0.07523	0.25555
	RESET_B	0.07121	0.08103	0.24758
	RESET_B	0.07406	0.08384	0.24919

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.04955	0.05873	0.21852
	D	0.04737	0.05647	0.21606
	GATE	0.05088	0.06298	0.25877
	GATE	0.04843	0.06048	0.25627
	RESET_B	0.04414	0.05315	0.20250
	RESET_B	0.04132	0.05030	0.19946
sky130_fd_sc_hs__dlrbp_2	D	0.06136	0.06885	0.22664
	D	0.05918	0.06664	0.22358
	GATE	0.06252	0.07303	0.26802
	GATE	0.06009	0.07055	0.26451
	RESET_B	0.05585	0.06437	0.22528
	RESET_B	0.05303	0.06149	0.22146

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)	0.05056	0.07006	0.38718
	(GATE * !RESET_B * !Q * Q_N)	0.04676	0.06625	0.38339
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.04392	0.06237	0.34958
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.03983	0.05827	0.34550
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.04889	0.06837	0.38561
	(GATE * !RESET_B * !Q * Q_N)	0.04509	0.06456	0.38181
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.04867	0.06710	0.35443
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.04455	0.06298	0.35032

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)	0.04109	0.06197	0.38535
	(GATE * !RESET_B * !Q * Q_N)	0.04488	0.06577	0.38915
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.02722	0.04737	0.34494
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.03128	0.05146	0.34902
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.03947	0.06031	0.38384
	(GATE * !RESET_B * !Q * Q_N)	0.04325	0.06413	0.38764
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.03207	0.05223	0.34993
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.03618	0.05635	0.35404

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)	0.04946	0.07323	0.43843
	(D * RESET_B * Q * !Q_N)	0.04487	0.06863	0.43384
	(D * !RESET_B * !Q * Q_N)	0.05398	0.07936	0.47177
	(D * !RESET_B * !Q * Q_N)	0.04967	0.07503	0.46747
	(!D * !Q * Q_N)	0.04344	0.06722	0.43327
	(!D * !Q * Q_N)	0.03886	0.06262	0.42868
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.05423	0.07802	0.44329
	(D * RESET_B * Q * !Q_N)	0.04962	0.07339	0.43868
	(D * !RESET_B * !Q * Q_N)	0.05218	0.07757	0.47004
	(D * !RESET_B * !Q * Q_N)	0.04788	0.07328	0.46574
	(!D * !Q * Q_N)	0.04167	0.06548	0.43162
	(!D * !Q * Q_N)	0.03706	0.06086	0.42701

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)	0.04547	0.06888	0.43005
	(D * RESET_B * Q * !Q_N)	0.05006	0.07348	0.43463
	(D * !RESET_B * !Q * Q_N)	0.06012	0.08440	0.46316
	(D * !RESET_B * !Q * Q_N)	0.06442	0.08872	0.46747
	(!D * !Q * Q_N)	0.03719	0.06096	0.42543
	(!D * !Q * Q_N)	0.04178	0.06555	0.43002
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.05017	0.07360	0.43484
	(D * RESET_B * Q * !Q_N)	0.05478	0.07821	0.43944
	(D * !RESET_B * !Q * Q_N)	0.05827	0.08256	0.46140
	(D * !RESET_B * !Q * Q_N)	0.06257	0.08687	0.46570
	(!D * !Q * Q_N)	0.03544	0.05921	0.42377
	(!D * !Q * Q_N)	0.04005	0.06383	0.42838

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)	0.04731	0.04733	0.04730
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04240	0.04238	0.04239
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04558	0.04559	0.04557
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04065	0.04064	0.04064

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)	0.04333	0.04318	0.04317
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04826	0.04814	0.04807
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04155	0.04139	0.04139
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.04649	0.04637	0.04631

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00220	0.00253	0.00286	1.70751
sky130_fd_sc_hs__dlrtn_2	0.00222	0.00251	0.00296	3.30316
sky130_fd_sc_hs__dlrtn_4	0.00222	0.00252	0.00482	6.05337

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	2962.68000	3875.68000
sky130_fd_sc_hs__dlrtn_2	0.00000	3287.75000	4375.74000
sky130_fd_sc_hs__dlrtn_4	0.00000	5304.87000	8005.11000

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)	0.15066	0.50637	5.73425
	GATE_N->Q (-R)	0.16919	0.67576	7.82991
	RESET_B->Q (RR)	0.05464	0.41275	5.70237
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.15988	0.43591	5.70826
	GATE_N->Q (-R)	0.17840	0.60502	7.79863
	RESET_B->Q (RR)	0.06024	0.35541	5.80411
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.17464	0.39213	5.64552
	GATE_N->Q (-R)	0.19312	0.56202	7.73295
	RESET_B->Q (RR)	0.06473	0.30459	5.91464

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.12473	0.47584	5.06310
	GATE_N->Q (-F)	0.12604	0.51135	5.47266
	RESET_B->Q (FF)	0.05353	0.44086	5.59173
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.12719	0.42574	4.92612
	GATE_N->Q (-F)	0.12822	0.46091	5.33398
	RESET_B->Q (FF)	0.05545	0.38921	5.39269
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.13740	0.40086	4.86713
	GATE_N->Q (-F)	0.14037	0.43995	5.28860
	RESET_B->Q (FF)	0.05977	0.36347	5.50208

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 ()**	0.06483	0.59937	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.07385	0.59937	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.08513	0.59937	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	0.12330	0.14242	0.46822
	D	0.11900	0.13810	0.46368
	GATE_N	0.12844	0.15159	0.51955
	GATE_N	0.13280	0.15592	0.52415
	RESET_B	0.11407	0.12940	0.39095
	RESET_B	0.10870	0.12399	0.38534
sky130_fd_sc_hs__dlrtn_2	D	0.12443	0.14278	0.47147
	D	0.12015	0.13907	0.46673
	GATE_N	0.12943	0.15191	0.52243
	GATE_N	0.13379	0.15626	0.52718
	RESET_B	0.11477	0.13124	0.41075
	RESET_B	0.10920	0.12565	0.40452
sky130_fd_sc_hs__dlrtn_4	D	0.24955	0.26478	0.58139
	D	0.24508	0.26024	0.57638
	GATE_N	0.25940	0.27837	0.63108
	GATE_N	0.26357	0.28261	0.63584
	RESET_B	0.24171	0.27435	0.82696
	RESET_B	0.23263	0.26527	0.81566

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.05695	0.07855	0.41718
	D	0.06126	0.08280	0.42069
	GATE_N	0.06155	0.08730	0.47296
	GATE_N	0.06645	0.09215	0.47794
	RESET_B	0.06201	0.08016	0.35329
	RESET_B	0.06741	0.08554	0.35882
sky130_fd_sc_hs__dlrtn_2	D	0.07071	0.09074	0.42748
	D	0.07499	0.09501	0.42915
	GATE_N	0.07559	0.09976	0.48290
	GATE_N	0.08037	0.10453	0.48635
	RESET_B	0.07536	0.09430	0.40469
	RESET_B	0.08096	0.09988	0.40906
sky130_fd_sc_hs__dlrtn_4	D	0.10212	0.12077	0.47494
	D	0.10660	0.12512	0.47506
	GATE_N	0.10738	0.13045	0.53041
	GATE_N	0.11238	0.13521	0.53526
	RESET_B	0.10574	0.14132	0.74198
	RESET_B	0.11486	0.15041	0.75155

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)	0.04026	0.05878	0.34823
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.03622	0.05474	0.34419
	(!GATE_N * !RESET_B * !Q)	0.03884	0.05885	0.38333
	(!GATE_N * !RESET_B * !Q)	0.03507	0.05507	0.37957
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.03918	0.05769	0.34719
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.03510	0.05361	0.34311
	(!GATE_N * !RESET_B * !Q)	0.04341	0.06340	0.38795
	(!GATE_N * !RESET_B * !Q)	0.03961	0.05960	0.38416
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.07624	0.09479	0.38448
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.07217	0.09071	0.38042
	(!GATE_N * !RESET_B * !Q)	0.05317	0.07305	0.39721
	(!GATE_N * !RESET_B * !Q)	0.04943	0.06930	0.39347

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)	0.02435	0.04460	0.34441
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02838	0.04865	0.34845
	(!GATE_N * !RESET_B * !Q)	0.03005	0.05139	0.38257
	(!GATE_N * !RESET_B * !Q)	0.03381	0.05517	0.38634
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02319	0.04343	0.34329
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02725	0.04752	0.34737
	(!GATE_N * !RESET_B * !Q)	0.03470	0.05603	0.38731
	(!GATE_N * !RESET_B * !Q)	0.03848	0.05983	0.39110
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.06018	0.08051	0.38052
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.06423	0.08459	0.38459
	(!GATE_N * !RESET_B * !Q)	0.04542	0.06669	0.39765
	(!GATE_N * !RESET_B * !Q)	0.04915	0.07043	0.40140

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)	0.04542	0.06980	0.44308
	(D * RESET_B * Q)	0.04077	0.06514	0.43845
	(D * !RESET_B * !Q)	0.05240	0.07649	0.44582
	(D * !RESET_B * !Q)	0.04747	0.07159	0.44093
	(!D * !Q)	0.02917	0.05364	0.42855
	(!D * !Q)	0.02453	0.04899	0.42392
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.04423	0.06862	0.44201
	(D * RESET_B * Q)	0.03964	0.06401	0.43742
	(D * !RESET_B * !Q)	0.05705	0.08117	0.45067
	(D * !RESET_B * !Q)	0.05216	0.07628	0.44579
	(!D * !Q)	0.03362	0.05811	0.43316
	(!D * !Q)	0.02902	0.05352	0.42857
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.08136	0.10574	0.47952
	(D * RESET_B * Q)	0.07675	0.10112	0.47492
	(D * !RESET_B * !Q)	0.06784	0.09196	0.46168
	(D * !RESET_B * !Q)	0.06289	0.08702	0.45676
	(!D * !Q)	0.04298	0.06744	0.44263
	(!D * !Q)	0.03837	0.06284	0.43803

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)	0.04210	0.06631	0.43555
	(D * RESET_B * Q)	0.04673	0.07094	0.44018
	(D * !RESET_B * !Q)	0.03948	0.06362	0.43480
	(D * !RESET_B * !Q)	0.04439	0.06855	0.43971
	(!D * !Q)	0.02758	0.05190	0.42167
	(!D * !Q)	0.03222	0.05655	0.42631
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.04104	0.06528	0.43458
	(D * RESET_B * Q)	0.04563	0.06987	0.43917
	(D * !RESET_B * !Q)	0.04412	0.06829	0.43951
	(D * !RESET_B * !Q)	0.04899	0.07318	0.44439
	(!D * !Q)	0.03224	0.05658	0.42642
	(!D * !Q)	0.03683	0.06119	0.43101
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.07822	0.10250	0.47204
	(D * RESET_B * Q)	0.08281	0.10710	0.47664
	(D * !RESET_B * !Q)	0.05388	0.07808	0.44910
	(D * !RESET_B * !Q)	0.05881	0.08302	0.45402
	(!D * !Q)	0.04163	0.06595	0.43593
	(!D * !Q)	0.04623	0.07056	0.44053

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)	0.03566	0.03568	0.03565
	(D * GATE_N * !Q) + (!D * !Q)	0.03099	0.03097	0.03097
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.04023	0.04025	0.04022
	(D * GATE_N * !Q) + (!D * !Q)	0.03531	0.03530	0.03531
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.05105	0.05105	0.05100
	(D * GATE_N * !Q) + (!D * !Q)	0.04313	0.04311	0.04307

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)	0.03166	0.03150	0.03150
	(D * GATE_N * !Q) + (!D * !Q)	0.03635	0.03622	0.03616
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.03614	0.03600	0.03598
	(D * GATE_N * !Q) + (!D * !Q)	0.04107	0.04096	0.04089
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.04416	0.04377	0.04384
	(D * GATE_N * !Q) + (!D * !Q)	0.05213	0.05178	0.05175

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00237	0.00255	0.00291	1.73348
sky130_fd_sc_hs__dlrtp_2	0.00233	0.00250	0.00302	3.25968
sky130_fd_sc_hs__dlrtp_4	0.00232	0.00249	0.00460	6.05395

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	2959.33000	3860.26000
sky130_fd_sc_hs__dlrtp_2	0.00000	3284.04000	4377.17000
sky130_fd_sc_hs__dlrtp_4	0.00000	5300.25000	7987.46000

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)	0.14975	0.49964	5.69132
	GATE->Q (-R)	0.13385	0.47118	5.20032
	RESET_B->Q (RR)	0.05488	0.41490	5.77865
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.15925	0.42536	5.50968
	GATE->Q (-R)	0.14264	0.39600	5.02731
	RESET_B->Q (RR)	0.05984	0.35761	5.84743
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.17435	0.38650	5.53156
	GATE->Q (-R)	0.15941	0.36095	5.06927
	RESET_B->Q (RR)	0.06454	0.30435	5.91928

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.12960	0.49722	5.36642
	GATE->Q (-F)	0.14265	0.36789	3.07212
	RESET_B->Q (FF)	0.05412	0.44672	5.66051
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.13254	0.44240	5.09693
	GATE->Q (-F)	0.14408	0.30854	2.76416
	RESET_B->Q (FF)	0.05373	0.38321	5.31078
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.14145	0.41095	4.95590
	GATE->Q (-F)	0.15270	0.28262	2.70659
	RESET_B->Q (FF)	0.05912	0.36229	5.49373

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 ()**	0.06483	0.59937	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.06934	0.59937	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.08513	0.59937	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	0.12281	0.14115	0.45923
	D	0.11805	0.13638	0.45423
	GATE	0.12576	0.15011	0.54263
	GATE	0.12078	0.14511	0.53708
	RESET_B	0.11326	0.12798	0.38284
	RESET_B	0.10777	0.12248	0.37699
sky130_fd_sc_hs__dlrtp_2	D	0.12394	0.14161	0.46299
	D	0.11919	0.13681	0.45816
	GATE	0.12658	0.15025	0.54475
	GATE	0.12162	0.14530	0.53867
	RESET_B	0.11419	0.13157	0.42974
	RESET_B	0.10851	0.12591	0.42324
sky130_fd_sc_hs__dlrtp_4	D	0.24756	0.26215	0.56990
	D	0.24280	0.25737	0.56479
	GATE	0.24909	0.26971	0.65302
	GATE	0.24411	0.26468	0.64569
	RESET_B	0.23989	0.27335	0.84238
	RESET_B	0.23120	0.26475	0.83153

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.05807	0.07905	0.40919
	D	0.06282	0.08377	0.41407
	GATE	0.06512	0.08900	0.45524
	GATE	0.06067	0.08451	0.45042
	RESET_B	0.06387	0.08150	0.33540
	RESET_B	0.06938	0.08687	0.34050
sky130_fd_sc_hs__dlrtp_2	D	0.07059	0.08996	0.41813
	D	0.07535	0.09459	0.42051
	GATE	0.07654	0.09876	0.46147
	GATE	0.07219	0.09442	0.45572
	RESET_B	0.07489	0.09418	0.39987
	RESET_B	0.08060	0.09986	0.40399
sky130_fd_sc_hs__dlrtp_4	D	0.10229	0.11991	0.46205
	D	0.10707	0.12459	0.46414
	GATE	0.10687	0.12698	0.49608
	GATE	0.10256	0.12267	0.48926
	RESET_B	0.10586	0.14193	0.74916
	RESET_B	0.11457	0.15061	0.75778

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)	0.03938	0.05880	0.37607
	(GATE * !RESET_B * !Q)	0.03520	0.05461	0.37190
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.04088	0.05923	0.34649
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.03638	0.05474	0.34200
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.04403	0.06339	0.38050
	(GATE * !RESET_B * !Q)	0.03985	0.05921	0.37633
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.03978	0.05809	0.34536
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.03531	0.05363	0.34089
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.05362	0.07268	0.38706
	(GATE * !RESET_B * !Q)	0.04947	0.06852	0.38291
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.07684	0.09496	0.37961
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.07238	0.09051	0.37517

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)	0.02927	0.05006	0.37363
	(GATE * !RESET_B * !Q)	0.03344	0.05424	0.37781
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02379	0.04386	0.34152
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02828	0.04836	0.34601
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.03407	0.05482	0.37823
	(GATE * !RESET_B * !Q)	0.03824	0.05900	0.38241
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02274	0.04278	0.34045
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02720	0.04726	0.34491
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.04472	0.06526	0.38603
	(GATE * !RESET_B * !Q)	0.04886	0.06940	0.39017
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.05974	0.07967	0.37472
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.06420	0.08413	0.37918

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)	0.04662	0.07039	0.43671
	(D * RESET_B * Q)	0.04192	0.06566	0.43198
	(D * !RESET_B * !Q)	0.04298	0.06838	0.46229
	(D * !RESET_B * !Q)	0.03856	0.06395	0.45788
	(!D * !Q)	0.03222	0.05598	0.42317
	(!D * !Q)	0.02748	0.05125	0.41845
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.04522	0.06898	0.43420
	(D * RESET_B * Q)	0.04057	0.06432	0.42955
	(D * !RESET_B * !Q)	0.04728	0.07264	0.46528
	(D * !RESET_B * !Q)	0.04292	0.06826	0.46093
	(!D * !Q)	0.03642	0.06019	0.42626
	(!D * !Q)	0.03177	0.05553	0.42161
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.08216	0.10571	0.46850
	(D * RESET_B * Q)	0.07751	0.10105	0.46385
	(D * !RESET_B * !Q)	0.05690	0.08187	0.47172
	(D * !RESET_B * !Q)	0.05255	0.07752	0.46738
	(!D * !Q)	0.04564	0.06918	0.43265
	(!D * !Q)	0.04098	0.06454	0.42800

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)	0.04205	0.06548	0.42793
	(D * RESET_B * Q)	0.04679	0.07022	0.43265
	(D * !RESET_B * !Q)	0.04843	0.07274	0.45299
	(D * !RESET_B * !Q)	0.05285	0.07716	0.45740
	(!D * !Q)	0.02571	0.04944	0.41524
	(!D * !Q)	0.03044	0.05416	0.41997
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.04096	0.06435	0.42548
	(D * RESET_B * Q)	0.04562	0.06901	0.43013
	(D * !RESET_B * !Q)	0.05322	0.07744	0.45622
	(D * !RESET_B * !Q)	0.05758	0.08181	0.46058
	(!D * !Q)	0.03030	0.05400	0.41848
	(!D * !Q)	0.03495	0.05866	0.42313
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.07792	0.10124	0.45999
	(D * RESET_B * Q)	0.08258	0.10590	0.46463
	(D * !RESET_B * !Q)	0.06387	0.08787	0.46422
	(D * !RESET_B * !Q)	0.06822	0.09221	0.46857
	(!D * !Q)	0.03947	0.06301	0.42510
	(!D * !Q)	0.04412	0.06766	0.42975

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)	0.03567	0.03569	0.03566
	(D * !GATE * !Q) + (!D * !Q)	0.03094	0.03092	0.03092
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.04021	0.04022	0.04019
	(D * !GATE * !Q) + (!D * !Q)	0.03527	0.03526	0.03526
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.05096	0.05098	0.05092
	(D * !GATE * !Q) + (!D * !Q)	0.04333	0.04331	0.04327

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)	0.03169	0.03151	0.03152
	(D * !GATE * !Q) + (!D * !Q)	0.03642	0.03630	0.03625
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.03619	0.03603	0.03603
	(D * !GATE * !Q) + (!D * !Q)	0.04114	0.04102	0.04095
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.04425	0.04388	0.04394
	(D * !GATE * !Q) + (!D * !Q)	0.05194	0.05161	0.05157

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00235	0.00255	1.68832	1.69477
sky130_fd_sc_hs__dlxbn_2	0.00223	0.00253	2.73467	3.20162

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	3662.43000	5189.92000
sky130_fd_sc_hs__dlxbn_2	0.00000	3833.52000	4986.93000

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)	0.15116	0.51589	5.82368
	GATE_N->Q (-R)	0.17069	0.68733	7.92532
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.15743	0.44538	5.45336
	GATE_N->Q (-R)	0.17676	0.61582	7.54558

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.13049	0.49052	5.16544
	GATE_N->Q (-F)	0.13235	0.52754	5.58059
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.13410	0.42311	4.36358
	GATE_N->Q (-F)	0.13626	0.46013	4.78186

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)	0.16065	0.65799	7.77865
	GATE_N->Q_N (-R)	0.16259	0.69488	8.19473
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.17569	0.57082	7.41559
	GATE_N->Q_N (-R)	0.17791	0.60776	7.83305

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)	0.17538	0.41396	3.66070
	GATE_N->Q_N (-F)	0.19481	0.58527	5.76212
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.19914	0.39274	3.68831
	GATE_N->Q_N (-F)	0.21845	0.56286	5.77852

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.06474	0.07499	0.24347
	D	0.06258	0.07282	0.24080
	GATE_N	0.06713	0.07943	0.26962
	GATE_N	0.06946	0.08174	0.27070
sky130_fd_sc_hs__dlxbn_2	D	0.07650	0.08569	0.25511
	D	0.07443	0.08355	0.25215
	GATE_N	0.07919	0.09044	0.28018
	GATE_N	0.08152	0.09272	0.28159

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.04473	0.05539	0.22213
	D	0.04689	0.05752	0.22368
	GATE_N	0.04740	0.06012	0.25029
	GATE_N	0.04974	0.06245	0.25240
sky130_fd_sc_hs__dlxbn_2	D	0.04443	0.05406	0.22200
	D	0.04649	0.05605	0.22329
	GATE_N	0.04707	0.05875	0.25045
	GATE_N	0.04940	0.06098	0.25211

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.06257	0.07326	0.24167
	D	0.06473	0.07538	0.24224
	GATE_N	0.06525	0.07797	0.26899
	GATE_N	0.06759	0.08029	0.27075
sky130_fd_sc_hs__dlxbn_2	D	0.06437	0.07401	0.24257
	D	0.06643	0.07598	0.24332
	GATE_N	0.06702	0.07859	0.27365
	GATE_N	0.06935	0.08089	0.27304

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.04739	0.05762	0.22527
	D	0.04524	0.05545	0.22256
	GATE_N	0.04976	0.06207	0.25119
	GATE_N	0.05210	0.06438	0.25281
sky130_fd_sc_hs__dlxbn_2	D	0.05738	0.06651	0.23453
	D	0.05531	0.06438	0.23184
	GATE_N	0.06005	0.07126	0.26146
	GATE_N	0.06238	0.07356	0.26225

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)	0.03947	0.05801	0.34806
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.03516	0.05369	0.34375
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.04408	0.06264	0.35274
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.03995	0.05851	0.34862

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)	0.02290	0.04316	0.34358
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.02721	0.04748	0.34789
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.02773	0.04803	0.34849
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.03184	0.05216	0.35262

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)	0.04465	0.06892	0.44247
	(D * Q * !Q_N)	0.03995	0.06422	0.43778
	(!D * !Q * Q_N)	0.04103	0.06541	0.44054
	(!D * !Q * Q_N)	0.03633	0.06071	0.43586
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.04936	0.07366	0.44722
	(D * Q * !Q_N)	0.04469	0.06898	0.44255
	(!D * !Q * Q_N)	0.03924	0.06363	0.43876
	(!D * !Q * Q_N)	0.03456	0.05895	0.43409

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)	0.04106	0.06530	0.43481
	(D * Q * !Q_N)	0.04575	0.07001	0.43950
	(!D * !Q * Q_N)	0.03943	0.06373	0.43382
	(!D * !Q * Q_N)	0.04412	0.06843	0.43850
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.04576	0.06996	0.43956
	(D * Q * !Q_N)	0.05044	0.07461	0.44423
	(!D * !Q * Q_N)	0.03759	0.06189	0.43203
	(!D * !Q * Q_N)	0.04227	0.06657	0.43669

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00233	0.00256	1.69721	1.72817

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	3658.95000	5190.68000

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)	0.14903	0.50766	5.73223
	GATE->Q (-R)	0.13312	0.47855	5.24437

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.13450	0.50418	5.30653
	GATE->Q (-F)	0.14446	0.36805	2.96994

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)	0.16514	0.67421	8.03011
	GATE->Q_N (-R)	0.17513	0.53816	5.69745

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)	0.17328	0.40777	3.61956
	GATE->Q_N (-F)	0.15735	0.37857	3.13323

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.06451	0.07449	0.23907
	D	0.06237	0.07234	0.23629
	GATE	0.06572	0.07878	0.27948
	GATE	0.06337	0.07637	0.27653

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.04482	0.05515	0.21745
	D	0.04696	0.05726	0.21935
	GATE	0.04711	0.05895	0.23878
	GATE	0.04477	0.05653	0.23606

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.06335	0.07367	0.23716
	D	0.06549	0.07578	0.23827
	GATE	0.06567	0.07751	0.25842
	GATE	0.06333	0.07509	0.25570

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.04752	0.05751	0.22147
	D	0.04538	0.05535	0.21874
	GATE	0.04874	0.06179	0.26138
	GATE	0.04639	0.05938	0.25854

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)	0.03970	0.05805	0.34541
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.03541	0.05377	0.34113

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)	0.02274	0.04277	0.34053
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.02699	0.04706	0.34480

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)	0.04485	0.06865	0.43373
	(D * Q * !Q_N)	0.04016	0.06394	0.42903
	(!D * !Q * Q_N)	0.04339	0.06719	0.43319
	(!D * !Q * Q_N)	0.03870	0.06248	0.42849

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)	0.04076	0.06412	0.42546
	(D * Q * !Q_N)	0.04545	0.06881	0.43015
	(!D * !Q * Q_N)	0.03691	0.06063	0.42526
	(!D * !Q * Q_N)	0.04160	0.06534	0.42996

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00233	0.00258	1.72272
sky130_fd_sc_hs__dlxtn_2	0.00239	0.00258	3.02560
sky130_fd_sc_hs__dlxtn_4	0.00238	0.00257	6.28058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	2771.53000	3865.74000
sky130_fd_sc_hs__dlxtn_2	0.00000	2996.94000	4376.25000
sky130_fd_sc_hs__dlxtn_4	0.00000	4613.36000	5447.89000

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)	0.14037	0.49957	5.78584
	GATE_N->Q (-R)	0.15956	0.66939	7.88440
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.14357	0.41552	5.42184
	GATE_N->Q (-R)	0.16176	0.58365	7.51529
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.15697	0.37305	5.76577
	GATE_N->Q (-R)	0.17397	0.54025	7.85379

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.12255	0.47351	5.07333
	GATE_N->Q (-F)	0.12547	0.51112	5.48674
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.12435	0.41527	4.63825
	GATE_N->Q (-F)	0.12637	0.45179	5.05150
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.13682	0.40511	5.07641
	GATE_N->Q (-F)	0.14061	0.44535	5.50416

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.10821	0.12819	0.45957
	D	0.10377	0.12373	0.45478
	GATE_N	0.11244	0.13635	0.51021
	GATE_N	0.11721	0.14110	0.51514
sky130_fd_sc_hs__dlxtn_2	D	0.11035	0.12987	0.46402
	D	0.10583	0.12533	0.45916
	GATE_N	0.11432	0.13795	0.51390
	GATE_N	0.11907	0.14267	0.51789
sky130_fd_sc_hs__dlxtn_4	D	0.18243	0.19948	0.52633
	D	0.17790	0.19490	0.51994
	GATE_N	0.18872	0.20970	0.57437
	GATE_N	0.19348	0.21435	0.57917

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.05681	0.07825	0.41502
	D	0.06126	0.08265	0.41862
	GATE_N	0.06188	0.08749	0.47162
	GATE_N	0.06666	0.09223	0.47642
sky130_fd_sc_hs__dlxtn_2	D	0.06734	0.08746	0.42250
	D	0.07188	0.09185	0.42479
	GATE_N	0.07250	0.09677	0.47932
	GATE_N	0.07726	0.10138	0.48170
sky130_fd_sc_hs__dlxtn_4	D	0.10390	0.12211	0.46351
	D	0.10843	0.12643	0.46558
	GATE_N	0.10947	0.13212	0.52208
	GATE_N	0.11425	0.13653	0.52584

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.03551	0.05390	0.34343
	GATE_N	0.03104	0.04943	0.33898
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.03501	0.05341	0.34309
	GATE_N	0.03046	0.04886	0.33856
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.05385	0.07223	0.36194
	GATE_N	0.04931	0.06768	0.35742

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.01929	0.03941	0.33934
	GATE_N	0.02373	0.04386	0.34379
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.01874	0.03888	0.33897
	GATE_N	0.02327	0.04342	0.34351
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.03757	0.05774	0.35784
	GATE_N	0.04210	0.06228	0.36237

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.04120	0.06541	0.43927
	(D * Q)	0.03640	0.06059	0.43447
	(!D * !Q)	0.03000	0.05430	0.42978
	(!D * !Q)	0.02521	0.04950	0.42499
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.04040	0.06467	0.43830
	(D * Q)	0.03562	0.05988	0.43353
	(!D * !Q)	0.03412	0.05847	0.43373
	(!D * !Q)	0.02934	0.05370	0.42896
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.05930	0.08355	0.45757
	(D * Q)	0.05451	0.07876	0.45280
	(!D * !Q)	0.04353	0.06785	0.44325
	(!D * !Q)	0.03876	0.06308	0.43848

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.03719	0.06131	0.43108
	(D * Q)	0.04200	0.06611	0.43588
	(!D * !Q)	0.02806	0.05223	0.42259
	(!D * !Q)	0.03286	0.05705	0.42739
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.03657	0.06068	0.43032
	(D * Q)	0.04135	0.06544	0.43509
	(!D * !Q)	0.03245	0.05667	0.42683
	(!D * !Q)	0.03722	0.06145	0.43160
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.05549	0.07961	0.44953
	(D * Q)	0.06027	0.08439	0.45431
	(!D * !Q)	0.04183	0.06604	0.43634
	(!D * !Q)	0.04660	0.07082	0.44111

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00229	0.00265	1.67092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	2727.30000	3861.24000

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)	0.16616	0.52312	5.81872
	GATE->Q (-R)	0.13559	0.48476	5.34961

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.13154	0.48894	5.13615
	GATE->Q (-F)	0.14262	0.37073	3.08708

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.10910	0.12821	0.45313
	D	0.10453	0.12363	0.44800
	GATE	0.11221	0.13441	0.46322
	GATE	0.10723	0.12941	0.45805

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.05992	0.08091	0.41576
	D	0.06448	0.08549	0.42014
	GATE	0.06663	0.08957	0.46930
	GATE	0.06209	0.08496	0.46376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.04008	0.05887	0.34913
	!GATE	0.03571	0.05450	0.34478

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.01995	0.04041	0.34520
	!GATE	0.02428	0.04479	0.34955

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.04140	0.06589	0.44012
	(D * Q)	0.03662	0.06111	0.43535
	(!D * !Q)	0.03272	0.05709	0.43019
	(!D * !Q)	0.02794	0.05231	0.42544

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.03512	0.05941	0.42954
	(D * Q)	0.03990	0.06418	0.43431
	(!D * !Q)	0.02508	0.04948	0.42049
	(!D * !Q)	0.02986	0.05427	0.42525

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00189	1.74289
sky130_fd_sc_hs__dlygate4sd2_1	0.00191	1.73408
sky130_fd_sc_hs__dlygate4sd3_1	0.00193	1.72325

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	380.87800	585.58800
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	323.43200	528.14900
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	321.88800	526.63600

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)**	0.10946	0.45695	5.38160
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.13598	0.49524	5.46829
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.23205	0.61496	5.70392

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.12169	0.52013	5.81685
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.14924	0.55495	5.82369
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.22913	0.65960	5.90593

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.02109	0.03044	0.19690
	A	0.01751	0.02687	0.19316
sky130_fd_sc_hs__dlygate4sd2_1	A	0.02074	0.02899	0.18650
	A	0.01713	0.02536	0.18288
sky130_fd_sc_hs__dlygate4sd3_1	A	0.02432	0.03151	0.18347
	A	0.02068	0.02785	0.17960

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.02305	0.03248	0.19473
	A	0.02662	0.03603	0.19689
sky130_fd_sc_hs__dlygate4sd2_1	A	0.02317	0.03139	0.18427
	A	0.02679	0.03499	0.18698
sky130_fd_sc_hs__dlygate4sd3_1	A	0.02794	0.03371	0.18038
	A	0.03160	0.03736	0.18348

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00238	0.00442	0.90522
sky130_fd_sc_hs__ebufn_2	0.00259	0.00582	1.43848
sky130_fd_sc_hs__ebufn_4	0.00284	0.00893	2.83442
sky130_fd_sc_hs__ebufn_8	0.00548	0.01487	4.67944

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	1635.63000	2629.92000
sky130_fd_sc_hs__ebufn_2	0.00000	888.43900	1181.51000
sky130_fd_sc_hs__ebufn_4	0.00000	980.39500	2073.96000
sky130_fd_sc_hs__ebufn_8	0.00000	1607.13000	4111.25000

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)	0.05035	0.49578	5.63290
	TE_B->Z (RR)	0.02408	0.37781	5.34326
	TE_B->Z (FR)	0.03467	0.56533	7.28345
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.04992	0.41014	5.27392
	TE_B->Z (RR)	0.02651	0.37878	5.34425
	TE_B->Z (FR)	0.03532	0.47624	7.06859
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.05713	0.36012	5.41359
	TE_B->Z (RR)	0.03488	0.38132	5.34682
	TE_B->Z (FR)	0.03325	0.36602	6.89310
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.06074	0.31210	5.36286
	TE_B->Z (RR)	0.06036	0.38695	5.35255
	TE_B->Z (FR)	0.03746	0.27946	6.36749

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.05144	0.41527	4.69959
	TE_B->Z (RF)	0.02401	0.37781	5.34322
	TE_B->Z (FF)	0.04158	0.38855	4.48319
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.05785	0.39338	4.62517
	TE_B->Z (RF)	0.02628	0.37879	5.34419
	TE_B->Z (FF)	0.04402	0.35819	4.41227
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.07331	0.39219	4.75044
	TE_B->Z (RF)	0.03457	0.38133	5.34668
	TE_B->Z (FF)	0.04903	0.33953	4.46499
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.07447	0.36131	4.69312
	TE_B->Z (RF)	0.05949	0.38699	5.35221
	TE_B->Z (FF)	0.06600	0.34766	4.42913

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.04226	0.06141	0.35421
	A	0.03763	0.05675	0.34931
	TE_B	0.04003	0.06029	0.35452
	TE_B	0.04828	0.06860	0.36328
sky130_fd_sc_hs__ebufn_2	A	0.02899	0.05059	0.37952
	A	0.02402	0.04559	0.37353
	TE_B	0.02522	0.04629	0.36287
	TE_B	0.03608	0.05717	0.37396
sky130_fd_sc_hs__ebufn_4	A	0.03675	0.06113	0.43448
	A	0.03129	0.05563	0.42661
	TE_B	0.03219	0.05499	0.40574
	TE_B	0.04896	0.07196	0.42257
sky130_fd_sc_hs__ebufn_8	A	0.07216	0.12176	0.87335
	A	0.06158	0.11099	0.85740
	TE_B	0.06456	0.08576	0.43366
	TE_B	0.09256	0.11392	0.46245

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.01271	0.03262	0.32638
	A	0.01734	0.03721	0.33072
	TE_B	0.01255	0.03274	0.32472
	TE_B	0.02071	0.04089	0.33285
sky130_fd_sc_hs__ebufn_2	A	0.02523	0.04502	0.36209
	A	0.03016	0.04992	0.36671
	TE_B	0.02465	0.04523	0.35563
	TE_B	0.03511	0.05565	0.36552
sky130_fd_sc_hs__ebufn_4	A	0.05313	0.07223	0.41865
	A	0.05857	0.07760	0.42393
	TE_B	0.05050	0.07140	0.40786
	TE_B	0.06671	0.08761	0.42406
sky130_fd_sc_hs__ebufn_8	A	0.10566	0.14567	0.84779
	A	0.11625	0.15616	0.85583
	TE_B	0.10202	0.11996	0.44506
	TE_B	0.12904	0.14685	0.46845

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.02917	0.04773	0.32932
	(TE_B * Z)	0.02450	0.04303	0.32464
	(TE_B * !Z)	0.02962	0.04821	0.32967
	(TE_B * !Z)	0.02497	0.04353	0.32499
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.01942	0.03951	0.35135
	(TE_B * Z)	0.01428	0.03436	0.34621
	(TE_B * !Z)	0.01985	0.03983	0.35164
	(TE_B * !Z)	0.01479	0.03479	0.34657
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.02293	0.04396	0.39038
	(TE_B * Z)	0.01724	0.03826	0.38466
	(TE_B * !Z)	0.02702	0.04800	0.39378
	(TE_B * !Z)	0.02129	0.04229	0.38799
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.03972	0.08329	0.78458
	(TE_B * Z)	0.02868	0.07223	0.77346
	(TE_B * !Z)	0.04797	0.09098	0.79107
	(TE_B * !Z)	0.03687	0.07984	0.77980

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.01226	0.03232	0.32421
	(TE_B * Z)	0.01692	0.03701	0.32890
	(TE_B * !Z)	0.01244	0.03256	0.32475
	(TE_B * !Z)	0.01713	0.03727	0.32944
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00689	0.02760	0.34419
	(TE_B * Z)	0.01201	0.03275	0.34935
	(TE_B * !Z)	0.00756	0.02832	0.34546
	(TE_B * !Z)	0.01271	0.03347	0.35063
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00772	0.03010	0.38137
	(TE_B * Z)	0.01340	0.03581	0.38710
	(TE_B * !Z)	0.00887	0.03132	0.38363
	(TE_B * !Z)	0.01461	0.03708	0.38940
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01004	0.05607	0.76742
	(TE_B * Z)	0.02110	0.06722	0.77856
	(TE_B * !Z)	0.01235	0.05855	0.77196
	(TE_B * !Z)	0.02353	0.06977	0.78320

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.02787	0.04657	0.32974
	(A * Z)	0.01967	0.03834	0.32154
	(!A * !Z)	0.01704	0.03583	0.32310
	(!A * !Z)	0.00883	0.02760	0.31489
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.01596	0.03605	0.34704
	(A * Z)	0.00541	0.02544	0.33649
	(!A * !Z)	0.01226	0.03230	0.34906
	(!A * !Z)	0.00167	0.02166	0.33853
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.01606	0.03706	0.38227
	(A * Z)	-0.00018	0.02071	0.36597
	(!A * !Z)	0.01376	0.03468	0.39065
	(!A * !Z)	-0.00256	0.01826	0.37434
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.02282	0.04144	0.38371
	(A * Z)	-0.00420	0.01427	0.35660
	(!A * !Z)	0.01793	0.03668	0.40047
	(!A * !Z)	-0.00923	0.00935	0.37328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.01299	0.03344	0.32686
	(A * Z)	0.02119	0.04163	0.33503
	(!A * !Z)	0.00616	0.02652	0.32107
	(!A * !Z)	0.01435	0.03472	0.32928
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00879	0.03016	0.34579
	(A * Z)	0.01932	0.04071	0.35634
	(!A * !Z)	0.01295	0.03402	0.34916
	(!A * !Z)	0.02354	0.04468	0.35978
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.01196	0.03512	0.38472
	(A * Z)	0.02820	0.05148	0.40104
	(!A * !Z)	0.02603	0.04870	0.39631
	(!A * !Z)	0.04238	0.06517	0.41272
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.02430	0.04587	0.39303
	(A * Z)	0.05135	0.07309	0.42009
	(!A * !Z)	0.05216	0.07289	0.41578
	(!A * !Z)	0.07936	0.10026	0.44311

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00193	0.00380	0.00298	1.72482	1.75074

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	2659.32000	3962.35000

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)	0.13146	0.50334	5.52045

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.11559	0.38893	3.31114

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)	0.16803	0.53038	5.56933

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)	0.17596	0.42232	3.28972

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)	-0.07531	-0.14151	-0.62828
	setup	CLK (R)	0.09651	0.15496	0.62535

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)	-0.13279	-0.24092	-3.14619
	setup	CLK (R)	0.18434	0.29292	3.21351

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)	-0.07531	-0.14151	-0.62828
	setup	CLK (R)	0.09651	0.15496	0.62535

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)	-0.13279	-0.24092	-3.14619
	setup	CLK (R)	0.18434	0.29292	3.21351

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)	-0.00422	0.01008	0.60733
	setup	CLK (R)	0.20608	0.22174	0.59193

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)	-0.11722	-0.20463	-2.45139
	setup	CLK (R)	0.15540	0.23545	3.07927

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)	-0.00422	0.01008	0.60733
	hold	CLK (R)	-0.08298	-0.08636	-0.34723
	setup	CLK (R)	0.09354	0.13512	0.50128
	setup	CLK (R)	0.20608	0.22174	0.59193

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)	-0.14268	-0.22512	-3.07622
	hold	CLK (R)	-0.11722	-0.20463	-2.45139
	setup	CLK (R)	0.15540	0.23545	3.07927
	setup	CLK (R)	0.12672	0.21189	2.45655

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 ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.08964	0.59937	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 ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK ()	0.13475	0.59937	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	0.05168	0.06313	0.26042
	CLK	0.04901	0.06043	0.25710

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.05299	0.06443	0.27441
	CLK	0.05011	0.06150	0.27109

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.06987	0.08133	0.29260
	CLK	0.06699	0.07838	0.28917

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.04048	0.05188	0.24781
	CLK	0.03781	0.04921	0.24456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.04151	0.04707	0.15213
	(CLK * DE)	0.03762	0.04317	0.14823
	(CLK * !DE)	0.02664	0.02665	0.02663
	(CLK * !DE)	0.02426	0.02423	0.02421
	(!CLK * DE * Q * !Q_N)	0.03724	0.04682	0.20018
	(!CLK * DE * Q * !Q_N)	0.03340	0.04296	0.19632
	(!CLK * DE * !Q * Q_N)	0.04037	0.04970	0.20112
	(!CLK * DE * !Q * Q_N)	0.03649	0.04580	0.19723
	(!CLK * !DE)	0.02646	0.02645	0.02642
	(!CLK * !DE)	0.02407	0.02403	0.02399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.03473	0.04076	0.14806
	(CLK * DE)	0.03861	0.04466	0.15196
	(CLK * !DE)	0.02571	0.02571	0.02572
	(CLK * !DE)	0.02812	0.02814	0.02813
	(!CLK * DE * Q * !Q_N)	0.05108	0.05772	0.18954
	(!CLK * DE * Q * !Q_N)	0.05492	0.06157	0.19339
	(!CLK * DE * !Q * Q_N)	0.05155	0.05868	0.19371
	(!CLK * DE * !Q * Q_N)	0.05544	0.06258	0.19760
	(!CLK * !DE)	0.02575	0.02571	0.02572
	(!CLK * !DE)	0.02817	0.02814	0.02813

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.04696	0.06519	0.37545
	CLK	0.03817	0.05638	0.36665
	(!CLK * D * Q * !Q_N)	0.02492	0.03767	0.23854
	(!CLK * D * Q * !Q_N)	0.01784	0.03054	0.23145
	(!CLK * D * !Q * Q_N)	0.04580	0.06696	0.42320
	(!CLK * D * !Q * Q_N)	0.03701	0.05817	0.41440
	(!CLK * !D * Q * !Q_N)	0.05942	0.07198	0.28307
	(!CLK * !D * Q * !Q_N)	0.05382	0.06633	0.27746
	(!CLK * !D * !Q * Q_N)	0.03889	0.05149	0.25288
	(!CLK * !D * !Q * Q_N)	0.03179	0.04436	0.24578

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.03007	0.04960	0.36747
	CLK	0.03886	0.05840	0.37626
	(!CLK * D * Q * !Q_N)	0.01197	0.02545	0.23180
	(!CLK * D * Q * !Q_N)	0.01907	0.03255	0.23890
	(!CLK * D * !Q * Q_N)	0.04652	0.06646	0.41156
	(!CLK * D * !Q * Q_N)	0.05531	0.07527	0.42031
	(!CLK * !D * Q * !Q_N)	0.03152	0.04569	0.27461
	(!CLK * !D * Q * !Q_N)	0.03714	0.05134	0.28022
	(!CLK * !D * !Q * Q_N)	0.02587	0.03942	0.24601
	(!CLK * !D * !Q * Q_N)	0.03296	0.04653	0.25310

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)	0.03975	0.06417	0.45595
	(D * Q * !Q_N)	0.03416	0.05859	0.45038
	(D * !DE * !Q * Q_N)	0.04502	0.06964	0.46259
	(D * !DE * !Q * Q_N)	0.03945	0.06405	0.45702
	(!D * !Q * Q_N)	0.05075	0.07537	0.46832
	(!D * !Q * Q_N)	0.04518	0.06978	0.46275
	(!D * !DE * Q * !Q_N)	0.03450	0.05893	0.45071
	(!D * !DE * Q * !Q_N)	0.02891	0.05335	0.44514

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)	0.02797	0.05260	0.44295
	(D * Q * !Q_N)	0.03352	0.05818	0.44853
	(D * DE * !Q * Q_N)	0.04401	0.06998	0.47754
	(D * DE * !Q * Q_N)	0.04955	0.07556	0.48311
	(D * !DE * !Q * Q_N)	0.03734	0.06177	0.45058
	(D * !DE * !Q * Q_N)	0.04288	0.06735	0.45613
	(!D * DE * Q * !Q_N)	0.05959	0.08430	0.48301
	(!D * DE * Q * !Q_N)	0.06514	0.08989	0.48857
	(!D * !Q * Q_N)	0.04307	0.06750	0.45631
	(!D * !Q * Q_N)	0.04861	0.07308	0.46186
	(!D * !DE * Q * !Q_N)	0.02272	0.04735	0.43771
	(!D * !DE * Q * !Q_N)	0.02827	0.05293	0.44329

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00196	0.00366	0.00292	1.72065

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	2421.33000	4024.17000

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)	0.12505	0.49424	5.49908

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.10851	0.37127	3.18955

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)	-0.07602	-0.14033	-0.62582
	setup	CLK (R)	0.09247	0.15528	0.62575

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)	-0.13588	-0.24173	-3.13647
	setup	CLK (R)	0.18111	0.29418	3.21902

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)	-0.00358	0.01008	0.60738
	setup	CLK (R)	0.20790	0.22234	0.59410

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)	-0.11574	-0.20752	-2.46792
	setup	CLK (R)	0.15688	0.23545	3.07618

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)	-0.00358	0.01008	0.60738
	hold	CLK (R)	-0.08119	-0.08488	-0.33459
	setup	CLK (R)	0.09156	0.13311	0.50072
	setup	CLK (R)	0.20790	0.22234	0.59410

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)	-0.14472	-0.22471	-3.07262
	hold	CLK (R)	-0.11574	-0.20752	-2.46792
	setup	CLK (R)	0.15688	0.23545	3.07618
	setup	CLK (R)	0.12341	0.21166	2.47110

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 ()	0.06257	0.59937	16.50020
	min_pulse_width	CLK ()	0.08513	0.59937	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 ()	0.09866	0.59937	16.50020
	min_pulse_width	CLK ()	0.13700	0.59937	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	0.08172	0.10655	0.50448
	CLK	0.07646	0.10128	0.49926

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.09681	0.12116	0.54107
	CLK	0.09117	0.11542	0.53422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.04187	0.04747	0.15259
	(CLK * DE)	0.03796	0.04353	0.14866
	(CLK * !DE)	0.02718	0.02717	0.02715
	(CLK * !DE)	0.02473	0.02472	0.02470
	(!CLK * DE * Q)	0.03250	0.04214	0.19561
	(!CLK * DE * Q)	0.02862	0.03824	0.19172
	(!CLK * DE * !Q)	0.04069	0.05007	0.20170
	(!CLK * DE * !Q)	0.03677	0.04614	0.19777
	(!CLK * !DE)	0.02699	0.02698	0.02695
	(!CLK * !DE)	0.02458	0.02453	0.02449

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.03517	0.04123	0.14860
	(CLK * DE)	0.03908	0.04517	0.15253
	(CLK * !DE)	0.02627	0.02627	0.02628
	(CLK * !DE)	0.02871	0.02872	0.02872
	(!CLK * DE * Q)	0.04579	0.05247	0.18446
	(!CLK * DE * Q)	0.04966	0.05636	0.18835
	(!CLK * DE * !Q)	0.05157	0.05873	0.19389
	(!CLK * DE * !Q)	0.05548	0.06267	0.19781
	(!CLK * !DE)	0.02632	0.02628	0.02629
	(!CLK * !DE)	0.02877	0.02876	0.02873

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.04715	0.06556	0.37549
	CLK	0.03861	0.05699	0.36696
	(!CLK * D * Q)	0.02006	0.03292	0.23379
	(!CLK * D * Q)	0.01322	0.02605	0.22696
	(!CLK * D * !Q)	0.04593	0.06730	0.42335
	(!CLK * D * !Q)	0.03740	0.05876	0.41480
	(!CLK * !D * Q)	0.05394	0.06656	0.27777
	(!CLK * !D * Q)	0.04860	0.06118	0.27240
	(!CLK * !D * !Q)	0.03927	0.05199	0.25342
	(!CLK * !D * !Q)	0.03244	0.04511	0.24658

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.03055	0.05004	0.36760
	CLK	0.03908	0.05860	0.37613
	(!CLK * D * Q)	0.00734	0.02079	0.22716
	(!CLK * D * Q)	0.01416	0.02765	0.23400
	(!CLK * D * !Q)	0.04657	0.06649	0.41130
	(!CLK * D * !Q)	0.05511	0.07505	0.41982
	(!CLK * !D * Q)	0.02681	0.04098	0.26989
	(!CLK * !D * Q)	0.03217	0.04633	0.27525
	(!CLK * !D * !Q)	0.02645	0.03997	0.24661
	(!CLK * !D * !Q)	0.03328	0.04684	0.25344

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.03432	0.05897	0.45095
	(D * Q)	0.02887	0.05350	0.44548
	(D * !DE * !Q)	0.04535	0.07016	0.46343
	(D * !DE * !Q)	0.03989	0.06467	0.45796
	(!D * !Q)	0.05108	0.07587	0.46915
	(!D * !Q)	0.04562	0.07039	0.46368
	(!D * !DE * Q)	0.02908	0.05372	0.44570
	(!D * !DE * Q)	0.02362	0.04825	0.44023

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.02323	0.04798	0.43876
	(D * Q)	0.02868	0.05347	0.44424
	(D * DE * !Q)	0.04390	0.07005	0.47867
	(D * DE * !Q)	0.04935	0.07552	0.48412
	(D * !DE * !Q)	0.03725	0.06182	0.45103
	(D * !DE * !Q)	0.04270	0.06730	0.45649
	(!D * DE * Q)	0.05431	0.07914	0.47678
	(!D * DE * Q)	0.05976	0.08463	0.48224
	(!D * !Q)	0.04298	0.06756	0.45676
	(!D * !Q)	0.04843	0.07304	0.46222
	(!D * !DE * Q)	0.01798	0.04273	0.43352
	(!D * !DE * Q)	0.02343	0.04822	0.43899

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00289	0.00330	0.92982
sky130_fd_sc_hs__einvn_2	0.00544	0.00497	1.59759
sky130_fd_sc_hs__einvn_4	0.01085	0.00887	3.03060
sky130_fd_sc_hs__einvn_8	0.02171	0.01481	5.07400

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	537.38300	676.33200
sky130_fd_sc_hs__einvn_2	0.00000	628.49000	1032.82000
sky130_fd_sc_hs__einvn_4	0.00000	716.38900	2065.28000
sky130_fd_sc_hs__einvn_8	0.00000	1078.54000	4099.72000

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)	0.02871	0.66681	8.96557
	TE_B->Z (RR)	0.02609	0.37739	5.34282
	TE_B->Z (FR)	0.03410	0.57592	7.49888
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02066	0.56441	8.70538
	TE_B->Z (RR)	0.03467	0.37960	5.34510
	TE_B->Z (FR)	0.03135	0.45930	7.11338
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.01944	0.48766	8.73206
	TE_B->Z (RR)	0.03551	0.38140	5.34693
	TE_B->Z (FR)	0.03033	0.35266	6.85601
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02117	0.42472	8.49678
	TE_B->Z (RR)	0.05852	0.38954	5.35521
	TE_B->Z (FR)	0.03645	0.26645	6.27930

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01816	0.37473	4.96815
	TE_B->Z (RF)	0.02583	0.37739	5.34280
	TE_B->Z (FF)	0.04043	0.37968	4.30005
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01496	0.31034	4.86383
	TE_B->Z (RF)	0.03406	0.37960	5.34499
	TE_B->Z (FF)	0.04445	0.35134	4.31249
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01440	0.25562	4.88228
	TE_B->Z (RF)	0.03511	0.38141	5.34677
	TE_B->Z (FF)	0.04527	0.31875	4.39040
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01619	0.22384	4.96654
	TE_B->Z (RF)	0.05771	0.38959	5.35478
	TE_B->Z (FF)	0.06068	0.32845	4.43952

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00020	0.00841	0.12847
	A	0.00509	0.01370	0.13334
	TE_B	0.00305	0.01724	0.22747
	TE_B	0.01129	0.02551	0.23583
sky130_fd_sc_hs__einvn_2	A	-0.00166	0.01618	0.23744
	A	0.00860	0.02642	0.24658
	TE_B	0.00480	0.01875	0.23054
	TE_B	0.01831	0.03236	0.24423
sky130_fd_sc_hs__einvn_4	A	-0.00312	0.03397	0.44662
	A	0.01735	0.05451	0.46531
	TE_B	0.01007	0.03442	0.40381
	TE_B	0.03512	0.05970	0.43139
sky130_fd_sc_hs__einvn_8	A	-0.00595	0.06560	0.81163
	A	0.03519	0.10646	0.84713
	TE_B	0.02056	0.04345	0.41064
	TE_B	0.06519	0.08843	0.45780

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.01442	0.02062	0.10614
	A	0.00911	0.01528	0.09970
	TE_B	0.01282	0.02645	0.22396
	TE_B	0.01714	0.03072	0.22801
sky130_fd_sc_hs__einvn_2	A	0.02715	0.04058	0.20058
	A	0.01689	0.03031	0.18856
	TE_B	0.02421	0.03767	0.24219
	TE_B	0.02995	0.04340	0.24770
sky130_fd_sc_hs__einvn_4	A	0.05493	0.08381	0.38432
	A	0.03446	0.06328	0.36125
	TE_B	0.04960	0.07302	0.42886
	TE_B	0.05887	0.08224	0.43661
sky130_fd_sc_hs__einvn_8	A	0.11141	0.16816	0.71261
	A	0.07034	0.12694	0.67142
	TE_B	0.10190	0.12287	0.46061
	TE_B	0.11459	0.13554	0.47306

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00685	0.00685	0.00683
	(TE_B * Z)	0.00393	0.00392	0.00398
	(TE_B * !Z)	0.00704	0.00704	0.00716
	(TE_B * !Z)	0.00456	0.00457	0.00483
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00780	0.00782	0.00771
	(TE_B * Z)	0.00216	0.00211	0.00217
	(TE_B * !Z)	0.00847	0.00839	0.00865
	(TE_B * !Z)	0.00360	0.00343	0.00396
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00822	0.00823	0.00801
	(TE_B * Z)	-0.00278	-0.00282	-0.00268
	(TE_B * !Z)	0.00944	0.00929	0.00974
	(TE_B * !Z)	0.00013	-0.00022	0.00077
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.01158	0.01165	0.01121
	(TE_B * Z)	-0.00991	-0.01009	-0.00977
	(TE_B * !Z)	0.01400	0.01374	0.01460
	(TE_B * !Z)	-0.00439	-0.00489	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00489	0.00489	0.00487
	(TE_B * Z)	0.00789	0.00788	0.00772
	(TE_B * !Z)	0.00509	0.00512	0.00516
	(TE_B * !Z)	0.00836	0.00838	0.00813
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00411	0.00411	0.00409
	(TE_B * Z)	0.00995	0.00994	0.00964
	(TE_B * !Z)	0.00405	0.00397	0.00422
	(TE_B * !Z)	0.01042	0.01032	0.01008
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00149	0.00148	0.00145
	(TE_B * Z)	0.01288	0.01285	0.01218
	(TE_B * !Z)	0.00131	0.00260	0.00372
	(TE_B * !Z)	0.01653	0.01754	0.01654
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00121	-0.00130	-0.00135
	(TE_B * Z)	0.02111	0.02117	0.01971
	(TE_B * !Z)	-0.00128	-0.00157	-0.00072
	(TE_B * !Z)	0.02353	0.02311	0.02177

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00985	0.02341	0.23386
	(A * !Z)	0.00399	0.01743	0.22824
	(!A * Z)	0.00939	0.02295	0.23134
	(!A * Z)	0.00333	0.01684	0.22527
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.01126	0.02407	0.23395
	(A * !Z)	0.00255	0.01517	0.22574
	(!A * Z)	0.01014	0.02298	0.22845
	(!A * Z)	0.00096	0.01375	0.21926
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.01368	0.03606	0.40829
	(A * !Z)	-0.00160	0.02046	0.39408
	(!A * Z)	0.01160	0.03399	0.39760
	(!A * Z)	-0.00460	0.01763	0.38137
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01686	0.03724	0.41589
	(A * !Z)	-0.00824	0.01155	0.39312
	(!A * Z)	0.01298	0.03315	0.39444
	(!A * Z)	-0.01389	0.00611	0.36759

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00655	0.02093	0.23347
	(A * !Z)	0.01259	0.02697	0.23951
	(!A * Z)	0.00200	0.01663	0.23028
	(!A * Z)	0.00808	0.02274	0.23638
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.01274	0.02646	0.23537
	(A * !Z)	0.02178	0.03555	0.24445
	(!A * Z)	0.00359	0.01768	0.22873
	(!A * Z)	0.01280	0.02695	0.23797
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.02573	0.04959	0.41337
	(A * !Z)	0.04168	0.06567	0.42933
	(!A * Z)	0.00738	0.03198	0.40012
	(!A * Z)	0.02366	0.04838	0.41649
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.05171	0.07357	0.43123
	(A * !Z)	0.07792	0.09995	0.45759
	(!A * Z)	0.01526	0.03840	0.40493
	(!A * Z)	0.04219	0.06549	0.43202

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00289	0.00294	0.80022
sky130_fd_sc_hs__einvp_2	0.00536	0.00450	1.64070
sky130_fd_sc_hs__einvp_4	0.01084	0.00807	3.03162
sky130_fd_sc_hs__einvp_8	0.02172	0.01272	5.06560

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	140.38300	688.20200
sky130_fd_sc_hs__einvp_2	0.00000	407.80300	1695.83000
sky130_fd_sc_hs__einvp_4	0.00000	546.83100	2574.48000
sky130_fd_sc_hs__einvp_8	0.00000	908.21100	4604.77000

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)	0.03263	0.69971	9.07884
	TE->Z (FR)	0.05534	0.37721	5.34263
	TE->Z (RR)	0.05514	0.49236	5.05299
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02037	0.56168	8.71825
	TE->Z (FR)	0.05712	0.37839	5.34378
	TE->Z (RR)	0.05385	0.40190	5.34729
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.01953	0.48670	8.71268
	TE->Z (FR)	0.06796	0.38041	5.34579
	TE->Z (RR)	0.05241	0.31568	5.17966
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02113	0.42575	8.53860
	TE->Z (FR)	0.11755	0.38706	5.35203
	TE->Z (RR)	0.06629	0.29614	5.03890

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01839	0.34596	4.34539
	TE->Z (FF)	0.05568	0.37717	5.34262
	TE->Z (RF)	0.01812	0.28099	3.37981
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01451	0.30053	4.75749
	TE->Z (FF)	0.05807	0.37830	5.34376
	TE->Z (RF)	0.01656	0.22408	3.60422
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01460	0.25943	4.94350
	TE->Z (FF)	0.06829	0.38021	5.34572
	TE->Z (RF)	0.01754	0.16116	3.42393
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01637	0.23366	5.15090
	TE->Z (FF)	0.11782	0.38654	5.35188
	TE->Z (RF)	0.02203	0.10645	3.04406

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00227	0.01015	0.12335
	A	0.00769	0.01512	0.12854
	TE	0.01166	0.02052	0.16196
	TE	0.00855	0.01742	0.15888
sky130_fd_sc_hs__einvp_2	A	0.01652	0.03499	0.26184
	A	0.02664	0.04508	0.27088
	TE	0.03083	0.04362	0.25023
	TE	0.02703	0.03985	0.24645
sky130_fd_sc_hs__einvp_4	A	0.01114	0.04829	0.46177
	A	0.03159	0.06871	0.48035
	TE	0.04034	0.06257	0.42740
	TE	0.03468	0.05695	0.42176
sky130_fd_sc_hs__einvp_8	A	0.00815	0.07641	0.78040
	A	0.04922	0.11749	0.81556
	TE	0.06133	0.08173	0.44334
	TE	0.05654	0.07699	0.43857

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.01687	0.02238	0.10168
	A	0.01146	0.01694	0.09607
	TE	0.02217	0.03123	0.17740
	TE	0.01479	0.02380	0.16991
sky130_fd_sc_hs__einvp_2	A	0.03889	0.05267	0.21633
	A	0.02878	0.04256	0.20480
	TE	0.04639	0.05879	0.25936
	TE	0.03448	0.04688	0.24650
sky130_fd_sc_hs__einvp_4	A	0.06450	0.09340	0.39391
	A	0.04404	0.07275	0.37156
	TE	0.07837	0.10006	0.45134
	TE	0.05612	0.07763	0.42834
sky130_fd_sc_hs__einvp_8	A	0.12350	0.17833	0.69734
	A	0.08246	0.13711	0.65652
	TE	0.14306	0.16203	0.49778
	TE	0.10482	0.12372	0.45848

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00091	0.00092	0.00091
	(!TE * Z)	-0.00188	-0.00189	-0.00184
	(!TE * !Z)	0.00103	0.00104	0.00111
	(!TE * !Z)	-0.00130	-0.00131	-0.00106
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00169	0.00170	0.00161
	(!TE * Z)	-0.00380	-0.00385	-0.00384
	(!TE * !Z)	0.00214	0.00207	0.00226
	(!TE * !Z)	-0.00240	-0.00260	-0.00206
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00323	0.00327	0.00309
	(!TE * Z)	-0.00754	-0.00766	-0.00762
	(!TE * !Z)	0.00415	0.00402	0.00443
	(!TE * !Z)	-0.00489	-0.00519	-0.00407
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00622	0.00631	0.00596
	(!TE * Z)	-0.01488	-0.01513	-0.01495
	(!TE * !Z)	0.00794	0.00770	0.00836
	(!TE * !Z)	-0.00959	-0.01015	-0.00809

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00070	-0.00072	-0.00073
	(!TE * Z)	0.00214	0.00214	0.00198
	(!TE * !Z)	-0.00054	-0.00052	-0.00053
	(!TE * !Z)	0.00266	0.00268	0.00240
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00131	-0.00131	-0.00132
	(!TE * Z)	0.00438	0.00437	0.00409
	(!TE * !Z)	-0.00131	-0.00137	-0.00119
	(!TE * !Z)	0.00476	0.00467	0.00447
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00241	-0.00245	-0.00244
	(!TE * Z)	0.00884	0.00890	0.00821
	(!TE * !Z)	-0.00238	-0.00249	-0.00213
	(!TE * !Z)	0.00982	0.00963	0.00914
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00475	-0.00484	-0.00487
	(!TE * Z)	0.01716	0.01724	0.01589
	(!TE * !Z)	-0.00468	-0.00490	-0.00427
	(!TE * !Z)	0.01935	0.01895	0.01778

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.01432	0.02371	0.17330
	(A * !Z)	0.00899	0.01835	0.16795
	(!A * Z)	0.00905	0.01854	0.16991
	(!A * Z)	0.00384	0.01331	0.16469
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.02815	0.04080	0.24358
	(A * !Z)	0.01985	0.03247	0.23525
	(!A * Z)	0.01862	0.03154	0.23724
	(!A * Z)	0.01078	0.02364	0.22937
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.04760	0.06957	0.42684
	(A * !Z)	0.03281	0.05473	0.41201
	(!A * Z)	0.02875	0.05113	0.41418
	(!A * Z)	0.01484	0.03722	0.40022
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.08398	0.10351	0.45278
	(A * !Z)	0.06082	0.08022	0.42954
	(!A * Z)	0.04681	0.06737	0.42782
	(!A * Z)	0.02528	0.04571	0.40623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00139	0.00836	0.16315
	(A * !Z)	0.00393	0.01374	0.16827
	(!A * Z)	-0.00168	0.00789	0.15993
	(!A * Z)	0.00351	0.01311	0.16508
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00305	0.01048	0.22630
	(A * !Z)	0.00533	0.01886	0.23404
	(!A * Z)	-0.00391	0.00930	0.22011
	(!A * Z)	0.00391	0.01716	0.22789
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00545	0.01797	0.39502
	(A * !Z)	0.00941	0.03290	0.40875
	(!A * Z)	-0.00702	0.01571	0.38261
	(!A * Z)	0.00686	0.02966	0.39641
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01052	0.01141	0.39640
	(A * !Z)	0.01276	0.03506	0.41753
	(!A * Z)	-0.01326	0.00720	0.37167
	(!A * Z)	0.00824	0.02880	0.39294

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00296	0.00704	0.00521	0.88405	1.70727

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	6868.93000	7959.23000

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)	0.11786	0.52597	4.21058
	B->COUT (RR)	0.09871	0.47984	4.63496
	CIN->COUT (FR)	0.04739	0.60432	7.67926

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.11438	0.52058	4.52726
	B->COUT (FF)	0.10799	0.50247	4.95037
	CIN->COUT (RF)	0.03313	0.37963	4.67655

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)	-	0.14487	0.66221	7.72963
	B->SUM (-R)	-	0.13764	0.65886	8.01779
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.06771	0.47031	6.00668
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.09623	0.58995	7.58909

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)	-	0.18404	0.59849	5.58787
	B->SUM (-F)	-	0.13895	0.54626	5.70201
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.07865	0.51913	6.13570
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.08863	0.33913	3.32303

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.11877	0.12969	0.33484
	A	0.11582	0.12665	0.33121
	B	0.12410	0.14089	0.47181
	B	0.11746	0.13423	0.46504
	CIN	0.11188	0.12810	0.38797
	CIN	0.11682	0.13301	0.39280

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.07684	0.08763	0.29254
	A	0.07979	0.09071	0.29729
	B	0.06447	0.08512	0.45520
	B	0.07114	0.09190	0.46369
	CIN	0.06887	0.08708	0.36679
	CIN	0.06394	0.08228	0.36348

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.20146	0.22393	0.63776
	A	-	0.19619	0.21866	0.63230
	B	-	0.18637	0.23056	1.05287
	B	-	0.17309	0.21764	1.04424
	CIN	(A * B) + (!A * !B)	0.16307	0.20852	0.89323
	CIN	(A * B) + (!A * !B)	0.17293	0.21879	0.90978
	CIN	(A * !B) + (!A * B)	0.09555	0.11330	0.38200
	CIN	(A * !B) + (!A * B)	0.09062	0.10854	0.38041

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.15874	0.18062	0.58863
	A	-	0.16401	0.18589	0.59372
	B	-	0.16473	0.20951	0.99166
	B	-	0.17806	0.22206	0.99094
	CIN	(A * B) + (!A * !B)	0.15620	0.19909	0.87109
	CIN	(A * B) + (!A * !B)	0.14631	0.18871	0.85401
	CIN	(A * !B) + (!A * B)	0.07939	0.09465	0.33881
	CIN	(A * !B) + (!A * B)	0.08433	0.09958	0.34308

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00294	0.00899	0.00524	0.92154	1.65337

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	6879.59000	8077.81000

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)	0.14228	0.61286	6.05508
	B->COUT_N (FR)	0.09744	0.64584	8.17349
	CI->COUT_N (FR)	0.04289	0.59135	7.66764

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)	0.11227	0.38433	2.56928
	B->COUT_N (RF)	0.07138	0.43759	5.36430
	CI->COUT_N (RF)	0.03222	0.38534	4.87835

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)	-	0.13200	0.64536	7.59184
	B->SUM (-R)	-	0.11456	0.62372	7.83845
	CI->SUM (RR)	(A * B) + (!A * !B)	0.06593	0.46625	5.91971
	CI->SUM (FR)	(A * !B) + (!A * B)	0.09622	0.59488	7.60953

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)	-	0.16839	0.57730	5.47096
	B->SUM (-F)	-	0.12179	0.50789	5.43937
	CI->SUM (FF)	(A * B) + (!A * !B)	0.07566	0.49659	5.83942
	CI->SUM (RF)	(A * !B) + (!A * B)	0.09214	0.34391	3.34199

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	0.11530	0.12572	0.32649
	A	0.11801	0.12837	0.32901
	B	0.10856	0.13916	0.62917
	B	0.11696	0.14763	0.63755
	CI	0.07840	0.09671	0.37473
	CI	0.08335	0.10159	0.37895

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.07954	0.09018	0.29872
	A	0.07682	0.08763	0.29803
	B	0.09473	0.12295	0.60883
	B	0.08630	0.11447	0.60057
	CI	0.08259	0.09968	0.37582
	CI	0.07762	0.09473	0.37061

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.20918	0.23242	0.64231
	A	-	0.20373	0.22699	0.63649
	B	-	0.24148	0.30886	1.38733
	B	-	0.22469	0.29161	1.36156
	CI	(A * B) + (!A * !B)	0.19893	0.24489	0.95699
	CI	(A * B) + (!A * !B)	0.18897	0.23474	0.94430
	CI	(A * !B) + (!A * B)	0.07736	0.09513	0.35966
	CI	(A * !B) + (!A * B)	0.08231	0.09997	0.36262

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.16343	0.18558	0.59126
	A	-	0.16886	0.19102	0.59716
	B	-	0.15954	0.22318	1.27957
	B	-	0.17636	0.24020	1.29979
	CI	(A * B) + (!A * !B)	0.16062	0.20521	0.89886
	CI	(A * B) + (!A * !B)	0.17056	0.21532	0.91059
	CI	(A * !B) + (!A * B)	0.07596	0.09275	0.35913
	CI	(A * !B) + (!A * B)	0.07098	0.08774	0.35444

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00495	0.00705	0.00262	1.41944	1.65871
sky130_fd_sc_hs__fah_2	0.00499	0.00798	0.00275	2.76781	3.16363
sky130_fd_sc_hs__fah_4	0.00491	0.00726	0.00264	5.04392	6.21479

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	6875.02000	8081.60000
sky130_fd_sc_hs__fah_2	0.00000	7418.15000	8619.38000
sky130_fd_sc_hs__fah_4	0.00000	8529.79000	9790.90000

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)	0.15833	0.54880	5.59162
	B->COUT (RR)	0.12020	0.53661	5.59379
	CI->COUT (RR)	0.09251	0.54013	6.20885
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.16182	0.45763	5.35392
	B->COUT (RR)	0.11544	0.47091	6.24779
	CI->COUT (RR)	0.08634	0.42095	5.53598
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.17384	0.41615	5.49317
	B->COUT (RR)	0.13603	0.40127	5.45175
	CI->COUT (RR)	0.11152	0.42419	6.13217

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.16180	0.55617	5.20678
	B->COUT (FF)	0.14043	0.54852	5.41810
	CI->COUT (FF)	0.09878	0.54069	5.76081
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.16352	0.51361	4.85599
	B->COUT (FF)	0.14741	0.52182	5.44541
	CI->COUT (FF)	0.10074	0.49212	5.38737
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.17726	0.51876	4.98405
	B->COUT (FF)	0.15537	0.51715	5.43507
	CI->COUT (FF)	0.11900	0.49220	5.50606

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)	-	0.15288	0.70530	8.18243
	B->SUM (-R)	-	0.14117	0.66943	8.06745
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09061	0.50211	5.81458
	CI->SUM (FR)	(A * !B) + (!A * B)	0.16196	0.72594	8.29451
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.16040	0.60700	7.71606
	B->SUM (-R)	-	0.14400	0.58241	7.88287
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08789	0.41652	5.66656
	CI->SUM (FR)	(A * !B) + (!A * B)	0.15626	0.61220	7.83248
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.17774	0.57006	8.05226
	B->SUM (-R)	-	0.16431	0.55763	8.12808
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11617	0.41485	5.87523
	CI->SUM (FR)	(A * !B) + (!A * B)	0.20976	0.63282	8.23243

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)	-	0.15943	0.56485	5.55642
	B->SUM (-F)	-	0.14697	0.56309	6.13098
	CI->SUM (FF)	(A * B) + (!A * !B)	0.09937	0.54239	5.74157
	CI->SUM (RF)	(A * !B) + (!A * B)	0.14930	0.47842	3.90211
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.17136	0.52909	5.26376
	B->SUM (-F)	-	0.15098	0.51873	5.33860
	CI->SUM (FF)	(A * B) + (!A * !B)	0.10620	0.50832	5.87332
	CI->SUM (RF)	(A * !B) + (!A * B)	0.13056	0.38376	3.11249
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.17774	0.52786	5.48257
	B->SUM (-F)	-	0.16462	0.52287	5.53082
	CI->SUM (FF)	(A * B) + (!A * !B)	0.12669	0.50613	5.74918
	CI->SUM (RF)	(A * !B) + (!A * B)	0.19477	0.48063	3.97217

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.13029	0.15056	0.51103
	A	0.12571	0.14594	0.50618
	B	0.12943	0.14957	0.55132
	B	0.12303	0.14311	0.54443
	CI	0.11936	0.12814	0.30025
	CI	0.11716	0.12586	0.29747
sky130_fd_sc_hs__fah_2	A	0.14525	0.16159	0.51543
	A	0.14042	0.15677	0.50994
	B	0.14536	0.16038	0.55366
	B	0.13806	0.15302	0.54553
	CI	0.12823	0.13392	0.29898
	CI	0.12563	0.13131	0.29575
sky130_fd_sc_hs__fah_4	A	0.17834	0.18531	0.53671
	A	0.17380	0.18068	0.53113
	B	0.17917	0.18623	0.58334
	B	0.17248	0.17953	0.57500
	CI	0.16772	0.16813	0.35174
	CI	0.16542	0.16577	0.34733

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.08429	0.10399	0.45902
	A	0.08885	0.10855	0.46303
	B	0.07498	0.09616	0.48042
	B	0.08119	0.10235	0.48610
	CI	0.06832	0.07752	0.25316
	CI	0.07053	0.07970	0.25515
sky130_fd_sc_hs__fah_2	A	0.08851	0.10566	0.46370
	A	0.09331	0.11038	0.46686
	B	0.07601	0.09210	0.46528
	B	0.08332	0.09939	0.47174
	CI	0.07489	0.08024	0.24657
	CI	0.07749	0.08274	0.24885
sky130_fd_sc_hs__fah_4	A	0.12266	0.12930	0.47803
	A	0.12720	0.13379	0.48059
	B	0.11237	0.12190	0.49505
	B	0.11896	0.12836	0.50077
	CI	0.10756	0.10583	0.28362
	CI	0.10985	0.10800	0.28476

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.20891	0.24943	0.96006
	A	-	0.19959	0.24009	0.95069
	B	-	0.23892	0.28724	1.12862
	B	-	0.22595	0.27423	1.11582
	CI	(A * B) + (!A * !B)	0.18644	0.20474	0.50196
	CI	(A * B) + (!A * !B)	0.18149	0.19976	0.49617
	CI	(A * !B) + (!A * B)	0.10335	0.11250	0.28718
	CI	(A * !B) + (!A * B)	0.10556	0.11468	0.28914
sky130_fd_sc_hs__fah_2	A	-	0.22683	0.26422	0.95953
	A	-	0.21716	0.25454	0.94975
	B	-	0.25594	0.30230	1.12986
	B	-	0.24129	0.28763	1.11582
	CI	(A * B) + (!A * !B)	0.18616	0.20793	0.56644
	CI	(A * B) + (!A * !B)	0.18096	0.20273	0.55768
	CI	(A * !B) + (!A * B)	0.11210	0.11730	0.28494
	CI	(A * !B) + (!A * B)	0.11470	0.11983	0.28534
sky130_fd_sc_hs__fah_4	A	-	0.26825	0.30093	1.01619
	A	-	0.25892	0.29178	1.00628
	B	-	0.30322	0.35410	1.25711
	B	-	0.28959	0.34053	1.24429
	CI	(A * B) + (!A * !B)	0.21083	0.22895	0.56522
	CI	(A * B) + (!A * !B)	0.20584	0.22406	0.55717
	CI	(A * !B) + (!A * B)	0.15277	0.15052	0.32620
	CI	(A * !B) + (!A * B)	0.15506	0.15271	0.32661

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.14340	0.18288	0.88050
	A	-	0.15308	0.19258	0.89025
	B	-	0.16910	0.21501	1.04210
	B	-	0.18244	0.22837	1.05331
	CI	(A * B) + (!A * !B)	0.16247	0.17863	0.46134
	CI	(A * B) + (!A * !B)	0.16742	0.18360	0.46603
	CI	(A * !B) + (!A * B)	0.08403	0.09266	0.26391
	CI	(A * !B) + (!A * B)	0.08184	0.09045	0.26047
sky130_fd_sc_hs__fah_2	A	-	0.16799	0.20130	0.88454
	A	-	0.17763	0.21089	0.89349
	B	-	0.15499	0.19140	0.95923
	B	-	0.16963	0.20600	0.97249
	CI	(A * B) + (!A * !B)	0.17662	0.18955	0.51779
	CI	(A * B) + (!A * !B)	0.18185	0.19473	0.52145
	CI	(A * !B) + (!A * B)	0.08542	0.09101	0.25458
	CI	(A * !B) + (!A * B)	0.08282	0.08838	0.25107
sky130_fd_sc_hs__fah_4	A	-	0.23062	0.25089	0.92688
	A	-	0.23994	0.26020	0.93659
	B	-	0.22189	0.24557	1.03976
	B	-	0.23548	0.25874	1.05386
	CI	(A * B) + (!A * !B)	0.22871	0.22950	0.51312
	CI	(A * B) + (!A * !B)	0.23370	0.23438	0.51396
	CI	(A * !B) + (!A * B)	0.12509	0.12510	0.30569
	CI	(A * !B) + (!A * B)	0.12279	0.12263	0.30036

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.01051	0.01011	0.00742	1.71741	1.75300
sky130_fd_sc_hs__fa_2	0.01109	0.01043	0.00787	2.74720	3.06452
sky130_fd_sc_hs__fa_4	0.01104	0.01085	0.00774	6.20364	6.18135

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fa_1	0.00000	1400.18000	1736.91000
sky130_fd_sc_hs__fa_2	0.00000	1914.83000	2250.52000
sky130_fd_sc_hs__fa_4	0.00000	2980.82000	4195.67000

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)	0.07957	0.45707	5.72286
	B->COUT (RR)	0.09444	0.49405	6.00392
	CIN->COUT (RR)	0.07087	0.47659	5.94634
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.08422	0.38621	5.25026
	B->COUT (RR)	0.09325	0.42282	5.48164
	CIN->COUT (RR)	0.07818	0.41235	5.39678
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.12055	0.37741	5.50115
	B->COUT (RR)	0.10499	0.39710	5.79973
	CIN->COUT (RR)	0.10146	0.39715	5.71704

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.12008	0.54229	6.24654
	B->COUT (FF)	0.13324	0.57449	6.48197
	CIN->COUT (FF)	0.09750	0.55790	6.36428
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.14062	0.51295	5.73701
	B->COUT (FF)	0.14943	0.54987	5.93891
	CIN->COUT (FF)	0.12588	0.53574	5.83528
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.19412	0.56610	6.35905
	B->COUT (FF)	0.17499	0.57417	6.48861
	CIN->COUT (FF)	0.17444	0.58128	6.47400

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.17722	0.68160	8.07882
	B->SUM (-R)	0.18945	0.71376	8.40874
	CIN->SUM (-R)	0.16972	0.70193	8.18461
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.23221	0.65791	8.11396
	B->SUM (-R)	0.23387	0.69168	8.41774
	CIN->SUM (-R)	0.21559	0.67666	8.23145
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.32951	0.69981	8.36592
	B->SUM (-R)	0.29919	0.70429	8.57959
	CIN->SUM (-R)	0.30854	0.71164	8.49987

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.13113	0.53625	6.48481
	B->SUM (-F)	0.13848	0.58442	6.72257
	CIN->SUM (-F)	0.10667	0.56926	6.83011
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.16267	0.52845	6.16236
	B->SUM (-F)	0.17442	0.57491	6.36150
	CIN->SUM (-F)	0.14352	0.56731	6.47045
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.23299	0.57678	6.49816
	B->SUM (-F)	0.20503	0.58487	6.67131
	CIN->SUM (-F)	0.19249	0.60038	6.82175

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.03329	0.03990	0.18219
	A	0.02337	0.02992	0.17182
	B	0.03304	0.03915	0.18237
	B	0.02395	0.03007	0.17220
	CIN	0.03739	0.04405	0.17887
	CIN	0.03178	0.03837	0.17228
sky130_fd_sc_hs__fa_2	A	0.05100	0.05311	0.18644
	A	0.04015	0.04207	0.17496
	B	0.04792	0.04928	0.18227
	B	0.03833	0.03967	0.17192
	CIN	0.04917	0.05095	0.17714
	CIN	0.04285	0.04460	0.17017
sky130_fd_sc_hs__fa_4	A	0.08622	0.08032	0.22048
	A	0.07490	0.06897	0.20736
	B	0.08349	0.07793	0.21485
	B	0.07432	0.06824	0.20419
	CIN	0.08459	0.07823	0.20675
	CIN	0.07868	0.07211	0.19918

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.02154	0.02742	0.16477
	A	0.03147	0.03732	0.17395
	B	0.02290	0.02853	0.16575
	B	0.03198	0.03759	0.17397
	CIN	0.02325	0.02919	0.16172
	CIN	0.02950	0.03538	0.16648
sky130_fd_sc_hs__fa_2	A	0.03593	0.03634	0.16288
	A	0.04679	0.04718	0.17296
	B	0.03419	0.03503	0.16061
	B	0.04378	0.04459	0.16920
	CIN	0.03610	0.03734	0.15810
	CIN	0.04256	0.04372	0.16401
sky130_fd_sc_hs__fa_4	A	0.07246	0.06023	0.18737
	A	0.08377	0.07147	0.19600
	B	0.07258	0.05956	0.18478
	B	0.08173	0.06867	0.18969
	CIN	0.07437	0.06241	0.18140
	CIN	0.08044	0.06843	0.18428

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.06126	0.07139	0.26975
	A	0.03934	0.04941	0.24773
	B	0.04828	0.05953	0.28052
	B	0.02889	0.04009	0.26134
	CIN	0.04476	0.05528	0.27197
	CIN	0.03228	0.04277	0.25945
sky130_fd_sc_hs__fa_2	A	0.07973	0.09080	0.31584
	A	0.05729	0.06836	0.29223
	B	0.05562	0.06660	0.30285
	B	0.03591	0.04686	0.27990
	CIN	0.05212	0.06275	0.29423
	CIN	0.03899	0.04960	0.27753
sky130_fd_sc_hs__fa_4	A	0.12079	0.12897	0.32461
	A	0.09664	0.10474	0.29939
	B	0.07366	0.08092	0.31850
	B	0.05399	0.06124	0.29528
	CIN	0.06862	0.07644	0.32187
	CIN	0.05549	0.06344	0.30739

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.03489	0.04478	0.24509
	A	0.05604	0.06590	0.26457
	B	0.03002	0.04055	0.23030
	B	0.04930	0.05983	0.24851
	CIN	0.02813	0.03771	0.22574
	CIN	0.04064	0.05017	0.23747
sky130_fd_sc_hs__fa_2	A	0.05062	0.05695	0.29208
	A	0.07278	0.07891	0.30972
	B	0.04751	0.05315	0.27008
	B	0.06707	0.07254	0.28931
	CIN	0.04547	0.05008	0.26422
	CIN	0.05861	0.06316	0.27717
sky130_fd_sc_hs__fa_4	A	0.12683	0.10789	0.30794
	A	0.15089	0.13197	0.33272
	B	0.09419	0.08513	0.26927
	B	0.14994	0.13082	0.29998
	CIN	0.09231	0.08353	0.26656
	CIN	0.10547	0.09663	0.27630

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00501	0.00461	1.64835	1.51605
sky130_fd_sc_hs__ha_2	0.00504	0.00508	2.71835	2.87262
sky130_fd_sc_hs__ha_4	0.00966	0.00862	5.10960	6.11389

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	2229.14000	3197.52000
sky130_fd_sc_hs__ha_2	0.00000	2147.08000	2256.07000
sky130_fd_sc_hs__ha_4	0.00000	5764.72000	7424.83000

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)	0.06026	0.43558	5.78096
	B->COUT (RR)	0.05606	0.46001	6.24960
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.06682	0.37697	5.47163
	B->COUT (RR)	0.06379	0.39780	5.75037
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.08285	0.33092	5.53655
	B->COUT (RR)	0.07139	0.34618	5.91524

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.06236	0.45201	5.48851
	B->COUT (FF)	0.05546	0.42619	5.25910
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.07351	0.42907	5.17038
	B->COUT (FF)	0.06827	0.40597	4.93098
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.08684	0.39896	5.12776
	B->COUT (FF)	0.07404	0.36900	4.90814

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	0.06304	0.43676	5.70679
	A->SUM (FR)	B	0.10249	0.61810	7.58726
	B->SUM (RR)	!A	0.05263	0.40687	5.37509
	B->SUM (FR)	A	0.10427	0.59712	7.20931
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.06814	0.34914	5.21372
	A->SUM (FR)	B	0.13673	0.58079	7.62097
	B->SUM (RR)	!A	0.05983	0.32847	4.98140
	B->SUM (FR)	A	0.13789	0.56428	7.30228
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.07827	0.31465	5.73730
	A->SUM (FR)	B	0.15605	0.53136	7.83849
	B->SUM (RR)	!A	0.06553	0.28473	5.42613
	B->SUM (FR)	A	0.14926	0.50712	7.49701

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	0.08191	0.45919	5.60339
	A->SUM (RF)	B	0.08861	0.30433	2.64862
	B->SUM (FF)	!A	0.07142	0.47960	5.86284
	B->SUM (RF)	A	0.08526	0.33294	3.14707
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.10570	0.46115	5.70401
	A->SUM (RF)	B	0.10683	0.29113	2.63416
	B->SUM (FF)	!A	0.09496	0.48292	5.92434
	B->SUM (RF)	A	0.10489	0.31518	2.98041
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.10978	0.42921	6.00162
	A->SUM (RF)	B	0.13280	0.29251	3.05147
	B->SUM (FF)	!A	0.09688	0.45293	6.26663
	B->SUM (RF)	A	0.12247	0.31304	3.48682

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.05254	0.06107	0.20152
	A	0.04709	0.05555	0.19602
	B	0.05226	0.06292	0.23572
	B	0.04816	0.05875	0.23111
sky130_fd_sc_hs__ha_2	A	0.04606	0.05393	0.21678
	A	0.04055	0.04841	0.21083
	B	0.04568	0.05418	0.21590
	B	0.04116	0.04962	0.21102
sky130_fd_sc_hs__ha_4	A	0.13008	0.14470	0.44167
	A	0.11997	0.13455	0.43038
	B	0.12890	0.14649	0.48009
	B	0.12177	0.13932	0.47211

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.02699	0.03669	0.18187
	A	0.03244	0.04211	0.18695
	B	0.02598	0.03572	0.18927
	B	0.03006	0.03979	0.19303
sky130_fd_sc_hs__ha_2	A	0.03089	0.03798	0.19323
	A	0.03639	0.04342	0.19767
	B	0.02947	0.03562	0.18779
	B	0.03399	0.04011	0.19108
sky130_fd_sc_hs__ha_4	A	0.07274	0.08848	0.41856
	A	0.08286	0.09855	0.42637
	B	0.07095	0.08632	0.42295
	B	0.07806	0.09342	0.42807

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	0.03876	0.04853	0.19518
	A	B	0.04421	0.05393	0.20022
	A	!B	0.07274	0.08664	0.32820
	A	!B	0.06211	0.07597	0.31736
	B	A	0.03636	0.04613	0.20059
	B	A	0.04044	0.05020	0.20435
	B	!A	0.07477	0.08883	0.32128
	B	!A	0.06684	0.08091	0.31325
sky130_fd_sc_hs__ha_2	A	B	0.04382	0.05090	0.20606
	A	B	0.04932	0.05635	0.21058
	A	!B	0.07303	0.08591	0.32882
	A	!B	0.06249	0.07531	0.31788
	B	A	0.04077	0.04708	0.19900
	B	A	0.04529	0.05147	0.20226
	B	!A	0.07569	0.08882	0.32199
	B	!A	0.06714	0.08023	0.31210
sky130_fd_sc_hs__ha_4	A	B	0.10662	0.12207	0.45228
	A	B	0.11674	0.13215	0.45835
	A	!B	0.18718	0.21199	0.68554
	A	!B	0.16533	0.19011	0.66160
	B	A	0.10151	0.11681	0.45184
	B	A	0.10862	0.12385	0.45711
	B	!A	0.18944	0.21523	0.66669
	B	!A	0.17357	0.19929	0.64907

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	0.03459	0.04311	0.18398
	A	B	0.02914	0.03764	0.17858
	A	!B	0.02240	0.03625	0.28909
	A	!B	0.03302	0.04688	0.29941
	B	A	0.03433	0.04495	0.21643
	B	A	0.03023	0.04086	0.21244
	B	!A	0.02393	0.03884	0.28415
	B	!A	0.03208	0.04696	0.29290
sky130_fd_sc_hs__ha_2	A	B	0.03366	0.04153	0.20271
	A	B	0.02816	0.03599	0.19674
	A	!B	0.04911	0.05702	0.29436
	A	!B	0.05962	0.06756	0.30557
	B	A	0.03336	0.04180	0.20162
	B	A	0.02884	0.03725	0.19685
	B	!A	0.05009	0.05949	0.29255
	B	!A	0.05900	0.06822	0.30061
sky130_fd_sc_hs__ha_4	A	B	0.09509	0.10954	0.40031
	A	B	0.08497	0.09935	0.38915
	A	!B	0.10572	0.12156	0.59582
	A	!B	0.12752	0.14337	0.61105
	B	A	0.09417	0.11146	0.43980
	B	A	0.08704	0.10427	0.43098
	B	!A	0.10923	0.12762	0.58239
	B	!A	0.12593	0.14410	0.59643

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00844	25.39480
sky130_fd_sc_hs__bufinv_8	0.00288	9.60536
sky130_fd_sc_hs__inv_1	0.00293	1.58548
sky130_fd_sc_hs__inv_16	0.04450	23.60392
sky130_fd_sc_hs__inv_2	0.00540	2.94777
sky130_fd_sc_hs__inv_4	0.01089	5.58397
sky130_fd_sc_hs__inv_8	0.02157	10.99433

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	6649.04000	9954.07000
sky130_fd_sc_hs__bufinv_8	0.00000	3184.09000	4704.74000
sky130_fd_sc_hs__inv_1	0.00000	266.20500	520.59500
sky130_fd_sc_hs__inv_16	0.00000	4254.02000	8320.20000
sky130_fd_sc_hs__inv_2	0.00000	532.13300	1040.78000
sky130_fd_sc_hs__inv_4	0.00000	1063.13000	2079.28000
sky130_fd_sc_hs__inv_8	0.00000	2126.16000	4158.40000

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)	0.08321	0.34632	7.52573
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.10482	0.43663	7.47719
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.01792	0.57180	8.82859
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01255	0.31279	8.75475
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.01436	0.47813	8.56039
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01324	0.41399	8.58159
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01314	0.35870	8.61807

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.07647	0.17052	3.13474
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.09294	0.22283	2.53020
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01341	0.36954	5.82270
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.00975	0.14868	5.72774
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01092	0.28841	5.51443
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01016	0.23827	5.58124
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01020	0.19080	5.58700

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.18716	0.26594	1.55512
	A	0.20315	0.28181	1.56508
sky130_fd_sc_hs__bufinv_8	A	0.09701	0.12610	0.65995
	A	0.10247	0.13157	0.66295
sky130_fd_sc_hs__inv_1	A	-0.00072	0.01110	0.15425
	A	0.00483	0.01665	0.15955
sky130_fd_sc_hs__inv_16	A	-0.01491	0.25329	2.35535
	A	0.06927	0.33789	2.43678
sky130_fd_sc_hs__inv_2	A	-0.00182	0.02482	0.31278
	A	0.00840	0.03501	0.32210
sky130_fd_sc_hs__inv_4	A	-0.00353	0.05095	0.57549
	A	0.01706	0.07175	0.59435
sky130_fd_sc_hs__inv_8	A	-0.00682	0.11606	1.22924
	A	0.03397	0.15735	1.26569

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.28663	0.34966	1.59816
	A	0.27061	0.33356	1.57116
sky130_fd_sc_hs__bufinv_8	**A**	0.12845	0.14689	0.62835
	A	0.12300	0.14142	0.61950
sky130_fd_sc_hs__inv_1	**A**	0.01501	0.02316	0.11539
	A	0.00947	0.01751	0.10886
sky130_fd_sc_hs__inv_16	**A**	0.22801	0.44917	1.84019
	A	0.14384	0.36469	1.74158
sky130_fd_sc_hs__inv_2	**A**	0.02772	0.04653	0.23144
	A	0.01750	0.03627	0.22039
sky130_fd_sc_hs__inv_4	**A**	0.05649	0.09835	0.45341
	A	0.03590	0.07774	0.42817
sky130_fd_sc_hs__inv_8	**A**	0.11269	0.20974	0.97829
	A	0.07192	0.16891	0.92354

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00549	0.00516	0.00536	1.69609
sky130_fd_sc_hs__maj3_2	0.00580	0.00552	0.00566	3.23959
sky130_fd_sc_hs__maj3_4	0.01069	0.01010	0.01053	6.14479

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	649.99700	1218.51000
sky130_fd_sc_hs__maj3_2	0.00000	910.00500	1230.85000
sky130_fd_sc_hs__maj3_4	0.00000	1830.75000	2457.66000

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)	0.07574	0.44711	5.60916
	B->X (RR)	0.06665	0.44705	5.58673
	C->X (RR)	0.07772	0.47642	5.95511
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.08320	0.37277	5.35979
	B->X (RR)	0.06858	0.37418	5.35440
	C->X (RR)	0.07739	0.39757	5.66549
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.07872	0.31625	5.58902
	B->X (RR)	0.07458	0.32756	5.60889
	C->X (RR)	0.07732	0.33894	5.76140

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.09738	0.50904	6.08243
	B->X (FF)	0.08862	0.51909	6.16477
	C->X (FF)	0.10011	0.53627	6.37624
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.11215	0.48506	5.91756
	B->X (FF)	0.10196	0.50487	6.00158
	C->X (FF)	0.11953	0.51656	6.19266
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.11585	0.43754	5.98847
	B->X (FF)	0.09255	0.45366	6.09347
	C->X (FF)	0.11054	0.46658	6.23364

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.04478	0.05703	0.29614
	A	0.02958	0.04179	0.28086
	B	0.04833	0.06004	0.27178
	B	0.03670	0.04840	0.26009
	C	0.03928	0.05160	0.29726
	C	0.02586	0.03816	0.28417
sky130_fd_sc_hs__maj3_2	A	0.05089	0.06423	0.31714
	A	0.03451	0.04787	0.30040
	B	0.05509	0.06672	0.28945
	B	0.04240	0.05407	0.27642
	C	0.04594	0.05806	0.30888
	C	0.03171	0.04381	0.29433
sky130_fd_sc_hs__maj3_4	A	0.10061	0.12527	0.59656
	A	0.07149	0.09614	0.56670
	B	0.10720	0.13298	0.61517
	B	0.08465	0.11050	0.59185
	C	0.08892	0.11364	0.60770
	C	0.06287	0.08751	0.57998

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01519	0.02640	0.26730
	A	0.03052	0.04174	0.28086
	B	0.01722	0.02855	0.26307
	B	0.02885	0.04017	0.27324
	C	0.01633	0.02770	0.27024
	C	0.02974	0.04109	0.28284
sky130_fd_sc_hs__maj3_2	A	0.03389	0.04098	0.28394
	A	0.05019	0.05705	0.29829
	B	0.03537	0.04178	0.27541
	B	0.04804	0.05436	0.28561
	C	0.03471	0.04072	0.27784
	C	0.04893	0.05451	0.29213
sky130_fd_sc_hs__maj3_4	A	0.06970	0.08337	0.56598
	A	0.09880	0.11214	0.58930
	B	0.07234	0.08624	0.56027
	B	0.09476	0.10849	0.57521
	C	0.07005	0.08196	0.52792
	C	0.09611	0.10775	0.55371

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00717	0.00693	0.01370
	(B * C * X)	-0.00195	-0.00228	0.00458
	(!B * !C * !X)	0.00914	0.00920	0.00910
	(!B * !C * !X)	0.00013	0.00009	0.00007
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00709	0.00687	0.01364
	(B * C * X)	-0.00249	-0.00281	0.00406
	(!B * !C * !X)	0.01315	0.01320	0.01314
	(!B * !C * !X)	0.00370	0.00367	0.00368
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.01375	0.01322	0.02667
	(B * C * X)	-0.00370	-0.00442	0.00925
	(!B * !C * !X)	0.02630	0.02639	0.02625
	(!B * !C * !X)	0.00912	0.00908	0.00902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00599	0.00573	0.00416
	(B * C * X)	0.01513	0.01496	0.01332
	(!B * !C * !X)	0.00093	0.00065	0.00078
	(!B * !C * !X)	0.00996	0.00973	0.00976
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00630	0.00604	0.00444
	(B * C * X)	0.01586	0.01568	0.01405
	(!B * !C * !X)	0.00579	0.00544	0.00550
	(!B * !C * !X)	0.01525	0.01500	0.01491
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.01315	0.01264	0.00944
	(B * C * X)	0.03064	0.03026	0.02695
	(!B * !C * !X)	0.01204	0.01145	0.01162
	(!B * !C * !X)	0.02927	0.02884	0.02875

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00433	0.00439	0.00564
	(A * C * X)	-0.00111	-0.00109	0.00013
	(!A * !C * !X)	0.00568	0.00567	0.00554
	(!A * !C * !X)	-0.00050	-0.00055	-0.00070
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00505	0.00511	0.00630
	(A * C * X)	-0.00093	-0.00091	0.00025
	(!A * !C * !X)	0.01025	0.01024	0.01013
	(!A * !C * !X)	0.00376	0.00374	0.00359
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00878	0.00886	0.01106
	(A * C * X)	-0.00198	-0.00194	0.00020
	(!A * !C * !X)	0.02069	0.02068	0.02036
	(!A * !C * !X)	0.00829	0.00818	0.00780

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00312	0.00287	-0.00004
	(A * C * X)	0.00863	0.00842	0.00548
	(!A * !C * !X)	0.00384	0.00382	0.00387
	(!A * !C * !X)	0.01006	0.01011	0.01004
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00265	0.00239	-0.00051
	(A * C * X)	0.00870	0.00850	0.00556
	(!A * !C * !X)	0.00824	0.00818	0.00822
	(!A * !C * !X)	0.01471	0.01477	0.01469
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00673	0.00626	0.00048
	(A * C * X)	0.01768	0.01724	0.01141
	(!A * !C * !X)	0.01662	0.01651	0.01658
	(!A * !C * !X)	0.02897	0.02895	0.02897

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00552	0.00542	0.00941
	(A * B * X)	-0.00156	-0.00172	0.00232
	(!A * !B * !X)	0.00696	0.00698	0.00687
	(!A * !B * !X)	-0.00042	-0.00047	-0.00056
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00619	0.00608	0.01007
	(A * B * X)	-0.00139	-0.00156	0.00248
	(!A * !B * !X)	0.01173	0.01175	0.01167
	(!A * !B * !X)	0.00399	0.00397	0.00390
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.01131	0.01107	0.01892
	(A * B * X)	-0.00272	-0.00315	0.00484
	(!A * !B * !X)	0.02340	0.02344	0.02322
	(!A * !B * !X)	0.00867	0.00863	0.00839

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00481	0.00455	0.00231
	(A * B * X)	0.01191	0.01172	0.00943
	(!A * !B * !X)	0.00285	0.00265	0.00278
	(!A * !B * !X)	0.01022	0.01014	0.01014
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00436	0.00411	0.00186
	(A * B * X)	0.01196	0.01176	0.00948
	(!A * !B * !X)	0.00701	0.00677	0.00682
	(!A * !B * !X)	0.01472	0.01461	0.01454
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00988	0.00941	0.00490
	(A * B * X)	0.02404	0.02359	0.01905
	(!A * !B * !X)	0.01439	0.01404	0.01417
	(!A * !B * !X)	0.02915	0.02894	0.02887

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00293	0.00277	0.00517	0.81908
sky130_fd_sc_hs__mux2i_2	0.00549	0.00580	0.00839	1.30272
sky130_fd_sc_hs__mux2i_4	0.01087	0.01084	0.01462	2.17653

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	1022.34000	2151.89000
sky130_fd_sc_hs__mux2i_2	0.00000	1013.90000	2237.85000
sky130_fd_sc_hs__mux2i_4	0.00000	2738.17000	5921.57000

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)	-	0.05074	0.69741	8.84437
	A1->Y (FR)	-	0.04559	0.69044	8.81356
	S->Y (RR)	(A0 * !A1)	0.07738	0.52784	5.42071
	S->Y (FR)	(!A0 * A1)	0.05912	0.64269	8.00272
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.05871	0.62545	8.73425
	A1->Y (FR)	-	0.05313	0.59342	8.29968
	S->Y (RR)	(A0 * !A1)	0.08394	0.41335	4.56552
	S->Y (FR)	(!A0 * A1)	0.06482	0.55209	7.64745
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.05545	0.53293	8.28852
	A1->Y (FR)	-	0.05535	0.54178	8.48173
	S->Y (RR)	(A0 * !A1)	0.09944	0.44256	5.66311
	S->Y (FR)	(!A0 * A1)	0.06241	0.45048	7.02278

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)	-	0.02779	0.37469	4.58674
	A1->Y (RF)	-	0.02921	0.40036	4.92985
	S->Y (FF)	(A0 * !A1)	0.06117	0.40026	4.16452
	S->Y (RF)	(!A0 * A1)	0.03321	0.34164	4.10500
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03414	0.35105	4.80160
	A1->Y (RF)	-	0.03242	0.33862	4.65407
	S->Y (FF)	(A0 * !A1)	0.07362	0.39483	4.22817
	S->Y (RF)	(!A0 * A1)	0.03430	0.25709	3.48033
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.03150	0.27812	4.35516
	A1->Y (RF)	-	0.03624	0.31354	4.88859
	S->Y (FF)	(A0 * !A1)	0.07258	0.30958	3.28846
	S->Y (RF)	(!A0 * A1)	0.03715	0.20299	3.22811

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	-	0.00239	0.01050	0.13053
	A0	-	0.00997	0.01801	0.13771
	A1	-	0.03709	0.04500	0.16006
	A1	-	0.04446	0.05232	0.16681
	S	(A0 * !A1)	0.04535	0.06449	0.36529
	S	(A0 * !A1)	0.03961	0.05867	0.35885
	S	(!A0 * A1)	0.00320	0.03067	0.45658
	S	(!A0 * A1)	0.01701	0.04445	0.46964
sky130_fd_sc_hs__mux2i_2	A0	-	0.00206	0.01653	0.21381
	A0	-	0.01655	0.03093	0.22634
	A1	-	0.01657	0.03190	0.23821
	A1	-	0.03180	0.04698	0.25147
	S	(A0 * !A1)	0.03547	0.05388	0.35499
	S	(A0 * !A1)	0.02839	0.04671	0.34677
	S	(!A0 * A1)	0.00744	0.04266	0.59954
	S	(!A0 * A1)	0.03110	0.06622	0.62130
sky130_fd_sc_hs__mux2i_4	A0	-	0.00043	0.03128	0.41803
	A0	-	0.02927	0.05995	0.44326
	A1	-	0.07288	0.10044	0.44134
	A1	-	0.10199	0.12939	0.46568
	S	(A0 * !A1)	0.10335	0.13495	0.66885
	S	(A0 * !A1)	0.09287	0.12418	0.65538
	S	(!A0 * A1)	0.01210	0.07585	1.02595
	S	(!A0 * A1)	0.05509	0.11876	1.06434

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.02450	0.03001	0.11285
	A0	-	0.01700	0.02247	0.10533
	A1	-	0.04865	0.05388	0.13265
	A1	-	0.04129	0.04646	0.12452
	S	(A0 * !A1)	0.01980	0.03990	0.34089
	S	(A0 * !A1)	0.02555	0.04562	0.34657
	S	(!A0 * A1)	0.05409	0.07824	0.46730
	S	(!A0 * A1)	0.04029	0.06444	0.45356
sky130_fd_sc_hs__mux2i_2	A0	-	0.05039	0.06012	0.19751
	A0	-	0.03595	0.04569	0.18219
	A1	-	0.05943	0.07007	0.21662
	A1	-	0.04427	0.05481	0.20108
	S	(A0 * !A1)	0.04145	0.05962	0.34373
	S	(A0 * !A1)	0.04844	0.06659	0.35080
	S	(!A0 * A1)	0.06825	0.10026	0.61495
	S	(!A0 * A1)	0.04463	0.07653	0.59127
sky130_fd_sc_hs__mux2i_4	A0	-	0.09467	0.11661	0.38915
	A0	-	0.06592	0.08767	0.35957
	A1	-	0.14838	0.16756	0.40773
	A1	-	0.11929	0.13837	0.37794
	S	(A0 * !A1)	0.07752	0.11053	0.63449
	S	(A0 * !A1)	0.08800	0.12102	0.64462
	S	(!A0 * A1)	0.15962	0.21558	1.09617
	S	(!A0 * A1)	0.11668	0.17255	1.05340

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.01864	0.01867	0.01897
	(A1 * S * !Y)	0.01525	0.01525	0.01557
	(!A1 * S * Y)	0.01265	0.01265	0.01259
	(!A1 * S * Y)	0.00872	0.00870	0.00864
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.01872	0.01879	0.01971
	(A1 * S * !Y)	0.01269	0.01269	0.01360
	(!A1 * S * Y)	0.00695	0.00695	0.00679
	(!A1 * S * Y)	-0.00032	-0.00035	-0.00052
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.04961	0.04973	0.05167
	(A1 * S * !Y)	0.03746	0.03746	0.03938
	(!A1 * S * Y)	0.02648	0.02648	0.02621
	(!A1 * S * Y)	0.01207	0.01202	0.01168

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.01695	0.01685	0.01557
	(A1 * S * !Y)	0.02038	0.02030	0.01901
	(!A1 * S * Y)	0.01076	0.01076	0.01077
	(!A1 * S * Y)	0.01470	0.01471	0.01470
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.01615	0.01594	0.01331
	(A1 * S * !Y)	0.02236	0.02216	0.01950
	(!A1 * S * Y)	0.00409	0.00408	0.00411
	(!A1 * S * Y)	0.01134	0.01139	0.01137
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.04524	0.04480	0.03956
	(A1 * S * !Y)	0.05766	0.05728	0.05195
	(!A1 * S * Y)	0.02104	0.02101	0.02106
	(!A1 * S * Y)	0.03543	0.03551	0.03550

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00685	0.00688	0.00718
	(A0 * !S * !Y)	0.00362	0.00362	0.00395
	(!A0 * !S * Y)	0.00102	0.00102	0.00094
	(!A0 * !S * Y)	-0.00267	-0.00269	-0.00279
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.01379	0.01385	0.01468
	(A0 * !S * !Y)	0.00711	0.00711	0.00796
	(!A0 * !S * Y)	0.00206	0.00206	0.00192
	(!A0 * !S * Y)	-0.00538	-0.00541	-0.00559
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.02671	0.02693	0.02865
	(A0 * !S * !Y)	0.01438	0.01433	0.01621
	(!A0 * !S * Y)	0.00321	0.00323	0.00297
	(!A0 * !S * Y)	-0.01076	-0.01084	-0.01127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00578	0.00567	0.00439
	(A0 * !S * !Y)	0.00905	0.00896	0.00766
	(!A0 * !S * Y)	-0.00049	-0.00049	-0.00048
	(!A0 * !S * Y)	0.00322	0.00322	0.00322
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.01121	0.01099	0.00838
	(A0 * !S * !Y)	0.01797	0.01779	0.01515
	(!A0 * !S * Y)	-0.00096	-0.00097	-0.00095
	(!A0 * !S * Y)	0.00647	0.00650	0.00649
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.02250	0.02205	0.01681
	(A0 * !S * !Y)	0.03500	0.03463	0.02934
	(!A0 * !S * Y)	-0.00158	-0.00159	-0.00155
	(!A0 * !S * Y)	0.01251	0.01257	0.01256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.02638	0.04484	0.33784
	(A0 * A1 * !Y)	0.01686	0.03527	0.32833
	(!A0 * !A1 * Y)	0.02111	0.03970	0.33119
	(!A0 * !A1 * Y)	0.01165	0.03016	0.32167
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.03074	0.04959	0.37144
	(A0 * A1 * !Y)	0.01587	0.03460	0.35653
	(!A0 * !A1 * Y)	0.02001	0.03950	0.35863
	(!A0 * !A1 * Y)	0.00517	0.02459	0.34375
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.07062	0.09841	0.60900
	(A0 * A1 * !Y)	0.04472	0.07241	0.58316
	(!A0 * !A1 * Y)	0.04935	0.07843	0.58373
	(!A0 * !A1 * Y)	0.02359	0.05255	0.55787

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00510	0.02517	0.32865
	(A0 * A1 * !Y)	0.01461	0.03473	0.33818
	(!A0 * !A1 * Y)	-0.00035	0.01996	0.32200
	(!A0 * !A1 * Y)	0.00915	0.02950	0.33150
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01018	0.03015	0.35658
	(A0 * A1 * !Y)	0.02507	0.04516	0.37154
	(!A0 * !A1 * Y)	0.00017	0.02013	0.34381
	(!A0 * !A1 * Y)	0.01512	0.03511	0.35866
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.02109	0.05385	0.58608
	(A0 * A1 * !Y)	0.04693	0.07987	0.61202
	(!A0 * !A1 * Y)	0.00105	0.03389	0.56052
	(!A0 * !A1 * Y)	0.02699	0.05986	0.58627

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00282	0.00329	0.00477	1.74507
sky130_fd_sc_hs__mux2_2	0.00261	0.00294	0.00561	2.74442
sky130_fd_sc_hs__mux2_4	0.00505	0.00505	0.00853	5.13737

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	1321.48000	2234.00000
sky130_fd_sc_hs__mux2_2	0.00000	1583.85000	2377.28000
sky130_fd_sc_hs__mux2_4	0.00000	2155.97000	2743.16000

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)	-	0.05489	0.41931	5.53750
	A1->X (RR)	-	0.05559	0.41760	5.45629
	S->X (RR)	(!A0 * A1)	0.05769	0.40153	5.39352
	S->X (FR)	(A0 * !A1)	0.09586	0.58091	7.52160
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.06887	0.38751	5.29378
	A1->X (RR)	-	0.06642	0.37241	5.10353
	S->X (RR)	(!A0 * A1)	0.06773	0.35744	5.20869
	S->X (FR)	(A0 * !A1)	0.10723	0.52362	7.34230
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.09871	0.36885	5.34781
	A1->X (RR)	-	0.10005	0.37661	5.49481
	S->X (RR)	(!A0 * A1)	0.10188	0.33444	5.29556
	S->X (FR)	(A0 * !A1)	0.14525	0.53276	7.66644

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)	-	0.07755	0.52053	6.18105
	A1->X (FF)	-	0.07514	0.52097	6.41650
	S->X (FF)	(!A0 * A1)	0.09682	0.52116	6.49803
	S->X (RF)	(A0 * !A1)	0.11340	0.36596	3.56781
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.09584	0.48731	5.57215
	A1->X (FF)	-	0.09885	0.49882	5.70148
	S->X (FF)	(!A0 * A1)	0.11378	0.45938	5.49756
	S->X (RF)	(A0 * !A1)	0.13819	0.32612	2.85275
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.12331	0.47645	5.42481
	A1->X (FF)	-	0.12501	0.47875	5.34215
	S->X (FF)	(!A0 * A1)	0.13753	0.44113	5.27813
	S->X (RF)	(A0 * !A1)	0.16108	0.30923	2.40076

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	-	0.03756	0.05030	0.27350
	A0	-	0.03030	0.04301	0.26618
	A1	-	0.07183	0.08419	0.29246
	A1	-	0.06402	0.07637	0.28444
	S	(A0 * !A1)	0.03723	0.05669	0.37575
	S	(A0 * !A1)	0.04187	0.06127	0.38001
	S	(!A0 * A1)	0.07956	0.10939	0.60851
	S	(!A0 * A1)	0.06654	0.09634	0.59525
sky130_fd_sc_hs__mux2_2	A0	-	0.04374	0.05663	0.28245
	A0	-	0.03656	0.04942	0.27493
	A1	-	0.07769	0.09038	0.30822
	A1	-	0.07024	0.08297	0.29959
	S	(A0 * !A1)	0.04286	0.06203	0.39559
	S	(A0 * !A1)	0.04854	0.06759	0.40087
	S	(!A0 * A1)	0.08578	0.11172	0.55492
	S	(!A0 * A1)	0.07170	0.09765	0.54074
sky130_fd_sc_hs__mux2_4	A0	-	0.08937	0.10863	0.47692
	A0	-	0.07621	0.09551	0.46329
	A1	-	0.10488	0.12519	0.53161
	A1	-	0.09158	0.11189	0.51825
	S	(A0 * !A1)	0.08849	0.10446	0.50594
	S	(A0 * !A1)	0.09654	0.11247	0.51498
	S	(!A0 * A1)	0.11745	0.15186	0.79437
	S	(!A0 * A1)	0.09483	0.12925	0.77121

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.01693	0.02908	0.22978
	A0	-	0.02418	0.03634	0.23611
	A1	-	0.04107	0.05399	0.28331
	A1	-	0.04887	0.06179	0.29125
	S	(A0 * !A1)	0.05121	0.06849	0.38378
	S	(A0 * !A1)	0.04658	0.06377	0.37913
	S	(!A0 * A1)	0.01879	0.04921	0.55807
	S	(!A0 * A1)	0.03180	0.06224	0.57115
sky130_fd_sc_hs__mux2_2	A0	-	0.03365	0.04035	0.25250
	A0	-	0.04082	0.04732	0.25805
	A1	-	0.05506	0.06149	0.27671
	A1	-	0.06251	0.06884	0.28245
	S	(A0 * !A1)	0.06332	0.07388	0.37692
	S	(A0 * !A1)	0.05766	0.06822	0.37075
	S	(!A0 * A1)	0.03395	0.05856	0.54453
	S	(!A0 * A1)	0.04804	0.07265	0.55643
sky130_fd_sc_hs__mux2_4	A0	-	0.07366	0.08089	0.45909
	A0	-	0.08682	0.09404	0.46723
	A1	-	0.08327	0.09112	0.46478
	A1	-	0.09662	0.10405	0.47356
	S	(A0 * !A1)	0.09613	0.10036	0.45804
	S	(A0 * !A1)	0.08803	0.09226	0.44919
	S	(!A0 * A1)	0.07553	0.10181	0.80623
	S	(!A0 * A1)	0.09812	0.12441	0.82491

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.01903	0.01909	0.01950
	(A1 * S * X)	0.01593	0.01592	0.01638
	(!A1 * S * !X)	0.01701	0.01700	0.01691
	(!A1 * S * !X)	0.01354	0.01351	0.01342
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.01900	0.01903	0.01935
	(A1 * S * X)	0.01595	0.01595	0.01630
	(!A1 * S * !X)	0.02155	0.02152	0.02140
	(!A1 * S * !X)	0.01810	0.01806	0.01793
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.01972	0.01981	0.02070
	(A1 * S * X)	0.01406	0.01404	0.01499
	(!A1 * S * !X)	0.02507	0.02504	0.02484
	(!A1 * S * !X)	0.01844	0.01831	0.01813

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.01776	0.01763	0.01622
	(A1 * S * X)	0.02089	0.02079	0.01936
	(!A1 * S * !X)	0.01552	0.01547	0.01548
	(!A1 * S * !X)	0.01897	0.01895	0.01895
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.01805	0.01793	0.01654
	(A1 * S * X)	0.02112	0.02104	0.01963
	(!A1 * S * !X)	0.01996	0.01989	0.01990
	(!A1 * S * !X)	0.02341	0.02335	0.02335
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.01831	0.01808	0.01522
	(A1 * S * X)	0.02406	0.02385	0.02097
	(!A1 * S * !X)	0.02275	0.02260	0.02262
	(!A1 * S * !X)	0.02941	0.02931	0.02929

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00783	0.00786	0.00844
	(A0 * !S * X)	0.00423	0.00424	0.00481
	(!A0 * !S * !X)	0.00546	0.00544	0.00538
	(!A0 * !S * !X)	0.00164	0.00161	0.00155
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00786	0.00789	0.00823
	(A0 * !S * X)	0.00461	0.00460	0.00496
	(!A0 * !S * !X)	0.00986	0.00983	0.00977
	(!A0 * !S * !X)	0.00640	0.00636	0.00629
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.01492	0.01500	0.01591
	(A0 * !S * X)	0.00912	0.00912	0.01010
	(!A0 * !S * !X)	0.01990	0.01984	0.01965
	(!A0 * !S * !X)	0.01335	0.01325	0.01304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00599	0.00587	0.00442
	(A0 * !S * X)	0.00962	0.00951	0.00805
	(!A0 * !S * !X)	0.00419	0.00412	0.00413
	(!A0 * !S * !X)	0.00799	0.00794	0.00794
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00634	0.00622	0.00484
	(A0 * !S * X)	0.00963	0.00954	0.00812
	(!A0 * !S * !X)	0.00886	0.00876	0.00878
	(!A0 * !S * !X)	0.01230	0.01227	0.01223
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.01320	0.01295	0.01010
	(A0 * !S * X)	0.01903	0.01882	0.01594
	(!A0 * !S * !X)	0.01814	0.01799	0.01801
	(!A0 * !S * !X)	0.02466	0.02456	0.02453

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.02721	0.04495	0.33238
	(A0 * A1 * X)	0.01854	0.03624	0.32373
	(!A0 * !A1 * !X)	0.02602	0.04403	0.33118
	(!A0 * !A1 * !X)	0.01734	0.03533	0.32249
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.02748	0.04532	0.33167
	(A0 * A1 * X)	0.01777	0.03553	0.32196
	(!A0 * !A1 * !X)	0.02999	0.04791	0.33094
	(!A0 * !A1 * !X)	0.02027	0.03815	0.32120
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.03259	0.05135	0.36927
	(A0 * A1 * X)	0.01768	0.03636	0.35436
	(!A0 * !A1 * !X)	0.03903	0.05787	0.36938
	(!A0 * !A1 * !X)	0.02414	0.04290	0.35446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00596	0.02550	0.32344
	(A0 * A1 * X)	0.01466	0.03423	0.33212
	(!A0 * !A1 * !X)	0.00449	0.02418	0.32177
	(!A0 * !A1 * !X)	0.01316	0.03291	0.33043
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00538	0.02502	0.32185
	(A0 * A1 * X)	0.01515	0.03480	0.33162
	(!A0 * !A1 * !X)	0.00879	0.02835	0.32171
	(!A0 * !A1 * !X)	0.01851	0.03813	0.33143
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01168	0.03131	0.35381
	(A0 * A1 * X)	0.02660	0.04627	0.36875
	(!A0 * !A1 * !X)	0.01817	0.03768	0.35360
	(!A0 * !A1 * !X)	0.03308	0.05267	0.36847

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00249	0.00260	0.00258	0.00285	0.00862	0.00552	1.59294
sky130_fd_sc_hs__mux4_2	0.00280	0.00265	0.00276	0.00269	0.00973	0.00570	3.21092
sky130_fd_sc_hs__mux4_4	0.00496	0.00478	0.00495	0.00496	0.01370	0.00851	6.09100

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	1836.10000	3243.27000
sky130_fd_sc_hs__mux4_2	0.00000	2090.81000	3755.30000
sky130_fd_sc_hs__mux4_4	0.00000	3511.31000	6227.03000

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)	0.09968	0.48950	5.63088
	A1->X (RR)	0.10069	0.48752	5.55141
	A2->X (RR)	0.10122	0.49100	5.55542
	A3->X (RR)	0.09966	0.48482	5.51122
	S0->X (-R)	0.14236	0.65451	7.58297
	S1->X (-R)	0.07786	0.58147	7.71446
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.10716	0.41616	5.45559
	A1->X (RR)	0.10372	0.41506	5.46248
	A2->X (RR)	0.09989	0.40486	5.40247
	A3->X (RR)	0.09580	0.40137	5.41191
	S0->X (-R)	0.13669	0.57490	7.60478
	S1->X (-R)	0.08564	0.50753	7.60463
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.12362	0.37599	5.70767
	A1->X (RR)	0.12782	0.38117	5.78615
	A2->X (RR)	0.12835	0.37853	5.63975
	A3->X (RR)	0.12326	0.37665	5.65828
	S0->X (-R)	0.18785	0.57183	7.63134
	S1->X (-R)	0.09914	0.46932	7.64605

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.12651	0.54378	5.81926
	A1->X (FF)	0.13334	0.55843	5.90749
	A2->X (FF)	0.13584	0.56401	5.92110
	A3->X (FF)	0.13567	0.56396	5.94345
	S0->X (-F)	0.12691	0.58381	6.06239
	S1->X (-F)	0.06103	0.48922	5.95335
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.15617	0.55602	6.08083
	A1->X (FF)	0.15533	0.55236	6.06857
	A2->X (FF)	0.15519	0.55422	6.11613
	A3->X (FF)	0.15054	0.54547	6.09097
	S0->X (-F)	0.13228	0.56321	6.19715
	S1->X (-F)	0.07286	0.47752	6.14248
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.16369	0.51062	6.12576
	A1->X (FF)	0.15956	0.50324	6.07820
	A2->X (FF)	0.18000	0.53325	6.24652
	A3->X (FF)	0.17019	0.52002	6.16966
	S0->X (-F)	0.16114	0.56854	6.37249
	S1->X (-F)	0.07798	0.43836	6.04526

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.04293	0.05563	0.30768
	A0	0.03412	0.04680	0.29888
	A1	0.05545	0.06772	0.31156
	A1	0.04685	0.05909	0.30297
	A2	0.05518	0.06714	0.30792
	A2	0.04669	0.05863	0.29941
	A3	0.06807	0.08032	0.32388
	A3	0.05940	0.07161	0.31516
	S0	0.10938	0.15680	0.93917
	S0	0.08938	0.13679	0.91912
	S1	0.07238	0.10227	0.55110
	S1	0.06199	0.09185	0.54057
sky130_fd_sc_hs__mux4_2	A0	0.05082	0.06240	0.31896
	A0	0.04110	0.05267	0.30927
	A1	0.06337	0.07521	0.33335
	A1	0.05382	0.06566	0.32383
	A2	0.06175	0.07320	0.32030
	A2	0.05260	0.06405	0.31087
	A3	0.07466	0.08669	0.34052
	A3	0.06577	0.07780	0.33130
	S0	0.11817	0.16612	0.95963
	S0	0.09744	0.14535	0.93856
	S1	0.07750	0.10764	0.57065
	S1	0.06673	0.09685	0.55957

sky130_fd_sc_hs__mux4_4	**A0**	0.09935	0.11950	0.61584
	A0	0.08207	0.10213	0.59713
	A1	0.10922	0.12937	0.63333
	A1	0.09248	0.11257	0.61489
	A2	0.10934	0.12783	0.60880
	A2	0.09258	0.11101	0.59103
	A3	0.11901	0.13895	0.63218
	A3	0.10240	0.12227	0.61460
	S0	0.19634	0.26235	1.43769
	S0	0.16452	0.23061	1.40518
	S1	0.12371	0.16038	0.80621
	S1	0.10764	0.14421	0.78812

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.03684	0.04655	0.28642
	A0	0.04564	0.05535	0.29526
	A1	0.04922	0.05810	0.29093
	A1	0.05783	0.06671	0.29835
	A2	0.05053	0.05908	0.29081
	A2	0.05901	0.06757	0.29899
	A3	0.06175	0.07055	0.30516
	A3	0.07044	0.07924	0.31363
	S0	0.03586	0.08276	0.87539
	S0	0.05605	0.10296	0.89234
	S1	0.04197	0.07218	0.53774
	S1	0.05238	0.08258	0.54814

sky130_fd_sc_hs__mux4_2	**A0**	0.06206	0.06351	0.30106
	A0	0.07177	0.07322	0.30899
	A1	0.07347	0.07509	0.31368
	A1	0.08301	0.08462	0.32204
	A2	0.07343	0.07447	0.30575
	A2	0.08257	0.08361	0.31201
	A3	0.08396	0.08595	0.32312
	A3	0.09286	0.09476	0.32988
	S0	0.05797	0.09793	0.89148
	S0	0.07910	0.11906	0.91000
	S1	0.06309	0.08771	0.55536
	S1	0.07387	0.09845	0.56328
sky130_fd_sc_hs__mux4_4	**A0**	0.12649	0.12810	0.58851
	A0	0.14378	0.14535	0.59791
	A1	0.13922	0.14160	0.60250
	A1	0.15594	0.15831	0.61909
	A2	0.14457	0.14233	0.58715
	A2	0.16132	0.15900	0.59732
	A3	0.15347	0.15421	0.61348
	A3	0.17006	0.17081	0.62238
	S0	0.11134	0.16216	1.32681
	S0	0.14377	0.19457	1.35503
	S1	0.12125	0.14783	0.77883
	S1	0.13739	0.16354	0.78942

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)	0.02347	0.03741	0.28230
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01648	0.03042	0.27532
	(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)	0.01944	0.01925	0.02257
	(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)	0.01522	0.01497	0.01836
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02481	0.03846	0.28437
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01694	0.03055	0.27648
	(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)	0.01957	0.01941	0.02281
	(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)	0.01521	0.01503	0.01846
sky130_fd_sc_hs__mux4_4	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.03949	0.06609	0.53650
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02575	0.05232	0.52274
	(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)	0.02738	0.02705	0.03372
	(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)	0.01889	0.01849	0.02526

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)	0.01558	0.02987	0.27300
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02256	0.03686	0.27997
	(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)	0.01945	0.01932	0.01851
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.02368	0.02358	0.02274
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01645	0.03061	0.27482
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02434	0.03850	0.28269
	(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)	0.01940	0.01927	0.01848
	(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)	0.02376	0.02365	0.02285
sky130_fd_sc_hs__mux4_4	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02565	0.05283	0.51972
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.03939	0.06655	0.53342
	(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)	0.02757	0.02731	0.02571
	(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)	0.03607	0.03586	0.03422

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)	0.02637	0.03984	0.27688
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01961	0.03305	0.27009
	(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)	0.01422	0.01405	0.01742
	(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)	0.01000	0.00977	0.01319
sky130_fd_sc_hs__mux4_2	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02777	0.04152	0.28895
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02007	0.03382	0.28124
	(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)	0.01461	0.01440	0.01771
	(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)	0.01033	0.01008	0.01344

sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.03981	0.06677	0.54445
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02664	0.05354	0.53127
	(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)	0.02270	0.02231	0.02894
	(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)	0.01454	0.01409	0.02079

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)**	0.02281	0.03651	0.27161
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02959	0.04332	0.27836
	(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)	0.01465	0.01451	0.01372
	(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)	0.01887	0.01878	0.01796

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.02332	0.03745	0.28331
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.03103	0.04517	0.29097
	(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)	0.01462	0.01448	0.01368
	(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)	0.01890	0.01881	0.01796
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.03481	0.06223	0.53647
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.04799	0.07541	0.54955
	(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)	0.02354	0.02327	0.02166
	(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)	0.03170	0.03154	0.02983

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)	0.01947	0.01927	0.02264
	(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)	0.01521	0.01499	0.01839
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01875	0.03198	0.26883
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01178	0.02499	0.26185
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)	0.01978	0.01961	0.02300
	(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)	0.01525	0.01504	0.01847
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01924	0.03239	0.27070
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01175	0.02487	0.26319
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)	0.02730	0.02694	0.03362
	(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)	0.01896	0.01857	0.02532
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.03533	0.06079	0.51746
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02152	0.04693	0.50363

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)	0.01935	0.01922	0.01842
	(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)	0.02361	0.02351	0.02269
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01156	0.02510	0.26008
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01852	0.03206	0.26705
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)	0.01922	0.01909	0.01829
	(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)	0.02375	0.02365	0.02284
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01163	0.02527	0.26191
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01913	0.03279	0.26938
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)	0.02755	0.02730	0.02572
	(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)	0.03591	0.03569	0.03408
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02101	0.04722	0.50058
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.03481	0.06109	0.51439

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)	0.02213	0.03558	0.27536
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01496	0.02838	0.26820
	(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)	0.01471	0.01452	0.01793
	(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)	0.01003	0.00985	0.01326
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02263	0.03626	0.28092
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01538	0.02899	0.27366
	(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)	0.01469	0.01449	0.01782
	(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)	0.01036	0.01013	0.01348

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.03699	0.06339	0.53413
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02332	0.04971	0.52044
	(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)	0.02294	0.02255	0.02916
	(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)	0.01473	0.01430	0.02099

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)**	0.01810	0.03183	0.26978
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02527	0.03901	0.27693
	(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)	0.01416	0.01403	0.01325
	(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)	0.01882	0.01872	0.01791

sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01798	0.03205	0.27520
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02524	0.03933	0.28242
	(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)	0.01449	0.01436	0.01356
	(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)	0.01882	0.01873	0.01789
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.02909	0.05590	0.52325
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.04277	0.06958	0.53683
	(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)	0.02326	0.02299	0.02140
	(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)	0.03145	0.03125	0.02959

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)**	0.02881	0.04863	0.36946
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01543	0.03516	0.35602
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03219	0.05338	0.40832
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02104	0.04217	0.39706
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.03454	0.06899	0.62145
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01863	0.05300	0.60548
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.03610	0.05602	0.37719
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02230	0.04213	0.36333
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03622	0.05762	0.41086
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02501	0.04640	0.39957
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03257	0.05452	0.41243
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02082	0.04276	0.40061
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03905	0.07337	0.61814
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02312	0.05741	0.60215
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.04684	0.08105	0.62273
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.03060	0.06472	0.60643
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02844	0.05012	0.40993
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01681	0.03846	0.39820
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.04237	0.07661	0.62634
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02595	0.06010	0.60984

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.03037	0.05045	0.37372
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01722	0.03727	0.36048
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03336	0.05451	0.41169
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02280	0.04383	0.40098
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.03612	0.07092	0.62404
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02029	0.05497	0.60805
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.04138	0.06159	0.38513
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02796	0.04815	0.37163
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03899	0.05934	0.41425
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02891	0.04915	0.40405
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03923	0.06010	0.41983
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02876	0.04954	0.40923
	(!A0 * A1 * A2 * A3 * S1 * X)	0.04124	0.07614	0.62997
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02483	0.05971	0.61350
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.05252	0.08759	0.63836
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.03604	0.07100	0.62172
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03328	0.05490	0.41709
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02242	0.04398	0.40613
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.04848	0.08339	0.63342
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.03233	0.06716	0.61712

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.04156	0.06300	0.42480
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02268	0.04402	0.40581
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.05217	0.07532	0.49289
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03782	0.06089	0.47840
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.05721	0.10301	0.84913
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.03330	0.07898	0.82493
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.06411	0.08574	0.44824
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.04457	0.06611	0.42860
	(A0 * !A1 * A2 * A3 * S1 * X)	0.05714	0.08026	0.49678
	(A0 * !A1 * A2 * A3 * S1 * X)	0.04234	0.06546	0.48185
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.05791	0.08210	0.50846
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.04222	0.06637	0.49265
	(!A0 * A1 * A2 * A3 * S1 * X)	0.06081	0.10811	0.87644
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03717	0.08435	0.85269
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.08396	0.13099	0.89308
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.05989	0.10683	0.86888
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.05380	0.07782	0.50519
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03873	0.06271	0.48998
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.08156	0.12686	0.86707
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.05681	0.10211	0.84202

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)**	0.01278	0.03330	0.35912
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02627	0.04685	0.37263
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02141	0.04307	0.39945
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03262	0.05424	0.41042
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01216	0.04816	0.60758
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02814	0.06419	0.62355
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01903	0.03937	0.36527
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.03286	0.05329	0.37914
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02608	0.04737	0.40047
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03735	0.05854	0.41139
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03284	0.05355	0.40157
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.04459	0.06524	0.41297
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01612	0.05185	0.60343
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03212	0.06786	0.61941
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01134	0.04727	0.60489
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02759	0.06359	0.62110
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02828	0.04939	0.40076
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03991	0.06098	0.41216
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00737	0.04372	0.60933
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02379	0.06022	0.62576

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01053	0.03177	0.35952
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02383	0.04506	0.37278
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01928	0.04139	0.39956
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02999	0.05194	0.40988
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00997	0.04629	0.60654
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02595	0.06230	0.62241
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02177	0.04287	0.37076
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.03528	0.05639	0.38425
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02496	0.04706	0.40390
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03515	0.05707	0.41373
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03654	0.05801	0.41010
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.04707	0.06847	0.42028
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01417	0.05076	0.61161
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03066	0.06724	0.62804
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01469	0.05156	0.61864
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.03129	0.06814	0.63517
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03128	0.05292	0.40588
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.04217	0.06368	0.41643
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00946	0.04618	0.61262
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02569	0.06245	0.62882

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01671	0.04029	0.40693
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.03589	0.05952	0.42604
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03882	0.06398	0.47981
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.05334	0.07848	0.49345
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01945	0.06790	0.82285
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.04354	0.09205	0.84684
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.03900	0.06245	0.42943
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.05869	0.08219	0.44907
	(A0 * !A1 * A2 * A3 * S1 * X)	0.04161	0.06628	0.48160
	(A0 * !A1 * A2 * A3 * S1 * X)	0.05661	0.08107	0.49584
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.06474	0.08836	0.49350
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.08045	0.10404	0.50850
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02336	0.07501	0.85295
	(!A0 * A1 * A2 * A3 * S1 * X)	0.04720	0.09890	0.87667
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02384	0.07619	0.86612
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.04797	0.10042	0.89015
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.06112	0.08528	0.49091
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.07617	0.10033	0.50520
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01885	0.06805	0.83519
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.04364	0.09291	0.85990

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)	0.02467	0.04622	0.36658
	(A1 * A3 * S0 * X)	0.01609	0.03762	0.35799
	(A0 * A2 * !S0 * X)	0.01971	0.04126	0.36162
	(A0 * A2 * !S0 * X)	0.01113	0.03266	0.35303
	(!A1 * !A3 * S0 * !X)	0.02405	0.04561	0.36539
	(!A1 * !A3 * S0 * !X)	0.01504	0.03655	0.35634
	(!A0 * !A2 * !S0 * !X)	0.01908	0.04063	0.36042
	(!A0 * !A2 * !S0 * !X)	0.01006	0.03158	0.35137
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.02517	0.04670	0.36530
	(A1 * A3 * S0 * X)	0.01624	0.03771	0.35636
	(A0 * A2 * !S0 * X)	0.02020	0.04174	0.36034
	(A0 * A2 * !S0 * X)	0.01128	0.03275	0.35140
	(!A1 * !A3 * S0 * !X)	0.02839	0.04984	0.36800
	(!A1 * !A3 * S0 * !X)	0.01913	0.04054	0.35871
	(!A0 * !A2 * !S0 * !X)	0.02343	0.04490	0.36302
	(!A0 * !A2 * !S0 * !X)	0.01416	0.03559	0.35374
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.03408	0.05735	0.41928
	(A1 * A3 * S0 * X)	0.02150	0.04470	0.40670
	(A0 * A2 * !S0 * X)	0.02965	0.05291	0.41485
	(A0 * A2 * !S0 * X)	0.01707	0.04026	0.40227
	(!A1 * !A3 * S0 * !X)	0.04113	0.06429	0.42542
	(!A1 * !A3 * S0 * !X)	0.02765	0.05075	0.41193
	(!A0 * !A2 * !S0 * !X)	0.03670	0.05986	0.42099
	(!A0 * !A2 * !S0 * !X)	0.02322	0.04632	0.40750

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)	0.01052	0.03288	0.35779
	(A1 * A3 * S0 * X)	0.01910	0.04148	0.36637
	(A0 * A2 * !S0 * X)	0.00555	0.02791	0.35283
	(A0 * A2 * !S0 * X)	0.01413	0.03651	0.36141
	(!A1 * !A3 * S0 * !X)	0.00928	0.03148	0.35575
	(!A1 * !A3 * S0 * !X)	0.01830	0.04051	0.36480
	(!A0 * !A2 * !S0 * !X)	0.00431	0.02652	0.35078
	(!A0 * !A2 * !S0 * !X)	0.01333	0.03560	0.35983
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.01047	0.03263	0.35597
	(A1 * A3 * S0 * X)	0.01938	0.04161	0.36491
	(A0 * A2 * !S0 * X)	0.00550	0.02767	0.35101
	(A0 * A2 * !S0 * X)	0.01442	0.03665	0.35995
	(!A1 * !A3 * S0 * !X)	0.01357	0.03565	0.35832
	(!A1 * !A3 * S0 * !X)	0.02283	0.04497	0.36760
	(!A0 * !A2 * !S0 * !X)	0.00860	0.03067	0.35335
	(!A0 * !A2 * !S0 * !X)	0.01785	0.03998	0.36263
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01572	0.04054	0.40652
	(A1 * A3 * S0 * X)	0.02831	0.05314	0.41909
	(A0 * A2 * !S0 * X)	0.01129	0.03611	0.40209
	(A0 * A2 * !S0 * X)	0.02388	0.04871	0.41466
	(!A1 * !A3 * S0 * !X)	0.02274	0.04706	0.41222
	(!A1 * !A3 * S0 * !X)	0.03618	0.06058	0.42572
	(!A0 * !A2 * !S0 * !X)	0.01831	0.04265	0.40780
	(!A0 * !A2 * !S0 * !X)	0.03175	0.05610	0.42129

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00240	0.00286	1.54185
sky130_fd_sc_hs__nand2b_2	0.00270	0.00544	2.56298
sky130_fd_sc_hs__nand2b_4	0.00394	0.00832	3.24177

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	932.56100	1337.34000
sky130_fd_sc_hs__nand2b_2	0.00000	836.62000	2095.76000
sky130_fd_sc_hs__nand2b_4	0.00000	1874.51000	2697.81000

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)	0.04297	0.42520	5.97228
	B->Y (FR)	0.02379	0.57518	8.73980
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.04377	0.30682	4.70614
	B->Y (FR)	0.02281	0.49151	8.39667
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.05325	0.37488	6.15222
	B->Y (FR)	0.02825	0.51145	8.97516

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)	0.05043	0.48497	6.56626
	B->Y (RF)	0.02213	0.42779	6.60849
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.05421	0.44047	6.45855
	B->Y (RF)	0.02176	0.33284	6.00229
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.04115	0.28726	4.19576
	B->Y (RF)	0.01805	0.19991	4.05429

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	0.04409	0.06382	0.36434
	A_N	0.03943	0.05909	0.35821
	B	0.00065	0.01053	0.13334
	B	0.00589	0.01571	0.13754
sky130_fd_sc_hs__nand2b_2	A_N	0.02773	0.04699	0.32965
	A_N	0.02287	0.04196	0.32232
	B	0.00125	0.02213	0.25916
	B	0.01156	0.03234	0.26584
sky130_fd_sc_hs__nand2b_4	A_N	0.08367	0.11671	0.61413
	A_N	0.07674	0.10971	0.60632
	B	0.00099	0.03227	0.37942
	B	0.01676	0.04789	0.39282

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.02725	0.04695	0.33069
	A_N	0.03190	0.05155	0.33513
	B	0.03032	0.03608	0.11096
	B	0.02507	0.03078	0.10460
sky130_fd_sc_hs__nand2b_2	A_N	0.05256	0.07145	0.37094
	A_N	0.05743	0.07615	0.37544
	B	0.05853	0.07144	0.21679
	B	0.04820	0.06101	0.20649
sky130_fd_sc_hs__nand2b_4	A_N	0.04888	0.08363	0.59954
	A_N	0.05579	0.09050	0.60437
	B	0.05973	0.08138	0.31832
	B	0.04401	0.06558	0.30160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.01924	0.03848	0.33315
	(!B * Y)	0.01430	0.03353	0.32823
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.01606	0.03618	0.35484
	(!B * Y)	0.01059	0.03070	0.34938
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.03633	0.06863	0.57462
	(!B * Y)	0.02832	0.06060	0.56662

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00009	0.02081	0.32574
	(!B * Y)	0.00503	0.02575	0.33066
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00108	0.02176	0.34469
	(!B * Y)	0.00655	0.02723	0.35017
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00187	0.03738	0.56394
	(!B * Y)	0.00991	0.04544	0.57195

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.01398	0.01402	0.01398
	(A_N * Y)	0.00916	0.00914	0.00915
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00946	0.00948	0.00945
	(A_N * Y)	0.00030	0.00029	0.00028
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.03167	0.03179	0.03166
	(A_N * Y)	0.01814	0.01809	0.01809

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00948	0.00933	0.00933
	(A_N * Y)	0.01433	0.01421	0.01415
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00178	0.00136	0.00131
	(A_N * Y)	0.01099	0.01063	0.01047
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.01637	0.01553	0.01541
	(A_N * Y)	0.02993	0.02924	0.02893

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00278	1.58639
sky130_fd_sc_hs__nand2_2	0.00549	0.00546	3.03706
sky130_fd_sc_hs__nand2_4	0.00834	0.00813	3.15974
sky130_fd_sc_hs__nand2_8	0.01598	0.01607	5.38865

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	265.77200	1039.76000
sky130_fd_sc_hs__nand2_2	0.00000	530.78600	2076.60000
sky130_fd_sc_hs__nand2_4	0.00000	542.88300	2078.60000
sky130_fd_sc_hs__nand2_8	0.00000	1086.12000	4159.11000

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)	0.01904	0.56485	8.71969
	B->Y (FR)	0.02311	0.57060	8.74222
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.01671	0.47698	8.63576
	B->Y (FR)	0.02191	0.48292	8.61888
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.02300	0.50726	9.01157
	B->Y (FR)	0.03356	0.51906	9.02155
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.01931	0.42358	8.51146
	B->Y (FR)	0.02807	0.41869	8.03689

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01792	0.47730	7.46783
	B->Y (RF)	0.02067	0.43219	6.76215
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01697	0.42618	7.98178
	B->Y (RF)	0.02161	0.37674	7.16699
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01509	0.26528	5.16862
	B->Y (RF)	0.01906	0.20571	4.10388
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01328	0.22180	5.16390
	B->Y (RF)	0.01709	0.14065	3.65011

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00036	0.00949	0.12823
	A	0.00510	0.01487	0.13233
	B	0.00012	0.01024	0.13394
	B	0.00697	0.01703	0.13946
sky130_fd_sc_hs__nand2_2	A	-0.00119	0.01865	0.22947
	A	0.00938	0.02918	0.23596
	B	0.00084	0.02137	0.24302
	B	0.01448	0.03496	0.25217
sky130_fd_sc_hs__nand2_4	A	-0.00241	0.02667	0.34700
	A	0.01362	0.04261	0.36046
	B	0.00127	0.03139	0.37040
	B	0.02327	0.05333	0.39006
sky130_fd_sc_hs__nand2_8	A	-0.00537	0.05998	0.74814
	A	0.02576	0.09097	0.77372
	B	0.00070	0.06939	0.76766
	B	0.04427	0.11303	0.80763

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.02973	0.03572	0.10535
	A	0.02427	0.03018	0.09974
	B	0.03026	0.03602	0.10956
	B	0.02342	0.02916	0.10178
sky130_fd_sc_hs__nand2_2	A	0.06351	0.07670	0.20028
	A	0.05294	0.06600	0.18963
	B	0.06473	0.07743	0.20976
	B	0.05107	0.06371	0.19617
sky130_fd_sc_hs__nand2_4	A	0.05843	0.07869	0.28552
	A	0.04237	0.06249	0.26898
	B	0.06159	0.08251	0.31416
	B	0.03957	0.06044	0.29222
sky130_fd_sc_hs__nand2_8	A	0.10973	0.15637	0.58254
	A	0.07856	0.12498	0.55153
	B	0.11511	0.16761	0.68173
	B	0.07161	0.12397	0.63507

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00072	0.00072	0.00067
	(!B * Y)	-0.00291	-0.00294	-0.00299
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00136	0.00137	0.00124
	(!B * Y)	-0.00565	-0.00571	-0.00587
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00266	0.00268	0.00243
	(!B * Y)	-0.00660	-0.00669	-0.00702
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00528	0.00530	0.00482
	(!B * Y)	-0.01276	-0.01289	-0.01354

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00058	-0.00059	-0.00057
	(!B * Y)	0.00305	0.00311	0.00306
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00106	-0.00107	-0.00104
	(!B * Y)	0.00601	0.00610	0.00601
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00206	-0.00210	-0.00203
	(!B * Y)	0.00725	0.00739	0.00728
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00412	-0.00408	-0.00401
	(!B * Y)	0.01408	0.01406	0.01407

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00214	0.00217	0.00213
	(!A * Y)	-0.00250	-0.00252	-0.00251
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00416	0.00419	0.00414
	(!A * Y)	-0.00489	-0.00492	-0.00491
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00826	0.00836	0.00825
	(!A * Y)	-0.00490	-0.00495	-0.00495
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01658	0.01675	0.01650
	(!A * Y)	-0.00982	-0.00989	-0.00989

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00175	-0.00190	-0.00189
	(!A * Y)	0.00292	0.00280	0.00273
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00319	-0.00367	-0.00366
	(!A * Y)	0.00584	0.00548	0.00534
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00636	-0.00730	-0.00728
	(!A * Y)	0.00683	0.00605	0.00581
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.01292	-0.01466	-0.01457
	(!A * Y)	0.01358	0.01184	0.01162

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00225	0.00288	0.00280	1.50913
sky130_fd_sc_hs__nand3b_2	0.00266	0.00548	0.00545	2.40876
sky130_fd_sc_hs__nand3b_4	0.00375	0.00788	0.00797	2.60467

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	866.66500	1564.20000
sky130_fd_sc_hs__nand3b_2	0.00000	704.22400	3129.18000
sky130_fd_sc_hs__nand3b_4	0.00000	1732.83000	3117.98000

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)	0.04373	0.39160	5.35258
	B->Y (FR)	0.02693	0.56740	8.54598
	C->Y (FR)	0.02958	0.56158	8.39927
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.04564	0.27954	4.05616
	B->Y (FR)	0.02320	0.43857	7.35011
	C->Y (FR)	0.02670	0.45206	7.46767
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.05749	0.37198	5.56322
	B->Y (FR)	0.03296	0.47423	7.93119
	C->Y (FR)	0.04417	0.51090	8.32302

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)	0.05677	0.57606	7.98509
	B->Y (RF)	0.03187	0.53523	8.15402
	C->Y (RF)	0.03473	0.48542	7.39433
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.06448	0.52753	7.88288
	B->Y (RF)	0.03197	0.45225	7.84331
	C->Y (RF)	0.03456	0.38248	6.77704
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.05367	0.42296	6.49107
	B->Y (RF)	0.03437	0.40466	7.11997
	C->Y (RF)	0.03716	0.27013	5.02393

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	0.04091	0.06098	0.36597
	A_N	0.03676	0.05663	0.36531
	B	0.00108	0.00972	0.11905
	B	0.00642	0.01487	0.12090
	C	0.00160	0.01055	0.12563
	C	0.00808	0.01685	0.12861
sky130_fd_sc_hs__nand3b_2	A_N	0.02607	0.04800	0.38220
	A_N	0.02138	0.04296	0.36977
	B	0.00205	0.02026	0.23415
	B	0.01277	0.03062	0.23827
	C	0.00309	0.02256	0.24807
	C	0.01676	0.03584	0.25468
sky130_fd_sc_hs__nand3b_4	A_N	0.08075	0.11384	0.62377
	A_N	0.07379	0.10656	0.60952
	B	0.00282	0.02407	0.27684
	B	0.01811	0.03910	0.28423
	C	0.00439	0.02750	0.30346
	C	0.02620	0.04889	0.31728

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.04698	0.06662	0.35047
	A_N	0.05112	0.07076	0.35455
	B	0.05023	0.05444	0.10980
	B	0.04487	0.04905	0.10442
	C	0.05070	0.05545	0.12258
	C	0.04420	0.04893	0.11570
sky130_fd_sc_hs__nand3b_2	A_N	0.09289	0.11109	0.38721
	A_N	0.09756	0.11574	0.39189
	B	0.09889	0.10858	0.22032
	B	0.08814	0.09772	0.20945
	C	0.09960	0.11118	0.25566
	C	0.08591	0.09735	0.24173
sky130_fd_sc_hs__nand3b_4	A_N	0.09076	0.12254	0.59248
	A_N	0.09771	0.12947	0.59852
	B	0.10171	0.11246	0.23865
	B	0.08642	0.09710	0.22349
	C	0.10508	0.12106	0.32768
	C	0.08326	0.09917	0.30499

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)	0.01897	0.03848	0.33580
	(B * !C * Y)	0.01426	0.03376	0.33110
	(!B * Y)	0.01886	0.03839	0.33548
	(!B * Y)	0.01426	0.03378	0.33089
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.01659	0.03676	0.35674
	(B * !C * Y)	0.01064	0.03080	0.35080
	(!B * Y)	0.01630	0.03650	0.35615
	(!B * Y)	0.01064	0.03083	0.35051
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.03674	0.06769	0.55624
	(B * !C * Y)	0.02827	0.05920	0.54781
	(!B * Y)	0.03612	0.06724	0.55737
	(!B * Y)	0.02815	0.05921	0.54936

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)	0.00031	0.02127	0.32888
	(B * !C * Y)	0.00505	0.02604	0.33359
	(!B * Y)	0.00034	0.02129	0.32865
	(!B * Y)	0.00492	0.02589	0.33324
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00098	0.02165	0.34590
	(B * !C * Y)	0.00702	0.02772	0.35188
	(!B * Y)	0.00118	0.02182	0.34573
	(!B * Y)	0.00685	0.02750	0.35138
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00202	0.03612	0.54518
	(B * !C * Y)	0.01068	0.04480	0.55372
	(!B * Y)	0.00228	0.03651	0.54710
	(!B * Y)	0.01029	0.04455	0.55512

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)	0.01383	0.01385	0.01382
	(A_N * C * Y)	0.00910	0.00909	0.00909
	(A_N * !C * Y)	0.01292	0.01293	0.01291
	(A_N * !C * Y)	0.00901	0.00899	0.00901
	(!A_N * !C * Y)	0.00079	0.00079	0.00078
	(!A_N * !C * Y)	-0.00284	-0.00287	-0.00287
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00940	0.00943	0.00940
	(A_N * C * Y)	0.00013	0.00010	0.00010
	(A_N * !C * Y)	0.00768	0.00768	0.00767
	(A_N * !C * Y)	-0.00008	-0.00009	-0.00008
	(!A_N * !C * Y)	0.00172	0.00174	0.00175
	(!A_N * !C * Y)	-0.00538	-0.00543	-0.00540
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.03164	0.03169	0.03162
	(A_N * C * Y)	0.01829	0.01826	0.01824
	(A_N * !C * Y)	0.02748	0.02751	0.02745
	(A_N * !C * Y)	0.01729	0.01727	0.01731
	(!A_N * !C * Y)	0.00297	0.00300	0.00302
	(!A_N * !C * Y)	-0.00593	-0.00599	-0.00598

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)	0.00974	0.00948	0.00950
	(A_N * C * Y)	0.01446	0.01427	0.01422
	(A_N * !C * Y)	0.01022	0.01022	0.01017
	(A_N * !C * Y)	0.01423	0.01426	0.01415
	(!A_N * !C * Y)	-0.00051	-0.00051	-0.00052
	(!A_N * !C * Y)	0.00316	0.00319	0.00311
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00205	0.00137	0.00134
	(A_N * C * Y)	0.01135	0.01067	0.01064
	(A_N * !C * Y)	0.00270	0.00273	0.00261
	(A_N * !C * Y)	0.01075	0.01079	0.01053
	(!A_N * !C * Y)	-0.00106	-0.00110	-0.00114
	(!A_N * !C * Y)	0.00607	0.00619	0.00598
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.01715	0.01536	0.01526
	(A_N * C * Y)	0.03048	0.02887	0.02859
	(A_N * !C * Y)	0.01877	0.01869	0.01851
	(A_N * !C * Y)	0.02942	0.02943	0.02896
	(!A_N * !C * Y)	-0.00222	-0.00226	-0.00233
	(!A_N * !C * Y)	0.00678	0.00686	0.00661

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)	0.01363	0.01364	0.01362
	(A_N * B * Y)	0.00914	0.00913	0.00914
	(A_N * !B * Y)	0.01352	0.01354	0.01352
	(A_N * !B * Y)	0.00906	0.00904	0.00906
	(!A_N * !B * Y)	0.00206	0.00208	0.00206
	(!A_N * !B * Y)	-0.00241	-0.00243	-0.00243
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00957	0.00958	0.00956
	(A_N * B * Y)	0.00029	0.00029	0.00031
	(A_N * !B * Y)	0.00934	0.00941	0.00936
	(A_N * !B * Y)	0.00015	0.00010	0.00013
	(!A_N * !B * Y)	0.00417	0.00421	0.00417
	(!A_N * !B * Y)	-0.00509	-0.00513	-0.00512
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.03161	0.03161	0.03157
	(A_N * B * Y)	0.01827	0.01827	0.01828
	(A_N * !B * Y)	0.03109	0.03119	0.03112
	(A_N * !B * Y)	0.01790	0.01786	0.01789
	(!A_N * !B * Y)	0.00810	0.00821	0.00813
	(!A_N * !B * Y)	-0.00517	-0.00522	-0.00521

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)	0.00995	0.00973	0.00971
	(A_N * B * Y)	0.01442	0.01426	0.01418
	(A_N * !B * Y)	0.00968	0.00960	0.00963
	(A_N * !B * Y)	0.01415	0.01413	0.01408
	(!A_N * !B * Y)	-0.00155	-0.00169	-0.00171
	(!A_N * !B * Y)	0.00296	0.00285	0.00276
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00170	0.00123	0.00119
	(A_N * B * Y)	0.01094	0.01057	0.01043
	(A_N * !B * Y)	0.00111	0.00100	0.00102
	(A_N * !B * Y)	0.01034	0.01031	0.01024
	(!A_N * !B * Y)	-0.00304	-0.00335	-0.00338
	(!A_N * !B * Y)	0.00630	0.00603	0.00586
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.01623	0.01543	0.01532
	(A_N * B * Y)	0.02955	0.02888	0.02857
	(A_N * !B * Y)	0.01525	0.01491	0.01498
	(A_N * !B * Y)	0.02844	0.02828	0.02821
	(!A_N * !B * Y)	-0.00628	-0.00711	-0.00706
	(!A_N * !B * Y)	0.00712	0.00639	0.00620

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00295	0.00287	1.45247
sky130_fd_sc_hs__nand3_2	0.00545	0.00591	0.00542	2.45902
sky130_fd_sc_hs__nand3_4	0.00808	0.00801	0.00805	3.11092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	199.23100	1556.37000
sky130_fd_sc_hs__nand3_2	0.00000	397.28400	3103.59000
sky130_fd_sc_hs__nand3_4	0.00000	407.81400	3114.60000

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)	0.02258	0.54403	8.16865
	B->Y (FR)	0.02715	0.54744	8.15273
	C->Y (FR)	0.03002	0.55388	8.19133
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.02134	0.50279	8.59904
	B->Y (FR)	0.02408	0.45035	7.57485
	C->Y (FR)	0.02806	0.46203	7.66603
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.02280	0.49739	8.84602
	B->Y (FR)	0.03401	0.50602	8.80437
	C->Y (FR)	0.04067	0.51028	8.71596

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02623	0.56289	8.50799
	B->Y (RF)	0.03165	0.52804	7.94208
	C->Y (RF)	0.03409	0.47777	7.17735
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02210	0.46147	8.10563
	B->Y (RF)	0.02921	0.43444	7.60433
	C->Y (RF)	0.03325	0.38594	6.83017
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01684	0.33670	6.40742
	B->Y (RF)	0.02410	0.29138	5.56640
	C->Y (RF)	0.02695	0.22930	4.53883

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00019	0.00872	0.11980
	A	0.00556	0.01430	0.12212
	B	0.00058	0.00930	0.12176
	B	0.00772	0.01625	0.12562
	C	0.00098	0.00998	0.12665
	C	0.00963	0.01848	0.13190
sky130_fd_sc_hs__nand3_2	A	-0.00108	0.01581	0.20615
	A	0.00981	0.02637	0.20953
	B	0.00110	0.01969	0.23336
	B	0.01536	0.03358	0.24073
	C	0.00283	0.02238	0.25445
	C	0.01985	0.03931	0.26478
sky130_fd_sc_hs__nand3_4	A	-0.00221	0.02403	0.30918
	A	0.01387	0.03998	0.32018
	B	0.00180	0.02819	0.32958
	B	0.02381	0.05001	0.34669
	C	0.00408	0.03192	0.35338
	C	0.03253	0.06031	0.37677

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.04917	0.05415	0.11323
	A	0.04341	0.04839	0.10750
	B	0.04963	0.05400	0.11278
	B	0.04247	0.04680	0.10548
	C	0.05021	0.05510	0.12477
	C	0.04153	0.04637	0.11594
sky130_fd_sc_hs__nand3_2	A	0.09559	0.10585	0.20924
	A	0.08469	0.09488	0.19808
	B	0.09655	0.10672	0.22418
	B	0.08225	0.09242	0.20901
	C	0.09745	0.10903	0.25455
	C	0.08041	0.09195	0.23705
sky130_fd_sc_hs__nand3_4	A	0.08735	0.10381	0.26600
	A	0.07127	0.08757	0.24981
	B	0.09017	0.10608	0.28109
	B	0.06812	0.08390	0.25641
	C	0.09360	0.11186	0.32990
	C	0.06515	0.08340	0.29981

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00068	0.00068	0.00062
	(B * !C * Y)	-0.00283	-0.00284	-0.00299
	(!B * Y)	0.00070	0.00070	0.00065
	(!B * Y)	-0.00290	-0.00293	-0.00300
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00135	0.00136	0.00118
	(B * !C * Y)	-0.00527	-0.00530	-0.00565
	(!B * Y)	0.00141	0.00142	0.00129
	(!B * Y)	-0.00544	-0.00549	-0.00565
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00251	0.00252	0.00221
	(B * !C * Y)	-0.00609	-0.00615	-0.00681
	(!B * Y)	0.00260	0.00262	0.00237
	(!B * Y)	-0.00644	-0.00653	-0.00686

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)	0.00305	0.00307	0.00307
	(!B * Y)	-0.00056	-0.00056	-0.00055
	(!B * Y)	0.00306	0.00309	0.00307
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00095	-0.00098	-0.00095
	(B * !C * Y)	0.00577	0.00588	0.00580
	(!B * Y)	-0.00110	-0.00112	-0.00109
	(!B * Y)	0.00575	0.00583	0.00579
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00179	-0.00178	-0.00175
	(B * !C * Y)	0.00710	0.00712	0.00709
	(!B * Y)	-0.00202	-0.00200	-0.00198
	(!B * Y)	0.00709	0.00707	0.00712

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00082	0.00082	0.00081
	(A * !C * Y)	-0.00259	-0.00262	-0.00259
	(!A * C * Y)	0.00208	0.00210	0.00208
	(!A * C * Y)	-0.00249	-0.00251	-0.00251
	(!A * !C * Y)	0.00102	0.00103	0.00101
	(!A * !C * Y)	-0.00259	-0.00261	-0.00259
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00164	0.00166	0.00165
	(A * !C * Y)	-0.00544	-0.00549	-0.00542
	(!A * C * Y)	0.00410	0.00413	0.00409
	(!A * C * Y)	-0.00520	-0.00523	-0.00523
	(!A * !C * Y)	0.00215	0.00217	0.00214
	(!A * !C * Y)	-0.00544	-0.00548	-0.00544
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00292	0.00295	0.00294
	(A * !C * Y)	-0.00535	-0.00540	-0.00533
	(!A * C * Y)	0.00817	0.00824	0.00816
	(!A * C * Y)	-0.00493	-0.00497	-0.00498
	(!A * !C * Y)	0.00379	0.00384	0.00377
	(!A * !C * Y)	-0.00537	-0.00542	-0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00068	-0.00068	-0.00070
	(A * !C * Y)	0.00275	0.00278	0.00268
	(!A * C * Y)	-0.00161	-0.00187	-0.00184
	(!A * C * Y)	0.00300	0.00278	0.00273
	(!A * !C * Y)	-0.00099	-0.00099	-0.00101
	(!A * !C * Y)	0.00274	0.00276	0.00265
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00133	-0.00135	-0.00140
	(A * !C * Y)	0.00575	0.00579	0.00562
	(!A * C * Y)	-0.00305	-0.00369	-0.00363
	(!A * C * Y)	0.00628	0.00576	0.00566
	(!A * !C * Y)	-0.00205	-0.00205	-0.00212
	(!A * !C * Y)	0.00584	0.00585	0.00560
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00240	-0.00241	-0.00247
	(A * !C * Y)	0.00603	0.00605	0.00570
	(!A * C * Y)	-0.00598	-0.00726	-0.00722
	(!A * C * Y)	0.00719	0.00595	0.00583
	(!A * !C * Y)	-0.00369	-0.00365	-0.00375
	(!A * !C * Y)	0.00603	0.00607	0.00562

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00220	0.00221	0.00219
	(A * !B * Y)	-0.00253	-0.00253	-0.00253
	(!A * B * Y)	0.00218	0.00220	0.00218
	(!A * B * Y)	-0.00251	-0.00252	-0.00251
	(!A * !B * Y)	0.00210	0.00211	0.00210
	(!A * !B * Y)	-0.00260	-0.00261	-0.00260
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00409	0.00412	0.00408
	(A * !B * Y)	-0.00492	-0.00495	-0.00493
	(!A * B * Y)	0.00408	0.00407	0.00406
	(!A * B * Y)	-0.00494	-0.00493	-0.00493
	(!A * !B * Y)	0.00385	0.00390	0.00387
	(!A * !B * Y)	-0.00509	-0.00513	-0.00510
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00829	0.00836	0.00830
	(A * !B * Y)	-0.00501	-0.00505	-0.00505
	(!A * B * Y)	0.00823	0.00833	0.00827
	(!A * B * Y)	-0.00497	-0.00502	-0.00500
	(!A * !B * Y)	0.00788	0.00795	0.00790
	(!A * !B * Y)	-0.00534	-0.00536	-0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00183	-0.00199	-0.00198
	(A * !B * Y)	0.00292	0.00279	0.00272
	(!A * B * Y)	-0.00172	-0.00194	-0.00195
	(!A * B * Y)	0.00300	0.00281	0.00273
	(!A * !B * Y)	-0.00199	-0.00207	-0.00205
	(!A * !B * Y)	0.00270	0.00268	0.00264
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00319	-0.00363	-0.00365
	(A * !B * Y)	0.00581	0.00551	0.00534
	(!A * B * Y)	-0.00298	-0.00355	-0.00360
	(!A * B * Y)	0.00600	0.00555	0.00537
	(!A * !B * Y)	-0.00360	-0.00380	-0.00379
	(!A * !B * Y)	0.00527	0.00525	0.00519
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00661	-0.00738	-0.00744
	(A * !B * Y)	0.00674	0.00614	0.00581
	(!A * B * Y)	-0.00621	-0.00722	-0.00734
	(!A * B * Y)	0.00706	0.00621	0.00587
	(!A * !B * Y)	-0.00736	-0.00775	-0.00772
	(!A * !B * Y)	0.00572	0.00558	0.00549

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00228	0.00221	0.00294	0.00296	1.12788
sky130_fd_sc_hs__nand4bb_2	0.00260	0.00256	0.00555	0.00548	1.78561
sky130_fd_sc_hs__nand4bb_4	0.00362	0.00373	0.01081	0.01085	2.79687

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	1463.87000	2643.41000
sky130_fd_sc_hs__nand4bb_2	0.00000	876.12000	4169.90000
sky130_fd_sc_hs__nand4bb_4	0.00000	3184.49000	8256.62000

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)	0.04995	0.37011	4.34476
	B_N->Y (RR)	0.05535	0.37373	4.31209
	C->Y (FR)	0.03450	0.51444	7.04915
	D->Y (FR)	0.03816	0.52214	7.09572
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.04844	0.24642	2.92119
	B_N->Y (RR)	0.05376	0.23836	2.65200
	C->Y (FR)	0.02748	0.39480	5.97252
	D->Y (FR)	0.03059	0.40635	6.06357
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.05947	0.26270	3.14367
	B_N->Y (RR)	0.06761	0.27977	3.29408
	C->Y (FR)	0.02664	0.32988	5.44787
	D->Y (FR)	0.02933	0.34407	5.56448

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)	0.06830	0.61781	7.79645
	B_N->Y (FF)	0.07642	0.62519	7.70121
	C->Y (RF)	0.05256	0.54679	7.40766
	D->Y (RF)	0.05689	0.51080	6.81956
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.07461	0.57921	8.02044
	B_N->Y (FF)	0.08994	0.59743	7.95632
	C->Y (RF)	0.05225	0.45032	6.98463
	D->Y (RF)	0.05652	0.41786	6.43446
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.07505	0.45378	6.68220
	B_N->Y (FF)	0.08617	0.46237	6.51376
	C->Y (RF)	0.05480	0.37608	6.54872
	D->Y (RF)	0.05830	0.33753	5.90611

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	0.03711	0.05707	0.36112
	A_N	0.03346	0.05314	0.35345
	B_N	0.03752	0.05736	0.36103
	B_N	0.03399	0.05354	0.35252
	C	0.00205	0.01014	0.12470
	C	0.00787	0.01562	0.12587
	D	0.00275	0.01111	0.13243
	D	0.00987	0.01791	0.13479
sky130_fd_sc_hs__nand4bb_2	A_N	0.02478	0.04690	0.38231
	A_N	0.02081	0.04234	0.36908
	B_N	0.02714	0.04892	0.38342
	B_N	0.02328	0.04447	0.36868
	C	0.00380	0.02145	0.25025
	C	0.01444	0.03157	0.25136
	D	0.00569	0.02370	0.26181
	D	0.01937	0.03688	0.26539
sky130_fd_sc_hs__nand4bb_4	A_N	0.06433	0.09946	0.64896
	A_N	0.05912	0.09319	0.62274
	B_N	0.07054	0.10605	0.66788
	B_N	0.06511	0.09960	0.64096
	C	0.00533	0.04462	0.53983
	C	0.02643	0.06486	0.54069
	D	0.00828	0.04909	0.57401
	D	0.03546	0.07534	0.57949

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.06184	0.08110	0.36695
	A_N	0.06547	0.08473	0.37056
	B_N	0.06354	0.08286	0.36837
	B_N	0.06705	0.08637	0.37176
	C	0.06677	0.07029	0.13151
	C	0.06095	0.06446	0.12533
	D	0.06747	0.07151	0.14588
	D	0.06034	0.06435	0.13870
sky130_fd_sc_hs__nand4bb_2	A_N	0.12322	0.14112	0.42448
	A_N	0.12717	0.14507	0.42815
	B_N	0.12613	0.14387	0.42547
	B_N	0.12999	0.14771	0.42917
	C	0.13064	0.13955	0.27025
	C	0.11997	0.12877	0.25961
	D	0.13262	0.14204	0.29674
	D	0.11892	0.12821	0.28215
sky130_fd_sc_hs__nand4bb_4	A_N	0.23781	0.26840	0.73070
	A_N	0.24302	0.27355	0.73532
	B_N	0.24217	0.27283	0.74368
	B_N	0.24757	0.27816	0.74798
	C	0.25625	0.27988	0.60590
	C	0.23515	0.25870	0.58370
	D	0.26036	0.28665	0.67832
	D	0.23318	0.25932	0.65063

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)	0.02990	0.04899	0.33961
	(B_N * Y)	0.02548	0.04456	0.33520
	(!B_N * C * !D * Y)	0.01924	0.03838	0.33002
	(!B_N * C * !D * Y)	0.01473	0.03384	0.32551
	(!B_N * !C * Y)	0.01923	0.03836	0.33001
	(!B_N * !C * Y)	0.01478	0.03389	0.32556
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.02073	0.04050	0.35276
	(B_N * Y)	0.01589	0.03565	0.34793
	(!B_N * C * !D * Y)	0.01673	0.03650	0.34955
	(!B_N * C * !D * Y)	0.01169	0.03146	0.34454
	(!B_N * !C * Y)	0.01669	0.03646	0.34950
	(!B_N * !C * Y)	0.01178	0.03155	0.34461
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.06303	0.09316	0.59042
	(B_N * Y)	0.05612	0.08624	0.58351
	(!B_N * C * !D * Y)	0.04165	0.07181	0.57052
	(!B_N * C * !D * Y)	0.03426	0.06442	0.56317
	(!B_N * !C * Y)	0.04155	0.07171	0.57042
	(!B_N * !C * Y)	0.03447	0.06462	0.56335

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)	0.01211	0.03258	0.33334
	(B_N * Y)	0.01653	0.03700	0.33775
	(!B_N * C * !D * Y)	0.00008	0.02062	0.32250
	(!B_N * C * !D * Y)	0.00466	0.02521	0.32704
	(!B_N * !C * Y)	0.00005	0.02059	0.32248
	(!B_N * !C * Y)	0.00451	0.02506	0.32693
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00687	0.02697	0.34336
	(B_N * Y)	0.01169	0.03182	0.34819
	(!B_N * C * !D * Y)	0.00124	0.02141	0.33860
	(!B_N * C * !D * Y)	0.00638	0.02659	0.34368
	(!B_N * !C * Y)	0.00118	0.02135	0.33858
	(!B_N * !C * Y)	0.00607	0.02629	0.34348
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.02645	0.06004	0.57786
	(B_N * Y)	0.03333	0.06697	0.58477
	(!B_N * C * !D * Y)	0.00264	0.03635	0.55570
	(!B_N * C * !D * Y)	0.01025	0.04398	0.56321
	(!B_N * !C * Y)	0.00255	0.03626	0.55568
	(!B_N * !C * Y)	0.00964	0.04336	0.56276

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)	0.03002	0.04856	0.33846
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.02572	0.04425	0.33416
	(!C * Y)	0.02994	0.04888	0.33897
	(!C * Y)	0.02551	0.04444	0.33454
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.02098	0.03971	0.34970
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01626	0.03497	0.34498
	(!C * Y)	0.02072	0.04011	0.35053
	(!C * Y)	0.01577	0.03516	0.34558
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.06373	0.09210	0.58745
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.05665	0.08500	0.58037
	(!C * Y)	0.06360	0.09313	0.58942
	(!C * Y)	0.05603	0.08555	0.58182

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)	0.01335	0.03366	0.33401
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01763	0.03796	0.33830
	(!C * Y)	0.01244	0.03284	0.33326
	(!C * Y)	0.01684	0.03727	0.33769
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00939	0.02904	0.34364
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01408	0.03377	0.34835
	(!C * Y)	0.00764	0.02748	0.34234
	(!C * Y)	0.01257	0.03244	0.34730
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.03084	0.06387	0.58071
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.03791	0.07099	0.58780
	(!C * Y)	0.02733	0.06065	0.57803
	(!C * Y)	0.03490	0.06823	0.58562

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)**	0.02510	0.02512	0.02511
	(A_N * B_N * D * Y)	0.02035	0.02034	0.02035
	(A_N * B_N * !D * Y)	0.02434	0.02435	0.02433
	(A_N * B_N * !D * Y)	0.02032	0.02030	0.02032
	(A_N * !B_N * D * Y)	0.01359	0.01360	0.01358
	(A_N * !B_N * D * Y)	0.00882	0.00881	0.00882
	(A_N * !B_N * !D * Y)	0.01263	0.01263	0.01262
	(A_N * !B_N * !D * Y)	0.00837	0.00836	0.00838
	(!A_N * B_N * D * Y)	0.01379	0.01382	0.01380
	(!A_N * B_N * D * Y)	0.00905	0.00902	0.00903
	(!A_N * B_N * !D * Y)	0.01293	0.01295	0.01293
	(!A_N * B_N * !D * Y)	0.00895	0.00892	0.00894
	(!A_N * !B_N * !D * Y)	0.00093	0.00092	0.00091
	(!A_N * !B_N * !D * Y)	-0.00280	-0.00279	-0.00281
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.01425	0.01430	0.01426
	(A_N * B_N * D * Y)	0.00508	0.00504	0.00507
	(A_N * B_N * !D * Y)	0.01265	0.01267	0.01264
	(A_N * B_N * !D * Y)	0.00504	0.00501	0.00504
	(A_N * !B_N * D * Y)	0.00949	0.00952	0.00949
	(A_N * !B_N * D * Y)	0.00028	0.00025	0.00028
	(A_N * !B_N * !D * Y)	0.00757	0.00757	0.00756
	(A_N * !B_N * !D * Y)	-0.00060	-0.00062	-0.00059
	(!A_N * B_N * D * Y)	0.00950	0.00953	0.00950
	(!A_N * B_N * D * Y)	0.00030	0.00028	0.00029
	(!A_N * B_N * !D * Y)	0.00768	0.00771	0.00768
	(!A_N * B_N * !D * Y)	0.00012	0.00007	0.00011
	(!A_N * !B_N * !D * Y)	0.00206	0.00208	0.00206
	(!A_N * !B_N * !D * Y)	-0.00491	-0.00496	-0.00497

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.05396	0.05407	0.05399
	(A_N * B_N * D * Y)	0.03583	0.03576	0.03582
	(A_N * B_N * !D * Y)	0.05070	0.05075	0.05068
	(A_N * B_N * !D * Y)	0.03576	0.03568	0.03576
	(A_N * !B_N * D * Y)	0.03140	0.03141	0.03138
	(A_N * !B_N * D * Y)	0.01315	0.01316	0.01318
	(A_N * !B_N * !D * Y)	0.02742	0.02742	0.02738
	(A_N * !B_N * !D * Y)	0.01137	0.01134	0.01140
	(!A_N * B_N * D * Y)	0.03148	0.03156	0.03147
	(!A_N * B_N * D * Y)	0.01329	0.01323	0.01326
	(!A_N * B_N * !D * Y)	0.02777	0.02783	0.02777
	(!A_N * B_N * !D * Y)	0.01290	0.01282	0.01289
	(!A_N * !B_N * !D * Y)	0.00342	0.00342	0.00343
	(!A_N * !B_N * !D * Y)	-0.01029	-0.01032	-0.01038

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)**	0.02102	0.02091	0.02093
	(A_N * B_N * D * Y)	0.02578	0.02573	0.02569
	(A_N * B_N * !D * Y)	0.02163	0.02162	0.02163
	(A_N * B_N * !D * Y)	0.02577	0.02579	0.02572
	(A_N * !B_N * D * Y)	0.01020	0.00986	0.00987
	(A_N * !B_N * D * Y)	0.01496	0.01467	0.01463
	(A_N * !B_N * !D * Y)	0.01059	0.01064	0.01059
	(A_N * !B_N * !D * Y)	0.01501	0.01507	0.01494
	(!A_N * B_N * D * Y)	0.00986	0.00961	0.00961
	(!A_N * B_N * D * Y)	0.01463	0.01443	0.01437
	(!A_N * B_N * !D * Y)	0.01031	0.01030	0.01026
	(!A_N * B_N * !D * Y)	0.01443	0.01445	0.01434
	(!A_N * !B_N * !D * Y)	-0.00046	-0.00046	-0.00048
	(!A_N * !B_N * !D * Y)	0.00329	0.00332	0.00324
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00649	0.00630	0.00634
	(A_N * B_N * D * Y)	0.01568	0.01561	0.01553
	(A_N * B_N * !D * Y)	0.00783	0.00783	0.00786
	(A_N * B_N * !D * Y)	0.01577	0.01577	0.01562
	(A_N * !B_N * D * Y)	0.00239	0.00159	0.00162
	(A_N * !B_N * D * Y)	0.01158	0.01091	0.01083
	(A_N * !B_N * !D * Y)	0.00309	0.00321	0.00309
	(A_N * !B_N * !D * Y)	0.01156	0.01178	0.01149
	(!A_N * B_N * D * Y)	0.00213	0.00156	0.00156
	(!A_N * B_N * D * Y)	0.01134	0.01089	0.01076
	(!A_N * B_N * !D * Y)	0.00305	0.00306	0.00297
	(!A_N * B_N * !D * Y)	0.01093	0.01094	0.01070
	(!A_N * !B_N * !D * Y)	-0.00092	-0.00095	-0.00101
	(!A_N * !B_N * !D * Y)	0.00614	0.00621	0.00603

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	0.03857	0.03814	0.03815
	(A_N * B_N * D * Y)	0.05672	0.05637	0.05633
	(A_N * B_N * !D * Y)	0.04118	0.04119	0.04122
	(A_N * B_N * !D * Y)	0.05679	0.05679	0.05648
	(A_N * !B_N * D * Y)	0.01744	0.01581	0.01582
	(A_N * !B_N * D * Y)	0.03563	0.03406	0.03403
	(A_N * !B_N * !D * Y)	0.01885	0.01907	0.01888
	(A_N * !B_N * !D * Y)	0.03547	0.03590	0.03533
	(!A_N * B_N * D * Y)	0.01684	0.01569	0.01561
	(!A_N * B_N * D * Y)	0.03505	0.03398	0.03380
	(!A_N * B_N * !D * Y)	0.01864	0.01866	0.01848
	(!A_N * B_N * !D * Y)	0.03411	0.03414	0.03367
	(!A_N * !B_N * !D * Y)	-0.00227	-0.00228	-0.00242
	(!A_N * !B_N * !D * Y)	0.01160	0.01162	0.01141

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)	0.02487	0.02489	0.02487
	(A_N * B_N * C * Y)	0.02021	0.02020	0.02021
	(A_N * !C * Y)	0.02488	0.02490	0.02488
	(A_N * !C * Y)	0.02021	0.02019	0.02020
	(A_N * !B_N * C * Y)	0.01359	0.01360	0.01359
	(A_N * !B_N * C * Y)	0.00891	0.00890	0.00890
	(!A_N * B_N * C * Y)	0.01359	0.01361	0.01359
	(!A_N * B_N * C * Y)	0.00889	0.00889	0.00890
	(!A_N * B_N * !C * Y)	0.01349	0.01351	0.01350
	(!A_N * B_N * !C * Y)	0.00883	0.00881	0.00882
	(!A_N * !B_N * !C * Y)	0.00213	0.00214	0.00212
	(!A_N * !B_N * !C * Y)	-0.00257	-0.00258	-0.00258

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.01420	0.01424	0.01420
	(A_N * B_N * C * Y)	0.00518	0.00515	0.00518
	(A_N * !C * Y)	0.01420	0.01425	0.01422
	(A_N * !C * Y)	0.00518	0.00514	0.00517
	(A_N * !B_N * C * Y)	0.00947	0.00950	0.00948
	(A_N * !B_N * C * Y)	0.00040	0.00038	0.00039
	(!A_N * B_N * C * Y)	0.00947	0.00948	0.00947
	(!A_N * B_N * C * Y)	0.00039	0.00039	0.00039
	(!A_N * B_N * !C * Y)	0.00928	0.00930	0.00930
	(!A_N * B_N * !C * Y)	0.00026	0.00025	0.00025
	(!A_N * !B_N * !C * Y)	0.00451	0.00457	0.00453
	(!A_N * !B_N * !C * Y)	-0.00455	-0.00460	-0.00458
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.05379	0.05379	0.05377
	(A_N * B_N * C * Y)	0.03585	0.03586	0.03588
	(A_N * !C * Y)	0.05389	0.05393	0.05388
	(A_N * !C * Y)	0.03583	0.03581	0.03584
	(A_N * !B_N * C * Y)	0.03145	0.03150	0.03143
	(A_N * !B_N * C * Y)	0.01330	0.01327	0.01332
	(!A_N * B_N * C * Y)	0.03145	0.03147	0.03142
	(!A_N * B_N * C * Y)	0.01330	0.01329	0.01333
	(!A_N * B_N * !C * Y)	0.03103	0.03115	0.03106
	(!A_N * B_N * !C * Y)	0.01304	0.01296	0.01302
	(!A_N * !B_N * !C * Y)	0.00850	0.00859	0.00850
	(!A_N * !B_N * !C * Y)	-0.00962	-0.00969	-0.00966

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)**	0.02123	0.02115	0.02114
	(A_N * B_N * C * Y)	0.02584	0.02585	0.02582
	(A_N * !C * Y)	0.02116	0.02111	0.02113
	(A_N * !C * Y)	0.02579	0.02584	0.02581
	(A_N * !B_N * C * Y)	0.01012	0.00987	0.00985
	(A_N * !B_N * C * Y)	0.01478	0.01461	0.01454
	(!A_N * B_N * C * Y)	0.01007	0.00984	0.00982
	(!A_N * B_N * C * Y)	0.01474	0.01458	0.01450
	(!A_N * B_N * !C * Y)	0.00980	0.00974	0.00975
	(!A_N * B_N * !C * Y)	0.01444	0.01446	0.01443
	(!A_N * !B_N * !C * Y)	-0.00146	-0.00164	-0.00164
	(!A_N * !B_N * !C * Y)	0.00323	0.00312	0.00305
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00656	0.00636	0.00636
	(A_N * B_N * C * Y)	0.01547	0.01547	0.01540
	(A_N * !C * Y)	0.00638	0.00630	0.00633
	(A_N * !C * Y)	0.01538	0.01545	0.01539
	(A_N * !B_N * C * Y)	0.00225	0.00168	0.00162
	(A_N * !B_N * C * Y)	0.01132	0.01086	0.01070
	(!A_N * B_N * C * Y)	0.00217	0.00162	0.00157
	(!A_N * B_N * C * Y)	0.01122	0.01080	0.01063
	(!A_N * B_N * !C * Y)	0.00151	0.00139	0.00142
	(!A_N * B_N * !C * Y)	0.01052	0.01054	0.01048
	(!A_N * !B_N * !C * Y)	-0.00294	-0.00338	-0.00338
	(!A_N * !B_N * !C * Y)	0.00616	0.00585	0.00569

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.03864	0.03824	0.03823
	(A_N * B_N * C * Y)	0.05641	0.05637	0.05625
	(A_N * !C * Y)	0.03826	0.03809	0.03817
	(A_N * !C * Y)	0.05620	0.05633	0.05622
	(A_N * !B_N * C * Y)	0.01694	0.01589	0.01577
	(A_N * !B_N * C * Y)	0.03504	0.03419	0.03387
	(!A_N * B_N * C * Y)	0.01679	0.01577	0.01567
	(!A_N * B_N * C * Y)	0.03491	0.03408	0.03372
	(!A_N * B_N * !C * Y)	0.01555	0.01529	0.01537
	(!A_N * B_N * !C * Y)	0.03352	0.03354	0.03341
	(!A_N * !B_N * !C * Y)	-0.00643	-0.00727	-0.00726
	(!A_N * !B_N * !C * Y)	0.01173	0.01112	0.01082

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00224	0.00289	0.00289	0.00280	1.15033
sky130_fd_sc_hs__nand4b_2	0.00281	0.00570	0.00553	0.00554	1.80017
sky130_fd_sc_hs__nand4b_4	0.00389	0.00809	0.00825	0.00793	3.02751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	800.29400	2078.03000
sky130_fd_sc_hs__nand4b_2	0.00000	571.57700	4150.36000
sky130_fd_sc_hs__nand4b_4	0.00000	1602.56000	4156.12000

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)	0.04549	0.33638	3.90829
	B->Y (FR)	0.02819	0.51119	7.13128
	C->Y (FR)	0.03238	0.51655	7.14936
	D->Y (FR)	0.03364	0.51155	7.03478
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.04744	0.23391	2.68809
	B->Y (FR)	0.02509	0.38630	5.94832
	C->Y (FR)	0.02889	0.40261	6.11334
	D->Y (FR)	0.03160	0.40783	6.10155
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.05888	0.37155	5.85780
	B->Y (FR)	0.03400	0.48538	8.38208
	C->Y (FR)	0.04204	0.49786	8.41569
	D->Y (FR)	0.05054	0.51943	8.61374

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)	0.06397	0.60979	7.70731
	B->Y (RF)	0.04023	0.57841	8.04561
	C->Y (RF)	0.04604	0.54037	7.42877
	D->Y (RF)	0.04859	0.50272	6.85139
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.06946	0.55974	7.83090
	B->Y (RF)	0.04392	0.50661	7.92336
	C->Y (RF)	0.04974	0.44639	6.96160
	D->Y (RF)	0.05435	0.41457	6.42176
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.05270	0.41601	6.80635
	B->Y (RF)	0.03607	0.39487	7.29423
	C->Y (RF)	0.04272	0.34031	6.36299
	D->Y (RF)	0.04648	0.29812	5.63483

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	0.03449	0.05426	0.35635
	A_N	0.03060	0.05007	0.34775
	B	0.00108	0.00935	0.12129
	B	0.00667	0.01462	0.12226
	C	0.00185	0.01011	0.12596
	C	0.00861	0.01658	0.12799
	D	0.00236	0.01105	0.13302
	D	0.01044	0.01882	0.13669
sky130_fd_sc_hs__nand4b_2	A_N	0.02396	0.04458	0.35334
	A_N	0.02005	0.04009	0.33903
	B	0.00155	0.01852	0.23319
	B	0.01310	0.02947	0.23587
	C	0.00323	0.02079	0.24796
	C	0.01735	0.03445	0.25193
	D	0.00499	0.02293	0.26204
	D	0.02226	0.03972	0.26912
sky130_fd_sc_hs__nand4b_4	A_N	0.08280	0.11557	0.61334
	A_N	0.07720	0.10953	0.59755
	B	0.00220	0.02434	0.28013
	B	0.01857	0.04039	0.28566
	C	0.00498	0.02727	0.29517
	C	0.02732	0.04919	0.30633
	D	0.00808	0.03098	0.30458
	D	0.03612	0.05857	0.32163

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.06061	0.07924	0.34961
	A_N	0.06448	0.08311	0.35334
	B	0.06444	0.06781	0.12014
	B	0.05883	0.06222	0.11446
	C	0.06488	0.06850	0.12933
	C	0.05812	0.06171	0.12220
	D	0.06549	0.06954	0.14240
	D	0.05739	0.06142	0.13429
sky130_fd_sc_hs__nand4b_2	A_N	0.12108	0.13922	0.42507
	A_N	0.12500	0.14312	0.42870
	B	0.12934	0.13692	0.23988
	B	0.11777	0.12536	0.22817
	C	0.12945	0.13842	0.26797
	C	0.11529	0.12417	0.25373
	D	0.13133	0.14087	0.29563
	D	0.11401	0.12350	0.27776
sky130_fd_sc_hs__nand4b_4	A_N	0.12488	0.15787	0.64319
	A_N	0.13045	0.16343	0.64861
	B	0.13747	0.14907	0.27544
	B	0.12108	0.13254	0.25842
	C	0.14052	0.15346	0.31275
	C	0.11814	0.13097	0.28858
	D	0.14468	0.15850	0.34608
	D	0.11661	0.13040	0.31683

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)	0.01908	0.03824	0.33235
	(B * C * !D * Y)	0.01435	0.03351	0.32764
	(B * !C * Y)	0.01905	0.03821	0.33207
	(B * !C * Y)	0.01435	0.03351	0.32740
	(!B * Y)	0.01894	0.03811	0.33200
	(!B * Y)	0.01435	0.03353	0.32743
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.01656	0.03698	0.35969
	(B * C * !D * Y)	0.01066	0.03107	0.35380
	(B * !C * Y)	0.01652	0.03693	0.35965
	(B * !C * Y)	0.01067	0.03107	0.35381
	(!B * Y)	0.01635	0.03678	0.35952
	(!B * Y)	0.01069	0.03111	0.35386
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.03666	0.06879	0.57135
	(B * C * !D * Y)	0.02823	0.06036	0.56300
	(B * !C * Y)	0.03657	0.06868	0.57127
	(B * !C * Y)	0.02824	0.06036	0.56301
	(!B * Y)	0.03620	0.06836	0.57102
	(!B * Y)	0.02828	0.06045	0.56314

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(B * C * !D * Y)	0.00057	0.02119	0.32559
	(B * C * !D * Y)	0.00538	0.02601	0.33035
	(B * !C * Y)	0.00057	0.02117	0.32532
	(B * !C * Y)	0.00529	0.02590	0.33002
	(!B * Y)	0.00058	0.02119	0.32537
	(!B * Y)	0.00516	0.02578	0.32994
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00083	0.02174	0.34870
	(B * C * !D * Y)	0.00695	0.02785	0.35470
	(B * !C * Y)	0.00078	0.02169	0.34868
	(B * !C * Y)	0.00672	0.02762	0.35456
	(!B * Y)	0.00076	0.02168	0.34872
	(!B * Y)	0.00642	0.02734	0.35438
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00182	0.03709	0.56016
	(B * C * !D * Y)	0.01062	0.04593	0.56875
	(B * !C * Y)	0.00173	0.03700	0.56013
	(B * !C * Y)	0.01018	0.04548	0.56849
	(!B * Y)	0.00173	0.03703	0.56022
	(!B * Y)	0.00961	0.04496	0.56811

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)**	0.01380	0.01383	0.01380
	(A_N * C * D * Y)	0.00910	0.00907	0.00907
	(A_N * C * !D * Y)	0.01286	0.01287	0.01286
	(A_N * C * !D * Y)	0.00900	0.00899	0.00900
	(A_N * !C * Y)	0.01293	0.01295	0.01293
	(A_N * !C * Y)	0.00900	0.00897	0.00899
	(!A_N * C * !D * Y)	0.00078	0.00079	0.00078
	(!A_N * C * !D * Y)	-0.00278	-0.00281	-0.00284
	(!A_N * !C * Y)	0.00083	0.00083	0.00082
	(!A_N * !C * Y)	-0.00284	-0.00285	-0.00285
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00935	0.00938	0.00934
	(A_N * C * D * Y)	-0.00003	-0.00006	-0.00006
	(A_N * C * !D * Y)	0.00751	0.00754	0.00752
	(A_N * C * !D * Y)	-0.00025	-0.00029	-0.00025
	(A_N * !C * Y)	0.00766	0.00770	0.00766
	(A_N * !C * Y)	-0.00028	-0.00032	-0.00028
	(!A_N * C * !D * Y)	0.00170	0.00171	0.00170
	(!A_N * C * !D * Y)	-0.00539	-0.00541	-0.00553
	(!A_N * !C * Y)	0.00180	0.00182	0.00179
	(!A_N * !C * Y)	-0.00549	-0.00555	-0.00555
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.03114	0.03122	0.03112
	(A_N * C * D * Y)	0.01787	0.01783	0.01783
	(A_N * C * !D * Y)	0.02726	0.02732	0.02728
	(A_N * C * !D * Y)	0.01745	0.01740	0.01745
	(A_N * !C * Y)	0.02756	0.02762	0.02755
	(A_N * !C * Y)	0.01739	0.01734	0.01739
	(!A_N * C * !D * Y)	0.00293	0.00297	0.00294
	(!A_N * C * !D * Y)	-0.00567	-0.00574	-0.00593
	(!A_N * !C * Y)	0.00311	0.00314	0.00308
	(!A_N * !C * Y)	-0.00587	-0.00593	-0.00598

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)	0.00981	0.00952	0.00952
	(A_N * C * D * Y)	0.01453	0.01425	0.01424
	(A_N * C * !D * Y)	0.01034	0.01032	0.01027
	(A_N * C * !D * Y)	0.01443	0.01438	0.01426
	(A_N * !C * Y)	0.01021	0.01021	0.01016
	(A_N * !C * Y)	0.01426	0.01428	0.01417
	(!A_N * C * !D * Y)	-0.00048	-0.00049	-0.00051
	(!A_N * C * !D * Y)	0.00313	0.00315	0.00310
	(!A_N * !C * Y)	-0.00054	-0.00054	-0.00055
	(!A_N * !C * Y)	0.00314	0.00317	0.00310
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	0.00217	0.00149	0.00141
	(A_N * C * D * Y)	0.01156	0.01095	0.01080
	(A_N * C * !D * Y)	0.00311	0.00296	0.00289
	(A_N * C * !D * Y)	0.01127	0.01119	0.01091
	(A_N * !C * Y)	0.00277	0.00274	0.00264
	(A_N * !C * Y)	0.01092	0.01100	0.01073
	(!A_N * C * !D * Y)	-0.00103	-0.00105	-0.00108
	(!A_N * C * !D * Y)	0.00622	0.00632	0.00613
	(!A_N * !C * Y)	-0.00112	-0.00113	-0.00118
	(!A_N * !C * Y)	0.00621	0.00626	0.00614

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.01740	0.01604	0.01589
	(A_N * C * D * Y)	0.03069	0.02943	0.02914
	(A_N * C * !D * Y)	0.01938	0.01914	0.01898
	(A_N * C * !D * Y)	0.03003	0.02981	0.02932
	(A_N * !C * Y)	0.01870	0.01872	0.01852
	(A_N * !C * Y)	0.02938	0.02941	0.02896
	(!A_N * C * !D * Y)	-0.00212	-0.00214	-0.00223
	(!A_N * C * !D * Y)	0.00673	0.00676	0.00658
	(!A_N * !C * Y)	-0.00231	-0.00235	-0.00241
	(!A_N * !C * Y)	0.00675	0.00683	0.00659

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)**	0.01359	0.01360	0.01358
	(A_N * B * D * Y)	0.00909	0.00908	0.00909
	(A_N * B * !D * Y)	0.01262	0.01263	0.01262
	(A_N * B * !D * Y)	0.00901	0.00899	0.00900
	(A_N * !B * D * Y)	0.01349	0.01351	0.01349
	(A_N * !B * D * Y)	0.00900	0.00899	0.00901
	(A_N * !B * !D * Y)	0.01256	0.01256	0.01255
	(A_N * !B * !D * Y)	0.00900	0.00899	0.00900
	(!A_N * B * !D * Y)	0.00082	0.00082	0.00081
	(!A_N * B * !D * Y)	-0.00253	-0.00256	-0.00252
	(!A_N * !B * D * Y)	0.00204	0.00207	0.00204
	(!A_N * !B * D * Y)	-0.00245	-0.00247	-0.00246
	(!A_N * !B * !D * Y)	0.00099	0.00100	0.00098
	(!A_N * !B * !D * Y)	-0.00255	-0.00257	-0.00255

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00927	0.00927	0.00927
	(A_N * B * D * Y)	0.00017	0.00017	0.00016
	(A_N * B * !D * Y)	0.00735	0.00733	0.00733
	(A_N * B * !D * Y)	-0.00008	-0.00005	-0.00006
	(A_N * !B * D * Y)	0.00908	0.00911	0.00907
	(A_N * !B * D * Y)	-0.00001	-0.00003	-0.00000
	(A_N * !B * !D * Y)	0.00727	0.00729	0.00726
	(A_N * !B * !D * Y)	-0.00003	-0.00007	-0.00004
	(!A_N * B * !D * Y)	0.00182	0.00185	0.00184
	(!A_N * B * !D * Y)	-0.00495	-0.00500	-0.00493
	(!A_N * !B * D * Y)	0.00430	0.00432	0.00430
	(!A_N * !B * D * Y)	-0.00480	-0.00482	-0.00482
	(!A_N * !B * !D * Y)	0.00225	0.00228	0.00225
	(!A_N * !B * !D * Y)	-0.00500	-0.00504	-0.00501
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.03136	0.03144	0.03137
	(A_N * B * D * Y)	0.01791	0.01788	0.01789
	(A_N * B * !D * Y)	0.02728	0.02728	0.02724
	(A_N * B * !D * Y)	0.01743	0.01742	0.01745
	(A_N * !B * D * Y)	0.03095	0.03102	0.03098
	(A_N * !B * D * Y)	0.01757	0.01754	0.01756
	(A_N * !B * !D * Y)	0.02707	0.02710	0.02703
	(A_N * !B * !D * Y)	0.01749	0.01746	0.01750
	(!A_N * B * !D * Y)	0.00333	0.00334	0.00331
	(!A_N * B * !D * Y)	-0.00541	-0.00542	-0.00533
	(!A_N * !B * D * Y)	0.00843	0.00848	0.00842
	(!A_N * !B * D * Y)	-0.00507	-0.00510	-0.00510
	(!A_N * !B * !D * Y)	0.00405	0.00407	0.00401
	(!A_N * !B * !D * Y)	-0.00547	-0.00549	-0.00545

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)	0.01010	0.00973	0.00974
	(A_N * B * D * Y)	0.01459	0.01429	0.01422
	(A_N * B * !D * Y)	0.01049	0.01051	0.01046
	(A_N * B * !D * Y)	0.01430	0.01436	0.01420
	(A_N * !B * D * Y)	0.00973	0.00963	0.00965
	(A_N * !B * D * Y)	0.01421	0.01417	0.01413
	(A_N * !B * !D * Y)	0.01050	0.01049	0.01053
	(A_N * !B * !D * Y)	0.01420	0.01422	0.01415
	(!A_N * B * !D * Y)	-0.00050	-0.00051	-0.00053
	(!A_N * B * !D * Y)	0.00290	0.00291	0.00282
	(!A_N * !B * D * Y)	-0.00146	-0.00171	-0.00169
	(!A_N * !B * D * Y)	0.00305	0.00286	0.00280
	(!A_N * !B * !D * Y)	-0.00082	-0.00082	-0.00083
	(!A_N * !B * !D * Y)	0.00284	0.00286	0.00276
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	0.00228	0.00146	0.00149
	(A_N * B * D * Y)	0.01137	0.01071	0.01058
	(A_N * B * !D * Y)	0.00298	0.00307	0.00296
	(A_N * B * !D * Y)	0.01080	0.01096	0.01061
	(A_N * !B * D * Y)	0.00151	0.00126	0.00131
	(A_N * !B * D * Y)	0.01056	0.01047	0.01039
	(A_N * !B * !D * Y)	0.00297	0.00296	0.00302
	(A_N * !B * !D * Y)	0.01060	0.01063	0.01048
	(!A_N * B * !D * Y)	-0.00107	-0.00110	-0.00116
	(!A_N * B * !D * Y)	0.00581	0.00588	0.00564
	(!A_N * !B * D * Y)	-0.00296	-0.00355	-0.00352
	(!A_N * !B * D * Y)	0.00619	0.00571	0.00559
	(!A_N * !B * !D * Y)	-0.00182	-0.00181	-0.00186
	(!A_N * !B * !D * Y)	0.00577	0.00577	0.00553

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	0.01738	0.01564	0.01565
	(A_N * B * D * Y)	0.03084	0.02923	0.02908
	(A_N * B * !D * Y)	0.01881	0.01899	0.01880
	(A_N * B * !D * Y)	0.02946	0.02972	0.02907
	(A_N * !B * D * Y)	0.01575	0.01525	0.01529
	(A_N * !B * D * Y)	0.02913	0.02874	0.02870
	(A_N * !B * !D * Y)	0.01890	0.01888	0.01900
	(A_N * !B * !D * Y)	0.02909	0.02911	0.02883
	(!A_N * B * !D * Y)	-0.00238	-0.00242	-0.00252
	(!A_N * B * !D * Y)	0.00649	0.00656	0.00616
	(!A_N * !B * D * Y)	-0.00622	-0.00737	-0.00737
	(!A_N * !B * D * Y)	0.00735	0.00624	0.00608
	(!A_N * !B * !D * Y)	-0.00370	-0.00371	-0.00378
	(!A_N * !B * !D * Y)	0.00633	0.00635	0.00592

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)	0.01359	0.01361	0.01360
	(A_N * B * C * Y)	0.00916	0.00914	0.00915
	(A_N * !C * Y)	0.01351	0.01353	0.01351
	(A_N * !C * Y)	0.00906	0.00905	0.00906
	(A_N * !B * C * Y)	0.01346	0.01348	0.01347
	(A_N * !B * C * Y)	0.00906	0.00905	0.00906
	(!A_N * B * !C * Y)	0.00205	0.00207	0.00205
	(!A_N * B * !C * Y)	-0.00241	-0.00243	-0.00243
	(!A_N * !B * C * Y)	0.00205	0.00206	0.00204
	(!A_N * !B * C * Y)	-0.00241	-0.00242	-0.00241
	(!A_N * !B * !C * Y)	0.00196	0.00198	0.00196
	(!A_N * !B * !C * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00927	0.00930	0.00929
	(A_N * B * C * Y)	0.00021	0.00019	0.00021
	(A_N * !C * Y)	0.00912	0.00917	0.00913
	(A_N * !C * Y)	0.00003	-0.00001	0.00002
	(A_N * !B * C * Y)	0.00903	0.00905	0.00903
	(A_N * !B * C * Y)	0.00003	0.00001	0.00002
	(!A_N * B * !C * Y)	0.00433	0.00439	0.00434
	(!A_N * B * !C * Y)	-0.00480	-0.00485	-0.00482
	(!A_N * !B * C * Y)	0.00432	0.00433	0.00431
	(!A_N * !B * C * Y)	-0.00479	-0.00479	-0.00478
	(!A_N * !B * !C * Y)	0.00415	0.00421	0.00416
	(!A_N * !B * !C * Y)	-0.00493	-0.00498	-0.00494
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.03119	0.03129	0.03124
	(A_N * B * C * Y)	0.01834	0.01830	0.01833
	(A_N * !C * Y)	0.03089	0.03100	0.03092
	(A_N * !C * Y)	0.01796	0.01792	0.01795
	(A_N * !B * C * Y)	0.03072	0.03081	0.03074
	(A_N * !B * C * Y)	0.01796	0.01792	0.01795
	(!A_N * B * !C * Y)	0.00832	0.00843	0.00833
	(!A_N * B * !C * Y)	-0.00474	-0.00478	-0.00476
	(!A_N * !B * C * Y)	0.00824	0.00832	0.00828
	(!A_N * !B * C * Y)	-0.00466	-0.00469	-0.00467
	(!A_N * !B * !C * Y)	0.00792	0.00806	0.00798
	(!A_N * !B * !C * Y)	-0.00497	-0.00502	-0.00499

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)**	0.00999	0.00973	0.00972
	(A_N * B * C * Y)	0.01440	0.01422	0.01416
	(A_N * !C * Y)	0.00967	0.00962	0.00963
	(A_N * !C * Y)	0.01409	0.01408	0.01407
	(A_N * !B * C * Y)	0.00975	0.00965	0.00964
	(A_N * !B * C * Y)	0.01410	0.01409	0.01407
	(!A_N * B * !C * Y)	-0.00156	-0.00170	-0.00170
	(!A_N * B * !C * Y)	0.00294	0.00282	0.00275
	(!A_N * !B * C * Y)	-0.00146	-0.00168	-0.00169
	(!A_N * !B * C * Y)	0.00297	0.00282	0.00274
	(!A_N * !B * !C * Y)	-0.00173	-0.00178	-0.00178
	(!A_N * !B * !C * Y)	0.00270	0.00268	0.00267
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00210	0.00150	0.00145
	(A_N * B * C * Y)	0.01116	0.01072	0.01054
	(A_N * !C * Y)	0.00139	0.00122	0.00125
	(A_N * !C * Y)	0.01038	0.01041	0.01035
	(A_N * !B * C * Y)	0.00155	0.00128	0.00128
	(A_N * !B * C * Y)	0.01043	0.01042	0.01035
	(!A_N * B * !C * Y)	-0.00312	-0.00357	-0.00356
	(!A_N * B * !C * Y)	0.00601	0.00571	0.00556
	(!A_N * !B * C * Y)	-0.00292	-0.00353	-0.00355
	(!A_N * !B * C * Y)	0.00615	0.00571	0.00554
	(!A_N * !B * !C * Y)	-0.00357	-0.00374	-0.00372
	(!A_N * !B * !C * Y)	0.00543	0.00545	0.00539

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.01694	0.01569	0.01573
	(A_N * B * C * Y)	0.02975	0.02888	0.02865
	(A_N * !C * Y)	0.01561	0.01525	0.01533
	(A_N * !C * Y)	0.02835	0.02834	0.02827
	(A_N * !B * C * Y)	0.01592	0.01533	0.01538
	(A_N * !B * C * Y)	0.02841	0.02834	0.02827
	(!A_N * B * !C * Y)	-0.00649	-0.00739	-0.00732
	(!A_N * B * !C * Y)	0.00657	0.00588	0.00568
	(!A_N * !B * C * Y)	-0.00614	-0.00735	-0.00728
	(!A_N * !B * C * Y)	0.00675	0.00585	0.00564
	(!A_N * !B * !C * Y)	-0.00731	-0.00769	-0.00762
	(!A_N * !B * !C * Y)	0.00546	0.00541	0.00533

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00281	0.00297	0.00293	0.00292	1.12910
sky130_fd_sc_hs__nand4_2	0.00549	0.00556	0.00562	0.00545	1.75976
sky130_fd_sc_hs__nand4_4	0.00821	0.00804	0.00806	0.00827	2.86241

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	132.86600	2069.25000
sky130_fd_sc_hs__nand4_2	0.00000	264.99700	4127.80000
sky130_fd_sc_hs__nand4_4	0.00000	272.82400	4143.02000

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)	0.02373	0.49019	6.86516
	B->Y (FR)	0.02994	0.50873	7.05479
	C->Y (FR)	0.03382	0.51527	7.08224
	D->Y (FR)	0.03526	0.51011	6.96066
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02019	0.38057	5.93400
	B->Y (FR)	0.02559	0.38423	5.88562
	C->Y (FR)	0.02923	0.39448	5.95309
	D->Y (FR)	0.03203	0.40618	6.04275
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.02530	0.46693	8.08813
	B->Y (FR)	0.03641	0.47683	8.09028
	C->Y (FR)	0.04679	0.50570	8.40127
	D->Y (FR)	0.05470	0.52033	8.46786

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.03230	0.59155	8.28734
	B->Y (RF)	0.04102	0.56653	7.82288
	C->Y (RF)	0.04621	0.52781	7.19667
	D->Y (RF)	0.04922	0.49017	6.61001
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.03003	0.52686	8.28180
	B->Y (RF)	0.04207	0.50264	7.82357
	C->Y (RF)	0.04814	0.44364	6.87902
	D->Y (RF)	0.05225	0.40971	6.31531
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02267	0.41315	7.54383
	B->Y (RF)	0.03435	0.38192	6.92865
	C->Y (RF)	0.04105	0.32682	5.97888
	D->Y (RF)	0.04482	0.28459	5.25489

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00004	0.00842	0.11890
	A	0.00618	0.01428	0.12117
	B	0.00092	0.00910	0.12185
	B	0.00846	0.01638	0.12496
	C	0.00173	0.01007	0.12805
	C	0.01061	0.01864	0.13242
	D	0.00220	0.01097	0.13548
	D	0.01256	0.02100	0.14160
sky130_fd_sc_hs__nand4_2	A	-0.00095	0.01603	0.22319
	A	0.01043	0.02683	0.22599
	B	0.00143	0.01845	0.23541
	B	0.01587	0.03239	0.24154
	C	0.00265	0.02045	0.25280
	C	0.02025	0.03756	0.26126
	D	0.00456	0.02281	0.26498
	D	0.02507	0.04283	0.27577
sky130_fd_sc_hs__nand4_4	A	-0.00186	0.02157	0.28054
	A	0.01495	0.03801	0.28773
	B	0.00215	0.02490	0.29530
	B	0.02486	0.04712	0.30828
	C	0.00493	0.02763	0.30514
	C	0.03350	0.05575	0.32370
	D	0.00811	0.03156	0.31891
	D	0.04316	0.06617	0.34374

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.06327	0.06740	0.12244
	A	0.05714	0.06126	0.11632
	B	0.06364	0.06705	0.12129
	B	0.05608	0.05948	0.11367
	C	0.06405	0.06783	0.13202
	C	0.05516	0.05890	0.12300
	D	0.06472	0.06900	0.14595
	D	0.05435	0.05862	0.13517
sky130_fd_sc_hs__nand4_2	A	0.12582	0.13473	0.23747
	A	0.11442	0.12328	0.22611
	B	0.12678	0.13429	0.23824
	B	0.11232	0.11983	0.22338
	C	0.12704	0.13599	0.26682
	C	0.10941	0.11826	0.24919
	D	0.12894	0.13843	0.29401
	D	0.10837	0.11783	0.27263
sky130_fd_sc_hs__nand4_4	A	0.12844	0.14195	0.27312
	A	0.11164	0.12504	0.25600
	B	0.13131	0.14302	0.27580
	B	0.10863	0.12030	0.25289
	C	0.13430	0.14704	0.30584
	C	0.10573	0.11836	0.27730
	D	0.13867	0.15262	0.34480
	D	0.10356	0.11742	0.30906

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)	0.00077	0.00077	0.00068
	(B * C * !D * Y)	-0.00267	-0.00269	-0.00290
	(B * !C * Y)	0.00075	0.00076	0.00068
	(B * !C * Y)	-0.00274	-0.00276	-0.00292
	(!B * Y)	0.00075	0.00076	0.00070
	(!B * Y)	-0.00282	-0.00286	-0.00292
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00141	0.00142	0.00119
	(B * C * !D * Y)	-0.00526	-0.00530	-0.00581
	(B * !C * Y)	0.00133	0.00134	0.00117
	(B * !C * Y)	-0.00547	-0.00551	-0.00585
	(!B * Y)	0.00138	0.00140	0.00126
	(!B * Y)	-0.00564	-0.00571	-0.00587
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00273	0.00274	0.00233
	(B * C * !D * Y)	-0.00579	-0.00586	-0.00683
	(B * !C * Y)	0.00259	0.00259	0.00230
	(B * !C * Y)	-0.00620	-0.00625	-0.00690
	(!B * Y)	0.00266	0.00268	0.00244
	(!B * Y)	-0.00654	-0.00663	-0.00695

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(B * C * !D * Y)	-0.00056	-0.00056	-0.00055
	(B * C * !D * Y)	0.00298	0.00300	0.00299
	(B * !C * Y)	-0.00057	-0.00057	-0.00057
	(B * !C * Y)	0.00297	0.00299	0.00299
	(!B * Y)	-0.00061	-0.00062	-0.00060
	(!B * Y)	0.00298	0.00301	0.00299
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00094	-0.00095	-0.00093
	(B * C * !D * Y)	0.00597	0.00604	0.00599
	(B * !C * Y)	-0.00095	-0.00097	-0.00094
	(B * !C * Y)	0.00597	0.00610	0.00600
	(!B * Y)	-0.00107	-0.00109	-0.00106
	(!B * Y)	0.00597	0.00610	0.00601
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00183	-0.00186	-0.00182
	(B * C * !D * Y)	0.00713	0.00721	0.00717
	(B * !C * Y)	-0.00188	-0.00187	-0.00183
	(B * !C * Y)	0.00720	0.00721	0.00719
	(!B * Y)	-0.00206	-0.00212	-0.00205
	(!B * Y)	0.00714	0.00731	0.00721

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)**	0.00072	0.00073	0.00073
	(A * C * !D * Y)	-0.00268	-0.00271	-0.00269
	(A * !C * Y)	0.00078	0.00078	0.00077
	(A * !C * Y)	-0.00271	-0.00272	-0.00269
	(!A * C * D * Y)	0.00200	0.00202	0.00199
	(!A * C * D * Y)	-0.00259	-0.00260	-0.00260
	(!A * C * !D * Y)	0.00095	0.00096	0.00095
	(!A * C * !D * Y)	-0.00268	-0.00270	-0.00269
	(!A * !C * Y)	0.00099	0.00101	0.00099
	(!A * !C * Y)	-0.00268	-0.00271	-0.00269
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00152	0.00154	0.00155
	(A * C * !D * Y)	-0.00513	-0.00518	-0.00514
	(A * !C * Y)	0.00153	0.00155	0.00155
	(A * !C * Y)	-0.00516	-0.00520	-0.00515
	(!A * C * D * Y)	0.00415	0.00415	0.00415
	(!A * C * D * Y)	-0.00495	-0.00495	-0.00497
	(!A * C * !D * Y)	0.00204	0.00204	0.00204
	(!A * C * !D * Y)	-0.00516	-0.00517	-0.00515
	(!A * !C * Y)	0.00202	0.00204	0.00201
	(!A * !C * Y)	-0.00517	-0.00521	-0.00518
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00295	0.00297	0.00297
	(A * C * !D * Y)	-0.00537	-0.00540	-0.00537
	(A * !C * Y)	0.00301	0.00303	0.00300
	(A * !C * Y)	-0.00542	-0.00544	-0.00538
	(!A * C * D * Y)	0.00824	0.00833	0.00823
	(!A * C * D * Y)	-0.00498	-0.00502	-0.00503
	(!A * C * !D * Y)	0.00386	0.00386	0.00385
	(!A * C * !D * Y)	-0.00538	-0.00539	-0.00537
	(!A * !C * Y)	0.00385	0.00386	0.00381
	(!A * !C * Y)	-0.00543	-0.00544	-0.00542

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)	-0.00058	-0.00058	-0.00060
	(A * C * !D * Y)	0.00285	0.00286	0.00279
	(A * !C * Y)	-0.00063	-0.00064	-0.00065
	(A * !C * Y)	0.00286	0.00289	0.00279
	(!A * C * D * Y)	-0.00147	-0.00177	-0.00175
	(!A * C * D * Y)	0.00312	0.00282	0.00281
	(!A * C * !D * Y)	-0.00087	-0.00090	-0.00092
	(!A * C * !D * Y)	0.00302	0.00298	0.00285
	(!A * !C * Y)	-0.00095	-0.00096	-0.00098
	(!A * !C * Y)	0.00286	0.00288	0.00276
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00125	-0.00125	-0.00131
	(A * C * !D * Y)	0.00551	0.00551	0.00534
	(A * !C * Y)	-0.00125	-0.00126	-0.00132
	(A * !C * Y)	0.00550	0.00552	0.00535
	(!A * C * D * Y)	-0.00288	-0.00364	-0.00368
	(!A * C * D * Y)	0.00625	0.00555	0.00541
	(!A * C * !D * Y)	-0.00177	-0.00190	-0.00195
	(!A * C * !D * Y)	0.00588	0.00579	0.00550
	(!A * !C * Y)	-0.00197	-0.00194	-0.00200
	(!A * !C * Y)	0.00553	0.00556	0.00531

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00237	-0.00238	-0.00247
	(A * C * !D * Y)	0.00602	0.00604	0.00573
	(A * !C * Y)	-0.00245	-0.00248	-0.00254
	(A * !C * Y)	0.00605	0.00609	0.00574
	(!A * C * D * Y)	-0.00574	-0.00719	-0.00728
	(!A * C * D * Y)	0.00751	0.00618	0.00588
	(!A * C * !D * Y)	-0.00339	-0.00364	-0.00370
	(!A * C * !D * Y)	0.00678	0.00655	0.00604
	(!A * !C * Y)	-0.00371	-0.00370	-0.00379
	(!A * !C * Y)	0.00605	0.00610	0.00566

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)**	0.00075	0.00076	0.00075
	(A * B * !D * Y)	-0.00259	-0.00262	-0.00258
	(A * !B * D * Y)	0.00197	0.00199	0.00197
	(A * !B * D * Y)	-0.00254	-0.00255	-0.00255
	(A * !B * !D * Y)	0.00093	0.00093	0.00093
	(A * !B * !D * Y)	-0.00264	-0.00265	-0.00265
	(!A * B * D * Y)	0.00197	0.00199	0.00197
	(!A * B * D * Y)	-0.00254	-0.00255	-0.00254
	(!A * B * !D * Y)	0.00093	0.00094	0.00093
	(!A * B * !D * Y)	-0.00265	-0.00266	-0.00265
	(!A * !B * D * Y)	0.00187	0.00189	0.00188
	(!A * !B * D * Y)	-0.00262	-0.00264	-0.00263
	(!A * !B * !D * Y)	0.00095	0.00096	0.00094
	(!A * !B * !D * Y)	-0.00266	-0.00267	-0.00265

sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	0.00172	0.00172	0.00169
	(A * B * !D * Y)	-0.00504	-0.00504	-0.00501
	(A * !B * D * Y)	0.00419	0.00425	0.00420
	(A * !B * D * Y)	-0.00492	-0.00498	-0.00496
	(A * !B * !D * Y)	0.00203	0.00205	0.00202
	(A * !B * !D * Y)	-0.00514	-0.00517	-0.00514
	(!A * B * D * Y)	0.00417	0.00418	0.00417
	(!A * B * D * Y)	-0.00495	-0.00496	-0.00496
	(!A * B * !D * Y)	0.00207	0.00209	0.00206
	(!A * B * !D * Y)	-0.00516	-0.00519	-0.00516
	(!A * !B * D * Y)	0.00397	0.00399	0.00398
	(!A * !B * D * Y)	-0.00511	-0.00513	-0.00511
	(!A * !B * !D * Y)	0.00207	0.00208	0.00206
	(!A * !B * !D * Y)	-0.00515	-0.00517	-0.00515
sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	0.00316	0.00320	0.00311
	(A * B * !D * Y)	-0.00509	-0.00514	-0.00504
	(A * !B * D * Y)	0.00813	0.00823	0.00812
	(A * !B * D * Y)	-0.00489	-0.00494	-0.00492
	(A * !B * !D * Y)	0.00377	0.00380	0.00376
	(A * !B * !D * Y)	-0.00528	-0.00531	-0.00529
	(!A * B * D * Y)	0.00808	0.00813	0.00809
	(!A * B * D * Y)	-0.00490	-0.00493	-0.00492
	(!A * B * !D * Y)	0.00379	0.00380	0.00378
	(!A * B * !D * Y)	-0.00532	-0.00534	-0.00532
	(!A * !B * D * Y)	0.00766	0.00771	0.00772
	(!A * !B * D * Y)	-0.00521	-0.00524	-0.00524
	(!A * !B * !D * Y)	0.00385	0.00386	0.00382
	(!A * !B * !D * Y)	-0.00531	-0.00532	-0.00530

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	-0.00058	-0.00061
	(A * B * !D * Y)	0.00284	0.00285	0.00274
	(A * !B * D * Y)	-0.00154	-0.00178	-0.00176
	(A * !B * D * Y)	0.00301	0.00281	0.00275
	(A * !B * !D * Y)	-0.00091	-0.00091	-0.00093
	(A * !B * !D * Y)	0.00278	0.00280	0.00271
	(!A * B * D * Y)	-0.00138	-0.00174	-0.00174
	(!A * B * D * Y)	0.00312	0.00284	0.00276
	(!A * B * !D * Y)	-0.00092	-0.00089	-0.00092
	(!A * B * !D * Y)	0.00285	0.00292	0.00275
	(!A * !B * D * Y)	-0.00174	-0.00185	-0.00183
	(!A * !B * D * Y)	0.00276	0.00271	0.00267
	(!A * !B * !D * Y)	-0.00095	-0.00096	-0.00094
	(!A * !B * !D * Y)	0.00275	0.00278	0.00271
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00128	-0.00131	-0.00137
	(A * B * !D * Y)	0.00558	0.00565	0.00535
	(A * !B * D * Y)	-0.00319	-0.00378	-0.00375
	(A * !B * D * Y)	0.00600	0.00553	0.00537
	(A * !B * !D * Y)	-0.00194	-0.00196	-0.00201
	(A * !B * !D * Y)	0.00559	0.00556	0.00530
	(!A * B * D * Y)	-0.00284	-0.00374	-0.00370
	(!A * B * D * Y)	0.00627	0.00554	0.00539
	(!A * B * !D * Y)	-0.00202	-0.00194	-0.00203
	(!A * B * !D * Y)	0.00563	0.00576	0.00540
	(!A * !B * D * Y)	-0.00365	-0.00393	-0.00389
	(!A * !B * D * Y)	0.00540	0.00529	0.00521
	(!A * !B * !D * Y)	-0.00207	-0.00208	-0.00206
	(!A * !B * !D * Y)	0.00545	0.00545	0.00529

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00237	-0.00240	-0.00251
	(A * B * !D * Y)	0.00613	0.00616	0.00568
	(A * !B * D * Y)	-0.00610	-0.00726	-0.00726
	(A * !B * D * Y)	0.00703	0.00593	0.00573
	(A * !B * !D * Y)	-0.00361	-0.00366	-0.00375
	(A * !B * !D * Y)	0.00602	0.00601	0.00555
	(!A * B * D * Y)	-0.00541	-0.00719	-0.00715
	(!A * B * D * Y)	0.00758	0.00595	0.00578
	(!A * B * !D * Y)	-0.00373	-0.00358	-0.00372
	(!A * B * !D * Y)	0.00621	0.00644	0.00578
	(!A * !B * D * Y)	-0.00700	-0.00756	-0.00754
	(!A * !B * D * Y)	0.00586	0.00546	0.00542
	(!A * !B * !D * Y)	-0.00385	-0.00386	-0.00382
	(!A * !B * !D * Y)	0.00583	0.00583	0.00555

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)	0.00198	0.00200	0.00198
	(A * B * !C * Y)	-0.00268	-0.00270	-0.00269
	(A * !B * C * Y)	0.00198	0.00199	0.00197
	(A * !B * C * Y)	-0.00265	-0.00266	-0.00265
	(A * !B * !C * Y)	0.00190	0.00191	0.00190
	(A * !B * !C * Y)	-0.00273	-0.00275	-0.00274
	(!A * B * C * Y)	0.00195	0.00196	0.00196
	(!A * B * C * Y)	-0.00264	-0.00265	-0.00264
	(!A * !C * Y)	0.00190	0.00191	0.00190
	(!A * !C * Y)	-0.00273	-0.00275	-0.00273
	(!A * !B * C * Y)	0.00185	0.00187	0.00185
	(!A * !B * C * Y)	-0.00273	-0.00275	-0.00273

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00417	0.00419	0.00416
	(A * B * !C * Y)	-0.00495	-0.00496	-0.00495
	(A * !B * C * Y)	0.00413	0.00414	0.00414
	(A * !B * C * Y)	-0.00492	-0.00493	-0.00492
	(A * !B * !C * Y)	0.00396	0.00403	0.00399
	(A * !B * !C * Y)	-0.00506	-0.00510	-0.00507
	(!A * B * C * Y)	0.00413	0.00417	0.00414
	(!A * B * C * Y)	-0.00488	-0.00491	-0.00489
	(!A * !C * Y)	0.00397	0.00403	0.00399
	(!A * !C * Y)	-0.00506	-0.00510	-0.00507
	(!A * !B * C * Y)	0.00391	0.00395	0.00392
	(!A * !B * C * Y)	-0.00507	-0.00509	-0.00507
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00837	0.00849	0.00839
	(A * B * !C * Y)	-0.00515	-0.00520	-0.00518
	(A * !B * C * Y)	0.00834	0.00838	0.00834
	(A * !B * C * Y)	-0.00504	-0.00506	-0.00504
	(A * !B * !C * Y)	0.00802	0.00814	0.00805
	(A * !B * !C * Y)	-0.00537	-0.00542	-0.00538
	(!A * B * C * Y)	0.00831	0.00834	0.00833
	(!A * B * C * Y)	-0.00501	-0.00502	-0.00501
	(!A * !C * Y)	0.00802	0.00815	0.00805
	(!A * !C * Y)	-0.00536	-0.00541	-0.00537
	(!A * !B * C * Y)	0.00788	0.00791	0.00789
	(!A * !B * C * Y)	-0.00538	-0.00538	-0.00537

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)**	-0.00164	-0.00177	-0.00178
	(A * B * !C * Y)	0.00303	0.00293	0.00285
	(A * !B * C * Y)	-0.00155	-0.00175	-0.00177
	(A * !B * C * Y)	0.00305	0.00292	0.00285
	(A * !B * !C * Y)	-0.00181	-0.00187	-0.00185
	(A * !B * !C * Y)	0.00279	0.00281	0.00277
	(!A * B * C * Y)	-0.00150	-0.00175	-0.00175
	(!A * B * C * Y)	0.00308	0.00293	0.00286
	(!A * !C * Y)	-0.00180	-0.00187	-0.00185
	(!A * !C * Y)	0.00279	0.00281	0.00277
	(!A * !B * C * Y)	-0.00172	-0.00183	-0.00184
	(!A * !B * C * Y)	0.00279	0.00279	0.00277
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00330	-0.00374	-0.00376
	(A * B * !C * Y)	0.00577	0.00548	0.00533
	(A * !B * C * Y)	-0.00313	-0.00369	-0.00374
	(A * !B * C * Y)	0.00587	0.00546	0.00530
	(A * !B * !C * Y)	-0.00374	-0.00393	-0.00392
	(A * !B * !C * Y)	0.00515	0.00520	0.00514
	(!A * B * C * Y)	-0.00304	-0.00364	-0.00370
	(!A * B * C * Y)	0.00595	0.00551	0.00533
	(!A * !C * Y)	-0.00373	-0.00392	-0.00391
	(!A * !C * Y)	0.00517	0.00520	0.00514
	(!A * !B * C * Y)	-0.00357	-0.00385	-0.00388
	(!A * !B * C * Y)	0.00521	0.00520	0.00514

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00667	-0.00758	-0.00758
	(A * B * !C * Y)	0.00677	0.00609	0.00585
	(A * !B * C * Y)	-0.00632	-0.00745	-0.00753
	(A * !B * C * Y)	0.00699	0.00611	0.00581
	(A * !B * !C * Y)	-0.00753	-0.00792	-0.00789
	(A * !B * !C * Y)	0.00555	0.00556	0.00550
	(!A * B * C * Y)	-0.00614	-0.00734	-0.00745
	(!A * B * C * Y)	0.00708	0.00620	0.00588
	(!A * !C * Y)	-0.00751	-0.00792	-0.00789
	(!A * !C * Y)	0.00557	0.00557	0.00550
	(!A * !B * C * Y)	-0.00718	-0.00776	-0.00781
	(!A * !B * C * Y)	0.00568	0.00557	0.00550

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00282	0.00229	0.93839
sky130_fd_sc_hs__nor2b_2	0.00556	0.00265	1.60959
sky130_fd_sc_hs__nor2b_4	0.00918	0.00379	3.06921

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	891.73900	1637.93000
sky130_fd_sc_hs__nor2b_2	0.00000	754.97000	1217.30000
sky130_fd_sc_hs__nor2b_4	0.00000	2213.70000	3895.62000

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)	0.03901	0.63858	8.47532
	B_N->Y (RR)	0.05161	0.50968	5.90695
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.03867	0.54756	8.31536
	B_N->Y (RR)	0.04961	0.40262	5.48881
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.03001	0.41040	7.55489
	B_N->Y (RR)	0.05028	0.37447	6.16714

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01729	0.29515	3.83565
	B_N->Y (FF)	0.04515	0.34228	3.79888
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01518	0.22562	3.44997
	B_N->Y (FF)	0.04939	0.32200	3.59799
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02315	0.34014	6.08355
	B_N->Y (FF)	0.05247	0.33795	4.82888

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.03809	0.04657	0.17627
	A	0.04334	0.05184	0.18137
	B_N	0.04337	0.06203	0.34592
	B_N	0.03910	0.05774	0.34143
sky130_fd_sc_hs__nor2b_2	A	0.02004	0.03884	0.30457
	A	0.03059	0.04941	0.31478
	B_N	0.02948	0.05230	0.39788
	B_N	0.02523	0.04805	0.39352
sky130_fd_sc_hs__nor2b_4	A	0.07749	0.10350	0.41351
	A	0.09476	0.12073	0.42914
	B_N	0.08909	0.12228	0.63284
	B_N	0.08286	0.11597	0.62577

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.03222	0.03997	0.15310
	A	0.02697	0.03473	0.14754
	B_N	0.01161	0.03194	0.33267
	B_N	0.01587	0.03619	0.33713
sky130_fd_sc_hs__nor2b_2	A	0.03112	0.04803	0.27403
	A	0.02060	0.03744	0.26339
	B_N	0.02235	0.04238	0.35118
	B_N	0.02656	0.04660	0.35513
sky130_fd_sc_hs__nor2b_4	A	0.09951	0.12313	0.38963
	A	0.08223	0.10571	0.37024
	B_N	0.04975	0.08398	0.60095
	B_N	0.05595	0.09015	0.60523

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00321	0.00300	0.00602
	(!B_N * !Y)	-0.00165	-0.00185	0.00117
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00706	0.00638	0.01219
	(!B_N * !Y)	-0.00227	-0.00299	0.00286
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00995	0.00895	0.02080
	(!B_N * !Y)	-0.00558	-0.00655	0.00535

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00256	0.00245	0.00184
	(!B_N * !Y)	0.00740	0.00734	0.00669
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00509	0.00486	0.00356
	(!B_N * !Y)	0.01440	0.01424	0.01291
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.01304	0.01265	0.01011
	(!B_N * !Y)	0.02853	0.02817	0.02560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.02007	0.03929	0.33393
	(A * !Y)	0.01537	0.03459	0.32925
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.01856	0.03922	0.36383
	(A * !Y)	0.01323	0.03389	0.35850
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.04607	0.07737	0.57773
	(A * !Y)	0.03813	0.06942	0.56980

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00188	0.02298	0.33006
	(A * !Y)	0.00658	0.02769	0.33474
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00420	0.02599	0.35919
	(A * !Y)	0.00956	0.03140	0.36453
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00501	0.04083	0.57024
	(A * !Y)	0.01302	0.04882	0.57818

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00283	0.00290	0.91899
sky130_fd_sc_hs__nor2_2	0.00450	0.00427	1.56902
sky130_fd_sc_hs__nor2_4	0.00860	0.00853	2.91764
sky130_fd_sc_hs__nor2_8	0.01679	0.01684	5.19192

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor2_1	0.00000	224.66300	516.24500
sky130_fd_sc_hs__nor2_2	0.00000	442.37900	1028.91000
sky130_fd_sc_hs__nor2_4	0.00000	883.54000	2053.29000
sky130_fd_sc_hs__nor2_8	0.00000	1762.89000	4090.81000

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)	0.03802	0.63283	8.36422
	B->Y (FR)	0.02985	0.67404	9.02563
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.03148	0.50863	7.78366
	B->Y (FR)	0.01937	0.55103	8.50150
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.03111	0.42176	7.61084
	B->Y (FR)	0.01886	0.47353	8.49405
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.03140	0.34780	7.30913
	B->Y (FR)	0.02383	0.42365	8.52253

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01770	0.29208	3.76445
	B->Y (RF)	0.01488	0.28366	3.70736
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02487	0.39615	5.95182
	B->Y (RF)	0.01720	0.38222	5.91148
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02404	0.32512	5.72016
	B->Y (RF)	0.01631	0.30471	5.60686
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02208	0.26066	5.32447
	B->Y (RF)	0.02275	0.24674	5.24111

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00015	0.00872	0.14367
	A	0.00710	0.01600	0.15201
	B	-0.00024	0.00988	0.14862
	B	0.00551	0.01564	0.15441
sky130_fd_sc_hs__nor2_2	A	-0.00067	0.01148	0.18508
	A	0.01145	0.02360	0.19746
	B	-0.00040	0.01441	0.19634
	B	0.00799	0.02280	0.20379
sky130_fd_sc_hs__nor2_4	A	0.00085	0.02848	0.37524
	A	0.02445	0.05200	0.39885
	B	0.00033	0.03197	0.38597
	B	0.01727	0.04900	0.40106
sky130_fd_sc_hs__nor2_8	A	0.00080	0.06144	0.74855
	A	0.04720	0.10785	0.79531
	B	0.00007	0.06726	0.76416
	B	0.03361	0.10097	0.79478

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.01313	0.02107	0.13656
	A	0.00588	0.01375	0.12887
	B	0.01370	0.02121	0.12492
	B	0.00794	0.01541	0.11879
sky130_fd_sc_hs__nor2_2	A	0.02640	0.03719	0.17835
	A	0.01426	0.02499	0.16476
	B	0.02664	0.03754	0.16421
	B	0.01827	0.02905	0.15441
sky130_fd_sc_hs__nor2_4	A	0.05091	0.07562	0.35556
	A	0.02728	0.05186	0.33171
	B	0.05219	0.07682	0.32559
	B	0.03526	0.05971	0.30863
sky130_fd_sc_hs__nor2_8	A	0.09802	0.15365	0.72720
	A	0.05156	0.10719	0.67584
	B	0.10152	0.15353	0.64858
	B	0.06793	0.11986	0.61327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00330	0.00306	0.00609
	(B * !Y)	-0.00143	-0.00166	0.00137
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00553	0.00478	0.01060
	(B * !Y)	-0.00237	-0.00315	0.00276
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00994	0.00855	0.02022
	(B * !Y)	-0.00496	-0.00639	0.00542
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01880	0.01665	0.03992
	(B * !Y)	-0.01053	-0.01285	0.01076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00235	0.00223	0.00162
	(B * !Y)	0.00706	0.00700	0.00635
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00628	0.00608	0.00477
	(B * !Y)	0.01419	0.01400	0.01267
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.01345	0.01303	0.01045
	(B * !Y)	0.02836	0.02802	0.02536
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.02713	0.02626	0.02119
	(B * !Y)	0.05639	0.05587	0.05057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00244	0.00251	0.00308
	(A * !Y)	-0.00080	-0.00080	-0.00019
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00281	0.00288	0.00362
	(A * !Y)	-0.00151	-0.00152	-0.00072
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00545	0.00560	0.00732
	(A * !Y)	-0.00309	-0.00311	-0.00130
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.01089	0.01120	0.01493
	(A * !Y)	-0.00599	-0.00605	-0.00219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00084	0.00074	-0.00060
	(A * !Y)	0.00415	0.00404	0.00269
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00414	0.00392	0.00131
	(A * !Y)	0.00855	0.00839	0.00574
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00818	0.00777	0.00249
	(A * !Y)	0.01696	0.01658	0.01127
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.01620	0.01534	0.00473
	(A * !Y)	0.03351	0.03277	0.02212

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00278	0.00290	0.00223	0.64041
sky130_fd_sc_hs__nor3b_2	0.00545	0.00543	0.00264	1.09480
sky130_fd_sc_hs__nor3b_4	0.01093	0.01087	0.00371	1.81619

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	830.25900	1634.80000
sky130_fd_sc_hs__nor3b_2	0.00000	633.45500	1213.41000
sky130_fd_sc_hs__nor3b_4	0.00000	1981.22000	3886.09000

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)	0.07078	0.70977	8.22299
	B->Y (FR)	0.06317	0.74952	8.81209
	C_N->Y (RR)	0.06452	0.60231	5.94135
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.06844	0.59346	7.93818
	B->Y (FR)	0.05996	0.64751	8.75781
	C_N->Y (RR)	0.05836	0.47247	5.54167
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.07232	0.50996	7.68284
	B->Y (FR)	0.06390	0.56728	8.54846
	C_N->Y (RR)	0.07670	0.47874	6.30965

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01896	0.24901	2.66548
	B->Y (RF)	0.01978	0.25167	2.72614
	C_N->Y (FF)	0.04702	0.31155	3.08628
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01518	0.17881	2.23563
	B->Y (RF)	0.01572	0.16831	2.12973
	C_N->Y (FF)	0.05076	0.29576	2.92067
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01440	0.13033	1.95051
	B->Y (RF)	0.01488	0.12006	1.83982
	C_N->Y (FF)	0.05441	0.24283	2.17952

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.03939	0.04663	0.18480
	A	0.04619	0.05341	0.19151
	B	0.03968	0.04661	0.16408
	B	0.04527	0.05219	0.16970
	C_N	0.04457	0.06305	0.34531
	C_N	0.04090	0.05969	0.34149
sky130_fd_sc_hs__nor3b_2	A	0.02151	0.03800	0.32423
	A	0.03578	0.05226	0.33871
	B	0.02182	0.03700	0.27330
	B	0.03286	0.04803	0.28432
	C_N	0.03095	0.05351	0.39868
	C_N	0.02748	0.05004	0.39514
sky130_fd_sc_hs__nor3b_4	A	0.08182	0.11507	0.65603
	A	0.11043	0.14372	0.68417
	B	0.08343	0.11393	0.55752
	B	0.10576	0.13628	0.57949
	C_N	0.09829	0.13273	0.67417
	C_N	0.09423	0.12862	0.67024

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.03169	0.03865	0.15976
	A	0.02489	0.03186	0.15308
	B	0.02975	0.03648	0.14462
	B	0.02418	0.03090	0.13920
	C_N	0.01092	0.03107	0.33039
	C_N	0.01457	0.03474	0.33426
sky130_fd_sc_hs__nor3b_2	A	0.03471	0.05055	0.29770
	A	0.02045	0.03624	0.28361
	B	0.02933	0.04399	0.25851
	B	0.01833	0.03296	0.24763
	C_N	0.02105	0.04113	0.35185
	C_N	0.02450	0.04459	0.35547
sky130_fd_sc_hs__nor3b_4	A	0.08719	0.11929	0.58910
	A	0.05855	0.09054	0.56074
	B	0.07568	0.10498	0.50610
	B	0.05343	0.08259	0.48429
	C_N	0.04288	0.07691	0.61329
	C_N	0.04693	0.08103	0.61782

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)	0.01470	0.01439	0.01604
	(B * C_N * !Y)	0.01017	0.00986	0.01154
	(B * !C_N * !Y)	0.00257	0.00233	0.00238
	(B * !C_N * !Y)	-0.00191	-0.00215	-0.00208
	(!B * !C_N * !Y)	0.00369	0.00335	0.00600
	(!B * !C_N * !Y)	-0.00096	-0.00135	0.00144
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.01173	0.01106	0.01426
	(B * C_N * !Y)	0.00239	0.00171	0.00499
	(B * !C_N * !Y)	0.00544	0.00493	0.00500
	(B * !C_N * !Y)	-0.00378	-0.00430	-0.00417
	(!B * !C_N * !Y)	0.00776	0.00706	0.01224
	(!B * !C_N * !Y)	-0.00183	-0.00255	0.00287
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.03658	0.03528	0.04167
	(B * C_N * !Y)	0.01784	0.01649	0.02305
	(B * !C_N * !Y)	0.01053	0.00956	0.00968
	(B * !C_N * !Y)	-0.00798	-0.00905	-0.00877
	(!B * !C_N * !Y)	0.01500	0.01364	0.02401
	(!B * !C_N * !Y)	-0.00432	-0.00564	0.00518

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)	0.01217	0.01209	0.01178
	(B * C_N * !Y)	0.01667	0.01666	0.01631
	(B * !C_N * !Y)	-0.00146	-0.00148	-0.00149
	(B * !C_N * !Y)	0.00301	0.00304	0.00299
	(!B * !C_N * !Y)	0.00259	0.00248	0.00182
	(!B * !C_N * !Y)	0.00722	0.00715	0.00645
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00634	0.00621	0.00556
	(B * C_N * !Y)	0.01566	0.01558	0.01489
	(B * !C_N * !Y)	-0.00307	-0.00309	-0.00312
	(B * !C_N * !Y)	0.00613	0.00614	0.00609
	(!B * !C_N * !Y)	0.00499	0.00477	0.00343
	(!B * !C_N * !Y)	0.01451	0.01437	0.01297
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.02499	0.02472	0.02343
	(B * C_N * !Y)	0.04367	0.04355	0.04218
	(B * !C_N * !Y)	-0.00632	-0.00641	-0.00645
	(B * !C_N * !Y)	0.01213	0.01223	0.01207
	(!B * !C_N * !Y)	0.00962	0.00919	0.00656
	(!B * !C_N * !Y)	0.02873	0.02846	0.02571

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)	0.01417	0.01423	0.01474
	(A * C_N * !Y)	0.01085	0.01084	0.01138
	(A * !C_N * !Y)	0.00271	0.00276	0.00290
	(A * !C_N * !Y)	-0.00138	-0.00135	-0.00118
	(!A * !C_N * !Y)	0.00345	0.00310	0.00602
	(!A * !C_N * !Y)	-0.00132	-0.00169	0.00127
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.01009	0.01017	0.01108
	(A * C_N * !Y)	0.00392	0.00392	0.00484
	(A * !C_N * !Y)	0.00550	0.00563	0.00581
	(A * !C_N * !Y)	-0.00239	-0.00229	-0.00204
	(!A * !C_N * !Y)	0.00736	0.00639	0.01208
	(!A * !C_N * !Y)	-0.00191	-0.00289	0.00287
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.03342	0.03365	0.03521
	(A * C_N * !Y)	0.02083	0.02079	0.02253
	(A * !C_N * !Y)	0.01078	0.01099	0.01148
	(A * !C_N * !Y)	-0.00490	-0.00482	-0.00421
	(!A * !C_N * !Y)	0.01427	0.01246	0.02387
	(!A * !C_N * !Y)	-0.00417	-0.00617	0.00542

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)	0.01197	0.01185	0.01064
	(A * C_N * !Y)	0.01532	0.01523	0.01401
	(A * !C_N * !Y)	-0.00190	-0.00190	-0.00180
	(A * !C_N * !Y)	0.00228	0.00228	0.00224
	(!A * !C_N * !Y)	0.00250	0.00239	0.00177
	(!A * !C_N * !Y)	0.00726	0.00718	0.00653
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00644	0.00624	0.00381
	(A * C_N * !Y)	0.01276	0.01257	0.01012
	(A * !C_N * !Y)	-0.00378	-0.00381	-0.00358
	(A * !C_N * !Y)	0.00421	0.00425	0.00419
	(!A * !C_N * !Y)	0.00502	0.00477	0.00351
	(!A * !C_N * !Y)	0.01423	0.01408	0.01273
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.02534	0.02494	0.02012
	(A * C_N * !Y)	0.03818	0.03780	0.03295
	(A * !C_N * !Y)	-0.00786	-0.00787	-0.00747
	(A * !C_N * !Y)	0.00813	0.00815	0.00805
	(!A * !C_N * !Y)	0.00953	0.00906	0.00656
	(!A * !C_N * !Y)	0.02799	0.02760	0.02503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.01736	0.03665	0.33041
	(B * !Y)	0.01287	0.03218	0.32593
	(A * !B * !Y)	0.02020	0.03939	0.33234
	(A * !B * !Y)	0.01532	0.03452	0.32746
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.01307	0.03384	0.36033
	(B * !Y)	0.00786	0.02863	0.35514
	(A * !B * !Y)	0.01882	0.03949	0.36488
	(A * !B * !Y)	0.01288	0.03356	0.35895
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.03583	0.06634	0.57529
	(B * !Y)	0.02806	0.05854	0.56751
	(A * !B * !Y)	0.04729	0.07755	0.58377
	(A * !B * !Y)	0.03797	0.06821	0.57445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00192	0.02284	0.32715
	(B * !Y)	0.00641	0.02734	0.33162
	(A * !B * !Y)	0.00195	0.02287	0.32784
	(A * !B * !Y)	0.00700	0.02794	0.33270
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00403	0.02579	0.35716
	(B * !Y)	0.00922	0.03100	0.36235
	(A * !B * !Y)	0.00409	0.02592	0.35896
	(A * !B * !Y)	0.01039	0.03222	0.36492
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00918	0.04416	0.57491
	(B * !Y)	0.01699	0.05201	0.58271
	(A * !B * !Y)	0.00931	0.04439	0.57805
	(A * !B * !Y)	0.01941	0.05450	0.58753

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00288	0.00311	0.00294	0.63012
sky130_fd_sc_hs__nor3_2	0.00445	0.00467	0.00433	1.15052
sky130_fd_sc_hs__nor3_4	0.00972	0.00959	0.00922	1.70612

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	163.95400	511.87400
sky130_fd_sc_hs__nor3_2	0.00000	322.96900	1020.71000
sky130_fd_sc_hs__nor3_4	0.00000	643.05300	2024.81000

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)	0.07160	0.69937	8.03706
	B->Y (FR)	0.06495	0.73986	8.63841
	C->Y (FR)	0.04604	0.75593	9.04951
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.05753	0.54807	7.43006
	B->Y (FR)	0.04784	0.58595	8.07975
	C->Y (FR)	0.02452	0.60389	8.56332
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.06646	0.47128	6.94802
	B->Y (FR)	0.05358	0.51016	7.63711
	C->Y (FR)	0.03163	0.53690	8.21653

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01978	0.24763	2.62155
	B->Y (RF)	0.02102	0.24882	2.66034
	C->Y (RF)	0.01719	0.24131	2.62864
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03114	0.36049	4.75029
	B->Y (RF)	0.02838	0.34627	4.66607
	C->Y (RF)	0.01893	0.33101	4.61610
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02072	0.26452	3.76438
	B->Y (RF)	0.02350	0.25959	3.80224
	C->Y (RF)	0.02469	0.24935	3.75927

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00085	0.00858	0.15214
	A	0.01038	0.01812	0.16175
	B	0.00094	0.00825	0.13119
	B	0.00896	0.01631	0.13908
	C	0.00087	0.00960	0.13970
	C	0.00735	0.01609	0.14602
sky130_fd_sc_hs__nor3_2	A	0.00067	0.01105	0.19762
	A	0.01628	0.02663	0.21319
	B	0.00105	0.01162	0.17914
	B	0.01361	0.02414	0.19155
	C	0.00102	0.01478	0.19731
	C	0.00986	0.02359	0.20552
sky130_fd_sc_hs__nor3_4	A	0.00093	0.02349	0.41636
	A	0.03412	0.05675	0.44910
	B	0.00096	0.02452	0.37094
	B	0.02700	0.05049	0.39660
	C	0.00031	0.02908	0.39248
	C	0.02023	0.04900	0.41151

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01609	0.02329	0.14752
	A	0.00655	0.01373	0.13795
	B	0.01378	0.02061	0.13149
	B	0.00575	0.01259	0.12342
	C	0.01350	0.02031	0.12366
	C	0.00702	0.01383	0.11712
sky130_fd_sc_hs__nor3_2	A	0.03079	0.04102	0.19720
	A	0.01518	0.02532	0.18102
	B	0.02576	0.03595	0.18248
	B	0.01322	0.02337	0.16899
	C	0.02467	0.03505	0.16787
	C	0.01582	0.02620	0.15845
sky130_fd_sc_hs__nor3_4	A	0.06199	0.08111	0.39412
	A	0.02878	0.04793	0.36059
	B	0.05025	0.07049	0.36482
	B	0.02424	0.04440	0.33816
	C	0.04851	0.07065	0.34674
	C	0.02860	0.05066	0.32620

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00276	0.00252	0.00258
	(B * C * !Y)	-0.00197	-0.00220	-0.00212
	(B * !C * !Y)	0.00338	0.00308	0.00473
	(B * !C * !Y)	-0.00142	-0.00172	-0.00003
	(!B * C * !Y)	0.00386	0.00354	0.00620
	(!B * C * !Y)	-0.00107	-0.00145	0.00138
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00382	0.00331	0.00336
	(B * C * !Y)	-0.00373	-0.00427	-0.00414
	(B * !C * !Y)	0.00526	0.00457	0.00770
	(B * !C * !Y)	-0.00250	-0.00321	0.00007
	(!B * C * !Y)	0.00625	0.00542	0.01058
	(!B * C * !Y)	-0.00178	-0.00265	0.00282
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00781	0.00650	0.00652
	(B * C * !Y)	-0.00783	-0.00923	-0.00900
	(B * !C * !Y)	0.01095	0.00915	0.01521
	(B * !C * !Y)	-0.00510	-0.00699	-0.00057
	(!B * C * !Y)	0.01293	0.01086	0.02095
	(!B * C * !Y)	-0.00370	-0.00582	0.00492

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00179	-0.00182	-0.00183
	(B * C * !Y)	0.00290	0.00294	0.00289
	(B * !C * !Y)	0.00042	0.00036	0.00004
	(B * !C * !Y)	0.00521	0.00517	0.00484
	(!B * C * !Y)	0.00225	0.00214	0.00147
	(!B * C * !Y)	0.00715	0.00709	0.00639
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00181	-0.00184	-0.00185
	(B * C * !Y)	0.00572	0.00577	0.00569
	(B * !C * !Y)	0.00255	0.00243	0.00178
	(B * !C * !Y)	0.01028	0.01021	0.00953
	(!B * C * !Y)	0.00630	0.00609	0.00475
	(!B * C * !Y)	0.01425	0.01411	0.01271
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00338	-0.00342	-0.00349
	(B * C * !Y)	0.01219	0.01221	0.01213
	(B * !C * !Y)	0.00537	0.00509	0.00374
	(B * !C * !Y)	0.02135	0.02120	0.01978
	(!B * C * !Y)	0.01263	0.01219	0.00949
	(!B * C * !Y)	0.02906	0.02877	0.02595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00290	0.00295	0.00310
	(A * C * !Y)	-0.00106	-0.00104	-0.00084
	(A * !C * !Y)	0.00265	0.00271	0.00321
	(A * !C * !Y)	-0.00067	-0.00068	-0.00012
	(!A * C * !Y)	0.00364	0.00327	0.00620
	(!A * C * !Y)	-0.00113	-0.00150	0.00147
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00364	0.00373	0.00390
	(A * C * !Y)	-0.00238	-0.00232	-0.00203
	(A * !C * !Y)	0.00368	0.00373	0.00452
	(A * !C * !Y)	-0.00114	-0.00115	-0.00029
	(!A * C * !Y)	0.00550	0.00451	0.01018
	(!A * C * !Y)	-0.00214	-0.00322	0.00258
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00785	0.00797	0.00850
	(A * C * !Y)	-0.00438	-0.00432	-0.00365
	(A * !C * !Y)	0.00730	0.00744	0.00877
	(A * !C * !Y)	-0.00201	-0.00204	-0.00055
	(!A * C * !Y)	0.01115	0.00948	0.02096
	(!A * C * !Y)	-0.00419	-0.00601	0.00569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00223	-0.00224	-0.00213
	(A * C * !Y)	0.00183	0.00184	0.00178
	(A * !C * !Y)	0.00043	0.00032	-0.00090
	(A * !C * !Y)	0.00378	0.00370	0.00247
	(!A * C * !Y)	0.00217	0.00206	0.00145
	(!A * C * !Y)	0.00692	0.00683	0.00619
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00220	-0.00220	-0.00203
	(A * C * !Y)	0.00393	0.00394	0.00386
	(A * !C * !Y)	0.00269	0.00249	0.00006
	(A * !C * !Y)	0.00759	0.00741	0.00496
	(!A * C * !Y)	0.00661	0.00639	0.00507
	(!A * C * !Y)	0.01430	0.01408	0.01275
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00515	-0.00516	-0.00469
	(A * C * !Y)	0.00739	0.00743	0.00732
	(A * !C * !Y)	0.00565	0.00529	0.00045
	(A * !C * !Y)	0.01520	0.01481	0.01001
	(!A * C * !Y)	0.01225	0.01180	0.00929
	(!A * C * !Y)	0.02761	0.02722	0.02466

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00236	0.00239	0.00239
	(B * !Y)	-0.00090	-0.00091	-0.00087
	(A * !B * !Y)	0.00238	0.00241	0.00263
	(A * !B * !Y)	-0.00033	-0.00032	-0.00011
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00266	0.00268	0.00270
	(B * !Y)	-0.00174	-0.00175	-0.00170
	(A * !B * !Y)	0.00270	0.00273	0.00313
	(A * !B * !Y)	-0.00061	-0.00060	-0.00024
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00589	0.00594	0.00599
	(B * !Y)	-0.00374	-0.00377	-0.00366
	(A * !B * !Y)	0.00596	0.00604	0.00685
	(A * !B * !Y)	-0.00141	-0.00139	-0.00063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00173	-0.00176	-0.00183
	(B * !Y)	0.00154	0.00156	0.00147
	(A * !B * !Y)	0.00112	0.00104	0.00001
	(A * !B * !Y)	0.00403	0.00396	0.00293
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00137	-0.00141	-0.00164
	(B * !Y)	0.00304	0.00307	0.00288
	(A * !B * !Y)	0.00440	0.00427	0.00226
	(A * !B * !Y)	0.00815	0.00804	0.00606
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00339	-0.00343	-0.00383
	(B * !Y)	0.00632	0.00635	0.00601
	(A * !B * !Y)	0.00814	0.00788	0.00386
	(A * !B * !Y)	0.01638	0.01615	0.01219

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00291	0.00298	0.00236	0.00232	0.48724
sky130_fd_sc_hs__nor4bb_2	0.00545	0.00570	0.00273	0.00259	0.78908
sky130_fd_sc_hs__nor4bb_4	0.01075	0.01143	0.00375	0.00366	1.44621

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	1447.14000	2937.72000
sky130_fd_sc_hs__nor4bb_2	0.00000	840.57100	1761.01000
sky130_fd_sc_hs__nor4bb_4	0.00000	3110.35000	6435.82000

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)	0.11325	0.78803	8.18148
	B->Y (FR)	0.10598	0.81806	8.58857
	C_N->Y (RR)	0.11146	0.70379	5.88327
	D_N->Y (RR)	0.07497	0.66562	5.88680
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.11812	0.68255	8.05358
	B->Y (FR)	0.10779	0.70498	8.39608
	C_N->Y (RR)	0.11316	0.59205	5.65202
	D_N->Y (RR)	0.07059	0.55525	5.72495
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.11968	0.57907	7.86815
	B->Y (FR)	0.10937	0.60641	8.30666
	C_N->Y (RR)	0.11630	0.54550	6.26388
	D_N->Y (RR)	0.08274	0.51955	6.34231

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01976	0.22231	1.95597
	B->Y (RF)	0.02034	0.21441	1.86892
	C_N->Y (FF)	0.05839	0.30350	2.66157
	D_N->Y (FF)	0.04873	0.28788	2.59185
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01602	0.14975	1.41988
	B->Y (RF)	0.01695	0.14791	1.40421
	C_N->Y (FF)	0.06108	0.29485	2.65088
	D_N->Y (FF)	0.05188	0.28277	2.62713
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01660	0.12926	1.56260
	B->Y (RF)	0.01706	0.11573	1.37794
	C_N->Y (FF)	0.06020	0.23624	1.80933
	D_N->Y (FF)	0.05607	0.23509	1.90405

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.07830	0.08433	0.22728
	A	0.08560	0.09163	0.23454
	B	0.07892	0.08500	0.20988
	B	0.08484	0.09095	0.21571
	C_N	0.08263	0.10039	0.38545
	C_N	0.07885	0.09662	0.38167
	D_N	0.08012	0.09979	0.40368
	D_N	0.07674	0.09640	0.40024
sky130_fd_sc_hs__nor4bb_2	A	0.04330	0.05532	0.33364
	A	0.05767	0.06972	0.34807
	B	0.04359	0.05621	0.29987
	B	0.05499	0.06761	0.31113
	C_N	0.05207	0.07319	0.41775
	C_N	0.04869	0.06980	0.41445
	D_N	0.04862	0.07122	0.41835
	D_N	0.04562	0.06818	0.41520
sky130_fd_sc_hs__nor4bb_4	A	0.16554	0.18985	0.70791
	A	0.19342	0.21772	0.73604
	B	0.16644	0.19119	0.65116
	B	0.18914	0.21390	0.67346
	C_N	0.17657	0.20847	0.74717
	C_N	0.17270	0.20462	0.74378
	D_N	0.17054	0.20627	0.76396
	D_N	0.16696	0.20267	0.76062

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.04859	0.05483	0.17923
	A	0.04129	0.04751	0.17214
	B	0.04568	0.05192	0.16599
	B	0.03977	0.04598	0.16027
	C_N	0.02319	0.04302	0.34417
	C_N	0.02695	0.04679	0.34816
	D_N	0.02269	0.04286	0.34081
	D_N	0.02605	0.04625	0.34440
sky130_fd_sc_hs__nor4bb_2	A	0.04415	0.05700	0.30049
	A	0.02981	0.04266	0.28631
	B	0.03756	0.05054	0.26996
	B	0.02615	0.03908	0.25873
	C_N	0.02672	0.04802	0.38702
	C_N	0.03012	0.05142	0.39067
	D_N	0.02584	0.04727	0.38283
	D_N	0.02883	0.05030	0.38610
sky130_fd_sc_hs__nor4bb_4	A	0.12475	0.15141	0.61891
	A	0.09693	0.12354	0.59132
	B	0.11121	0.13811	0.56611
	B	0.08851	0.11539	0.54381
	C_N	0.06210	0.09532	0.61062
	C_N	0.06594	0.09923	0.61496
	D_N	0.06355	0.09820	0.64134
	D_N	0.06716	0.10184	0.64541

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)**	0.02655	0.02623	0.02769
	(B * C_N * D_N * !Y)	0.02176	0.02145	0.02292
	(B * !D_N * !Y)	0.01442	0.01420	0.01425
	(B * !D_N * !Y)	0.00968	0.00946	0.00953
	(B * !C_N * D_N * !Y)	0.01427	0.01404	0.01407
	(B * !C_N * D_N * !Y)	0.00953	0.00930	0.00935
	(!B * C_N * !D_N * !Y)	0.01568	0.01536	0.01780
	(!B * C_N * !D_N * !Y)	0.01079	0.01042	0.01300
	(!B * !C_N * D_N * !Y)	0.01529	0.01490	0.01625
	(!B * !C_N * D_N * !Y)	0.01041	0.00997	0.01145
	(!B * !C_N * !D_N * !Y)	0.00288	0.00263	0.00262
	(!B * !C_N * !D_N * !Y)	-0.00187	-0.00218	-0.00210
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.01725	0.01640	0.01908
	(B * C_N * D_N * !Y)	0.00797	0.00707	0.00987
	(B * !D_N * !Y)	0.01065	0.01010	0.01014
	(B * !D_N * !Y)	0.00150	0.00090	0.00102
	(B * !C_N * D_N * !Y)	0.01067	0.01010	0.01009
	(B * !C_N * D_N * !Y)	0.00152	0.00089	0.00097
	(!B * C_N * !D_N * !Y)	0.01339	0.01251	0.01725
	(!B * C_N * !D_N * !Y)	0.00391	0.00299	0.00797
	(!B * !C_N * D_N * !Y)	0.01290	0.01190	0.01445
	(!B * !C_N * D_N * !Y)	0.00344	0.00238	0.00519
	(!B * !C_N * !D_N * !Y)	0.00580	0.00517	0.00515
	(!B * !C_N * !D_N * !Y)	-0.00338	-0.00405	-0.00396

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.05948	0.05791	0.06338
	(B * C_N * D_N * !Y)	0.04147	0.03983	0.04552
	(B * !D_N * !Y)	0.03352	0.03248	0.03255
	(B * !D_N * !Y)	0.01577	0.01465	0.01487
	(B * !C_N * D_N * !Y)	0.03358	0.03249	0.03247
	(B * !C_N * D_N * !Y)	0.01582	0.01465	0.01479
	(!B * C_N * !D_N * !Y)	0.03889	0.03717	0.04668
	(!B * C_N * !D_N * !Y)	0.02041	0.01867	0.02868
	(!B * !C_N * D_N * !Y)	0.03799	0.03601	0.04112
	(!B * !C_N * D_N * !Y)	0.01955	0.01755	0.02316
	(!B * !C_N * !D_N * !Y)	0.01087	0.00962	0.00955
	(!B * !C_N * !D_N * !Y)	-0.00701	-0.00831	-0.00812

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)**	0.02318	0.02312	0.02284
	(B * C_N * D_N * !Y)	0.02797	0.02794	0.02763
	(B * !D_N * !Y)	0.00973	0.00970	0.00970
	(B * !D_N * !Y)	0.01446	0.01449	0.01445
	(B * !C_N * D_N * !Y)	0.00989	0.00987	0.00987
	(B * !C_N * D_N * !Y)	0.01463	0.01465	0.01461
	(!B * C_N * !D_N * !Y)	0.01385	0.01375	0.01309
	(!B * C_N * !D_N * !Y)	0.01871	0.01864	0.01795
	(!B * !C_N * D_N * !Y)	0.01217	0.01211	0.01177
	(!B * !C_N * D_N * !Y)	0.01702	0.01699	0.01664
	(!B * !C_N * !D_N * !Y)	-0.00154	-0.00154	-0.00156
	(!B * !C_N * !D_N * !Y)	0.00321	0.00321	0.00319

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.01107	0.01092	0.01034
	(B * C_N * D_N * !Y)	0.02031	0.02030	0.01962
	(B * !D_N * !Y)	0.00213	0.00208	0.00208
	(B * !D_N * !Y)	0.01126	0.01132	0.01124
	(B * !C_N * D_N * !Y)	0.00212	0.00207	0.00206
	(B * !C_N * D_N * !Y)	0.01125	0.01131	0.01122
	(!B * C_N * !D_N * !Y)	0.01030	0.01008	0.00878
	(!B * C_N * !D_N * !Y)	0.01971	0.01957	0.01820
	(!B * !C_N * D_N * !Y)	0.00659	0.00645	0.00579
	(!B * !C_N * D_N * !Y)	0.01598	0.01594	0.01521
	(!B * !C_N * !D_N * !Y)	-0.00280	-0.00284	-0.00284
	(!B * !C_N * !D_N * !Y)	0.00635	0.00641	0.00632
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.04759	0.04735	0.04616
	(B * C_N * D_N * !Y)	0.06552	0.06537	0.06416
	(B * !D_N * !Y)	0.01684	0.01675	0.01675
	(B * !D_N * !Y)	0.03454	0.03468	0.03451
	(B * !C_N * D_N * !Y)	0.01681	0.01671	0.01673
	(B * !C_N * D_N * !Y)	0.03450	0.03464	0.03448
	(!B * C_N * !D_N * !Y)	0.03323	0.03281	0.03021
	(!B * C_N * !D_N * !Y)	0.05149	0.05122	0.04849
	(!B * !C_N * D_N * !Y)	0.02587	0.02560	0.02429
	(!B * !C_N * D_N * !Y)	0.04410	0.04399	0.04255
	(!B * !C_N * !D_N * !Y)	-0.00593	-0.00596	-0.00601
	(!B * !C_N * !D_N * !Y)	0.01181	0.01183	0.01175

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)**	0.02593	0.02594	0.02647
	(A * C_N * D_N * !Y)	0.02251	0.02253	0.02302
	(A * C_N * !D_N * !Y)	0.01489	0.01506	0.01503
	(A * C_N * !D_N * !Y)	0.01050	0.01062	0.01064
	(A * !C_N * D_N * !Y)	0.01436	0.01442	0.01444
	(A * !C_N * D_N * !Y)	0.01018	0.01020	0.01026
	(A * !C_N * !D_N * !Y)	0.00269	0.00272	0.00254
	(A * !C_N * !D_N * !Y)	-0.00155	-0.00155	-0.00166
	(!A * C_N * !D_N * !Y)	0.01574	0.01523	0.01789
	(!A * C_N * !D_N * !Y)	0.01088	0.01037	0.01306
	(!A * !C_N * D_N * !Y)	0.01517	0.01473	0.01630
	(!A * !C_N * D_N * !Y)	0.01031	0.00987	0.01148
	(!A * !C_N * !D_N * !Y)	0.00301	0.00269	0.00271
	(!A * !C_N * !D_N * !Y)	-0.00184	-0.00217	-0.00211
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.01571	0.01582	0.01645
	(A * C_N * D_N * !Y)	0.00919	0.00917	0.00991
	(A * C_N * !D_N * !Y)	0.01139	0.01178	0.01171
	(A * C_N * !D_N * !Y)	0.00275	0.00310	0.00314
	(A * !C_N * D_N * !Y)	0.01072	0.01077	0.01079
	(A * !C_N * D_N * !Y)	0.00257	0.00259	0.00269
	(A * !C_N * !D_N * !Y)	0.00535	0.00535	0.00498
	(A * !C_N * !D_N * !Y)	-0.00294	-0.00294	-0.00317
	(!A * C_N * !D_N * !Y)	0.01303	0.01218	0.01738
	(!A * C_N * !D_N * !Y)	0.00357	0.00261	0.00790
	(!A * !C_N * D_N * !Y)	0.01227	0.01146	0.01455
	(!A * !C_N * D_N * !Y)	0.00282	0.00189	0.00507
	(!A * !C_N * !D_N * !Y)	0.00595	0.00529	0.00531
	(!A * !C_N * !D_N * !Y)	-0.00359	-0.00425	-0.00414

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.05709	0.05714	0.05868
	(A * C_N * D_N * !Y)	0.04398	0.04405	0.04558
	(A * C_N * !D_N * !Y)	0.03511	0.03571	0.03561
	(A * C_N * !D_N * !Y)	0.01828	0.01888	0.01887
	(A * !C_N * D_N * !Y)	0.03367	0.03392	0.03375
	(A * !C_N * D_N * !Y)	0.01775	0.01782	0.01790
	(A * !C_N * !D_N * !Y)	0.00982	0.00997	0.00913
	(A * !C_N * !D_N * !Y)	-0.00630	-0.00636	-0.00684
	(!A * C_N * !D_N * !Y)	0.03881	0.03664	0.04695
	(!A * C_N * !D_N * !Y)	0.02016	0.01779	0.02833
	(!A * !C_N * D_N * !Y)	0.03738	0.03525	0.04131
	(!A * !C_N * D_N * !Y)	0.01872	0.01639	0.02268
	(!A * !C_N * !D_N * !Y)	0.01128	0.00978	0.00979
	(!A * !C_N * !D_N * !Y)	-0.00729	-0.00900	-0.00877

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)**	0.02319	0.02309	0.02196
	(A * C_N * D_N * !Y)	0.02664	0.02656	0.02542
	(A * C_N * !D_N * !Y)	0.00902	0.00900	0.00909
	(A * C_N * !D_N * !Y)	0.01338	0.01340	0.01341
	(A * !C_N * D_N * !Y)	0.00955	0.00954	0.00962
	(A * !C_N * D_N * !Y)	0.01381	0.01382	0.01376
	(A * !C_N * !D_N * !Y)	-0.00191	-0.00192	-0.00188
	(A * !C_N * !D_N * !Y)	0.00239	0.00240	0.00231
	(!A * C_N * !D_N * !Y)	0.01374	0.01363	0.01297
	(!A * C_N * !D_N * !Y)	0.01856	0.01848	0.01780
	(!A * !C_N * D_N * !Y)	0.01206	0.01200	0.01168
	(!A * !C_N * D_N * !Y)	0.01690	0.01685	0.01651
	(!A * !C_N * !D_N * !Y)	-0.00163	-0.00165	-0.00166
	(!A * !C_N * !D_N * !Y)	0.00319	0.00319	0.00316
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.01115	0.01095	0.00872
	(A * C_N * D_N * !Y)	0.01776	0.01761	0.01536
	(A * C_N * !D_N * !Y)	0.00069	0.00066	0.00086
	(A * C_N * !D_N * !Y)	0.00919	0.00924	0.00927
	(A * !C_N * D_N * !Y)	0.00141	0.00137	0.00157
	(A * !C_N * D_N * !Y)	0.00962	0.00968	0.00958
	(A * !C_N * !D_N * !Y)	-0.00356	-0.00358	-0.00349
	(A * !C_N * !D_N * !Y)	0.00474	0.00476	0.00462
	(!A * C_N * !D_N * !Y)	0.01010	0.00987	0.00856
	(!A * C_N * !D_N * !Y)	0.01957	0.01942	0.01805
	(!A * !C_N * D_N * !Y)	0.00636	0.00622	0.00558
	(!A * !C_N * D_N * !Y)	0.01585	0.01577	0.01508
	(!A * !C_N * !D_N * !Y)	-0.00301	-0.00304	-0.00306
	(!A * !C_N * !D_N * !Y)	0.00646	0.00648	0.00641

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	0.04734	0.04693	0.04245
	(A * C_N * D_N * !Y)	0.06052	0.06019	0.05566
	(A * C_N * !D_N * !Y)	0.01409	0.01404	0.01437
	(A * C_N * !D_N * !Y)	0.03072	0.03078	0.03081
	(A * !C_N * D_N * !Y)	0.01552	0.01552	0.01585
	(A * !C_N * D_N * !Y)	0.03170	0.03172	0.03157
	(A * !C_N * !D_N * !Y)	-0.00735	-0.00742	-0.00721
	(A * !C_N * !D_N * !Y)	0.00887	0.00896	0.00868
	(!A * C_N * !D_N * !Y)	0.03293	0.03246	0.02981
	(!A * C_N * !D_N * !Y)	0.05158	0.05121	0.04848
	(!A * !C_N * D_N * !Y)	0.02557	0.02523	0.02393
	(!A * !C_N * D_N * !Y)	0.04418	0.04407	0.04260
	(!A * !C_N * !D_N * !Y)	-0.00620	-0.00630	-0.00634
	(!A * !C_N * !D_N * !Y)	0.01233	0.01244	0.01227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.02958	0.04820	0.34012
	(B * !Y)	0.02473	0.04333	0.33528
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.03221	0.05070	0.34198
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.02698	0.04547	0.33676
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.01799	0.03867	0.36568
	(B * !Y)	0.01273	0.03338	0.36044
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.02329	0.04382	0.36991
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01731	0.03781	0.36392
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.05799	0.08819	0.58966
	(B * !Y)	0.05052	0.08073	0.58222
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.06862	0.09852	0.59772
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.05979	0.08970	0.58891

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.01425	0.03465	0.33711
	(B * !Y)	0.01909	0.03952	0.34195
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01438	0.03477	0.33783
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01977	0.04019	0.34305
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.01036	0.03199	0.36398
	(B * !Y)	0.01561	0.03728	0.36923
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01068	0.03235	0.36592
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01704	0.03874	0.37194
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.03268	0.06730	0.59028
	(B * !Y)	0.04017	0.07480	0.59773
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.03337	0.06803	0.59370
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.04296	0.07760	0.60271

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)	0.02892	0.04813	0.34348
	(B * C_N * !Y)	0.02448	0.04368	0.33905
	(A * !B * C_N * !Y)	0.03157	0.05074	0.34563
	(A * !B * C_N * !Y)	0.02690	0.04605	0.34096
	(!C_N * !Y)	0.01773	0.03694	0.33231
	(!C_N * !Y)	0.01331	0.03251	0.32789
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.01787	0.03872	0.36468
	(B * C_N * !Y)	0.01304	0.03387	0.35986
	(A * !B * C_N * !Y)	0.02322	0.04399	0.36912
	(A * !B * C_N * !Y)	0.01790	0.03866	0.36382
	(!C_N * !Y)	0.01303	0.03389	0.36011
	(!C_N * !Y)	0.00824	0.02908	0.35533
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.05772	0.08820	0.59370
	(B * C_N * !Y)	0.05066	0.08113	0.58667
	(A * !B * C_N * !Y)	0.06840	0.09862	0.60239
	(A * !B * C_N * !Y)	0.06041	0.09066	0.59442
	(!C_N * !Y)	0.03507	0.06554	0.57251
	(!C_N * !Y)	0.02812	0.05861	0.56557

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)	0.01390	0.03485	0.34064
	(B * C_N * !Y)	0.01832	0.03930	0.34507
	(A * !B * C_N * !Y)	0.01419	0.03517	0.34164
	(A * !B * C_N * !Y)	0.01899	0.03998	0.34632
	(!C_N * !Y)	0.00188	0.02284	0.32863
	(!C_N * !Y)	0.00629	0.02727	0.33304
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00969	0.03144	0.36238
	(B * C_N * !Y)	0.01452	0.03629	0.36718
	(A * !B * C_N * !Y)	0.01020	0.03201	0.36434
	(A * !B * C_N * !Y)	0.01581	0.03762	0.36966
	(!C_N * !Y)	0.00396	0.02574	0.35689
	(!C_N * !Y)	0.00875	0.03055	0.36165
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.03334	0.06830	0.59553
	(B * C_N * !Y)	0.04039	0.07536	0.60256
	(A * !B * C_N * !Y)	0.03448	0.06955	0.59919
	(A * !B * C_N * !Y)	0.04304	0.07808	0.60729
	(!C_N * !Y)	0.00897	0.04401	0.57254
	(!C_N * !Y)	0.01589	0.05096	0.57947

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00281	0.00292	0.00291	0.00226	0.49332
sky130_fd_sc_hs__nor4b_2	0.00555	0.00561	0.00565	0.00265	0.78271
sky130_fd_sc_hs__nor4b_4	0.01089	0.01095	0.01112	0.00394	1.40813

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	780.52300	1633.22000
sky130_fd_sc_hs__nor4b_2	0.00000	533.91800	1208.72000
sky130_fd_sc_hs__nor4b_4	0.00000	1782.91000	3876.87000

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)	0.10882	0.78113	8.15608
	B->Y (FR)	0.10121	0.80996	8.57050
	C->Y (FR)	0.08329	0.83554	9.03109
	D_N->Y (RR)	0.07688	0.67637	6.03328
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.11869	0.68264	8.03271
	B->Y (FR)	0.10851	0.70562	8.39595
	C->Y (FR)	0.08916	0.74445	9.01968
	D_N->Y (RR)	0.07112	0.54690	5.56551
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.11984	0.58081	7.86170
	B->Y (FR)	0.10998	0.60876	8.29091
	C->Y (FR)	0.08867	0.64741	8.94348
	D_N->Y (RR)	0.08336	0.52054	6.37896

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02053	0.23104	2.07743
	B->Y (RF)	0.02161	0.22610	2.02629
	C->Y (RF)	0.02087	0.21861	1.97801
	D_N->Y (FF)	0.04957	0.29413	2.68280
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01584	0.14733	1.38524
	B->Y (RF)	0.01666	0.14565	1.37119
	C->Y (RF)	0.01864	0.14414	1.37789
	D_N->Y (FF)	0.05354	0.28350	2.55433
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01590	0.11177	1.32615
	B->Y (RF)	0.01600	0.10590	1.24419
	C->Y (RF)	0.01632	0.08978	1.07358
	D_N->Y (FF)	0.05471	0.22858	1.80669

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.03989	0.04563	0.18340
	A	0.04864	0.05438	0.19206
	B	0.04024	0.04597	0.16624
	B	0.04754	0.05328	0.17343
	C	0.04040	0.04649	0.15474
	C	0.04646	0.05255	0.16074
	D_N	0.04554	0.06408	0.34939
	D_N	0.04219	0.06070	0.34614
sky130_fd_sc_hs__nor4b_2	A	0.02323	0.03555	0.31844
	A	0.04193	0.05429	0.33725
	B	0.02340	0.03640	0.28503
	B	0.03891	0.05188	0.30246
	C	0.02354	0.03586	0.24105
	C	0.03604	0.04834	0.25358
	D_N	0.03268	0.05509	0.40073
	D_N	0.03042	0.05281	0.39843
sky130_fd_sc_hs__nor4b_4	A	0.08597	0.11131	0.64631
	A	0.12284	0.14823	0.68354
	B	0.08666	0.11295	0.58462
	B	0.11726	0.14355	0.61492
	C	0.08745	0.11331	0.50957
	C	0.11214	0.13804	0.53433
	D_N	0.10097	0.13550	0.68081
	D_N	0.09915	0.13363	0.67869

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.03369	0.03975	0.16078
	A	0.02495	0.03102	0.15221
	B	0.03105	0.03708	0.14799
	B	0.02376	0.02978	0.14088
	C	0.02840	0.03458	0.13706
	C	0.02235	0.02854	0.13122
	D_N	0.01114	0.03123	0.33025
	D_N	0.01448	0.03459	0.33382
sky130_fd_sc_hs__nor4b_2	A	0.04113	0.05387	0.29782
	A	0.02245	0.03516	0.27934
	B	0.03461	0.04746	0.26710
	B	0.01914	0.03198	0.25182
	C	0.02935	0.04169	0.23252
	C	0.01691	0.02918	0.22028
	D_N	0.02131	0.04162	0.35649
	D_N	0.02357	0.04392	0.35901
sky130_fd_sc_hs__nor4b_4	A	0.09851	0.12511	0.59271
	A	0.06162	0.08812	0.55615
	B	0.08520	0.11154	0.52950
	B	0.05456	0.08091	0.49933
	C	0.07302	0.09895	0.46707
	C	0.04837	0.07421	0.44287
	D_N	0.04248	0.07595	0.58856
	D_N	0.04433	0.07784	0.59087

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)**	0.01413	0.01390	0.01393
	(B * C * D_N * !Y)	0.00962	0.00939	0.00945
	(B * !D_N * !Y)	0.00238	0.00224	0.00224
	(B * !D_N * !Y)	-0.00212	-0.00226	-0.00224
	(B * !C * D_N * !Y)	0.01483	0.01451	0.01594
	(B * !C * D_N * !Y)	0.01023	0.00991	0.01139
	(!B * C * D_N * !Y)	0.01513	0.01474	0.01609
	(!B * C * D_N * !Y)	0.01045	0.01000	0.01152
	(!B * C * !D_N * !Y)	0.00266	0.00241	0.00240
	(!B * C * !D_N * !Y)	-0.00186	-0.00216	-0.00208
	(!B * !C * !D_N * !Y)	0.00399	0.00366	0.00604
	(!B * !C * !D_N * !Y)	-0.00082	-0.00120	0.00142
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.01055	0.00997	0.00998
	(B * C * D_N * !Y)	0.00126	0.00064	0.00074
	(B * !D_N * !Y)	0.00509	0.00475	0.00471
	(B * !D_N * !Y)	-0.00417	-0.00456	-0.00452
	(B * !C * D_N * !Y)	0.01226	0.01142	0.01404
	(B * !C * D_N * !Y)	0.00275	0.00186	0.00467
	(!B * C * D_N * !Y)	0.01278	0.01178	0.01433
	(!B * C * D_N * !Y)	0.00310	0.00205	0.00491
	(!B * C * !D_N * !Y)	0.00569	0.00506	0.00504
	(!B * C * !D_N * !Y)	-0.00362	-0.00431	-0.00420
	(!B * !C * !D_N * !Y)	0.00860	0.00772	0.01229
	(!B * !C * !D_N * !Y)	-0.00131	-0.00222	0.00276

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.03356	0.03250	0.03250
	(B * C * D_N * !Y)	0.01531	0.01414	0.01435
	(B * !D_N * !Y)	0.00967	0.00905	0.00896
	(B * !D_N * !Y)	-0.00852	-0.00926	-0.00918
	(B * !C * D_N * !Y)	0.03683	0.03526	0.04060
	(B * !C * D_N * !Y)	0.01814	0.01651	0.02220
	(!B * C * D_N * !Y)	0.03785	0.03600	0.04117
	(!B * C * D_N * !Y)	0.01882	0.01690	0.02266
	(!B * C * !D_N * !Y)	0.01084	0.00965	0.00962
	(!B * C * !D_N * !Y)	-0.00748	-0.00875	-0.00852
	(!B * !C * !D_N * !Y)	0.01645	0.01488	0.02402
	(!B * !C * !D_N * !Y)	-0.00305	-0.00471	0.00528

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)**	0.00989	0.00986	0.00986
	(B * C * D_N * !Y)	0.01438	0.01441	0.01436
	(B * !D_N * !Y)	-0.00163	-0.00165	-0.00164
	(B * !D_N * !Y)	0.00287	0.00289	0.00285
	(B * !C * D_N * !Y)	0.01185	0.01178	0.01150
	(B * !C * D_N * !Y)	0.01644	0.01641	0.01610
	(!B * C * D_N * !Y)	0.01214	0.01207	0.01175
	(!B * C * D_N * !Y)	0.01680	0.01678	0.01641
	(!B * C * !D_N * !Y)	-0.00146	-0.00147	-0.00149
	(!B * C * !D_N * !Y)	0.00304	0.00305	0.00303
	(!B * !C * !D_N * !Y)	0.00253	0.00243	0.00176
	(!B * !C * !D_N * !Y)	0.00728	0.00721	0.00652

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00186	0.00181	0.00180
	(B * C * D_N * !Y)	0.01112	0.01118	0.01109
	(B * !D_N * !Y)	-0.00339	-0.00342	-0.00341
	(B * !D_N * !Y)	0.00586	0.00591	0.00585
	(B * !C * D_N * !Y)	0.00574	0.00560	0.00502
	(B * !C * D_N * !Y)	0.01524	0.01520	0.01452
	(!B * C * D_N * !Y)	0.00633	0.00622	0.00553
	(!B * C * D_N * !Y)	0.01592	0.01581	0.01515
	(!B * C * !D_N * !Y)	-0.00305	-0.00308	-0.00310
	(!B * C * !D_N * !Y)	0.00622	0.00625	0.00619
	(!B * !C * !D_N * !Y)	0.00483	0.00462	0.00331
	(!B * !C * !D_N * !Y)	0.01460	0.01446	0.01310
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.01661	0.01651	0.01650
	(B * C * D_N * !Y)	0.03481	0.03495	0.03475
	(B * !D_N * !Y)	-0.00688	-0.00694	-0.00692
	(B * !D_N * !Y)	0.01132	0.01141	0.01128
	(B * !C * D_N * !Y)	0.02442	0.02417	0.02297
	(B * !C * D_N * !Y)	0.04301	0.04288	0.04164
	(!B * C * D_N * !Y)	0.02556	0.02533	0.02398
	(!B * C * D_N * !Y)	0.04443	0.04426	0.04288
	(!B * C * !D_N * !Y)	-0.00620	-0.00624	-0.00629
	(!B * C * !D_N * !Y)	0.01203	0.01206	0.01197
	(!B * !C * !D_N * !Y)	0.00944	0.00903	0.00643
	(!B * !C * !D_N * !Y)	0.02867	0.02841	0.02570

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)**	0.01419	0.01424	0.01428
	(A * C * D_N * !Y)	0.01039	0.01041	0.01051
	(A * C * !D_N * !Y)	0.00244	0.00246	0.00229
	(A * C * !D_N * !Y)	-0.00141	-0.00142	-0.00151
	(A * !C * D_N * !Y)	0.01414	0.01416	0.01467
	(A * !C * D_N * !Y)	0.01095	0.01096	0.01146
	(A * !C * !D_N * !Y)	0.00274	0.00289	0.00280
	(A * !C * !D_N * !Y)	-0.00111	-0.00100	-0.00097
	(!A * C * D_N * !Y)	0.01496	0.01452	0.01611
	(!A * C * D_N * !Y)	0.01037	0.00992	0.01157
	(!A * C * !D_N * !Y)	0.00276	0.00243	0.00246
	(!A * C * !D_N * !Y)	-0.00179	-0.00212	-0.00205
	(!A * !C * !D_N * !Y)	0.00398	0.00347	0.00606
	(!A * !C * !D_N * !Y)	-0.00074	-0.00125	0.00147
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.01052	0.01057	0.01058
	(A * C * D_N * !Y)	0.00263	0.00264	0.00280
	(A * C * !D_N * !Y)	0.00516	0.00515	0.00478
	(A * C * !D_N * !Y)	-0.00288	-0.00288	-0.00305
	(A * !C * D_N * !Y)	0.01066	0.01076	0.01134
	(A * !C * D_N * !Y)	0.00412	0.00409	0.00481
	(A * !C * !D_N * !Y)	0.00571	0.00611	0.00589
	(A * !C * !D_N * !Y)	-0.00231	-0.00201	-0.00197
	(!A * C * D_N * !Y)	0.01215	0.01125	0.01434
	(!A * C * D_N * !Y)	0.00264	0.00173	0.00496
	(!A * C * !D_N * !Y)	0.00576	0.00508	0.00511
	(!A * C * !D_N * !Y)	-0.00364	-0.00433	-0.00419
	(!A * !C * !D_N * !Y)	0.00814	0.00727	0.01228
	(!A * !C * !D_N * !Y)	-0.00153	-0.00250	0.00280

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.03348	0.03367	0.03371
	(A * C * D_N * !Y)	0.01814	0.01816	0.01850
	(A * C * !D_N * !Y)	0.00972	0.00982	0.00909
	(A * C * !D_N * !Y)	-0.00585	-0.00590	-0.00625
	(A * !C * D_N * !Y)	0.03366	0.03387	0.03526
	(A * !C * D_N * !Y)	0.02089	0.02085	0.02250
	(A * !C * !D_N * !Y)	0.01090	0.01170	0.01126
	(A * !C * !D_N * !Y)	-0.00474	-0.00416	-0.00406
	(!A * C * D_N * !Y)	0.03682	0.03497	0.04120
	(!A * C * D_N * !Y)	0.01824	0.01622	0.02272
	(!A * C * !D_N * !Y)	0.01105	0.00969	0.00976
	(!A * C * !D_N * !Y)	-0.00730	-0.00885	-0.00856
	(!A * !C * !D_N * !Y)	0.01585	0.01400	0.02401
	(!A * !C * !D_N * !Y)	-0.00321	-0.00524	0.00533

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)**	0.00958	0.00958	0.00964
	(A * C * D_N * !Y)	0.01346	0.01345	0.01339
	(A * C * !D_N * !Y)	-0.00179	-0.00180	-0.00176
	(A * C * !D_N * !Y)	0.00212	0.00213	0.00203
	(A * !C * D_N * !Y)	0.01191	0.01182	0.01068
	(A * !C * D_N * !Y)	0.01513	0.01504	0.01391
	(A * !C * !D_N * !Y)	-0.00188	-0.00189	-0.00175
	(A * !C * !D_N * !Y)	0.00194	0.00195	0.00196
	(!A * C * D_N * !Y)	0.01207	0.01201	0.01169
	(!A * C * D_N * !Y)	0.01664	0.01660	0.01626
	(!A * C * !D_N * !Y)	-0.00153	-0.00155	-0.00156
	(!A * C * !D_N * !Y)	0.00298	0.00300	0.00296
	(!A * !C * !D_N * !Y)	0.00248	0.00237	0.00170
	(!A * !C * !D_N * !Y)	0.00714	0.00705	0.00637
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00122	0.00121	0.00140
	(A * C * D_N * !Y)	0.00924	0.00926	0.00914
	(A * C * !D_N * !Y)	-0.00373	-0.00375	-0.00366
	(A * C * !D_N * !Y)	0.00431	0.00433	0.00417
	(A * !C * D_N * !Y)	0.00598	0.00577	0.00353
	(A * !C * D_N * !Y)	0.01256	0.01241	0.01016
	(A * !C * !D_N * !Y)	-0.00392	-0.00394	-0.00365
	(A * !C * !D_N * !Y)	0.00399	0.00404	0.00407
	(!A * C * D_N * !Y)	0.00619	0.00606	0.00542
	(!A * C * D_N * !Y)	0.01563	0.01554	0.01486
	(!A * C * !D_N * !Y)	-0.00317	-0.00320	-0.00323
	(!A * C * !D_N * !Y)	0.00615	0.00617	0.00611
	(!A * !C * !D_N * !Y)	0.00475	0.00452	0.00320
	(!A * !C * !D_N * !Y)	0.01436	0.01420	0.01284

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	0.01541	0.01535	0.01572
	(A * C * D_N * !Y)	0.03105	0.03112	0.03086
	(A * C * !D_N * !Y)	-0.00751	-0.00753	-0.00739
	(A * C * !D_N * !Y)	0.00825	0.00826	0.00794
	(A * !C * D_N * !Y)	0.02481	0.02441	0.01991
	(A * !C * D_N * !Y)	0.03769	0.03737	0.03286
	(A * !C * !D_N * !Y)	-0.00790	-0.00794	-0.00738
	(A * !C * !D_N * !Y)	0.00757	0.00765	0.00769
	(!A * C * D_N * !Y)	0.02531	0.02504	0.02376
	(!A * C * D_N * !Y)	0.04390	0.04370	0.04235
	(!A * C * !D_N * !Y)	-0.00639	-0.00651	-0.00654
	(!A * C * !D_N * !Y)	0.01189	0.01202	0.01185
	(!A * !C * !D_N * !Y)	0.00928	0.00882	0.00622
	(!A * !C * !D_N * !Y)	0.02823	0.02791	0.02521

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)	0.01408	0.01413	0.01407
	(B * D_N * !Y)	0.01070	0.01069	0.01070
	(B * !D_N * !Y)	0.00255	0.00258	0.00256
	(B * !D_N * !Y)	-0.00149	-0.00148	-0.00147
	(A * !B * D_N * !Y)	0.01419	0.01424	0.01439
	(A * !B * D_N * !Y)	0.01134	0.01133	0.01151
	(A * !B * !D_N * !Y)	0.00284	0.00275	0.00298
	(A * !B * !D_N * !Y)	-0.00121	-0.00130	-0.00109
	(!A * !B * !D_N * !Y)	0.00349	0.00311	0.00600
	(!A * !B * !D_N * !Y)	-0.00130	-0.00169	0.00125

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.01007	0.01017	0.01005
	(B * D_N * !Y)	0.00353	0.00348	0.00347
	(B * !D_N * !Y)	0.00547	0.00555	0.00546
	(B * !D_N * !Y)	-0.00256	-0.00253	-0.00254
	(A * !B * D_N * !Y)	0.01038	0.01049	0.01072
	(A * !B * D_N * !Y)	0.00485	0.00482	0.00513
	(A * !B * !D_N * !Y)	0.00614	0.00590	0.00626
	(A * !B * !D_N * !Y)	-0.00186	-0.00218	-0.00179
	(!A * !B * !D_N * !Y)	0.00762	0.00661	0.01222
	(!A * !B * !D_N * !Y)	-0.00181	-0.00286	0.00286
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.03270	0.03268	0.03265
	(B * D_N * !Y)	0.01976	0.01977	0.01967
	(B * !D_N * !Y)	0.01069	0.01087	0.01072
	(B * !D_N * !Y)	-0.00503	-0.00503	-0.00500
	(A * !B * D_N * !Y)	0.03328	0.03329	0.03393
	(A * !B * D_N * !Y)	0.02235	0.02240	0.02297
	(A * !B * !D_N * !Y)	0.01205	0.01148	0.01234
	(A * !B * !D_N * !Y)	-0.00378	-0.00430	-0.00349
	(!A * !B * !D_N * !Y)	0.01478	0.01290	0.02419
	(!A * !B * !D_N * !Y)	-0.00376	-0.00571	0.00565

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)**	0.00965	0.00963	0.00950
	(B * D_N * !Y)	0.01303	0.01304	0.01292
	(B * !D_N * !Y)	-0.00190	-0.00191	-0.00183
	(B * !D_N * !Y)	0.00211	0.00213	0.00213
	(A * !B * D_N * !Y)	0.01224	0.01217	0.01115
	(A * !B * D_N * !Y)	0.01530	0.01523	0.01422
	(A * !B * !D_N * !Y)	-0.00189	-0.00189	-0.00168
	(A * !B * !D_N * !Y)	0.00214	0.00214	0.00221
	(!A * !B * !D_N * !Y)	0.00246	0.00234	0.00173
	(!A * !B * !D_N * !Y)	0.00722	0.00714	0.00649
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00158	0.00154	0.00125
	(B * D_N * !Y)	0.00817	0.00819	0.00792
	(B * !D_N * !Y)	-0.00401	-0.00403	-0.00388
	(B * !D_N * !Y)	0.00388	0.00391	0.00394
	(A * !B * D_N * !Y)	0.00680	0.00666	0.00463
	(A * !B * D_N * !Y)	0.01275	0.01264	0.01066
	(A * !B * !D_N * !Y)	-0.00395	-0.00393	-0.00355
	(A * !B * !D_N * !Y)	0.00396	0.00397	0.00413
	(!A * !B * !D_N * !Y)	0.00469	0.00443	0.00318
	(!A * !B * !D_N * !Y)	0.01405	0.01388	0.01256
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.01609	0.01601	0.01542
	(B * D_N * !Y)	0.02910	0.02914	0.02859
	(B * !D_N * !Y)	-0.00836	-0.00838	-0.00810
	(B * !D_N * !Y)	0.00719	0.00722	0.00729
	(A * !B * D_N * !Y)	0.02652	0.02625	0.02219
	(A * !B * D_N * !Y)	0.03822	0.03798	0.03403
	(A * !B * !D_N * !Y)	-0.00827	-0.00825	-0.00745
	(A * !B * !D_N * !Y)	0.00734	0.00737	0.00764
	(!A * !B * !D_N * !Y)	0.00887	0.00838	0.00589
	(!A * !B * !D_N * !Y)	0.02741	0.02698	0.02446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.01735	0.03642	0.32837
	(C * !Y)	0.01271	0.03179	0.32373
	(B * !C * !Y)	0.01763	0.03670	0.32852
	(B * !C * !Y)	0.01287	0.03194	0.32377
	(A * !B * !C * !Y)	0.02041	0.03941	0.33033
	(A * !B * !C * !Y)	0.01526	0.03425	0.32520
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.01273	0.03360	0.35991
	(C * !Y)	0.00745	0.02830	0.35463
	(B * !C * !Y)	0.01333	0.03419	0.36044
	(B * !C * !Y)	0.00784	0.02868	0.35498
	(A * !B * !C * !Y)	0.01894	0.03973	0.36517
	(A * !B * !C * !Y)	0.01274	0.03351	0.35899
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.03470	0.06549	0.57286
	(C * !Y)	0.02693	0.05767	0.56510
	(B * !C * !Y)	0.03590	0.06668	0.57391
	(B * !C * !Y)	0.02771	0.05844	0.56577
	(A * !B * !C * !Y)	0.04710	0.07774	0.58314
	(A * !B * !C * !Y)	0.03744	0.06805	0.57349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00192	0.02266	0.32509
	(C * !Y)	0.00654	0.02730	0.32971
	(B * !C * !Y)	0.00193	0.02265	0.32506
	(B * !C * !Y)	0.00669	0.02744	0.32978
	(A * !B * !C * !Y)	0.00195	0.02266	0.32548
	(A * !B * !C * !Y)	0.00735	0.02806	0.33060
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00401	0.02575	0.35693
	(C * !Y)	0.00928	0.03102	0.36220
	(B * !C * !Y)	0.00400	0.02573	0.35702
	(B * !C * !Y)	0.00950	0.03123	0.36245
	(A * !B * !C * !Y)	0.00408	0.02588	0.35871
	(A * !B * !C * !Y)	0.01081	0.03258	0.36495
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00821	0.04332	0.57215
	(C * !Y)	0.01598	0.05111	0.57990
	(B * !C * !Y)	0.00819	0.04330	0.57228
	(B * !C * !Y)	0.01642	0.05153	0.58038
	(A * !B * !C * !Y)	0.00832	0.04353	0.57519
	(A * !B * !C * !Y)	0.01908	0.05427	0.58510

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00276	0.00292	0.00291	0.00294	0.49712
sky130_fd_sc_hs__nor4_2	0.00427	0.00488	0.00484	0.00452	0.83877
sky130_fd_sc_hs__nor4_4	0.00845	0.00882	0.00861	0.00873	1.45868

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	114.21700	507.69000
sky130_fd_sc_hs__nor4_2	0.00000	224.80000	1010.01000
sky130_fd_sc_hs__nor4_4	0.00000	448.07300	2000.42000

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)	0.10562	0.77411	8.12819
	B->Y (FR)	0.09887	0.80184	8.51821
	C->Y (FR)	0.08120	0.82852	8.99085
	D->Y (FR)	0.05337	0.83100	9.27971
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.09286	0.61524	7.32882
	B->Y (FR)	0.08244	0.63777	7.74665
	C->Y (FR)	0.05935	0.66038	8.28127
	D->Y (FR)	0.03047	0.65909	8.55868
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.10348	0.52250	7.10390
	B->Y (FR)	0.09403	0.55411	7.64407
	C->Y (FR)	0.07279	0.59263	8.35961
	D->Y (FR)	0.03575	0.59665	8.76792

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01974	0.22295	1.99482
	B->Y (RF)	0.02198	0.22765	2.05493
	C->Y (RF)	0.02150	0.22097	2.01930
	D->Y (RF)	0.01757	0.20959	1.94905
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02948	0.32331	3.67720
	B->Y (RF)	0.03263	0.32587	3.76382
	C->Y (RF)	0.02942	0.31183	3.70088
	D->Y (RF)	0.02206	0.28766	3.50745
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02961	0.25633	3.26918
	B->Y (RF)	0.03135	0.24888	3.22853
	C->Y (RF)	0.03021	0.24119	3.23587
	D->Y (RF)	0.02077	0.22190	3.15973

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00150	0.00769	0.15112
	A	0.01252	0.01874	0.16217
	B	0.00167	0.00763	0.13073
	B	0.01116	0.01715	0.14012
	C	0.00169	0.00803	0.11911
	C	0.00961	0.01598	0.12706
	D	0.00157	0.00948	0.12984
	D	0.00814	0.01604	0.13638
sky130_fd_sc_hs__nor4_2	A	0.00153	0.00947	0.19850
	A	0.02044	0.02838	0.21740
	B	0.00112	0.00937	0.17608
	B	0.01780	0.02605	0.19283
	C	0.00146	0.01074	0.16368
	C	0.01452	0.02382	0.17644
	D	0.00112	0.01354	0.18546
	D	0.01096	0.02339	0.19483
sky130_fd_sc_hs__nor4_4	A	0.00627	0.02359	0.40407
	A	0.04471	0.06213	0.44203
	B	0.00642	0.02473	0.35879
	B	0.03877	0.05712	0.39128
	C	0.00665	0.02568	0.32009
	C	0.03247	0.05163	0.34584
	D	0.00628	0.03102	0.35029
	D	0.02568	0.05040	0.36917

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01861	0.02511	0.15124
	A	0.00761	0.01405	0.14030
	B	0.01613	0.02232	0.13486
	B	0.00663	0.01281	0.12545
	C	0.01333	0.01963	0.12322
	C	0.00538	0.01167	0.11539
	D	0.01280	0.01937	0.11954
	D	0.00625	0.01280	0.11306
sky130_fd_sc_hs__nor4_2	A	0.03588	0.04405	0.20663
	A	0.01697	0.02510	0.18760
	B	0.03113	0.03927	0.18816
	B	0.01446	0.02261	0.17097
	C	0.02446	0.03326	0.17198
	C	0.01138	0.02014	0.15863
	D	0.02366	0.03328	0.16656
	D	0.01382	0.02340	0.15682
sky130_fd_sc_hs__nor4_4	A	0.07147	0.08945	0.42251
	A	0.03297	0.05089	0.38370
	B	0.05950	0.07758	0.37794
	B	0.02706	0.04517	0.34574
	C	0.04832	0.06658	0.33369
	C	0.02256	0.04073	0.30767
	D	0.04572	0.06553	0.31293
	D	0.02632	0.04603	0.29365

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00244	0.00230	0.00230
	(B * D * !Y)	-0.00218	-0.00232	-0.00229
	(B * C * !D * !Y)	0.00265	0.00242	0.00245
	(B * C * !D * !Y)	-0.00198	-0.00221	-0.00215
	(B * !C * !D * !Y)	0.00339	0.00308	0.00449
	(B * !C * !D * !Y)	-0.00137	-0.00168	-0.00019
	(!B * C * D * !Y)	0.00272	0.00248	0.00247
	(!B * C * D * !Y)	-0.00192	-0.00222	-0.00213
	(!B * C * !D * !Y)	0.00369	0.00331	0.00464
	(!B * C * !D * !Y)	-0.00115	-0.00159	-0.00006
	(!B * !C * D * !Y)	0.00405	0.00373	0.00611
	(!B * !C * D * !Y)	-0.00093	-0.00129	0.00134
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00291	0.00257	0.00254
	(B * D * !Y)	-0.00412	-0.00450	-0.00446
	(B * C * !D * !Y)	0.00342	0.00285	0.00285
	(B * C * !D * !Y)	-0.00366	-0.00425	-0.00416
	(B * !C * !D * !Y)	0.00512	0.00429	0.00695
	(B * !C * !D * !Y)	-0.00225	-0.00310	-0.00022
	(!B * C * D * !Y)	0.00355	0.00288	0.00286
	(!B * C * D * !Y)	-0.00355	-0.00427	-0.00415
	(!B * C * !D * !Y)	0.00573	0.00466	0.00721
	(!B * C * !D * !Y)	-0.00182	-0.00291	-0.00001
	(!B * !C * D * !Y)	0.00646	0.00550	0.01014
	(!B * !C * D * !Y)	-0.00135	-0.00233	0.00279

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00596	0.00530	0.00524
	(B * D * !Y)	-0.00856	-0.00928	-0.00921
	(B * C * !D * !Y)	0.00693	0.00583	0.00584
	(B * C * !D * !Y)	-0.00768	-0.00881	-0.00862
	(B * !C * !D * !Y)	0.01032	0.00875	0.01399
	(B * !C * !D * !Y)	-0.00488	-0.00647	-0.00077
	(!B * C * D * !Y)	0.00714	0.00593	0.00590
	(!B * C * D * !Y)	-0.00756	-0.00880	-0.00855
	(!B * C * !D * !Y)	0.01136	0.00948	0.01458
	(!B * C * !D * !Y)	-0.00422	-0.00609	-0.00029
	(!B * !C * D * !Y)	0.01275	0.01114	0.02032
	(!B * !C * D * !Y)	-0.00334	-0.00494	0.00519

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00184	-0.00185	-0.00185
	(B * D * !Y)	0.00277	0.00280	0.00276
	(B * C * !D * !Y)	-0.00171	-0.00173	-0.00173
	(B * C * !D * !Y)	0.00291	0.00294	0.00289
	(B * !C * !D * !Y)	0.00023	0.00017	-0.00011
	(B * !C * !D * !Y)	0.00497	0.00493	0.00464
	(!B * C * D * !Y)	-0.00167	-0.00167	-0.00169
	(!B * C * D * !Y)	0.00295	0.00294	0.00294
	(!B * C * !D * !Y)	0.00054	0.00047	0.00014
	(!B * C * !D * !Y)	0.00534	0.00532	0.00495
	(!B * !C * D * !Y)	0.00233	0.00222	0.00155
	(!B * !C * D * !Y)	0.00722	0.00715	0.00647

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00161	-0.00163	-0.00162
	(B * D * !Y)	0.00540	0.00545	0.00541
	(B * C * !D * !Y)	-0.00136	-0.00139	-0.00140
	(B * C * !D * !Y)	0.00567	0.00573	0.00566
	(B * !C * !D * !Y)	0.00245	0.00233	0.00175
	(B * !C * !D * !Y)	0.00979	0.00972	0.00909
	(!B * C * D * !Y)	-0.00126	-0.00129	-0.00130
	(!B * C * D * !Y)	0.00578	0.00585	0.00576
	(!B * C * !D * !Y)	0.00315	0.00303	0.00236
	(!B * C * !D * !Y)	0.01057	0.01052	0.00980
	(!B * !C * D * !Y)	0.00667	0.00646	0.00513
	(!B * !C * D * !Y)	0.01430	0.01416	0.01279
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00335	-0.00340	-0.00340
	(B * D * !Y)	0.01109	0.01123	0.01111
	(B * C * !D * !Y)	-0.00282	-0.00289	-0.00293
	(B * C * !D * !Y)	0.01168	0.01183	0.01164
	(B * !C * !D * !Y)	0.00484	0.00462	0.00341
	(B * !C * !D * !Y)	0.01992	0.01976	0.01854
	(!B * C * D * !Y)	-0.00269	-0.00273	-0.00278
	(!B * C * D * !Y)	0.01184	0.01190	0.01179
	(!B * C * !D * !Y)	0.00603	0.00580	0.00445
	(!B * C * !D * !Y)	0.02133	0.02119	0.01980
	(!B * !C * D * !Y)	0.01299	0.01259	0.00997
	(!B * !C * D * !Y)	0.02870	0.02844	0.02573

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)**	0.00238	0.00240	0.00222
	(A * C * D * !Y)	-0.00148	-0.00148	-0.00156
	(A * C * !D * !Y)	0.00257	0.00262	0.00262
	(A * C * !D * !Y)	-0.00123	-0.00121	-0.00111
	(A * !C * D * !Y)	0.00268	0.00284	0.00274
	(A * !C * D * !Y)	-0.00115	-0.00104	-0.00099
	(A * !C * !D * !Y)	0.00263	0.00265	0.00314
	(A * !C * !D * !Y)	-0.00065	-0.00064	-0.00013
	(!A * C * D * !Y)	0.00271	0.00237	0.00239
	(!A * C * D * !Y)	-0.00187	-0.00221	-0.00214
	(!A * C * !D * !Y)	0.00343	0.00298	0.00455
	(!A * C * !D * !Y)	-0.00123	-0.00169	-0.00004
	(!A * !C * D * !Y)	0.00395	0.00342	0.00601
	(!A * !C * D * !Y)	-0.00086	-0.00138	0.00135
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00343	0.00346	0.00308
	(A * C * D * !Y)	-0.00303	-0.00302	-0.00316
	(A * C * !D * !Y)	0.00384	0.00392	0.00383
	(A * C * !D * !Y)	-0.00249	-0.00244	-0.00232
	(A * !C * D * !Y)	0.00404	0.00433	0.00409
	(A * !C * D * !Y)	-0.00232	-0.00208	-0.00202
	(A * !C * !D * !Y)	0.00424	0.00430	0.00500
	(A * !C * !D * !Y)	-0.00108	-0.00110	-0.00024
	(!A * C * D * !Y)	0.00415	0.00334	0.00337
	(!A * C * D * !Y)	-0.00375	-0.00456	-0.00441
	(!A * C * !D * !Y)	0.00581	0.00468	0.00769
	(!A * C * !D * !Y)	-0.00229	-0.00341	-0.00022
	(!A * !C * D * !Y)	0.00674	0.00558	0.01060
	(!A * !C * D * !Y)	-0.00155	-0.00277	0.00258

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00611	0.00612	0.00540
	(A * C * D * !Y)	-0.00601	-0.00598	-0.00625
	(A * C * !D * !Y)	0.00686	0.00697	0.00694
	(A * C * !D * !Y)	-0.00496	-0.00490	-0.00454
	(A * !C * D * !Y)	0.00721	0.00791	0.00751
	(A * !C * D * !Y)	-0.00476	-0.00417	-0.00399
	(A * !C * !D * !Y)	0.00732	0.00744	0.00886
	(A * !C * !D * !Y)	-0.00223	-0.00227	-0.00060
	(!A * C * D * !Y)	0.00745	0.00596	0.00606
	(!A * C * D * !Y)	-0.00759	-0.00909	-0.00878
	(!A * C * !D * !Y)	0.01047	0.00850	0.01467
	(!A * C * !D * !Y)	-0.00495	-0.00693	-0.00042
	(!A * !C * D * !Y)	0.01233	0.01026	0.02034
	(!A * !C * D * !Y)	-0.00363	-0.00570	0.00501

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)**	-0.00187	-0.00188	-0.00184
	(A * C * D * !Y)	0.00204	0.00205	0.00195
	(A * C * !D * !Y)	-0.00186	-0.00187	-0.00179
	(A * C * !D * !Y)	0.00201	0.00203	0.00195
	(A * !C * D * !Y)	-0.00197	-0.00197	-0.00184
	(A * !C * D * !Y)	0.00185	0.00185	0.00185
	(A * !C * !D * !Y)	0.00038	0.00028	-0.00086
	(A * !C * !D * !Y)	0.00367	0.00358	0.00244
	(!A * C * D * !Y)	-0.00160	-0.00163	-0.00164
	(!A * C * D * !Y)	0.00293	0.00295	0.00291
	(!A * C * !D * !Y)	0.00059	0.00052	0.00020
	(!A * C * !D * !Y)	0.00522	0.00518	0.00484
	(!A * !C * D * !Y)	0.00239	0.00228	0.00161
	(!A * !C * D * !Y)	0.00713	0.00704	0.00636
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00241	-0.00241	-0.00233
	(A * C * D * !Y)	0.00408	0.00409	0.00393
	(A * C * !D * !Y)	-0.00236	-0.00236	-0.00221
	(A * C * !D * !Y)	0.00405	0.00406	0.00395
	(A * !C * D * !Y)	-0.00254	-0.00253	-0.00229
	(A * !C * D * !Y)	0.00372	0.00373	0.00375
	(A * !C * !D * !Y)	0.00198	0.00178	-0.00048
	(A * !C * !D * !Y)	0.00730	0.00713	0.00486
	(!A * C * D * !Y)	-0.00180	-0.00182	-0.00185
	(!A * C * D * !Y)	0.00604	0.00606	0.00598
	(!A * C * !D * !Y)	0.00259	0.00245	0.00179
	(!A * C * !D * !Y)	0.01062	0.01054	0.00981
	(!A * !C * D * !Y)	0.00615	0.00592	0.00458
	(!A * !C * D * !Y)	0.01438	0.01422	0.01282

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00403	-0.00405	-0.00389
	(A * C * D * !Y)	0.00810	0.00813	0.00781
	(A * C * !D * !Y)	-0.00399	-0.00399	-0.00364
	(A * C * !D * !Y)	0.00809	0.00810	0.00785
	(A * !C * D * !Y)	-0.00440	-0.00438	-0.00386
	(A * !C * D * !Y)	0.00741	0.00744	0.00746
	(A * !C * !D * !Y)	0.00507	0.00469	0.00018
	(A * !C * !D * !Y)	0.01472	0.01439	0.00986
	(!A * C * D * !Y)	-0.00295	-0.00300	-0.00305
	(!A * C * D * !Y)	0.01198	0.01203	0.01188
	(!A * C * !D * !Y)	0.00572	0.00545	0.00415
	(!A * C * !D * !Y)	0.02101	0.02083	0.01946
	(!A * !C * D * !Y)	0.01282	0.01237	0.00974
	(!A * !C * D * !Y)	0.02852	0.02820	0.02548

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00252	0.00254	0.00253
	(B * D * !Y)	-0.00120	-0.00120	-0.00116
	(B * !D * !Y)	0.00230	0.00233	0.00227
	(B * !D * !Y)	-0.00084	-0.00085	-0.00085
	(A * !B * D * !Y)	0.00281	0.00271	0.00294
	(A * !B * D * !Y)	-0.00094	-0.00104	-0.00081
	(A * !B * !D * !Y)	0.00244	0.00249	0.00263
	(A * !B * !D * !Y)	-0.00020	-0.00021	-0.00003
	(!A * !B * D * !Y)	0.00348	0.00307	0.00596
	(!A * !B * D * !Y)	-0.00109	-0.00151	0.00143

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00367	0.00366	0.00368
	(B * D * !Y)	-0.00238	-0.00240	-0.00231
	(B * !D * !Y)	0.00319	0.00322	0.00311
	(B * !D * !Y)	-0.00164	-0.00166	-0.00166
	(A * !B * D * !Y)	0.00420	0.00400	0.00447
	(A * !B * D * !Y)	-0.00192	-0.00217	-0.00166
	(A * !B * !D * !Y)	0.00350	0.00356	0.00381
	(A * !B * !D * !Y)	-0.00038	-0.00040	-0.00008
	(!A * !B * D * !Y)	0.00545	0.00464	0.01040
	(!A * !B * D * !Y)	-0.00232	-0.00313	0.00274
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00640	0.00648	0.00637
	(B * D * !Y)	-0.00488	-0.00485	-0.00478
	(B * !D * !Y)	0.00564	0.00571	0.00545
	(B * !D * !Y)	-0.00333	-0.00340	-0.00342
	(A * !B * D * !Y)	0.00778	0.00724	0.00803
	(A * !B * D * !Y)	-0.00371	-0.00432	-0.00342
	(A * !B * !D * !Y)	0.00643	0.00652	0.00699
	(A * !B * !D * !Y)	-0.00068	-0.00069	-0.00007
	(!A * !B * D * !Y)	0.01072	0.00868	0.01995
	(!A * !B * D * !Y)	-0.00414	-0.00619	0.00531

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00201	-0.00199	-0.00193
	(B * D * !Y)	0.00168	0.00167	0.00169
	(B * !D * !Y)	-0.00163	-0.00165	-0.00180
	(B * !D * !Y)	0.00150	0.00151	0.00139
	(A * !B * D * !Y)	-0.00200	-0.00199	-0.00179
	(A * !B * D * !Y)	0.00174	0.00174	0.00180
	(A * !B * !D * !Y)	0.00095	0.00087	-0.00016
	(A * !B * !D * !Y)	0.00379	0.00372	0.00271
	(!A * !B * D * !Y)	0.00236	0.00224	0.00162
	(!A * !B * D * !Y)	0.00691	0.00681	0.00617
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00254	-0.00255	-0.00241
	(B * D * !Y)	0.00336	0.00338	0.00341
	(B * !D * !Y)	-0.00179	-0.00181	-0.00221
	(B * !D * !Y)	0.00301	0.00303	0.00274
	(A * !B * D * !Y)	-0.00251	-0.00250	-0.00208
	(A * !B * D * !Y)	0.00354	0.00354	0.00367
	(A * !B * !D * !Y)	0.00338	0.00324	0.00120
	(A * !B * !D * !Y)	0.00765	0.00753	0.00558
	(!A * !B * D * !Y)	0.00616	0.00592	0.00469
	(!A * !B * D * !Y)	0.01387	0.01368	0.01240
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00426	-0.00427	-0.00401
	(B * D * !Y)	0.00685	0.00689	0.00688
	(B * !D * !Y)	-0.00295	-0.00302	-0.00365
	(B * !D * !Y)	0.00604	0.00612	0.00558
	(A * !B * D * !Y)	-0.00417	-0.00414	-0.00340
	(A * !B * D * !Y)	0.00712	0.00713	0.00735
	(A * !B * !D * !Y)	0.00733	0.00704	0.00293
	(A * !B * !D * !Y)	0.01515	0.01493	0.01098
	(!A * !B * D * !Y)	0.01300	0.01250	0.00999
	(!A * !B * D * !Y)	0.02772	0.02733	0.02474

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00233	0.00237	0.00234
	(C * !Y)	-0.00094	-0.00096	-0.00093
	(B * !C * !Y)	0.00233	0.00235	0.00236
	(B * !C * !Y)	-0.00084	-0.00085	-0.00082
	(A * !B * !C * !Y)	0.00234	0.00238	0.00254
	(A * !B * !C * !Y)	-0.00019	-0.00019	-0.00003
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00282	0.00284	0.00285
	(C * !Y)	-0.00184	-0.00185	-0.00183
	(B * !C * !Y)	0.00284	0.00290	0.00290
	(B * !C * !Y)	-0.00162	-0.00166	-0.00159
	(A * !B * !C * !Y)	0.00290	0.00290	0.00327
	(A * !B * !C * !Y)	-0.00032	-0.00029	-0.00001
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00538	0.00547	0.00543
	(C * !Y)	-0.00367	-0.00371	-0.00361
	(B * !C * !Y)	0.00536	0.00539	0.00545
	(B * !C * !Y)	-0.00329	-0.00330	-0.00322
	(A * !B * !C * !Y)	0.00544	0.00554	0.00619
	(A * !B * !C * !Y)	-0.00062	-0.00063	-0.00004

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00189	-0.00190	-0.00199
	(C * !Y)	0.00139	0.00139	0.00131
	(B * !C * !Y)	-0.00162	-0.00165	-0.00184
	(B * !C * !Y)	0.00155	0.00156	0.00142
	(A * !B * !C * !Y)	0.00118	0.00112	0.00026
	(A * !B * !C * !Y)	0.00399	0.00396	0.00312
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00197	-0.00198	-0.00216
	(C * !Y)	0.00272	0.00272	0.00258
	(B * !C * !Y)	-0.00142	-0.00143	-0.00191
	(B * !C * !Y)	0.00309	0.00309	0.00277
	(A * !B * !C * !Y)	0.00417	0.00407	0.00234
	(A * !B * !C * !Y)	0.00796	0.00789	0.00624
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00362	-0.00368	-0.00411
	(C * !Y)	0.00538	0.00541	0.00507
	(B * !C * !Y)	-0.00247	-0.00254	-0.00343
	(B * !C * !Y)	0.00620	0.00623	0.00560
	(A * !B * !C * !Y)	0.00873	0.00851	0.00506
	(A * !B * !C * !Y)	0.01596	0.01585	0.01253

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00280	0.00290	0.00281	0.00298	0.00290	0.90879
sky130_fd_sc_hs__o2111ai_2	0.00545	0.00544	0.00563	0.00549	0.00545	1.53516
sky130_fd_sc_hs__o2111ai_4	0.01085	0.01088	0.00821	0.00828	0.00816	2.41292

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	177.46800	2066.12000
sky130_fd_sc_hs__o2111ai_2	0.00000	353.77400	4117.51000
sky130_fd_sc_hs__o2111ai_4	0.00000	417.31000	5138.11000

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)	0.07440	0.64766	8.02586
	A2->Y (FR)	0.06652	0.68895	8.72678
	B1->Y (FR)	0.03229	0.46941	6.09701
	C1->Y (FR)	0.02871	0.46364	6.07384
	D1->Y (FR)	0.02416	0.45652	6.03268
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.07803	0.55189	7.68345
	A2->Y (FR)	0.06602	0.59352	8.42532
	B1->Y (FR)	0.03012	0.38622	5.59032
	C1->Y (FR)	0.02614	0.37527	5.51793
	D1->Y (FR)	0.02051	0.36527	5.47034
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.08675	0.48319	7.30758
	A2->Y (FR)	0.07228	0.52652	8.09027
	B1->Y (FR)	0.05394	0.51580	8.08469
	C1->Y (FR)	0.04099	0.47254	7.56861
	D1->Y (FR)	0.03095	0.48462	7.96524

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.06352	0.46935	5.62395
	A2->Y (RF)	0.05211	0.44441	5.40742
	B1->Y (RF)	0.05894	0.51703	6.40981
	C1->Y (RF)	0.05324	0.55394	6.99775
	D1->Y (RF)	0.04523	0.57630	7.41891
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.07139	0.40182	5.57214
	A2->Y (RF)	0.05483	0.37493	5.36245
	B1->Y (RF)	0.06588	0.44796	6.35653
	C1->Y (RF)	0.05892	0.50703	7.27983
	D1->Y (RF)	0.04576	0.52645	7.69852
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.06728	0.29157	4.55594
	A2->Y (RF)	0.05484	0.28387	4.68546
	B1->Y (RF)	0.04644	0.32363	5.44823
	C1->Y (RF)	0.03931	0.37554	6.34098
	D1->Y (RF)	0.02576	0.39931	6.87190

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00331	0.00940	0.11342
	A1	0.01542	0.02129	0.12207
	A2	0.00337	0.01049	0.11973
	A2	0.01388	0.02073	0.12665
	B1	0.00164	0.01122	0.15116
	B1	0.01034	0.01979	0.15794
	C1	0.00084	0.01013	0.14351
	C1	0.00827	0.01738	0.14919
	D1	0.00027	0.00947	0.13765
	D1	0.00628	0.01528	0.14203
sky130_fd_sc_hs__o2111ai_2	A1	0.00581	0.01766	0.20698
	A1	0.03018	0.04157	0.22288
	A2	0.00591	0.01961	0.21536
	A2	0.02687	0.04005	0.22743
	B1	0.00251	0.02200	0.28500
	B1	0.02026	0.03939	0.29719
	C1	0.00117	0.01961	0.26184
	C1	0.01583	0.03391	0.27076
	D1	-0.00130	0.01710	0.25011
	D1	0.01036	0.02842	0.25618

sky130_fd_sc_hs__o2111ai_4	**A1**	0.01029	0.03537	0.41108
	A1	0.05834	0.08300	0.45097
	A2	0.01014	0.03700	0.39353
	A2	0.05191	0.07837	0.42462
	B1	0.00449	0.02831	0.33394
	B1	0.03449	0.05805	0.35820
	C1	0.00179	0.02586	0.32771
	C1	0.02606	0.04988	0.34685
	D1	-0.00217	0.02152	0.30069
	D1	0.01593	0.03929	0.31320

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.05730	0.06090	0.13731
	A1	0.04518	0.04874	0.12513
	A2	0.05762	0.06103	0.12907
	A2	0.04710	0.05046	0.11804
	B1	0.04379	0.04883	0.13734
	B1	0.03508	0.04007	0.12776
	C1	0.04341	0.04807	0.12470
	C1	0.03596	0.04061	0.11728
	D1	0.05584	0.06044	0.12754
	D1	0.04991	0.05449	0.12162

sky130_fd_sc_hs__o2111ai_2	**A1**	0.11945	0.12680	0.26955
	A1	0.09506	0.10243	0.24506
	A2	0.11903	0.12639	0.25186
	A2	0.09804	0.10530	0.23046
	B1	0.08997	0.10151	0.27863
	B1	0.07219	0.08368	0.25988
	C1	0.08936	0.09895	0.23822
	C1	0.07470	0.08430	0.22326
	D1	0.08832	0.09916	0.23504
	D1	0.07665	0.08745	0.22270
sky130_fd_sc_hs__o2111ai_4	**A1**	0.15257	0.17131	0.49113
	A1	0.10457	0.12323	0.44219
	A2	0.15913	0.17747	0.44746
	A2	0.11728	0.13553	0.40500
	B1	0.14403	0.15650	0.33906
	B1	0.07266	0.08778	0.29415
	C1	0.14151	0.15329	0.31159
	C1	0.07561	0.08958	0.26696
	D1	0.13870	0.15174	0.29918
	D1	0.12934	0.14168	0.27199

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)**	0.01680	0.01656	0.01954
	(A2 * B1 * C1 * D1 * !Y)	0.01211	0.01188	0.01488
	(A2 * B1 * C1 * !D1 * Y)	0.00217	0.00217	0.00217
	(A2 * B1 * C1 * !D1 * Y)	-0.00244	-0.00243	-0.00243
	(A2 * B1 * !C1 * Y)	0.00215	0.00215	0.00215
	(A2 * B1 * !C1 * Y)	-0.00245	-0.00245	-0.00245
	(A2 * !B1 * Y)	0.00215	0.00217	0.00215
	(A2 * !B1 * Y)	-0.00246	-0.00247	-0.00245
	(!A2 * B1 * C1 * !D1 * Y)	0.00211	0.00213	0.00211
	(!A2 * B1 * C1 * !D1 * Y)	-0.00243	-0.00245	-0.00243
	(!A2 * B1 * !C1 * D1 * Y)	0.00212	0.00212	0.00212
	(!A2 * B1 * !C1 * D1 * Y)	-0.00244	-0.00243	-0.00243
	(!A2 * B1 * !C1 * !D1 * Y)	0.00200	0.00201	0.00200
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00252	-0.00253	-0.00252
	(!A2 * !B1 * C1 * D1 * Y)	0.00213	0.00216	0.00214
	(!A2 * !B1 * C1 * D1 * Y)	-0.00245	-0.00247	-0.00246
	(!A2 * !B1 * !D1 * Y)	0.00203	0.00206	0.00204
	(!A2 * !B1 * !D1 * Y)	-0.00252	-0.00254	-0.00252
	(!A2 * !B1 * !C1 * D1 * Y)	0.00204	0.00204	0.00204
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00252	-0.00252	-0.00253

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.03387	0.03317	0.03890
	(A2 * B1 * C1 * D1 * !Y)	0.02457	0.02383	0.02964
	(A2 * B1 * C1 * !D1 * Y)	0.00420	0.00422	0.00421
	(A2 * B1 * C1 * !D1 * Y)	-0.00492	-0.00493	-0.00492
	(A2 * B1 * !C1 * Y)	0.00416	0.00419	0.00417
	(A2 * B1 * !C1 * Y)	-0.00495	-0.00497	-0.00495
	(A2 * !B1 * Y)	0.00416	0.00418	0.00417
	(A2 * !B1 * Y)	-0.00496	-0.00497	-0.00496
	(!A2 * B1 * C1 * !D1 * Y)	0.00407	0.00408	0.00409
	(!A2 * B1 * C1 * !D1 * Y)	-0.00492	-0.00492	-0.00492
	(!A2 * B1 * !C1 * D1 * Y)	0.00408	0.00407	0.00410
	(!A2 * B1 * !C1 * D1 * Y)	-0.00491	-0.00490	-0.00491
	(!A2 * B1 * !C1 * !D1 * Y)	0.00384	0.00386	0.00385
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00509	-0.00510	-0.00510
	(!A2 * !B1 * C1 * D1 * Y)	0.00412	0.00419	0.00414
	(!A2 * !B1 * C1 * D1 * Y)	-0.00495	-0.00500	-0.00496
	(!A2 * !B1 * !D1 * Y)	0.00395	0.00398	0.00394
	(!A2 * !B1 * !D1 * Y)	-0.00511	-0.00513	-0.00510
	(!A2 * !B1 * !C1 * D1 * Y)	0.00394	0.00398	0.00394
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00512	-0.00514	-0.00510

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.04112	0.03955	0.05095
	(A2 * B1 * C1 * D1 * !Y)	0.02275	0.02109	0.03266
	(A2 * B1 * C1 * !D1 * Y)	0.00823	0.00828	0.00825
	(A2 * B1 * C1 * !D1 * Y)	-0.00981	-0.00984	-0.00981
	(A2 * B1 * !C1 * Y)	0.00816	0.00821	0.00818
	(A2 * B1 * !C1 * Y)	-0.00987	-0.00990	-0.00988
	(A2 * !B1 * Y)	0.00815	0.00821	0.00817
	(A2 * !B1 * Y)	-0.00988	-0.00991	-0.00989
	(!A2 * B1 * C1 * !D1 * Y)	0.00802	0.00810	0.00805
	(!A2 * B1 * C1 * !D1 * Y)	-0.00980	-0.00985	-0.00981
	(!A2 * B1 * !C1 * D1 * Y)	0.00807	0.00810	0.00806
	(!A2 * B1 * !C1 * D1 * Y)	-0.00987	-0.00987	-0.00984
	(!A2 * B1 * !C1 * !D1 * Y)	0.00761	0.00769	0.00763
	(!A2 * B1 * !C1 * !D1 * Y)	-0.01017	-0.01022	-0.01017
	(!A2 * !B1 * C1 * D1 * Y)	0.00809	0.00819	0.00810
	(!A2 * !B1 * C1 * D1 * Y)	-0.00991	-0.00998	-0.00993
	(!A2 * !B1 * !D1 * Y)	0.00772	0.00777	0.00774
	(!A2 * !B1 * !D1 * Y)	-0.01016	-0.01019	-0.01017
	(!A2 * !B1 * !C1 * D1 * Y)	0.00772	0.00777	0.00774
	(!A2 * !B1 * !C1 * D1 * Y)	-0.01017	-0.01019	-0.01018

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)**	0.01588	0.01577	0.01517
	(A2 * B1 * C1 * D1 * !Y)	0.02056	0.02049	0.01985
	(A2 * B1 * C1 * !D1 * Y)	-0.00195	-0.00197	-0.00196
	(A2 * B1 * C1 * !D1 * Y)	0.00264	0.00266	0.00265
	(A2 * B1 * !C1 * Y)	-0.00197	-0.00198	-0.00197
	(A2 * B1 * !C1 * Y)	0.00262	0.00264	0.00263
	(A2 * !B1 * Y)	-0.00197	-0.00198	-0.00198
	(A2 * !B1 * Y)	0.00262	0.00263	0.00263
	(!A2 * B1 * C1 * !D1 * Y)	-0.00161	-0.00189	-0.00190
	(!A2 * B1 * C1 * !D1 * Y)	0.00291	0.00273	0.00265
	(!A2 * B1 * !C1 * D1 * Y)	-0.00166	-0.00190	-0.00192
	(!A2 * B1 * !C1 * D1 * Y)	0.00287	0.00271	0.00264
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00186	-0.00198	-0.00199
	(!A2 * B1 * !C1 * !D1 * Y)	0.00258	0.00259	0.00256
	(!A2 * !B1 * C1 * D1 * Y)	-0.00173	-0.00191	-0.00193
	(!A2 * !B1 * C1 * D1 * Y)	0.00285	0.00271	0.00265
	(!A2 * !B1 * !D1 * Y)	-0.00194	-0.00201	-0.00201
	(!A2 * !B1 * !D1 * Y)	0.00257	0.00258	0.00256
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00194	-0.00201	-0.00201
	(!A2 * !B1 * !C1 * D1 * Y)	0.00256	0.00258	0.00256

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.03180	0.03158	0.03031
	(A2 * B1 * C1 * D1 * !Y)	0.04107	0.04092	0.03962
	(A2 * B1 * C1 * !D1 * Y)	-0.00378	-0.00380	-0.00379
	(A2 * B1 * C1 * !D1 * Y)	0.00532	0.00536	0.00534
	(A2 * B1 * !C1 * Y)	-0.00381	-0.00383	-0.00382
	(A2 * B1 * !C1 * Y)	0.00529	0.00533	0.00531
	(A2 * !B1 * Y)	-0.00382	-0.00383	-0.00383
	(A2 * !B1 * Y)	0.00529	0.00531	0.00531
	(!A2 * B1 * C1 * !D1 * Y)	-0.00308	-0.00367	-0.00368
	(!A2 * B1 * C1 * !D1 * Y)	0.00590	0.00551	0.00536
	(!A2 * B1 * !C1 * D1 * Y)	-0.00316	-0.00373	-0.00372
	(!A2 * B1 * !C1 * D1 * Y)	0.00582	0.00546	0.00533
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00359	-0.00386	-0.00385
	(!A2 * B1 * !C1 * !D1 * Y)	0.00521	0.00524	0.00517
	(!A2 * !B1 * C1 * D1 * Y)	-0.00332	-0.00377	-0.00373
	(!A2 * !B1 * C1 * D1 * Y)	0.00577	0.00546	0.00535
	(!A2 * !B1 * !D1 * Y)	-0.00376	-0.00392	-0.00388
	(!A2 * !B1 * !D1 * Y)	0.00521	0.00524	0.00517
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00377	-0.00392	-0.00388
	(!A2 * !B1 * !C1 * D1 * Y)	0.00519	0.00523	0.00517

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.03652	0.03610	0.03356
	(A2 * B1 * C1 * D1 * !Y)	0.05491	0.05454	0.05196
	(A2 * B1 * C1 * !D1 * Y)	-0.00737	-0.00743	-0.00742
	(A2 * B1 * C1 * !D1 * Y)	0.01059	0.01069	0.01066
	(A2 * B1 * !C1 * Y)	-0.00744	-0.00750	-0.00748
	(A2 * B1 * !C1 * Y)	0.01052	0.01062	0.01059
	(A2 * !B1 * Y)	-0.00746	-0.00752	-0.00749
	(A2 * !B1 * Y)	0.01052	0.01065	0.01058
	(!A2 * B1 * C1 * !D1 * Y)	-0.00601	-0.00710	-0.00718
	(!A2 * B1 * C1 * !D1 * Y)	0.01177	0.01101	0.01068
	(!A2 * B1 * !C1 * D1 * Y)	-0.00620	-0.00724	-0.00727
	(!A2 * B1 * !C1 * D1 * Y)	0.01164	0.01090	0.01062
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00704	-0.00753	-0.00755
	(!A2 * B1 * !C1 * !D1 * Y)	0.01043	0.01043	0.01031
	(!A2 * !B1 * C1 * D1 * Y)	-0.00649	-0.00735	-0.00731
	(!A2 * !B1 * C1 * D1 * Y)	0.01150	0.01088	0.01065
	(!A2 * !B1 * !D1 * Y)	-0.00735	-0.00767	-0.00760
	(!A2 * !B1 * !D1 * Y)	0.01038	0.01043	0.01031
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00738	-0.00767	-0.00760
	(!A2 * !B1 * !C1 * D1 * Y)	0.01036	0.01043	0.01031

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)**	0.01583	0.01587	0.01645
	(A1 * B1 * C1 * D1 * !Y)	0.01271	0.01272	0.01332
	(A1 * B1 * C1 * !D1 * Y)	0.00212	0.00214	0.00212
	(A1 * B1 * C1 * !D1 * Y)	-0.00240	-0.00241	-0.00240
	(A1 * B1 * !C1 * D1 * Y)	0.00210	0.00212	0.00210
	(A1 * B1 * !C1 * D1 * Y)	-0.00242	-0.00243	-0.00242
	(A1 * B1 * !C1 * !D1 * Y)	0.00203	0.00204	0.00203
	(A1 * B1 * !C1 * !D1 * Y)	-0.00249	-0.00250	-0.00249
	(A1 * !B1 * C1 * D1 * Y)	0.00210	0.00212	0.00210
	(A1 * !B1 * C1 * D1 * Y)	-0.00242	-0.00243	-0.00242
	(A1 * !B1 * !D1 * Y)	0.00203	0.00204	0.00203
	(A1 * !B1 * !D1 * Y)	-0.00249	-0.00250	-0.00249
	(A1 * !B1 * !C1 * D1 * Y)	0.00203	0.00204	0.00203
	(A1 * !B1 * !C1 * D1 * Y)	-0.00249	-0.00250	-0.00249
	(!A1 * B1 * C1 * !D1 * Y)	0.00206	0.00207	0.00207
	(!A1 * B1 * C1 * !D1 * Y)	-0.00240	-0.00241	-0.00240
	(!A1 * B1 * !C1 * D1 * Y)	0.00207	0.00207	0.00207
	(!A1 * B1 * !C1 * D1 * Y)	-0.00240	-0.00241	-0.00240
	(!A1 * B1 * !C1 * !D1 * Y)	0.00195	0.00196	0.00196
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00249	-0.00249	-0.00249
	(!A1 * !B1 * C1 * D1 * Y)	0.00208	0.00212	0.00209
	(!A1 * !B1 * C1 * D1 * Y)	-0.00242	-0.00244	-0.00243
	(!A1 * !B1 * !D1 * Y)	0.00199	0.00202	0.00200
	(!A1 * !B1 * !D1 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * !B1 * !C1 * D1 * Y)	0.00199	0.00201	0.00199
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00250	-0.00251	-0.00249

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.03152	0.03163	0.03236
	(A1 * B1 * C1 * D1 * !Y)	0.02548	0.02546	0.02627
	(A1 * B1 * C1 * !D1 * Y)	0.00414	0.00417	0.00412
	(A1 * B1 * C1 * !D1 * Y)	-0.00488	-0.00489	-0.00486
	(A1 * B1 * !C1 * D1 * Y)	0.00411	0.00414	0.00409
	(A1 * B1 * !C1 * D1 * Y)	-0.00492	-0.00492	-0.00489
	(A1 * B1 * !C1 * !D1 * Y)	0.00396	0.00398	0.00395
	(A1 * B1 * !C1 * !D1 * Y)	-0.00506	-0.00506	-0.00504
	(A1 * !B1 * C1 * D1 * Y)	0.00410	0.00413	0.00408
	(A1 * !B1 * C1 * D1 * Y)	-0.00492	-0.00493	-0.00490
	(A1 * !B1 * !D1 * Y)	0.00396	0.00398	0.00395
	(A1 * !B1 * !D1 * Y)	-0.00506	-0.00506	-0.00503
	(A1 * !B1 * !C1 * D1 * Y)	0.00392	0.00398	0.00395
	(A1 * !B1 * !C1 * D1 * Y)	-0.00502	-0.00506	-0.00503
	(!A1 * B1 * C1 * !D1 * Y)	0.00400	0.00403	0.00402
	(!A1 * B1 * C1 * !D1 * Y)	-0.00485	-0.00488	-0.00485
	(!A1 * B1 * !C1 * D1 * Y)	0.00400	0.00403	0.00402
	(!A1 * B1 * !C1 * D1 * Y)	-0.00486	-0.00487	-0.00486
	(!A1 * B1 * !C1 * !D1 * Y)	0.00377	0.00380	0.00378
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00503	-0.00505	-0.00504
	(!A1 * !B1 * C1 * D1 * Y)	0.00404	0.00406	0.00405
	(!A1 * !B1 * C1 * D1 * Y)	-0.00489	-0.00491	-0.00490
	(!A1 * !B1 * !D1 * Y)	0.00386	0.00390	0.00386
	(!A1 * !B1 * !D1 * Y)	-0.00505	-0.00507	-0.00504
	(!A1 * !B1 * !C1 * D1 * Y)	0.00386	0.00390	0.00385
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00505	-0.00507	-0.00504

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.03652	0.03673	0.03806
	(A1 * B1 * C1 * D1 * !Y)	0.02402	0.02398	0.02549
	(A1 * B1 * C1 * !D1 * Y)	0.00835	0.00847	0.00837
	(A1 * B1 * C1 * !D1 * Y)	-0.00980	-0.00988	-0.00981
	(A1 * B1 * !C1 * D1 * Y)	0.00828	0.00840	0.00831
	(A1 * B1 * !C1 * D1 * Y)	-0.00986	-0.00995	-0.00988
	(A1 * B1 * !C1 * !D1 * Y)	0.00799	0.00811	0.00802
	(A1 * B1 * !C1 * !D1 * Y)	-0.01015	-0.01023	-0.01017
	(A1 * !B1 * C1 * D1 * Y)	0.00827	0.00840	0.00830
	(A1 * !B1 * C1 * D1 * Y)	-0.00987	-0.00996	-0.00989
	(A1 * !B1 * !D1 * Y)	0.00801	0.00811	0.00802
	(A1 * !B1 * !D1 * Y)	-0.01017	-0.01023	-0.01016
	(A1 * !B1 * !C1 * D1 * Y)	0.00801	0.00811	0.00802
	(A1 * !B1 * !C1 * D1 * Y)	-0.01016	-0.01023	-0.01016
	(!A1 * B1 * C1 * !D1 * Y)	0.00812	0.00820	0.00814
	(!A1 * B1 * C1 * !D1 * Y)	-0.00980	-0.00986	-0.00980
	(!A1 * B1 * !C1 * D1 * Y)	0.00816	0.00821	0.00817
	(!A1 * B1 * !C1 * D1 * Y)	-0.00982	-0.00985	-0.00982
	(!A1 * B1 * !C1 * !D1 * Y)	0.00776	0.00781	0.00773
	(!A1 * B1 * !C1 * !D1 * Y)	-0.01021	-0.01023	-0.01017
	(!A1 * !B1 * C1 * D1 * Y)	0.00822	0.00832	0.00823
	(!A1 * !B1 * C1 * D1 * Y)	-0.00990	-0.00997	-0.00992
	(!A1 * !B1 * !D1 * Y)	0.00787	0.00785	0.00786
	(!A1 * !B1 * !D1 * Y)	-0.01019	-0.01016	-0.01017
	(!A1 * !B1 * !C1 * D1 * Y)	0.00788	0.00786	0.00786
	(!A1 * !B1 * !C1 * D1 * Y)	-0.01020	-0.01018	-0.01018

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)**	0.01453	0.01442	0.01309
	(A1 * B1 * C1 * D1 * !Y)	0.01767	0.01757	0.01623
	(A1 * B1 * C1 * !D1 * Y)	-0.00190	-0.00191	-0.00191
	(A1 * B1 * C1 * !D1 * Y)	0.00260	0.00262	0.00262
	(A1 * B1 * !C1 * D1 * Y)	-0.00193	-0.00193	-0.00193
	(A1 * B1 * !C1 * D1 * Y)	0.00260	0.00260	0.00260
	(A1 * B1 * !C1 * !D1 * Y)	-0.00199	-0.00201	-0.00200
	(A1 * B1 * !C1 * !D1 * Y)	0.00251	0.00254	0.00253
	(A1 * !B1 * C1 * D1 * Y)	-0.00193	-0.00193	-0.00193
	(A1 * !B1 * C1 * D1 * Y)	0.00259	0.00260	0.00260
	(A1 * !B1 * !D1 * Y)	-0.00199	-0.00201	-0.00200
	(A1 * !B1 * !D1 * Y)	0.00252	0.00254	0.00253
	(A1 * !B1 * !C1 * D1 * Y)	-0.00199	-0.00201	-0.00200
	(A1 * !B1 * !C1 * D1 * Y)	0.00252	0.00254	0.00253
	(!A1 * B1 * C1 * !D1 * Y)	-0.00155	-0.00184	-0.00185
	(!A1 * B1 * C1 * !D1 * Y)	0.00288	0.00269	0.00262
	(!A1 * B1 * !C1 * D1 * Y)	-0.00161	-0.00185	-0.00188
	(!A1 * B1 * !C1 * D1 * Y)	0.00284	0.00268	0.00261
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00181	-0.00193	-0.00194
	(!A1 * B1 * !C1 * !D1 * Y)	0.00255	0.00255	0.00253
	(!A1 * !B1 * C1 * D1 * Y)	-0.00167	-0.00186	-0.00189
	(!A1 * !B1 * C1 * D1 * Y)	0.00282	0.00268	0.00261
	(!A1 * !B1 * !D1 * Y)	-0.00189	-0.00196	-0.00196
	(!A1 * !B1 * !D1 * Y)	0.00254	0.00255	0.00253
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00190	-0.00196	-0.00196
	(!A1 * !B1 * !C1 * D1 * Y)	0.00253	0.00255	0.00253

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.02936	0.02913	0.02656
	(A1 * B1 * C1 * D1 * !Y)	0.03552	0.03536	0.03273
	(A1 * B1 * C1 * !D1 * Y)	-0.00371	-0.00373	-0.00371
	(A1 * B1 * C1 * !D1 * Y)	0.00527	0.00532	0.00528
	(A1 * B1 * !C1 * D1 * Y)	-0.00374	-0.00376	-0.00374
	(A1 * B1 * !C1 * D1 * Y)	0.00524	0.00528	0.00525
	(A1 * B1 * !C1 * !D1 * Y)	-0.00388	-0.00390	-0.00388
	(A1 * B1 * !C1 * !D1 * Y)	0.00510	0.00514	0.00510
	(A1 * !B1 * C1 * D1 * Y)	-0.00374	-0.00376	-0.00374
	(A1 * !B1 * C1 * D1 * Y)	0.00524	0.00528	0.00524
	(A1 * !B1 * !D1 * Y)	-0.00386	-0.00390	-0.00388
	(A1 * !B1 * !D1 * Y)	0.00508	0.00514	0.00511
	(A1 * !B1 * !C1 * D1 * Y)	-0.00386	-0.00390	-0.00388
	(A1 * !B1 * !C1 * D1 * Y)	0.00508	0.00514	0.00511
	(!A1 * B1 * C1 * !D1 * Y)	-0.00298	-0.00356	-0.00360
	(!A1 * B1 * C1 * !D1 * Y)	0.00582	0.00545	0.00529
	(!A1 * B1 * !C1 * D1 * Y)	-0.00308	-0.00363	-0.00363
	(!A1 * B1 * !C1 * D1 * Y)	0.00575	0.00540	0.00527
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00351	-0.00377	-0.00377
	(!A1 * B1 * !C1 * !D1 * Y)	0.00514	0.00517	0.00511
	(!A1 * !B1 * C1 * D1 * Y)	-0.00324	-0.00367	-0.00365
	(!A1 * !B1 * C1 * D1 * Y)	0.00570	0.00540	0.00529
	(!A1 * !B1 * !D1 * Y)	-0.00367	-0.00383	-0.00380
	(!A1 * !B1 * !D1 * Y)	0.00514	0.00517	0.00511
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00369	-0.00383	-0.00380
	(!A1 * !B1 * !C1 * D1 * Y)	0.00512	0.00517	0.00511

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.03160	0.03113	0.02599
	(A1 * B1 * C1 * D1 * !Y)	0.04424	0.04395	0.03869
	(A1 * B1 * C1 * !D1 * Y)	-0.00753	-0.00755	-0.00754
	(A1 * B1 * C1 * !D1 * Y)	0.01063	0.01066	0.01065
	(A1 * B1 * !C1 * D1 * Y)	-0.00760	-0.00765	-0.00760
	(A1 * B1 * !C1 * D1 * Y)	0.01056	0.01066	0.01058
	(A1 * B1 * !C1 * !D1 * Y)	-0.00789	-0.00793	-0.00790
	(A1 * B1 * !C1 * !D1 * Y)	0.01028	0.01035	0.01030
	(A1 * !B1 * C1 * D1 * Y)	-0.00761	-0.00763	-0.00761
	(A1 * !B1 * C1 * D1 * Y)	0.01055	0.01059	0.01057
	(A1 * !B1 * !D1 * Y)	-0.00789	-0.00792	-0.00789
	(A1 * !B1 * !D1 * Y)	0.01028	0.01034	0.01030
	(A1 * !B1 * !C1 * D1 * Y)	-0.00789	-0.00794	-0.00789
	(A1 * !B1 * !C1 * D1 * Y)	0.01028	0.01038	0.01030
	(!A1 * B1 * C1 * !D1 * Y)	-0.00617	-0.00725	-0.00730
	(!A1 * B1 * C1 * !D1 * Y)	0.01167	0.01099	0.01068
	(!A1 * B1 * !C1 * D1 * Y)	-0.00634	-0.00737	-0.00739
	(!A1 * B1 * !C1 * D1 * Y)	0.01155	0.01089	0.01062
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00715	-0.00763	-0.00766
	(!A1 * B1 * !C1 * !D1 * Y)	0.01037	0.01041	0.01031
	(!A1 * !B1 * C1 * D1 * Y)	-0.00660	-0.00750	-0.00743
	(!A1 * !B1 * C1 * D1 * Y)	0.01150	0.01086	0.01065
	(!A1 * !B1 * !D1 * Y)	-0.00746	-0.00777	-0.00772
	(!A1 * !B1 * !D1 * Y)	0.01037	0.01042	0.01031
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00749	-0.00778	-0.00772
	(!A1 * !B1 * !C1 * D1 * Y)	0.01034	0.01041	0.01031

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)**	0.00203	0.00204	0.00202
	(A2 * C1 * !D1 * Y)	-0.00243	-0.00244	-0.00243
	(A2 * !C1 * D1 * Y)	0.00203	0.00205	0.00202
	(A2 * !C1 * D1 * Y)	-0.00243	-0.00245	-0.00245
	(A2 * !C1 * !D1 * Y)	0.00193	0.00194	0.00193
	(A2 * !C1 * !D1 * Y)	-0.00251	-0.00253	-0.00252
	(A1 * !A2 * C1 * !D1 * Y)	0.00202	0.00204	0.00202
	(A1 * !A2 * C1 * !D1 * Y)	-0.00243	-0.00244	-0.00243
	(A1 * !A2 * !C1 * D1 * Y)	0.00202	0.00205	0.00202
	(A1 * !A2 * !C1 * D1 * Y)	-0.00243	-0.00245	-0.00244
	(A1 * !A2 * !C1 * !D1 * Y)	0.00192	0.00195	0.00193
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00251	-0.00253	-0.00251
	(!A1 * !A2 * C1 * D1 * Y)	0.00089	0.00090	0.00086
	(!A1 * !A2 * C1 * D1 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * !A2 * C1 * !D1 * Y)	0.00103	0.00103	0.00102
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !A2 * !C1 * D1 * Y)	0.00108	0.00110	0.00108
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00251	-0.00253	-0.00251
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00110	0.00110	0.00109
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00253	-0.00254	-0.00253

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00425	0.00428	0.00424
	(A2 * C1 * !D1 * Y)	-0.00505	-0.00506	-0.00504
	(A2 * !C1 * D1 * Y)	0.00426	0.00430	0.00426
	(A2 * !C1 * D1 * Y)	-0.00504	-0.00508	-0.00506
	(A2 * !C1 * !D1 * Y)	0.00406	0.00410	0.00406
	(A2 * !C1 * !D1 * Y)	-0.00522	-0.00524	-0.00521
	(A1 * !A2 * C1 * !D1 * Y)	0.00423	0.00425	0.00424
	(A1 * !A2 * C1 * !D1 * Y)	-0.00504	-0.00505	-0.00504
	(A1 * !A2 * !C1 * D1 * Y)	0.00424	0.00430	0.00425
	(A1 * !A2 * !C1 * D1 * Y)	-0.00503	-0.00508	-0.00506
	(A1 * !A2 * !C1 * !D1 * Y)	0.00405	0.00411	0.00406
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00520	-0.00524	-0.00521
	(!A1 * !A2 * C1 * D1 * Y)	0.00185	0.00186	0.00181
	(!A1 * !A2 * C1 * D1 * Y)	-0.00510	-0.00513	-0.00508
	(!A1 * !A2 * C1 * !D1 * Y)	0.00221	0.00221	0.00218
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00525	-0.00527	-0.00523
	(!A1 * !A2 * !C1 * D1 * Y)	0.00226	0.00226	0.00223
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00524	-0.00525	-0.00522
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00226	0.00229	0.00225
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00522	-0.00526	-0.00523

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00816	0.00825	0.00819
	(A2 * C1 * !D1 * Y)	-0.00504	-0.00507	-0.00505
	(A2 * !C1 * D1 * Y)	0.00824	0.00831	0.00824
	(A2 * !C1 * D1 * Y)	-0.00507	-0.00510	-0.00510
	(A2 * !C1 * !D1 * Y)	0.00784	0.00794	0.00787
	(A2 * !C1 * !D1 * Y)	-0.00539	-0.00543	-0.00539
	(A1 * !A2 * C1 * !D1 * Y)	0.00815	0.00824	0.00819
	(A1 * !A2 * C1 * !D1 * Y)	-0.00503	-0.00507	-0.00505
	(A1 * !A2 * !C1 * D1 * Y)	0.00824	0.00834	0.00824
	(A1 * !A2 * !C1 * D1 * Y)	-0.00507	-0.00511	-0.00510
	(A1 * !A2 * !C1 * !D1 * Y)	0.00784	0.00793	0.00787
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00539	-0.00543	-0.00540
	(!A1 * !A2 * C1 * D1 * Y)	0.00345	0.00344	0.00334
	(!A1 * !A2 * C1 * D1 * Y)	-0.00521	-0.00521	-0.00518
	(!A1 * !A2 * C1 * !D1 * Y)	0.00399	0.00404	0.00399
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00546	-0.00550	-0.00546
	(!A1 * !A2 * !C1 * D1 * Y)	0.00412	0.00417	0.00410
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00541	-0.00545	-0.00541
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00418	0.00423	0.00414
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00544	-0.00548	-0.00544

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)**	-0.00147	-0.00178	-0.00179
	(A2 * C1 * !D1 * Y)	0.00297	0.00274	0.00265
	(A2 * !C1 * D1 * Y)	-0.00162	-0.00183	-0.00182
	(A2 * !C1 * D1 * Y)	0.00288	0.00271	0.00263
	(A2 * !C1 * !D1 * Y)	-0.00180	-0.00190	-0.00189
	(A2 * !C1 * !D1 * Y)	0.00264	0.00259	0.00256
	(A1 * !A2 * C1 * !D1 * Y)	-0.00141	-0.00181	-0.00179
	(A1 * !A2 * C1 * !D1 * Y)	0.00305	0.00272	0.00265
	(A1 * !A2 * !C1 * D1 * Y)	-0.00157	-0.00184	-0.00182
	(A1 * !A2 * !C1 * D1 * Y)	0.00291	0.00270	0.00263
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00176	-0.00190	-0.00189
	(A1 * !A2 * !C1 * !D1 * Y)	0.00266	0.00260	0.00256
	(!A1 * !A2 * C1 * D1 * Y)	-0.00058	-0.00058	-0.00060
	(!A1 * !A2 * C1 * D1 * Y)	0.00280	0.00282	0.00269
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00100	-0.00097	-0.00098
	(!A1 * !A2 * C1 * !D1 * Y)	0.00278	0.00281	0.00266
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00101	-0.00104	-0.00105
	(!A1 * !A2 * !C1 * D1 * Y)	0.00273	0.00272	0.00258
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00110	-0.00110	-0.00109
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00265	0.00265	0.00258

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00312	-0.00382	-0.00379
	(A2 * C1 * !D1 * Y)	0.00619	0.00561	0.00548
	(A2 * !C1 * D1 * Y)	-0.00337	-0.00388	-0.00384
	(A2 * !C1 * D1 * Y)	0.00598	0.00558	0.00545
	(A2 * !C1 * !D1 * Y)	-0.00379	-0.00403	-0.00399
	(A2 * !C1 * !D1 * Y)	0.00542	0.00536	0.00529
	(A1 * !A2 * C1 * !D1 * Y)	-0.00295	-0.00381	-0.00379
	(A1 * !A2 * C1 * !D1 * Y)	0.00632	0.00555	0.00548
	(A1 * !A2 * !C1 * D1 * Y)	-0.00326	-0.00384	-0.00384
	(A1 * !A2 * !C1 * D1 * Y)	0.00607	0.00554	0.00545
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00374	-0.00399	-0.00399
	(A1 * !A2 * !C1 * !D1 * Y)	0.00546	0.00531	0.00529
	(!A1 * !A2 * C1 * D1 * Y)	-0.00122	-0.00125	-0.00131
	(!A1 * !A2 * C1 * D1 * Y)	0.00579	0.00588	0.00556
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00218	-0.00209	-0.00211
	(!A1 * !A2 * C1 * !D1 * Y)	0.00568	0.00585	0.00550
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00209	-0.00215	-0.00217
	(!A1 * !A2 * !C1 * D1 * Y)	0.00564	0.00566	0.00539
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00226	-0.00229	-0.00225
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00551	0.00553	0.00537

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00583	-0.00736	-0.00731
	(A2 * C1 * !D1 * Y)	0.00749	0.00602	0.00592
	(A2 * !C1 * D1 * Y)	-0.00642	-0.00743	-0.00741
	(A2 * !C1 * D1 * Y)	0.00697	0.00600	0.00586
	(A2 * !C1 * !D1 * Y)	-0.00725	-0.00772	-0.00770
	(A2 * !C1 * !D1 * Y)	0.00586	0.00556	0.00555
	(A1 * !A2 * C1 * !D1 * Y)	-0.00563	-0.00735	-0.00731
	(A1 * !A2 * C1 * !D1 * Y)	0.00765	0.00610	0.00592
	(A1 * !A2 * !C1 * D1 * Y)	-0.00634	-0.00741	-0.00741
	(A1 * !A2 * !C1 * D1 * Y)	0.00711	0.00607	0.00587
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00723	-0.00772	-0.00770
	(A1 * !A2 * !C1 * !D1 * Y)	0.00594	0.00559	0.00554
	(!A1 * !A2 * C1 * D1 * Y)	-0.00222	-0.00224	-0.00235
	(!A1 * !A2 * C1 * D1 * Y)	0.00654	0.00656	0.00608
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00399	-0.00382	-0.00386
	(!A1 * !A2 * C1 * !D1 * Y)	0.00634	0.00662	0.00597
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00384	-0.00398	-0.00400
	(!A1 * !A2 * !C1 * D1 * Y)	0.00625	0.00621	0.00572
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00418	-0.00423	-0.00414
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00596	0.00596	0.00569

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)**	0.00210	0.00211	0.00209
	(A2 * B1 * !D1 * Y)	-0.00252	-0.00253	-0.00253
	(A2 * !B1 * D1 * Y)	0.00085	0.00085	0.00082
	(A2 * !B1 * D1 * Y)	-0.00262	-0.00263	-0.00261
	(A2 * !B1 * !D1 * Y)	0.00101	0.00102	0.00101
	(A2 * !B1 * !D1 * Y)	-0.00260	-0.00263	-0.00261
	(A1 * !A2 * B1 * !D1 * Y)	0.00210	0.00211	0.00209
	(A1 * !A2 * B1 * !D1 * Y)	-0.00252	-0.00253	-0.00253
	(!A2 * !B1 * D1 * Y)	0.00085	0.00085	0.00082
	(!A2 * !B1 * D1 * Y)	-0.00263	-0.00263	-0.00261
	(!A2 * !B1 * !D1 * Y)	0.00101	0.00103	0.00101
	(!A2 * !B1 * !D1 * Y)	-0.00260	-0.00263	-0.00261
	(!A1 * !A2 * B1 * D1 * Y)	0.00088	0.00088	0.00083
	(!A1 * !A2 * B1 * D1 * Y)	-0.00258	-0.00260	-0.00261
	(!A1 * !A2 * B1 * !D1 * Y)	0.00106	0.00106	0.00105
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00260	-0.00262	-0.00260

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00411	0.00413	0.00410
	(A2 * B1 * !D1 * Y)	-0.00491	-0.00493	-0.00493
	(A2 * !B1 * D1 * Y)	0.00166	0.00168	0.00166
	(A2 * !B1 * D1 * Y)	-0.00511	-0.00515	-0.00510
	(A2 * !B1 * !D1 * Y)	0.00213	0.00216	0.00213
	(A2 * !B1 * !D1 * Y)	-0.00511	-0.00515	-0.00511
	(A1 * !A2 * B1 * !D1 * Y)	0.00411	0.00413	0.00410
	(A1 * !A2 * B1 * !D1 * Y)	-0.00491	-0.00493	-0.00494
	(!A2 * !B1 * D1 * Y)	0.00166	0.00168	0.00166
	(!A2 * !B1 * D1 * Y)	-0.00511	-0.00515	-0.00510
	(!A2 * !B1 * !D1 * Y)	0.00213	0.00216	0.00213
	(!A2 * !B1 * !D1 * Y)	-0.00511	-0.00515	-0.00512
	(!A1 * !A2 * B1 * D1 * Y)	0.00166	0.00168	0.00164
	(!A1 * !A2 * B1 * D1 * Y)	-0.00506	-0.00511	-0.00510
	(!A1 * !A2 * B1 * !D1 * Y)	0.00211	0.00212	0.00210
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00510	-0.00512	-0.00509

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00825	0.00834	0.00823
	(A2 * B1 * !D1 * Y)	-0.00497	-0.00502	-0.00502
	(A2 * !B1 * D1 * Y)	0.00314	0.00315	0.00308
	(A2 * !B1 * D1 * Y)	-0.00542	-0.00544	-0.00538
	(A2 * !B1 * !D1 * Y)	0.00388	0.00394	0.00389
	(A2 * !B1 * !D1 * Y)	-0.00540	-0.00545	-0.00542
	(A1 * !A2 * B1 * !D1 * Y)	0.00825	0.00833	0.00823
	(A1 * !A2 * B1 * !D1 * Y)	-0.00497	-0.00502	-0.00502
	(!A2 * !B1 * D1 * Y)	0.00311	0.00315	0.00308
	(!A2 * !B1 * D1 * Y)	-0.00539	-0.00544	-0.00538
	(!A2 * !B1 * !D1 * Y)	0.00389	0.00394	0.00389
	(!A2 * !B1 * !D1 * Y)	-0.00541	-0.00545	-0.00542
	(!A1 * !A2 * B1 * D1 * Y)	0.00315	0.00320	0.00311
	(!A1 * !A2 * B1 * D1 * Y)	-0.00531	-0.00537	-0.00537
	(!A1 * !A2 * B1 * !D1 * Y)	0.00397	0.00400	0.00395
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00538	-0.00542	-0.00536

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)**	-0.00161	-0.00189	-0.00185
	(A2 * B1 * !D1 * Y)	0.00302	0.00279	0.00275
	(A2 * !B1 * D1 * Y)	-0.00069	-0.00070	-0.00070
	(A2 * !B1 * D1 * Y)	0.00277	0.00281	0.00271
	(A2 * !B1 * !D1 * Y)	-0.00097	-0.00098	-0.00100
	(A2 * !B1 * !D1 * Y)	0.00278	0.00279	0.00267
	(A1 * !A2 * B1 * !D1 * Y)	-0.00158	-0.00187	-0.00185
	(A1 * !A2 * B1 * !D1 * Y)	0.00304	0.00277	0.00275
	(!A2 * !B1 * D1 * Y)	-0.00069	-0.00069	-0.00070
	(!A2 * !B1 * D1 * Y)	0.00277	0.00277	0.00271
	(!A2 * !B1 * !D1 * Y)	-0.00097	-0.00098	-0.00100
	(!A2 * !B1 * !D1 * Y)	0.00277	0.00279	0.00267
	(!A1 * !A2 * B1 * D1 * Y)	-0.00059	-0.00058	-0.00059
	(!A1 * !A2 * B1 * D1 * Y)	0.00286	0.00285	0.00278
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00096	-0.00102	-0.00100
	(!A1 * !A2 * B1 * !D1 * Y)	0.00294	0.00289	0.00279

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00287	-0.00363	-0.00363
	(A2 * B1 * !D1 * Y)	0.00617	0.00549	0.00537
	(A2 * !B1 * D1 * Y)	-0.00136	-0.00137	-0.00142
	(A2 * !B1 * D1 * Y)	0.00546	0.00551	0.00530
	(A2 * !B1 * !D1 * Y)	-0.00204	-0.00203	-0.00211
	(A2 * !B1 * !D1 * Y)	0.00552	0.00552	0.00526
	(A1 * !A2 * B1 * !D1 * Y)	-0.00283	-0.00358	-0.00363
	(A1 * !A2 * B1 * !D1 * Y)	0.00622	0.00553	0.00537
	(!A2 * !B1 * D1 * Y)	-0.00136	-0.00137	-0.00142
	(!A2 * !B1 * D1 * Y)	0.00546	0.00551	0.00530
	(!A2 * !B1 * !D1 * Y)	-0.00204	-0.00203	-0.00211
	(!A2 * !B1 * !D1 * Y)	0.00551	0.00552	0.00526
	(!A1 * !A2 * B1 * D1 * Y)	-0.00112	-0.00114	-0.00118
	(!A1 * !A2 * B1 * D1 * Y)	0.00559	0.00566	0.00542
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00181	-0.00199	-0.00199
	(!A1 * !A2 * B1 * !D1 * Y)	0.00589	0.00573	0.00547

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00574	-0.00722	-0.00726
	(A2 * B1 * !D1 * Y)	0.00754	0.00618	0.00588
	(A2 * !B1 * D1 * Y)	-0.00252	-0.00255	-0.00262
	(A2 * !B1 * D1 * Y)	0.00606	0.00612	0.00574
	(A2 * !B1 * !D1 * Y)	-0.00375	-0.00374	-0.00386
	(A2 * !B1 * !D1 * Y)	0.00613	0.00614	0.00567
	(A1 * !A2 * B1 * !D1 * Y)	-0.00568	-0.00728	-0.00726
	(A1 * !A2 * B1 * !D1 * Y)	0.00759	0.00613	0.00588
	(!A2 * !B1 * D1 * Y)	-0.00252	-0.00255	-0.00262
	(!A2 * !B1 * D1 * Y)	0.00606	0.00611	0.00574
	(!A2 * !B1 * !D1 * Y)	-0.00374	-0.00374	-0.00386
	(!A2 * !B1 * !D1 * Y)	0.00612	0.00614	0.00567
	(!A1 * !A2 * B1 * D1 * Y)	-0.00207	-0.00209	-0.00218
	(!A1 * !A2 * B1 * D1 * Y)	0.00631	0.00634	0.00600
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00342	-0.00380	-0.00375
	(!A1 * !A2 * B1 * !D1 * Y)	0.00693	0.00653	0.00606

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00065	0.00066	0.00061
	(A2 * !C1 * Y)	-0.00290	-0.00294	-0.00299
	(A2 * !B1 * C1 * Y)	0.00067	0.00067	0.00061
	(A2 * !B1 * C1 * Y)	-0.00283	-0.00284	-0.00299
	(!A2 * !C1 * Y)	0.00065	0.00066	0.00061
	(!A2 * !C1 * Y)	-0.00290	-0.00294	-0.00299
	(!A2 * !B1 * C1 * Y)	0.00067	0.00067	0.00061
	(!A2 * !B1 * C1 * Y)	-0.00283	-0.00283	-0.00299
	(!A1 * !A2 * B1 * C1 * Y)	0.00082	0.00082	0.00069
	(!A1 * !A2 * B1 * C1 * Y)	-0.00260	-0.00263	-0.00292

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00151	0.00152	0.00139
	(A2 * !C1 * Y)	-0.00556	-0.00562	-0.00578
	(A2 * !B1 * C1 * Y)	0.00152	0.00153	0.00134
	(A2 * !B1 * C1 * Y)	-0.00538	-0.00544	-0.00576
	(!A2 * !C1 * Y)	0.00151	0.00150	0.00139
	(!A2 * !C1 * Y)	-0.00556	-0.00555	-0.00578
	(!A2 * !B1 * C1 * Y)	0.00152	0.00152	0.00134
	(!A2 * !B1 * C1 * Y)	-0.00538	-0.00541	-0.00576
	(!A1 * !A2 * B1 * C1 * Y)	0.00175	0.00175	0.00146
	(!A1 * !A2 * B1 * C1 * Y)	-0.00495	-0.00499	-0.00561
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00268	0.00267	0.00247
	(A2 * !C1 * Y)	-0.00643	-0.00644	-0.00685
	(A2 * !B1 * C1 * Y)	0.00269	0.00270	0.00240
	(A2 * !B1 * C1 * Y)	-0.00608	-0.00613	-0.00679
	(!A2 * !C1 * Y)	0.00268	0.00270	0.00247
	(!A2 * !C1 * Y)	-0.00644	-0.00651	-0.00685
	(!A2 * !B1 * C1 * Y)	0.00270	0.00269	0.00240
	(!A2 * !B1 * C1 * Y)	-0.00609	-0.00612	-0.00679
	(!A1 * !A2 * B1 * C1 * Y)	0.00317	0.00318	0.00266
	(!A1 * !A2 * B1 * C1 * Y)	-0.00525	-0.00530	-0.00650

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00052	-0.00052	-0.00051
	(A2 * !C1 * Y)	0.00305	0.00309	0.00306
	(A2 * !B1 * C1 * Y)	-0.00049	-0.00050	-0.00049
	(A2 * !B1 * C1 * Y)	0.00305	0.00307	0.00306
	(!A2 * !C1 * Y)	-0.00052	-0.00052	-0.00051
	(!A2 * !C1 * Y)	0.00305	0.00309	0.00306
	(!A2 * !B1 * C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * C1 * Y)	0.00304	0.00308	0.00306
	(!A1 * !A2 * B1 * C1 * Y)	-0.00046	-0.00047	-0.00045
	(!A1 * !A2 * B1 * C1 * Y)	0.00305	0.00308	0.00307
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00120	-0.00123	-0.00119
	(A2 * !C1 * Y)	0.00588	0.00601	0.00591
	(A2 * !B1 * C1 * Y)	-0.00113	-0.00113	-0.00111
	(A2 * !B1 * C1 * Y)	0.00590	0.00591	0.00591
	(!A2 * !C1 * Y)	-0.00122	-0.00123	-0.00119
	(!A2 * !C1 * Y)	0.00592	0.00600	0.00592
	(!A2 * !B1 * C1 * Y)	-0.00112	-0.00115	-0.00111
	(!A2 * !B1 * C1 * Y)	0.00588	0.00600	0.00591
	(!A1 * !A2 * B1 * C1 * Y)	-0.00102	-0.00103	-0.00100
	(!A1 * !A2 * B1 * C1 * Y)	0.00589	0.00599	0.00592
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00208	-0.00213	-0.00206
	(A2 * !C1 * Y)	0.00705	0.00720	0.00710
	(A2 * !B1 * C1 * Y)	-0.00198	-0.00196	-0.00193
	(A2 * !B1 * C1 * Y)	0.00708	0.00708	0.00708
	(!A2 * !C1 * Y)	-0.00210	-0.00213	-0.00206
	(!A2 * !C1 * Y)	0.00707	0.00720	0.00710
	(!A2 * !B1 * C1 * Y)	-0.00198	-0.00199	-0.00193
	(!A2 * !B1 * C1 * Y)	0.00708	0.00717	0.00708
	(!A1 * !A2 * B1 * C1 * Y)	-0.00178	-0.00176	-0.00173
	(!A1 * !A2 * B1 * C1 * Y)	0.00709	0.00708	0.00710

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00269	0.00273	0.00252	0.00273	0.00275	1.62519
sky130_fd_sc_hs__o2111a_2	0.00272	0.00270	0.00266	0.00275	0.00285	3.33405
sky130_fd_sc_hs__o2111a_4	0.00521	0.00556	0.00470	0.00484	0.00486	6.01751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	872.60000	4488.78000
sky130_fd_sc_hs__o2111a_2	0.00000	1145.03000	2366.99000
sky130_fd_sc_hs__o2111a_4	0.00000	2682.65000	8920.69000

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)	0.09448	0.45916	5.81722
	A2->X (RR)	0.08098	0.43432	5.52065
	B1->X (RR)	0.08932	0.49748	6.37974
	C1->X (RR)	0.08421	0.51328	6.57901
	D1->X (RR)	0.07658	0.51512	6.59770
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.10691	0.39456	5.81963
	A2->X (RR)	0.09321	0.37099	5.53517
	B1->X (RR)	0.10255	0.43623	6.46520
	C1->X (RR)	0.09716	0.45457	6.65794
	D1->X (RR)	0.08894	0.46166	6.74236
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.12840	0.34730	5.69233
	A2->X (RR)	0.11453	0.32844	5.34678
	B1->X (RR)	0.12403	0.40018	6.49186
	C1->X (RR)	0.11824	0.43583	6.82552
	D1->X (RR)	0.10551	0.44023	6.96696

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.10495	0.49548	5.77142
	A2->X (FF)	0.09674	0.52369	6.03784
	B1->X (FF)	0.06354	0.44552	5.49470
	C1->X (FF)	0.05799	0.42395	5.24289
	D1->X (FF)	0.04845	0.39039	4.95524
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.12137	0.48192	5.99217
	A2->X (FF)	0.11304	0.51345	6.26792
	B1->X (FF)	0.06380	0.40705	5.53743
	C1->X (FF)	0.05932	0.38841	5.28951
	D1->X (FF)	0.05156	0.36091	5.03811
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.14602	0.46282	5.91068
	A2->X (FF)	0.13840	0.51503	6.33203
	B1->X (FF)	0.08062	0.39885	5.55742
	C1->X (FF)	0.07571	0.37253	5.13970
	D1->X (FF)	0.06664	0.34736	4.94734

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.12798	0.13803	0.36356
	A1	0.11643	0.12648	0.35172
	A2	0.13137	0.14171	0.35726
	A2	0.12130	0.13163	0.34720
	B1	0.13106	0.14514	0.40400
	B1	0.12312	0.13720	0.39617
	C1	0.13014	0.14397	0.38996
	C1	0.12346	0.13728	0.38327
	D1	0.12845	0.14113	0.35090
	D1	0.12306	0.13572	0.34547
sky130_fd_sc_hs__o2111a_2	A1	0.08083	0.08994	0.33371
	A1	0.06923	0.07843	0.32148
	A2	0.08373	0.09341	0.32526
	A2	0.07371	0.08339	0.31525
	B1	0.08263	0.09579	0.36796
	B1	0.07440	0.08758	0.35979
	C1	0.08145	0.09447	0.35238
	C1	0.07456	0.08756	0.34511
	D1	0.08008	0.09330	0.33002
	D1	0.07441	0.08761	0.32371

sky130_fd_sc_hs__o2111a_4	**A1**	0.27422	0.28476	0.69149
	A1	0.25070	0.26121	0.66706
	A2	0.27884	0.28854	0.63160
	A2	0.25787	0.26755	0.60949
	B1	0.27988	0.30012	0.79065
	B1	0.26364	0.28380	0.77392
	C1	0.27789	0.29693	0.74662
	C1	0.26438	0.28343	0.73087
	D1	0.27521	0.29696	0.74389
	D1	0.26466	0.28635	0.73111

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.01851	0.03054	0.28547
	A1	0.03006	0.04210	0.29653
	A2	0.01864	0.03165	0.28006
	A2	0.02871	0.04171	0.28916
	B1	0.01538	0.03403	0.33228
	B1	0.02340	0.04206	0.33973
	C1	0.01450	0.03266	0.31767
	C1	0.02128	0.03943	0.32324
	D1	0.01327	0.03107	0.30613
	D1	0.01874	0.03650	0.31105

sky130_fd_sc_hs__o2111a_2	**A1**	0.03780	0.04404	0.29068
	A1	0.04938	0.05545	0.29899
	A2	0.03811	0.04523	0.28417
	A2	0.04813	0.05524	0.29116
	B1	0.03040	0.04654	0.33047
	B1	0.03872	0.05444	0.33891
	C1	0.02921	0.04476	0.31426
	C1	0.03621	0.05173	0.32038
	D1	0.02743	0.04307	0.30813
	D1	0.03317	0.04874	0.31166
sky130_fd_sc_hs__o2111a_4	**A1**	0.08140	0.08827	0.54260
	A1	0.10490	0.11150	0.56414
	A2	0.08194	0.08817	0.49900
	A2	0.10292	0.10905	0.51547
	B1	0.06465	0.09265	0.63382
	B1	0.08109	0.10891	0.65035
	C1	0.06191	0.08892	0.58435
	C1	0.07560	0.10223	0.59703
	D1	0.05802	0.08559	0.57413
	D1	0.06876	0.09632	0.58500

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)**	0.03734	0.03719	0.04048
	(A2 * B1 * C1 * D1 * X)	0.03286	0.03266	0.03602
	(A2 * B1 * C1 * !D1 * !X)	0.00671	0.00671	0.00671
	(A2 * B1 * C1 * !D1 * !X)	0.00231	0.00231	0.00231
	(A2 * B1 * !C1 * !X)	0.00669	0.00669	0.00669
	(A2 * B1 * !C1 * !X)	0.00229	0.00229	0.00229
	(A2 * !B1 * !X)	0.00669	0.00669	0.00669
	(A2 * !B1 * !X)	0.00229	0.00229	0.00229
	(!A2 * B1 * C1 * !D1 * !X)	0.00666	0.00669	0.00666
	(!A2 * B1 * C1 * !D1 * !X)	0.00231	0.00229	0.00231
	(!A2 * B1 * !C1 * D1 * !X)	0.00666	0.00667	0.00666
	(!A2 * B1 * !C1 * D1 * !X)	0.00229	0.00230	0.00230
	(!A2 * B1 * !C1 * !D1 * !X)	0.00655	0.00656	0.00655
	(!A2 * B1 * !C1 * !D1 * !X)	0.00221	0.00221	0.00222
	(!A2 * !B1 * C1 * D1 * !X)	0.00667	0.00669	0.00667
	(!A2 * !B1 * C1 * D1 * !X)	0.00229	0.00227	0.00228
	(!A2 * !B1 * !D1 * !X)	0.00658	0.00660	0.00659
	(!A2 * !B1 * !D1 * !X)	0.00222	0.00221	0.00222
	(!A2 * !B1 * !C1 * D1 * !X)	0.00658	0.00660	0.00658
	(!A2 * !B1 * !C1 * D1 * !X)	0.00222	0.00220	0.00221

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.01885	0.01870	0.02205
	(A2 * B1 * C1 * D1 * X)	0.01431	0.01411	0.01754
	(A2 * B1 * C1 * !D1 * !X)	0.01132	0.01135	0.01132
	(A2 * B1 * C1 * !D1 * !X)	0.00686	0.00685	0.00687
	(A2 * B1 * !C1 * !X)	0.01130	0.01133	0.01130
	(A2 * B1 * !C1 * !X)	0.00684	0.00683	0.00685
	(A2 * !B1 * !X)	0.01130	0.01132	0.01130
	(A2 * !B1 * !X)	0.00684	0.00683	0.00684
	(!A2 * B1 * C1 * !D1 * !X)	0.01125	0.01127	0.01125
	(!A2 * B1 * C1 * !D1 * !X)	0.00686	0.00685	0.00686
	(!A2 * B1 * !C1 * D1 * !X)	0.01125	0.01127	0.01126
	(!A2 * B1 * !C1 * D1 * !X)	0.00686	0.00686	0.00687
	(!A2 * B1 * !C1 * !D1 * !X)	0.01114	0.01116	0.01114
	(!A2 * B1 * !C1 * !D1 * !X)	0.00677	0.00676	0.00677
	(!A2 * !B1 * C1 * D1 * !X)	0.01127	0.01130	0.01127
	(!A2 * !B1 * C1 * D1 * !X)	0.00684	0.00682	0.00683
	(!A2 * !B1 * !D1 * !X)	0.01119	0.01119	0.01119
	(!A2 * !B1 * !D1 * !X)	0.00677	0.00677	0.00677
	(!A2 * !B1 * !C1 * D1 * !X)	0.01118	0.01118	0.01119
	(!A2 * !B1 * !C1 * D1 * !X)	0.00677	0.00677	0.00677

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.07453	0.07414	0.08056
	(A2 * B1 * C1 * D1 * X)	0.06566	0.06525	0.07173
	(A2 * B1 * C1 * !D1 * !X)	0.02214	0.02219	0.02216
	(A2 * B1 * C1 * !D1 * !X)	0.01345	0.01343	0.01346
	(A2 * B1 * !C1 * !X)	0.02210	0.02216	0.02212
	(A2 * B1 * !C1 * !X)	0.01341	0.01340	0.01343
	(A2 * !B1 * !X)	0.02210	0.02216	0.02212
	(A2 * !B1 * !X)	0.01341	0.01340	0.01342
	(!A2 * B1 * C1 * !D1 * !X)	0.02202	0.02202	0.02203
	(!A2 * B1 * C1 * !D1 * !X)	0.01342	0.01344	0.01344
	(!A2 * B1 * !C1 * D1 * !X)	0.02203	0.02207	0.02203
	(!A2 * B1 * !C1 * D1 * !X)	0.01341	0.01341	0.01344
	(!A2 * B1 * !C1 * !D1 * !X)	0.02181	0.02184	0.02180
	(!A2 * B1 * !C1 * !D1 * !X)	0.01325	0.01324	0.01327
	(!A2 * !B1 * C1 * D1 * !X)	0.02204	0.02206	0.02206
	(!A2 * !B1 * C1 * D1 * !X)	0.01339	0.01339	0.01338
	(!A2 * !B1 * !D1 * !X)	0.02189	0.02193	0.02189
	(!A2 * !B1 * !D1 * !X)	0.01326	0.01324	0.01327
	(!A2 * !B1 * !C1 * D1 * !X)	0.02186	0.02192	0.02189
	(!A2 * !B1 * !C1 * D1 * !X)	0.01328	0.01324	0.01327

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)**	0.03696	0.03683	0.03608
	(A2 * B1 * C1 * D1 * X)	0.04143	0.04135	0.04057
	(A2 * B1 * C1 * !D1 * !X)	0.00257	0.00256	0.00257
	(A2 * B1 * C1 * !D1 * !X)	0.00697	0.00698	0.00697
	(A2 * B1 * !C1 * !X)	0.00254	0.00254	0.00255
	(A2 * B1 * !C1 * !X)	0.00695	0.00696	0.00695
	(A2 * !B1 * !X)	0.00254	0.00254	0.00254
	(A2 * !B1 * !X)	0.00695	0.00696	0.00694
	(!A2 * B1 * C1 * !D1 * !X)	0.00292	0.00264	0.00263
	(!A2 * B1 * C1 * !D1 * !X)	0.00724	0.00705	0.00698
	(!A2 * B1 * !C1 * D1 * !X)	0.00286	0.00262	0.00260
	(!A2 * B1 * !C1 * D1 * !X)	0.00720	0.00703	0.00696
	(!A2 * B1 * !C1 * !D1 * !X)	0.00266	0.00254	0.00253
	(!A2 * B1 * !C1 * !D1 * !X)	0.00691	0.00690	0.00688
	(!A2 * !B1 * C1 * D1 * !X)	0.00280	0.00261	0.00259
	(!A2 * !B1 * C1 * D1 * !X)	0.00719	0.00704	0.00696
	(!A2 * !B1 * !D1 * !X)	0.00258	0.00252	0.00252
	(!A2 * !B1 * !D1 * !X)	0.00690	0.00690	0.00688
	(!A2 * !B1 * !C1 * D1 * !X)	0.00258	0.00251	0.00252
	(!A2 * !B1 * !C1 * D1 * !X)	0.00689	0.00690	0.00688

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.01841	0.01828	0.01750
	(A2 * B1 * C1 * D1 * X)	0.02294	0.02285	0.02204
	(A2 * B1 * C1 * !D1 * !X)	0.00703	0.00702	0.00702
	(A2 * B1 * C1 * !D1 * !X)	0.01147	0.01148	0.01148
	(A2 * B1 * !C1 * !X)	0.00700	0.00699	0.00700
	(A2 * B1 * !C1 * !X)	0.01145	0.01147	0.01146
	(A2 * !B1 * !X)	0.00701	0.00699	0.00700
	(A2 * !B1 * !X)	0.01145	0.01147	0.01145
	(!A2 * B1 * C1 * !D1 * !X)	0.00738	0.00710	0.00709
	(!A2 * B1 * C1 * !D1 * !X)	0.01175	0.01156	0.01149
	(!A2 * B1 * !C1 * D1 * !X)	0.00733	0.00708	0.00706
	(!A2 * B1 * !C1 * D1 * !X)	0.01170	0.01154	0.01147
	(!A2 * B1 * !C1 * !D1 * !X)	0.00711	0.00700	0.00699
	(!A2 * B1 * !C1 * !D1 * !X)	0.01141	0.01141	0.01139
	(!A2 * !B1 * C1 * D1 * !X)	0.00726	0.00707	0.00705
	(!A2 * !B1 * C1 * D1 * !X)	0.01168	0.01155	0.01148
	(!A2 * !B1 * !D1 * !X)	0.00704	0.00697	0.00697
	(!A2 * !B1 * !D1 * !X)	0.01140	0.01141	0.01139
	(!A2 * !B1 * !C1 * D1 * !X)	0.00703	0.00697	0.00697
	(!A2 * !B1 * !C1 * D1 * !X)	0.01139	0.01141	0.01139

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.07344	0.07319	0.07175
	(A2 * B1 * C1 * D1 * X)	0.08232	0.08215	0.08063
	(A2 * B1 * C1 * !D1 * !X)	0.01447	0.01446	0.01447
	(A2 * B1 * C1 * !D1 * !X)	0.02317	0.02319	0.02317
	(A2 * B1 * !C1 * !X)	0.01444	0.01443	0.01444
	(A2 * B1 * !C1 * !X)	0.02314	0.02316	0.02314
	(A2 * !B1 * !X)	0.01443	0.01442	0.01443
	(A2 * !B1 * !X)	0.02313	0.02315	0.02313
	(!A2 * B1 * C1 * !D1 * !X)	0.01504	0.01462	0.01460
	(!A2 * B1 * C1 * !D1 * !X)	0.02362	0.02335	0.02321
	(!A2 * B1 * !C1 * D1 * !X)	0.01496	0.01457	0.01456
	(!A2 * B1 * !C1 * D1 * !X)	0.02357	0.02331	0.02318
	(!A2 * B1 * !C1 * !D1 * !X)	0.01460	0.01441	0.01441
	(!A2 * B1 * !C1 * !D1 * !X)	0.02305	0.02306	0.02301
	(!A2 * !B1 * C1 * D1 * !X)	0.01487	0.01453	0.01454
	(!A2 * !B1 * C1 * D1 * !X)	0.02353	0.02330	0.02319
	(!A2 * !B1 * !D1 * !X)	0.01448	0.01436	0.01438
	(!A2 * !B1 * !D1 * !X)	0.02303	0.02306	0.02301
	(!A2 * !B1 * !C1 * D1 * !X)	0.01447	0.01435	0.01438
	(!A2 * !B1 * !C1 * D1 * !X)	0.02302	0.02306	0.02301

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)**	0.03636	0.03642	0.03698
	(A1 * B1 * C1 * D1 * X)	0.03337	0.03336	0.03394
	(A1 * B1 * C1 * !D1 * !X)	0.00660	0.00662	0.00660
	(A1 * B1 * C1 * !D1 * !X)	0.00234	0.00232	0.00233
	(A1 * B1 * !C1 * D1 * !X)	0.00657	0.00659	0.00657
	(A1 * B1 * !C1 * D1 * !X)	0.00232	0.00230	0.00231
	(A1 * B1 * !C1 * !D1 * !X)	0.00651	0.00652	0.00651
	(A1 * B1 * !C1 * !D1 * !X)	0.00225	0.00224	0.00225
	(A1 * !B1 * C1 * D1 * !X)	0.00657	0.00659	0.00657
	(A1 * !B1 * C1 * D1 * !X)	0.00232	0.00230	0.00231
	(A1 * !B1 * !D1 * !X)	0.00651	0.00652	0.00651
	(A1 * !B1 * !D1 * !X)	0.00226	0.00225	0.00225
	(A1 * !B1 * !C1 * D1 * !X)	0.00651	0.00652	0.00651
	(A1 * !B1 * !C1 * D1 * !X)	0.00225	0.00224	0.00225
	(!A1 * B1 * C1 * !D1 * !X)	0.00656	0.00658	0.00656
	(!A1 * B1 * C1 * !D1 * !X)	0.00235	0.00233	0.00234
	(!A1 * B1 * !C1 * D1 * !X)	0.00655	0.00656	0.00656
	(!A1 * B1 * !C1 * D1 * !X)	0.00234	0.00233	0.00233
	(!A1 * B1 * !C1 * !D1 * !X)	0.00645	0.00647	0.00645
	(!A1 * B1 * !C1 * !D1 * !X)	0.00226	0.00224	0.00225
	(!A1 * !B1 * C1 * D1 * !X)	0.00657	0.00659	0.00657
	(!A1 * !B1 * C1 * D1 * !X)	0.00232	0.00230	0.00231
	(!A1 * !B1 * !D1 * !X)	0.00648	0.00649	0.00648
	(!A1 * !B1 * !D1 * !X)	0.00226	0.00225	0.00225
	(!A1 * !B1 * !C1 * D1 * !X)	0.00647	0.00650	0.00648
	(!A1 * !B1 * !C1 * D1 * !X)	0.00226	0.00224	0.00225

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.01779	0.01784	0.01843
	(A1 * B1 * C1 * D1 * X)	0.01482	0.01482	0.01543
	(A1 * B1 * C1 * !D1 * !X)	0.01113	0.01114	0.01112
	(A1 * B1 * C1 * !D1 * !X)	0.00691	0.00689	0.00690
	(A1 * B1 * !C1 * D1 * !X)	0.01111	0.01112	0.01110
	(A1 * B1 * !C1 * D1 * !X)	0.00689	0.00686	0.00687
	(A1 * B1 * !C1 * !D1 * !X)	0.01105	0.01105	0.01105
	(A1 * B1 * !C1 * !D1 * !X)	0.00683	0.00682	0.00682
	(A1 * !B1 * C1 * D1 * !X)	0.01111	0.01112	0.01110
	(A1 * !B1 * C1 * D1 * !X)	0.00688	0.00686	0.00687
	(A1 * !B1 * !D1 * !X)	0.01105	0.01106	0.01105
	(A1 * !B1 * !D1 * !X)	0.00683	0.00682	0.00682
	(A1 * !B1 * !C1 * D1 * !X)	0.01105	0.01105	0.01104
	(A1 * !B1 * !C1 * D1 * !X)	0.00682	0.00681	0.00682
	(!A1 * B1 * C1 * !D1 * !X)	0.01108	0.01108	0.01108
	(!A1 * B1 * C1 * !D1 * !X)	0.00692	0.00691	0.00692
	(!A1 * B1 * !C1 * D1 * !X)	0.01108	0.01109	0.01108
	(!A1 * B1 * !C1 * D1 * !X)	0.00692	0.00691	0.00692
	(!A1 * B1 * !C1 * !D1 * !X)	0.01097	0.01099	0.01097
	(!A1 * B1 * !C1 * !D1 * !X)	0.00683	0.00682	0.00683
	(!A1 * !B1 * C1 * D1 * !X)	0.01110	0.01111	0.01110
	(!A1 * !B1 * C1 * D1 * !X)	0.00690	0.00689	0.00689
	(!A1 * !B1 * !D1 * !X)	0.01102	0.01103	0.01102
	(!A1 * !B1 * !D1 * !X)	0.00682	0.00682	0.00683
	(!A1 * !B1 * !C1 * D1 * !X)	0.01102	0.01103	0.01101
	(!A1 * !B1 * !C1 * D1 * !X)	0.00682	0.00681	0.00682

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.07301	0.07312	0.07402
	(A1 * B1 * C1 * D1 * X)	0.06664	0.06662	0.06759
	(A1 * B1 * C1 * !D1 * !X)	0.02227	0.02229	0.02224
	(A1 * B1 * C1 * !D1 * !X)	0.01337	0.01330	0.01333
	(A1 * B1 * !C1 * D1 * !X)	0.02229	0.02226	0.02221
	(A1 * B1 * !C1 * D1 * !X)	0.01330	0.01327	0.01330
	(A1 * B1 * !C1 * !D1 * !X)	0.02212	0.02215	0.02211
	(A1 * B1 * !C1 * !D1 * !X)	0.01322	0.01317	0.01320
	(A1 * !B1 * C1 * D1 * !X)	0.02224	0.02226	0.02221
	(A1 * !B1 * C1 * D1 * !X)	0.01334	0.01327	0.01330
	(A1 * !B1 * !D1 * !X)	0.02213	0.02216	0.02212
	(A1 * !B1 * !D1 * !X)	0.01323	0.01318	0.01320
	(A1 * !B1 * !C1 * D1 * !X)	0.02213	0.02216	0.02212
	(A1 * !B1 * !C1 * D1 * !X)	0.01323	0.01318	0.01320
	(!A1 * B1 * C1 * !D1 * !X)	0.02219	0.02223	0.02220
	(!A1 * B1 * C1 * !D1 * !X)	0.01339	0.01336	0.01338
	(!A1 * B1 * !C1 * D1 * !X)	0.02222	0.02223	0.02220
	(!A1 * B1 * !C1 * D1 * !X)	0.01336	0.01335	0.01336
	(!A1 * B1 * !C1 * !D1 * !X)	0.02201	0.02201	0.02200
	(!A1 * B1 * !C1 * !D1 * !X)	0.01321	0.01321	0.01322
	(!A1 * !B1 * C1 * D1 * !X)	0.02222	0.02227	0.02222
	(!A1 * !B1 * C1 * D1 * !X)	0.01334	0.01330	0.01332
	(!A1 * !B1 * !D1 * !X)	0.02206	0.02208	0.02206
	(!A1 * !B1 * !D1 * !X)	0.01323	0.01321	0.01322
	(!A1 * !B1 * !C1 * D1 * !X)	0.02206	0.02207	0.02206
	(!A1 * !B1 * !C1 * D1 * !X)	0.01323	0.01321	0.01322

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)**	0.03511	0.03500	0.03360
	(A1 * B1 * C1 * D1 * X)	0.03816	0.03805	0.03664
	(A1 * B1 * C1 * !D1 * !X)	0.00270	0.00267	0.00268
	(A1 * B1 * C1 * !D1 * !X)	0.00695	0.00697	0.00695
	(A1 * B1 * !C1 * D1 * !X)	0.00269	0.00265	0.00267
	(A1 * B1 * !C1 * D1 * !X)	0.00694	0.00695	0.00693
	(A1 * B1 * !C1 * !D1 * !X)	0.00259	0.00258	0.00258
	(A1 * B1 * !C1 * !D1 * !X)	0.00685	0.00685	0.00685
	(A1 * !B1 * C1 * D1 * !X)	0.00268	0.00264	0.00266
	(A1 * !B1 * C1 * D1 * !X)	0.00694	0.00695	0.00693
	(A1 * !B1 * !D1 * !X)	0.00258	0.00258	0.00258
	(A1 * !B1 * !D1 * !X)	0.00685	0.00685	0.00685
	(A1 * !B1 * !C1 * D1 * !X)	0.00259	0.00258	0.00258
	(A1 * !B1 * !C1 * D1 * !X)	0.00686	0.00685	0.00685
	(!A1 * B1 * C1 * !D1 * !X)	0.00303	0.00275	0.00273
	(!A1 * B1 * C1 * !D1 * !X)	0.00721	0.00702	0.00694
	(!A1 * B1 * !C1 * D1 * !X)	0.00297	0.00273	0.00270
	(!A1 * B1 * !C1 * D1 * !X)	0.00716	0.00700	0.00692
	(!A1 * B1 * !C1 * !D1 * !X)	0.00276	0.00264	0.00263
	(!A1 * B1 * !C1 * !D1 * !X)	0.00687	0.00687	0.00685
	(!A1 * !B1 * C1 * D1 * !X)	0.00290	0.00272	0.00269
	(!A1 * !B1 * C1 * D1 * !X)	0.00715	0.00700	0.00693
	(!A1 * !B1 * !D1 * !X)	0.00268	0.00262	0.00262
	(!A1 * !B1 * !D1 * !X)	0.00686	0.00686	0.00685
	(!A1 * !B1 * !C1 * D1 * !X)	0.00268	0.00261	0.00262
	(!A1 * !B1 * !C1 * D1 * !X)	0.00686	0.00686	0.00684

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.01662	0.01650	0.01506
	(A1 * B1 * C1 * D1 * X)	0.01963	0.01952	0.01807
	(A1 * B1 * C1 * !D1 * !X)	0.00724	0.00720	0.00722
	(A1 * B1 * C1 * !D1 * !X)	0.01146	0.01147	0.01145
	(A1 * B1 * !C1 * D1 * !X)	0.00723	0.00718	0.00720
	(A1 * B1 * !C1 * D1 * !X)	0.01144	0.01145	0.01143
	(A1 * B1 * !C1 * !D1 * !X)	0.00713	0.00711	0.00711
	(A1 * B1 * !C1 * !D1 * !X)	0.01134	0.01135	0.01134
	(A1 * !B1 * C1 * D1 * !X)	0.00722	0.00718	0.00720
	(A1 * !B1 * C1 * D1 * !X)	0.01144	0.01145	0.01143
	(A1 * !B1 * !D1 * !X)	0.00712	0.00711	0.00711
	(A1 * !B1 * !D1 * !X)	0.01134	0.01134	0.01134
	(A1 * !B1 * !C1 * D1 * !X)	0.00713	0.00711	0.00711
	(A1 * !B1 * !C1 * D1 * !X)	0.01134	0.01134	0.01134
	(!A1 * B1 * C1 * !D1 * !X)	0.00755	0.00727	0.00726
	(!A1 * B1 * C1 * !D1 * !X)	0.01169	0.01150	0.01144
	(!A1 * B1 * !C1 * D1 * !X)	0.00750	0.00725	0.00723
	(!A1 * B1 * !C1 * D1 * !X)	0.01165	0.01148	0.01142
	(!A1 * B1 * !C1 * !D1 * !X)	0.00728	0.00717	0.00716
	(!A1 * B1 * !C1 * !D1 * !X)	0.01135	0.01136	0.01134
	(!A1 * !B1 * C1 * D1 * !X)	0.00743	0.00724	0.00722
	(!A1 * !B1 * C1 * D1 * !X)	0.01163	0.01149	0.01143
	(!A1 * !B1 * !D1 * !X)	0.00721	0.00714	0.00714
	(!A1 * !B1 * !D1 * !X)	0.01134	0.01135	0.01134
	(!A1 * !B1 * !C1 * D1 * !X)	0.00721	0.00714	0.00714
	(!A1 * !B1 * !C1 * D1 * !X)	0.01134	0.01135	0.01133

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.06957	0.06932	0.06657
	(A1 * B1 * C1 * D1 * X)	0.07599	0.07581	0.07304
	(A1 * B1 * C1 * !D1 * !X)	0.01448	0.01438	0.01439
	(A1 * B1 * C1 * !D1 * !X)	0.02337	0.02332	0.02330
	(A1 * B1 * !C1 * D1 * !X)	0.01444	0.01433	0.01435
	(A1 * B1 * !C1 * D1 * !X)	0.02333	0.02329	0.02327
	(A1 * B1 * !C1 * !D1 * !X)	0.01420	0.01413	0.01415
	(A1 * B1 * !C1 * !D1 * !X)	0.02309	0.02310	0.02307
	(A1 * !B1 * C1 * D1 * !X)	0.01442	0.01432	0.01434
	(A1 * !B1 * C1 * D1 * !X)	0.02332	0.02328	0.02326
	(A1 * !B1 * !D1 * !X)	0.01419	0.01413	0.01415
	(A1 * !B1 * !D1 * !X)	0.02308	0.02310	0.02307
	(A1 * !B1 * !C1 * D1 * !X)	0.01419	0.01413	0.01415
	(A1 * !B1 * !C1 * D1 * !X)	0.02309	0.02310	0.02307
	(!A1 * B1 * C1 * !D1 * !X)	0.01516	0.01451	0.01446
	(!A1 * B1 * C1 * !D1 * !X)	0.02389	0.02343	0.02327
	(!A1 * B1 * !C1 * D1 * !X)	0.01504	0.01444	0.01442
	(!A1 * B1 * !C1 * D1 * !X)	0.02381	0.02338	0.02324
	(!A1 * B1 * !C1 * !D1 * !X)	0.01453	0.01427	0.01425
	(!A1 * B1 * !C1 * !D1 * !X)	0.02312	0.02310	0.02305
	(!A1 * !B1 * C1 * D1 * !X)	0.01486	0.01438	0.01439
	(!A1 * !B1 * C1 * D1 * !X)	0.02374	0.02336	0.02325
	(!A1 * !B1 * !D1 * !X)	0.01436	0.01419	0.01422
	(!A1 * !B1 * !D1 * !X)	0.02310	0.02310	0.02305
	(!A1 * !B1 * !C1 * D1 * !X)	0.01434	0.01419	0.01422
	(!A1 * !B1 * !C1 * D1 * !X)	0.02309	0.02310	0.02305

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)**	0.00652	0.00654	0.00652
	(A2 * C1 * !D1 * !X)	0.00262	0.00261	0.00262
	(A2 * !C1 * D1 * !X)	0.00651	0.00653	0.00651
	(A2 * !C1 * D1 * !X)	0.00263	0.00261	0.00261
	(A2 * !C1 * !D1 * !X)	0.00642	0.00644	0.00643
	(A2 * !C1 * !D1 * !X)	0.00255	0.00253	0.00254
	(A1 * !A2 * C1 * !D1 * !X)	0.00652	0.00653	0.00652
	(A1 * !A2 * C1 * !D1 * !X)	0.00262	0.00262	0.00262
	(A1 * !A2 * !C1 * D1 * !X)	0.00652	0.00652	0.00651
	(A1 * !A2 * !C1 * D1 * !X)	0.00261	0.00261	0.00261
	(A1 * !A2 * !C1 * !D1 * !X)	0.00642	0.00644	0.00643
	(A1 * !A2 * !C1 * !D1 * !X)	0.00255	0.00254	0.00254
	(!A1 * !A2 * C1 * D1 * !X)	0.00539	0.00541	0.00535
	(!A1 * !A2 * C1 * D1 * !X)	0.00258	0.00255	0.00257
	(!A1 * !A2 * C1 * !D1 * !X)	0.00551	0.00552	0.00551
	(!A1 * !A2 * C1 * !D1 * !X)	0.00253	0.00252	0.00253
	(!A1 * !A2 * !C1 * D1 * !X)	0.00556	0.00557	0.00556
	(!A1 * !A2 * !C1 * D1 * !X)	0.00255	0.00254	0.00254
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00558	0.00558	0.00557
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00253	0.00252	0.00253

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.01108	0.01110	0.01108
	(A2 * C1 * !D1 * !X)	0.00686	0.00686	0.00686
	(A2 * !C1 * D1 * !X)	0.01109	0.01111	0.01108
	(A2 * !C1 * D1 * !X)	0.00684	0.00683	0.00684
	(A2 * !C1 * !D1 * !X)	0.01099	0.01099	0.01099
	(A2 * !C1 * !D1 * !X)	0.00678	0.00678	0.00678
	(A1 * !A2 * C1 * !D1 * !X)	0.01108	0.01110	0.01108
	(A1 * !A2 * C1 * !D1 * !X)	0.00686	0.00685	0.00686
	(A1 * !A2 * !C1 * D1 * !X)	0.01108	0.01111	0.01108
	(A1 * !A2 * !C1 * D1 * !X)	0.00685	0.00683	0.00684
	(A1 * !A2 * !C1 * !D1 * !X)	0.01098	0.01099	0.01099
	(A1 * !A2 * !C1 * !D1 * !X)	0.00679	0.00678	0.00678
	(!A1 * !A2 * C1 * D1 * !X)	0.00995	0.00997	0.00992
	(!A1 * !A2 * C1 * D1 * !X)	0.00682	0.00680	0.00682
	(!A1 * !A2 * C1 * !D1 * !X)	0.01012	0.01013	0.01011
	(!A1 * !A2 * C1 * !D1 * !X)	0.00678	0.00676	0.00677
	(!A1 * !A2 * !C1 * D1 * !X)	0.01016	0.01015	0.01014
	(!A1 * !A2 * !C1 * D1 * !X)	0.00677	0.00678	0.00678
	(!A1 * !A2 * !C1 * !D1 * !X)	0.01016	0.01017	0.01015
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00678	0.00676	0.00677

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.02207	0.02209	0.02207
	(A2 * C1 * !D1 * !X)	0.01431	0.01431	0.01431
	(A2 * !C1 * D1 * !X)	0.02208	0.02214	0.02209
	(A2 * !C1 * D1 * !X)	0.01431	0.01429	0.01430
	(A2 * !C1 * !D1 * !X)	0.02188	0.02194	0.02190
	(A2 * !C1 * !D1 * !X)	0.01416	0.01413	0.01415
	(A1 * !A2 * C1 * !D1 * !X)	0.02206	0.02207	0.02206
	(A1 * !A2 * C1 * !D1 * !X)	0.01431	0.01431	0.01431
	(A1 * !A2 * !C1 * D1 * !X)	0.02207	0.02212	0.02208
	(A1 * !A2 * !C1 * D1 * !X)	0.01431	0.01428	0.01429
	(A1 * !A2 * !C1 * !D1 * !X)	0.02189	0.02194	0.02190
	(A1 * !A2 * !C1 * !D1 * !X)	0.01416	0.01413	0.01415
	(!A1 * !A2 * C1 * D1 * !X)	0.01975	0.01978	0.01971
	(!A1 * !A2 * C1 * D1 * !X)	0.01424	0.01422	0.01425
	(!A1 * !A2 * C1 * !D1 * !X)	0.02010	0.02011	0.02009
	(!A1 * !A2 * C1 * !D1 * !X)	0.01411	0.01409	0.01412
	(!A1 * !A2 * !C1 * D1 * !X)	0.02010	0.02011	0.02008
	(!A1 * !A2 * !C1 * D1 * !X)	0.01412	0.01411	0.01414
	(!A1 * !A2 * !C1 * !D1 * !X)	0.02013	0.02015	0.02011
	(!A1 * !A2 * !C1 * !D1 * !X)	0.01412	0.01410	0.01413

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)**	0.00309	0.00279	0.00279
	(A2 * C1 * !D1 * !X)	0.00698	0.00674	0.00666
	(A2 * !C1 * D1 * !X)	0.00295	0.00274	0.00276
	(A2 * !C1 * D1 * !X)	0.00687	0.00671	0.00664
	(A2 * !C1 * !D1 * !X)	0.00279	0.00267	0.00269
	(A2 * !C1 * !D1 * !X)	0.00664	0.00660	0.00657
	(A1 * !A2 * C1 * !D1 * !X)	0.00315	0.00275	0.00279
	(A1 * !A2 * C1 * !D1 * !X)	0.00704	0.00672	0.00666
	(A1 * !A2 * !C1 * D1 * !X)	0.00298	0.00273	0.00276
	(A1 * !A2 * !C1 * D1 * !X)	0.00691	0.00670	0.00664
	(A1 * !A2 * !C1 * !D1 * !X)	0.00280	0.00267	0.00269
	(A1 * !A2 * !C1 * !D1 * !X)	0.00667	0.00660	0.00657
	(!A1 * !A2 * C1 * D1 * !X)	0.00398	0.00398	0.00396
	(!A1 * !A2 * C1 * D1 * !X)	0.00682	0.00684	0.00671
	(!A1 * !A2 * C1 * !D1 * !X)	0.00358	0.00360	0.00359
	(!A1 * !A2 * C1 * !D1 * !X)	0.00678	0.00681	0.00666
	(!A1 * !A2 * !C1 * D1 * !X)	0.00357	0.00354	0.00352
	(!A1 * !A2 * !C1 * D1 * !X)	0.00675	0.00672	0.00659
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00346	0.00344	0.00348
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00666	0.00665	0.00659

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00760	0.00729	0.00728
	(A2 * C1 * !D1 * !X)	0.01181	0.01157	0.01149
	(A2 * !C1 * D1 * !X)	0.00745	0.00725	0.00725
	(A2 * !C1 * D1 * !X)	0.01171	0.01154	0.01147
	(A2 * !C1 * !D1 * !X)	0.00726	0.00716	0.00718
	(A2 * !C1 * !D1 * !X)	0.01146	0.01142	0.01139
	(A1 * !A2 * C1 * !D1 * !X)	0.00766	0.00726	0.00728
	(A1 * !A2 * C1 * !D1 * !X)	0.01189	0.01155	0.01149
	(A1 * !A2 * !C1 * D1 * !X)	0.00749	0.00723	0.00726
	(A1 * !A2 * !C1 * D1 * !X)	0.01174	0.01153	0.01147
	(A1 * !A2 * !C1 * !D1 * !X)	0.00728	0.00716	0.00718
	(A1 * !A2 * !C1 * !D1 * !X)	0.01147	0.01142	0.01139
	(!A1 * !A2 * C1 * D1 * !X)	0.00848	0.00848	0.00846
	(!A1 * !A2 * C1 * D1 * !X)	0.01166	0.01165	0.01154
	(!A1 * !A2 * C1 * !D1 * !X)	0.00804	0.00807	0.00805
	(!A1 * !A2 * C1 * !D1 * !X)	0.01161	0.01165	0.01149
	(!A1 * !A2 * !C1 * D1 * !X)	0.00805	0.00802	0.00800
	(!A1 * !A2 * !C1 * D1 * !X)	0.01157	0.01155	0.01142
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00794	0.00791	0.00796
	(!A1 * !A2 * !C1 * !D1 * !X)	0.01148	0.01148	0.01142

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.01527	0.01455	0.01459
	(A2 * C1 * !D1 * !X)	0.02302	0.02245	0.02233
	(A2 * !C1 * D1 * !X)	0.01499	0.01450	0.01455
	(A2 * !C1 * D1 * !X)	0.02282	0.02242	0.02231
	(A2 * !C1 * !D1 * !X)	0.01458	0.01435	0.01439
	(A2 * !C1 * !D1 * !X)	0.02224	0.02219	0.02213
	(A1 * !A2 * C1 * !D1 * !X)	0.01542	0.01457	0.01459
	(A1 * !A2 * C1 * !D1 * !X)	0.02316	0.02239	0.02233
	(A1 * !A2 * !C1 * D1 * !X)	0.01509	0.01454	0.01455
	(A1 * !A2 * !C1 * D1 * !X)	0.02290	0.02238	0.02231
	(A1 * !A2 * !C1 * !D1 * !X)	0.01461	0.01438	0.01439
	(A1 * !A2 * !C1 * !D1 * !X)	0.02229	0.02213	0.02213
	(!A1 * !A2 * C1 * D1 * !X)	0.01710	0.01707	0.01702
	(!A1 * !A2 * C1 * D1 * !X)	0.02268	0.02274	0.02245
	(!A1 * !A2 * C1 * !D1 * !X)	0.01615	0.01623	0.01620
	(!A1 * !A2 * C1 * !D1 * !X)	0.02255	0.02270	0.02237
	(!A1 * !A2 * !C1 * D1 * !X)	0.01626	0.01621	0.01619
	(!A1 * !A2 * !C1 * D1 * !X)	0.02255	0.02250	0.02225
	(!A1 * !A2 * !C1 * !D1 * !X)	0.01604	0.01599	0.01609
	(!A1 * !A2 * !C1 * !D1 * !X)	0.02236	0.02236	0.02222

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)**	0.00655	0.00655	0.00653
	(A2 * B1 * !D1 * !X)	0.00250	0.00250	0.00249
	(A2 * !B1 * D1 * !X)	0.00526	0.00527	0.00524
	(A2 * !B1 * D1 * !X)	0.00239	0.00238	0.00240
	(A2 * !B1 * !D1 * !X)	0.00542	0.00543	0.00541
	(A2 * !B1 * !D1 * !X)	0.00241	0.00240	0.00241
	(A1 * !A2 * B1 * !D1 * !X)	0.00654	0.00655	0.00653
	(A1 * !A2 * B1 * !D1 * !X)	0.00251	0.00250	0.00249
	(!A2 * !B1 * D1 * !X)	0.00526	0.00527	0.00524
	(!A2 * !B1 * D1 * !X)	0.00239	0.00238	0.00240
	(!A2 * !B1 * !D1 * !X)	0.00542	0.00543	0.00541
	(!A2 * !B1 * !D1 * !X)	0.00241	0.00240	0.00241
	(!A1 * !A2 * B1 * D1 * !X)	0.00534	0.00535	0.00530
	(!A1 * !A2 * B1 * D1 * !X)	0.00244	0.00242	0.00240
	(!A1 * !A2 * B1 * !D1 * !X)	0.00551	0.00553	0.00552
	(!A1 * !A2 * B1 * !D1 * !X)	0.00242	0.00241	0.00242

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.01106	0.01109	0.01106
	(A2 * B1 * !D1 * !X)	0.00679	0.00677	0.00677
	(A2 * !B1 * D1 * !X)	0.00982	0.00983	0.00981
	(A2 * !B1 * D1 * !X)	0.00667	0.00666	0.00668
	(A2 * !B1 * !D1 * !X)	0.01004	0.01005	0.01003
	(A2 * !B1 * !D1 * !X)	0.00669	0.00668	0.00669
	(A1 * !A2 * B1 * !D1 * !X)	0.01106	0.01108	0.01106
	(A1 * !A2 * B1 * !D1 * !X)	0.00679	0.00677	0.00677
	(!A2 * !B1 * D1 * !X)	0.00982	0.00983	0.00981
	(!A2 * !B1 * D1 * !X)	0.00667	0.00666	0.00668
	(!A2 * !B1 * !D1 * !X)	0.01004	0.01005	0.01003
	(!A2 * !B1 * !D1 * !X)	0.00669	0.00668	0.00669
	(!A1 * !A2 * B1 * D1 * !X)	0.00988	0.00989	0.00985
	(!A1 * !A2 * B1 * D1 * !X)	0.00671	0.00670	0.00668
	(!A1 * !A2 * B1 * !D1 * !X)	0.01010	0.01011	0.01010
	(!A1 * !A2 * B1 * !D1 * !X)	0.00670	0.00668	0.00670

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.02218	0.02221	0.02218
	(A2 * B1 * !D1 * !X)	0.01423	0.01421	0.01420
	(A2 * !B1 * D1 * !X)	0.01967	0.01968	0.01967
	(A2 * !B1 * D1 * !X)	0.01399	0.01398	0.01403
	(A2 * !B1 * !D1 * !X)	0.02016	0.02016	0.02015
	(A2 * !B1 * !D1 * !X)	0.01402	0.01401	0.01402
	(A1 * !A2 * B1 * !D1 * !X)	0.02218	0.02224	0.02218
	(A1 * !A2 * B1 * !D1 * !X)	0.01423	0.01419	0.01420
	(!A2 * !B1 * D1 * !X)	0.01967	0.01968	0.01967
	(!A2 * !B1 * D1 * !X)	0.01399	0.01398	0.01403
	(!A2 * !B1 * !D1 * !X)	0.02016	0.02016	0.02015
	(!A2 * !B1 * !D1 * !X)	0.01402	0.01401	0.01402
	(!A1 * !A2 * B1 * D1 * !X)	0.01968	0.01971	0.01967
	(!A1 * !A2 * B1 * D1 * !X)	0.01405	0.01404	0.01402
	(!A1 * !A2 * B1 * !D1 * !X)	0.02016	0.02018	0.02017
	(!A1 * !A2 * B1 * !D1 * !X)	0.01404	0.01402	0.01403

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)**	0.00300	0.00273	0.00277
	(A2 * B1 * !D1 * !X)	0.00705	0.00683	0.00679
	(A2 * !B1 * D1 * !X)	0.00394	0.00394	0.00393
	(A2 * !B1 * D1 * !X)	0.00682	0.00682	0.00675
	(A2 * !B1 * !D1 * !X)	0.00368	0.00368	0.00366
	(A2 * !B1 * !D1 * !X)	0.00681	0.00681	0.00671
	(A1 * !A2 * B1 * !D1 * !X)	0.00302	0.00275	0.00278
	(A1 * !A2 * B1 * !D1 * !X)	0.00708	0.00681	0.00679
	(!A2 * !B1 * D1 * !X)	0.00394	0.00393	0.00393
	(!A2 * !B1 * D1 * !X)	0.00682	0.00684	0.00675
	(!A2 * !B1 * !D1 * !X)	0.00368	0.00368	0.00366
	(!A2 * !B1 * !D1 * !X)	0.00680	0.00681	0.00671
	(!A1 * !A2 * B1 * D1 * !X)	0.00401	0.00401	0.00400
	(!A1 * !A2 * B1 * D1 * !X)	0.00690	0.00690	0.00682
	(!A1 * !A2 * B1 * !D1 * !X)	0.00364	0.00358	0.00360
	(!A1 * !A2 * B1 * !D1 * !X)	0.00699	0.00693	0.00682

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00757	0.00727	0.00731
	(A2 * B1 * !D1 * !X)	0.01187	0.01162	0.01157
	(A2 * !B1 * D1 * !X)	0.00844	0.00844	0.00843
	(A2 * !B1 * D1 * !X)	0.01161	0.01163	0.01153
	(A2 * !B1 * !D1 * !X)	0.00812	0.00812	0.00810
	(A2 * !B1 * !D1 * !X)	0.01159	0.01161	0.01150
	(A1 * !A2 * B1 * !D1 * !X)	0.00760	0.00729	0.00731
	(A1 * !A2 * B1 * !D1 * !X)	0.01189	0.01159	0.01157
	(!A2 * !B1 * D1 * !X)	0.00844	0.00844	0.00843
	(!A2 * !B1 * D1 * !X)	0.01161	0.01162	0.01153
	(!A2 * !B1 * !D1 * !X)	0.00813	0.00812	0.00810
	(!A2 * !B1 * !D1 * !X)	0.01159	0.01161	0.01149
	(!A1 * !A2 * B1 * D1 * !X)	0.00853	0.00853	0.00851
	(!A1 * !A2 * B1 * D1 * !X)	0.01167	0.01168	0.01161
	(!A1 * !A2 * B1 * !D1 * !X)	0.00814	0.00808	0.00808
	(!A1 * !A2 * B1 * !D1 * !X)	0.01178	0.01172	0.01161

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.01527	0.01449	0.01450
	(A2 * B1 * !D1 * !X)	0.02325	0.02253	0.02244
	(A2 * !B1 * D1 * !X)	0.01683	0.01684	0.01677
	(A2 * !B1 * D1 * !X)	0.02254	0.02252	0.02237
	(A2 * !B1 * !D1 * !X)	0.01613	0.01613	0.01607
	(A2 * !B1 * !D1 * !X)	0.02251	0.02256	0.02232
	(A1 * !A2 * B1 * !D1 * !X)	0.01532	0.01454	0.01450
	(A1 * !A2 * B1 * !D1 * !X)	0.02330	0.02258	0.02244
	(!A2 * !B1 * D1 * !X)	0.01683	0.01684	0.01677
	(!A2 * !B1 * D1 * !X)	0.02253	0.02252	0.02237
	(!A2 * !B1 * !D1 * !X)	0.01612	0.01613	0.01607
	(!A2 * !B1 * !D1 * !X)	0.02251	0.02256	0.02232
	(!A1 * !A2 * B1 * D1 * !X)	0.01706	0.01706	0.01700
	(!A1 * !A2 * B1 * D1 * !X)	0.02268	0.02269	0.02253
	(!A1 * !A2 * B1 * !D1 * !X)	0.01633	0.01616	0.01616
	(!A1 * !A2 * B1 * !D1 * !X)	0.02294	0.02279	0.02253

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00520	0.00520	0.00515
	(A2 * !C1 * !X)	0.00207	0.00205	0.00200
	(A2 * !B1 * C1 * !X)	0.00520	0.00520	0.00514
	(A2 * !B1 * C1 * !X)	0.00214	0.00212	0.00200
	(!A2 * !C1 * !X)	0.00520	0.00520	0.00515
	(!A2 * !C1 * !X)	0.00207	0.00205	0.00200
	(!A2 * !B1 * C1 * !X)	0.00520	0.00520	0.00514
	(!A2 * !B1 * C1 * !X)	0.00214	0.00212	0.00200
	(!A1 * !A2 * B1 * C1 * !X)	0.00535	0.00535	0.00523
	(!A1 * !A2 * B1 * C1 * !X)	0.00236	0.00235	0.00207

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00976	0.00976	0.00970
	(A2 * !C1 * !X)	0.00630	0.00628	0.00621
	(A2 * !B1 * C1 * !X)	0.00975	0.00975	0.00968
	(A2 * !B1 * C1 * !X)	0.00637	0.00635	0.00621
	(!A2 * !C1 * !X)	0.00976	0.00976	0.00970
	(!A2 * !C1 * !X)	0.00630	0.00628	0.00621
	(!A2 * !B1 * C1 * !X)	0.00975	0.00975	0.00968
	(!A2 * !B1 * C1 * !X)	0.00637	0.00635	0.00621
	(!A1 * !A2 * B1 * C1 * !X)	0.00990	0.00990	0.00975
	(!A1 * !A2 * B1 * C1 * !X)	0.00659	0.00659	0.00628
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.01956	0.01956	0.01942
	(A2 * !C1 * !X)	0.01354	0.01352	0.01330
	(A2 * !B1 * C1 * !X)	0.01952	0.01952	0.01934
	(A2 * !B1 * C1 * !X)	0.01371	0.01368	0.01332
	(!A2 * !C1 * !X)	0.01956	0.01956	0.01942
	(!A2 * !C1 * !X)	0.01354	0.01352	0.01330
	(!A2 * !B1 * C1 * !X)	0.01951	0.01952	0.01934
	(!A2 * !B1 * C1 * !X)	0.01370	0.01368	0.01332
	(!A1 * !A2 * B1 * C1 * !X)	0.01976	0.01978	0.01945
	(!A1 * !A2 * B1 * C1 * !X)	0.01413	0.01411	0.01346

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00400	0.00399	0.00401
	(A2 * !C1 * !X)	0.00713	0.00717	0.00713
	(A2 * !B1 * C1 * !X)	0.00404	0.00403	0.00404
	(A2 * !B1 * C1 * !X)	0.00712	0.00716	0.00713
	(!A2 * !C1 * !X)	0.00400	0.00399	0.00401
	(!A2 * !C1 * !X)	0.00712	0.00717	0.00713
	(!A2 * !B1 * C1 * !X)	0.00403	0.00403	0.00404
	(!A2 * !B1 * C1 * !X)	0.00712	0.00716	0.00713
	(!A1 * !A2 * B1 * C1 * !X)	0.00406	0.00406	0.00407
	(!A1 * !A2 * B1 * C1 * !X)	0.00713	0.00715	0.00714
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00851	0.00851	0.00852
	(A2 * !C1 * !X)	0.01198	0.01200	0.01198
	(A2 * !B1 * C1 * !X)	0.00856	0.00856	0.00857
	(A2 * !B1 * C1 * !X)	0.01197	0.01199	0.01198
	(!A2 * !C1 * !X)	0.00851	0.00851	0.00852
	(!A2 * !C1 * !X)	0.01197	0.01200	0.01198
	(!A2 * !B1 * C1 * !X)	0.00856	0.00856	0.00857
	(!A2 * !B1 * C1 * !X)	0.01197	0.01198	0.01198
	(!A1 * !A2 * B1 * C1 * !X)	0.00860	0.00860	0.00861
	(!A1 * !A2 * B1 * C1 * !X)	0.01198	0.01201	0.01200
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.01696	0.01694	0.01698
	(A2 * !C1 * !X)	0.02304	0.02311	0.02304
	(A2 * !B1 * C1 * !X)	0.01709	0.01708	0.01710
	(A2 * !B1 * C1 * !X)	0.02301	0.02302	0.02303
	(!A2 * !C1 * !X)	0.01696	0.01694	0.01698
	(!A2 * !C1 * !X)	0.02304	0.02310	0.02304
	(!A2 * !B1 * C1 * !X)	0.01709	0.01708	0.01710
	(!A2 * !B1 * C1 * !X)	0.02301	0.02302	0.02303
	(!A1 * !A2 * B1 * C1 * !X)	0.01721	0.01719	0.01723
	(!A1 * !A2 * B1 * C1 * !X)	0.02304	0.02312	0.02307

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00281	0.00290	0.00295	0.00287	0.90950
sky130_fd_sc_hs__o211ai_2	0.00549	0.00557	0.00556	0.00541	1.58683
sky130_fd_sc_hs__o211ai_4	0.01083	0.01099	0.00791	0.00810	2.70340

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	255.08000	1551.24000
sky130_fd_sc_hs__o211ai_2	0.00000	509.50600	3096.99000
sky130_fd_sc_hs__o211ai_4	0.00000	630.12800	4119.18000

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)	0.06764	0.64550	8.11972
	A2->Y (FR)	0.05963	0.68746	8.82533
	B1->Y (FR)	0.02954	0.48082	6.30658
	C1->Y (FR)	0.02436	0.47277	6.26231
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.06560	0.55290	7.98536
	A2->Y (FR)	0.05357	0.59439	8.70785
	B1->Y (FR)	0.02444	0.38651	5.76188
	C1->Y (FR)	0.01821	0.37208	5.64165
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.06405	0.45458	7.40746
	A2->Y (FR)	0.05268	0.50989	8.32819
	B1->Y (FR)	0.03559	0.49766	8.30429
	C1->Y (FR)	0.02358	0.47353	8.09656

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.04862	0.40688	4.97245
	A2->Y (RF)	0.03968	0.38697	4.79259
	B1->Y (RF)	0.04432	0.46912	5.91762
	C1->Y (RF)	0.03768	0.50043	6.44043
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.04682	0.31902	4.60886
	A2->Y (RF)	0.03642	0.30519	4.55063
	B1->Y (RF)	0.04296	0.40440	5.90025
	C1->Y (RF)	0.03371	0.43484	6.44878
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.04758	0.26450	4.52785
	A2->Y (RF)	0.03407	0.23716	4.25380
	B1->Y (RF)	0.03971	0.31845	5.44513
	C1->Y (RF)	0.03119	0.36923	6.35161

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00260	0.00927	0.11993
	A1	0.01309	0.01962	0.12850
	A2	0.00265	0.01052	0.12814
	A2	0.01156	0.01929	0.13510
	B1	0.00093	0.01143	0.16096
	B1	0.00815	0.01857	0.16691
	C1	0.00019	0.01039	0.15278
	C1	0.00593	0.01608	0.15748
sky130_fd_sc_hs__o211ai_2	A1	0.00365	0.01735	0.22554
	A1	0.02485	0.03833	0.24223
	A2	0.00366	0.01945	0.23218
	A2	0.02153	0.03700	0.24522
	B1	0.00118	0.02285	0.30556
	B1	0.01553	0.03703	0.31764
	C1	-0.00135	0.02016	0.28978
	C1	0.00985	0.03127	0.29887
sky130_fd_sc_hs__o211ai_4	A1	0.00704	0.03540	0.42109
	A1	0.04862	0.07671	0.45728
	A2	0.00707	0.03867	0.42677
	A2	0.04209	0.07340	0.45455
	B1	0.00149	0.02883	0.35313
	B1	0.02412	0.05141	0.37226
	C1	-0.00254	0.02483	0.33523
	C1	0.01431	0.04163	0.34868

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.04011	0.04462	0.12925
	A1	0.02962	0.03411	0.11881
	A2	0.04030	0.04462	0.12021
	A2	0.03138	0.03564	0.11131
	B1	0.02884	0.03478	0.12955
	B1	0.02161	0.02748	0.12200
	C1	0.02833	0.03475	0.12725
	C1	0.02259	0.02896	0.12086
sky130_fd_sc_hs__o211ai_2	A1	0.08030	0.09071	0.26004
	A1	0.05909	0.06947	0.23886
	A2	0.08072	0.09082	0.23782
	A2	0.06284	0.07289	0.22005
	B1	0.05684	0.07019	0.25338
	B1	0.04248	0.05574	0.23903
	C1	0.05549	0.07009	0.24840
	C1	0.04429	0.05889	0.23721
sky130_fd_sc_hs__o211ai_4	A1	0.11730	0.14093	0.48215
	A1	0.07571	0.09927	0.43805
	A2	0.11576	0.13893	0.43464
	A2	0.08068	0.10389	0.39949
	B1	0.10839	0.12414	0.30590
	B1	0.08610	0.10175	0.28232
	C1	0.10720	0.12352	0.28898
	C1	0.09074	0.10695	0.27166

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)**	0.01228	0.01205	0.01505
	(A2 * B1 * C1 * !Y)	0.00762	0.00739	0.01040
	(A2 * B1 * !C1 * Y)	0.00218	0.00218	0.00218
	(A2 * B1 * !C1 * Y)	-0.00242	-0.00242	-0.00242
	(A2 * !B1 * Y)	0.00216	0.00218	0.00216
	(A2 * !B1 * Y)	-0.00243	-0.00245	-0.00243
	(!A2 * B1 * !C1 * Y)	0.00215	0.00215	0.00214
	(!A2 * B1 * !C1 * Y)	-0.00242	-0.00242	-0.00241
	(!A2 * !B1 * C1 * Y)	0.00215	0.00218	0.00215
	(!A2 * !B1 * C1 * Y)	-0.00241	-0.00243	-0.00242
	(!A2 * !B1 * !C1 * Y)	0.00205	0.00208	0.00206
	(!A2 * !B1 * !C1 * Y)	-0.00250	-0.00252	-0.00250
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.02503	0.02429	0.03006
	(A2 * B1 * C1 * !Y)	0.01564	0.01485	0.02071
	(A2 * B1 * !C1 * Y)	0.00425	0.00427	0.00426
	(A2 * B1 * !C1 * Y)	-0.00496	-0.00498	-0.00496
	(A2 * !B1 * Y)	0.00422	0.00425	0.00423
	(A2 * !B1 * Y)	-0.00499	-0.00501	-0.00499
	(!A2 * B1 * !C1 * Y)	0.00423	0.00424	0.00421
	(!A2 * B1 * !C1 * Y)	-0.00498	-0.00498	-0.00497
	(!A2 * !B1 * C1 * Y)	0.00422	0.00426	0.00422
	(!A2 * !B1 * C1 * Y)	-0.00496	-0.00498	-0.00497
	(!A2 * !B1 * !C1 * Y)	0.00402	0.00405	0.00402
	(!A2 * !B1 * !C1 * Y)	-0.00515	-0.00516	-0.00514

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.03159	0.03026	0.04187
	(A2 * B1 * C1 * !Y)	0.01305	0.01166	0.02342
	(A2 * B1 * !C1 * Y)	0.00834	0.00841	0.00836
	(A2 * B1 * !C1 * Y)	-0.00984	-0.00988	-0.00984
	(A2 * !B1 * Y)	0.00828	0.00837	0.00829
	(A2 * !B1 * Y)	-0.00991	-0.00995	-0.00990
	(!A2 * B1 * !C1 * Y)	0.00825	0.00825	0.00823
	(!A2 * B1 * !C1 * Y)	-0.00988	-0.00986	-0.00984
	(!A2 * !B1 * C1 * Y)	0.00826	0.00836	0.00827
	(!A2 * !B1 * C1 * Y)	-0.00983	-0.00990	-0.00985
	(!A2 * !B1 * !C1 * Y)	0.00780	0.00782	0.00783
	(!A2 * !B1 * !C1 * Y)	-0.01016	-0.01018	-0.01018

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)**	0.01140	0.01129	0.01068
	(A2 * B1 * C1 * !Y)	0.01606	0.01600	0.01535
	(A2 * B1 * !C1 * Y)	-0.00196	-0.00197	-0.00197
	(A2 * B1 * !C1 * Y)	0.00262	0.00264	0.00263
	(A2 * !B1 * Y)	-0.00198	-0.00199	-0.00198
	(A2 * !B1 * Y)	0.00261	0.00262	0.00261
	(!A2 * B1 * !C1 * Y)	-0.00163	-0.00189	-0.00192
	(!A2 * B1 * !C1 * Y)	0.00292	0.00273	0.00264
	(!A2 * !B1 * C1 * Y)	-0.00173	-0.00191	-0.00194
	(!A2 * !B1 * C1 * Y)	0.00287	0.00271	0.00262
	(!A2 * !B1 * !C1 * Y)	-0.00195	-0.00202	-0.00201
	(!A2 * !B1 * !C1 * Y)	0.00259	0.00257	0.00254

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.02285	0.02265	0.02135
	(A2 * B1 * C1 * !Y)	0.03226	0.03207	0.03076
	(A2 * B1 * !C1 * Y)	-0.00383	-0.00387	-0.00384
	(A2 * B1 * !C1 * Y)	0.00537	0.00544	0.00539
	(A2 * !B1 * Y)	-0.00386	-0.00390	-0.00387
	(A2 * !B1 * Y)	0.00533	0.00541	0.00535
	(!A2 * B1 * !C1 * Y)	-0.00326	-0.00371	-0.00375
	(!A2 * B1 * !C1 * Y)	0.00588	0.00557	0.00540
	(!A2 * !B1 * C1 * Y)	-0.00343	-0.00378	-0.00379
	(!A2 * !B1 * C1 * Y)	0.00580	0.00553	0.00537
	(!A2 * !B1 * !C1 * Y)	-0.00384	-0.00396	-0.00394
	(!A2 * !B1 * !C1 * Y)	0.00528	0.00527	0.00521
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.02781	0.02735	0.02481
	(A2 * B1 * C1 * !Y)	0.04630	0.04601	0.04337
	(A2 * B1 * !C1 * Y)	-0.00751	-0.00753	-0.00753
	(A2 * B1 * !C1 * Y)	0.01065	0.01068	0.01069
	(A2 * !B1 * Y)	-0.00757	-0.00759	-0.00760
	(A2 * !B1 * Y)	0.01058	0.01061	0.01062
	(!A2 * B1 * !C1 * Y)	-0.00617	-0.00732	-0.00732
	(!A2 * B1 * !C1 * Y)	0.01194	0.01104	0.01072
	(!A2 * !B1 * C1 * Y)	-0.00653	-0.00748	-0.00741
	(!A2 * !B1 * C1 * Y)	0.01169	0.01094	0.01066
	(!A2 * !B1 * !C1 * Y)	-0.00744	-0.00779	-0.00770
	(!A2 * !B1 * !C1 * Y)	0.01052	0.01048	0.01034

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)**	0.01131	0.01136	0.01195
	(A1 * B1 * C1 * !Y)	0.00818	0.00818	0.00880
	(A1 * B1 * !C1 * Y)	0.00212	0.00214	0.00213
	(A1 * B1 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(A1 * !B1 * C1 * Y)	0.00211	0.00213	0.00211
	(A1 * !B1 * C1 * Y)	-0.00245	-0.00246	-0.00245
	(A1 * !B1 * !C1 * Y)	0.00203	0.00205	0.00204
	(A1 * !B1 * !C1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * B1 * !C1 * Y)	0.00210	0.00212	0.00210
	(!A1 * B1 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(!A1 * !B1 * C1 * Y)	0.00210	0.00213	0.00210
	(!A1 * !B1 * C1 * Y)	-0.00243	-0.00245	-0.00244
	(!A1 * !B1 * !C1 * Y)	0.00200	0.00201	0.00201
	(!A1 * !B1 * !C1 * Y)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.02283	0.02291	0.02362
	(A1 * B1 * C1 * !Y)	0.01656	0.01657	0.01736
	(A1 * B1 * !C1 * Y)	0.00429	0.00431	0.00427
	(A1 * B1 * !C1 * Y)	-0.00493	-0.00494	-0.00491
	(A1 * !B1 * C1 * Y)	0.00426	0.00428	0.00424
	(A1 * !B1 * C1 * Y)	-0.00496	-0.00497	-0.00494
	(A1 * !B1 * !C1 * Y)	0.00412	0.00413	0.00409
	(A1 * !B1 * !C1 * Y)	-0.00511	-0.00511	-0.00508
	(!A1 * B1 * !C1 * Y)	0.00420	0.00422	0.00420
	(!A1 * B1 * !C1 * Y)	-0.00490	-0.00492	-0.00491
	(!A1 * !B1 * C1 * Y)	0.00422	0.00425	0.00422
	(!A1 * !B1 * C1 * Y)	-0.00491	-0.00493	-0.00493
	(!A1 * !B1 * !C1 * Y)	0.00401	0.00404	0.00402
	(!A1 * !B1 * !C1 * Y)	-0.00508	-0.00510	-0.00508

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.02720	0.02744	0.02910
	(A1 * B1 * C1 * !Y)	0.01494	0.01490	0.01672
	(A1 * B1 * !C1 * Y)	0.00840	0.00845	0.00836
	(A1 * B1 * !C1 * Y)	-0.00993	-0.00994	-0.00987
	(A1 * !B1 * C1 * Y)	0.00833	0.00839	0.00829
	(A1 * !B1 * C1 * Y)	-0.00999	-0.01001	-0.00994
	(A1 * !B1 * !C1 * Y)	0.00804	0.00809	0.00800
	(A1 * !B1 * !C1 * Y)	-0.01028	-0.01029	-0.01022
	(!A1 * B1 * !C1 * Y)	0.00823	0.00830	0.00824
	(!A1 * B1 * !C1 * Y)	-0.00986	-0.00992	-0.00988
	(!A1 * !B1 * C1 * Y)	0.00825	0.00832	0.00826
	(!A1 * !B1 * C1 * Y)	-0.00982	-0.00988	-0.00986
	(!A1 * !B1 * !C1 * Y)	0.00787	0.00787	0.00785
	(!A1 * !B1 * !C1 * Y)	-0.01025	-0.01024	-0.01022

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)**	0.01003	0.00993	0.00859
	(A1 * B1 * C1 * !Y)	0.01321	0.01309	0.01175
	(A1 * B1 * !C1 * Y)	-0.00191	-0.00193	-0.00192
	(A1 * B1 * !C1 * Y)	0.00264	0.00266	0.00265
	(A1 * !B1 * C1 * Y)	-0.00193	-0.00194	-0.00193
	(A1 * !B1 * C1 * Y)	0.00262	0.00264	0.00263
	(A1 * !B1 * !C1 * Y)	-0.00200	-0.00201	-0.00201
	(A1 * !B1 * !C1 * Y)	0.00255	0.00257	0.00256
	(!A1 * B1 * !C1 * Y)	-0.00158	-0.00184	-0.00187
	(!A1 * B1 * !C1 * Y)	0.00294	0.00274	0.00266
	(!A1 * !B1 * C1 * Y)	-0.00168	-0.00186	-0.00189
	(!A1 * !B1 * C1 * Y)	0.00289	0.00273	0.00264
	(!A1 * !B1 * !C1 * Y)	-0.00190	-0.00197	-0.00196
	(!A1 * !B1 * !C1 * Y)	0.00260	0.00259	0.00256
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.02026	0.02004	0.01744
	(A1 * B1 * C1 * !Y)	0.02658	0.02640	0.02378
	(A1 * B1 * !C1 * Y)	-0.00386	-0.00387	-0.00386
	(A1 * B1 * !C1 * Y)	0.00532	0.00536	0.00533
	(A1 * !B1 * C1 * Y)	-0.00389	-0.00391	-0.00389
	(A1 * !B1 * C1 * Y)	0.00529	0.00533	0.00530
	(A1 * !B1 * !C1 * Y)	-0.00401	-0.00405	-0.00403
	(A1 * !B1 * !C1 * Y)	0.00512	0.00519	0.00515
	(!A1 * B1 * !C1 * Y)	-0.00322	-0.00372	-0.00375
	(!A1 * B1 * !C1 * Y)	0.00587	0.00550	0.00535
	(!A1 * !B1 * C1 * Y)	-0.00340	-0.00377	-0.00380
	(!A1 * !B1 * C1 * Y)	0.00579	0.00544	0.00532
	(!A1 * !B1 * !C1 * Y)	-0.00384	-0.00395	-0.00394
	(!A1 * !B1 * !C1 * Y)	0.00523	0.00518	0.00516

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.02257	0.02212	0.01687
	(A1 * B1 * C1 * !Y)	0.03505	0.03469	0.02939
	(A1 * B1 * !C1 * Y)	-0.00752	-0.00757	-0.00752
	(A1 * B1 * !C1 * Y)	0.01069	0.01079	0.01071
	(A1 * !B1 * C1 * Y)	-0.00759	-0.00764	-0.00759
	(A1 * !B1 * C1 * Y)	0.01064	0.01072	0.01064
	(A1 * !B1 * !C1 * Y)	-0.00784	-0.00791	-0.00788
	(A1 * !B1 * !C1 * Y)	0.01029	0.01040	0.01036
	(!A1 * B1 * !C1 * Y)	-0.00608	-0.00730	-0.00731
	(!A1 * B1 * !C1 * Y)	0.01200	0.01107	0.01075
	(!A1 * !B1 * C1 * Y)	-0.00652	-0.00747	-0.00741
	(!A1 * !B1 * C1 * Y)	0.01172	0.01096	0.01069
	(!A1 * !B1 * !C1 * Y)	-0.00743	-0.00775	-0.00770
	(!A1 * !B1 * !C1 * Y)	0.01055	0.01049	0.01037

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00206	0.00207	0.00206
	(A2 * !C1 * Y)	-0.00255	-0.00256	-0.00256
	(A1 * !A2 * !C1 * Y)	0.00206	0.00208	0.00206
	(A1 * !A2 * !C1 * Y)	-0.00254	-0.00257	-0.00256
	(!A1 * !A2 * C1 * Y)	0.00089	0.00090	0.00086
	(!A1 * !A2 * C1 * Y)	-0.00264	-0.00266	-0.00265
	(!A1 * !A2 * !C1 * Y)	0.00111	0.00112	0.00110
	(!A1 * !A2 * !C1 * Y)	-0.00264	-0.00267	-0.00264
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00412	0.00415	0.00412
	(A2 * !C1 * Y)	-0.00499	-0.00501	-0.00502
	(A1 * !A2 * !C1 * Y)	0.00412	0.00414	0.00412
	(A1 * !A2 * !C1 * Y)	-0.00499	-0.00501	-0.00502
	(!A1 * !A2 * C1 * Y)	0.00163	0.00165	0.00162
	(!A1 * !A2 * C1 * Y)	-0.00518	-0.00522	-0.00518
	(!A1 * !A2 * !C1 * Y)	0.00212	0.00215	0.00211
	(!A1 * !A2 * !C1 * Y)	-0.00521	-0.00525	-0.00521
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00817	0.00822	0.00816
	(A2 * !C1 * Y)	-0.00480	-0.00483	-0.00485
	(A1 * !A2 * !C1 * Y)	0.00817	0.00823	0.00816
	(A1 * !A2 * !C1 * Y)	-0.00480	-0.00483	-0.00485
	(!A1 * !A2 * C1 * Y)	0.00321	0.00324	0.00316
	(!A1 * !A2 * C1 * Y)	-0.00517	-0.00521	-0.00518
	(!A1 * !A2 * !C1 * Y)	0.00409	0.00411	0.00406
	(!A1 * !A2 * !C1 * Y)	-0.00521	-0.00524	-0.00521

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00161	-0.00184	-0.00182
	(A2 * !C1 * Y)	0.00304	0.00284	0.00278
	(A1 * !A2 * !C1 * Y)	-0.00156	-0.00185	-0.00182
	(A1 * !A2 * !C1 * Y)	0.00307	0.00283	0.00278
	(!A1 * !A2 * C1 * Y)	-0.00061	-0.00062	-0.00063
	(!A1 * !A2 * C1 * Y)	0.00290	0.00292	0.00282
	(!A1 * !A2 * !C1 * Y)	-0.00101	-0.00104	-0.00106
	(!A1 * !A2 * !C1 * Y)	0.00288	0.00288	0.00275
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00302	-0.00369	-0.00365
	(A2 * !C1 * Y)	0.00613	0.00557	0.00545
	(A1 * !A2 * !C1 * Y)	-0.00292	-0.00366	-0.00365
	(A1 * !A2 * !C1 * Y)	0.00622	0.00551	0.00545
	(!A1 * !A2 * C1 * Y)	-0.00113	-0.00114	-0.00119
	(!A1 * !A2 * C1 * Y)	0.00574	0.00577	0.00553
	(!A1 * !A2 * !C1 * Y)	-0.00197	-0.00199	-0.00204
	(!A1 * !A2 * !C1 * Y)	0.00569	0.00567	0.00540
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00614	-0.00734	-0.00722
	(A2 * !C1 * Y)	0.00692	0.00585	0.00570
	(A1 * !A2 * !C1 * Y)	-0.00587	-0.00724	-0.00722
	(A1 * !A2 * !C1 * Y)	0.00716	0.00587	0.00571
	(!A1 * !A2 * C1 * Y)	-0.00218	-0.00221	-0.00228
	(!A1 * !A2 * C1 * Y)	0.00617	0.00622	0.00585
	(!A1 * !A2 * !C1 * Y)	-0.00382	-0.00386	-0.00392
	(!A1 * !A2 * !C1 * Y)	0.00613	0.00606	0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00069	0.00070	0.00064
	(A2 * !B1 * Y)	-0.00286	-0.00290	-0.00296
	(!A2 * !B1 * Y)	0.00069	0.00070	0.00064
	(!A2 * !B1 * Y)	-0.00286	-0.00290	-0.00296
	(!A1 * !A2 * B1 * Y)	0.00081	0.00081	0.00070
	(!A1 * !A2 * B1 * Y)	-0.00266	-0.00268	-0.00290
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00148	0.00149	0.00134
	(A2 * !B1 * Y)	-0.00556	-0.00562	-0.00580
	(!A2 * !B1 * Y)	0.00148	0.00149	0.00134
	(!A2 * !B1 * Y)	-0.00556	-0.00562	-0.00580
	(!A1 * !A2 * B1 * Y)	0.00162	0.00162	0.00139
	(!A1 * !A2 * B1 * Y)	-0.00517	-0.00520	-0.00566
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00280	0.00281	0.00256
	(A2 * !B1 * Y)	-0.00629	-0.00635	-0.00672
	(!A2 * !B1 * Y)	0.00280	0.00282	0.00256
	(!A2 * !B1 * Y)	-0.00630	-0.00637	-0.00672
	(!A1 * !A2 * B1 * Y)	0.00311	0.00311	0.00267
	(!A1 * !A2 * B1 * Y)	-0.00547	-0.00552	-0.00643

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00055	-0.00056	-0.00054
	(A2 * !B1 * Y)	0.00302	0.00308	0.00303
	(!A2 * !B1 * Y)	-0.00055	-0.00056	-0.00054
	(!A2 * !B1 * Y)	0.00302	0.00308	0.00303
	(!A1 * !A2 * B1 * Y)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * B1 * Y)	0.00302	0.00304	0.00304
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00115	-0.00118	-0.00114
	(A2 * !B1 * Y)	0.00590	0.00603	0.00594
	(!A2 * !B1 * Y)	-0.00116	-0.00118	-0.00114
	(!A2 * !B1 * Y)	0.00592	0.00603	0.00594
	(!A1 * !A2 * B1 * Y)	-0.00097	-0.00098	-0.00095
	(!A1 * !A2 * B1 * Y)	0.00591	0.00597	0.00594
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00220	-0.00219	-0.00217
	(A2 * !B1 * Y)	0.00693	0.00692	0.00697
	(!A2 * !B1 * Y)	-0.00219	-0.00224	-0.00217
	(!A2 * !B1 * Y)	0.00692	0.00707	0.00697
	(!A1 * !A2 * B1 * Y)	-0.00185	-0.00182	-0.00179
	(!A1 * !A2 * B1 * Y)	0.00696	0.00693	0.00697

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00271	0.00289	0.00266	0.00261	1.74751
sky130_fd_sc_hs__o211a_2	0.00287	0.00284	0.00283	0.00275	3.35280
sky130_fd_sc_hs__o211a_4	0.00521	0.00494	0.00509	0.00449	6.05149

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	715.32500	1773.04000
sky130_fd_sc_hs__o211a_2	0.00000	1136.12000	1784.03000
sky130_fd_sc_hs__o211a_4	0.00000	2817.58000	6431.09000

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)	0.08589	0.44813	5.82507
	A2->X (RR)	0.07371	0.42355	5.53712
	B1->X (RR)	0.08038	0.49552	6.57089
	C1->X (RR)	0.07412	0.50603	6.76575
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.08891	0.37070	5.59585
	A2->X (RR)	0.07469	0.34548	5.30312
	B1->X (RR)	0.08425	0.42347	6.39238
	C1->X (RR)	0.07781	0.43511	6.57341
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.09195	0.32546	5.80714
	A2->X (RR)	0.08119	0.30181	5.59220
	B1->X (RR)	0.07619	0.35640	6.45642
	C1->X (RR)	0.06779	0.35599	6.51933

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.09735	0.48939	5.94795
	A2->X (FF)	0.08952	0.51660	6.22529
	B1->X (FF)	0.05082	0.41983	5.47587
	C1->X (FF)	0.04616	0.39998	5.27710
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.11173	0.46930	6.01058
	A2->X (FF)	0.10265	0.50028	6.28617
	B1->X (FF)	0.05876	0.40042	5.57767
	C1->X (FF)	0.05373	0.38062	5.37900
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.10715	0.41766	5.77439
	A2->X (FF)	0.09525	0.43918	6.02119
	B1->X (FF)	0.06043	0.35057	5.30101
	C1->X (FF)	0.05994	0.35250	5.35001

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.05644	0.06797	0.29760
	A1	0.04649	0.05800	0.28732
	A2	0.06070	0.07248	0.29391
	A2	0.05179	0.06357	0.28500
	B1	0.05912	0.07508	0.34979
	B1	0.05228	0.06822	0.34292
	C1	0.05801	0.07481	0.34758
	C1	0.05240	0.06917	0.34163
sky130_fd_sc_hs__o211a_2	A1	0.06264	0.07291	0.29742
	A1	0.05219	0.06253	0.28697
	A2	0.06550	0.07643	0.29295
	A2	0.05656	0.06753	0.28354
	B1	0.06446	0.07994	0.36113
	B1	0.05720	0.07276	0.35407
	C1	0.06320	0.07959	0.35699
	C1	0.05731	0.07378	0.35114
sky130_fd_sc_hs__o211a_4	A1	0.19786	0.22061	0.69939
	A1	0.17888	0.20159	0.68050
	A2	0.20428	0.22708	0.68229
	A2	0.18861	0.21150	0.66612
	B1	0.17379	0.20559	0.73965
	B1	0.16105	0.19283	0.72676
	C1	0.20102	0.23156	0.73943
	C1	0.19186	0.22239	0.72921

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01829	0.02996	0.27494
	A1	0.02824	0.03990	0.28343
	A2	0.01787	0.03046	0.26874
	A2	0.02678	0.03935	0.27633
	B1	0.01496	0.03356	0.32367
	B1	0.02188	0.04048	0.33062
	C1	0.01434	0.03274	0.31933
	C1	0.02003	0.03840	0.32467
sky130_fd_sc_hs__o211a_2	A1	0.03569	0.04267	0.28239
	A1	0.04614	0.05305	0.29175
	A2	0.03589	0.04408	0.27763
	A2	0.04485	0.05297	0.28395
	B1	0.02932	0.04615	0.33356
	B1	0.03668	0.05342	0.34096
	C1	0.02827	0.04488	0.32773
	C1	0.03424	0.05081	0.33253
sky130_fd_sc_hs__o211a_4	A1	0.07012	0.08747	0.58375
	A1	0.08911	0.10643	0.59968
	A2	0.07077	0.09017	0.57316
	A2	0.08645	0.10556	0.58310
	B1	0.05700	0.09232	0.67186
	B1	0.06973	0.10503	0.68470
	C1	0.05807	0.09019	0.64230
	C1	0.06738	0.09949	0.64919

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)**	0.01348	0.01335	0.01673
	(A2 * B1 * C1 * X)	0.00909	0.00891	0.01235
	(A2 * B1 * !C1 * !X)	0.00650	0.00653	0.00651
	(A2 * B1 * !C1 * !X)	0.00218	0.00217	0.00219
	(A2 * !B1 * !X)	0.00646	0.00649	0.00647
	(A2 * !B1 * !X)	0.00214	0.00213	0.00215
	(!A2 * B1 * !C1 * !X)	0.00649	0.00651	0.00648
	(!A2 * B1 * !C1 * !X)	0.00218	0.00217	0.00217
	(!A2 * !B1 * C1 * !X)	0.00646	0.00648	0.00646
	(!A2 * !B1 * C1 * !X)	0.00216	0.00213	0.00214
	(!A2 * !B1 * !C1 * !X)	0.00631	0.00632	0.00630
	(!A2 * !B1 * !C1 * !X)	0.00200	0.00200	0.00201
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.01382	0.01368	0.01705
	(A2 * B1 * C1 * X)	0.00927	0.00907	0.01251
	(A2 * B1 * !C1 * !X)	0.01109	0.01109	0.01110
	(A2 * B1 * !C1 * !X)	0.00661	0.00662	0.00662
	(A2 * !B1 * !X)	0.01107	0.01108	0.01108
	(A2 * !B1 * !X)	0.00659	0.00660	0.00660
	(!A2 * B1 * !C1 * !X)	0.01106	0.01107	0.01106
	(!A2 * B1 * !C1 * !X)	0.00661	0.00660	0.00661
	(!A2 * !B1 * C1 * !X)	0.01106	0.01109	0.01106
	(!A2 * !B1 * C1 * !X)	0.00661	0.00658	0.00660
	(!A2 * !B1 * !C1 * !X)	0.01097	0.01100	0.01097
	(!A2 * !B1 * !C1 * !X)	0.00653	0.00650	0.00652

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.05236	0.05208	0.05864
	(A2 * B1 * C1 * X)	0.04362	0.04326	0.04991
	(A2 * B1 * !C1 * !X)	0.02238	0.02244	0.02241
	(A2 * B1 * !C1 * !X)	0.01381	0.01379	0.01381
	(A2 * !B1 * !X)	0.02230	0.02237	0.02233
	(A2 * !B1 * !X)	0.01374	0.01371	0.01374
	(!A2 * B1 * !C1 * !X)	0.02236	0.02240	0.02236
	(!A2 * B1 * !C1 * !X)	0.01379	0.01377	0.01376
	(!A2 * !B1 * C1 * !X)	0.02231	0.02236	0.02230
	(!A2 * !B1 * C1 * !X)	0.01374	0.01371	0.01371
	(!A2 * !B1 * !C1 * !X)	0.02198	0.02203	0.02200
	(!A2 * !B1 * !C1 * !X)	0.01347	0.01344	0.01346

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)**	0.01338	0.01326	0.01247
	(A2 * B1 * C1 * X)	0.01779	0.01770	0.01688
	(A2 * B1 * !C1 * !X)	0.00293	0.00293	0.00294
	(A2 * B1 * !C1 * !X)	0.00726	0.00726	0.00726
	(A2 * !B1 * !X)	0.00290	0.00290	0.00290
	(A2 * !B1 * !X)	0.00722	0.00722	0.00722
	(!A2 * B1 * !C1 * !X)	0.00324	0.00297	0.00298
	(!A2 * B1 * !C1 * !X)	0.00756	0.00734	0.00728
	(!A2 * !B1 * C1 * !X)	0.00316	0.00294	0.00293
	(!A2 * !B1 * C1 * !X)	0.00748	0.00732	0.00723
	(!A2 * !B1 * !C1 * !X)	0.00289	0.00281	0.00280
	(!A2 * !B1 * !C1 * !X)	0.00714	0.00713	0.00710

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.01326	0.01313	0.01234
	(A2 * B1 * C1 * X)	0.01781	0.01772	0.01690
	(A2 * B1 * !C1 * !X)	0.00724	0.00722	0.00724
	(A2 * B1 * !C1 * !X)	0.01172	0.01175	0.01172
	(A2 * !B1 * !X)	0.00722	0.00721	0.00722
	(A2 * !B1 * !X)	0.01171	0.01173	0.01170
	(!A2 * B1 * !C1 * !X)	0.00755	0.00731	0.00729
	(!A2 * B1 * !C1 * !X)	0.01200	0.01182	0.01174
	(!A2 * !B1 * C1 * !X)	0.00747	0.00729	0.00727
	(!A2 * !B1 * C1 * !X)	0.01195	0.01180	0.01172
	(!A2 * !B1 * !C1 * !X)	0.00726	0.00719	0.00719
	(!A2 * !B1 * !C1 * !X)	0.01169	0.01167	0.01164
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.05192	0.05167	0.05014
	(A2 * B1 * C1 * X)	0.06069	0.06050	0.05892
	(A2 * B1 * !C1 * !X)	0.01456	0.01455	0.01455
	(A2 * B1 * !C1 * !X)	0.02313	0.02314	0.02315
	(A2 * !B1 * !X)	0.01449	0.01448	0.01448
	(A2 * !B1 * !X)	0.02306	0.02307	0.02308
	(!A2 * B1 * !C1 * !X)	0.01509	0.01459	0.01465
	(!A2 * B1 * !C1 * !X)	0.02370	0.02329	0.02320
	(!A2 * !B1 * C1 * !X)	0.01494	0.01455	0.01456
	(!A2 * !B1 * C1 * !X)	0.02355	0.02324	0.02311
	(!A2 * !B1 * !C1 * !X)	0.01444	0.01429	0.01429
	(!A2 * !B1 * !C1 * !X)	0.02290	0.02287	0.02283

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)**	0.01298	0.01301	0.01363
	(A1 * B1 * C1 * X)	0.00961	0.00962	0.01023
	(A1 * B1 * !C1 * !X)	0.00701	0.00703	0.00700
	(A1 * B1 * !C1 * !X)	0.00238	0.00236	0.00237
	(A1 * !B1 * C1 * !X)	0.00698	0.00699	0.00697
	(A1 * !B1 * C1 * !X)	0.00234	0.00232	0.00234
	(A1 * !B1 * !C1 * !X)	0.00685	0.00686	0.00684
	(A1 * !B1 * !C1 * !X)	0.00222	0.00220	0.00221
	(!A1 * B1 * !C1 * !X)	0.00702	0.00703	0.00700
	(!A1 * B1 * !C1 * !X)	0.00238	0.00237	0.00237
	(!A1 * !B1 * C1 * !X)	0.00697	0.00698	0.00697
	(!A1 * !B1 * C1 * !X)	0.00236	0.00235	0.00234
	(!A1 * !B1 * !C1 * !X)	0.00680	0.00683	0.00681
	(!A1 * !B1 * !C1 * !X)	0.00222	0.00220	0.00222
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.01276	0.01283	0.01340
	(A1 * B1 * C1 * X)	0.00971	0.00970	0.01030
	(A1 * B1 * !C1 * !X)	0.01104	0.01106	0.01103
	(A1 * B1 * !C1 * !X)	0.00672	0.00669	0.00671
	(A1 * !B1 * C1 * !X)	0.01103	0.01104	0.01102
	(A1 * !B1 * C1 * !X)	0.00671	0.00668	0.00669
	(A1 * !B1 * !C1 * !X)	0.01096	0.01097	0.01096
	(A1 * !B1 * !C1 * !X)	0.00664	0.00663	0.00663
	(!A1 * B1 * !C1 * !X)	0.01103	0.01104	0.01103
	(!A1 * B1 * !C1 * !X)	0.00673	0.00672	0.00672
	(!A1 * !B1 * C1 * !X)	0.01103	0.01106	0.01103
	(!A1 * !B1 * C1 * !X)	0.00673	0.00670	0.00672
	(!A1 * !B1 * !C1 * !X)	0.01093	0.01095	0.01094
	(!A1 * !B1 * !C1 * !X)	0.00665	0.00663	0.00664

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.05011	0.05018	0.05118
	(A1 * B1 * C1 * X)	0.04456	0.04457	0.04563
	(A1 * B1 * !C1 * !X)	0.02179	0.02180	0.02176
	(A1 * B1 * !C1 * !X)	0.01374	0.01367	0.01370
	(A1 * !B1 * C1 * !X)	0.02173	0.02175	0.02171
	(A1 * !B1 * C1 * !X)	0.01368	0.01362	0.01365
	(A1 * !B1 * !C1 * !X)	0.02148	0.02150	0.02147
	(A1 * !B1 * !C1 * !X)	0.01342	0.01339	0.01341
	(!A1 * B1 * !C1 * !X)	0.02182	0.02185	0.02179
	(!A1 * B1 * !C1 * !X)	0.01375	0.01372	0.01372
	(!A1 * !B1 * C1 * !X)	0.02176	0.02177	0.02174
	(!A1 * !B1 * C1 * !X)	0.01371	0.01368	0.01367
	(!A1 * !B1 * !C1 * !X)	0.02143	0.02146	0.02144
	(!A1 * !B1 * !C1 * !X)	0.01345	0.01341	0.01343

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)**	0.01105	0.01092	0.00948
	(A1 * B1 * C1 * X)	0.01445	0.01434	0.01288
	(A1 * B1 * !C1 * !X)	0.00245	0.00242	0.00244
	(A1 * B1 * !C1 * !X)	0.00708	0.00709	0.00707
	(A1 * !B1 * C1 * !X)	0.00240	0.00238	0.00240
	(A1 * !B1 * C1 * !X)	0.00704	0.00705	0.00703
	(A1 * !B1 * !C1 * !X)	0.00226	0.00224	0.00226
	(A1 * !B1 * !C1 * !X)	0.00689	0.00691	0.00689
	(!A1 * B1 * !C1 * !X)	0.00276	0.00243	0.00247
	(!A1 * B1 * !C1 * !X)	0.00740	0.00713	0.00708
	(!A1 * !B1 * C1 * !X)	0.00265	0.00240	0.00243
	(!A1 * !B1 * C1 * !X)	0.00731	0.00710	0.00703
	(!A1 * !B1 * !C1 * !X)	0.00237	0.00228	0.00230
	(!A1 * !B1 * !C1 * !X)	0.00695	0.00693	0.00690
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.01144	0.01133	0.00988
	(A1 * B1 * C1 * X)	0.01457	0.01445	0.01299
	(A1 * B1 * !C1 * !X)	0.00733	0.00729	0.00730
	(A1 * B1 * !C1 * !X)	0.01165	0.01165	0.01163
	(A1 * !B1 * C1 * !X)	0.00731	0.00727	0.00728
	(A1 * !B1 * C1 * !X)	0.01163	0.01163	0.01161
	(A1 * !B1 * !C1 * !X)	0.00720	0.00718	0.00719
	(A1 * !B1 * !C1 * !X)	0.01153	0.01155	0.01152
	(!A1 * B1 * !C1 * !X)	0.00760	0.00734	0.00733
	(!A1 * B1 * !C1 * !X)	0.01189	0.01170	0.01162
	(!A1 * !B1 * C1 * !X)	0.00751	0.00732	0.00730
	(!A1 * !B1 * C1 * !X)	0.01184	0.01168	0.01160
	(!A1 * !B1 * !C1 * !X)	0.00729	0.00722	0.00722
	(!A1 * !B1 * !C1 * !X)	0.01157	0.01155	0.01152

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.04865	0.04843	0.04559
	(A1 * B1 * C1 * X)	0.05426	0.05403	0.05118
	(A1 * B1 * !C1 * !X)	0.01528	0.01519	0.01520
	(A1 * B1 * !C1 * !X)	0.02332	0.02327	0.02326
	(A1 * !B1 * C1 * !X)	0.01516	0.01508	0.01510
	(A1 * !B1 * C1 * !X)	0.02321	0.02321	0.02317
	(A1 * !B1 * !C1 * !X)	0.01484	0.01478	0.01480
	(A1 * !B1 * !C1 * !X)	0.02288	0.02291	0.02287
	(!A1 * B1 * !C1 * !X)	0.01568	0.01517	0.01522
	(!A1 * B1 * !C1 * !X)	0.02377	0.02334	0.02323
	(!A1 * !B1 * C1 * !X)	0.01552	0.01513	0.01512
	(!A1 * !B1 * C1 * !X)	0.02365	0.02331	0.02314
	(!A1 * !B1 * !C1 * !X)	0.01500	0.01485	0.01485
	(!A1 * !B1 * !C1 * !X)	0.02297	0.02291	0.02286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00635	0.00637	0.00633
	(A2 * !C1 * !X)	0.00213	0.00210	0.00209
	(A1 * !A2 * !C1 * !X)	0.00636	0.00637	0.00633
	(A1 * !A2 * !C1 * !X)	0.00211	0.00210	0.00209
	(!A1 * !A2 * C1 * !X)	0.00538	0.00538	0.00528
	(!A1 * !A2 * C1 * !X)	0.00200	0.00197	0.00191
	(!A1 * !A2 * !C1 * !X)	0.00547	0.00547	0.00546
	(!A1 * !A2 * !C1 * !X)	0.00191	0.00190	0.00191
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.01103	0.01105	0.01102
	(A2 * !C1 * !X)	0.00670	0.00668	0.00668
	(A1 * !A2 * !C1 * !X)	0.01104	0.01104	0.01102
	(A1 * !A2 * !C1 * !X)	0.00669	0.00668	0.00668
	(!A1 * !A2 * C1 * !X)	0.00988	0.00988	0.00983
	(!A1 * !A2 * C1 * !X)	0.00656	0.00655	0.00656
	(!A1 * !A2 * !C1 * !X)	0.01006	0.01007	0.01006
	(!A1 * !A2 * !C1 * !X)	0.00657	0.00655	0.00656
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.02251	0.02252	0.02247
	(A2 * !C1 * !X)	0.01425	0.01424	0.01420
	(A1 * !A2 * !C1 * !X)	0.02250	0.02251	0.02247
	(A1 * !A2 * !C1 * !X)	0.01426	0.01425	0.01420
	(!A1 * !A2 * C1 * !X)	0.02042	0.02044	0.02028
	(!A1 * !A2 * C1 * !X)	0.01400	0.01397	0.01388
	(!A1 * !A2 * !C1 * !X)	0.02060	0.02063	0.02058
	(!A1 * !A2 * !C1 * !X)	0.01387	0.01384	0.01387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00324	0.00305	0.00313
	(A2 * !C1 * !X)	0.00750	0.00734	0.00734
	(A1 * !A2 * !C1 * !X)	0.00328	0.00304	0.00313
	(A1 * !A2 * !C1 * !X)	0.00752	0.00733	0.00734
	(!A1 * !A2 * C1 * !X)	0.00415	0.00414	0.00414
	(!A1 * !A2 * C1 * !X)	0.00748	0.00750	0.00743
	(!A1 * !A2 * !C1 * !X)	0.00373	0.00368	0.00368
	(!A1 * !A2 * !C1 * !X)	0.00742	0.00740	0.00731
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00754	0.00731	0.00734
	(A2 * !C1 * !X)	0.01187	0.01171	0.01166
	(A1 * !A2 * !C1 * !X)	0.00757	0.00730	0.00734
	(A1 * !A2 * !C1 * !X)	0.01193	0.01170	0.01166
	(!A1 * !A2 * C1 * !X)	0.00854	0.00854	0.00853
	(!A1 * !A2 * C1 * !X)	0.01182	0.01183	0.01175
	(!A1 * !A2 * !C1 * !X)	0.00815	0.00811	0.00810
	(!A1 * !A2 * !C1 * !X)	0.01181	0.01178	0.01167
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.01476	0.01442	0.01453
	(A2 * !C1 * !X)	0.02302	0.02274	0.02274
	(A1 * !A2 * !C1 * !X)	0.01480	0.01442	0.01453
	(A1 * !A2 * !C1 * !X)	0.02306	0.02274	0.02274
	(!A1 * !A2 * C1 * !X)	0.01663	0.01662	0.01662
	(!A1 * !A2 * C1 * !X)	0.02295	0.02298	0.02286
	(!A1 * !A2 * !C1 * !X)	0.01584	0.01577	0.01575
	(!A1 * !A2 * !C1 * !X)	0.02280	0.02278	0.02259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00518	0.00517	0.00511
	(A2 * !B1 * !X)	0.00185	0.00183	0.00176
	(!A2 * !B1 * !X)	0.00518	0.00517	0.00511
	(!A2 * !B1 * !X)	0.00185	0.00183	0.00176
	(!A1 * !A2 * B1 * !X)	0.00537	0.00537	0.00524
	(!A1 * !A2 * B1 * !X)	0.00212	0.00211	0.00188
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00975	0.00975	0.00970
	(A2 * !B1 * !X)	0.00641	0.00639	0.00633
	(!A2 * !B1 * !X)	0.00975	0.00975	0.00970
	(!A2 * !B1 * !X)	0.00640	0.00639	0.00633
	(!A1 * !A2 * B1 * !X)	0.00990	0.00989	0.00978
	(!A1 * !A2 * B1 * !X)	0.00660	0.00660	0.00638
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.01931	0.01929	0.01915
	(A2 * !B1 * !X)	0.01373	0.01372	0.01356
	(!A2 * !B1 * !X)	0.01930	0.01929	0.01915
	(!A2 * !B1 * !X)	0.01374	0.01371	0.01356
	(!A1 * !A2 * B1 * !X)	0.01963	0.01964	0.01937
	(!A1 * !A2 * B1 * !X)	0.01430	0.01428	0.01381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00411	0.00410	0.00412
	(A2 * !B1 * !X)	0.00741	0.00746	0.00743
	(!A2 * !B1 * !X)	0.00411	0.00410	0.00412
	(!A2 * !B1 * !X)	0.00741	0.00744	0.00743
	(!A1 * !A2 * B1 * !X)	0.00419	0.00418	0.00420
	(!A1 * !A2 * B1 * !X)	0.00743	0.00746	0.00745
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00852	0.00851	0.00852
	(A2 * !B1 * !X)	0.01185	0.01188	0.01187
	(!A2 * !B1 * !X)	0.00852	0.00851	0.00852
	(!A2 * !B1 * !X)	0.01185	0.01188	0.01187
	(!A1 * !A2 * B1 * !X)	0.00855	0.00856	0.00858
	(!A1 * !A2 * B1 * !X)	0.01190	0.01190	0.01190
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.01736	0.01734	0.01739
	(A2 * !B1 * !X)	0.02288	0.02292	0.02290
	(!A2 * !B1 * !X)	0.01735	0.01734	0.01739
	(!A2 * !B1 * !X)	0.02288	0.02292	0.02290
	(!A1 * !A2 * B1 * !X)	0.01754	0.01753	0.01757
	(!A1 * !A2 * B1 * !X)	0.02288	0.02290	0.02292

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00294	0.00300	0.00292	0.92301
sky130_fd_sc_hs__o21ai_2	0.00596	0.00548	0.00540	1.59820
sky130_fd_sc_hs__o21ai_4	0.01063	0.01084	0.00802	2.55887

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	311.49100	1035.44000
sky130_fd_sc_hs__o21ai_2	0.00000	621.75200	2065.72000
sky130_fd_sc_hs__o21ai_4	0.00000	852.47500	3082.72000

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)	0.05466	0.63995	8.25378
	A2->Y (FR)	0.04627	0.68271	8.96146
	B1->Y (FR)	0.02082	0.46749	6.27228
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.04962	0.53074	7.87246
	A2->Y (FR)	0.03834	0.56704	8.49838
	B1->Y (FR)	0.01622	0.38862	5.93790
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.05051	0.44192	7.29681
	A2->Y (FR)	0.03943	0.50624	8.34465
	B1->Y (FR)	0.02257	0.51694	8.73431

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03312	0.35671	4.48893
	A2->Y (RF)	0.02658	0.34109	4.35816
	B1->Y (RF)	0.02816	0.42094	5.46735
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02709	0.26782	3.97724
	A2->Y (RF)	0.02229	0.26071	3.98899
	B1->Y (RF)	0.01651	0.32962	5.10790
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02700	0.20562	3.52203
	A2->Y (RF)	0.02110	0.19094	3.44568
	B1->Y (RF)	0.01326	0.23184	4.30156

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00129	0.00849	0.12475
	A1	0.01056	0.01772	0.13304
	A2	0.00138	0.01005	0.13484
	A2	0.00898	0.01760	0.14144
	B1	-0.00025	0.01157	0.17575
	B1	0.00570	0.01756	0.18152
sky130_fd_sc_hs__o21ai_2	A1	0.00190	0.01835	0.25787
	A1	0.01972	0.03613	0.27434
	A2	0.00194	0.02030	0.25877
	A2	0.01613	0.03436	0.27049
	B1	-0.00182	0.02337	0.34091
	B1	0.00889	0.03409	0.35130
sky130_fd_sc_hs__o21ai_4	A1	0.00318	0.03825	0.50859
	A1	0.03788	0.07290	0.54129
	A2	0.00283	0.03898	0.47994
	A2	0.03126	0.06723	0.50695
	B1	-0.00316	0.02923	0.40448
	B1	0.01291	0.04526	0.42024

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.02575	0.03138	0.12613
	A1	0.01647	0.02210	0.11607
	A2	0.02589	0.03131	0.11597
	A2	0.01828	0.02365	0.10803
	B1	0.01576	0.02424	0.14102
	B1	0.00982	0.01824	0.13493
sky130_fd_sc_hs__o21ai_2	A1	0.04838	0.06125	0.24960
	A1	0.03055	0.04333	0.23136
	A2	0.04926	0.06187	0.23044
	A2	0.03505	0.04762	0.21464
	B1	0.02908	0.04813	0.28074
	B1	0.01836	0.03737	0.26934
sky130_fd_sc_hs__o21ai_4	A1	0.07616	0.10620	0.50180
	A1	0.04149	0.07137	0.46651
	A2	0.07602	0.10409	0.43975
	A2	0.04762	0.07556	0.41032
	B1	0.03592	0.05990	0.31912
	B1	0.01985	0.04381	0.30259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00799	0.00775	0.01077
	(A2 * B1 * !Y)	0.00314	0.00292	0.00594
	(A2 * !B1 * Y)	0.00222	0.00222	0.00221
	(A2 * !B1 * Y)	-0.00256	-0.00256	-0.00256
	(!A2 * !B1 * Y)	0.00220	0.00221	0.00220
	(!A2 * !B1 * Y)	-0.00255	-0.00256	-0.00256
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.01590	0.01531	0.02123
	(A2 * B1 * !Y)	0.00642	0.00582	0.01179
	(A2 * !B1 * Y)	0.00423	0.00424	0.00424
	(A2 * !B1 * Y)	-0.00509	-0.00509	-0.00509
	(!A2 * !B1 * Y)	0.00421	0.00426	0.00421
	(!A2 * !B1 * Y)	-0.00508	-0.00512	-0.00510
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.02225	0.02105	0.03268
	(A2 * B1 * !Y)	0.00398	0.00271	0.01449
	(A2 * !B1 * Y)	0.00820	0.00829	0.00822
	(A2 * !B1 * Y)	-0.00973	-0.00977	-0.00972
	(!A2 * !B1 * Y)	0.00818	0.00829	0.00817
	(!A2 * !B1 * Y)	-0.00972	-0.00980	-0.00976

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00670	0.00659	0.00598
	(A2 * B1 * !Y)	0.01154	0.01148	0.01083
	(A2 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(A2 * !B1 * Y)	0.00276	0.00279	0.00277
	(!A2 * !B1 * Y)	-0.00173	-0.00194	-0.00196
	(!A2 * !B1 * Y)	0.00304	0.00288	0.00278
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.01367	0.01343	0.01219
	(A2 * B1 * !Y)	0.02312	0.02299	0.02167
	(A2 * !B1 * Y)	-0.00382	-0.00383	-0.00382
	(A2 * !B1 * Y)	0.00551	0.00552	0.00551
	(!A2 * !B1 * Y)	-0.00328	-0.00375	-0.00374
	(!A2 * !B1 * Y)	0.00608	0.00568	0.00554
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.01895	0.01851	0.01596
	(A2 * B1 * !Y)	0.03720	0.03688	0.03426
	(A2 * !B1 * Y)	-0.00737	-0.00744	-0.00739
	(A2 * !B1 * Y)	0.01053	0.01068	0.01057
	(!A2 * !B1 * Y)	-0.00632	-0.00732	-0.00722
	(!A2 * !B1 * Y)	0.01169	0.01086	0.01063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00691	0.00698	0.00756
	(A1 * B1 * !Y)	0.00373	0.00373	0.00434
	(A1 * !B1 * Y)	0.00204	0.00204	0.00202
	(A1 * !B1 * Y)	-0.00262	-0.00262	-0.00261
	(!A1 * !B1 * Y)	0.00201	0.00204	0.00201
	(!A1 * !B1 * Y)	-0.00260	-0.00262	-0.00261
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.01338	0.01350	0.01449
	(A1 * B1 * !Y)	0.00747	0.00746	0.00850
	(A1 * !B1 * Y)	0.00414	0.00417	0.00412
	(A1 * !B1 * Y)	-0.00476	-0.00477	-0.00474
	(!A1 * !B1 * Y)	0.00410	0.00415	0.00409
	(!A1 * !B1 * Y)	-0.00473	-0.00477	-0.00475
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.01833	0.01857	0.02016
	(A1 * B1 * !Y)	0.00607	0.00603	0.00779
	(A1 * !B1 * Y)	0.00832	0.00843	0.00833
	(A1 * !B1 * Y)	-0.00990	-0.00997	-0.00989
	(!A1 * !B1 * Y)	0.00830	0.00841	0.00829
	(!A1 * !B1 * Y)	-0.00988	-0.00997	-0.00993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00542	0.00531	0.00398
	(A1 * B1 * !Y)	0.00867	0.00856	0.00721
	(A1 * !B1 * Y)	-0.00181	-0.00182	-0.00181
	(A1 * !B1 * Y)	0.00281	0.00283	0.00282
	(!A1 * !B1 * Y)	-0.00158	-0.00176	-0.00178
	(!A1 * !B1 * Y)	0.00306	0.00291	0.00283
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.01140	0.01117	0.00852
	(A1 * B1 * !Y)	0.01741	0.01723	0.01455
	(A1 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(A1 * !B1 * Y)	0.00514	0.00519	0.00516
	(!A1 * !B1 * Y)	-0.00318	-0.00358	-0.00362
	(!A1 * !B1 * Y)	0.00571	0.00537	0.00518
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.01346	0.01299	0.00777
	(A1 * B1 * !Y)	0.02595	0.02562	0.02029
	(A1 * !B1 * Y)	-0.00750	-0.00753	-0.00750
	(A1 * !B1 * Y)	0.01071	0.01077	0.01073
	(!A1 * !B1 * Y)	-0.00642	-0.00737	-0.00733
	(!A1 * !B1 * Y)	0.01187	0.01087	0.01079

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00083	0.00084	0.00074
	(!A1 * !A2 * Y)	-0.00285	-0.00288	-0.00301
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00169	0.00168	0.00150
	(!A1 * !A2 * Y)	-0.00525	-0.00524	-0.00557
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00301	0.00302	0.00267
	(!A1 * !A2 * Y)	-0.00577	-0.00584	-0.00637

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00055	-0.00056	-0.00054
	(!A1 * !A2 * Y)	0.00315	0.00321	0.00316
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00112	-0.00112	-0.00110
	(!A1 * !A2 * Y)	0.00581	0.00582	0.00585
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00191	-0.00193	-0.00184
	(!A1 * !A2 * Y)	0.00691	0.00702	0.00693

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00253	0.00253	0.00250	1.69371
sky130_fd_sc_hs__o21a_2	0.00274	0.00269	0.00279	3.33774
sky130_fd_sc_hs__o21a_4	0.00527	0.00485	0.00465	6.25748

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	956.76400	1918.16000
sky130_fd_sc_hs__o21a_2	0.00000	1006.51000	1198.82000
sky130_fd_sc_hs__o21a_4	0.00000	2567.27000	3841.79000

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)	0.05964	0.41405	5.63149
	A2->X (RR)	0.05055	0.38658	5.31807
	B1->X (RR)	0.05458	0.44869	6.15816
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.06246	0.34451	5.57346
	A2->X (RR)	0.05429	0.32225	5.29218
	B1->X (RR)	0.05774	0.38073	6.09917
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.06805	0.29285	5.61904
	A2->X (RR)	0.05897	0.26920	5.40781
	B1->X (RR)	0.05937	0.32026	6.03962

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.08004	0.46607	5.89327
	A2->X (FF)	0.07056	0.48679	6.14643
	B1->X (FF)	0.04241	0.40698	5.56530
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.09836	0.45420	6.00237
	A2->X (FF)	0.08971	0.48063	6.24639
	B1->X (FF)	0.04839	0.37957	5.55967
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.09798	0.41339	5.97783
	A2->X (FF)	0.08493	0.43174	6.20157
	B1->X (FF)	0.05226	0.34952	5.62641

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.05614	0.07027	0.31502
	A1	0.04827	0.06239	0.30717
	A2	0.05973	0.07402	0.30958
	A2	0.05336	0.06764	0.30307
	B1	0.04469	0.06376	0.34803
	B1	0.03998	0.05901	0.34304
sky130_fd_sc_hs__o21a_2	A1	0.04332	0.05767	0.31290
	A1	0.03479	0.04924	0.30438
	A2	0.04686	0.06133	0.30584
	A2	0.03995	0.05438	0.29865
	B1	0.04530	0.06296	0.33070
	B1	0.04006	0.05781	0.32627
sky130_fd_sc_hs__o21a_4	A1	0.12367	0.15199	0.64934
	A1	0.10758	0.13588	0.63264
	A2	0.13024	0.15855	0.63365
	A2	0.11755	0.14584	0.61996
	B1	0.09837	0.13629	0.68134
	B1	0.08922	0.12713	0.67048

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01626	0.03017	0.28232
	A1	0.02412	0.03797	0.28957
	A2	0.01635	0.03113	0.27814
	A2	0.02274	0.03750	0.28301
	B1	0.01350	0.03454	0.34788
	B1	0.01825	0.03924	0.35289
sky130_fd_sc_hs__o21a_2	A1	0.03371	0.04303	0.29216
	A1	0.04224	0.05156	0.29782
	A2	0.03397	0.04452	0.28751
	A2	0.04087	0.05128	0.29096
	B1	0.02728	0.04579	0.34358
	B1	0.03262	0.05100	0.34899
sky130_fd_sc_hs__o21a_4	A1	0.06784	0.08715	0.58395
	A1	0.08395	0.10325	0.59481
	A2	0.06854	0.08987	0.57325
	A2	0.08125	0.10238	0.57972
	B1	0.05716	0.09350	0.68785
	B1	0.06632	0.10266	0.69493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.01463	0.01447	0.01783
	(A2 * B1 * X)	0.01038	0.01017	0.01360
	(A2 * !B1 * !X)	0.00656	0.00656	0.00656
	(A2 * !B1 * !X)	0.00238	0.00239	0.00239
	(!A2 * !B1 * !X)	0.00657	0.00659	0.00655
	(!A2 * !B1 * !X)	0.00238	0.00236	0.00236
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00864	0.00850	0.01189
	(A2 * B1 * X)	0.00409	0.00389	0.00735
	(A2 * !B1 * !X)	0.01134	0.01137	0.01135
	(A2 * !B1 * !X)	0.00686	0.00685	0.00687
	(!A2 * !B1 * !X)	0.01132	0.01135	0.01132
	(!A2 * !B1 * !X)	0.00686	0.00684	0.00685
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.02979	0.02950	0.03613
	(A2 * B1 * X)	0.02107	0.02071	0.02743
	(A2 * !B1 * !X)	0.02242	0.02249	0.02245
	(A2 * !B1 * !X)	0.01388	0.01386	0.01388
	(!A2 * !B1 * !X)	0.02244	0.02247	0.02241
	(!A2 * !B1 * !X)	0.01387	0.01385	0.01382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.01482	0.01469	0.01390
	(A2 * B1 * X)	0.01908	0.01898	0.01816
	(A2 * !B1 * !X)	0.00288	0.00287	0.00288
	(A2 * !B1 * !X)	0.00706	0.00709	0.00706
	(!A2 * !B1 * !X)	0.00308	0.00289	0.00292
	(!A2 * !B1 * !X)	0.00730	0.00713	0.00708
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00822	0.00809	0.00730
	(A2 * B1 * X)	0.01278	0.01269	0.01186
	(A2 * !B1 * !X)	0.00700	0.00699	0.00699
	(A2 * !B1 * !X)	0.01147	0.01149	0.01148
	(!A2 * !B1 * !X)	0.00729	0.00707	0.00705
	(!A2 * !B1 * !X)	0.01177	0.01160	0.01150
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.02930	0.02905	0.02747
	(A2 * B1 * X)	0.03803	0.03784	0.03621
	(A2 * !B1 * !X)	0.01455	0.01451	0.01454
	(A2 * !B1 * !X)	0.02311	0.02316	0.02312
	(!A2 * !B1 * !X)	0.01497	0.01457	0.01463
	(!A2 * !B1 * !X)	0.02357	0.02324	0.02317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.01355	0.01360	0.01416
	(A1 * B1 * X)	0.01079	0.01078	0.01136
	(A1 * !B1 * !X)	0.00645	0.00647	0.00646
	(A1 * !B1 * !X)	0.00244	0.00242	0.00243
	(!A1 * !B1 * !X)	0.00647	0.00649	0.00646
	(!A1 * !B1 * !X)	0.00245	0.00243	0.00242
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00755	0.00760	0.00820
	(A1 * B1 * X)	0.00459	0.00459	0.00522
	(A1 * !B1 * !X)	0.01111	0.01112	0.01111
	(A1 * !B1 * !X)	0.00690	0.00688	0.00689
	(!A1 * !B1 * !X)	0.01111	0.01114	0.01111
	(!A1 * !B1 * !X)	0.00691	0.00689	0.00690
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.02734	0.02741	0.02841
	(A1 * B1 * X)	0.02190	0.02191	0.02298
	(A1 * !B1 * !X)	0.02179	0.02180	0.02176
	(A1 * !B1 * !X)	0.01386	0.01380	0.01383
	(!A1 * !B1 * !X)	0.02182	0.02185	0.02179
	(!A1 * !B1 * !X)	0.01389	0.01385	0.01383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.01301	0.01291	0.01146
	(A1 * B1 * X)	0.01584	0.01572	0.01427
	(A1 * !B1 * !X)	0.00300	0.00298	0.00299
	(A1 * !B1 * !X)	0.00702	0.00702	0.00701
	(!A1 * !B1 * !X)	0.00318	0.00299	0.00301
	(!A1 * !B1 * !X)	0.00724	0.00706	0.00702
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00644	0.00632	0.00487
	(A1 * B1 * X)	0.00943	0.00932	0.00786
	(A1 * !B1 * !X)	0.00726	0.00722	0.00724
	(A1 * !B1 * !X)	0.01146	0.01147	0.01145
	(!A1 * !B1 * !X)	0.00749	0.00728	0.00726
	(!A1 * !B1 * !X)	0.01171	0.01153	0.01145
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.02613	0.02590	0.02304
	(A1 * B1 * X)	0.03162	0.03140	0.02852
	(A1 * !B1 * !X)	0.01531	0.01524	0.01524
	(A1 * !B1 * !X)	0.02322	0.02317	0.02317
	(!A1 * !B1 * !X)	0.01560	0.01520	0.01525
	(!A1 * !B1 * !X)	0.02361	0.02325	0.02316

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00545	0.00545	0.00532
	(!A1 * !A2 * !X)	0.00242	0.00240	0.00226
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00989	0.00989	0.00978
	(!A1 * !A2 * !X)	0.00648	0.00646	0.00632
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.01971	0.01971	0.01945
	(!A1 * !A2 * !X)	0.01400	0.01397	0.01366

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00407	0.00405	0.00408
	(!A1 * !A2 * !X)	0.00706	0.00711	0.00708
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00854	0.00852	0.00855
	(!A1 * !A2 * !X)	0.01193	0.01199	0.01195
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.01742	0.01741	0.01746
	(!A1 * !A2 * !X)	0.02308	0.02316	0.02311

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00280	0.00307	0.00241	0.90561
sky130_fd_sc_hs__o21bai_2	0.00592	0.00542	0.00267	1.60662
sky130_fd_sc_hs__o21bai_4	0.01075	0.01078	0.00359	2.96738

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	979.40400	1339.21000
sky130_fd_sc_hs__o21bai_2	0.00000	928.64200	2088.09000
sky130_fd_sc_hs__o21bai_4	0.00000	2183.34000	3100.34000

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)	0.05132	0.63526	8.17589
	A2->Y (FR)	0.04359	0.67883	8.88813
	B1_N->Y (RR)	0.04367	0.29704	2.96451
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.04772	0.52758	7.84977
	A2->Y (FR)	0.03710	0.56549	8.48146
	B1_N->Y (RR)	0.04450	0.23155	2.48610
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.04950	0.45830	7.91659
	A2->Y (FR)	0.03799	0.51628	8.85901
	B1_N->Y (RR)	0.05667	0.40665	6.62734

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.03244	0.35416	4.44547
	A2->Y (RF)	0.02618	0.34041	4.33391
	B1_N->Y (FF)	0.05703	0.42309	4.75690
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.02892	0.26936	4.00460
	A2->Y (RF)	0.02382	0.26265	4.01695
	B1_N->Y (FF)	0.05471	0.39328	4.88159
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03438	0.23163	4.17343
	A2->Y (RF)	0.02399	0.21157	3.97719
	B1_N->Y (FF)	0.05731	0.32144	4.50161

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00146	0.00882	0.12744
	A1	0.00868	0.01602	0.13378
	A2	0.00143	0.01019	0.13629
	A2	0.00735	0.01607	0.14133
	B1_N	0.03037	0.04897	0.33088
	B1_N	0.02614	0.04473	0.32654
sky130_fd_sc_hs__o21bai_2	A1	0.00239	0.01902	0.25968
	A1	0.01694	0.03352	0.27287
	A2	0.00251	0.02108	0.26059
	A2	0.01321	0.03167	0.26906
	B1_N	0.02233	0.04304	0.34819
	B1_N	0.01774	0.03846	0.34287
sky130_fd_sc_hs__o21bai_4	A1	0.00386	0.03611	0.45148
	A1	0.03226	0.06436	0.47699
	A2	0.00377	0.03992	0.46712
	A2	0.02558	0.06164	0.48598
	B1_N	0.08787	0.12321	0.66113
	B1_N	0.08184	0.11704	0.65168

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.02503	0.03062	0.12483
	A1	0.01779	0.02336	0.11678
	A2	0.02533	0.03074	0.11499
	A2	0.01940	0.02475	0.10862
	B1_N	0.02042	0.04062	0.33895
	B1_N	0.02473	0.04493	0.34337
sky130_fd_sc_hs__o21bai_2	A1	0.04878	0.06157	0.24950
	A1	0.03424	0.04696	0.23492
	A2	0.04982	0.06232	0.23034
	A2	0.03912	0.05157	0.21867
	B1_N	0.04260	0.06248	0.37613
	B1_N	0.04734	0.06713	0.37935
sky130_fd_sc_hs__o21bai_4	A1	0.08304	0.11102	0.47193
	A1	0.05463	0.08257	0.44116
	A2	0.08141	0.10845	0.42243
	A2	0.05954	0.08659	0.39930
	B1_N	0.06586	0.10080	0.61745
	B1_N	0.07189	0.10676	0.62356

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)	0.01372	0.01374	0.01372
	(A2 * B1_N * Y)	0.00913	0.00912	0.00914
	(A2 * !B1_N * !Y)	0.00787	0.00765	0.01063
	(A2 * !B1_N * !Y)	0.00321	0.00295	0.00598
	(!A2 * B1_N * Y)	0.01371	0.01373	0.01371
	(!A2 * B1_N * Y)	0.00914	0.00913	0.00913
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00957	0.00958	0.00958
	(A2 * B1_N * Y)	0.00011	0.00011	0.00011
	(A2 * !B1_N * !Y)	0.01606	0.01548	0.02142
	(A2 * !B1_N * !Y)	0.00643	0.00586	0.01184
	(!A2 * B1_N * Y)	0.00957	0.00961	0.00956
	(!A2 * B1_N * Y)	0.00010	0.00008	0.00010
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.03137	0.03141	0.03137
	(A2 * B1_N * Y)	0.01321	0.01320	0.01323
	(A2 * !B1_N * !Y)	0.02255	0.02130	0.03292
	(A2 * !B1_N * !Y)	0.00405	0.00273	0.01454
	(!A2 * B1_N * Y)	0.03137	0.03146	0.03134
	(!A2 * B1_N * Y)	0.01321	0.01315	0.01319

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)	0.00960	0.00958	0.00960
	(A2 * B1_N * Y)	0.01419	0.01421	0.01418
	(A2 * !B1_N * !Y)	0.00700	0.00688	0.00627
	(A2 * !B1_N * !Y)	0.01165	0.01159	0.01093
	(!A2 * B1_N * Y)	0.00986	0.00966	0.00963
	(!A2 * B1_N * Y)	0.01447	0.01429	0.01420
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00114	0.00114	0.00114
	(A2 * B1_N * Y)	0.01062	0.01062	0.01062
	(A2 * !B1_N * !Y)	0.01385	0.01363	0.01238
	(A2 * !B1_N * !Y)	0.02349	0.02334	0.02202
	(!A2 * B1_N * Y)	0.00168	0.00122	0.00120
	(!A2 * B1_N * Y)	0.01119	0.01079	0.01064
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.01557	0.01552	0.01556
	(A2 * B1_N * Y)	0.03370	0.03380	0.03372
	(A2 * !B1_N * !Y)	0.01899	0.01854	0.01599
	(A2 * !B1_N * !Y)	0.03745	0.03715	0.03449
	(!A2 * B1_N * Y)	0.01670	0.01563	0.01568
	(!A2 * B1_N * Y)	0.03479	0.03402	0.03378

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)	0.01378	0.01379	0.01377
	(A1 * B1_N * Y)	0.00891	0.00891	0.00893
	(A1 * !B1_N * !Y)	0.00703	0.00708	0.00766
	(A1 * !B1_N * !Y)	0.00363	0.00363	0.00424
	(!A1 * B1_N * Y)	0.01376	0.01378	0.01376
	(!A1 * B1_N * Y)	0.00893	0.00891	0.00892
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00920	0.00927	0.00922
	(A1 * B1_N * Y)	0.00043	0.00038	0.00042
	(A1 * !B1_N * !Y)	0.01355	0.01367	0.01467
	(A1 * !B1_N * !Y)	0.00770	0.00768	0.00875
	(!A1 * B1_N * Y)	0.00920	0.00926	0.00920
	(!A1 * B1_N * Y)	0.00042	0.00038	0.00040
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.03129	0.03131	0.03130
	(A1 * B1_N * Y)	0.01320	0.01319	0.01320
	(A1 * !B1_N * !Y)	0.01824	0.01848	0.02013
	(A1 * !B1_N * !Y)	0.00608	0.00604	0.00786
	(!A1 * B1_N * Y)	0.03127	0.03136	0.03126
	(!A1 * B1_N * Y)	0.01321	0.01314	0.01317

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)	0.00956	0.00955	0.00955
	(A1 * B1_N * Y)	0.01438	0.01439	0.01439
	(A1 * !B1_N * !Y)	0.00546	0.00535	0.00402
	(A1 * !B1_N * !Y)	0.00890	0.00880	0.00745
	(!A1 * B1_N * Y)	0.00982	0.00962	0.00958
	(!A1 * B1_N * Y)	0.01468	0.01451	0.01441
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00151	0.00147	0.00150
	(A1 * B1_N * Y)	0.01028	0.01035	0.01031
	(A1 * !B1_N * !Y)	0.01160	0.01137	0.00872
	(A1 * !B1_N * !Y)	0.01756	0.01737	0.01470
	(!A1 * B1_N * Y)	0.00201	0.00158	0.00155
	(!A1 * B1_N * Y)	0.01084	0.01049	0.01034
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.01566	0.01561	0.01563
	(A1 * B1_N * Y)	0.03370	0.03377	0.03374
	(A1 * !B1_N * !Y)	0.01370	0.01328	0.00801
	(A1 * !B1_N * !Y)	0.02611	0.02573	0.02042
	(!A1 * B1_N * Y)	0.01674	0.01571	0.01575
	(!A1 * B1_N * Y)	0.03479	0.03403	0.03380

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)	0.01903	0.03843	0.33487
	(!A1 * !A2 * Y)	0.01419	0.03358	0.33005
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.01620	0.03659	0.35885
	(!A1 * !A2 * Y)	0.01066	0.03104	0.35333
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.03631	0.06879	0.57618
	(!A1 * !A2 * Y)	0.02868	0.06116	0.56860

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)	0.00035	0.02127	0.32798
	(!A1 * !A2 * Y)	0.00515	0.02609	0.33279
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00123	0.02217	0.34866
	(!A1 * !A2 * Y)	0.00677	0.02769	0.35418
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00234	0.03798	0.56575
	(!A1 * !A2 * Y)	0.00994	0.04562	0.57333

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00257	0.00270	0.00221	1.51757
sky130_fd_sc_hs__o21ba_2	0.00266	0.00276	0.00234	2.80456
sky130_fd_sc_hs__o21ba_4	0.00534	0.00504	0.00284	5.23194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	1343.10000	1857.07000
sky130_fd_sc_hs__o21ba_2	0.00000	1668.06000	2368.54000
sky130_fd_sc_hs__o21ba_4	0.00000	2830.29000	3855.66000

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)	0.06556	0.43888	5.70100
	A2->X (RR)	0.05646	0.41282	5.39482
	B1_N->X (FR)	0.09399	0.60144	7.74531
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.06605	0.34656	5.20425
	A2->X (RR)	0.05651	0.32260	4.90114
	B1_N->X (FR)	0.09656	0.51138	7.32626
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.07263	0.30155	5.41399
	A2->X (RR)	0.06396	0.27828	5.19281
	B1_N->X (FR)	0.09543	0.46714	7.59889

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.08263	0.45827	5.50436
	A2->X (FF)	0.07442	0.48035	5.76083
	B1_N->X (RF)	0.06990	0.28652	2.83954
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.09651	0.44027	5.49732
	A2->X (FF)	0.08800	0.46665	5.74796
	B1_N->X (RF)	0.07537	0.25651	2.88064
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.09644	0.39758	5.32780
	A2->X (FF)	0.08364	0.41578	5.55387
	B1_N->X (RF)	0.07829	0.21619	2.48244

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.03843	0.05338	0.31317
	A1	0.03184	0.04678	0.30640
	A2	0.04251	0.05753	0.30831
	A2	0.03715	0.05217	0.30285
	B1_N	0.04187	0.06447	0.42051
	B1_N	0.04583	0.06848	0.42458
sky130_fd_sc_hs__o21ba_2	A1	0.04326	0.05767	0.31644
	A1	0.03649	0.05090	0.30968
	A2	0.04683	0.06143	0.30928
	A2	0.04133	0.05591	0.30295
	B1_N	0.04598	0.06686	0.40090
	B1_N	0.05022	0.07109	0.40483
sky130_fd_sc_hs__o21ba_4	A1	0.12401	0.15244	0.66819
	A1	0.11053	0.13898	0.65392
	A2	0.13067	0.15902	0.65299
	A2	0.12061	0.14898	0.64080
	B1_N	0.13068	0.15560	0.61374
	B1_N	0.13566	0.16061	0.61727

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01598	0.02957	0.27903
	A1	0.02258	0.03610	0.28487
	A2	0.01603	0.03045	0.27385
	A2	0.02138	0.03577	0.27893
	B1_N	0.04090	0.06065	0.38097
	B1_N	0.03703	0.05672	0.37654
sky130_fd_sc_hs__o21ba_2	A1	0.03146	0.04107	0.29023
	A1	0.03823	0.04781	0.29419
	A2	0.03156	0.04212	0.28345
	A2	0.03707	0.04762	0.28732
	B1_N	0.05280	0.07046	0.39519
	B1_N	0.04866	0.06632	0.39013
sky130_fd_sc_hs__o21ba_4	A1	0.06267	0.08208	0.57758
	A1	0.07615	0.09542	0.58442
	A2	0.06327	0.08473	0.56223
	A2	0.07337	0.09466	0.56931
	B1_N	0.07282	0.09343	0.51237
	B1_N	0.07070	0.09125	0.51023

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)	0.01799	0.01801	0.01799
	(A2 * B1_N * !X)	0.01381	0.01380	0.01381
	(A2 * !B1_N * X)	0.00825	0.00811	0.01150
	(A2 * !B1_N * X)	0.00400	0.00380	0.00726
	(!A2 * B1_N * !X)	0.01799	0.01801	0.01798
	(!A2 * B1_N * !X)	0.01381	0.01379	0.01379
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.02267	0.02268	0.02268
	(A2 * B1_N * !X)	0.01831	0.01832	0.01831
	(A2 * !B1_N * X)	0.00863	0.00847	0.01186
	(A2 * !B1_N * X)	0.00419	0.00399	0.00743
	(!A2 * B1_N * !X)	0.02266	0.02269	0.02266
	(!A2 * B1_N * !X)	0.01831	0.01829	0.01830
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.02697	0.02703	0.02700
	(A2 * B1_N * !X)	0.01827	0.01824	0.01827
	(A2 * !B1_N * X)	0.02992	0.02962	0.03625
	(A2 * !B1_N * X)	0.02104	0.02066	0.02739
	(!A2 * B1_N * !X)	0.02698	0.02701	0.02696
	(!A2 * B1_N * !X)	0.01825	0.01824	0.01820

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)	0.01435	0.01434	0.01434
	(A2 * B1_N * !X)	0.01851	0.01853	0.01852
	(A2 * !B1_N * X)	0.00853	0.00840	0.00761
	(A2 * !B1_N * X)	0.01279	0.01270	0.01187
	(!A2 * B1_N * !X)	0.01456	0.01436	0.01437
	(!A2 * B1_N * !X)	0.01876	0.01860	0.01855
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.01857	0.01854	0.01856
	(A2 * B1_N * !X)	0.02292	0.02295	0.02293
	(A2 * !B1_N * X)	0.00841	0.00827	0.00748
	(A2 * !B1_N * X)	0.01284	0.01275	0.01192
	(!A2 * B1_N * !X)	0.01884	0.01864	0.01860
	(!A2 * B1_N * !X)	0.02321	0.02304	0.02295
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.01894	0.01890	0.01893
	(A2 * B1_N * !X)	0.02766	0.02772	0.02767
	(A2 * !B1_N * X)	0.02943	0.02918	0.02760
	(A2 * !B1_N * X)	0.03833	0.03814	0.03650
	(!A2 * B1_N * !X)	0.01935	0.01896	0.01900
	(!A2 * B1_N * !X)	0.02809	0.02778	0.02772

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)	0.01806	0.01808	0.01807
	(A1 * B1_N * !X)	0.01380	0.01377	0.01378
	(A1 * !B1_N * X)	0.00738	0.00743	0.00803
	(A1 * !B1_N * X)	0.00435	0.00435	0.00498
	(!A1 * B1_N * !X)	0.01808	0.01810	0.01806
	(!A1 * B1_N * !X)	0.01379	0.01378	0.01377
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.02270	0.02271	0.02269
	(A1 * B1_N * !X)	0.01827	0.01825	0.01826
	(A1 * !B1_N * X)	0.00771	0.00777	0.00834
	(A1 * !B1_N * X)	0.00453	0.00453	0.00513
	(!A1 * B1_N * !X)	0.02270	0.02272	0.02270
	(!A1 * B1_N * !X)	0.01828	0.01826	0.01826
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.02635	0.02637	0.02633
	(A1 * B1_N * !X)	0.01820	0.01814	0.01816
	(A1 * !B1_N * X)	0.02753	0.02763	0.02865
	(A1 * !B1_N * X)	0.02197	0.02196	0.02303
	(!A1 * B1_N * !X)	0.02639	0.02642	0.02635
	(!A1 * B1_N * !X)	0.01822	0.01817	0.01816

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)	0.01429	0.01425	0.01427
	(A1 * B1_N * !X)	0.01856	0.01858	0.01856
	(A1 * !B1_N * X)	0.00653	0.00641	0.00496
	(A1 * !B1_N * X)	0.00960	0.00948	0.00802
	(!A1 * B1_N * !X)	0.01447	0.01427	0.01429
	(!A1 * B1_N * !X)	0.01878	0.01861	0.01857
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.01857	0.01853	0.01855
	(A1 * B1_N * !X)	0.02299	0.02300	0.02298
	(A1 * !B1_N * X)	0.00643	0.00632	0.00487
	(A1 * !B1_N * X)	0.00966	0.00954	0.00808
	(!A1 * B1_N * !X)	0.01879	0.01859	0.01856
	(!A1 * B1_N * !X)	0.02324	0.02307	0.02298
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.01968	0.01959	0.01960
	(A1 * B1_N * !X)	0.02782	0.02779	0.02777
	(A1 * !B1_N * X)	0.02616	0.02591	0.02305
	(A1 * !B1_N * X)	0.03179	0.03159	0.02871
	(!A1 * B1_N * !X)	0.02000	0.01958	0.01962
	(!A1 * B1_N * !X)	0.02823	0.02786	0.02777

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)	0.02297	0.04173	0.32653
	(!A1 * !A2 * !X)	0.01845	0.03719	0.32201
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.02812	0.04661	0.33076
	(!A1 * !A2 * !X)	0.02338	0.04186	0.32603
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.03347	0.05584	0.40320
	(!A1 * !A2 * !X)	0.02756	0.04992	0.39734

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)	0.00508	0.02521	0.32008
	(!A1 * !A2 * !X)	0.00959	0.02972	0.32458
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00940	0.02934	0.32362
	(!A1 * !A2 * !X)	0.01414	0.03408	0.32832
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.01912	0.04233	0.39336
	(!A1 * !A2 * !X)	0.02497	0.04819	0.39921

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00289	0.00303	0.00300	0.00291	0.00294	0.89791
sky130_fd_sc_hs__o221ai_2	0.00593	0.00539	0.00620	0.00539	0.00543	1.55484
sky130_fd_sc_hs__o221ai_4	0.01131	0.01069	0.01142	0.01067	0.01082	2.87467

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	317.43100	1547.59000
sky130_fd_sc_hs__o221ai_2	0.00000	633.71600	3086.14000
sky130_fd_sc_hs__o221ai_4	0.00000	1265.14000	6154.36000

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)	0.07782	0.65626	8.09864
	A2->Y (FR)	0.06954	0.69810	8.80831
	B1->Y (FR)	0.05821	0.62685	7.96167
	B2->Y (FR)	0.04932	0.66974	8.68792
	C1->Y (FR)	0.02268	0.45551	6.02547
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.07319	0.54760	7.71151
	A2->Y (FR)	0.06254	0.58504	8.36212
	B1->Y (FR)	0.05454	0.52103	7.60653
	B2->Y (FR)	0.04375	0.55702	8.23818
	C1->Y (FR)	0.01798	0.37096	5.59200
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.06450	0.44611	7.26318
	A2->Y (FR)	0.05426	0.49698	8.09422
	B1->Y (FR)	0.05407	0.45011	7.64230
	B2->Y (FR)	0.04217	0.49467	8.40997
	C1->Y (FR)	0.01826	0.33005	5.76628

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.06395	0.42692	4.99700
	A2->Y (RF)	0.05528	0.41334	4.90440
	B1->Y (RF)	0.05738	0.48444	5.93053
	B2->Y (RF)	0.04773	0.46431	5.75408
	C1->Y (RF)	0.04879	0.53599	6.76288
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.04909	0.32324	4.59330
	A2->Y (RF)	0.04080	0.31607	4.62237
	B1->Y (RF)	0.04249	0.37986	5.52293
	B2->Y (RF)	0.03446	0.38668	5.77159
	C1->Y (RF)	0.02276	0.43361	6.61047
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.05563	0.29032	4.99187
	A2->Y (RF)	0.04304	0.27520	4.96492
	B1->Y (RF)	0.04926	0.35795	6.10149
	B2->Y (RF)	0.03688	0.34539	6.15491
	C1->Y (RF)	0.02494	0.41181	7.30780

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00361	0.01006	0.12178
	A1	0.01631	0.02271	0.13336
	A2	0.00373	0.01137	0.12878
	A2	0.01485	0.02235	0.13865
	B1	0.00150	0.00807	0.11640
	B1	0.01105	0.01756	0.12478
	B2	0.00153	0.00945	0.12564
	B2	0.00930	0.01714	0.13215
	C1	-0.00039	0.01010	0.15728
	C1	0.00599	0.01642	0.16412
sky130_fd_sc_hs__o221ai_2	A1	0.00603	0.02032	0.24223
	A1	0.03056	0.04473	0.26472
	A2	0.00611	0.02229	0.24567
	A2	0.02692	0.04292	0.26517
	B1	0.00214	0.01667	0.23257
	B1	0.02083	0.03526	0.24952
	B2	0.00244	0.01836	0.23157
	B2	0.01730	0.03307	0.24317
	C1	-0.00163	0.02104	0.30663
	C1	0.00998	0.03267	0.31677

sky130_fd_sc_hs__o221ai_4	**A1**	0.01022	0.03763	0.41899
	A1	0.05857	0.08581	0.46135
	A2	0.01049	0.04050	0.41330
	A2	0.05179	0.08146	0.44628
	B1	0.00368	0.03346	0.43584
	B1	0.04023	0.06988	0.46679
	B2	0.00380	0.03574	0.42813
	B2	0.03339	0.06504	0.44941
	C1	-0.00278	0.04674	0.64595
	C1	0.02015	0.06971	0.66866

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.04165	0.04588	0.13242
	A1	0.02980	0.03404	0.12029
	A2	0.04161	0.04573	0.12241
	A2	0.03134	0.03537	0.11217
	B1	0.02921	0.03387	0.11617
	B1	0.01965	0.02430	0.10636
	B2	0.04014	0.04414	0.11219
	B2	0.03243	0.03643	0.10350
	C1	0.01899	0.02609	0.12701
	C1	0.01261	0.01962	0.12052

sky130_fd_sc_hs__o221ai_2	**A1**	0.08058	0.09035	0.25867
	A1	0.05777	0.06752	0.23590
	A2	0.08314	0.09267	0.24135
	A2	0.06403	0.07354	0.22132
	B1	0.05566	0.06637	0.23000
	B1	0.03699	0.04764	0.21105
	B2	0.05832	0.06811	0.20457
	B2	0.04345	0.05321	0.18980
	C1	0.03524	0.05165	0.25421
	C1	0.02363	0.03997	0.24159
sky130_fd_sc_hs__o221ai_4	**A1**	0.17758	0.20096	0.54044
	A1	0.13262	0.15597	0.49556
	A2	0.18441	0.20635	0.49704
	A2	0.14658	0.16839	0.45848
	B1	0.12025	0.14536	0.48703
	B1	0.08369	0.10875	0.45059
	B2	0.12756	0.15115	0.44664
	B2	0.15100	0.17080	0.41458
	C1	0.07595	0.11454	0.56645
	C1	0.05301	0.09143	0.54353

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)**	0.00834	0.00812	0.01108
	(A2 * B2 * C1 * !Y)	0.00351	0.00324	0.00627
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00229	0.00229	0.00229
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00246	-0.00246	-0.00246
	(A2 * B1 * !B2 * C1 * !Y)	0.01066	0.01044	0.01339
	(A2 * B1 * !B2 * C1 * !Y)	0.00583	0.00556	0.00858
	(A2 * !B1 * !B2 * Y)	0.00236	0.00236	0.00236
	(A2 * !B1 * !B2 * Y)	-0.00240	-0.00240	-0.00240
	(!A2 * B2 * !C1 * Y)	0.00221	0.00224	0.00222
	(!A2 * B2 * !C1 * Y)	-0.00246	-0.00248	-0.00246
	(!A2 * B1 * !B2 * !C1 * Y)	0.00223	0.00224	0.00223
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00246	-0.00246	-0.00246
	(!A2 * !B1 * !B2 * C1 * Y)	0.00237	0.00238	0.00235
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00239	-0.00240	-0.00239
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00217	0.00218	0.00216
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00254	-0.00255	-0.00254

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.01661	0.01602	0.02196
	(A2 * B2 * C1 * !Y)	0.00713	0.00654	0.01252
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00425	0.00426	0.00425
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00506	-0.00507	-0.00506
	(A2 * B1 * !B2 * C1 * !Y)	0.02125	0.02066	0.02658
	(A2 * B1 * !B2 * C1 * !Y)	0.01177	0.01117	0.01715
	(A2 * !B1 * !B2 * Y)	0.00438	0.00439	0.00438
	(A2 * !B1 * !B2 * Y)	-0.00494	-0.00494	-0.00493
	(!A2 * B2 * !C1 * Y)	0.00414	0.00416	0.00415
	(!A2 * B2 * !C1 * Y)	-0.00505	-0.00507	-0.00506
	(!A2 * B1 * !B2 * !C1 * Y)	0.00416	0.00420	0.00417
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00506	-0.00508	-0.00506
	(!A2 * !B1 * !B2 * C1 * Y)	0.00440	0.00441	0.00436
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00494	-0.00494	-0.00494
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00403	0.00404	0.00402
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00524	-0.00524	-0.00522

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.03309	0.03197	0.04372
	(A2 * B2 * C1 * !Y)	0.01438	0.01320	0.02512
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00859	0.00868	0.00860
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00977	-0.00981	-0.00976
	(A2 * B1 * !B2 * C1 * !Y)	0.04236	0.04124	0.05296
	(A2 * B1 * !B2 * C1 * !Y)	0.02365	0.02246	0.03436
	(A2 * !B1 * !B2 * Y)	0.00885	0.00893	0.00885
	(A2 * !B1 * !B2 * Y)	-0.00952	-0.00956	-0.00951
	(!A2 * B2 * !C1 * Y)	0.00839	0.00841	0.00837
	(!A2 * B2 * !C1 * Y)	-0.00979	-0.00979	-0.00975
	(!A2 * B1 * !B2 * !C1 * Y)	0.00843	0.00848	0.00841
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00979	-0.00981	-0.00975
	(!A2 * !B1 * !B2 * C1 * Y)	0.00884	0.00893	0.00883
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00943	-0.00950	-0.00950
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00806	0.00816	0.00809
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.01004	-0.01011	-0.01006

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)**	0.00719	0.00707	0.00646
	(A2 * B2 * C1 * !Y)	0.01201	0.01195	0.01129
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00209	-0.00209	-0.00208
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00268	0.00268	0.00267
	(A2 * B1 * !B2 * C1 * !Y)	0.00950	0.00939	0.00877
	(A2 * B1 * !B2 * C1 * !Y)	0.01432	0.01426	0.01361
	(A2 * !B1 * !B2 * Y)	-0.00201	-0.00203	-0.00202
	(A2 * !B1 * !B2 * Y)	0.00273	0.00275	0.00274
	(!A2 * B2 * !C1 * Y)	-0.00170	-0.00201	-0.00202
	(!A2 * B2 * !C1 * Y)	0.00295	0.00275	0.00268
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00172	-0.00201	-0.00203
	(!A2 * B1 * !B2 * !C1 * Y)	0.00295	0.00275	0.00268
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00169	-0.00196	-0.00197
	(!A2 * !B1 * !B2 * C1 * Y)	0.00306	0.00285	0.00275
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00199	-0.00210	-0.00211
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00265	0.00263	0.00260

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.01453	0.01432	0.01307
	(A2 * B2 * C1 * !Y)	0.02402	0.02387	0.02255
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00384	-0.00384	-0.00384
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00548	0.00549	0.00548
	(A2 * B1 * !B2 * C1 * !Y)	0.01914	0.01893	0.01769
	(A2 * B1 * !B2 * C1 * !Y)	0.02864	0.02848	0.02717
	(A2 * !B1 * !B2 * Y)	-0.00370	-0.00371	-0.00371
	(A2 * !B1 * !B2 * Y)	0.00559	0.00560	0.00561
	(!A2 * B2 * !C1 * Y)	-0.00309	-0.00368	-0.00372
	(!A2 * B2 * !C1 * Y)	0.00604	0.00566	0.00549
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00312	-0.00368	-0.00373
	(!A2 * B1 * !B2 * !C1 * Y)	0.00605	0.00567	0.00550
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00311	-0.00365	-0.00363
	(!A2 * !B1 * !B2 * C1 * Y)	0.00626	0.00581	0.00563
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00368	-0.00391	-0.00390
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00546	0.00541	0.00534

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.02914	0.02869	0.02620
	(A2 * B2 * C1 * !Y)	0.04782	0.04754	0.04490
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00776	-0.00778	-0.00777
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.01059	0.01064	0.01060
	(A2 * B1 * !B2 * C1 * !Y)	0.03836	0.03791	0.03543
	(A2 * B1 * !B2 * C1 * !Y)	0.05704	0.05677	0.05414
	(A2 * !B1 * !B2 * Y)	-0.00750	-0.00753	-0.00751
	(A2 * !B1 * !B2 * Y)	0.01084	0.01089	0.01086
	(!A2 * B2 * !C1 * Y)	-0.00629	-0.00747	-0.00752
	(!A2 * B2 * !C1 * Y)	0.01180	0.01097	0.01063
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00635	-0.00746	-0.00753
	(!A2 * B1 * !B2 * !C1 * Y)	0.01181	0.01099	0.01064
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00628	-0.00741	-0.00734
	(!A2 * !B1 * !B2 * C1 * Y)	0.01221	0.01125	0.01090
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00741	-0.00791	-0.00788
	(!A2 * !B1 * !B2 * !C1 * Y)	0.01062	0.01046	0.01032

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)**	0.00726	0.00731	0.00785
	(A1 * B2 * C1 * !Y)	0.00396	0.00397	0.00455
	(A1 * B2 * !C1 * Y)	0.00211	0.00211	0.00209
	(A1 * B2 * !C1 * Y)	-0.00264	-0.00264	-0.00262
	(A1 * B1 * !B2 * C1 * !Y)	0.00959	0.00963	0.01017
	(A1 * B1 * !B2 * C1 * !Y)	0.00628	0.00629	0.00687
	(A1 * B1 * !B2 * !C1 * Y)	0.00209	0.00211	0.00210
	(A1 * B1 * !B2 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(A1 * !B1 * !B2 * C1 * Y)	0.00217	0.00218	0.00216
	(A1 * !B1 * !B2 * C1 * Y)	-0.00258	-0.00258	-0.00256
	(A1 * !B1 * !B2 * !C1 * Y)	0.00201	0.00203	0.00202
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00270	-0.00271	-0.00270
	(!A1 * B2 * !C1 * Y)	0.00204	0.00207	0.00205
	(!A1 * B2 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(!A1 * B1 * !B2 * !C1 * Y)	0.00205	0.00207	0.00206
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00262	-0.00263	-0.00262
	(!A1 * !B1 * !B2 * C1 * Y)	0.00216	0.00216	0.00215
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00257	-0.00257	-0.00257
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00197	0.00198	0.00197
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00270	-0.00271	-0.00270

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.01414	0.01426	0.01526
	(A1 * B2 * C1 * !Y)	0.00831	0.00830	0.00936
	(A1 * B2 * !C1 * Y)	0.00407	0.00410	0.00405
	(A1 * B2 * !C1 * Y)	-0.00475	-0.00476	-0.00473
	(A1 * B1 * !B2 * C1 * !Y)	0.01878	0.01890	0.01990
	(A1 * B1 * !B2 * C1 * !Y)	0.01295	0.01293	0.01400
	(A1 * B1 * !B2 * !C1 * Y)	0.00403	0.00410	0.00405
	(A1 * B1 * !B2 * !C1 * Y)	-0.00472	-0.00476	-0.00473
	(A1 * !B1 * !B2 * C1 * Y)	0.00420	0.00423	0.00418
	(A1 * !B1 * !B2 * C1 * Y)	-0.00463	-0.00464	-0.00460
	(A1 * !B1 * !B2 * !C1 * Y)	0.00388	0.00394	0.00389
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00487	-0.00491	-0.00488
	(!A1 * B2 * !C1 * Y)	0.00392	0.00395	0.00394
	(!A1 * B2 * !C1 * Y)	-0.00472	-0.00474	-0.00472
	(!A1 * B1 * !B2 * !C1 * Y)	0.00394	0.00399	0.00396
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00472	-0.00475	-0.00472
	(!A1 * !B1 * !B2 * C1 * Y)	0.00419	0.00417	0.00416
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00459	-0.00458	-0.00460
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00380	0.00382	0.00380
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00489	-0.00490	-0.00488

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.02840	0.02862	0.03054
	(A1 * B2 * C1 * !Y)	0.01666	0.01663	0.01868
	(A1 * B2 * !C1 * Y)	0.00787	0.00801	0.00792
	(A1 * B2 * !C1 * Y)	-0.00968	-0.00978	-0.00971
	(A1 * B1 * !B2 * C1 * !Y)	0.03767	0.03789	0.03981
	(A1 * B1 * !B2 * C1 * !Y)	0.02593	0.02590	0.02794
	(A1 * B1 * !B2 * !C1 * Y)	0.00789	0.00801	0.00792
	(A1 * B1 * !B2 * !C1 * Y)	-0.00970	-0.00978	-0.00971
	(A1 * !B1 * !B2 * C1 * Y)	0.00812	0.00827	0.00817
	(A1 * !B1 * !B2 * C1 * Y)	-0.00942	-0.00953	-0.00946
	(A1 * !B1 * !B2 * !C1 * Y)	0.00757	0.00769	0.00760
	(A1 * !B1 * !B2 * !C1 * Y)	-0.01001	-0.01009	-0.01003
	(!A1 * B2 * !C1 * Y)	0.00772	0.00779	0.00775
	(!A1 * B2 * !C1 * Y)	-0.00970	-0.00975	-0.00971
	(!A1 * B1 * !B2 * !C1 * Y)	0.00775	0.00785	0.00777
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00970	-0.00977	-0.00971
	(!A1 * !B1 * !B2 * C1 * Y)	0.00815	0.00818	0.00814
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00942	-0.00945	-0.00949
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00740	0.00752	0.00745
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.01000	-0.01009	-0.01003

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)**	0.00590	0.00580	0.00446
	(A1 * B2 * C1 * !Y)	0.00924	0.00913	0.00779
	(A1 * B2 * !C1 * Y)	-0.00188	-0.00189	-0.00189
	(A1 * B2 * !C1 * Y)	0.00282	0.00284	0.00283
	(A1 * B1 * !B2 * C1 * !Y)	0.00822	0.00812	0.00678
	(A1 * B1 * !B2 * C1 * !Y)	0.01156	0.01145	0.01011
	(A1 * B1 * !B2 * !C1 * Y)	-0.00188	-0.00189	-0.00189
	(A1 * B1 * !B2 * !C1 * Y)	0.00283	0.00284	0.00283
	(A1 * !B1 * !B2 * C1 * Y)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * !B2 * C1 * Y)	0.00289	0.00291	0.00290
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00196	-0.00197	-0.00196
	(A1 * !B1 * !B2 * !C1 * Y)	0.00275	0.00276	0.00276
	(!A1 * B2 * !C1 * Y)	-0.00154	-0.00182	-0.00183
	(!A1 * B2 * !C1 * Y)	0.00310	0.00290	0.00284
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00156	-0.00182	-0.00183
	(!A1 * B1 * !B2 * !C1 * Y)	0.00308	0.00291	0.00284
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00153	-0.00177	-0.00178
	(!A1 * !B1 * !B2 * C1 * Y)	0.00319	0.00300	0.00291
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00181	-0.00191	-0.00192
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00280	0.00279	0.00276

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.01223	0.01200	0.00935
	(A1 * B2 * C1 * !Y)	0.01817	0.01798	0.01530
	(A1 * B2 * !C1 * Y)	-0.00362	-0.00366	-0.00363
	(A1 * B2 * !C1 * Y)	0.00513	0.00519	0.00515
	(A1 * B1 * !B2 * C1 * !Y)	0.01686	0.01663	0.01398
	(A1 * B1 * !B2 * C1 * !Y)	0.02280	0.02261	0.01993
	(A1 * B1 * !B2 * !C1 * Y)	-0.00363	-0.00366	-0.00363
	(A1 * B1 * !B2 * !C1 * Y)	0.00513	0.00519	0.00515
	(A1 * !B1 * !B2 * C1 * Y)	-0.00349	-0.00353	-0.00351
	(A1 * !B1 * !B2 * C1 * Y)	0.00525	0.00531	0.00528
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00378	-0.00380	-0.00379
	(A1 * !B1 * !B2 * !C1 * Y)	0.00497	0.00500	0.00499
	(!A1 * B2 * !C1 * Y)	-0.00296	-0.00349	-0.00353
	(!A1 * B2 * !C1 * Y)	0.00564	0.00531	0.00516
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00299	-0.00350	-0.00353
	(!A1 * B1 * !B2 * !C1 * Y)	0.00564	0.00532	0.00516
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00294	-0.00346	-0.00343
	(!A1 * !B1 * !B2 * C1 * Y)	0.00586	0.00545	0.00530
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00348	-0.00371	-0.00370
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00509	0.00506	0.00500

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.02440	0.02394	0.01864
	(A1 * B2 * C1 * !Y)	0.03633	0.03596	0.03061
	(A1 * B2 * !C1 * Y)	-0.00706	-0.00713	-0.00709
	(A1 * B2 * !C1 * Y)	0.01051	0.01063	0.01055
	(A1 * B1 * !B2 * C1 * !Y)	0.03365	0.03320	0.02790
	(A1 * B1 * !B2 * C1 * !Y)	0.04559	0.04522	0.03988
	(A1 * B1 * !B2 * !C1 * Y)	-0.00707	-0.00713	-0.00709
	(A1 * B1 * !B2 * !C1 * Y)	0.01051	0.01063	0.01055
	(A1 * !B1 * !B2 * C1 * Y)	-0.00681	-0.00688	-0.00683
	(A1 * !B1 * !B2 * C1 * Y)	0.01076	0.01086	0.01080
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00738	-0.00745	-0.00740
	(A1 * !B1 * !B2 * !C1 * Y)	0.01020	0.01032	0.01024
	(!A1 * B2 * !C1 * Y)	-0.00582	-0.00682	-0.00688
	(!A1 * B2 * !C1 * Y)	0.01149	0.01087	0.01058
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00587	-0.00683	-0.00690
	(!A1 * B1 * !B2 * !C1 * Y)	0.01150	0.01088	0.01058
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00577	-0.00683	-0.00669
	(!A1 * !B1 * !B2 * C1 * Y)	0.01192	0.01110	0.01084
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00681	-0.00725	-0.00724
	(!A1 * !B1 * !B2 * !C1 * Y)	0.01048	0.01038	0.01026

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)**	0.00838	0.00819	0.01116
	(A2 * B2 * C1 * !Y)	0.00352	0.00327	0.00631
	(A2 * !B2 * !C1 * Y)	0.00219	0.00220	0.00217
	(A2 * !B2 * !C1 * Y)	-0.00261	-0.00262	-0.00261
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00218	0.00217	0.00218
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00260	-0.00260	-0.00261
	(A1 * !A2 * B2 * C1 * !Y)	0.01070	0.01048	0.01348
	(A1 * !A2 * B2 * C1 * !Y)	0.00584	0.00562	0.00863
	(A1 * !A2 * !B2 * !C1 * Y)	0.00219	0.00220	0.00217
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00261	-0.00262	-0.00261
	(!A1 * !A2 * B2 * C1 * Y)	0.00094	0.00094	0.00096
	(!A1 * !A2 * B2 * C1 * Y)	-0.00271	-0.00270	-0.00267
	(!A1 * !A2 * B2 * !C1 * Y)	0.00118	0.00117	0.00117
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00271	-0.00270	-0.00271
	(!A1 * !A2 * !B2 * C1 * Y)	0.00097	0.00098	0.00096
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00267	-0.00269	-0.00269
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00271	-0.00272	-0.00271

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.01685	0.01629	0.02223
	(A2 * B2 * C1 * !Y)	0.00725	0.00668	0.01266
	(A2 * !B2 * !C1 * Y)	0.00425	0.00429	0.00425
	(A2 * !B2 * !C1 * Y)	-0.00516	-0.00520	-0.00518
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00427	0.00428	0.00428
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00517	-0.00518	-0.00517
	(A1 * !A2 * B2 * C1 * !Y)	0.02150	0.02095	0.02685
	(A1 * !A2 * B2 * C1 * !Y)	0.01189	0.01132	0.01729
	(A1 * !A2 * !B2 * !C1 * Y)	0.00424	0.00429	0.00425
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00516	-0.00519	-0.00518
	(!A1 * !A2 * B2 * C1 * Y)	0.00172	0.00172	0.00174
	(!A1 * !A2 * B2 * C1 * Y)	-0.00538	-0.00537	-0.00530
	(!A1 * !A2 * B2 * !C1 * Y)	0.00216	0.00216	0.00215
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00537	-0.00537	-0.00536
	(!A1 * !A2 * !B2 * C1 * Y)	0.00179	0.00181	0.00175
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00535	-0.00539	-0.00533
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00230	0.00232	0.00229
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00536	-0.00540	-0.00536

	(A2 * B2 * C1 * !Y)	0.03321	0.03211	0.04383
	(A2 * B2 * C1 * !Y)	0.01453	0.01341	0.02528
	(A2 * !B2 * !C1 * Y)	0.00826	0.00837	0.00827
	(A2 * !B2 * !C1 * Y)	-0.00998	-0.01007	-0.01003
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00832	0.00834	0.00831
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.01004	-0.01002	-0.01000
	(A1 * !A2 * B2 * C1 * !Y)	0.04248	0.04143	0.05308
	(A1 * !A2 * B2 * C1 * !Y)	0.02380	0.02269	0.03453
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00826	0.00837	0.00826
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00998	-0.01007	-0.01003
	(!A1 * !A2 * B2 * C1 * Y)	0.00326	0.00326	0.00327
	(!A1 * !A2 * B2 * C1 * Y)	-0.01045	-0.01042	-0.01026
	(!A1 * !A2 * B2 * !C1 * Y)	0.00404	0.00404	0.00400
	(!A1 * !A2 * B2 * !C1 * Y)	-0.01044	-0.01042	-0.01038
	(!A1 * !A2 * !B2 * C1 * Y)	0.00339	0.00338	0.00329
	(!A1 * !A2 * !B2 * C1 * Y)	-0.01036	-0.01037	-0.01034
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00430	0.00432	0.00426
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.01043	-0.01046	-0.01038

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)**	0.00708	0.00698	0.00637
	(A2 * B2 * C1 * !Y)	0.01196	0.01188	0.01123
	(A2 * !B2 * !C1 * Y)	-0.00166	-0.00195	-0.00194
	(A2 * !B2 * !C1 * Y)	0.00313	0.00290	0.00283
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00197	-0.00198	-0.00198
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00281	0.00283	0.00282
	(A1 * !A2 * B2 * C1 * !Y)	0.00940	0.00929	0.00868
	(A1 * !A2 * B2 * C1 * !Y)	0.01428	0.01420	0.01355
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00162	-0.00196	-0.00194
	(A1 * !A2 * !B2 * !C1 * Y)	0.00317	0.00289	0.00283
	(!A1 * !A2 * B2 * C1 * Y)	-0.00055	-0.00055	-0.00062
	(!A1 * !A2 * B2 * C1 * Y)	0.00319	0.00319	0.00300
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00104	-0.00106	-0.00113
	(!A1 * !A2 * B2 * !C1 * Y)	0.00307	0.00308	0.00286
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00067	-0.00068	-0.00071
	(!A1 * !A2 * !B2 * C1 * Y)	0.00298	0.00300	0.00288
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00112	-0.00115	-0.00119
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00301	0.00302	0.00286

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.01425	0.01403	0.01278
	(A2 * B2 * C1 * !Y)	0.02384	0.02370	0.02239
	(A2 * !B2 * !C1 * Y)	-0.00314	-0.00380	-0.00377
	(A2 * !B2 * !C1 * Y)	0.00631	0.00576	0.00562
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00385	-0.00387	-0.00386
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00557	0.00562	0.00559
	(A1 * !A2 * B2 * C1 * !Y)	0.01887	0.01864	0.01741
	(A1 * !A2 * B2 * C1 * !Y)	0.02846	0.02832	0.02702
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00308	-0.00381	-0.00377
	(A1 * !A2 * !B2 * !C1 * Y)	0.00636	0.00576	0.00562
	(!A1 * !A2 * B2 * C1 * Y)	-0.00093	-0.00094	-0.00108
	(!A1 * !A2 * B2 * C1 * Y)	0.00626	0.00629	0.00594
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00191	-0.00194	-0.00207
	(!A1 * !A2 * B2 * !C1 * Y)	0.00605	0.00611	0.00565
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00119	-0.00121	-0.00128
	(!A1 * !A2 * !B2 * C1 * Y)	0.00591	0.00596	0.00570
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00206	-0.00212	-0.00219
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00598	0.00600	0.00564

	(A2 * B2 * C1 * !Y)	0.02895	0.02856	0.02604
	(A2 * B2 * C1 * !Y)	0.04759	0.04721	0.04469
	(A2 * !B2 * !C1 * Y)	-0.00602	-0.00732	-0.00731
	(A2 * !B2 * !C1 * Y)	0.01227	0.01113	0.01090
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00748	-0.00751	-0.00748
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.01084	0.01090	0.01084
	(A1 * !A2 * B2 * C1 * !Y)	0.03819	0.03776	0.03529
	(A1 * !A2 * B2 * C1 * !Y)	0.05683	0.05651	0.05393
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	-0.00589	-0.00729	-0.00731
	(A1 * !A2 * !B2 * !C1 * Y)	0.01238	0.01112	0.01090
	(!A1 * !A2 * B2 * C1 * Y)	-0.00173	-0.00175	-0.00197
	(!A1 * !A2 * B2 * C1 * Y)	0.01215	0.01220	0.01151
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00360	-0.00363	-0.00386
	(!A1 * !A2 * B2 * !C1 * Y)	0.01173	0.01178	0.01093
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00224	-0.00228	-0.00235
	(!A1 * !A2 * !B2 * C1 * Y)	0.01148	0.01163	0.01106
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00385	-0.00401	-0.00409
	(!A1 * !A2 * !B2 * !C1 * Y)	0.01153	0.01159	0.01091

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)**	0.00722	0.00729	0.00787
	(A2 * B1 * C1 * !Y)	0.00413	0.00411	0.00473
	(A2 * B1 * !C1 * Y)	0.00208	0.00211	0.00209
	(A2 * B1 * !C1 * Y)	-0.00244	-0.00247	-0.00245
	(A2 * !B1 * !C1 * Y)	0.00209	0.00210	0.00208
	(A2 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246
	(A1 * !A2 * B1 * C1 * !Y)	0.00954	0.00961	0.01019
	(A1 * !A2 * B1 * C1 * !Y)	0.00645	0.00644	0.00705
	(A1 * !A2 * B1 * !C1 * Y)	0.00209	0.00211	0.00209
	(A1 * !A2 * B1 * !C1 * Y)	-0.00245	-0.00247	-0.00245
	(A1 * !A2 * !B1 * !C1 * Y)	0.00209	0.00210	0.00208
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00246	-0.00246	-0.00246
	(!A1 * !A2 * B1 * C1 * Y)	0.00087	0.00088	0.00088
	(!A1 * !A2 * B1 * C1 * Y)	-0.00255	-0.00257	-0.00252
	(!A1 * !A2 * B1 * !C1 * Y)	0.00110	0.00110	0.00110
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00256	-0.00257	-0.00256
	(!A1 * !A2 * !B1 * C1 * Y)	0.00090	0.00090	0.00088
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00250	-0.00252	-0.00253
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00116	0.00118	0.00117
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00256	-0.00257	-0.00256

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.01412	0.01423	0.01523
	(A2 * B1 * C1 * !Y)	0.00828	0.00826	0.00932
	(A2 * B1 * !C1 * Y)	0.00399	0.00406	0.00401
	(A2 * B1 * !C1 * Y)	-0.00471	-0.00476	-0.00473
	(A2 * !B1 * !C1 * Y)	0.00398	0.00403	0.00399
	(A2 * !B1 * !C1 * Y)	-0.00471	-0.00475	-0.00474
	(A1 * !A2 * B1 * C1 * !Y)	0.01876	0.01879	0.01987
	(A1 * !A2 * B1 * C1 * !Y)	0.01293	0.01295	0.01396
	(A1 * !A2 * B1 * !C1 * Y)	0.00400	0.00406	0.00401
	(A1 * !A2 * B1 * !C1 * Y)	-0.00472	-0.00476	-0.00473
	(A1 * !A2 * !B1 * !C1 * Y)	0.00398	0.00401	0.00399
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00471	-0.00474	-0.00474
	(!A1 * !A2 * B1 * C1 * Y)	0.00156	0.00157	0.00158
	(!A1 * !A2 * B1 * C1 * Y)	-0.00494	-0.00496	-0.00484
	(!A1 * !A2 * B1 * !C1 * Y)	0.00199	0.00201	0.00198
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00491	-0.00495	-0.00491
	(!A1 * !A2 * !B1 * C1 * Y)	0.00163	0.00164	0.00159
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00486	-0.00489	-0.00488
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00212	0.00214	0.00212
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00491	-0.00495	-0.00491

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.02843	0.02866	0.03067
	(A2 * B1 * C1 * !Y)	0.01665	0.01661	0.01874
	(A2 * B1 * !C1 * Y)	0.00809	0.00821	0.00813
	(A2 * B1 * !C1 * Y)	-0.00949	-0.00958	-0.00952
	(A2 * !B1 * !C1 * Y)	0.00808	0.00819	0.00808
	(A2 * !B1 * !C1 * Y)	-0.00950	-0.00959	-0.00955
	(A1 * !A2 * B1 * C1 * !Y)	0.03771	0.03778	0.03995
	(A1 * !A2 * B1 * C1 * !Y)	0.02593	0.02597	0.02801
	(A1 * !A2 * B1 * !C1 * Y)	0.00810	0.00821	0.00813
	(A1 * !A2 * B1 * !C1 * Y)	-0.00951	-0.00958	-0.00952
	(A1 * !A2 * !B1 * !C1 * Y)	0.00806	0.00818	0.00808
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00949	-0.00959	-0.00955
	(!A1 * !A2 * B1 * C1 * Y)	0.00313	0.00317	0.00317
	(!A1 * !A2 * B1 * C1 * Y)	-0.00990	-0.00998	-0.00977
	(!A1 * !A2 * B1 * !C1 * Y)	0.00390	0.00395	0.00389
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00991	-0.00997	-0.00990
	(!A1 * !A2 * !B1 * C1 * Y)	0.00327	0.00329	0.00319
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00983	-0.00988	-0.00985
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00417	0.00422	0.00415
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00991	-0.00999	-0.00990

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)**	0.00591	0.00580	0.00446
	(A2 * B1 * C1 * !Y)	0.00907	0.00897	0.00762
	(A2 * B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A2 * B1 * !C1 * Y)	0.00265	0.00267	0.00267
	(A2 * !B1 * !C1 * Y)	-0.00159	-0.00185	-0.00185
	(A2 * !B1 * !C1 * Y)	0.00295	0.00275	0.00268
	(A1 * !A2 * B1 * C1 * !Y)	0.00822	0.00812	0.00678
	(A1 * !A2 * B1 * C1 * !Y)	0.01140	0.01129	0.00994
	(A1 * !A2 * B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * B1 * !C1 * Y)	0.00266	0.00268	0.00267
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00154	-0.00187	-0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	0.00300	0.00273	0.00268
	(!A1 * !A2 * B1 * C1 * Y)	-0.00047	-0.00047	-0.00054
	(!A1 * !A2 * B1 * C1 * Y)	0.00303	0.00303	0.00285
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00097	-0.00098	-0.00105
	(!A1 * !A2 * B1 * !C1 * Y)	0.00291	0.00292	0.00271
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00060	-0.00060	-0.00064
	(!A1 * !A2 * !B1 * C1 * Y)	0.00282	0.00284	0.00274
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00106	-0.00107	-0.00111
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00287	0.00286	0.00271

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.01226	0.01203	0.00938
	(A2 * B1 * C1 * !Y)	0.01819	0.01801	0.01533
	(A2 * B1 * !C1 * Y)	-0.00359	-0.00361	-0.00360
	(A2 * B1 * !C1 * Y)	0.00513	0.00516	0.00515
	(A2 * !B1 * !C1 * Y)	-0.00287	-0.00357	-0.00352
	(A2 * !B1 * !C1 * Y)	0.00586	0.00528	0.00517
	(A1 * !A2 * B1 * C1 * !Y)	0.01690	0.01667	0.01402
	(A1 * !A2 * B1 * C1 * !Y)	0.02283	0.02265	0.01997
	(A1 * !A2 * B1 * !C1 * Y)	-0.00359	-0.00363	-0.00360
	(A1 * !A2 * B1 * !C1 * Y)	0.00512	0.00519	0.00515
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00282	-0.00354	-0.00352
	(A1 * !A2 * !B1 * !C1 * Y)	0.00591	0.00524	0.00517
	(!A1 * !A2 * B1 * C1 * Y)	-0.00079	-0.00079	-0.00092
	(!A1 * !A2 * B1 * C1 * Y)	0.00583	0.00582	0.00549
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00174	-0.00177	-0.00190
	(!A1 * !A2 * B1 * !C1 * Y)	0.00559	0.00564	0.00521
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00104	-0.00106	-0.00112
	(!A1 * !A2 * !B1 * C1 * Y)	0.00544	0.00549	0.00526
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00190	-0.00195	-0.00201
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00552	0.00553	0.00520

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.02426	0.02383	0.01850
	(A2 * B1 * C1 * !Y)	0.03625	0.03585	0.03053
	(A2 * B1 * !C1 * Y)	-0.00731	-0.00733	-0.00730
	(A2 * B1 * !C1 * Y)	0.01037	0.01041	0.01036
	(A2 * !B1 * !C1 * Y)	-0.00585	-0.00719	-0.00714
	(A2 * !B1 * !C1 * Y)	0.01179	0.01050	0.01042
	(A1 * !A2 * B1 * C1 * !Y)	0.03353	0.03307	0.02778
	(A1 * !A2 * B1 * C1 * !Y)	0.04552	0.04515	0.03980
	(A1 * !A2 * B1 * !C1 * Y)	-0.00727	-0.00730	-0.00730
	(A1 * !A2 * B1 * !C1 * Y)	0.01032	0.01036	0.01036
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00574	-0.00717	-0.00713
	(A1 * !A2 * !B1 * !C1 * Y)	0.01191	0.01059	0.01042
	(!A1 * !A2 * B1 * C1 * Y)	-0.00163	-0.00164	-0.00187
	(!A1 * !A2 * B1 * C1 * Y)	0.01164	0.01166	0.01102
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00347	-0.00351	-0.00375
	(!A1 * !A2 * B1 * !C1 * Y)	0.01119	0.01124	0.01045
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00213	-0.00214	-0.00225
	(!A1 * !A2 * !B1 * C1 * Y)	0.01096	0.01102	0.01058
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00381	-0.00386	-0.00397
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01112	0.01105	0.01043

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)	0.00093	0.00094	0.00083
	(A2 * !B1 * !B2 * Y)	-0.00287	-0.00290	-0.00304
	(!A2 * !B1 * !B2 * Y)	0.00093	0.00094	0.00083
	(!A2 * !B1 * !B2 * Y)	-0.00287	-0.00290	-0.00304
	(!A1 * !A2 * B2 * Y)	0.00097	0.00097	0.00080
	(!A1 * !A2 * B2 * Y)	-0.00266	-0.00270	-0.00303
	(!A1 * !A2 * B1 * !B2 * Y)	0.00097	0.00097	0.00081
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00269	-0.00273	-0.00303
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00170	0.00171	0.00151
	(A2 * !B1 * !B2 * Y)	-0.00534	-0.00539	-0.00567
	(!A2 * !B1 * !B2 * Y)	0.00170	0.00170	0.00151
	(!A2 * !B1 * !B2 * Y)	-0.00533	-0.00535	-0.00567
	(!A1 * !A2 * B2 * Y)	0.00178	0.00178	0.00147
	(!A1 * !A2 * B2 * Y)	-0.00496	-0.00500	-0.00565
	(!A1 * !A2 * B1 * !B2 * Y)	0.00178	0.00178	0.00149
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00503	-0.00506	-0.00565
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00299	0.00300	0.00265
	(A2 * !B1 * !B2 * Y)	-0.01088	-0.01098	-0.01147
	(!A2 * !B1 * !B2 * Y)	0.00300	0.00298	0.00265
	(!A2 * !B1 * !B2 * Y)	-0.01088	-0.01090	-0.01147
	(!A1 * !A2 * B2 * Y)	0.00313	0.00312	0.00258
	(!A1 * !A2 * B2 * Y)	-0.01017	-0.01022	-0.01145
	(!A1 * !A2 * B1 * !B2 * Y)	0.00315	0.00313	0.00261
	(!A1 * !A2 * B1 * !B2 * Y)	-0.01033	-0.01035	-0.01145

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)	-0.00064	-0.00065	-0.00063
	(A2 * !B1 * !B2 * Y)	0.00317	0.00323	0.00318
	(!A2 * !B1 * !B2 * Y)	-0.00064	-0.00065	-0.00063
	(!A2 * !B1 * !B2 * Y)	0.00317	0.00322	0.00318
	(!A1 * !A2 * B2 * Y)	-0.00057	-0.00058	-0.00056
	(!A1 * !A2 * B2 * Y)	0.00316	0.00319	0.00318
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * B1 * !B2 * Y)	0.00318	0.00318	0.00318
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00111
	(A2 * !B1 * !B2 * Y)	0.00591	0.00592	0.00595
	(!A2 * !B1 * !B2 * Y)	-0.00114	-0.00115	-0.00111
	(!A2 * !B1 * !B2 * Y)	0.00594	0.00603	0.00595
	(!A1 * !A2 * B2 * Y)	-0.00102	-0.00103	-0.00101
	(!A1 * !A2 * B2 * Y)	0.00591	0.00597	0.00594
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00105	-0.00106	-0.00104
	(!A1 * !A2 * B1 * !B2 * Y)	0.00590	0.00595	0.00594
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00188	-0.00192	-0.00183
	(A2 * !B1 * !B2 * Y)	0.01197	0.01221	0.01203
	(!A2 * !B1 * !B2 * Y)	-0.00191	-0.00192	-0.00183
	(!A2 * !B1 * !B2 * Y)	0.01204	0.01220	0.01204
	(!A1 * !A2 * B2 * Y)	-0.00169	-0.00170	-0.00165
	(!A1 * !A2 * B2 * Y)	0.01200	0.01210	0.01202
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00175	-0.00174	-0.00170
	(!A1 * !A2 * B1 * !B2 * Y)	0.01201	0.01201	0.01202

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00264	0.00259	0.00274	0.00269	1.66467
sky130_fd_sc_hs__o221a_2	0.00284	0.00277	0.00277	0.00287	0.00281	3.26709
sky130_fd_sc_hs__o221a_4	0.00532	0.00481	0.00562	0.00480	0.00487	6.17987

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	732.73100	1764.29000
sky130_fd_sc_hs__o221a_2	0.00000	1105.15000	1777.42000
sky130_fd_sc_hs__o221a_4	0.00000	2218.49000	3548.58000

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)	0.10249	0.47309	5.73374
	A2->X (RR)	0.09359	0.45945	5.57115
	B1->X (RR)	0.09548	0.51084	6.30267
	B2->X (RR)	0.08697	0.48812	6.06393
	C1->X (RR)	0.06455	0.50785	6.92553
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.10201	0.38683	5.46550
	A2->X (RR)	0.09405	0.37427	5.30317
	B1->X (RR)	0.09537	0.42696	6.05523
	B2->X (RR)	0.08993	0.40857	5.82719
	C1->X (RR)	0.06952	0.43149	6.68561
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.11340	0.35187	5.87012
	A2->X (RR)	0.10345	0.33973	5.73391
	B1->X (RR)	0.09822	0.37811	6.34696
	B2->X (RR)	0.09739	0.36440	6.07960
	C1->X (RR)	0.07461	0.39366	7.01793

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.10834	0.50141	5.70888
	A2->X (FF)	0.09981	0.54134	6.09871
	B1->X (FF)	0.09057	0.46760	5.51891
	B2->X (FF)	0.08180	0.49059	5.79114
	C1->X (FF)	0.04599	0.39442	5.08425
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.12655	0.49734	5.83637
	A2->X (FF)	0.11614	0.52775	6.22448
	B1->X (FF)	0.10411	0.44994	5.62790
	B2->X (FF)	0.09534	0.47621	5.89289
	C1->X (FF)	0.05242	0.37283	5.17471
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.11530	0.42893	5.77507
	A2->X (FF)	0.10302	0.46167	6.05325
	B1->X (FF)	0.10202	0.40279	5.58100
	B2->X (FF)	0.08893	0.42277	5.84063
	C1->X (FF)	0.05003	0.32401	5.09935

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.05680	0.06573	0.25805
	A1	0.04629	0.05520	0.24735
	A2	0.06086	0.07048	0.26066
	A2	0.05182	0.06144	0.25164
	B1	0.05544	0.06709	0.29125
	B1	0.04703	0.05909	0.28301
	B2	0.05959	0.07138	0.28844
	B2	0.05233	0.06411	0.28129
	C1	0.02957	0.04821	0.34193
	C1	0.02370	0.04232	0.33608
sky130_fd_sc_hs__o221a_2	A1	0.06377	0.07174	0.27007
	A1	0.05243	0.06046	0.25844
	A2	0.06726	0.07608	0.27065
	A2	0.05746	0.06624	0.26048
	B1	0.06172	0.07301	0.30481
	B1	0.05272	0.06402	0.29659
	B2	0.06577	0.07698	0.30076
	B2	0.05803	0.06931	0.29230
	C1	0.06068	0.07544	0.35026
	C1	0.02846	0.04698	0.34624

sky130_fd_sc_hs__o221a_4	**A1**	0.12734	0.14675	0.60077
	A1	0.10682	0.12628	0.57807
	A2	0.13364	0.15343	0.58239
	A2	0.11663	0.13646	0.56401
	B1	0.11723	0.13762	0.59991
	B1	0.10709	0.12910	0.58759
	B2	0.13056	0.15282	0.59337
	B2	0.11724	0.13944	0.58000
	C1	0.09035	0.12267	0.68661
	C1	0.05674	0.09424	0.68070

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.01857	0.02831	0.23917
	A1	0.03116	0.04025	0.25030
	A2	0.01939	0.03000	0.25309
	A2	0.02979	0.04040	0.26330
	B1	0.01714	0.02890	0.25473
	B1	0.02565	0.03733	0.26215
	B2	0.01698	0.02955	0.25083
	B2	0.02433	0.03689	0.25821
	C1	0.01378	0.03215	0.31404
	C1	0.01966	0.03786	0.31724

sky130_fd_sc_hs__o221a_2	**A1**	0.03663	0.04165	0.25199
	A1	0.05089	0.05464	0.26241
	A2	0.03687	0.04336	0.26542
	A2	0.04962	0.05503	0.27528
	B1	0.03382	0.04176	0.26424
	B1	0.04292	0.05065	0.27332
	B2	0.03381	0.04250	0.26655
	B2	0.04158	0.05024	0.27340
	C1	0.02726	0.04415	0.32262
	C1	0.03349	0.05034	0.32675
sky130_fd_sc_hs__o221a_4	**A1**	0.07198	0.08607	0.54288
	A1	0.09251	0.10657	0.56031
	A2	0.07620	0.09094	0.54587
	A2	0.09601	0.11052	0.56033
	B1	0.06748	0.08442	0.53917
	B1	0.08478	0.10153	0.55171
	B2	0.07178	0.08815	0.51103
	B2	0.08786	0.10401	0.52433
	C1	0.05613	0.08989	0.63950
	C1	0.06682	0.10050	0.64871

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)**	0.00866	0.00850	0.01189
	(A2 * B2 * C1 * X)	0.00437	0.00417	0.00762
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00641	0.00642	0.00641
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00220	0.00220	0.00220
	(A2 * B1 * !B2 * C1 * X)	0.01110	0.01094	0.01432
	(A2 * B1 * !B2 * C1 * X)	0.00681	0.00661	0.01005
	(A2 * !B1 * !B2 * !X)	0.00651	0.00652	0.00651
	(A2 * !B1 * !B2 * !X)	0.00230	0.00230	0.00230
	(!A2 * B2 * !C1 * !X)	0.00640	0.00640	0.00639
	(!A2 * B2 * !C1 * !X)	0.00220	0.00220	0.00219
	(!A2 * B1 * !B2 * !C1 * !X)	0.00640	0.00641	0.00640
	(!A2 * B1 * !B2 * !C1 * !X)	0.00220	0.00219	0.00219
	(!A2 * !B1 * !B2 * C1 * !X)	0.00652	0.00654	0.00650
	(!A2 * !B1 * !B2 * C1 * !X)	0.00228	0.00226	0.00225
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00623	0.00624	0.00622
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00203	0.00203	0.00204

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00909	0.00891	0.01228
	(A2 * B2 * C1 * X)	0.00454	0.00432	0.00775
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.01110	0.01111	0.01111
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00663	0.00664	0.00664
	(A2 * B1 * !B2 * C1 * X)	0.01153	0.01135	0.01472
	(A2 * B1 * !B2 * C1 * X)	0.00698	0.00676	0.01018
	(A2 * !B1 * !B2 * !X)	0.01116	0.01117	0.01117
	(A2 * !B1 * !B2 * !X)	0.00669	0.00670	0.00670
	(!A2 * B2 * !C1 * !X)	0.01105	0.01105	0.01106
	(!A2 * B2 * !C1 * !X)	0.00663	0.00663	0.00663
	(!A2 * B1 * !B2 * !C1 * !X)	0.01106	0.01107	0.01107
	(!A2 * B1 * !B2 * !C1 * !X)	0.00663	0.00663	0.00663
	(!A2 * !B1 * !B2 * C1 * !X)	0.01115	0.01116	0.01115
	(!A2 * !B1 * !B2 * C1 * !X)	0.00669	0.00668	0.00667
	(!A2 * !B1 * !B2 * !C1 * !X)	0.01098	0.01101	0.01099
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00656	0.00654	0.00655

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.01778	0.01750	0.02421
	(A2 * B2 * C1 * X)	0.00906	0.00871	0.01551
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.02222	0.02227	0.02225
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.01367	0.01365	0.01367
	(A2 * B1 * !B2 * C1 * X)	0.02266	0.02238	0.02908
	(A2 * B1 * !B2 * C1 * X)	0.01393	0.01358	0.02037
	(A2 * !B1 * !B2 * !X)	0.02241	0.02247	0.02245
	(A2 * !B1 * !B2 * !X)	0.01386	0.01385	0.01387
	(!A2 * B2 * !C1 * !X)	0.02220	0.02223	0.02220
	(!A2 * B2 * !C1 * !X)	0.01365	0.01364	0.01363
	(!A2 * B1 * !B2 * !C1 * !X)	0.02220	0.02224	0.02220
	(!A2 * B1 * !B2 * !C1 * !X)	0.01365	0.01363	0.01363
	(!A2 * !B1 * !B2 * C1 * !X)	0.02244	0.02247	0.02240
	(!A2 * !B1 * !B2 * C1 * !X)	0.01382	0.01381	0.01376
	(!A2 * !B1 * !B2 * !C1 * !X)	0.02184	0.02189	0.02186
	(!A2 * !B1 * !B2 * !C1 * !X)	0.01334	0.01331	0.01334

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)**	0.00868	0.00854	0.00776
	(A2 * B2 * C1 * X)	0.01296	0.01287	0.01205
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00302	0.00302	0.00302
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00723	0.00723	0.00723
	(A2 * B1 * !B2 * C1 * X)	0.01110	0.01097	0.01019
	(A2 * B1 * !B2 * C1 * X)	0.01539	0.01530	0.01448
	(A2 * !B1 * !B2 * !X)	0.00312	0.00312	0.00312
	(A2 * !B1 * !B2 * !X)	0.00733	0.00733	0.00733
	(!A2 * B2 * !C1 * !X)	0.00330	0.00303	0.00306
	(!A2 * B2 * !C1 * !X)	0.00749	0.00730	0.00725
	(!A2 * B1 * !B2 * !C1 * !X)	0.00329	0.00303	0.00306
	(!A2 * B1 * !B2 * !C1 * !X)	0.00749	0.00729	0.00725
	(!A2 * !B1 * !B2 * C1 * !X)	0.00329	0.00309	0.00315
	(!A2 * !B1 * !B2 * C1 * !X)	0.00756	0.00740	0.00735
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00299	0.00290	0.00291
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00713	0.00711	0.00708

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00851	0.00838	0.00758
	(A2 * B2 * C1 * X)	0.01305	0.01296	0.01213
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00722	0.00721	0.00722
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.01169	0.01172	0.01169
	(A2 * B1 * !B2 * C1 * X)	0.01094	0.01081	0.01001
	(A2 * B1 * !B2 * C1 * X)	0.01549	0.01539	0.01457
	(A2 * !B1 * !B2 * !X)	0.00729	0.00728	0.00729
	(A2 * !B1 * !B2 * !X)	0.01176	0.01179	0.01177
	(!A2 * B2 * !C1 * !X)	0.00755	0.00729	0.00728
	(!A2 * B2 * !C1 * !X)	0.01194	0.01177	0.01171
	(!A2 * B1 * !B2 * !C1 * !X)	0.00754	0.00729	0.00728
	(!A2 * B1 * !B2 * !C1 * !X)	0.01195	0.01178	0.01171
	(!A2 * !B1 * !B2 * C1 * !X)	0.00756	0.00734	0.00734
	(!A2 * !B1 * !B2 * C1 * !X)	0.01205	0.01187	0.01179
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00729	0.00719	0.00719
	(!A2 * !B1 * !B2 * !C1 * !X)	0.01167	0.01165	0.01162

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.01734	0.01708	0.01548
	(A2 * B2 * C1 * X)	0.02608	0.02589	0.02423
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.01470	0.01468	0.01471
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.02329	0.02334	0.02329
	(A2 * B1 * !B2 * C1 * X)	0.02219	0.02193	0.02034
	(A2 * B1 * !B2 * C1 * X)	0.03093	0.03075	0.02909
	(A2 * !B1 * !B2 * !X)	0.01492	0.01489	0.01492
	(A2 * !B1 * !B2 * !X)	0.02349	0.02355	0.02350
	(!A2 * B2 * !C1 * !X)	0.01525	0.01472	0.01480
	(!A2 * B2 * !C1 * !X)	0.02379	0.02340	0.02333
	(!A2 * B1 * !B2 * !C1 * !X)	0.01522	0.01473	0.01480
	(!A2 * B1 * !B2 * !C1 * !X)	0.02378	0.02340	0.02333
	(!A2 * !B1 * !B2 * C1 * !X)	0.01523	0.01482	0.01498
	(!A2 * !B1 * !B2 * C1 * !X)	0.02393	0.02359	0.02354
	(!A2 * !B1 * !B2 * !C1 * !X)	0.01466	0.01448	0.01448
	(!A2 * !B1 * !B2 * !C1 * !X)	0.02309	0.02304	0.02300

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)**	0.00764	0.00769	0.00828
	(A1 * B2 * C1 * X)	0.00481	0.00481	0.00543
	(A1 * B2 * !C1 * !X)	0.00644	0.00646	0.00644
	(A1 * B2 * !C1 * !X)	0.00237	0.00235	0.00236
	(A1 * B1 * !B2 * C1 * X)	0.01007	0.01012	0.01072
	(A1 * B1 * !B2 * C1 * X)	0.00725	0.00725	0.00787
	(A1 * B1 * !B2 * !C1 * !X)	0.00644	0.00646	0.00644
	(A1 * B1 * !B2 * !C1 * !X)	0.00237	0.00235	0.00236
	(A1 * !B1 * !B2 * C1 * !X)	0.00653	0.00654	0.00652
	(A1 * !B1 * !B2 * C1 * !X)	0.00246	0.00243	0.00244
	(A1 * !B1 * !B2 * !C1 * !X)	0.00629	0.00630	0.00629
	(A1 * !B1 * !B2 * !C1 * !X)	0.00221	0.00220	0.00221
	(!A1 * B2 * !C1 * !X)	0.00643	0.00645	0.00643
	(!A1 * B2 * !C1 * !X)	0.00237	0.00236	0.00236
	(!A1 * B1 * !B2 * !C1 * !X)	0.00644	0.00644	0.00643
	(!A1 * B1 * !B2 * !C1 * !X)	0.00237	0.00237	0.00236
	(!A1 * !B1 * !B2 * C1 * !X)	0.00656	0.00657	0.00653
	(!A1 * !B1 * !B2 * C1 * !X)	0.00245	0.00244	0.00241
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00627	0.00628	0.00626
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00220	0.00220	0.00221

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00797	0.00803	0.00857
	(A1 * B2 * C1 * X)	0.00493	0.00492	0.00549
	(A1 * B2 * !C1 * !X)	0.01112	0.01113	0.01111
	(A1 * B2 * !C1 * !X)	0.00682	0.00679	0.00680
	(A1 * B1 * !B2 * C1 * X)	0.01041	0.01047	0.01101
	(A1 * B1 * !B2 * C1 * X)	0.00737	0.00736	0.00793
	(A1 * B1 * !B2 * !C1 * !X)	0.01111	0.01113	0.01111
	(A1 * B1 * !B2 * !C1 * !X)	0.00682	0.00679	0.00680
	(A1 * !B1 * !B2 * C1 * !X)	0.01117	0.01117	0.01115
	(A1 * !B1 * !B2 * C1 * !X)	0.00687	0.00683	0.00684
	(A1 * !B1 * !B2 * !C1 * !X)	0.01104	0.01105	0.01104
	(A1 * !B1 * !B2 * !C1 * !X)	0.00675	0.00673	0.00674
	(!A1 * B2 * !C1 * !X)	0.01106	0.01107	0.01107
	(!A1 * B2 * !C1 * !X)	0.00683	0.00682	0.00683
	(!A1 * B1 * !B2 * !C1 * !X)	0.01109	0.01111	0.01109
	(!A1 * B1 * !B2 * !C1 * !X)	0.00683	0.00681	0.00682
	(!A1 * !B1 * !B2 * C1 * !X)	0.01119	0.01121	0.01118
	(!A1 * !B1 * !B2 * C1 * !X)	0.00687	0.00686	0.00686
	(!A1 * !B1 * !B2 * !C1 * !X)	0.01102	0.01103	0.01102
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00674	0.00673	0.00675

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.01517	0.01527	0.01632
	(A1 * B2 * C1 * X)	0.00989	0.00988	0.01097
	(A1 * B2 * !C1 * !X)	0.02168	0.02170	0.02166
	(A1 * B2 * !C1 * !X)	0.01386	0.01379	0.01382
	(A1 * B1 * !B2 * C1 * X)	0.02005	0.02015	0.02119
	(A1 * B1 * !B2 * C1 * X)	0.01477	0.01475	0.01585
	(A1 * B1 * !B2 * !C1 * !X)	0.02168	0.02170	0.02166
	(A1 * B1 * !B2 * !C1 * !X)	0.01385	0.01380	0.01382
	(A1 * !B1 * !B2 * C1 * !X)	0.02185	0.02185	0.02181
	(A1 * !B1 * !B2 * C1 * !X)	0.01403	0.01395	0.01397
	(A1 * !B1 * !B2 * !C1 * !X)	0.02138	0.02140	0.02137
	(A1 * !B1 * !B2 * !C1 * !X)	0.01355	0.01350	0.01353
	(!A1 * B2 * !C1 * !X)	0.02169	0.02172	0.02168
	(!A1 * B2 * !C1 * !X)	0.01387	0.01384	0.01385
	(!A1 * B1 * !B2 * !C1 * !X)	0.02170	0.02171	0.02168
	(!A1 * B1 * !B2 * !C1 * !X)	0.01387	0.01385	0.01384
	(!A1 * !B1 * !B2 * C1 * !X)	0.02192	0.02195	0.02187
	(!A1 * !B1 * !B2 * C1 * !X)	0.01403	0.01400	0.01395
	(!A1 * !B1 * !B2 * !C1 * !X)	0.02132	0.02137	0.02134
	(!A1 * !B1 * !B2 * !C1 * !X)	0.01358	0.01352	0.01355

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)**	0.00682	0.00671	0.00525
	(A1 * B2 * C1 * X)	0.00969	0.00957	0.00811
	(A1 * B2 * !C1 * !X)	0.00301	0.00298	0.00299
	(A1 * B2 * !C1 * !X)	0.00708	0.00710	0.00708
	(A1 * B1 * !B2 * C1 * X)	0.00926	0.00914	0.00769
	(A1 * B1 * !B2 * C1 * X)	0.01212	0.01201	0.01055
	(A1 * B1 * !B2 * !C1 * !X)	0.00301	0.00298	0.00299
	(A1 * B1 * !B2 * !C1 * !X)	0.00708	0.00710	0.00708
	(A1 * !B1 * !B2 * C1 * !X)	0.00314	0.00311	0.00311
	(A1 * !B1 * !B2 * C1 * !X)	0.00721	0.00720	0.00719
	(A1 * !B1 * !B2 * !C1 * !X)	0.00284	0.00282	0.00283
	(A1 * !B1 * !B2 * !C1 * !X)	0.00692	0.00694	0.00692
	(!A1 * B2 * !C1 * !X)	0.00330	0.00300	0.00303
	(!A1 * B2 * !C1 * !X)	0.00735	0.00713	0.00708
	(!A1 * B1 * !B2 * !C1 * !X)	0.00328	0.00300	0.00302
	(!A1 * B1 * !B2 * !C1 * !X)	0.00735	0.00713	0.00708
	(!A1 * !B1 * !B2 * C1 * !X)	0.00329	0.00306	0.00311
	(!A1 * !B1 * !B2 * C1 * !X)	0.00743	0.00724	0.00718
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00297	0.00287	0.00287
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00697	0.00694	0.00691

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00673	0.00661	0.00516
	(A1 * B2 * C1 * X)	0.00983	0.00972	0.00826
	(A1 * B2 * !C1 * !X)	0.00725	0.00722	0.00722
	(A1 * B2 * !C1 * !X)	0.01154	0.01152	0.01153
	(A1 * B1 * !B2 * C1 * X)	0.00916	0.00905	0.00760
	(A1 * B1 * !B2 * C1 * X)	0.01227	0.01216	0.01070
	(A1 * B1 * !B2 * !C1 * !X)	0.00724	0.00722	0.00722
	(A1 * B1 * !B2 * !C1 * !X)	0.01154	0.01153	0.01153
	(A1 * !B1 * !B2 * C1 * !X)	0.00736	0.00730	0.00731
	(A1 * !B1 * !B2 * C1 * !X)	0.01166	0.01164	0.01162
	(A1 * !B1 * !B2 * !C1 * !X)	0.00714	0.00711	0.00713
	(A1 * !B1 * !B2 * !C1 * !X)	0.01144	0.01145	0.01144
	(!A1 * B2 * !C1 * !X)	0.00756	0.00727	0.00726
	(!A1 * B2 * !C1 * !X)	0.01178	0.01158	0.01152
	(!A1 * B1 * !B2 * !C1 * !X)	0.00755	0.00727	0.00725
	(!A1 * B1 * !B2 * !C1 * !X)	0.01178	0.01159	0.01152
	(!A1 * !B1 * !B2 * C1 * !X)	0.00757	0.00732	0.00732
	(!A1 * !B1 * !B2 * C1 * !X)	0.01189	0.01169	0.01160
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00728	0.00717	0.00717
	(!A1 * !B1 * !B2 * !C1 * !X)	0.01149	0.01146	0.01143

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.01424	0.01402	0.01112
	(A1 * B2 * C1 * X)	0.01964	0.01942	0.01650
	(A1 * B2 * !C1 * !X)	0.01537	0.01530	0.01530
	(A1 * B2 * !C1 * !X)	0.02318	0.02314	0.02314
	(A1 * B1 * !B2 * C1 * X)	0.01911	0.01889	0.01599
	(A1 * B1 * !B2 * C1 * X)	0.02451	0.02429	0.02137
	(A1 * B1 * !B2 * !C1 * !X)	0.01536	0.01531	0.01530
	(A1 * B1 * !B2 * !C1 * !X)	0.02317	0.02313	0.02314
	(A1 * !B1 * !B2 * C1 * !X)	0.01567	0.01554	0.01556
	(A1 * !B1 * !B2 * C1 * !X)	0.02350	0.02344	0.02340
	(A1 * !B1 * !B2 * !C1 * !X)	0.01500	0.01495	0.01495
	(A1 * !B1 * !B2 * !C1 * !X)	0.02281	0.02280	0.02280
	(!A1 * B2 * !C1 * !X)	0.01588	0.01529	0.01533
	(!A1 * B2 * !C1 * !X)	0.02368	0.02324	0.02312
	(!A1 * B1 * !B2 * !C1 * !X)	0.01585	0.01529	0.01532
	(!A1 * B1 * !B2 * !C1 * !X)	0.02367	0.02324	0.02312
	(!A1 * !B1 * !B2 * C1 * !X)	0.01586	0.01534	0.01551
	(!A1 * !B1 * !B2 * C1 * !X)	0.02383	0.02339	0.02333
	(!A1 * !B1 * !B2 * !C1 * !X)	0.01522	0.01499	0.01501
	(!A1 * !B1 * !B2 * !C1 * !X)	0.02292	0.02285	0.02278

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)**	0.00856	0.00840	0.01177
	(A2 * B2 * C1 * X)	0.00436	0.00416	0.00759
	(A2 * !B2 * !C1 * !X)	0.00645	0.00646	0.00644
	(A2 * !B2 * !C1 * !X)	0.00233	0.00231	0.00230
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00645	0.00647	0.00645
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00232	0.00231	0.00232
	(A1 * !A2 * B2 * C1 * X)	0.01100	0.01084	0.01421
	(A1 * !A2 * B2 * C1 * X)	0.00680	0.00659	0.01002
	(A1 * !A2 * !B2 * !C1 * !X)	0.00646	0.00647	0.00644
	(A1 * !A2 * !B2 * !C1 * !X)	0.00231	0.00230	0.00230
	(!A1 * !A2 * B2 * C1 * !X)	0.00538	0.00539	0.00540
	(!A1 * !A2 * B2 * C1 * !X)	0.00215	0.00214	0.00223
	(!A1 * !A2 * B2 * !C1 * !X)	0.00547	0.00548	0.00547
	(!A1 * !A2 * B2 * !C1 * !X)	0.00214	0.00213	0.00215
	(!A1 * !A2 * !B2 * C1 * !X)	0.00537	0.00538	0.00532
	(!A1 * !A2 * !B2 * C1 * !X)	0.00222	0.00220	0.00216
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00553	0.00554	0.00552
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00214	0.00213	0.00215

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00891	0.00877	0.01216
	(A2 * B2 * C1 * X)	0.00446	0.00427	0.00772
	(A2 * !B2 * !C1 * !X)	0.01110	0.01113	0.01111
	(A2 * !B2 * !C1 * !X)	0.00675	0.00673	0.00674
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.01112	0.01112	0.01112
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00675	0.00675	0.00675
	(A1 * !A2 * B2 * C1 * X)	0.01135	0.01118	0.01459
	(A1 * !A2 * B2 * C1 * X)	0.00690	0.00673	0.01016
	(A1 * !A2 * !B2 * !C1 * !X)	0.01112	0.01113	0.01111
	(A1 * !A2 * !B2 * !C1 * !X)	0.00673	0.00673	0.00674
	(!A1 * !A2 * B2 * C1 * !X)	0.00990	0.00990	0.00991
	(!A1 * !A2 * B2 * C1 * !X)	0.00664	0.00665	0.00669
	(!A1 * !A2 * B2 * !C1 * !X)	0.01009	0.01009	0.01009
	(!A1 * !A2 * B2 * !C1 * !X)	0.00664	0.00664	0.00665
	(!A1 * !A2 * !B2 * C1 * !X)	0.00989	0.00991	0.00989
	(!A1 * !A2 * !B2 * C1 * !X)	0.00667	0.00665	0.00666
	(!A1 * !A2 * !B2 * !C1 * !X)	0.01015	0.01016	0.01015
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00664	0.00662	0.00664

	(A2 * B2 * C1 * X)	0.01817	0.01791	0.02460
	(A2 * B2 * C1 * X)	0.00901	0.00867	0.01546
	(A2 * !B2 * !C1 * !X)	0.02268	0.02271	0.02266
	(A2 * !B2 * !C1 * !X)	0.01367	0.01365	0.01362
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.02267	0.02273	0.02269
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.01368	0.01366	0.01368
	(A1 * !A2 * B2 * C1 * X)	0.02306	0.02279	0.02947
	(A1 * !A2 * B2 * C1 * X)	0.01389	0.01354	0.02033
sky130_fd_sc_hs__o221a_4	**(A1 * !A2 * !B2 * !C1 * !X)**	0.02268	0.02270	0.02266
	(A1 * !A2 * !B2 * !C1 * !X)	0.01367	0.01365	0.01362
	(!A1 * !A2 * B2 * C1 * !X)	0.02042	0.02045	0.02045
	(!A1 * !A2 * B2 * C1 * !X)	0.01331	0.01330	0.01344
	(!A1 * !A2 * B2 * !C1 * !X)	0.02056	0.02060	0.02056
	(!A1 * !A2 * B2 * !C1 * !X)	0.01329	0.01327	0.01330
	(!A1 * !A2 * !B2 * C1 * !X)	0.02035	0.02037	0.02027
	(!A1 * !A2 * !B2 * C1 * !X)	0.01338	0.01335	0.01332
	(!A1 * !A2 * !B2 * !C1 * !X)	0.02068	0.02071	0.02067
	(!A1 * !A2 * !B2 * !C1 * !X)	0.01328	0.01324	0.01328

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)**	0.00879	0.00867	0.00787
	(A2 * B2 * C1 * X)	0.01300	0.01290	0.01208
	(A2 * !B2 * !C1 * !X)	0.00325	0.00296	0.00301
	(A2 * !B2 * !C1 * !X)	0.00740	0.00716	0.00713
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00299	0.00298	0.00298
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00711	0.00713	0.00711
	(A1 * !A2 * B2 * C1 * X)	0.01122	0.01110	0.01030
	(A1 * !A2 * B2 * C1 * X)	0.01543	0.01533	0.01451
	(A1 * !A2 * !B2 * !C1 * !X)	0.00329	0.00295	0.00301
	(A1 * !A2 * !B2 * !C1 * !X)	0.00743	0.00715	0.00713
	(!A1 * !A2 * B2 * C1 * !X)	0.00427	0.00426	0.00421
	(!A1 * !A2 * B2 * C1 * !X)	0.00748	0.00751	0.00736
	(!A1 * !A2 * B2 * !C1 * !X)	0.00375	0.00374	0.00366
	(!A1 * !A2 * B2 * !C1 * !X)	0.00725	0.00728	0.00707
	(!A1 * !A2 * !B2 * C1 * !X)	0.00414	0.00413	0.00411
	(!A1 * !A2 * !B2 * C1 * !X)	0.00726	0.00728	0.00719
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00367	0.00366	0.00362
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00720	0.00721	0.00707

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00862	0.00848	0.00770
	(A2 * B2 * C1 * X)	0.01306	0.01297	0.01215
	(A2 * !B2 * !C1 * !X)	0.00754	0.00723	0.00725
	(A2 * !B2 * !C1 * !X)	0.01191	0.01166	0.01160
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00721	0.00720	0.00721
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.01158	0.01159	0.01158
	(A1 * !A2 * B2 * C1 * X)	0.01105	0.01092	0.01013
	(A1 * !A2 * B2 * C1 * X)	0.01549	0.01541	0.01459
	(A1 * !A2 * !B2 * !C1 * !X)	0.00757	0.00722	0.00725
	(A1 * !A2 * !B2 * !C1 * !X)	0.01194	0.01166	0.01160
	(!A1 * !A2 * B2 * C1 * !X)	0.00863	0.00863	0.00856
	(!A1 * !A2 * B2 * C1 * !X)	0.01193	0.01193	0.01177
	(!A1 * !A2 * B2 * !C1 * !X)	0.00814	0.00814	0.00807
	(!A1 * !A2 * B2 * !C1 * !X)	0.01182	0.01181	0.01162
	(!A1 * !A2 * !B2 * C1 * !X)	0.00851	0.00852	0.00849
	(!A1 * !A2 * !B2 * C1 * !X)	0.01177	0.01177	0.01167
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00807	0.00805	0.00802
	(!A1 * !A2 * !B2 * !C1 * !X)	0.01177	0.01177	0.01162

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.01693	0.01667	0.01507
	(A2 * B2 * C1 * X)	0.02610	0.02591	0.02426
	(A2 * !B2 * !C1 * !X)	0.01481	0.01428	0.01434
	(A2 * !B2 * !C1 * !X)	0.02385	0.02339	0.02333
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.01427	0.01423	0.01426
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.02327	0.02333	0.02328
	(A1 * !A2 * B2 * C1 * X)	0.02178	0.02153	0.01994
	(A1 * !A2 * B2 * C1 * X)	0.03096	0.03077	0.02912
	(A1 * !A2 * !B2 * !C1 * !X)	0.01488	0.01428	0.01434
	(A1 * !A2 * !B2 * !C1 * !X)	0.02392	0.02339	0.02333
	(!A1 * !A2 * B2 * C1 * !X)	0.01698	0.01696	0.01687
	(!A1 * !A2 * B2 * C1 * !X)	0.02408	0.02413	0.02380
	(!A1 * !A2 * B2 * !C1 * !X)	0.01594	0.01591	0.01577
	(!A1 * !A2 * B2 * !C1 * !X)	0.02358	0.02362	0.02319
	(!A1 * !A2 * !B2 * C1 * !X)	0.01670	0.01669	0.01665
	(!A1 * !A2 * !B2 * C1 * !X)	0.02360	0.02364	0.02345
	(!A1 * !A2 * !B2 * !C1 * !X)	0.01578	0.01575	0.01568
	(!A1 * !A2 * !B2 * !C1 * !X)	0.02346	0.02349	0.02321

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)**	0.00786	0.00791	0.00845
	(A2 * B1 * C1 * X)	0.00477	0.00477	0.00535
	(A2 * B1 * !C1 * !X)	0.00662	0.00664	0.00662
	(A2 * B1 * !C1 * !X)	0.00231	0.00229	0.00230
	(A2 * !B1 * !C1 * !X)	0.00665	0.00665	0.00662
	(A2 * !B1 * !C1 * !X)	0.00230	0.00230	0.00229
	(A1 * !A2 * B1 * C1 * X)	0.01030	0.01034	0.01089
	(A1 * !A2 * B1 * C1 * X)	0.00721	0.00721	0.00779
	(A1 * !A2 * B1 * !C1 * !X)	0.00662	0.00664	0.00662
	(A1 * !A2 * B1 * !C1 * !X)	0.00231	0.00229	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	0.00665	0.00664	0.00662
	(A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00231	0.00229
	(!A1 * !A2 * B1 * C1 * !X)	0.00550	0.00549	0.00549
	(!A1 * !A2 * B1 * C1 * !X)	0.00213	0.00211	0.00218
	(!A1 * !A2 * B1 * !C1 * !X)	0.00558	0.00559	0.00558
	(!A1 * !A2 * B1 * !C1 * !X)	0.00213	0.00212	0.00213
	(!A1 * !A2 * !B1 * C1 * !X)	0.00547	0.00547	0.00543
	(!A1 * !A2 * !B1 * C1 * !X)	0.00219	0.00218	0.00214
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00565	0.00565	0.00564
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00213	0.00213	0.00213

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00813	0.00819	0.00878
	(A2 * B1 * C1 * X)	0.00492	0.00492	0.00555
	(A2 * B1 * !C1 * !X)	0.01124	0.01125	0.01123
	(A2 * B1 * !C1 * !X)	0.00678	0.00676	0.00677
	(A2 * !B1 * !C1 * !X)	0.01125	0.01127	0.01124
	(A2 * !B1 * !C1 * !X)	0.00678	0.00677	0.00678
	(A1 * !A2 * B1 * C1 * X)	0.01057	0.01063	0.01122
	(A1 * !A2 * B1 * C1 * X)	0.00737	0.00736	0.00799
	(A1 * !A2 * B1 * !C1 * !X)	0.01124	0.01125	0.01123
	(A1 * !A2 * B1 * !C1 * !X)	0.00678	0.00676	0.00677
	(A1 * !A2 * !B1 * !C1 * !X)	0.01125	0.01126	0.01124
	(A1 * !A2 * !B1 * !C1 * !X)	0.00678	0.00677	0.00678
	(!A1 * !A2 * B1 * C1 * !X)	0.00994	0.00993	0.00993
	(!A1 * !A2 * B1 * C1 * !X)	0.00666	0.00663	0.00668
	(!A1 * !A2 * B1 * !C1 * !X)	0.01016	0.01016	0.01015
	(!A1 * !A2 * B1 * !C1 * !X)	0.00667	0.00666	0.00667
	(!A1 * !A2 * !B1 * C1 * !X)	0.00996	0.00996	0.00995
	(!A1 * !A2 * !B1 * C1 * !X)	0.00671	0.00670	0.00670
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01023	0.01022	0.01022
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00668	0.00668	0.00668

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.01534	0.01544	0.01648
	(A2 * B1 * C1 * X)	0.00992	0.00991	0.01100
	(A2 * B1 * !C1 * !X)	0.02175	0.02177	0.02174
	(A2 * B1 * !C1 * !X)	0.01379	0.01373	0.01375
	(A2 * !B1 * !C1 * !X)	0.02179	0.02180	0.02176
	(A2 * !B1 * !C1 * !X)	0.01381	0.01378	0.01375
	(A1 * !A2 * B1 * C1 * X)	0.02022	0.02032	0.02136
	(A1 * !A2 * B1 * C1 * X)	0.01481	0.01479	0.01588
	(A1 * !A2 * B1 * !C1 * !X)	0.02175	0.02177	0.02173
	(A1 * !A2 * B1 * !C1 * !X)	0.01378	0.01373	0.01375
	(A1 * !A2 * !B1 * !C1 * !X)	0.02181	0.02178	0.02176
	(A1 * !A2 * !B1 * !C1 * !X)	0.01378	0.01379	0.01375
	(!A1 * !A2 * B1 * C1 * !X)	0.01958	0.01955	0.01956
	(!A1 * !A2 * B1 * C1 * !X)	0.01340	0.01333	0.01349
	(!A1 * !A2 * B1 * !C1 * !X)	0.01977	0.01977	0.01974
	(!A1 * !A2 * B1 * !C1 * !X)	0.01341	0.01337	0.01340
	(!A1 * !A2 * !B1 * C1 * !X)	0.01959	0.01959	0.01947
	(!A1 * !A2 * !B1 * C1 * !X)	0.01357	0.01354	0.01345
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01989	0.01990	0.01987
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01341	0.01339	0.01341

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)**	0.00663	0.00652	0.00508
	(A2 * B1 * C1 * X)	0.00977	0.00965	0.00819
	(A2 * B1 * !C1 * !X)	0.00284	0.00279	0.00281
	(A2 * B1 * !C1 * !X)	0.00714	0.00716	0.00714
	(A2 * !B1 * !C1 * !X)	0.00308	0.00277	0.00283
	(A2 * !B1 * !C1 * !X)	0.00743	0.00717	0.00714
	(A1 * !A2 * B1 * C1 * X)	0.00907	0.00896	0.00751
	(A1 * !A2 * B1 * C1 * X)	0.01220	0.01209	0.01063
	(A1 * !A2 * B1 * !C1 * !X)	0.00283	0.00280	0.00281
	(A1 * !A2 * B1 * !C1 * !X)	0.00714	0.00715	0.00714
	(A1 * !A2 * !B1 * !C1 * !X)	0.00312	0.00276	0.00283
	(A1 * !A2 * !B1 * !C1 * !X)	0.00746	0.00716	0.00714
	(!A1 * !A2 * B1 * C1 * !X)	0.00421	0.00418	0.00412
	(!A1 * !A2 * B1 * C1 * !X)	0.00757	0.00755	0.00739
	(!A1 * !A2 * B1 * !C1 * !X)	0.00365	0.00363	0.00355
	(!A1 * !A2 * B1 * !C1 * !X)	0.00728	0.00730	0.00708
	(!A1 * !A2 * !B1 * C1 * !X)	0.00402	0.00401	0.00399
	(!A1 * !A2 * !B1 * C1 * !X)	0.00729	0.00730	0.00720
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00353	0.00353	0.00349
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00721	0.00722	0.00708

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00653	0.00642	0.00496
	(A2 * B1 * C1 * X)	0.00978	0.00966	0.00820
	(A2 * B1 * !C1 * !X)	0.00713	0.00709	0.00710
	(A2 * B1 * !C1 * !X)	0.01158	0.01158	0.01156
	(A2 * !B1 * !C1 * !X)	0.00742	0.00710	0.00712
	(A2 * !B1 * !C1 * !X)	0.01188	0.01162	0.01156
	(A1 * !A2 * B1 * C1 * X)	0.00897	0.00885	0.00740
	(A1 * !A2 * B1 * C1 * X)	0.01222	0.01211	0.01064
	(A1 * !A2 * B1 * !C1 * !X)	0.00712	0.00708	0.00710
	(A1 * !A2 * B1 * !C1 * !X)	0.01157	0.01158	0.01156
	(A1 * !A2 * !B1 * !C1 * !X)	0.00745	0.00709	0.00712
	(A1 * !A2 * !B1 * !C1 * !X)	0.01191	0.01161	0.01156
	(!A1 * !A2 * B1 * C1 * !X)	0.00866	0.00862	0.00855
	(!A1 * !A2 * B1 * C1 * !X)	0.01200	0.01196	0.01178
	(!A1 * !A2 * B1 * !C1 * !X)	0.00810	0.00807	0.00801
	(!A1 * !A2 * B1 * !C1 * !X)	0.01180	0.01181	0.01159
	(!A1 * !A2 * !B1 * C1 * !X)	0.00845	0.00844	0.00842
	(!A1 * !A2 * !B1 * C1 * !X)	0.01173	0.01173	0.01163
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00799	0.00797	0.00795
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01171	0.01173	0.01158

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.01409	0.01385	0.01096
	(A2 * B1 * C1 * X)	0.01958	0.01938	0.01647
	(A2 * B1 * !C1 * !X)	0.01529	0.01521	0.01522
	(A2 * B1 * !C1 * !X)	0.02324	0.02323	0.02321
	(A2 * !B1 * !C1 * !X)	0.01570	0.01510	0.01523
	(A2 * !B1 * !C1 * !X)	0.02373	0.02322	0.02320
	(A1 * !A2 * B1 * C1 * X)	0.01896	0.01872	0.01584
	(A1 * !A2 * B1 * C1 * X)	0.02446	0.02426	0.02135
	(A1 * !A2 * B1 * !C1 * !X)	0.01528	0.01522	0.01522
	(A1 * !A2 * B1 * !C1 * !X)	0.02324	0.02321	0.02321
	(A1 * !A2 * !B1 * !C1 * !X)	0.01577	0.01509	0.01523
	(A1 * !A2 * !B1 * !C1 * !X)	0.02379	0.02321	0.02320
	(!A1 * !A2 * B1 * C1 * !X)	0.01797	0.01787	0.01777
	(!A1 * !A2 * B1 * C1 * !X)	0.02415	0.02406	0.02378
	(!A1 * !A2 * B1 * !C1 * !X)	0.01679	0.01673	0.01659
	(!A1 * !A2 * B1 * !C1 * !X)	0.02349	0.02351	0.02310
	(!A1 * !A2 * !B1 * C1 * !X)	0.01752	0.01749	0.01745
	(!A1 * !A2 * !B1 * C1 * !X)	0.02347	0.02350	0.02332
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01655	0.01654	0.01648
	(!A1 * !A2 * !B1 * !C1 * !X)	0.02334	0.02336	0.02308

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)	0.00551	0.00550	0.00537
	(A2 * !B1 * !B2 * !X)	0.00206	0.00204	0.00189
	(!A2 * !B1 * !B2 * !X)	0.00550	0.00550	0.00537
	(!A2 * !B1 * !B2 * !X)	0.00206	0.00204	0.00189
	(!A1 * !A2 * B2 * !X)	0.00548	0.00548	0.00531
	(!A1 * !A2 * B2 * !X)	0.00220	0.00218	0.00187
	(!A1 * !A2 * B1 * !B2 * !X)	0.00548	0.00548	0.00532
	(!A1 * !A2 * B1 * !B2 * !X)	0.00216	0.00215	0.00187
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00999	0.00999	0.00988
	(A2 * !B1 * !B2 * !X)	0.00643	0.00641	0.00627
	(!A2 * !B1 * !B2 * !X)	0.00999	0.00999	0.00988
	(!A2 * !B1 * !B2 * !X)	0.00642	0.00641	0.00627
	(!A1 * !A2 * B2 * !X)	0.01001	0.01001	0.00985
	(!A1 * !A2 * B2 * !X)	0.00662	0.00661	0.00629
	(!A1 * !A2 * B1 * !B2 * !X)	0.01001	0.01002	0.00986
	(!A1 * !A2 * B1 * !B2 * !X)	0.00658	0.00657	0.00628
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.01981	0.01981	0.01954
	(A2 * !B1 * !B2 * !X)	0.01342	0.01339	0.01308
	(!A2 * !B1 * !B2 * !X)	0.01980	0.01980	0.01954
	(!A2 * !B1 * !B2 * !X)	0.01341	0.01339	0.01308
	(!A1 * !A2 * B2 * !X)	0.01977	0.01978	0.01944
	(!A1 * !A2 * B2 * !X)	0.01370	0.01367	0.01306
	(!A1 * !A2 * B1 * !B2 * !X)	0.01976	0.01978	0.01946
	(!A1 * !A2 * B1 * !B2 * !X)	0.01366	0.01361	0.01307

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)	0.00400	0.00399	0.00402
	(A2 * !B1 * !B2 * !X)	0.00742	0.00747	0.00744
	(!A2 * !B1 * !B2 * !X)	0.00400	0.00399	0.00402
	(!A2 * !B1 * !B2 * !X)	0.00741	0.00747	0.00744
	(!A1 * !A2 * B2 * !X)	0.00411	0.00412	0.00414
	(!A1 * !A2 * B2 * !X)	0.00743	0.00744	0.00744
	(!A1 * !A2 * B1 * !B2 * !X)	0.00410	0.00410	0.00412
	(!A1 * !A2 * B1 * !B2 * !X)	0.00743	0.00742	0.00744
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00843	0.00842	0.00844
	(A2 * !B1 * !B2 * !X)	0.01198	0.01203	0.01200
	(!A2 * !B1 * !B2 * !X)	0.00843	0.00842	0.00844
	(!A2 * !B1 * !B2 * !X)	0.01198	0.01201	0.01200
	(!A1 * !A2 * B2 * !X)	0.00850	0.00850	0.00851
	(!A1 * !A2 * B2 * !X)	0.01198	0.01200	0.01199
	(!A1 * !A2 * B1 * !B2 * !X)	0.00847	0.00848	0.00850
	(!A1 * !A2 * B1 * !B2 * !X)	0.01199	0.01202	0.01199
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.01730	0.01729	0.01734
	(A2 * !B1 * !B2 * !X)	0.02363	0.02368	0.02366
	(!A2 * !B1 * !B2 * !X)	0.01730	0.01729	0.01734
	(!A2 * !B1 * !B2 * !X)	0.02362	0.02368	0.02366
	(!A1 * !A2 * B2 * !X)	0.01750	0.01751	0.01755
	(!A1 * !A2 * B2 * !X)	0.02365	0.02364	0.02365
	(!A1 * !A2 * B1 * !B2 * !X)	0.01745	0.01746	0.01751
	(!A1 * !A2 * B1 * !B2 * !X)	0.02365	0.02371	0.02365

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00284	0.00292	0.00298	0.91667
sky130_fd_sc_hs__o22ai_2	0.00549	0.00559	0.00558	0.00548	1.55977
sky130_fd_sc_hs__o22ai_4	0.01128	0.01067	0.01157	0.01084	2.44032

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	336.15500	1030.93000
sky130_fd_sc_hs__o22ai_2	0.00000	670.93400	2055.26000
sky130_fd_sc_hs__o22ai_4	0.00000	1338.97000	4096.48000

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)	0.06557	0.65154	8.27475
	A2->Y (FR)	0.05631	0.69408	8.98258
	B1->Y (FR)	0.04243	0.62925	8.23649
	B2->Y (FR)	0.03403	0.67127	8.93786
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.06743	0.55975	8.04646
	A2->Y (FR)	0.05518	0.60228	8.77326
	B1->Y (FR)	0.04112	0.52966	7.94013
	B2->Y (FR)	0.02858	0.57367	8.68748
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.06914	0.46544	7.29729
	A2->Y (FR)	0.05788	0.51520	8.13508
	B1->Y (FR)	0.04013	0.43237	7.15411
	B2->Y (FR)	0.02893	0.47595	7.90916

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.04304	0.37319	4.55529
	A2->Y (RF)	0.03622	0.36218	4.48380
	B1->Y (RF)	0.03513	0.42791	5.43746
	B2->Y (RF)	0.02901	0.41447	5.32874
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04435	0.30391	4.22673
	A2->Y (RF)	0.03515	0.28935	4.13233
	B1->Y (RF)	0.03595	0.36226	5.20592
	B2->Y (RF)	0.02661	0.34112	5.04023
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.03035	0.20440	3.39294
	A2->Y (RF)	0.02535	0.18939	3.29585
	B1->Y (RF)	0.02336	0.26449	4.41500
	B2->Y (RF)	0.02388	0.28044	4.63101

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00263	0.00993	0.13041
	A1	0.01342	0.02073	0.14091
	A2	0.00275	0.01149	0.13919
	A2	0.01173	0.02044	0.14779
	B1	0.00024	0.00771	0.12421
	B1	0.00788	0.01536	0.13159
	B2	0.00033	0.00919	0.13375
	B2	0.00626	0.01511	0.13928
sky130_fd_sc_hs__o22ai_2	A1	0.00489	0.02019	0.25261
	A1	0.02611	0.04141	0.27360
	A2	0.00481	0.02283	0.26423
	A2	0.02278	0.04076	0.28154
	B1	0.00018	0.01575	0.24014
	B1	0.01529	0.03085	0.25520
	B2	0.00014	0.01877	0.25630
	B2	0.01174	0.03034	0.26691
sky130_fd_sc_hs__o22ai_4	A1	0.00769	0.04544	0.58008
	A1	0.04986	0.08773	0.62195
	A2	0.00770	0.04767	0.56113
	A2	0.04280	0.08268	0.59516
	B1	-0.00021	0.03686	0.53562
	B1	0.02994	0.06692	0.56540
	B2	0.00027	0.03956	0.52152
	B2	0.02347	0.06281	0.54317

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.02624	0.03159	0.12543
	A1	0.01635	0.02172	0.11483
	A2	0.02626	0.03145	0.11526
	A2	0.01817	0.02332	0.10666
	B1	0.01546	0.02212	0.12013
	B1	0.00782	0.01436	0.11174
	B2	0.01603	0.02255	0.11242
	B2	0.01009	0.01651	0.10646
sky130_fd_sc_hs__o22ai_2	A1	0.05159	0.06331	0.24442
	A1	0.03218	0.04386	0.22403
	A2	0.05083	0.06243	0.22354
	A2	0.03465	0.04623	0.20653
	B1	0.03087	0.04493	0.23440
	B1	0.01575	0.02976	0.21941
	B2	0.03018	0.04433	0.21904
	B2	0.01857	0.03263	0.20669
sky130_fd_sc_hs__o22ai_4	A1	0.09754	0.12595	0.53280
	A1	0.05899	0.08736	0.49365
	A2	0.09724	0.12499	0.48086
	A2	0.06576	0.09341	0.44959
	B1	0.05828	0.08981	0.49191
	B1	0.02815	0.05969	0.46188
	B2	0.06006	0.08989	0.44173
	B2	0.03691	0.06669	0.41775

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00379	0.00357	0.00653
	(A2 * B2 * !Y)	-0.00103	-0.00130	0.00174
	(A2 * B1 * !B2 * !Y)	0.00611	0.00589	0.00886
	(A2 * B1 * !B2 * !Y)	0.00130	0.00103	0.00406
	(A2 * !B1 * !B2 * Y)	0.00237	0.00237	0.00237
	(A2 * !B1 * !B2 * Y)	-0.00237	-0.00237	-0.00237
	(!A2 * !B1 * !B2 * Y)	0.00239	0.00240	0.00236
	(!A2 * !B1 * !B2 * Y)	-0.00238	-0.00239	-0.00239
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00769	0.00698	0.01279
	(A2 * B2 * !Y)	-0.00163	-0.00240	0.00352
	(A2 * B1 * !B2 * !Y)	0.01234	0.01163	0.01743
	(A2 * B1 * !B2 * !Y)	0.00302	0.00225	0.00816
	(A2 * !B1 * !B2 * Y)	0.00443	0.00447	0.00443
	(A2 * !B1 * !B2 * Y)	-0.00472	-0.00474	-0.00472
	(!A2 * !B1 * !B2 * Y)	0.00446	0.00446	0.00441
	(!A2 * !B1 * !B2 * Y)	-0.00474	-0.00474	-0.00476
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01483	0.01377	0.02554
	(A2 * B2 * !Y)	-0.00374	-0.00487	0.00706
	(A2 * B1 * !B2 * !Y)	0.02413	0.02307	0.03481
	(A2 * B1 * !B2 * !Y)	0.00556	0.00443	0.01633
	(A2 * !B1 * !B2 * Y)	0.00869	0.00879	0.00870
	(A2 * !B1 * !B2 * Y)	-0.00954	-0.00959	-0.00953
	(!A2 * !B1 * !B2 * Y)	0.00870	0.00878	0.00866
	(!A2 * !B1 * !B2 * Y)	-0.00952	-0.00959	-0.00961

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00269	0.00258	0.00196
	(A2 * B2 * !Y)	0.00750	0.00744	0.00678
	(A2 * B1 * !B2 * !Y)	0.00502	0.00490	0.00428
	(A2 * B1 * !B2 * !Y)	0.00982	0.00976	0.00910
	(A2 * !B1 * !B2 * Y)	-0.00195	-0.00197	-0.00196
	(A2 * !B1 * !B2 * Y)	0.00278	0.00280	0.00278
	(!A2 * !B1 * !B2 * Y)	-0.00162	-0.00192	-0.00192
	(!A2 * !B1 * !B2 * Y)	0.00314	0.00289	0.00280
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00570	0.00547	0.00417
	(A2 * B2 * !Y)	0.01499	0.01484	0.01351
	(A2 * B1 * !B2 * !Y)	0.01034	0.01012	0.00882
	(A2 * B1 * !B2 * !Y)	0.01963	0.01948	0.01815
	(A2 * !B1 * !B2 * Y)	-0.00360	-0.00364	-0.00361
	(A2 * !B1 * !B2 * Y)	0.00553	0.00561	0.00555
	(!A2 * !B1 * !B2 * Y)	-0.00293	-0.00361	-0.00353
	(!A2 * !B1 * !B2 * Y)	0.00627	0.00570	0.00559
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01125	0.01078	0.00829
	(A2 * B2 * !Y)	0.02977	0.02951	0.02687
	(A2 * B1 * !B2 * !Y)	0.02051	0.02004	0.01755
	(A2 * B1 * !B2 * !Y)	0.03903	0.03877	0.03614
	(A2 * !B1 * !B2 * Y)	-0.00706	-0.00710	-0.00705
	(A2 * !B1 * !B2 * Y)	0.01119	0.01128	0.01119
	(!A2 * !B1 * !B2 * Y)	-0.00591	-0.00717	-0.00690
	(!A2 * !B1 * !B2 * Y)	0.01236	0.01140	0.01126

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00255	0.00261	0.00316
	(A1 * B2 * !Y)	-0.00046	-0.00047	0.00010
	(A1 * B1 * !B2 * !Y)	0.00488	0.00494	0.00549
	(A1 * B1 * !B2 * !Y)	0.00186	0.00185	0.00243
	(A1 * !B1 * !B2 * Y)	0.00219	0.00220	0.00218
	(A1 * !B1 * !B2 * Y)	-0.00229	-0.00229	-0.00227
	(!A1 * !B1 * !B2 * Y)	0.00219	0.00220	0.00217
	(!A1 * !B1 * !B2 * Y)	-0.00228	-0.00228	-0.00229
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00560	0.00567	0.00640
	(A1 * B2 * !Y)	-0.00070	-0.00069	0.00012
	(A1 * B1 * !B2 * !Y)	0.01026	0.01034	0.01106
	(A1 * B1 * !B2 * !Y)	0.00396	0.00397	0.00478
	(A1 * !B1 * !B2 * Y)	0.00445	0.00447	0.00443
	(A1 * !B1 * !B2 * Y)	-0.00480	-0.00481	-0.00477
	(!A1 * !B1 * !B2 * Y)	0.00443	0.00445	0.00440
	(!A1 * !B1 * !B2 * Y)	-0.00477	-0.00480	-0.00481
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.01021	0.01043	0.01247
	(A1 * B2 * !Y)	-0.00143	-0.00145	0.00070
	(A1 * B1 * !B2 * !Y)	0.01951	0.01973	0.02177
	(A1 * B1 * !B2 * !Y)	0.00786	0.00784	0.00999
	(A1 * !B1 * !B2 * Y)	0.00855	0.00856	0.00858
	(A1 * !B1 * !B2 * Y)	-0.00900	-0.00901	-0.00902
	(!A1 * !B1 * !B2 * Y)	0.00858	0.00870	0.00855
	(!A1 * !B1 * !B2 * Y)	-0.00899	-0.00910	-0.00911

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00155	0.00144	0.00011
	(A1 * B2 * !Y)	0.00463	0.00453	0.00318
	(A1 * B1 * !B2 * !Y)	0.00388	0.00377	0.00243
	(A1 * B1 * !B2 * !Y)	0.00696	0.00686	0.00551
	(A1 * !B1 * !B2 * Y)	-0.00176	-0.00178	-0.00177
	(A1 * !B1 * !B2 * Y)	0.00268	0.00271	0.00269
	(!A1 * !B1 * !B2 * Y)	-0.00146	-0.00174	-0.00173
	(!A1 * !B1 * !B2 * Y)	0.00301	0.00278	0.00271
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00297	0.00275	0.00015
	(A1 * B2 * !Y)	0.00931	0.00913	0.00651
	(A1 * B1 * !B2 * !Y)	0.00761	0.00739	0.00477
	(A1 * B1 * !B2 * !Y)	0.01395	0.01377	0.01114
	(A1 * !B1 * !B2 * Y)	-0.00360	-0.00362	-0.00360
	(A1 * !B1 * !B2 * Y)	0.00559	0.00562	0.00561
	(!A1 * !B1 * !B2 * Y)	-0.00292	-0.00358	-0.00352
	(!A1 * !B1 * !B2 * Y)	0.00631	0.00576	0.00564
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00633	0.00587	0.00055
	(A1 * B2 * !Y)	0.01818	0.01779	0.01243
	(A1 * B1 * !B2 * !Y)	0.01562	0.01516	0.00984
	(A1 * B1 * !B2 * !Y)	0.02745	0.02708	0.02172
	(A1 * !B1 * !B2 * Y)	-0.00690	-0.00694	-0.00693
	(A1 * !B1 * !B2 * Y)	0.01063	0.01068	0.01067
	(!A1 * !B1 * !B2 * Y)	-0.00583	-0.00691	-0.00678
	(!A1 * !B1 * !B2 * Y)	0.01185	0.01097	0.01075

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00381	0.00358	0.00660
	(A2 * B2 * !Y)	-0.00103	-0.00126	0.00177
	(A1 * !A2 * B2 * !Y)	0.00614	0.00591	0.00892
	(A1 * !A2 * B2 * !Y)	0.00129	0.00107	0.00410
	(!A1 * !A2 * B2 * Y)	0.00081	0.00081	0.00082
	(!A1 * !A2 * B2 * Y)	-0.00302	-0.00302	-0.00298
	(!A1 * !A2 * !B2 * Y)	0.00098	0.00099	0.00086
	(!A1 * !A2 * !B2 * Y)	-0.00271	-0.00274	-0.00293
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00768	0.00696	0.01279
	(A2 * B2 * !Y)	-0.00169	-0.00246	0.00346
	(A1 * !A2 * B2 * !Y)	0.01232	0.01161	0.01743
	(A1 * !A2 * B2 * !Y)	0.00295	0.00219	0.00810
	(!A1 * !A2 * B2 * Y)	0.00137	0.00138	0.00140
	(!A1 * !A2 * B2 * Y)	-0.00599	-0.00600	-0.00591
	(!A1 * !A2 * !B2 * Y)	0.00170	0.00169	0.00147
	(!A1 * !A2 * !B2 * Y)	-0.00540	-0.00541	-0.00583
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01528	0.01414	0.02593
	(A2 * B2 * !Y)	-0.00346	-0.00465	0.00728
	(A1 * !A2 * B2 * !Y)	0.02457	0.02344	0.03521
	(A1 * !A2 * B2 * !Y)	0.00583	0.00464	0.01656
	(!A1 * !A2 * B2 * Y)	0.00263	0.00264	0.00267
	(!A1 * !A2 * B2 * Y)	-0.01213	-0.01214	-0.01196
	(!A1 * !A2 * !B2 * Y)	0.00320	0.00318	0.00278
	(!A1 * !A2 * !B2 * Y)	-0.01103	-0.01107	-0.01179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00262	0.00251	0.00189
	(A2 * B2 * !Y)	0.00745	0.00739	0.00674
	(A1 * !A2 * B2 * !Y)	0.00494	0.00483	0.00422
	(A1 * !A2 * B2 * !Y)	0.00978	0.00972	0.00906
	(!A1 * !A2 * B2 * Y)	-0.00045	-0.00045	-0.00049
	(!A1 * !A2 * B2 * Y)	0.00338	0.00340	0.00330
	(!A1 * !A2 * !B2 * Y)	-0.00067	-0.00067	-0.00065
	(!A1 * !A2 * !B2 * Y)	0.00307	0.00311	0.00307
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00569	0.00547	0.00418
	(A2 * B2 * !Y)	0.01509	0.01490	0.01356
	(A1 * !A2 * B2 * !Y)	0.01033	0.01011	0.00882
	(A1 * !A2 * B2 * !Y)	0.01974	0.01956	0.01821
	(!A1 * !A2 * B2 * Y)	-0.00067	-0.00067	-0.00074
	(!A1 * !A2 * B2 * Y)	0.00673	0.00678	0.00656
	(!A1 * !A2 * !B2 * Y)	-0.00106	-0.00109	-0.00105
	(!A1 * !A2 * !B2 * Y)	0.00607	0.00619	0.00611
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01086	0.01039	0.00790
	(A2 * B2 * !Y)	0.02953	0.02927	0.02664
	(A1 * !A2 * B2 * !Y)	0.02013	0.01965	0.01717
	(A1 * !A2 * B2 * !Y)	0.03880	0.03858	0.03592
	(!A1 * !A2 * B2 * Y)	-0.00122	-0.00127	-0.00135
	(!A1 * !A2 * B2 * Y)	0.01349	0.01372	0.01325
	(!A1 * !A2 * !B2 * Y)	-0.00199	-0.00201	-0.00193
	(!A1 * !A2 * !B2 * Y)	0.01233	0.01252	0.01235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00274	0.00281	0.00339
	(A2 * B1 * !Y)	-0.00039	-0.00040	0.00022
	(A1 * !A2 * B1 * !Y)	0.00507	0.00509	0.00572
	(A1 * !A2 * B1 * !Y)	0.00194	0.00195	0.00254
	(!A1 * !A2 * B1 * Y)	0.00068	0.00069	0.00069
	(!A1 * !A2 * B1 * Y)	-0.00299	-0.00300	-0.00295
	(!A1 * !A2 * !B1 * Y)	0.00085	0.00084	0.00072
	(!A1 * !A2 * !B1 * Y)	-0.00270	-0.00270	-0.00291
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00530	0.00541	0.00617
	(A2 * B1 * !Y)	-0.00072	-0.00074	0.00010
	(A1 * !A2 * B1 * !Y)	0.00996	0.00998	0.01084
	(A1 * !A2 * B1 * !Y)	0.00393	0.00396	0.00476
	(!A1 * !A2 * B1 * Y)	0.00132	0.00132	0.00134
	(!A1 * !A2 * B1 * Y)	-0.00590	-0.00593	-0.00581
	(!A1 * !A2 * !B1 * Y)	0.00163	0.00164	0.00140
	(!A1 * !A2 * !B1 * Y)	-0.00529	-0.00534	-0.00573
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.01047	0.01055	0.01266
	(A2 * B1 * !Y)	-0.00141	-0.00137	0.00065
	(A1 * !A2 * B1 * !Y)	0.01977	0.01987	0.02195
	(A1 * !A2 * B1 * !Y)	0.00789	0.00792	0.00994
	(!A1 * !A2 * B1 * Y)	0.00251	0.00250	0.00253
	(!A1 * !A2 * B1 * Y)	-0.01159	-0.01156	-0.01140
	(!A1 * !A2 * !B1 * Y)	0.00305	0.00305	0.00264
	(!A1 * !A2 * !B1 * Y)	-0.01046	-0.01054	-0.01123

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00134	0.00122	-0.00011
	(A2 * B1 * !Y)	0.00453	0.00443	0.00307
	(A1 * !A2 * B1 * !Y)	0.00366	0.00355	0.00221
	(A1 * !A2 * B1 * !Y)	0.00686	0.00676	0.00540
	(!A1 * !A2 * B1 * Y)	-0.00033	-0.00033	-0.00036
	(!A1 * !A2 * B1 * Y)	0.00335	0.00335	0.00327
	(!A1 * !A2 * !B1 * Y)	-0.00052	-0.00053	-0.00051
	(!A1 * !A2 * !B1 * Y)	0.00303	0.00309	0.00305
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00318	0.00297	0.00036
	(A2 * B1 * !Y)	0.00934	0.00914	0.00652
	(A1 * !A2 * B1 * !Y)	0.00782	0.00761	0.00498
	(A1 * !A2 * B1 * !Y)	0.01396	0.01379	0.01114
	(!A1 * !A2 * B1 * Y)	-0.00060	-0.00061	-0.00068
	(!A1 * !A2 * B1 * Y)	0.00659	0.00662	0.00646
	(!A1 * !A2 * !B1 * Y)	-0.00101	-0.00102	-0.00098
	(!A1 * !A2 * !B1 * Y)	0.00600	0.00609	0.00601
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00615	0.00569	0.00038
	(A2 * B1 * !Y)	0.01822	0.01785	0.01249
	(A1 * !A2 * B1 * !Y)	0.01544	0.01495	0.00968
	(A1 * !A2 * B1 * !Y)	0.02751	0.02717	0.02178
	(!A1 * !A2 * B1 * Y)	-0.00107	-0.00111	-0.00121
	(!A1 * !A2 * B1 * Y)	0.01289	0.01300	0.01268
	(!A1 * !A2 * !B1 * Y)	-0.00182	-0.00184	-0.00179
	(!A1 * !A2 * !B1 * Y)	0.01169	0.01178	0.01179

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00251	0.00259	0.00269	0.00285	1.77062
sky130_fd_sc_hs__o22a_2	0.00268	0.00271	0.00283	0.00280	3.33516
sky130_fd_sc_hs__o22a_4	0.00523	0.00483	0.00535	0.00506	6.05892

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	602.75400	1180.09000
sky130_fd_sc_hs__o22a_2	0.00000	830.98000	1191.87000
sky130_fd_sc_hs__o22a_4	0.00000	1672.72000	2379.20000

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)	0.07234	0.43610	5.74296
	A2->X (RR)	0.06446	0.41393	5.47824
	B1->X (RR)	0.06531	0.45707	6.05363
	B2->X (RR)	0.05750	0.42962	5.75138
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.07447	0.36269	5.55293
	A2->X (RR)	0.06666	0.34334	5.29413
	B1->X (RR)	0.06762	0.38641	5.80765
	B2->X (RR)	0.05893	0.35809	5.49692
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.08102	0.31704	5.58757
	A2->X (RR)	0.07404	0.29729	5.39415
	B1->X (RR)	0.06815	0.33518	5.96840
	B2->X (RR)	0.06745	0.32547	5.70894

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.09105	0.49058	6.13416
	A2->X (FF)	0.08225	0.51361	6.38565
	B1->X (FF)	0.06822	0.44729	5.90574
	B2->X (FF)	0.05990	0.47043	6.23923
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.10897	0.47391	6.10922
	A2->X (FF)	0.09983	0.50110	6.35134
	B1->X (FF)	0.08497	0.43043	5.89217
	B2->X (FF)	0.07520	0.45471	6.20561
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.10672	0.42543	5.91326
	A2->X (FF)	0.09391	0.44527	6.13813
	B1->X (FF)	0.08639	0.38734	5.71531
	B2->X (FF)	0.07477	0.40208	5.86997

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.03818	0.05227	0.30207
	A1	0.02941	0.04350	0.29310
	A2	0.04206	0.05632	0.29739
	A2	0.03471	0.04894	0.28991
	B1	0.03615	0.05071	0.28279
	B1	0.02930	0.04384	0.27636
	B2	0.04068	0.05572	0.28714
	B2	0.03485	0.04988	0.28132
sky130_fd_sc_hs__o22a_2	A1	0.04370	0.05761	0.31296
	A1	0.03449	0.04842	0.30373
	A2	0.04709	0.06116	0.30596
	A2	0.03937	0.05340	0.29718
	B1	0.04152	0.05559	0.28130
	B1	0.03448	0.04863	0.27381
	B2	0.04496	0.05948	0.28287
	B2	0.03942	0.05393	0.27706
sky130_fd_sc_hs__o22a_4	A1	0.08838	0.11631	0.62858
	A1	0.07093	0.09896	0.61077
	A2	0.09480	0.12275	0.60958
	A2	0.08070	0.10865	0.59458
	B1	0.07754	0.10604	0.58490
	B1	0.06107	0.08961	0.56683
	B2	0.09139	0.11991	0.56481
	B2	0.08100	0.10953	0.55316

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01795	0.03031	0.27845
	A1	0.02806	0.04040	0.28680
	A2	0.01774	0.03140	0.27391
	A2	0.02668	0.03987	0.27965
	B1	0.01520	0.02931	0.27834
	B1	0.02213	0.03615	0.28382
	B2	0.01463	0.02977	0.27652
	B2	0.02052	0.03565	0.28150
sky130_fd_sc_hs__o22a_2	A1	0.03635	0.04370	0.29163
	A1	0.04692	0.05423	0.29830
	A2	0.03649	0.04488	0.28313
	A2	0.04556	0.05393	0.29028
	B1	0.03094	0.04106	0.28095
	B1	0.03803	0.04794	0.28570
	B2	0.03104	0.04216	0.28121
	B2	0.03662	0.04775	0.28323
sky130_fd_sc_hs__o22a_4	A1	0.06836	0.08637	0.57723
	A1	0.09213	0.10778	0.59526
	A2	0.07254	0.09057	0.56605
	A2	0.08943	0.10718	0.57817
	B1	0.06299	0.08337	0.57047
	B1	0.07683	0.09708	0.58209
	B2	0.06699	0.08580	0.53914
	B2	0.08015	0.09893	0.54899

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00337	0.00320	0.00659
	(A2 * B2 * X)	-0.00084	-0.00105	0.00240
	(A2 * B1 * !B2 * X)	0.00581	0.00565	0.00904
	(A2 * B1 * !B2 * X)	0.00160	0.00139	0.00484
	(A2 * !B1 * !B2 * !X)	0.00668	0.00668	0.00668
	(A2 * !B1 * !B2 * !X)	0.00254	0.00255	0.00255
	(!A2 * !B1 * !B2 * !X)	0.00670	0.00672	0.00666
	(!A2 * !B1 * !B2 * !X)	0.00254	0.00252	0.00248
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00376	0.00360	0.00699
	(A2 * B2 * X)	-0.00072	-0.00092	0.00253
	(A2 * B1 * !B2 * X)	0.00621	0.00605	0.00943
	(A2 * B1 * !B2 * X)	0.00173	0.00152	0.00497
	(A2 * !B1 * !B2 * !X)	0.01134	0.01134	0.01135
	(A2 * !B1 * !B2 * !X)	0.00694	0.00695	0.00694
	(!A2 * !B1 * !B2 * !X)	0.01134	0.01134	0.01132
	(!A2 * !B1 * !B2 * !X)	0.00692	0.00693	0.00691
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00738	0.00709	0.01381
	(A2 * B2 * X)	-0.00126	-0.00163	0.00519
	(A2 * B1 * !B2 * X)	0.01228	0.01198	0.01870
	(A2 * B1 * !B2 * X)	0.00363	0.00327	0.01007
	(A2 * !B1 * !B2 * !X)	0.02269	0.02275	0.02273
	(A2 * !B1 * !B2 * !X)	0.01422	0.01421	0.01423
	(!A2 * !B1 * !B2 * !X)	0.02275	0.02277	0.02266
	(!A2 * !B1 * !B2 * !X)	0.01420	0.01418	0.01409

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00371	0.00359	0.00279
	(A2 * B2 * X)	0.00793	0.00783	0.00700
	(A2 * B1 * !B2 * X)	0.00615	0.00603	0.00523
	(A2 * B1 * !B2 * X)	0.01037	0.01027	0.00944
	(A2 * !B1 * !B2 * !X)	0.00314	0.00312	0.00314
	(A2 * !B1 * !B2 * !X)	0.00727	0.00730	0.00727
	(!A2 * !B1 * !B2 * !X)	0.00329	0.00304	0.00317
	(!A2 * !B1 * !B2 * !X)	0.00748	0.00727	0.00730
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00352	0.00340	0.00260
	(A2 * B2 * X)	0.00801	0.00791	0.00708
	(A2 * B1 * !B2 * X)	0.00596	0.00584	0.00504
	(A2 * B1 * !B2 * X)	0.01045	0.01035	0.00952
	(A2 * !B1 * !B2 * !X)	0.00721	0.00719	0.00721
	(A2 * !B1 * !B2 * !X)	0.01160	0.01164	0.01161
	(!A2 * !B1 * !B2 * !X)	0.00752	0.00725	0.00726
	(!A2 * !B1 * !B2 * !X)	0.01194	0.01171	0.01164
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00722	0.00696	0.00535
	(A2 * B2 * X)	0.01588	0.01569	0.01402
	(A2 * B1 * !B2 * X)	0.01209	0.01184	0.01022
	(A2 * B1 * !B2 * X)	0.02075	0.02056	0.01890
	(A2 * !B1 * !B2 * !X)	0.01502	0.01498	0.01501
	(A2 * !B1 * !B2 * !X)	0.02350	0.02356	0.02351
	(!A2 * !B1 * !B2 * !X)	0.01523	0.01477	0.01507
	(!A2 * !B1 * !B2 * !X)	0.02383	0.02343	0.02357

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00244	0.00249	0.00306
	(A1 * B2 * X)	-0.00039	-0.00039	0.00021
	(A1 * B1 * !B2 * X)	0.00489	0.00494	0.00550
	(A1 * B1 * !B2 * X)	0.00206	0.00206	0.00266
	(A1 * !B1 * !B2 * !X)	0.00660	0.00662	0.00660
	(A1 * !B1 * !B2 * !X)	0.00254	0.00251	0.00252
	(!A1 * !B1 * !B2 * !X)	0.00666	0.00666	0.00660
	(!A1 * !B1 * !B2 * !X)	0.00253	0.00252	0.00248
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00270	0.00276	0.00332
	(A1 * B2 * X)	-0.00029	-0.00030	0.00030
	(A1 * B1 * !B2 * X)	0.00514	0.00520	0.00577
	(A1 * B1 * !B2 * X)	0.00216	0.00215	0.00275
	(A1 * !B1 * !B2 * !X)	0.01122	0.01123	0.01120
	(A1 * !B1 * !B2 * !X)	0.00698	0.00695	0.00696
	(!A1 * !B1 * !B2 * !X)	0.01125	0.01126	0.01122
	(!A1 * !B1 * !B2 * !X)	0.00698	0.00697	0.00697
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00492	0.00500	0.00604
	(A1 * B2 * X)	-0.00048	-0.00048	0.00061
	(A1 * B1 * !B2 * X)	0.00983	0.00990	0.01093
	(A1 * B1 * !B2 * X)	0.00440	0.00441	0.00550
	(A1 * !B1 * !B2 * !X)	0.02210	0.02210	0.02206
	(A1 * !B1 * !B2 * !X)	0.01416	0.01409	0.01411
	(!A1 * !B1 * !B2 * !X)	0.02223	0.02222	0.02210
	(!A1 * !B1 * !B2 * !X)	0.01417	0.01416	0.01407

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00175	0.00163	0.00018
	(A1 * B2 * X)	0.00461	0.00450	0.00304
	(A1 * B1 * !B2 * X)	0.00419	0.00408	0.00262
	(A1 * B1 * !B2 * X)	0.00706	0.00694	0.00548
	(A1 * !B1 * !B2 * !X)	0.00325	0.00322	0.00322
	(A1 * !B1 * !B2 * !X)	0.00732	0.00729	0.00730
	(!A1 * !B1 * !B2 * !X)	0.00335	0.00310	0.00322
	(!A1 * !B1 * !B2 * !X)	0.00748	0.00726	0.00730
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00169	0.00157	0.00012
	(A1 * B2 * X)	0.00473	0.00461	0.00315
	(A1 * B1 * !B2 * X)	0.00413	0.00402	0.00256
	(A1 * B1 * !B2 * X)	0.00717	0.00706	0.00559
	(A1 * !B1 * !B2 * !X)	0.00740	0.00734	0.00735
	(A1 * !B1 * !B2 * !X)	0.01163	0.01161	0.01160
	(!A1 * !B1 * !B2 * !X)	0.00763	0.00734	0.00735
	(!A1 * !B1 * !B2 * !X)	0.01190	0.01165	0.01158
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00394	0.00372	0.00082
	(A1 * B2 * X)	0.00943	0.00920	0.00629
	(A1 * B1 * !B2 * X)	0.00882	0.00860	0.00571
	(A1 * B1 * !B2 * X)	0.01432	0.01409	0.01118
	(A1 * !B1 * !B2 * !X)	0.01580	0.01570	0.01568
	(A1 * !B1 * !B2 * !X)	0.02372	0.02362	0.02364
	(!A1 * !B1 * !B2 * !X)	0.01582	0.01536	0.01563
	(!A1 * !B1 * !B2 * !X)	0.02387	0.02349	0.02358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00342	0.00329	0.00670
	(A2 * B2 * X)	-0.00094	-0.00112	0.00235
	(A1 * !A2 * B2 * X)	0.00587	0.00573	0.00914
	(A1 * !A2 * B2 * X)	0.00150	0.00133	0.00479
	(!A1 * !A2 * B2 * !X)	0.00522	0.00523	0.00523
	(!A1 * !A2 * B2 * !X)	0.00168	0.00168	0.00172
	(!A1 * !A2 * !B2 * !X)	0.00537	0.00537	0.00525
	(!A1 * !A2 * !B2 * !X)	0.00201	0.00198	0.00181
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00383	0.00368	0.00708
	(A2 * B2 * X)	-0.00068	-0.00087	0.00259
	(A1 * !A2 * B2 * X)	0.00628	0.00613	0.00953
	(A1 * !A2 * B2 * X)	0.00177	0.00157	0.00503
	(!A1 * !A2 * B2 * !X)	0.00972	0.00973	0.00974
	(!A1 * !A2 * B2 * !X)	0.00620	0.00621	0.00625
	(!A1 * !A2 * !B2 * !X)	0.00989	0.00989	0.00977
	(!A1 * !A2 * !B2 * !X)	0.00649	0.00647	0.00628
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00759	0.00726	0.01400
	(A2 * B2 * X)	-0.00123	-0.00162	0.00521
	(A1 * !A2 * B2 * X)	0.01249	0.01215	0.01889
	(A1 * !A2 * B2 * X)	0.00367	0.00327	0.01009
	(!A1 * !A2 * B2 * !X)	0.02004	0.02006	0.02006
	(!A1 * !A2 * B2 * !X)	0.01288	0.01286	0.01297
	(!A1 * !A2 * !B2 * !X)	0.02032	0.02034	0.02009
	(!A1 * !A2 * !B2 * !X)	0.01354	0.01351	0.01315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00361	0.00348	0.00269
	(A2 * B2 * X)	0.00798	0.00789	0.00706
	(A1 * !A2 * B2 * X)	0.00605	0.00592	0.00513
	(A1 * !A2 * B2 * X)	0.01042	0.01033	0.00950
	(!A1 * !A2 * B2 * !X)	0.00442	0.00442	0.00440
	(!A1 * !A2 * B2 * !X)	0.00796	0.00795	0.00790
	(!A1 * !A2 * !B2 * !X)	0.00416	0.00416	0.00419
	(!A1 * !A2 * !B2 * !X)	0.00753	0.00756	0.00753
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00343	0.00330	0.00251
	(A2 * B2 * X)	0.00793	0.00784	0.00702
	(A1 * !A2 * B2 * X)	0.00587	0.00574	0.00495
	(A1 * !A2 * B2 * X)	0.01037	0.01029	0.00946
	(!A1 * !A2 * B2 * !X)	0.00876	0.00875	0.00872
	(!A1 * !A2 * B2 * !X)	0.01229	0.01233	0.01221
	(!A1 * !A2 * !B2 * !X)	0.00856	0.00855	0.00857
	(!A1 * !A2 * !B2 * !X)	0.01197	0.01200	0.01199
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00703	0.00678	0.00516
	(A2 * B2 * X)	0.01586	0.01566	0.01400
	(A1 * !A2 * B2 * X)	0.01190	0.01165	0.01004
	(A1 * !A2 * B2 * X)	0.02073	0.02053	0.01888
	(!A1 * !A2 * B2 * !X)	0.01735	0.01733	0.01730
	(!A1 * !A2 * B2 * !X)	0.02444	0.02447	0.02436
	(!A1 * !A2 * !B2 * !X)	0.01681	0.01681	0.01685
	(!A1 * !A2 * !B2 * !X)	0.02355	0.02360	0.02361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00301	0.00304	0.00367
	(A2 * B1 * X)	-0.00033	-0.00032	0.00030
	(A1 * !A2 * B1 * X)	0.00546	0.00549	0.00611
	(A1 * !A2 * B1 * X)	0.00212	0.00213	0.00274
	(!A1 * !A2 * B1 * !X)	0.00574	0.00573	0.00572
	(!A1 * !A2 * B1 * !X)	0.00191	0.00188	0.00195
	(!A1 * !A2 * !B1 * !X)	0.00591	0.00591	0.00577
	(!A1 * !A2 * !B1 * !X)	0.00229	0.00227	0.00208
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00277	0.00283	0.00342
	(A2 * B1 * X)	-0.00023	-0.00024	0.00038
	(A1 * !A2 * B1 * X)	0.00522	0.00528	0.00587
	(A1 * !A2 * B1 * X)	0.00221	0.00221	0.00282
	(!A1 * !A2 * B1 * !X)	0.00968	0.00967	0.00967
	(!A1 * !A2 * B1 * !X)	0.00632	0.00628	0.00633
	(!A1 * !A2 * !B1 * !X)	0.00987	0.00986	0.00974
	(!A1 * !A2 * !B1 * !X)	0.00662	0.00662	0.00641
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00513	0.00522	0.00626
	(A2 * B1 * X)	-0.00047	-0.00047	0.00063
	(A1 * !A2 * B1 * X)	0.01002	0.01011	0.01115
	(A1 * !A2 * B1 * X)	0.00443	0.00442	0.00553
	(!A1 * !A2 * B1 * !X)	0.01931	0.01927	0.01925
	(!A1 * !A2 * B1 * !X)	0.01270	0.01260	0.01272
	(!A1 * !A2 * !B1 * !X)	0.01966	0.01964	0.01939
	(!A1 * !A2 * !B1 * !X)	0.01342	0.01339	0.01302

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00116	0.00103	-0.00042
	(A2 * B1 * X)	0.00453	0.00442	0.00295
	(A1 * !A2 * B1 * X)	0.00360	0.00347	0.00202
	(A1 * !A2 * B1 * X)	0.00697	0.00687	0.00540
	(!A1 * !A2 * B1 * !X)	0.00399	0.00394	0.00391
	(!A1 * !A2 * B1 * !X)	0.00776	0.00773	0.00766
	(!A1 * !A2 * !B1 * !X)	0.00363	0.00362	0.00365
	(!A1 * !A2 * !B1 * !X)	0.00722	0.00723	0.00724
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00160	0.00148	0.00002
	(A2 * B1 * X)	0.00466	0.00454	0.00308
	(A1 * !A2 * B1 * X)	0.00404	0.00392	0.00247
	(A1 * !A2 * B1 * X)	0.00710	0.00699	0.00552
	(!A1 * !A2 * B1 * !X)	0.00890	0.00883	0.00879
	(!A1 * !A2 * B1 * !X)	0.01228	0.01221	0.01212
	(!A1 * !A2 * !B1 * !X)	0.00860	0.00857	0.00860
	(!A1 * !A2 * !B1 * !X)	0.01186	0.01188	0.01185
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00373	0.00350	0.00060
	(A2 * B1 * X)	0.00941	0.00918	0.00626
	(A1 * !A2 * B1 * X)	0.00860	0.00838	0.00549
	(A1 * !A2 * B1 * X)	0.01431	0.01407	0.01115
	(!A1 * !A2 * B1 * !X)	0.01833	0.01815	0.01811
	(!A1 * !A2 * B1 * !X)	0.02486	0.02474	0.02461
	(!A1 * !A2 * !B1 * !X)	0.01753	0.01748	0.01754
	(!A1 * !A2 * !B1 * !X)	0.02372	0.02378	0.02373

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00232	0.00252	0.00283	0.00297	0.91833
sky130_fd_sc_hs__o2bb2ai_2	0.00525	0.00462	0.00577	0.00533	1.75340
sky130_fd_sc_hs__o2bb2ai_4	0.01089	0.01095	0.01082	0.01098	2.88701

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	1132.82000	2653.35000
sky130_fd_sc_hs__o2bb2ai_2	0.00000	2256.22000	5272.53000
sky130_fd_sc_hs__o2bb2ai_4	0.00000	2905.76000	4197.39000

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)	0.05062	0.29618	2.90840
	A2_N->Y (RR)	0.04816	0.30938	3.10855
	B1->Y (FR)	0.05078	0.63532	8.21932
	B2->Y (FR)	0.04264	0.67875	8.92708
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.04600	0.22906	2.78695
	A2_N->Y (RR)	0.04227	0.23456	2.91050
	B1->Y (FR)	0.04531	0.52836	8.08162
	B2->Y (FR)	0.03531	0.56744	8.72947
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.04971	0.19904	2.77810
	A2_N->Y (RR)	0.04382	0.22515	3.17393
	B1->Y (FR)	0.05048	0.45441	7.76121
	B2->Y (FR)	0.03930	0.51214	8.69461

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)	0.06638	0.46213	5.17598
	A2_N->Y (FF)	0.05939	0.43385	4.89394
	B1->Y (RF)	0.03306	0.36112	4.55398
	B2->Y (RF)	0.02598	0.34554	4.42625
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.05327	0.39205	5.11904
	A2_N->Y (FF)	0.05086	0.38620	5.09452
	B1->Y (RF)	0.02860	0.28112	4.31886
	B2->Y (RF)	0.02294	0.27367	4.32605
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.06338	0.35161	4.89971
	A2_N->Y (FF)	0.05531	0.31260	4.42735
	B1->Y (RF)	0.03303	0.22976	4.09237
	B2->Y (RF)	0.02335	0.20829	3.88325

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	0.05322	0.07278	0.38126
	A1_N	0.04767	0.06721	0.37541
	A2_N	0.05221	0.07049	0.34870
	A2_N	0.04780	0.06605	0.34403
	B1	0.00172	0.00897	0.12576
	B1	0.00889	0.01610	0.13200
	B2	0.00173	0.01045	0.13506
	B2	0.00748	0.01614	0.13986
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.10420	0.14085	0.71450
	A1_N	0.09214	0.12877	0.70176
	A2_N	0.10150	0.13900	0.70310
	A2_N	0.09288	0.13033	0.69414
	B1	0.00308	0.01983	0.25424
	B1	0.01741	0.03411	0.26692
	B2	0.00317	0.02185	0.25727
	B2	0.01374	0.03229	0.26526
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.10661	0.18754	1.47223
	A1_N	0.08026	0.16107	1.44482
	A2_N	0.10086	0.17763	1.33783
	A2_N	0.08070	0.15739	1.31648
	B1	0.00452	0.03721	0.46049
	B1	0.03315	0.06574	0.48474
	B2	0.00444	0.04118	0.47363
	B2	0.02662	0.06315	0.49122

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.02169	0.04308	0.36203
	A1_N	0.02734	0.04868	0.36696
	A2_N	0.02103	0.04155	0.35125
	A2_N	0.02553	0.04606	0.35463
	B1	0.02558	0.03113	0.12470
	B1	0.01840	0.02397	0.11697
	B2	0.02577	0.03114	0.11499
	B2	0.02002	0.02536	0.10876
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.04381	0.08492	0.69935
	A1_N	0.05604	0.09708	0.71072
	A2_N	0.04326	0.08198	0.66097
	A2_N	0.05207	0.09072	0.66880
	B1	0.04983	0.06295	0.24857
	B1	0.03551	0.04857	0.23332
	B2	0.05117	0.06389	0.22855
	B2	0.04059	0.05326	0.21718
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.08524	0.17036	1.44233
	A1_N	0.11201	0.19703	1.46726
	A2_N	0.08073	0.16057	1.33441
	A2_N	0.10127	0.18104	1.35445
	B1	0.10295	0.13081	0.49021
	B1	0.07437	0.10214	0.46013
	B2	0.10020	0.12721	0.44112
	B2	0.07802	0.10491	0.41796

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)	0.03204	0.05093	0.35159
	(A2_N * !B1 * !B2 * Y)	0.02597	0.04485	0.34554
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00694	0.00695	0.00690
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00310	0.00308	0.00307
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.06329	0.10023	0.68811
	(A2_N * !B1 * !B2 * Y)	0.05035	0.08721	0.67514
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01377	0.01382	0.01373
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00545	0.00540	0.00539
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.07504	0.15249	1.40094
	(A2_N * !B1 * !B2 * Y)	0.04673	0.12408	1.37263
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.02799	0.02809	0.02797
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00986	0.00977	0.00980

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)	0.00084	0.02238	0.34320
	(A2_N * !B1 * !B2 * Y)	0.00691	0.02846	0.34923
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00341	0.00328	0.00335
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00726	0.00715	0.00715
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00147	0.04353	0.67146
	(A2_N * !B1 * !B2 * Y)	0.01447	0.05653	0.68437
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00697	0.00660	0.00676
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01529	0.01503	0.01505
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00332	0.08838	1.36825
	(A2_N * !B1 * !B2 * Y)	0.03174	0.11683	1.39638
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01329	0.01234	0.01237
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.03146	0.03074	0.03045

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)	0.03092	0.05035	0.34753
	(A1_N * !B1 * !B2 * Y)	0.02600	0.04540	0.34260
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00561	0.00561	0.00554
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00262	0.00260	0.00253
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.06053	0.09597	0.63842
	(A1_N * !B1 * !B2 * Y)	0.05098	0.08636	0.62886
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01115	0.01115	0.01101
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00553	0.00547	0.00532
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.06894	0.14388	1.30183
	(A1_N * !B1 * !B2 * Y)	0.04685	0.12164	1.27967
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.02231	0.02229	0.02206
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00827	0.00826	0.00785

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)	0.00045	0.02180	0.33937
	(A1_N * !B1 * !B2 * Y)	0.00538	0.02673	0.34429
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00446	0.00445	0.00447
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00743	0.00748	0.00744
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00059	0.03967	0.62250
	(A1_N * !B1 * !B2 * Y)	0.01013	0.04927	0.63204
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00899	0.00897	0.00902
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01462	0.01469	0.01463
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.00023	0.08040	1.27060
	(A1_N * !B1 * !B2 * Y)	0.02232	0.10262	1.29273
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01771	0.01764	0.01771
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.03174	0.03198	0.03179

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)	0.02516	0.02519	0.02516
	(A1_N * A2_N * B2 * Y)	0.02053	0.02052	0.02054
	(A1_N * A2_N * !B2 * Y)	0.02516	0.02518	0.02516
	(A1_N * A2_N * !B2 * Y)	0.02054	0.02052	0.02053
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00798	0.00774	0.01075
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00329	0.00305	0.00607
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.05000	0.05001	0.05000
	(A1_N * A2_N * B2 * Y)	0.04066	0.04066	0.04066
	(A1_N * A2_N * !B2 * Y)	0.04998	0.05004	0.04999
	(A1_N * A2_N * !B2 * Y)	0.04067	0.04063	0.04065
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01609	0.01554	0.02151
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00659	0.00606	0.01205
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.04451	0.04457	0.04450
	(A1_N * A2_N * B2 * Y)	0.02626	0.02624	0.02630
	(A1_N * A2_N * !B2 * Y)	0.04447	0.04456	0.04446
	(A1_N * A2_N * !B2 * Y)	0.02630	0.02623	0.02627
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.03192	0.03065	0.04231
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01339	0.01205	0.02387

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)	0.02103	0.02102	0.02103
	(A1_N * A2_N * B2 * Y)	0.02566	0.02569	0.02566
	(A1_N * A2_N * !B2 * Y)	0.02131	0.02110	0.02106
	(A1_N * A2_N * !B2 * Y)	0.02595	0.02577	0.02568
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00710	0.00699	0.00637
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01179	0.01173	0.01107
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.04179	0.04180	0.04180
	(A1_N * A2_N * B2 * Y)	0.05115	0.05115	0.05114
	(A1_N * A2_N * !B2 * Y)	0.04232	0.04188	0.04185
	(A1_N * A2_N * !B2 * Y)	0.05170	0.05133	0.05117
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01417	0.01394	0.01269
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.02363	0.02351	0.02220
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.02861	0.02857	0.02859
	(A1_N * A2_N * B2 * Y)	0.04677	0.04685	0.04681
	(A1_N * A2_N * !B2 * Y)	0.02972	0.02869	0.02872
	(A1_N * A2_N * !B2 * Y)	0.04799	0.04712	0.04686
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.02826	0.02781	0.02527
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.04676	0.04647	0.04382

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)	0.02526	0.02526	0.02525
	(A1_N * A2_N * B1 * Y)	0.02050	0.02051	0.02052
	(A1_N * A2_N * !B1 * Y)	0.02523	0.02525	0.02523
	(A1_N * A2_N * !B1 * Y)	0.02052	0.02051	0.02051
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00704	0.00710	0.00767
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00376	0.00374	0.00435
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.04976	0.04978	0.04974
	(A1_N * A2_N * B1 * Y)	0.04096	0.04096	0.04099
	(A1_N * A2_N * !B1 * Y)	0.04973	0.04977	0.04972
	(A1_N * A2_N * !B1 * Y)	0.04099	0.04096	0.04097
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01366	0.01378	0.01481
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00787	0.00785	0.00894
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.04444	0.04459	0.04450
	(A1_N * A2_N * B1 * Y)	0.02627	0.02616	0.02622
	(A1_N * A2_N * !B1 * Y)	0.04446	0.04456	0.04446
	(A1_N * A2_N * !B1 * Y)	0.02624	0.02616	0.02619
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.02763	0.02787	0.02963
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01530	0.01527	0.01719

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)	0.02096	0.02094	0.02095
	(A1_N * A2_N * B1 * Y)	0.02567	0.02569	0.02568
	(A1_N * A2_N * !B1 * Y)	0.02123	0.02102	0.02099
	(A1_N * A2_N * !B1 * Y)	0.02598	0.02579	0.02570
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00567	0.00557	0.00424
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00904	0.00892	0.00757
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.04206	0.04204	0.04206
	(A1_N * A2_N * B1 * Y)	0.05081	0.05084	0.05082
	(A1_N * A2_N * !B1 * Y)	0.04256	0.04217	0.04211
	(A1_N * A2_N * !B1 * Y)	0.05134	0.05102	0.05085
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01186	0.01162	0.00896
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01774	0.01756	0.01488
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.02862	0.02855	0.02859
	(A1_N * A2_N * B1 * Y)	0.04683	0.04693	0.04687
	(A1_N * A2_N * !B1 * Y)	0.02971	0.02874	0.02872
	(A1_N * A2_N * !B1 * Y)	0.04805	0.04723	0.04694
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.02293	0.02248	0.01720
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.03546	0.03509	0.02977

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00233	0.00245	0.00251	0.00270	1.69534
sky130_fd_sc_hs__o2bb2a_2	0.00234	0.00254	0.00268	0.00275	3.03418
sky130_fd_sc_hs__o2bb2a_4	0.00232	0.00247	0.00505	0.00492	6.12534

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	1837.08000	3181.66000
sky130_fd_sc_hs__o2bb2a_2	0.00000	1650.75000	3681.25000
sky130_fd_sc_hs__o2bb2a_4	0.00000	3461.59000	4754.04000

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)	0.09333	0.59239	7.75055
	A2_N->X (FR)	0.08670	0.56077	7.32597
	B1->X (RR)	0.06315	0.42055	5.67623
	B2->X (RR)	0.05445	0.39494	5.37369
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.10286	0.53513	7.80284
	A2_N->X (FR)	0.09406	0.50298	7.34446
	B1->X (RR)	0.06655	0.34539	5.33804
	B2->X (RR)	0.05747	0.32297	5.05043
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.12065	0.49685	7.88237
	A2_N->X (FR)	0.11267	0.46814	7.43136
	B1->X (RR)	0.07747	0.30414	5.62084
	B2->X (RR)	0.06453	0.27517	5.30864

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)	0.07790	0.29789	3.13922
	A2_N->X (RF)	0.07559	0.31656	3.48102
	B1->X (FF)	0.08282	0.47387	5.93930
	B2->X (FF)	0.07475	0.49570	6.18961
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.08743	0.25336	2.70306
	A2_N->X (RF)	0.08530	0.26723	2.97449
	B1->X (FF)	0.09993	0.45174	5.72600
	B2->X (FF)	0.09145	0.47888	5.97134
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.09855	0.25458	3.08951
	A2_N->X (RF)	0.09627	0.26812	3.33054
	B1->X (FF)	0.10449	0.41929	5.90834
	B2->X (FF)	0.09125	0.44297	6.16344

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	0.06143	0.08536	0.45592
	A1_N	0.06679	0.09071	0.46089
	A2_N	0.06040	0.08372	0.43775
	A2_N	0.06454	0.08787	0.44169
	B1	0.05731	0.07150	0.32011
	B1	0.05069	0.06487	0.31337
	B2	0.06134	0.07560	0.31535
	B2	0.05590	0.07014	0.30978
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.04754	0.07025	0.44676
	A1_N	0.05299	0.07565	0.45244
	A2_N	0.04625	0.06803	0.40878
	A2_N	0.05057	0.07240	0.41265
	B1	0.04416	0.05829	0.31741
	B1	0.03712	0.05125	0.31003
	B2	0.04775	0.06207	0.30993
	B2	0.04198	0.05626	0.30310
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.13299	0.15652	0.60199
	A1_N	0.13817	0.16178	0.60647
	A2_N	0.13104	0.15289	0.52879
	A2_N	0.13498	0.15688	0.53158
	B1	0.12740	0.15297	0.63695
	B1	0.11399	0.13969	0.62339
	B2	0.13171	0.15821	0.61604
	B2	0.12141	0.14792	0.60486

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.06575	0.08706	0.43929
	A1_N	0.06047	0.08170	0.43381
	A2_N	0.06521	0.08749	0.44398
	A2_N	0.06108	0.08336	0.43941
	B1	0.01716	0.03086	0.28358
	B1	0.02378	0.03745	0.28875
	B2	0.01719	0.03170	0.27901
	B2	0.02263	0.03713	0.28266
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.07594	0.09321	0.41573
	A1_N	0.07047	0.08776	0.41016
	A2_N	0.07562	0.09303	0.42277
	A2_N	0.07351	0.08986	0.41397
	B1	0.03352	0.04275	0.29111
	B1	0.04056	0.04974	0.29805
	B2	0.03365	0.04404	0.28634
	B2	0.03944	0.04970	0.29076
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.11296	0.12715	0.51059
	A1_N	0.11077	0.12495	0.50560
	A2_N	0.11252	0.12720	0.52332
	A2_N	0.11154	0.12619	0.51856
	B1	0.06971	0.08503	0.55456
	B1	0.08310	0.09834	0.56800
	B2	0.07001	0.08784	0.54728
	B2	0.08031	0.09789	0.54971

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)	0.03568	0.05488	0.35643
	(A2_N * !B1 * !B2 * !X)	0.02965	0.04883	0.35041
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.01408	0.01411	0.01406
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.01023	0.01021	0.01019
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.04058	0.05886	0.34962
	(A2_N * !B1 * !B2 * !X)	0.03440	0.05267	0.34344
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00788	0.00790	0.00785
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00396	0.00394	0.00393
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.05144	0.06886	0.35723
	(A2_N * !B1 * !B2 * !X)	0.04518	0.06259	0.35098
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.02628	0.02630	0.02624
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.02242	0.02240	0.02237

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)	0.00552	0.02734	0.34893
	(A2_N * !B1 * !B2 * !X)	0.01152	0.03336	0.35493
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.01041	0.01028	0.01034
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.01429	0.01417	0.01418
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00988	0.03078	0.34154
	(A2_N * !B1 * !B2 * !X)	0.01605	0.03698	0.34768
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00401	0.00387	0.00393
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00791	0.00782	0.00782
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.01999	0.04018	0.34839
	(A2_N * !B1 * !B2 * !X)	0.02624	0.04643	0.35458
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.02244	0.02230	0.02239
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.02634	0.02621	0.02623

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)	0.03463	0.05429	0.35097
	(A1_N * !B1 * !B2 * !X)	0.02985	0.04948	0.34619
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.01262	0.01262	0.01255
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00970	0.00968	0.00962
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.03964	0.05827	0.34558
	(A1_N * !B1 * !B2 * !X)	0.03463	0.05324	0.34057
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00643	0.00643	0.00636
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00337	0.00335	0.00328
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.05044	0.06821	0.35363
	(A1_N * !B1 * !B2 * !X)	0.04542	0.06316	0.34862
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.02470	0.02470	0.02465
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.02176	0.02174	0.02169

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)	0.00505	0.02665	0.34363
	(A1_N * !B1 * !B2 * !X)	0.00982	0.03143	0.34840
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.01158	0.01157	0.01159
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.01448	0.01453	0.01449
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00934	0.03008	0.33759
	(A1_N * !B1 * !B2 * !X)	0.01438	0.03512	0.34259
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00516	0.00515	0.00518
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00820	0.00825	0.00821
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.01957	0.03943	0.34488
	(A1_N * !B1 * !B2 * !X)	0.02458	0.04445	0.34986
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.02367	0.02365	0.02366
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.02658	0.02663	0.02658

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)	0.02951	0.02953	0.02951
	(A1_N * A2_N * B2 * !X)	0.02539	0.02538	0.02540
	(A1_N * A2_N * !B2 * !X)	0.02952	0.02954	0.02950
	(A1_N * A2_N * !B2 * !X)	0.02539	0.02537	0.02537
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01478	0.01460	0.01802
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01059	0.01042	0.01384
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.03408	0.03411	0.03408
	(A1_N * A2_N * B2 * !X)	0.02968	0.02967	0.02969
	(A1_N * A2_N * !B2 * !X)	0.03407	0.03408	0.03406
	(A1_N * A2_N * !B2 * !X)	0.02968	0.02967	0.02967
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00869	0.00854	0.01194
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00422	0.00403	0.00748
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.04503	0.04507	0.04505
	(A1_N * A2_N * B2 * !X)	0.03664	0.03664	0.03666
	(A1_N * A2_N * !B2 * !X)	0.04503	0.04506	0.04499
	(A1_N * A2_N * !B2 * !X)	0.03663	0.03660	0.03657
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.03008	0.02947	0.03605
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.02151	0.02086	0.02753

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)	0.02588	0.02588	0.02588
	(A1_N * A2_N * B2 * !X)	0.03000	0.03001	0.03000
	(A1_N * A2_N * !B2 * !X)	0.02608	0.02589	0.02591
	(A1_N * A2_N * !B2 * !X)	0.03023	0.03006	0.03002
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01505	0.01492	0.01414
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01923	0.01915	0.01833
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.03001	0.03000	0.03001
	(A1_N * A2_N * B2 * !X)	0.03441	0.03442	0.03441
	(A1_N * A2_N * !B2 * !X)	0.03028	0.03008	0.03004
	(A1_N * A2_N * !B2 * !X)	0.03469	0.03451	0.03442
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00855	0.00841	0.00763
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01301	0.01293	0.01210
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.03774	0.03769	0.03772
	(A1_N * A2_N * B2 * !X)	0.04610	0.04617	0.04612
	(A1_N * A2_N * !B2 * !X)	0.03821	0.03775	0.03780
	(A1_N * A2_N * !B2 * !X)	0.04668	0.04626	0.04618
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.02996	0.02970	0.02807
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.03854	0.03832	0.03665

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)	0.02962	0.02964	0.02962
	(A1_N * A2_N * B1 * !X)	0.02535	0.02533	0.02534
	(A1_N * A2_N * !B1 * !X)	0.02964	0.02966	0.02961
	(A1_N * A2_N * !B1 * !X)	0.02535	0.02533	0.02532
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01398	0.01402	0.01461
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01093	0.01094	0.01156
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.03421	0.03422	0.03420
	(A1_N * A2_N * B1 * !X)	0.02974	0.02972	0.02973
	(A1_N * A2_N * !B1 * !X)	0.03420	0.03422	0.03420
	(A1_N * A2_N * !B1 * !X)	0.02975	0.02973	0.02973
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00776	0.00782	0.00842
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00456	0.00455	0.00518
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.04487	0.04489	0.04484
	(A1_N * A2_N * B1 * !X)	0.03664	0.03657	0.03660
	(A1_N * A2_N * !B1 * !X)	0.04492	0.04494	0.04486
	(A1_N * A2_N * !B1 * !X)	0.03665	0.03662	0.03659
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.02771	0.02775	0.02852
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.02203	0.02206	0.02287

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)	0.02579	0.02575	0.02577
	(A1_N * A2_N * B1 * !X)	0.03007	0.03008	0.03006
	(A1_N * A2_N * !B1 * !X)	0.02598	0.02577	0.02580
	(A1_N * A2_N * !B1 * !X)	0.03030	0.03010	0.03007
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01300	0.01288	0.01144
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01606	0.01595	0.01449
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.02991	0.02989	0.02989
	(A1_N * A2_N * B1 * !X)	0.03439	0.03436	0.03437
	(A1_N * A2_N * !B1 * !X)	0.03014	0.02994	0.02990
	(A1_N * A2_N * !B1 * !X)	0.03463	0.03445	0.03436
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00658	0.00648	0.00502
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00986	0.00973	0.00827
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.03802	0.03791	0.03793
	(A1_N * A2_N * B1 * !X)	0.04625	0.04622	0.04618
	(A1_N * A2_N * !B1 * !X)	0.03832	0.03785	0.03792
	(A1_N * A2_N * !B1 * !X)	0.04663	0.04622	0.04616
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.02650	0.02625	0.02344
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.03221	0.03204	0.02917

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00276	0.00290	0.00281	0.00291	0.00297	0.63192
sky130_fd_sc_hs__o311ai_2	0.00541	0.00553	0.00556	0.00556	0.00563	1.02913
sky130_fd_sc_hs__o311ai_4	0.01066	0.01068	0.01107	0.00841	0.00794	1.92309

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	273.13700	1547.68000
sky130_fd_sc_hs__o311ai_2	0.00000	545.12700	3081.89000
sky130_fd_sc_hs__o311ai_4	0.00000	636.86600	4090.49000

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)	0.10480	0.71225	7.77658
	A2->Y (FR)	0.09821	0.75276	8.41493
	A3->Y (FR)	0.07939	0.77045	8.86392
	B1->Y (FR)	0.02699	0.41558	5.01135
	C1->Y (FR)	0.02262	0.40703	4.94595
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.11949	0.61806	7.44832
	A2->Y (FR)	0.10832	0.65354	8.06793
	A3->Y (FR)	0.08805	0.68900	8.77154
	B1->Y (FR)	0.02695	0.35504	4.70742
	C1->Y (FR)	0.02180	0.34395	4.62505
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.10705	0.50332	7.12024
	A2->Y (FR)	0.09912	0.55938	8.01422
	A3->Y (FR)	0.07476	0.58466	8.57830
	B1->Y (FR)	0.03694	0.43996	6.65756
	C1->Y (FR)	0.02631	0.43275	6.73822

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.05172	0.33960	3.44839
	A2->Y (RF)	0.04973	0.34004	3.49267
	A3->Y (RF)	0.03885	0.32185	3.37444
	B1->Y (RF)	0.04291	0.40300	4.52754
	C1->Y (RF)	0.03723	0.43361	4.99191
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.05985	0.29016	3.25979
	A2->Y (RF)	0.05326	0.27472	3.15510
	A3->Y (RF)	0.04230	0.25663	3.02399
	B1->Y (RF)	0.05333	0.35836	4.33196
	C1->Y (RF)	0.04592	0.41465	5.18610
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.06335	0.24185	3.33648
	A2->Y (RF)	0.05453	0.22329	3.15634
	A3->Y (RF)	0.03851	0.20034	3.00110
	B1->Y (RF)	0.05671	0.33301	4.69706
	C1->Y (RF)	0.04596	0.36406	5.28991

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00238	0.00841	0.13120
	A1	0.01476	0.02068	0.14227
	A2	0.00253	0.00820	0.11463
	A2	0.01335	0.01893	0.12402
	A3	0.00251	0.00967	0.12545
	A3	0.01171	0.01875	0.13331
	B1	0.00029	0.01236	0.19573
	B1	0.00766	0.01973	0.20306
	C1	-0.00040	0.01122	0.18430
	C1	0.00569	0.01730	0.19019
sky130_fd_sc_hs__o311ai_2	A1	0.00546	0.01663	0.24125
	A1	0.03061	0.04154	0.26336
	A2	0.00552	0.01697	0.21506
	A2	0.02746	0.03874	0.23390
	A3	0.00552	0.01882	0.22043
	A3	0.02424	0.03732	0.23592
	B1	0.00080	0.02471	0.36637
	B1	0.01539	0.03929	0.37907
	C1	-0.00073	0.02146	0.32919
	C1	0.01099	0.03314	0.33896

sky130_fd_sc_hs__o311ai_4	**A1**	0.00854	0.03130	0.43073
	A1	0.05791	0.08035	0.47441
	A2	0.00888	0.02994	0.36302
	A2	0.05181	0.07256	0.40045
	A3	0.00898	0.03441	0.38168
	A3	0.04582	0.07088	0.41228
	B1	0.00145	0.02913	0.38987
	B1	0.02548	0.05309	0.41234
	C1	-0.00213	0.02522	0.36437
	C1	0.01567	0.04290	0.37959

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.03799	0.04238	0.14155
	A1	0.02561	0.03001	0.12877
	A2	0.03584	0.04004	0.12795
	A2	0.02501	0.02921	0.11692
	A3	0.03530	0.03954	0.11992
	A3	0.02609	0.03032	0.11058
	B1	0.02489	0.03232	0.16023
	B1	0.01753	0.02491	0.15283
	C1	0.02456	0.03244	0.15523
	C1	0.01846	0.02628	0.14893

sky130_fd_sc_hs__o311ai_2	**A1**	0.07812	0.08674	0.27213
	A1	0.05298	0.06153	0.24679
	A2	0.07129	0.08022	0.24812
	A2	0.04936	0.05823	0.22619
	A3	0.07031	0.07891	0.22641
	A3	0.05158	0.06018	0.20706
	B1	0.04897	0.06557	0.32160
	B1	0.03438	0.05090	0.30704
	C1	0.04873	0.06427	0.28473
	C1	0.03700	0.05242	0.27266
sky130_fd_sc_hs__o311ai_4	**A1**	0.12333	0.14550	0.53504
	A1	0.07393	0.09593	0.48454
	A2	0.11076	0.13114	0.46667
	A2	0.06787	0.08816	0.42299
	A3	0.10837	0.12955	0.42813
	A3	0.07148	0.09267	0.39093
	B1	0.06427	0.08359	0.34084
	B1	0.04022	0.05940	0.31591
	C1	0.06017	0.07975	0.31473
	C1	0.04242	0.06197	0.29510

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)**	0.00214	0.00217	0.00214
	(A2 * B1 * !C1 * Y)	-0.00245	-0.00247	-0.00245
	(A2 * A3 * B1 * C1 * !Y)	0.01166	0.01142	0.01148
	(A2 * A3 * B1 * C1 * !Y)	0.00703	0.00680	0.00688
	(A2 * !B1 * Y)	0.00213	0.00215	0.00213
	(A2 * !B1 * Y)	-0.00247	-0.00248	-0.00247
	(A2 * !A3 * B1 * C1 * !Y)	0.01229	0.01198	0.01363
	(A2 * !A3 * B1 * C1 * !Y)	0.00758	0.00728	0.00896
	(!A2 * A3 * B1 * C1 * !Y)	0.01277	0.01245	0.01509
	(!A2 * A3 * B1 * C1 * !Y)	0.00793	0.00755	0.01036
	(!A2 * A3 * B1 * !C1 * Y)	0.00214	0.00217	0.00214
	(!A2 * A3 * B1 * !C1 * Y)	-0.00245	-0.00247	-0.00244
	(!A2 * A3 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A2 * A3 * !B1 * Y)	-0.00247	-0.00249	-0.00246
	(!A2 * !A3 * B1 * !C1 * Y)	0.00212	0.00214	0.00212
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00245	-0.00247	-0.00246
	(!A2 * !A3 * !B1 * C1 * Y)	0.00213	0.00214	0.00212
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00247	-0.00247	-0.00246
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00202	0.00203	0.00201
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00255	-0.00255	-0.00254

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00418	0.00420	0.00419
	(A2 * B1 * !C1 * Y)	-0.00490	-0.00492	-0.00490
	(A2 * A3 * B1 * C1 * !Y)	0.02337	0.02279	0.02284
	(A2 * A3 * B1 * C1 * !Y)	0.01423	0.01361	0.01374
	(A2 * !B1 * Y)	0.00414	0.00417	0.00415
	(A2 * !B1 * Y)	-0.00494	-0.00495	-0.00493
	(A2 * !A3 * B1 * C1 * !Y)	0.02490	0.02408	0.02714
	(A2 * !A3 * B1 * C1 * !Y)	0.01556	0.01470	0.01791
	(!A2 * A3 * B1 * C1 * !Y)	0.02581	0.02492	0.03002
	(!A2 * A3 * B1 * C1 * !Y)	0.01620	0.01527	0.02066
	(!A2 * A3 * B1 * !C1 * Y)	0.00418	0.00420	0.00419
	(!A2 * A3 * B1 * !C1 * Y)	-0.00490	-0.00492	-0.00488
	(!A2 * A3 * !B1 * Y)	0.00414	0.00417	0.00415
	(!A2 * A3 * !B1 * Y)	-0.00493	-0.00495	-0.00491
	(!A2 * !A3 * B1 * !C1 * Y)	0.00410	0.00414	0.00411
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00491	-0.00494	-0.00491
	(!A2 * !A3 * !B1 * C1 * Y)	0.00411	0.00416	0.00413
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00487	-0.00492	-0.00490
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00389	0.00394	0.00391
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00507	-0.00510	-0.00508

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00838	0.00846	0.00837
	(A2 * B1 * !C1 * Y)	-0.00981	-0.00985	-0.00979
	(A2 * A3 * B1 * C1 * !Y)	0.02858	0.02751	0.02764
	(A2 * A3 * B1 * C1 * !Y)	0.01020	0.00917	0.00946
	(A2 * !B1 * Y)	0.00831	0.00839	0.00831
	(A2 * !B1 * Y)	-0.00987	-0.00992	-0.00985
	(A2 * !A3 * B1 * C1 * !Y)	0.03133	0.03000	0.03625
	(A2 * !A3 * B1 * C1 * !Y)	0.01263	0.01124	0.01781
	(!A2 * A3 * B1 * C1 * !Y)	0.03308	0.03171	0.04197
	(!A2 * A3 * B1 * C1 * !Y)	0.01391	0.01241	0.02328
	(!A2 * A3 * B1 * !C1 * Y)	0.00834	0.00842	0.00837
	(!A2 * A3 * B1 * !C1 * Y)	-0.00976	-0.00983	-0.00975
	(!A2 * A3 * !B1 * Y)	0.00828	0.00835	0.00831
	(!A2 * A3 * !B1 * Y)	-0.00983	-0.00989	-0.00981
	(!A2 * !A3 * B1 * !C1 * Y)	0.00819	0.00820	0.00821
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00980	-0.00980	-0.00980
	(!A2 * !A3 * !B1 * C1 * Y)	0.00825	0.00831	0.00826
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00976	-0.00980	-0.00978
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00780	0.00789	0.00782
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.01014	-0.01020	-0.01015

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)**	-0.00193	-0.00194	-0.00193
	(A2 * B1 * !C1 * Y)	0.00266	0.00267	0.00266
	(A2 * A3 * B1 * C1 * !Y)	0.00738	0.00736	0.00735
	(A2 * A3 * B1 * C1 * !Y)	0.01199	0.01202	0.01197
	(A2 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(A2 * !B1 * Y)	0.00264	0.00265	0.00265
	(A2 * !A3 * B1 * C1 * !Y)	0.00958	0.00951	0.00920
	(A2 * !A3 * B1 * C1 * !Y)	0.01428	0.01426	0.01391
	(!A2 * A3 * B1 * C1 * !Y)	0.01140	0.01129	0.01063
	(!A2 * A3 * B1 * C1 * !Y)	0.01621	0.01615	0.01545
	(!A2 * A3 * B1 * !C1 * Y)	-0.00193	-0.00193	-0.00193
	(!A2 * A3 * B1 * !C1 * Y)	0.00265	0.00266	0.00266
	(!A2 * A3 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(!A2 * A3 * !B1 * Y)	0.00264	0.00264	0.00264
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00165	-0.00188	-0.00189
	(!A2 * !A3 * B1 * !C1 * Y)	0.00290	0.00274	0.00267
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00173	-0.00190	-0.00191
	(!A2 * !A3 * !B1 * C1 * Y)	0.00285	0.00272	0.00265
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00193	-0.00199	-0.00198
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00260	0.00260	0.00258

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00376	-0.00377	-0.00377
	(A2 * B1 * !C1 * Y)	0.00531	0.00534	0.00533
	(A2 * A3 * B1 * C1 * !Y)	0.01485	0.01480	0.01479
	(A2 * A3 * B1 * C1 * !Y)	0.02397	0.02402	0.02393
	(A2 * !B1 * Y)	-0.00379	-0.00380	-0.00380
	(A2 * !B1 * Y)	0.00528	0.00530	0.00530
	(A2 * !A3 * B1 * C1 * !Y)	0.01923	0.01908	0.01843
	(A2 * !A3 * B1 * C1 * !Y)	0.02855	0.02850	0.02778
	(!A2 * A3 * B1 * C1 * !Y)	0.02280	0.02258	0.02126
	(!A2 * A3 * B1 * C1 * !Y)	0.03234	0.03219	0.03082
	(!A2 * A3 * B1 * !C1 * Y)	-0.00377	-0.00379	-0.00377
	(!A2 * A3 * B1 * !C1 * Y)	0.00531	0.00535	0.00532
	(!A2 * A3 * !B1 * Y)	-0.00380	-0.00382	-0.00380
	(!A2 * A3 * !B1 * Y)	0.00527	0.00532	0.00528
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00309	-0.00368	-0.00367
	(!A2 * !A3 * B1 * !C1 * Y)	0.00591	0.00549	0.00535
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00326	-0.00374	-0.00372
	(!A2 * !A3 * !B1 * C1 * Y)	0.00579	0.00545	0.00532
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00372	-0.00390	-0.00386
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00521	0.00523	0.00516

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00754	-0.00761	-0.00754
	(A2 * B1 * !C1 * Y)	0.01063	0.01076	0.01064
	(A2 * A3 * B1 * C1 * !Y)	0.01163	0.01161	0.01152
	(A2 * A3 * B1 * C1 * !Y)	0.02988	0.02986	0.02979
	(A2 * !B1 * Y)	-0.00760	-0.00767	-0.00761
	(A2 * !B1 * Y)	0.01056	0.01070	0.01057
	(A2 * !A3 * B1 * C1 * !Y)	0.02033	0.02005	0.01878
	(A2 * !A3 * B1 * C1 * !Y)	0.03898	0.03886	0.03745
	(!A2 * A3 * B1 * C1 * !Y)	0.02752	0.02708	0.02446
	(!A2 * A3 * B1 * C1 * !Y)	0.04661	0.04634	0.04356
	(!A2 * A3 * B1 * !C1 * Y)	-0.00754	-0.00756	-0.00754
	(!A2 * A3 * B1 * !C1 * Y)	0.01061	0.01066	0.01062
	(!A2 * A3 * !B1 * Y)	-0.00761	-0.00763	-0.00761
	(!A2 * A3 * !B1 * Y)	0.01055	0.01059	0.01055
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00650	-0.00732	-0.00734
	(!A2 * !A3 * B1 * !C1 * Y)	0.01160	0.01100	0.01068
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00672	-0.00743	-0.00743
	(!A2 * !A3 * !B1 * C1 * Y)	0.01146	0.01091	0.01063
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00752	-0.00779	-0.00772
	(!A2 * !A3 * !B1 * !C1 * Y)	0.01044	0.01044	0.01031

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)**	0.01173	0.01178	0.01192
	(A1 * A3 * B1 * C1 * !Y)	0.00790	0.00793	0.00812
	(A1 * A3 * B1 * !C1 * Y)	0.00205	0.00206	0.00205
	(A1 * A3 * B1 * !C1 * Y)	-0.00197	-0.00198	-0.00193
	(A1 * A3 * !B1 * Y)	0.00203	0.00205	0.00203
	(A1 * A3 * !B1 * Y)	-0.00198	-0.00199	-0.00195
	(A1 * !A3 * B1 * C1 * !Y)	0.01151	0.01157	0.01207
	(A1 * !A3 * B1 * C1 * !Y)	0.00832	0.00831	0.00886
	(A1 * !A3 * B1 * !C1 * Y)	0.00206	0.00207	0.00205
	(A1 * !A3 * B1 * !C1 * Y)	-0.00251	-0.00251	-0.00249
	(A1 * !A3 * !B1 * C1 * Y)	0.00204	0.00205	0.00203
	(A1 * !A3 * !B1 * C1 * Y)	-0.00252	-0.00252	-0.00251
	(A1 * !A3 * !B1 * !C1 * Y)	0.00197	0.00198	0.00196
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00259	-0.00259	-0.00258
	(!A1 * A3 * B1 * C1 * !Y)	0.01251	0.01211	0.01501
	(!A1 * A3 * B1 * C1 * !Y)	0.00787	0.00747	0.01042
	(!A1 * A3 * B1 * !C1 * Y)	0.00206	0.00206	0.00205
	(!A1 * A3 * B1 * !C1 * Y)	-0.00251	-0.00250	-0.00249
	(!A1 * A3 * !B1 * Y)	0.00204	0.00205	0.00203
	(!A1 * A3 * !B1 * Y)	-0.00252	-0.00252	-0.00251
	(!A1 * !A3 * B1 * !C1 * Y)	0.00201	0.00204	0.00202
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * !A3 * !B1 * C1 * Y)	0.00203	0.00205	0.00202
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00193	0.00194	0.00192
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00259	-0.00260	-0.00258

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.02345	0.02352	0.02379
	(A1 * A3 * B1 * C1 * !Y)	0.01565	0.01568	0.01605
	(A1 * A3 * B1 * !C1 * Y)	0.00422	0.00425	0.00422
	(A1 * A3 * B1 * !C1 * Y)	-0.00392	-0.00394	-0.00383
	(A1 * A3 * !B1 * Y)	0.00418	0.00421	0.00419
	(A1 * A3 * !B1 * Y)	-0.00395	-0.00397	-0.00386
	(A1 * !A3 * B1 * C1 * !Y)	0.02308	0.02319	0.02383
	(A1 * !A3 * B1 * C1 * !Y)	0.01673	0.01670	0.01746
	(A1 * !A3 * B1 * !C1 * Y)	0.00424	0.00427	0.00422
	(A1 * !A3 * B1 * !C1 * Y)	-0.00502	-0.00503	-0.00499
	(A1 * !A3 * !B1 * C1 * Y)	0.00421	0.00424	0.00419
	(A1 * !A3 * !B1 * C1 * Y)	-0.00505	-0.00506	-0.00502
	(A1 * !A3 * !B1 * !C1 * Y)	0.00406	0.00409	0.00404
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00520	-0.00520	-0.00517
	(!A1 * A3 * B1 * C1 * !Y)	0.02497	0.02418	0.02990
	(!A1 * A3 * B1 * C1 * !Y)	0.01555	0.01475	0.02057
	(!A1 * A3 * B1 * !C1 * Y)	0.00424	0.00426	0.00422
	(!A1 * A3 * B1 * !C1 * Y)	-0.00502	-0.00502	-0.00499
	(!A1 * A3 * !B1 * Y)	0.00421	0.00423	0.00419
	(!A1 * A3 * !B1 * Y)	-0.00506	-0.00505	-0.00502
	(!A1 * !A3 * B1 * !C1 * Y)	0.00415	0.00416	0.00416
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00499	-0.00500	-0.00499
	(!A1 * !A3 * !B1 * C1 * Y)	0.00418	0.00421	0.00416
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00500	-0.00501	-0.00498
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00397	0.00400	0.00396
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00519	-0.00520	-0.00517

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.02876	0.02895	0.02939
	(A1 * A3 * B1 * C1 * !Y)	0.01344	0.01360	0.01426
	(A1 * A3 * B1 * !C1 * Y)	0.00825	0.00836	0.00830
	(A1 * A3 * B1 * !C1 * Y)	-0.00763	-0.00772	-0.00751
	(A1 * A3 * !B1 * Y)	0.00818	0.00829	0.00823
	(A1 * A3 * !B1 * Y)	-0.00770	-0.00778	-0.00757
	(A1 * !A3 * B1 * C1 * !Y)	0.02810	0.02824	0.02996
	(A1 * !A3 * B1 * C1 * !Y)	0.01564	0.01564	0.01746
	(A1 * !A3 * B1 * !C1 * Y)	0.00833	0.00830	0.00828
	(A1 * !A3 * B1 * !C1 * Y)	-0.00988	-0.00984	-0.00982
	(A1 * !A3 * !B1 * C1 * Y)	0.00817	0.00824	0.00822
	(A1 * !A3 * !B1 * C1 * Y)	-0.00985	-0.00990	-0.00988
	(A1 * !A3 * !B1 * !C1 * Y)	0.00788	0.00803	0.00793
	(A1 * !A3 * !B1 * !C1 * Y)	-0.01014	-0.01025	-0.01017
	(!A1 * A3 * B1 * C1 * !Y)	0.03230	0.03041	0.04175
	(!A1 * A3 * B1 * C1 * !Y)	0.01390	0.01183	0.02342
	(!A1 * A3 * B1 * !C1 * Y)	0.00825	0.00837	0.00828
	(!A1 * A3 * B1 * !C1 * Y)	-0.00980	-0.00989	-0.00982
	(!A1 * A3 * !B1 * Y)	0.00820	0.00831	0.00821
	(!A1 * A3 * !B1 * Y)	-0.00989	-0.00995	-0.00988
	(!A1 * !A3 * B1 * !C1 * Y)	0.00815	0.00821	0.00816
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00982	-0.00985	-0.00983
	(!A1 * !A3 * !B1 * C1 * Y)	0.00814	0.00818	0.00817
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00980	-0.00984	-0.00985
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00775	0.00780	0.00773
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.01020	-0.01023	-0.01017

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)**	0.00703	0.00702	0.00713
	(A1 * A3 * B1 * C1 * !Y)	0.01096	0.01096	0.01090
	(A1 * A3 * B1 * !C1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * A3 * B1 * !C1 * Y)	0.00233	0.00233	0.00215
	(A1 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * A3 * !B1 * Y)	0.00231	0.00232	0.00213
	(A1 * !A3 * B1 * C1 * !Y)	0.00964	0.00953	0.00831
	(A1 * !A3 * B1 * C1 * !Y)	0.01286	0.01278	0.01155
	(A1 * !A3 * B1 * !C1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A3 * B1 * !C1 * Y)	0.00269	0.00272	0.00270
	(A1 * !A3 * !B1 * C1 * Y)	-0.00185	-0.00187	-0.00185
	(A1 * !A3 * !B1 * C1 * Y)	0.00268	0.00270	0.00269
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00192	-0.00193	-0.00193
	(A1 * !A3 * !B1 * !C1 * Y)	0.00261	0.00262	0.00261
	(!A1 * A3 * B1 * C1 * !Y)	0.01140	0.01129	0.01067
	(!A1 * A3 * B1 * C1 * !Y)	0.01602	0.01594	0.01529
	(!A1 * A3 * B1 * !C1 * Y)	-0.00183	-0.00185	-0.00184
	(!A1 * A3 * B1 * !C1 * Y)	0.00269	0.00273	0.00270
	(!A1 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * !B1 * Y)	0.00268	0.00269	0.00269
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00154	-0.00177	-0.00179
	(!A1 * !A3 * B1 * !C1 * Y)	0.00296	0.00279	0.00271
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00162	-0.00180	-0.00182
	(!A1 * !A3 * !B1 * C1 * Y)	0.00290	0.00277	0.00269
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00182	-0.00189	-0.00189
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00264	0.00264	0.00262

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.01401	0.01401	0.01423
	(A1 * A3 * B1 * C1 * !Y)	0.02197	0.02197	0.02191
	(A1 * A3 * B1 * !C1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * A3 * B1 * !C1 * Y)	0.00460	0.00460	0.00428
	(A1 * A3 * !B1 * Y)	-0.00383	-0.00385	-0.00383
	(A1 * A3 * !B1 * Y)	0.00456	0.00457	0.00425
	(A1 * !A3 * B1 * C1 * !Y)	0.01941	0.01921	0.01682
	(A1 * !A3 * B1 * C1 * !Y)	0.02587	0.02571	0.02332
	(A1 * !A3 * B1 * !C1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * !A3 * B1 * !C1 * Y)	0.00541	0.00544	0.00541
	(A1 * !A3 * !B1 * C1 * Y)	-0.00383	-0.00385	-0.00383
	(A1 * !A3 * !B1 * C1 * Y)	0.00538	0.00540	0.00538
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00398	-0.00400	-0.00398
	(A1 * !A3 * !B1 * !C1 * Y)	0.00523	0.00526	0.00524
	(!A1 * A3 * B1 * C1 * !Y)	0.02274	0.02253	0.02129
	(!A1 * A3 * B1 * C1 * !Y)	0.03211	0.03192	0.03066
	(!A1 * A3 * B1 * !C1 * Y)	-0.00379	-0.00382	-0.00380
	(!A1 * A3 * B1 * !C1 * Y)	0.00539	0.00545	0.00541
	(!A1 * A3 * !B1 * Y)	-0.00382	-0.00386	-0.00383
	(!A1 * A3 * !B1 * Y)	0.00536	0.00542	0.00538
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00309	-0.00366	-0.00369
	(!A1 * !A3 * B1 * !C1 * Y)	0.00602	0.00560	0.00543
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00327	-0.00374	-0.00374
	(!A1 * !A3 * !B1 * C1 * Y)	0.00589	0.00554	0.00540
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00374	-0.00391	-0.00388
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00529	0.00530	0.00524

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.01014	0.01008	0.01052
	(A1 * A3 * B1 * C1 * !Y)	0.02564	0.02572	0.02553
	(A1 * A3 * B1 * !C1 * Y)	-0.00745	-0.00752	-0.00746
	(A1 * A3 * B1 * !C1 * Y)	0.00905	0.00909	0.00841
	(A1 * A3 * !B1 * Y)	-0.00751	-0.00758	-0.00753
	(A1 * A3 * !B1 * Y)	0.00899	0.00903	0.00834
	(A1 * !A3 * B1 * C1 * !Y)	0.02054	0.02014	0.01530
	(A1 * !A3 * B1 * C1 * !Y)	0.03322	0.03284	0.02797
	(A1 * !A3 * B1 * !C1 * Y)	-0.00741	-0.00746	-0.00745
	(A1 * !A3 * B1 * !C1 * Y)	0.01060	0.01066	0.01066
	(A1 * !A3 * !B1 * C1 * Y)	-0.00747	-0.00753	-0.00751
	(A1 * !A3 * !B1 * C1 * Y)	0.01053	0.01060	0.01059
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00776	-0.00782	-0.00780
	(A1 * !A3 * !B1 * !C1 * Y)	0.01024	0.01033	0.01030
	(!A1 * A3 * B1 * C1 * !Y)	0.02750	0.02704	0.02453
	(!A1 * A3 * B1 * C1 * !Y)	0.04589	0.04550	0.04295
	(!A1 * A3 * B1 * !C1 * Y)	-0.00744	-0.00748	-0.00745
	(!A1 * A3 * B1 * !C1 * Y)	0.01064	0.01071	0.01066
	(!A1 * A3 * !B1 * Y)	-0.00751	-0.00754	-0.00751
	(!A1 * A3 * !B1 * Y)	0.01058	0.01064	0.01059
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00624	-0.00721	-0.00724
	(!A1 * !A3 * B1 * !C1 * Y)	0.01168	0.01100	0.01070
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00652	-0.00737	-0.00734
	(!A1 * !A3 * !B1 * C1 * Y)	0.01149	0.01088	0.01063
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00737	-0.00769	-0.00762
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01040	0.01043	0.01032

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)**	0.01122	0.01126	0.01125
	(A2 * B1 * C1 * !Y)	0.00815	0.00814	0.00817
	(A2 * B1 * !C1 * Y)	0.00208	0.00210	0.00208
	(A2 * B1 * !C1 * Y)	-0.00237	-0.00239	-0.00237
	(A2 * !B1 * C1 * Y)	0.00206	0.00208	0.00207
	(A2 * !B1 * C1 * Y)	-0.00239	-0.00240	-0.00239
	(A2 * !B1 * !C1 * Y)	0.00199	0.00200	0.00200
	(A2 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246
	(A1 * !A2 * B1 * C1 * !Y)	0.01124	0.01127	0.01148
	(A1 * !A2 * B1 * C1 * !Y)	0.00872	0.00872	0.00893
	(A1 * !A2 * B1 * !C1 * Y)	0.00210	0.00210	0.00208
	(A1 * !A2 * B1 * !C1 * Y)	-0.00239	-0.00238	-0.00236
	(A1 * !A2 * !B1 * C1 * Y)	0.00208	0.00208	0.00207
	(A1 * !A2 * !B1 * C1 * Y)	-0.00240	-0.00240	-0.00238
	(A1 * !A2 * !B1 * !C1 * Y)	0.00199	0.00200	0.00200
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00245
	(!A1 * !A2 * B1 * !C1 * Y)	0.00205	0.00205	0.00205
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00237	-0.00238	-0.00238
	(!A1 * !A2 * !B1 * C1 * Y)	0.00207	0.00208	0.00206
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00196	0.00197	0.00196
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00247	-0.00247	-0.00246

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.02256	0.02267	0.02264
	(A2 * B1 * C1 * !Y)	0.01626	0.01621	0.01628
	(A2 * B1 * !C1 * Y)	0.00415	0.00421	0.00417
	(A2 * B1 * !C1 * Y)	-0.00494	-0.00498	-0.00494
	(A2 * !B1 * C1 * Y)	0.00412	0.00418	0.00413
	(A2 * !B1 * C1 * Y)	-0.00497	-0.00501	-0.00497
	(A2 * !B1 * !C1 * Y)	0.00398	0.00402	0.00399
	(A2 * !B1 * !C1 * Y)	-0.00512	-0.00515	-0.00512
	(A1 * !A2 * B1 * C1 * !Y)	0.02265	0.02272	0.02308
	(A1 * !A2 * B1 * C1 * !Y)	0.01739	0.01739	0.01776
	(A1 * !A2 * B1 * !C1 * Y)	0.00415	0.00421	0.00417
	(A1 * !A2 * B1 * !C1 * Y)	-0.00493	-0.00497	-0.00492
	(A1 * !A2 * !B1 * C1 * Y)	0.00412	0.00418	0.00413
	(A1 * !A2 * !B1 * C1 * Y)	-0.00497	-0.00501	-0.00495
	(A1 * !A2 * !B1 * !C1 * Y)	0.00398	0.00403	0.00399
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00511	-0.00515	-0.00510
	(!A1 * !A2 * B1 * !C1 * Y)	0.00408	0.00412	0.00409
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00494	-0.00497	-0.00494
	(!A1 * !A2 * !B1 * C1 * Y)	0.00409	0.00415	0.00411
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00492	-0.00496	-0.00494
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00387	0.00391	0.00389
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00511	-0.00514	-0.00512

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.02728	0.02741	0.02734
	(A2 * B1 * C1 * !Y)	0.01438	0.01435	0.01451
	(A2 * B1 * !C1 * Y)	0.00808	0.00812	0.00802
	(A2 * B1 * !C1 * Y)	-0.01039	-0.01040	-0.01031
	(A2 * !B1 * C1 * Y)	0.00793	0.00805	0.00796
	(A2 * !B1 * C1 * Y)	-0.01037	-0.01046	-0.01038
	(A2 * !B1 * !C1 * Y)	0.00764	0.00776	0.00767
	(A2 * !B1 * !C1 * Y)	-0.01066	-0.01074	-0.01066
	(A1 * !A2 * B1 * C1 * !Y)	0.02734	0.02746	0.02822
	(A1 * !A2 * B1 * C1 * !Y)	0.01672	0.01673	0.01750
	(A1 * !A2 * B1 * !C1 * Y)	0.00798	0.00812	0.00802
	(A1 * !A2 * B1 * !C1 * Y)	-0.01028	-0.01039	-0.01027
	(A1 * !A2 * !B1 * C1 * Y)	0.00793	0.00805	0.00796
	(A1 * !A2 * !B1 * C1 * Y)	-0.01036	-0.01046	-0.01034
	(A1 * !A2 * !B1 * !C1 * Y)	0.00764	0.00776	0.00767
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01065	-0.01074	-0.01062
	(!A1 * !A2 * B1 * !C1 * Y)	0.00790	0.00796	0.00791
	(!A1 * !A2 * B1 * !C1 * Y)	-0.01032	-0.01036	-0.01033
	(!A1 * !A2 * !B1 * C1 * Y)	0.00788	0.00800	0.00791
	(!A1 * !A2 * !B1 * C1 * Y)	-0.01027	-0.01038	-0.01032
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00749	0.00760	0.00753
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.01065	-0.01073	-0.01068

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)**	0.00749	0.00746	0.00739
	(A2 * B1 * C1 * !Y)	0.01058	0.01059	0.01050
	(A2 * B1 * !C1 * Y)	-0.00188	-0.00188	-0.00188
	(A2 * B1 * !C1 * Y)	0.00258	0.00259	0.00259
	(A2 * !B1 * C1 * Y)	-0.00189	-0.00190	-0.00189
	(A2 * !B1 * C1 * Y)	0.00257	0.00257	0.00257
	(A2 * !B1 * !C1 * Y)	-0.00196	-0.00198	-0.00196
	(A2 * !B1 * !C1 * Y)	0.00248	0.00252	0.00250
	(A1 * !A2 * B1 * C1 * !Y)	0.01033	0.01026	0.00923
	(A1 * !A2 * B1 * C1 * !Y)	0.01306	0.01300	0.01197
	(A1 * !A2 * B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * B1 * !C1 * Y)	0.00258	0.00260	0.00258
	(A1 * !A2 * !B1 * C1 * Y)	-0.00189	-0.00191	-0.00189
	(A1 * !A2 * !B1 * C1 * Y)	0.00255	0.00259	0.00257
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00196	-0.00196	-0.00196
	(A1 * !A2 * !B1 * !C1 * Y)	0.00248	0.00249	0.00249
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00156	-0.00181	-0.00183
	(!A1 * !A2 * B1 * !C1 * Y)	0.00285	0.00267	0.00260
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00165	-0.00183	-0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	0.00279	0.00266	0.00258
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00186	-0.00193	-0.00192
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00252	0.00253	0.00250

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.01484	0.01480	0.01460
	(A2 * B1 * C1 * !Y)	0.02120	0.02122	0.02104
	(A2 * B1 * !C1 * Y)	-0.00374	-0.00376	-0.00375
	(A2 * B1 * !C1 * Y)	0.00535	0.00538	0.00537
	(A2 * !B1 * C1 * Y)	-0.00377	-0.00379	-0.00378
	(A2 * !B1 * C1 * Y)	0.00531	0.00535	0.00533
	(A2 * !B1 * !C1 * Y)	-0.00391	-0.00394	-0.00393
	(A2 * !B1 * !C1 * Y)	0.00517	0.00522	0.00519
	(A1 * !A2 * B1 * C1 * !Y)	0.02055	0.02040	0.01842
	(A1 * !A2 * B1 * C1 * !Y)	0.02623	0.02613	0.02416
	(A1 * !A2 * B1 * !C1 * Y)	-0.00374	-0.00377	-0.00375
	(A1 * !A2 * B1 * !C1 * Y)	0.00534	0.00539	0.00535
	(A1 * !A2 * !B1 * C1 * Y)	-0.00378	-0.00380	-0.00378
	(A1 * !A2 * !B1 * C1 * Y)	0.00531	0.00536	0.00532
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00392	-0.00394	-0.00392
	(A1 * !A2 * !B1 * !C1 * Y)	0.00516	0.00520	0.00517
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00305	-0.00365	-0.00365
	(!A1 * !A2 * B1 * !C1 * Y)	0.00595	0.00553	0.00538
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00324	-0.00370	-0.00369
	(!A1 * !A2 * !B1 * C1 * Y)	0.00582	0.00548	0.00535
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00370	-0.00387	-0.00384
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00524	0.00525	0.00520

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.01149	0.01143	0.01101
	(A2 * B1 * C1 * !Y)	0.02440	0.02441	0.02401
	(A2 * B1 * !C1 * Y)	-0.00719	-0.00722	-0.00719
	(A2 * B1 * !C1 * Y)	0.01114	0.01119	0.01116
	(A2 * !B1 * C1 * Y)	-0.00725	-0.00728	-0.00726
	(A2 * !B1 * C1 * Y)	0.01107	0.01113	0.01109
	(A2 * !B1 * !C1 * Y)	-0.00754	-0.00760	-0.00755
	(A2 * !B1 * !C1 * Y)	0.01079	0.01090	0.01081
	(A1 * !A2 * B1 * C1 * !Y)	0.02294	0.02265	0.01863
	(A1 * !A2 * B1 * C1 * !Y)	0.03437	0.03415	0.03017
	(A1 * !A2 * B1 * !C1 * Y)	-0.00718	-0.00725	-0.00719
	(A1 * !A2 * B1 * !C1 * Y)	0.01110	0.01121	0.01112
	(A1 * !A2 * !B1 * C1 * Y)	-0.00724	-0.00728	-0.00726
	(A1 * !A2 * !B1 * C1 * Y)	0.01103	0.01108	0.01106
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00753	-0.00759	-0.00754
	(A1 * !A2 * !B1 * !C1 * Y)	0.01074	0.01084	0.01077
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00608	-0.00708	-0.00700
	(!A1 * !A2 * B1 * !C1 * Y)	0.01210	0.01143	0.01120
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00635	-0.00720	-0.00710
	(!A1 * !A2 * !B1 * C1 * Y)	0.01190	0.01134	0.01113
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00715	-0.00745	-0.00738
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01089	0.01093	0.01082

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00204	0.00207	0.00204
	(A3 * !C1 * Y)	-0.00253	-0.00256	-0.00255
	(A2 * !A3 * !C1 * Y)	0.00205	0.00207	0.00204
	(A2 * !A3 * !C1 * Y)	-0.00254	-0.00256	-0.00255
	(A1 * !A2 * !A3 * !C1 * Y)	0.00204	0.00205	0.00204
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00254	-0.00254	-0.00255
	(!A1 * !A2 * !A3 * C1 * Y)	0.00092	0.00092	0.00086
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00259	-0.00261	-0.00264
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00108	0.00108	0.00106
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00265	-0.00265	-0.00264
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00421	0.00427	0.00422
	(A3 * !C1 * Y)	-0.00497	-0.00501	-0.00500
	(A2 * !A3 * !C1 * Y)	0.00421	0.00427	0.00421
	(A2 * !A3 * !C1 * Y)	-0.00497	-0.00502	-0.00500
	(A1 * !A2 * !A3 * !C1 * Y)	0.00423	0.00425	0.00421
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00499	-0.00500	-0.00501
	(!A1 * !A2 * !A3 * C1 * Y)	0.00186	0.00188	0.00177
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00509	-0.00514	-0.00519
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00225	0.00225	0.00223
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00522	-0.00523	-0.00520
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00797	0.00807	0.00796
	(A3 * !C1 * Y)	-0.00545	-0.00550	-0.00551
	(A2 * !A3 * !C1 * Y)	0.00796	0.00804	0.00796
	(A2 * !A3 * !C1 * Y)	-0.00544	-0.00549	-0.00551
	(A1 * !A2 * !A3 * !C1 * Y)	0.00798	0.00806	0.00796
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00546	-0.00550	-0.00551
	(!A1 * !A2 * !A3 * C1 * Y)	0.00344	0.00346	0.00324
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00575	-0.00581	-0.00591
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00409	0.00413	0.00406
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00600	-0.00603	-0.00599

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00162	-0.00181	-0.00180
	(A3 * !C1 * Y)	0.00299	0.00283	0.00277
	(A2 * !A3 * !C1 * Y)	-0.00161	-0.00183	-0.00180
	(A2 * !A3 * !C1 * Y)	0.00301	0.00281	0.00277
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00157	-0.00184	-0.00180
	(A1 * !A2 * !A3 * !C1 * Y)	0.00303	0.00281	0.00277
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00052	-0.00052	-0.00053
	(!A1 * !A2 * !A3 * C1 * Y)	0.00295	0.00297	0.00289
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00098	-0.00101	-0.00101
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00291	0.00288	0.00276
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00329	-0.00381	-0.00374
	(A3 * !C1 * Y)	0.00592	0.00554	0.00544
	(A2 * !A3 * !C1 * Y)	-0.00325	-0.00381	-0.00374
	(A2 * !A3 * !C1 * Y)	0.00599	0.00554	0.00544
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00316	-0.00376	-0.00374
	(A1 * !A2 * !A3 * !C1 * Y)	0.00608	0.00552	0.00544
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00107	-0.00109	-0.00112
	(!A1 * !A2 * !A3 * C1 * Y)	0.00580	0.00586	0.00568
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00206	-0.00213	-0.00211
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00576	0.00570	0.00545

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00591	-0.00708	-0.00701
	(A3 * !C1 * Y)	0.00760	0.00645	0.00636
	(A2 * !A3 * !C1 * Y)	-0.00576	-0.00705	-0.00701
	(A2 * !A3 * !C1 * Y)	0.00773	0.00651	0.00636
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00558	-0.00697	-0.00701
	(A1 * !A2 * !A3 * !C1 * Y)	0.00790	0.00658	0.00636
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00189	-0.00189	-0.00194
	(!A1 * !A2 * !A3 * C1 * Y)	0.00720	0.00721	0.00688
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00364	-0.00385	-0.00385
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00706	0.00690	0.00644

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00074	0.00075	0.00070
	(A3 * !B1 * Y)	-0.00296	-0.00299	-0.00305
	(A2 * !A3 * !B1 * Y)	0.00074	0.00075	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00297	-0.00299	-0.00305
	(!A2 * !A3 * !B1 * Y)	0.00074	0.00075	0.00070
	(!A2 * !A3 * !B1 * Y)	-0.00296	-0.00299	-0.00305
	(!A1 * !A2 * !A3 * B1 * Y)	0.00095	0.00095	0.00083
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00265	-0.00267	-0.00292
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00146	0.00147	0.00135
	(A3 * !B1 * Y)	-0.00581	-0.00587	-0.00602
	(A2 * !A3 * !B1 * Y)	0.00146	0.00146	0.00135
	(A2 * !A3 * !B1 * Y)	-0.00581	-0.00581	-0.00602
	(!A2 * !A3 * !B1 * Y)	0.00146	0.00147	0.00135
	(!A2 * !A3 * !B1 * Y)	-0.00581	-0.00587	-0.00602
	(!A1 * !A2 * !A3 * B1 * Y)	0.00184	0.00184	0.00156
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00515	-0.00519	-0.00574
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00270	0.00271	0.00249
	(A3 * !B1 * Y)	-0.00626	-0.00631	-0.00666
	(A2 * !A3 * !B1 * Y)	0.00270	0.00273	0.00249
	(A2 * !A3 * !B1 * Y)	-0.00626	-0.00634	-0.00666
	(!A2 * !A3 * !B1 * Y)	0.00270	0.00272	0.00249
	(!A2 * !A3 * !B1 * Y)	-0.00626	-0.00633	-0.00666
	(!A1 * !A2 * !A3 * B1 * Y)	0.00347	0.00347	0.00295
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00498	-0.00503	-0.00610

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00061	-0.00062	-0.00060
	(A3 * !B1 * Y)	0.00311	0.00317	0.00312
	(A2 * !A3 * !B1 * Y)	-0.00061	-0.00062	-0.00060
	(A2 * !A3 * !B1 * Y)	0.00311	0.00317	0.00312
	(!A2 * !A3 * !B1 * Y)	-0.00061	-0.00062	-0.00060
	(!A2 * !A3 * !B1 * Y)	0.00311	0.00317	0.00312
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00051	-0.00052	-0.00050
	(!A1 * !A2 * !A3 * B1 * Y)	0.00311	0.00314	0.00314
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00117	-0.00119	-0.00115
	(A3 * !B1 * Y)	0.00615	0.00624	0.00615
	(A2 * !A3 * !B1 * Y)	-0.00117	-0.00119	-0.00115
	(A2 * !A3 * !B1 * Y)	0.00613	0.00624	0.00615
	(!A2 * !A3 * !B1 * Y)	-0.00117	-0.00118	-0.00115
	(!A2 * !A3 * !B1 * Y)	0.00613	0.00619	0.00615
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00093	-0.00095	-0.00090
	(!A1 * !A2 * !A3 * B1 * Y)	0.00613	0.00624	0.00617
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00212	-0.00217	-0.00209
	(A3 * !B1 * Y)	0.00687	0.00702	0.00692
	(A2 * !A3 * !B1 * Y)	-0.00211	-0.00217	-0.00209
	(A2 * !A3 * !B1 * Y)	0.00686	0.00701	0.00692
	(!A2 * !A3 * !B1 * Y)	-0.00215	-0.00215	-0.00209
	(!A2 * !A3 * !B1 * Y)	0.00693	0.00696	0.00692
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00171	-0.00169	-0.00164
	(!A1 * !A2 * !A3 * B1 * Y)	0.00692	0.00692	0.00695

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00266	0.00314	0.00270	0.00263	0.00270	1.73214
sky130_fd_sc_hs__o311a_2	0.00294	0.00294	0.00291	0.00286	0.00284	3.33946
sky130_fd_sc_hs__o311a_4	0.00488	0.00533	0.00489	0.00590	0.00511	6.31289

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	719.14300	1764.51000
sky130_fd_sc_hs__o311a_2	0.00000	1122.34000	1711.84000
sky130_fd_sc_hs__o311a_4	0.00000	2255.56000	3544.43000

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)	0.09626	0.45460	5.57310
	A2->X (RR)	0.09179	0.44642	5.37517
	A3->X (RR)	0.07841	0.42475	5.24231
	B1->X (RR)	0.06918	0.48663	6.68272
	C1->X (RR)	0.06377	0.49630	6.85820
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.09973	0.38594	5.62081
	A2->X (RR)	0.09243	0.37104	5.36717
	A3->X (RR)	0.07676	0.34748	5.17328
	B1->X (RR)	0.09469	0.44406	6.44573
	C1->X (RR)	0.08846	0.45776	6.63295
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.11134	0.33002	5.40795
	A2->X (RR)	0.10114	0.31145	5.15258
	A3->X (RR)	0.08646	0.29458	5.04203
	B1->X (RR)	0.10627	0.40754	6.63203
	C1->X (RR)	0.09706	0.41873	6.86830

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.15499	0.55383	6.12486
	A2->X (FF)	0.14804	0.58176	6.42272
	A3->X (FF)	0.12077	0.58864	6.57154
	B1->X (FF)	0.05456	0.44048	5.43355
	C1->X (FF)	0.05037	0.42245	5.23969
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.15159	0.49995	5.89626
	A2->X (FF)	0.14194	0.53084	6.39898
	A3->X (FF)	0.12535	0.54516	6.56906
	B1->X (FF)	0.06018	0.40678	5.62562
	C1->X (FF)	0.05521	0.38678	5.41733
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.19338	0.52474	6.47229
	A2->X (FF)	0.18236	0.54775	6.64651
	A3->X (FF)	0.15295	0.55491	6.75200
	B1->X (FF)	0.05531	0.34388	5.35893
	C1->X (FF)	0.04988	0.32512	5.18730

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.06001	0.06765	0.25841
	A1	0.04831	0.05594	0.24673
	A2	0.05787	0.06547	0.23385
	A2	0.04734	0.05495	0.22321
	A3	0.06042	0.06891	0.23743
	A3	0.05162	0.06011	0.22815
	B1	0.04504	0.06226	0.35256
	B1	0.03788	0.05508	0.34568
	C1	0.04405	0.06192	0.34941
	C1	0.03796	0.05585	0.34324
sky130_fd_sc_hs__o311a_2	A1	0.06644	0.07415	0.28933
	A1	0.05376	0.06153	0.27647
	A2	0.06327	0.07181	0.26592
	A2	0.05221	0.06082	0.25444
	A3	0.06429	0.07402	0.26804
	A3	0.05480	0.06463	0.25737
	B1	0.04985	0.06664	0.36180
	B1	0.04235	0.05919	0.35497
	C1	0.04865	0.06629	0.35603
	C1	0.04245	0.06013	0.34991

sky130_fd_sc_hs__o311a_4	**A1**	0.13417	0.14779	0.56465
	A1	0.11202	0.12562	0.54196
	A2	0.12762	0.14208	0.51282
	A2	0.10775	0.12231	0.49041
	A3	0.13063	0.14735	0.50834
	A3	0.11392	0.13064	0.48908
	B1	0.09966	0.13126	0.67546
	B1	0.08550	0.11717	0.66119
	C1	0.09670	0.13247	0.70614
	C1	0.08594	0.12165	0.69487

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.02095	0.02709	0.23066
	A1	0.03264	0.03880	0.24072
	A2	0.02110	0.02691	0.21407
	A2	0.03163	0.03744	0.22423
	A3	0.02114	0.02871	0.21669
	A3	0.02994	0.03747	0.22560
	B1	0.01437	0.03274	0.31441
	B1	0.02152	0.03989	0.32099
	C1	0.01380	0.03189	0.31118
	C1	0.01988	0.03791	0.31556

sky130_fd_sc_hs__o311a_2	**A1**	0.03947	0.04211	0.25395
	A1	0.05215	0.05480	0.26363
	A2	0.03983	0.04254	0.25466
	A2	0.05090	0.05358	0.26492
	A3	0.03989	0.04415	0.25661
	A3	0.04938	0.05364	0.26601
	B1	0.02971	0.04654	0.32507
	B1	0.03723	0.05387	0.33159
	C1	0.02857	0.04497	0.31641
	C1	0.03477	0.05113	0.32266
sky130_fd_sc_hs__o311a_4	**A1**	0.09191	0.08673	0.49085
	A1	0.11405	0.10887	0.51224
	A2	0.09178	0.08666	0.44282
	A2	0.11167	0.10650	0.46291
	A3	0.09218	0.08975	0.44343
	A3	0.10890	0.10647	0.45905
	B1	0.05831	0.09165	0.65091
	B1	0.07250	0.10573	0.66525
	C1	0.05646	0.09069	0.65097
	C1	0.06721	0.10136	0.66065

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)**	0.00652	0.00652	0.00652
	(A2 * B1 * !C1 * !X)	0.00220	0.00221	0.00221
	(A2 * A3 * B1 * C1 * X)	0.01301	0.01280	0.01280
	(A2 * A3 * B1 * C1 * X)	0.00867	0.00841	0.00848
	(A2 * !B1 * !X)	0.00648	0.00648	0.00648
	(A2 * !B1 * !X)	0.00217	0.00217	0.00217
	(A2 * !A3 * B1 * C1 * X)	0.01369	0.01342	0.01504
	(A2 * !A3 * B1 * C1 * X)	0.00925	0.00894	0.01065
	(!A2 * A3 * B1 * C1 * X)	0.01416	0.01389	0.01687
	(!A2 * A3 * B1 * C1 * X)	0.00959	0.00929	0.01242
	(!A2 * A3 * B1 * !C1 * !X)	0.00652	0.00655	0.00652
	(!A2 * A3 * B1 * !C1 * !X)	0.00221	0.00219	0.00222
	(!A2 * A3 * !B1 * !X)	0.00648	0.00651	0.00648
	(!A2 * A3 * !B1 * !X)	0.00217	0.00215	0.00218
	(!A2 * !A3 * B1 * !C1 * !X)	0.00652	0.00652	0.00651
	(!A2 * !A3 * B1 * !C1 * !X)	0.00220	0.00220	0.00219
	(!A2 * !A3 * !B1 * C1 * !X)	0.00649	0.00648	0.00647
	(!A2 * !A3 * !B1 * C1 * !X)	0.00216	0.00217	0.00216
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00634	0.00634	0.00633
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00203	0.00203	0.00204

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.01107	0.01107	0.01107
	(A2 * B1 * !C1 * !X)	0.00640	0.00640	0.00640
	(A2 * A3 * B1 * C1 * X)	0.01321	0.01299	0.01302
	(A2 * A3 * B1 * C1 * X)	0.00851	0.00825	0.00835
	(A2 * !B1 * !X)	0.01105	0.01105	0.01105
	(A2 * !B1 * !X)	0.00638	0.00639	0.00639
	(A2 * !A3 * B1 * C1 * X)	0.01385	0.01356	0.01517
	(A2 * !A3 * B1 * C1 * X)	0.00907	0.00873	0.01043
	(!A2 * A3 * B1 * C1 * X)	0.01432	0.01399	0.01663
	(!A2 * A3 * B1 * C1 * X)	0.00940	0.00902	0.01183
	(!A2 * A3 * B1 * !C1 * !X)	0.01106	0.01110	0.01107
	(!A2 * A3 * B1 * !C1 * !X)	0.00640	0.00638	0.00641
	(!A2 * A3 * !B1 * !X)	0.01104	0.01108	0.01105
	(!A2 * A3 * !B1 * !X)	0.00638	0.00637	0.00640
	(!A2 * !A3 * B1 * !C1 * !X)	0.01104	0.01106	0.01104
	(!A2 * !A3 * B1 * !C1 * !X)	0.00639	0.00637	0.00639
	(!A2 * !A3 * !B1 * C1 * !X)	0.01104	0.01105	0.01104
	(!A2 * !A3 * !B1 * C1 * !X)	0.00638	0.00638	0.00638
	(!A2 * !A3 * !B1 * !C1 * !X)	0.01095	0.01096	0.01094
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00629	0.00630	0.00631

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.02177	0.02181	0.02178
	(A2 * B1 * !C1 * !X)	0.01381	0.01380	0.01383
	(A2 * A3 * B1 * C1 * X)	0.02554	0.02496	0.02497
	(A2 * A3 * B1 * C1 * X)	0.01753	0.01692	0.01701
	(A2 * !B1 * !X)	0.02170	0.02173	0.02171
	(A2 * !B1 * !X)	0.01374	0.01374	0.01376
	(A2 * !A3 * B1 * C1 * X)	0.02703	0.02626	0.02946
	(A2 * !A3 * B1 * C1 * X)	0.01882	0.01802	0.02136
	(!A2 * A3 * B1 * C1 * X)	0.02803	0.02718	0.03306
	(!A2 * A3 * B1 * C1 * X)	0.01953	0.01867	0.02483
	(!A2 * A3 * B1 * !C1 * !X)	0.02176	0.02181	0.02178
	(!A2 * A3 * B1 * !C1 * !X)	0.01381	0.01380	0.01385
	(!A2 * A3 * !B1 * !X)	0.02169	0.02173	0.02171
	(!A2 * A3 * !B1 * !X)	0.01374	0.01373	0.01378
	(!A2 * !A3 * B1 * !C1 * !X)	0.02177	0.02176	0.02175
	(!A2 * !A3 * B1 * !C1 * !X)	0.01378	0.01380	0.01378
	(!A2 * !A3 * !B1 * C1 * !X)	0.02171	0.02169	0.02169
	(!A2 * !A3 * !B1 * C1 * !X)	0.01371	0.01375	0.01372
	(!A2 * !A3 * !B1 * !C1 * !X)	0.02139	0.02140	0.02138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.01345	0.01345	0.01347

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)**	0.00292	0.00291	0.00291
	(A2 * B1 * !C1 * !X)	0.00722	0.00723	0.00723
	(A2 * A3 * B1 * C1 * X)	0.00862	0.00859	0.00859
	(A2 * A3 * B1 * C1 * X)	0.01294	0.01297	0.01293
	(A2 * !B1 * !X)	0.00288	0.00288	0.00288
	(A2 * !B1 * !X)	0.00719	0.00719	0.00719
	(A2 * !A3 * B1 * C1 * X)	0.01088	0.01082	0.01046
	(A2 * !A3 * B1 * C1 * X)	0.01533	0.01528	0.01490
	(!A2 * A3 * B1 * C1 * X)	0.01324	0.01311	0.01227
	(!A2 * A3 * B1 * C1 * X)	0.01776	0.01766	0.01681
	(!A2 * A3 * B1 * !C1 * !X)	0.00292	0.00291	0.00291
	(!A2 * A3 * B1 * !C1 * !X)	0.00722	0.00724	0.00723
	(!A2 * A3 * !B1 * !X)	0.00288	0.00287	0.00288
	(!A2 * A3 * !B1 * !X)	0.00718	0.00720	0.00719
	(!A2 * !A3 * B1 * !C1 * !X)	0.00316	0.00292	0.00295
	(!A2 * !A3 * B1 * !C1 * !X)	0.00747	0.00729	0.00725
	(!A2 * !A3 * !B1 * C1 * !X)	0.00309	0.00290	0.00290
	(!A2 * !A3 * !B1 * C1 * !X)	0.00740	0.00727	0.00720
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00284	0.00277	0.00277
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00708	0.00709	0.00707

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00727	0.00725	0.00726
	(A2 * B1 * !C1 * !X)	0.01192	0.01197	0.01193
	(A2 * A3 * B1 * C1 * X)	0.00870	0.00868	0.00867
	(A2 * A3 * B1 * C1 * X)	0.01338	0.01341	0.01337
	(A2 * !B1 * !X)	0.00725	0.00723	0.00724
	(A2 * !B1 * !X)	0.01191	0.01195	0.01192
	(A2 * !A3 * B1 * C1 * X)	0.01091	0.01084	0.01053
	(A2 * !A3 * B1 * C1 * X)	0.01568	0.01566	0.01531
	(!A2 * A3 * B1 * C1 * X)	0.01272	0.01261	0.01195
	(!A2 * A3 * B1 * C1 * X)	0.01760	0.01754	0.01685
	(!A2 * A3 * B1 * !C1 * !X)	0.00726	0.00725	0.00726
	(!A2 * A3 * B1 * !C1 * !X)	0.01192	0.01194	0.01193
	(!A2 * A3 * !B1 * !X)	0.00725	0.00724	0.00724
	(!A2 * A3 * !B1 * !X)	0.01191	0.01193	0.01191
	(!A2 * !A3 * B1 * !C1 * !X)	0.00755	0.00732	0.00731
	(!A2 * !A3 * B1 * !C1 * !X)	0.01218	0.01202	0.01195
	(!A2 * !A3 * !B1 * C1 * !X)	0.00748	0.00730	0.00729
	(!A2 * !A3 * !B1 * C1 * !X)	0.01213	0.01201	0.01193
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00727	0.00721	0.00721
	(!A2 * !A3 * !B1 * !C1 * !X)	0.01187	0.01188	0.01185

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.01520	0.01517	0.01519
	(A2 * B1 * !C1 * !X)	0.02314	0.02321	0.02315
	(A2 * A3 * B1 * C1 * X)	0.01829	0.01824	0.01824
	(A2 * A3 * B1 * C1 * X)	0.02626	0.02632	0.02624
	(A2 * !B1 * !X)	0.01513	0.01510	0.01512
	(A2 * !B1 * !X)	0.02307	0.02313	0.02308
	(A2 * !A3 * B1 * C1 * X)	0.02279	0.02265	0.02192
	(A2 * !A3 * B1 * C1 * X)	0.03097	0.03088	0.03012
	(!A2 * A3 * B1 * C1 * X)	0.02746	0.02719	0.02552
	(!A2 * A3 * B1 * C1 * X)	0.03585	0.03564	0.03393
	(!A2 * A3 * B1 * !C1 * !X)	0.01519	0.01518	0.01519
	(!A2 * A3 * B1 * !C1 * !X)	0.02313	0.02317	0.02314
	(!A2 * A3 * !B1 * !X)	0.01512	0.01511	0.01512
	(!A2 * A3 * !B1 * !X)	0.02306	0.02309	0.02307
	(!A2 * !A3 * B1 * !C1 * !X)	0.01567	0.01522	0.01527
	(!A2 * !A3 * B1 * !C1 * !X)	0.02367	0.02330	0.02320
	(!A2 * !A3 * !B1 * C1 * !X)	0.01554	0.01518	0.01519
	(!A2 * !A3 * !B1 * C1 * !X)	0.02355	0.02325	0.02312
	(!A2 * !A3 * !B1 * !C1 * !X)	0.01503	0.01491	0.01492
	(!A2 * !A3 * !B1 * !C1 * !X)	0.02289	0.02288	0.02283

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)**	0.01313	0.01318	0.01324
	(A1 * A3 * B1 * C1 * X)	0.00924	0.00928	0.00939
	(A1 * A3 * B1 * !C1 * !X)	0.00652	0.00653	0.00652
	(A1 * A3 * B1 * !C1 * !X)	0.00248	0.00247	0.00253
	(A1 * A3 * !B1 * !X)	0.00649	0.00649	0.00648
	(A1 * A3 * !B1 * !X)	0.00244	0.00244	0.00249
	(A1 * !A3 * B1 * C1 * X)	0.01306	0.01310	0.01353
	(A1 * !A3 * B1 * C1 * X)	0.00976	0.00976	0.01022
	(A1 * !A3 * B1 * !C1 * !X)	0.00652	0.00653	0.00650
	(A1 * !A3 * B1 * !C1 * !X)	0.00204	0.00202	0.00204
	(A1 * !A3 * !B1 * C1 * !X)	0.00649	0.00649	0.00647
	(A1 * !A3 * !B1 * C1 * !X)	0.00199	0.00198	0.00200
	(A1 * !A3 * !B1 * !C1 * !X)	0.00637	0.00636	0.00634
	(A1 * !A3 * !B1 * !C1 * !X)	0.00186	0.00186	0.00188
	(!A1 * A3 * B1 * C1 * X)	0.01405	0.01365	0.01687
	(!A1 * A3 * B1 * C1 * X)	0.00947	0.00907	0.01235
	(!A1 * A3 * B1 * !C1 * !X)	0.00653	0.00654	0.00652
	(!A1 * A3 * B1 * !C1 * !X)	0.00204	0.00204	0.00206
	(!A1 * A3 * !B1 * !X)	0.00649	0.00650	0.00648
	(!A1 * A3 * !B1 * !X)	0.00200	0.00200	0.00202
	(!A1 * !A3 * B1 * !C1 * !X)	0.00650	0.00652	0.00650
	(!A1 * !A3 * B1 * !C1 * !X)	0.00205	0.00204	0.00204
	(!A1 * !A3 * !B1 * C1 * !X)	0.00647	0.00649	0.00647
	(!A1 * !A3 * !B1 * C1 * !X)	0.00202	0.00201	0.00202
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00631	0.00633	0.00632
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00189	0.00188	0.00189

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.01311	0.01315	0.01332
	(A1 * A3 * B1 * C1 * X)	0.00927	0.00928	0.00949
	(A1 * A3 * B1 * !C1 * !X)	0.01107	0.01109	0.01107
	(A1 * A3 * B1 * !C1 * !X)	0.00704	0.00703	0.00707
	(A1 * A3 * !B1 * !X)	0.01106	0.01107	0.01106
	(A1 * A3 * !B1 * !X)	0.00702	0.00701	0.00706
	(A1 * !A3 * B1 * C1 * X)	0.01285	0.01290	0.01338
	(A1 * !A3 * B1 * C1 * X)	0.00964	0.00963	0.01015
	(A1 * !A3 * B1 * !C1 * !X)	0.01107	0.01106	0.01104
	(A1 * !A3 * B1 * !C1 * !X)	0.00648	0.00647	0.00648
	(A1 * !A3 * !B1 * C1 * !X)	0.01105	0.01105	0.01103
	(A1 * !A3 * !B1 * C1 * !X)	0.00647	0.00645	0.00647
	(A1 * !A3 * !B1 * !C1 * !X)	0.01099	0.01099	0.01097
	(A1 * !A3 * !B1 * !C1 * !X)	0.00640	0.00640	0.00641
	(!A1 * A3 * B1 * C1 * X)	0.01383	0.01347	0.01639
	(!A1 * A3 * B1 * C1 * X)	0.00917	0.00881	0.01178
	(!A1 * A3 * B1 * !C1 * !X)	0.01108	0.01110	0.01108
	(!A1 * A3 * B1 * !C1 * !X)	0.00650	0.00651	0.00652
	(!A1 * A3 * !B1 * !X)	0.01107	0.01108	0.01106
	(!A1 * A3 * !B1 * !X)	0.00648	0.00649	0.00650
	(!A1 * !A3 * B1 * !C1 * !X)	0.01103	0.01105	0.01104
	(!A1 * !A3 * B1 * !C1 * !X)	0.00651	0.00650	0.00650
	(!A1 * !A3 * !B1 * C1 * !X)	0.01105	0.01106	0.01104
	(!A1 * !A3 * !B1 * C1 * !X)	0.00649	0.00648	0.00650
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01095	0.01096	0.01095
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00641	0.00640	0.00642

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.02589	0.02603	0.02614
	(A1 * A3 * B1 * C1 * X)	0.01868	0.01874	0.01896
	(A1 * A3 * B1 * !C1 * !X)	0.02223	0.02227	0.02224
	(A1 * A3 * B1 * !C1 * !X)	0.01472	0.01468	0.01479
	(A1 * A3 * !B1 * !X)	0.02216	0.02220	0.02217
	(A1 * A3 * !B1 * !X)	0.01464	0.01461	0.01472
	(A1 * !A3 * B1 * C1 * X)	0.02583	0.02589	0.02670
	(A1 * !A3 * B1 * C1 * X)	0.01978	0.01978	0.02064
	(A1 * !A3 * B1 * !C1 * !X)	0.02220	0.02224	0.02218
	(A1 * !A3 * B1 * !C1 * !X)	0.01381	0.01375	0.01378
	(A1 * !A3 * !B1 * C1 * !X)	0.02213	0.02217	0.02212
	(A1 * !A3 * !B1 * C1 * !X)	0.01374	0.01368	0.01372
	(A1 * !A3 * !B1 * !C1 * !X)	0.02188	0.02193	0.02188
	(A1 * !A3 * !B1 * !C1 * !X)	0.01349	0.01345	0.01348
	(!A1 * A3 * B1 * C1 * X)	0.02780	0.02702	0.03340
	(!A1 * A3 * B1 * C1 * X)	0.01916	0.01837	0.02488
	(!A1 * A3 * B1 * !C1 * !X)	0.02227	0.02229	0.02225
	(!A1 * A3 * B1 * !C1 * !X)	0.01381	0.01382	0.01385
	(!A1 * A3 * !B1 * !X)	0.02220	0.02222	0.02218
	(!A1 * A3 * !B1 * !X)	0.01374	0.01375	0.01378
	(!A1 * !A3 * B1 * !C1 * !X)	0.02221	0.02224	0.02219
	(!A1 * !A3 * B1 * !C1 * !X)	0.01382	0.01380	0.01380
	(!A1 * !A3 * !B1 * C1 * !X)	0.02218	0.02218	0.02214
	(!A1 * !A3 * !B1 * C1 * !X)	0.01376	0.01375	0.01375
	(!A1 * !A3 * !B1 * !C1 * !X)	0.02182	0.02187	0.02183
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01351	0.01347	0.01350

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)**	0.00825	0.00823	0.00833
	(A1 * A3 * B1 * C1 * X)	0.01215	0.01218	0.01215
	(A1 * A3 * B1 * !C1 * !X)	0.00293	0.00291	0.00292
	(A1 * A3 * B1 * !C1 * !X)	0.00704	0.00706	0.00692
	(A1 * A3 * !B1 * !X)	0.00288	0.00287	0.00288
	(A1 * A3 * !B1 * !X)	0.00700	0.00702	0.00688
	(A1 * !A3 * B1 * C1 * X)	0.01077	0.01065	0.00936
	(A1 * !A3 * B1 * C1 * X)	0.01409	0.01400	0.01270
	(A1 * !A3 * B1 * !C1 * !X)	0.00295	0.00292	0.00293
	(A1 * !A3 * B1 * !C1 * !X)	0.00741	0.00741	0.00740
	(A1 * !A3 * !B1 * C1 * !X)	0.00290	0.00288	0.00289
	(A1 * !A3 * !B1 * C1 * !X)	0.00737	0.00737	0.00736
	(A1 * !A3 * !B1 * !C1 * !X)	0.00276	0.00274	0.00275
	(A1 * !A3 * !B1 * !C1 * !X)	0.00722	0.00724	0.00722
	(!A1 * A3 * B1 * C1 * X)	0.01317	0.01304	0.01222
	(!A1 * A3 * B1 * C1 * X)	0.01771	0.01759	0.01677
	(!A1 * A3 * B1 * !C1 * !X)	0.00292	0.00291	0.00292
	(!A1 * A3 * B1 * !C1 * !X)	0.00737	0.00740	0.00738
	(!A1 * A3 * !B1 * !X)	0.00288	0.00287	0.00288
	(!A1 * A3 * !B1 * !X)	0.00734	0.00735	0.00734
	(!A1 * !A3 * B1 * !C1 * !X)	0.00321	0.00294	0.00295
	(!A1 * !A3 * B1 * !C1 * !X)	0.00769	0.00746	0.00740
	(!A1 * !A3 * !B1 * C1 * !X)	0.00313	0.00291	0.00291
	(!A1 * !A3 * !B1 * C1 * !X)	0.00759	0.00743	0.00736
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00285	0.00277	0.00278
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00724	0.00725	0.00722

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00850	0.00849	0.00861
	(A1 * A3 * B1 * C1 * X)	0.01245	0.01246	0.01240
	(A1 * A3 * B1 * !C1 * !X)	0.00727	0.00726	0.00726
	(A1 * A3 * B1 * !C1 * !X)	0.01145	0.01145	0.01127
	(A1 * A3 * !B1 * !X)	0.00725	0.00724	0.00724
	(A1 * A3 * !B1 * !X)	0.01143	0.01144	0.01125
	(A1 * !A3 * B1 * C1 * X)	0.01117	0.01108	0.00986
	(A1 * !A3 * B1 * C1 * X)	0.01443	0.01433	0.01312
	(A1 * !A3 * B1 * !C1 * !X)	0.00732	0.00729	0.00729
	(A1 * !A3 * B1 * !C1 * !X)	0.01185	0.01186	0.01185
	(A1 * !A3 * !B1 * C1 * !X)	0.00730	0.00727	0.00727
	(A1 * !A3 * !B1 * C1 * !X)	0.01184	0.01184	0.01183
	(A1 * !A3 * !B1 * !C1 * !X)	0.00720	0.00717	0.00718
	(A1 * !A3 * !B1 * !C1 * !X)	0.01174	0.01175	0.01174
	(!A1 * A3 * B1 * C1 * X)	0.01288	0.01276	0.01215
	(!A1 * A3 * B1 * C1 * X)	0.01749	0.01742	0.01679
	(!A1 * A3 * B1 * !C1 * !X)	0.00726	0.00725	0.00725
	(!A1 * A3 * B1 * !C1 * !X)	0.01181	0.01183	0.01181
	(!A1 * A3 * !B1 * !X)	0.00724	0.00723	0.00724
	(!A1 * A3 * !B1 * !X)	0.01179	0.01181	0.01180
	(!A1 * !A3 * B1 * !C1 * !X)	0.00756	0.00732	0.00732
	(!A1 * !A3 * B1 * !C1 * !X)	0.01208	0.01191	0.01184
	(!A1 * !A3 * !B1 * C1 * !X)	0.00749	0.00730	0.00729
	(!A1 * !A3 * !B1 * C1 * !X)	0.01203	0.01189	0.01182
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00728	0.00721	0.00721
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01176	0.01176	0.01174

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.01722	0.01722	0.01742
	(A1 * A3 * B1 * C1 * X)	0.02455	0.02456	0.02454
	(A1 * A3 * B1 * !C1 * !X)	0.01474	0.01471	0.01473
	(A1 * A3 * B1 * !C1 * !X)	0.02246	0.02248	0.02221
	(A1 * A3 * !B1 * !X)	0.01467	0.01464	0.01466
	(A1 * A3 * !B1 * !X)	0.02238	0.02241	0.02214
	(A1 * !A3 * B1 * C1 * X)	0.02229	0.02208	0.01950
	(A1 * !A3 * B1 * C1 * X)	0.02841	0.02822	0.02562
	(A1 * !A3 * B1 * !C1 * !X)	0.01483	0.01478	0.01479
	(A1 * !A3 * B1 * !C1 * !X)	0.02319	0.02321	0.02319
	(A1 * !A3 * !B1 * C1 * !X)	0.01476	0.01470	0.01472
	(A1 * !A3 * !B1 * C1 * !X)	0.02312	0.02313	0.02312
	(A1 * !A3 * !B1 * !C1 * !X)	0.01444	0.01440	0.01442
	(A1 * !A3 * !B1 * !C1 * !X)	0.02280	0.02285	0.02282
	(!A1 * A3 * B1 * C1 * X)	0.02697	0.02668	0.02509
	(!A1 * A3 * B1 * C1 * X)	0.03554	0.03533	0.03367
	(!A1 * A3 * B1 * !C1 * !X)	0.01472	0.01470	0.01472
	(!A1 * A3 * B1 * !C1 * !X)	0.02312	0.02317	0.02313
	(!A1 * A3 * !B1 * !X)	0.01465	0.01463	0.01465
	(!A1 * A3 * !B1 * !X)	0.02305	0.02309	0.02306
	(!A1 * !A3 * B1 * !C1 * !X)	0.01537	0.01482	0.01484
	(!A1 * !A3 * B1 * !C1 * !X)	0.02375	0.02332	0.02318
	(!A1 * !A3 * !B1 * C1 * !X)	0.01521	0.01477	0.01475
	(!A1 * !A3 * !B1 * C1 * !X)	0.02362	0.02327	0.02310
	(!A1 * !A3 * !B1 * !C1 * !X)	0.01461	0.01446	0.01448
	(!A1 * !A3 * !B1 * !C1 * !X)	0.02287	0.02286	0.02281

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)**	0.01239	0.01241	0.01241
	(A2 * B1 * C1 * X)	0.00944	0.00943	0.00946
	(A2 * B1 * !C1 * !X)	0.00649	0.00651	0.00649
	(A2 * B1 * !C1 * !X)	0.00233	0.00231	0.00233
	(A2 * !B1 * C1 * !X)	0.00646	0.00647	0.00645
	(A2 * !B1 * C1 * !X)	0.00230	0.00228	0.00229
	(A2 * !B1 * !C1 * !X)	0.00633	0.00634	0.00633
	(A2 * !B1 * !C1 * !X)	0.00217	0.00216	0.00217
	(A1 * !A2 * B1 * C1 * X)	0.01242	0.01243	0.01264
	(A1 * !A2 * B1 * C1 * X)	0.00993	0.00994	0.01013
	(A1 * !A2 * B1 * !C1 * !X)	0.00649	0.00651	0.00649
	(A1 * !A2 * B1 * !C1 * !X)	0.00234	0.00232	0.00234
	(A1 * !A2 * !B1 * C1 * !X)	0.00646	0.00647	0.00645
	(A1 * !A2 * !B1 * C1 * !X)	0.00230	0.00228	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	0.00633	0.00634	0.00633
	(A1 * !A2 * !B1 * !C1 * !X)	0.00217	0.00216	0.00218
	(!A1 * !A2 * B1 * !C1 * !X)	0.00650	0.00651	0.00649
	(!A1 * !A2 * B1 * !C1 * !X)	0.00234	0.00233	0.00232
	(!A1 * !A2 * !B1 * C1 * !X)	0.00648	0.00648	0.00645
	(!A1 * !A2 * !B1 * C1 * !X)	0.00230	0.00229	0.00229
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00632	0.00631	0.00631
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00216	0.00217	0.00217

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.01268	0.01271	0.01270
	(A2 * B1 * C1 * X)	0.00957	0.00956	0.00960
	(A2 * B1 * !C1 * !X)	0.01105	0.01106	0.01104
	(A2 * B1 * !C1 * !X)	0.00656	0.00654	0.00655
	(A2 * !B1 * C1 * !X)	0.01103	0.01105	0.01103
	(A2 * !B1 * C1 * !X)	0.00655	0.00652	0.00654
	(A2 * !B1 * !C1 * !X)	0.01097	0.01098	0.01097
	(A2 * !B1 * !C1 * !X)	0.00649	0.00647	0.00648
	(A1 * !A2 * B1 * C1 * X)	0.01269	0.01274	0.01294
	(A1 * !A2 * B1 * C1 * X)	0.01014	0.01014	0.01036
	(A1 * !A2 * B1 * !C1 * !X)	0.01104	0.01106	0.01104
	(A1 * !A2 * B1 * !C1 * !X)	0.00657	0.00654	0.00656
	(A1 * !A2 * !B1 * C1 * !X)	0.01103	0.01104	0.01103
	(A1 * !A2 * !B1 * C1 * !X)	0.00656	0.00653	0.00655
	(A1 * !A2 * !B1 * !C1 * !X)	0.01097	0.01098	0.01097
	(A1 * !A2 * !B1 * !C1 * !X)	0.00649	0.00648	0.00649
	(!A1 * !A2 * B1 * !C1 * !X)	0.01104	0.01105	0.01103
	(!A1 * !A2 * B1 * !C1 * !X)	0.00657	0.00656	0.00656
	(!A1 * !A2 * !B1 * C1 * !X)	0.01105	0.01104	0.01103
	(!A1 * !A2 * !B1 * C1 * !X)	0.00656	0.00656	0.00656
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01095	0.01097	0.01094
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00648	0.00646	0.00648

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.02480	0.02483	0.02484
	(A2 * B1 * C1 * X)	0.01911	0.01910	0.01915
	(A2 * B1 * !C1 * !X)	0.02178	0.02181	0.02177
	(A2 * B1 * !C1 * !X)	0.01369	0.01363	0.01367
	(A2 * !B1 * C1 * !X)	0.02171	0.02174	0.02170
	(A2 * !B1 * C1 * !X)	0.01362	0.01356	0.01360
	(A2 * !B1 * !C1 * !X)	0.02146	0.02150	0.02146
	(A2 * !B1 * !C1 * !X)	0.01337	0.01333	0.01336
	(A1 * !A2 * B1 * C1 * X)	0.02483	0.02485	0.02526
	(A1 * !A2 * B1 * C1 * X)	0.02009	0.02011	0.02048
	(A1 * !A2 * B1 * !C1 * !X)	0.02178	0.02180	0.02177
	(A1 * !A2 * B1 * !C1 * !X)	0.01370	0.01364	0.01368
	(A1 * !A2 * !B1 * C1 * !X)	0.02171	0.02174	0.02170
	(A1 * !A2 * !B1 * C1 * !X)	0.01363	0.01357	0.01362
	(A1 * !A2 * !B1 * !C1 * !X)	0.02147	0.02150	0.02146
	(A1 * !A2 * !B1 * !C1 * !X)	0.01338	0.01334	0.01338
	(!A1 * !A2 * B1 * !C1 * !X)	0.02179	0.02180	0.02177
	(!A1 * !A2 * B1 * !C1 * !X)	0.01371	0.01368	0.01367
	(!A1 * !A2 * !B1 * C1 * !X)	0.02176	0.02173	0.02172
	(!A1 * !A2 * !B1 * C1 * !X)	0.01364	0.01364	0.01362
	(!A1 * !A2 * !B1 * !C1 * !X)	0.02142	0.02142	0.02141
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01336	0.01336	0.01337

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)**	0.00894	0.00893	0.00880
	(A2 * B1 * C1 * X)	0.01190	0.01190	0.01179
	(A2 * B1 * !C1 * !X)	0.00296	0.00294	0.00295
	(A2 * B1 * !C1 * !X)	0.00712	0.00712	0.00711
	(A2 * !B1 * C1 * !X)	0.00292	0.00290	0.00291
	(A2 * !B1 * C1 * !X)	0.00708	0.00708	0.00707
	(A2 * !B1 * !C1 * !X)	0.00277	0.00276	0.00277
	(A2 * !B1 * !C1 * !X)	0.00693	0.00695	0.00693
	(A1 * !A2 * B1 * C1 * X)	0.01184	0.01176	0.01067
	(A1 * !A2 * B1 * C1 * X)	0.01449	0.01443	0.01335
	(A1 * !A2 * B1 * !C1 * !X)	0.00296	0.00294	0.00295
	(A1 * !A2 * B1 * !C1 * !X)	0.00710	0.00711	0.00710
	(A1 * !A2 * !B1 * C1 * !X)	0.00292	0.00290	0.00291
	(A1 * !A2 * !B1 * C1 * !X)	0.00706	0.00707	0.00706
	(A1 * !A2 * !B1 * !C1 * !X)	0.00277	0.00276	0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	0.00692	0.00693	0.00692
	(!A1 * !A2 * B1 * !C1 * !X)	0.00322	0.00295	0.00297
	(!A1 * !A2 * B1 * !C1 * !X)	0.00738	0.00717	0.00711
	(!A1 * !A2 * !B1 * C1 * !X)	0.00315	0.00293	0.00292
	(!A1 * !A2 * !B1 * C1 * !X)	0.00731	0.00714	0.00707
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00287	0.00279	0.00279
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00696	0.00696	0.00693

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00890	0.00890	0.00880
	(A2 * B1 * C1 * X)	0.01201	0.01201	0.01194
	(A2 * B1 * !C1 * !X)	0.00733	0.00727	0.00729
	(A2 * B1 * !C1 * !X)	0.01180	0.01181	0.01178
	(A2 * !B1 * C1 * !X)	0.00730	0.00725	0.00727
	(A2 * !B1 * C1 * !X)	0.01178	0.01179	0.01177
	(A2 * !B1 * !C1 * !X)	0.00720	0.00718	0.00718
	(A2 * !B1 * !C1 * !X)	0.01168	0.01168	0.01168
	(A1 * !A2 * B1 * C1 * X)	0.01173	0.01166	0.01063
	(A1 * !A2 * B1 * C1 * X)	0.01448	0.01442	0.01340
	(A1 * !A2 * B1 * !C1 * !X)	0.00731	0.00728	0.00729
	(A1 * !A2 * B1 * !C1 * !X)	0.01179	0.01180	0.01178
	(A1 * !A2 * !B1 * C1 * !X)	0.00729	0.00726	0.00727
	(A1 * !A2 * !B1 * C1 * !X)	0.01177	0.01178	0.01176
	(A1 * !A2 * !B1 * !C1 * !X)	0.00719	0.00718	0.00718
	(A1 * !A2 * !B1 * !C1 * !X)	0.01167	0.01167	0.01167
	(!A1 * !A2 * B1 * !C1 * !X)	0.00758	0.00733	0.00732
	(!A1 * !A2 * B1 * !C1 * !X)	0.01203	0.01185	0.01178
	(!A1 * !A2 * !B1 * C1 * !X)	0.00750	0.00731	0.00729
	(!A1 * !A2 * !B1 * C1 * !X)	0.01197	0.01183	0.01176
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00728	0.00721	0.00721
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01170	0.01170	0.01168

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.01827	0.01822	0.01797
	(A2 * B1 * C1 * X)	0.02394	0.02397	0.02374
	(A2 * B1 * !C1 * !X)	0.01525	0.01520	0.01521
	(A2 * B1 * !C1 * !X)	0.02334	0.02333	0.02332
	(A2 * !B1 * C1 * !X)	0.01518	0.01512	0.01513
	(A2 * !B1 * C1 * !X)	0.02326	0.02326	0.02324
	(A2 * !B1 * !C1 * !X)	0.01486	0.01482	0.01483
	(A2 * !B1 * !C1 * !X)	0.02294	0.02296	0.02294
	(A1 * !A2 * B1 * C1 * X)	0.02407	0.02390	0.02176
	(A1 * !A2 * B1 * C1 * X)	0.02916	0.02906	0.02690
	(A1 * !A2 * B1 * !C1 * !X)	0.01524	0.01519	0.01521
	(A1 * !A2 * B1 * !C1 * !X)	0.02331	0.02332	0.02330
	(A1 * !A2 * !B1 * C1 * !X)	0.01516	0.01511	0.01513
	(A1 * !A2 * !B1 * C1 * !X)	0.02324	0.02324	0.02322
	(A1 * !A2 * !B1 * !C1 * !X)	0.01485	0.01482	0.01483
	(A1 * !A2 * !B1 * !C1 * !X)	0.02292	0.02294	0.02293
	(!A1 * !A2 * B1 * !C1 * !X)	0.01577	0.01518	0.01524
	(!A1 * !A2 * B1 * !C1 * !X)	0.02387	0.02341	0.02331
	(!A1 * !A2 * !B1 * C1 * !X)	0.01561	0.01512	0.01516
	(!A1 * !A2 * !B1 * C1 * !X)	0.02373	0.02335	0.02323
	(!A1 * !A2 * !B1 * !C1 * !X)	0.01502	0.01486	0.01489
	(!A1 * !A2 * !B1 * !C1 * !X)	0.02300	0.02299	0.02294

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00643	0.00645	0.00641
	(A3 * !C1 * !X)	0.00230	0.00227	0.00226
	(A2 * !A3 * !C1 * !X)	0.00643	0.00644	0.00641
	(A2 * !A3 * !C1 * !X)	0.00230	0.00228	0.00226
	(A1 * !A2 * !A3 * !C1 * !X)	0.00643	0.00645	0.00641
	(A1 * !A2 * !A3 * !C1 * !X)	0.00229	0.00227	0.00226
	(!A1 * !A2 * !A3 * C1 * !X)	0.00566	0.00565	0.00547
	(!A1 * !A2 * !A3 * C1 * !X)	0.00235	0.00234	0.00212
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00563	0.00564	0.00563
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00212	0.00211	0.00212
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.01103	0.01105	0.01103
	(A3 * !C1 * !X)	0.00666	0.00664	0.00664
	(A2 * !A3 * !C1 * !X)	0.01104	0.01103	0.01103
	(A2 * !A3 * !C1 * !X)	0.00664	0.00665	0.00664
	(A1 * !A2 * !A3 * !C1 * !X)	0.01103	0.01106	0.01103
	(A1 * !A2 * !A3 * !C1 * !X)	0.00665	0.00663	0.00664
	(!A1 * !A2 * !A3 * C1 * !X)	0.00991	0.00992	0.00985
	(!A1 * !A2 * !A3 * C1 * !X)	0.00654	0.00654	0.00651
	(!A1 * !A2 * !A3 * !C1 * !X)	0.01007	0.01007	0.01006
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00651	0.00650	0.00651
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.02218	0.02223	0.02214
	(A3 * !C1 * !X)	0.01313	0.01307	0.01306
	(A2 * !A3 * !C1 * !X)	0.02218	0.02223	0.02214
	(A2 * !A3 * !C1 * !X)	0.01312	0.01307	0.01306
	(A1 * !A2 * !A3 * !C1 * !X)	0.02217	0.02221	0.02214
	(A1 * !A2 * !A3 * !C1 * !X)	0.01312	0.01308	0.01306
	(!A1 * !A2 * !A3 * C1 * !X)	0.02026	0.02030	0.02001
	(!A1 * !A2 * !A3 * C1 * !X)	0.01300	0.01297	0.01271
	(!A1 * !A2 * !A3 * !C1 * !X)	0.02036	0.02038	0.02035
	(!A1 * !A2 * !A3 * !C1 * !X)	0.01275	0.01271	0.01274

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	0.00313	0.00297	0.00305
	(A3 * !C1 * !X)	0.00730	0.00716	0.00717
	(A2 * !A3 * !C1 * !X)	0.00314	0.00296	0.00305
	(A2 * !A3 * !C1 * !X)	0.00730	0.00715	0.00717
	(A1 * !A2 * !A3 * !C1 * !X)	0.00318	0.00295	0.00305
	(A1 * !A2 * !A3 * !C1 * !X)	0.00733	0.00715	0.00717
	(!A1 * !A2 * !A3 * C1 * !X)	0.00407	0.00407	0.00408
	(!A1 * !A2 * !A3 * C1 * !X)	0.00735	0.00738	0.00730
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00357	0.00353	0.00354
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00725	0.00720	0.00712
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	0.00752	0.00731	0.00733
	(A3 * !C1 * !X)	0.01191	0.01175	0.01170
	(A2 * !A3 * !C1 * !X)	0.00755	0.00729	0.00733
	(A2 * !A3 * !C1 * !X)	0.01193	0.01174	0.01170
	(A1 * !A2 * !A3 * !C1 * !X)	0.00757	0.00729	0.00733
	(A1 * !A2 * !A3 * !C1 * !X)	0.01197	0.01174	0.01170
	(!A1 * !A2 * !A3 * C1 * !X)	0.00861	0.00861	0.00861
	(!A1 * !A2 * !A3 * C1 * !X)	0.01193	0.01195	0.01187
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00816	0.00811	0.00812
	(!A1 * !A2 * !A3 * !C1 * !X)	0.01189	0.01184	0.01173

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.01522	0.01472	0.01488
	(A3 * !C1 * !X)	0.02432	0.02391	0.02391
	(A2 * !A3 * !C1 * !X)	0.01527	0.01471	0.01488
	(A2 * !A3 * !C1 * !X)	0.02437	0.02391	0.02391
	(A1 * !A2 * !A3 * !C1 * !X)	0.01534	0.01475	0.01488
	(A1 * !A2 * !A3 * !C1 * !X)	0.02444	0.02386	0.02391
	(!A1 * !A2 * !A3 * C1 * !X)	0.01721	0.01722	0.01722
	(!A1 * !A2 * !A3 * C1 * !X)	0.02438	0.02443	0.02427
	(!A1 * !A2 * !A3 * !C1 * !X)	0.01614	0.01606	0.01606
	(!A1 * !A2 * !A3 * !C1 * !X)	0.02411	0.02403	0.02380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00526	0.00526	0.00519
	(A3 * !B1 * !X)	0.00188	0.00186	0.00179
	(A2 * !A3 * !B1 * !X)	0.00526	0.00526	0.00519
	(A2 * !A3 * !B1 * !X)	0.00188	0.00186	0.00179
	(!A2 * !A3 * !B1 * !X)	0.00526	0.00526	0.00519
	(!A2 * !A3 * !B1 * !X)	0.00188	0.00186	0.00179
	(!A1 * !A2 * !A3 * B1 * !X)	0.00565	0.00566	0.00547
	(!A1 * !A2 * !A3 * B1 * !X)	0.00236	0.00234	0.00205
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00978	0.00978	0.00973
	(A3 * !B1 * !X)	0.00631	0.00628	0.00623
	(A2 * !A3 * !B1 * !X)	0.00978	0.00978	0.00973
	(A2 * !A3 * !B1 * !X)	0.00630	0.00629	0.00623
	(!A2 * !A3 * !B1 * !X)	0.00978	0.00978	0.00973
	(!A2 * !A3 * !B1 * !X)	0.00630	0.00628	0.00623
	(!A1 * !A2 * !A3 * B1 * !X)	0.00999	0.00999	0.00986
	(!A1 * !A2 * !A3 * B1 * !X)	0.00660	0.00660	0.00634
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.01959	0.01960	0.01944
	(A3 * !B1 * !X)	0.01311	0.01305	0.01288
	(A2 * !A3 * !B1 * !X)	0.01959	0.01959	0.01944
	(A2 * !A3 * !B1 * !X)	0.01311	0.01309	0.01288
	(!A2 * !A3 * !B1 * !X)	0.01959	0.01960	0.01944
	(!A2 * !A3 * !B1 * !X)	0.01311	0.01305	0.01288
	(!A1 * !A2 * !A3 * B1 * !X)	0.02019	0.02022	0.01984
	(!A1 * !A2 * !A3 * B1 * !X)	0.01397	0.01397	0.01337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00402	0.00401	0.00403
	(A3 * !B1 * !X)	0.00738	0.00743	0.00739
	(A2 * !A3 * !B1 * !X)	0.00402	0.00401	0.00403
	(A2 * !A3 * !B1 * !X)	0.00738	0.00741	0.00739
	(!A2 * !A3 * !B1 * !X)	0.00402	0.00401	0.00403
	(!A2 * !A3 * !B1 * !X)	0.00738	0.00740	0.00739
	(!A1 * !A2 * !A3 * B1 * !X)	0.00410	0.00410	0.00412
	(!A1 * !A2 * !A3 * B1 * !X)	0.00738	0.00740	0.00742
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00849	0.00848	0.00849
	(A3 * !B1 * !X)	0.01196	0.01198	0.01196
	(A2 * !A3 * !B1 * !X)	0.00849	0.00848	0.00849
	(A2 * !A3 * !B1 * !X)	0.01196	0.01198	0.01196
	(!A2 * !A3 * !B1 * !X)	0.00848	0.00848	0.00849
	(!A2 * !A3 * !B1 * !X)	0.01195	0.01198	0.01196
	(!A1 * !A2 * !A3 * B1 * !X)	0.00859	0.00859	0.00861
	(!A1 * !A2 * !A3 * B1 * !X)	0.01198	0.01201	0.01201
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.01708	0.01707	0.01712
	(A3 * !B1 * !X)	0.02359	0.02367	0.02360
	(A2 * !A3 * !B1 * !X)	0.01708	0.01707	0.01712
	(A2 * !A3 * !B1 * !X)	0.02359	0.02367	0.02360
	(!A2 * !A3 * !B1 * !X)	0.01708	0.01707	0.01712
	(!A2 * !A3 * !B1 * !X)	0.02359	0.02367	0.02360
	(!A1 * !A2 * !A3 * B1 * !X)	0.01742	0.01742	0.01748
	(!A1 * !A2 * !A3 * B1 * !X)	0.02360	0.02367	0.02368

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00272	0.00319	0.00310	0.00281	0.64163
sky130_fd_sc_hs__o31ai_2	0.00560	0.00546	0.00570	0.00560	1.04839
sky130_fd_sc_hs__o31ai_4	0.01077	0.01074	0.01109	0.00820	1.90338

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	314.47100	1031.30000
sky130_fd_sc_hs__o31ai_2	0.00000	627.23300	2051.65000
sky130_fd_sc_hs__o31ai_4	0.00000	800.07300	3058.46000

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)	0.08883	0.70557	7.93782
	A2->Y (FR)	0.08390	0.74941	8.58028
	A3->Y (FR)	0.06523	0.76787	9.03922
	B1->Y (FR)	0.02063	0.41340	5.09332
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.09877	0.61002	7.66365
	A2->Y (FR)	0.08731	0.64572	8.27832
	A3->Y (FR)	0.06706	0.68143	8.97479
	B1->Y (FR)	0.01853	0.35835	4.91151
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.09397	0.50981	7.43510
	A2->Y (FR)	0.08365	0.55475	8.18349
	A3->Y (FR)	0.06097	0.59654	8.96867
	B1->Y (FR)	0.02354	0.44463	6.91272

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03605	0.30194	3.18238
	A2->Y (RF)	0.03559	0.29501	3.12012
	A3->Y (RF)	0.02768	0.28035	3.02061
	B1->Y (RF)	0.03112	0.37054	4.17380
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03720	0.24751	2.91875
	A2->Y (RF)	0.03486	0.23574	2.83297
	A3->Y (RF)	0.02756	0.22167	2.73886
	B1->Y (RF)	0.02949	0.31943	4.00975
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03922	0.19884	2.82488
	A2->Y (RF)	0.03474	0.18167	2.66450
	A3->Y (RF)	0.02432	0.15696	2.42888
	B1->Y (RF)	0.03068	0.28876	4.20140

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00162	0.00810	0.13620
	A1	0.01260	0.01902	0.14662
	A2	0.00168	0.00791	0.11945
	A2	0.01150	0.01770	0.12861
	A3	0.00165	0.00952	0.13233
	A3	0.00984	0.01766	0.13983
	B1	-0.00035	0.01308	0.20972
	B1	0.00566	0.01906	0.21543
sky130_fd_sc_hs__o31ai_2	A1	0.00337	0.01581	0.25431
	A1	0.02558	0.03791	0.27507
	A2	0.00348	0.01625	0.22705
	A2	0.02222	0.03494	0.24431
	A3	0.00336	0.01813	0.23340
	A3	0.01909	0.03376	0.24775
	B1	-0.00174	0.02514	0.38974
	B1	0.00957	0.03658	0.40103
sky130_fd_sc_hs__o31ai_4	A1	0.00564	0.03112	0.46361
	A1	0.04885	0.07426	0.50471
	A2	0.00581	0.03113	0.40815
	A2	0.04252	0.06774	0.44233
	A3	0.00557	0.03525	0.42619
	A3	0.03609	0.06561	0.45443
	B1	-0.00309	0.03028	0.44416
	B1	0.01398	0.04740	0.46077

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.02646	0.03184	0.13826
	A1	0.01550	0.02084	0.12712
	A2	0.02428	0.02948	0.12609
	A2	0.01445	0.01966	0.11608
	A3	0.02368	0.02900	0.11841
	A3	0.01550	0.02078	0.11014
	B1	0.01430	0.02426	0.17551
	B1	0.00830	0.01825	0.16944
sky130_fd_sc_hs__o31ai_2	A1	0.05390	0.06462	0.26704
	A1	0.03168	0.04232	0.24457
	A2	0.04720	0.05814	0.24182
	A2	0.02844	0.03937	0.22292
	A3	0.04626	0.05701	0.22029
	A3	0.03051	0.04124	0.20423
	B1	0.02739	0.04858	0.34571
	B1	0.01610	0.03722	0.33440
sky130_fd_sc_hs__o31ai_4	A1	0.09061	0.11486	0.51644
	A1	0.04737	0.07157	0.47240
	A2	0.07722	0.10124	0.45850
	A2	0.04052	0.06449	0.42094
	A3	0.07385	0.09826	0.41858
	A3	0.04328	0.06771	0.38820
	B1	0.03590	0.06246	0.38404
	B1	0.01884	0.04531	0.36654

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)**	0.00715	0.00691	0.00697
	(A2 * A3 * B1 * !Y)	0.00259	0.00235	0.00243
	(A2 * !B1 * Y)	0.00215	0.00217	0.00214
	(A2 * !B1 * Y)	-0.00239	-0.00240	-0.00239
	(A2 * !A3 * B1 * !Y)	0.00778	0.00748	0.00912
	(A2 * !A3 * B1 * !Y)	0.00313	0.00283	0.00452
	(!A2 * A3 * B1 * !Y)	0.00827	0.00794	0.01058
	(!A2 * A3 * B1 * !Y)	0.00348	0.00311	0.00592
	(!A2 * A3 * !B1 * Y)	0.00214	0.00217	0.00214
	(!A2 * A3 * !B1 * Y)	-0.00239	-0.00241	-0.00238
	(!A2 * !A3 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A2 * !A3 * !B1 * Y)	-0.00238	-0.00240	-0.00240
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.01451	0.01391	0.01396
	(A2 * A3 * B1 * !Y)	0.00516	0.00453	0.00466
	(A2 * !B1 * Y)	0.00431	0.00433	0.00431
	(A2 * !B1 * Y)	-0.00498	-0.00499	-0.00497
	(A2 * !A3 * B1 * !Y)	0.01604	0.01520	0.01828
	(A2 * !A3 * B1 * !Y)	0.00650	0.00563	0.00885
	(!A2 * A3 * B1 * !Y)	0.01696	0.01604	0.02117
	(!A2 * A3 * B1 * !Y)	0.00715	0.00620	0.01162
	(!A2 * A3 * !B1 * Y)	0.00431	0.00433	0.00431
	(!A2 * A3 * !B1 * Y)	-0.00497	-0.00499	-0.00495
	(!A2 * !A3 * !B1 * Y)	0.00430	0.00432	0.00428
	(!A2 * !A3 * !B1 * Y)	-0.00499	-0.00501	-0.00499

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.01963	0.01851	0.01860
	(A2 * A3 * B1 * !Y)	0.00130	0.00013	0.00040
	(A2 * !B1 * Y)	0.00834	0.00838	0.00835
	(A2 * !B1 * Y)	-0.00986	-0.00987	-0.00983
	(A2 * !A3 * B1 * !Y)	0.02258	0.02107	0.02722
	(A2 * !A3 * B1 * !Y)	0.00387	0.00230	0.00877
	(!A2 * A3 * B1 * !Y)	0.02431	0.02275	0.03296
	(!A2 * A3 * B1 * !Y)	0.00516	0.00343	0.01425
	(!A2 * A3 * !B1 * Y)	0.00830	0.00840	0.00834
	(!A2 * A3 * !B1 * Y)	-0.00980	-0.00988	-0.00979
	(!A2 * !A3 * !B1 * Y)	0.00826	0.00831	0.00827
	(!A2 * !A3 * !B1 * Y)	-0.00983	-0.00987	-0.00986

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)**	0.00287	0.00284	0.00284
	(A2 * A3 * B1 * !Y)	0.00742	0.00745	0.00740
	(A2 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * Y)	0.00259	0.00262	0.00260
	(A2 * !A3 * B1 * !Y)	0.00508	0.00502	0.00470
	(A2 * !A3 * B1 * !Y)	0.00971	0.00967	0.00934
	(!A2 * A3 * B1 * !Y)	0.00691	0.00680	0.00614
	(!A2 * A3 * B1 * !Y)	0.01165	0.01159	0.01089
	(!A2 * A3 * !B1 * Y)	-0.00193	-0.00195	-0.00193
	(!A2 * A3 * !B1 * Y)	0.00259	0.00263	0.00260
	(!A2 * !A3 * !B1 * Y)	-0.00171	-0.00190	-0.00190
	(!A2 * !A3 * !B1 * Y)	0.00282	0.00267	0.00261

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00571	0.00566	0.00565
	(A2 * A3 * B1 * !Y)	0.01502	0.01508	0.01499
	(A2 * !B1 * Y)	-0.00389	-0.00391	-0.00390
	(A2 * !B1 * Y)	0.00538	0.00543	0.00540
	(A2 * !A3 * B1 * !Y)	0.01012	0.00999	0.00931
	(A2 * !A3 * B1 * !Y)	0.01962	0.01952	0.01885
	(!A2 * A3 * B1 * !Y)	0.01371	0.01349	0.01215
	(!A2 * A3 * B1 * !Y)	0.02344	0.02328	0.02190
	(!A2 * A3 * !B1 * Y)	-0.00389	-0.00393	-0.00390
	(!A2 * A3 * !B1 * Y)	0.00537	0.00544	0.00538
	(!A2 * !A3 * !B1 * Y)	-0.00326	-0.00384	-0.00380
	(!A2 * !A3 * !B1 * Y)	0.00602	0.00557	0.00543
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00265	0.00256	0.00253
	(A2 * A3 * B1 * !Y)	0.02091	0.02104	0.02083
	(A2 * !B1 * Y)	-0.00750	-0.00756	-0.00752
	(A2 * !B1 * Y)	0.01066	0.01078	0.01069
	(A2 * !A3 * B1 * !Y)	0.01144	0.01117	0.00986
	(A2 * !A3 * B1 * !Y)	0.03009	0.02994	0.02854
	(!A2 * A3 * B1 * !Y)	0.01858	0.01814	0.01550
	(!A2 * A3 * B1 * !Y)	0.03767	0.03737	0.03461
	(!A2 * A3 * !B1 * Y)	-0.00752	-0.00751	-0.00751
	(!A2 * A3 * !B1 * Y)	0.01065	0.01066	0.01066
	(!A2 * !A3 * !B1 * Y)	-0.00637	-0.00740	-0.00734
	(!A2 * !A3 * !B1 * Y)	0.01175	0.01101	0.01074

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)**	0.00750	0.00755	0.00769
	(A1 * A3 * B1 * !Y)	0.00332	0.00335	0.00354
	(A1 * A3 * !B1 * Y)	0.00213	0.00214	0.00213
	(A1 * A3 * !B1 * Y)	-0.00224	-0.00225	-0.00221
	(A1 * !A3 * B1 * !Y)	0.00727	0.00733	0.00783
	(A1 * !A3 * B1 * !Y)	0.00373	0.00372	0.00428
	(A1 * !A3 * !B1 * Y)	0.00214	0.00215	0.00213
	(A1 * !A3 * !B1 * Y)	-0.00278	-0.00278	-0.00276
	(!A1 * A3 * B1 * !Y)	0.00827	0.00788	0.01079
	(!A1 * A3 * B1 * !Y)	0.00328	0.00289	0.00585
	(!A1 * A3 * !B1 * Y)	0.00214	0.00214	0.00212
	(!A1 * A3 * !B1 * Y)	-0.00278	-0.00278	-0.00276
	(!A1 * !A3 * !B1 * Y)	0.00212	0.00213	0.00211
	(!A1 * !A3 * !B1 * Y)	-0.00277	-0.00278	-0.00277
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.01446	0.01452	0.01479
	(A1 * A3 * B1 * !Y)	0.00669	0.00672	0.00711
	(A1 * A3 * !B1 * Y)	0.00419	0.00423	0.00419
	(A1 * A3 * !B1 * Y)	-0.00388	-0.00391	-0.00379
	(A1 * !A3 * B1 * !Y)	0.01409	0.01420	0.01483
	(A1 * !A3 * B1 * !Y)	0.00780	0.00777	0.00851
	(A1 * !A3 * !B1 * Y)	0.00421	0.00425	0.00419
	(A1 * !A3 * !B1 * Y)	-0.00498	-0.00499	-0.00495
	(!A1 * A3 * B1 * !Y)	0.01594	0.01517	0.02093
	(!A1 * A3 * B1 * !Y)	0.00659	0.00580	0.01168
	(!A1 * A3 * !B1 * Y)	0.00421	0.00424	0.00419
	(!A1 * A3 * !B1 * Y)	-0.00498	-0.00498	-0.00495
	(!A1 * !A3 * !B1 * Y)	0.00417	0.00420	0.00415
	(!A1 * !A3 * !B1 * Y)	-0.00497	-0.00499	-0.00496

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.01975	0.01995	0.02047
	(A1 * A3 * B1 * !Y)	0.00442	0.00444	0.00521
	(A1 * A3 * !B1 * Y)	0.00828	0.00839	0.00830
	(A1 * A3 * !B1 * Y)	-0.00775	-0.00782	-0.00759
	(A1 * !A3 * B1 * !Y)	0.01907	0.01927	0.02064
	(A1 * !A3 * B1 * !Y)	0.00647	0.00642	0.00804
	(A1 * !A3 * !B1 * Y)	0.00828	0.00833	0.00830
	(A1 * !A3 * !B1 * Y)	-0.00990	-0.00993	-0.00990
	(!A1 * A3 * B1 * !Y)	0.02285	0.02125	0.03274
	(!A1 * A3 * B1 * !Y)	0.00437	0.00257	0.01432
	(!A1 * A3 * !B1 * Y)	0.00827	0.00840	0.00830
	(!A1 * A3 * !B1 * Y)	-0.00990	-0.00998	-0.00991
	(!A1 * !A3 * !B1 * Y)	0.00821	0.00832	0.00822
	(!A1 * !A3 * !B1 * Y)	-0.00989	-0.00997	-0.00992

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)**	0.00225	0.00223	0.00233
	(A1 * A3 * B1 * !Y)	0.00650	0.00652	0.00646
	(A1 * A3 * !B1 * Y)	-0.00191	-0.00193	-0.00192
	(A1 * A3 * !B1 * Y)	0.00260	0.00261	0.00242
	(A1 * !A3 * B1 * !Y)	0.00487	0.00475	0.00353
	(A1 * !A3 * B1 * !Y)	0.00843	0.00835	0.00712
	(A1 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(A1 * !A3 * !B1 * Y)	0.00297	0.00298	0.00297
	(!A1 * A3 * B1 * !Y)	0.00663	0.00651	0.00590
	(!A1 * A3 * B1 * !Y)	0.01160	0.01151	0.01086
	(!A1 * A3 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(!A1 * A3 * !B1 * Y)	0.00296	0.00299	0.00298
	(!A1 * !A3 * !B1 * Y)	-0.00165	-0.00186	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00323	0.00308	0.00299
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00499	0.00499	0.00522
	(A1 * A3 * B1 * !Y)	0.01289	0.01290	0.01283
	(A1 * A3 * !B1 * Y)	-0.00378	-0.00380	-0.00378
	(A1 * A3 * !B1 * Y)	0.00457	0.00457	0.00425
	(A1 * !A3 * B1 * !Y)	0.01043	0.01025	0.00784
	(A1 * !A3 * B1 * !Y)	0.01685	0.01667	0.01428
	(A1 * !A3 * !B1 * Y)	-0.00378	-0.00380	-0.00378
	(A1 * !A3 * !B1 * Y)	0.00536	0.00539	0.00537
	(!A1 * A3 * B1 * !Y)	0.01375	0.01353	0.01229
	(!A1 * A3 * B1 * !Y)	0.02305	0.02288	0.02160
	(!A1 * A3 * !B1 * Y)	-0.00377	-0.00379	-0.00378
	(!A1 * A3 * !B1 * Y)	0.00535	0.00539	0.00537
	(!A1 * !A3 * !B1 * Y)	-0.00316	-0.00370	-0.00369
	(!A1 * !A3 * !B1 * Y)	0.00597	0.00554	0.00540

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00105	0.00102	0.00148
	(A1 * A3 * B1 * !Y)	0.01671	0.01676	0.01660
	(A1 * A3 * !B1 * Y)	-0.00747	-0.00752	-0.00747
	(A1 * A3 * !B1 * Y)	0.00915	0.00916	0.00849
	(A1 * !A3 * B1 * !Y)	0.01181	0.01140	0.00660
	(A1 * !A3 * B1 * !Y)	0.02462	0.02427	0.01943
	(A1 * !A3 * !B1 * Y)	-0.00744	-0.00749	-0.00747
	(A1 * !A3 * !B1 * Y)	0.01070	0.01077	0.01074
	(!A1 * A3 * B1 * !Y)	0.01850	0.01799	0.01554
	(!A1 * A3 * B1 * !Y)	0.03696	0.03666	0.03406
	(!A1 * A3 * !B1 * Y)	-0.00744	-0.00749	-0.00747
	(!A1 * A3 * !B1 * Y)	0.01070	0.01079	0.01075
	(!A1 * !A3 * !B1 * Y)	-0.00634	-0.00740	-0.00729
	(!A1 * !A3 * !B1 * Y)	0.01190	0.01102	0.01080

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00701	0.00706	0.00704
	(A2 * B1 * !Y)	0.00362	0.00360	0.00364
	(A2 * !B1 * Y)	0.00205	0.00206	0.00205
	(A2 * !B1 * Y)	-0.00274	-0.00275	-0.00273
	(A1 * !A2 * B1 * !Y)	0.00703	0.00706	0.00727
	(A1 * !A2 * B1 * !Y)	0.00419	0.00419	0.00440
	(A1 * !A2 * !B1 * Y)	0.00206	0.00206	0.00205
	(A1 * !A2 * !B1 * Y)	-0.00274	-0.00274	-0.00272
	(!A1 * !A2 * !B1 * Y)	0.00205	0.00205	0.00203
	(!A1 * !A2 * !B1 * Y)	-0.00274	-0.00274	-0.00274

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.01370	0.01380	0.01377
	(A2 * B1 * !Y)	0.00727	0.00722	0.00730
	(A2 * !B1 * Y)	0.00408	0.00415	0.00410
	(A2 * !B1 * Y)	-0.00513	-0.00518	-0.00514
	(A1 * !A2 * B1 * !Y)	0.01376	0.01387	0.01422
	(A1 * !A2 * B1 * !Y)	0.00841	0.00839	0.00879
	(A1 * !A2 * !B1 * Y)	0.00408	0.00415	0.00410
	(A1 * !A2 * !B1 * Y)	-0.00513	-0.00518	-0.00512
	(!A1 * !A2 * !B1 * Y)	0.00408	0.00411	0.00406
	(!A1 * !A2 * !B1 * Y)	-0.00516	-0.00518	-0.00516
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.01818	0.01838	0.01831
	(A2 * B1 * !Y)	0.00552	0.00544	0.00559
	(A2 * !B1 * Y)	0.00804	0.00806	0.00806
	(A2 * !B1 * Y)	-0.01020	-0.01021	-0.01021
	(A1 * !A2 * B1 * !Y)	0.01830	0.01836	0.01921
	(A1 * !A2 * B1 * !Y)	0.00780	0.00784	0.00857
	(A1 * !A2 * !B1 * Y)	0.00804	0.00808	0.00806
	(A1 * !A2 * !B1 * Y)	-0.01020	-0.01023	-0.01017
	(!A1 * !A2 * !B1 * Y)	0.00800	0.00810	0.00800
	(!A1 * !A2 * !B1 * Y)	-0.01021	-0.01029	-0.01024

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00269	0.00266	0.00258
	(A2 * B1 * !Y)	0.00609	0.00610	0.00602
	(A2 * !B1 * Y)	-0.00183	-0.00185	-0.00184
	(A2 * !B1 * Y)	0.00293	0.00297	0.00294
	(A1 * !A2 * B1 * !Y)	0.00554	0.00546	0.00443
	(A1 * !A2 * B1 * !Y)	0.00857	0.00851	0.00749
	(A1 * !A2 * !B1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !B1 * Y)	0.00293	0.00296	0.00294
	(!A1 * !A2 * !B1 * Y)	-0.00160	-0.00178	-0.00180
	(!A1 * !A2 * !B1 * Y)	0.00317	0.00304	0.00296
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00566	0.00561	0.00544
	(A2 * B1 * !Y)	0.01215	0.01217	0.01199
	(A2 * !B1 * Y)	-0.00367	-0.00370	-0.00369
	(A2 * !B1 * Y)	0.00555	0.00559	0.00557
	(A1 * !A2 * B1 * !Y)	0.01138	0.01125	0.00925
	(A1 * !A2 * B1 * !Y)	0.01720	0.01708	0.01510
	(A1 * !A2 * !B1 * Y)	-0.00368	-0.00371	-0.00369
	(A1 * !A2 * !B1 * Y)	0.00554	0.00560	0.00555
	(!A1 * !A2 * !B1 * Y)	-0.00311	-0.00363	-0.00361
	(!A1 * !A2 * !B1 * Y)	0.00613	0.00572	0.00559
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00251	0.00237	0.00205
	(A2 * B1 * !Y)	0.01528	0.01533	0.01493
	(A2 * !B1 * Y)	-0.00721	-0.00727	-0.00723
	(A2 * !B1 * Y)	0.01101	0.01112	0.01105
	(A1 * !A2 * B1 * !Y)	0.01391	0.01366	0.00965
	(A1 * !A2 * B1 * !Y)	0.02534	0.02509	0.02111
	(A1 * !A2 * !B1 * Y)	-0.00723	-0.00724	-0.00723
	(A1 * !A2 * !B1 * Y)	0.01101	0.01103	0.01102
	(!A1 * !A2 * !B1 * Y)	-0.00620	-0.00714	-0.00708
	(!A1 * !A2 * !B1 * Y)	0.01199	0.01119	0.01110

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)	0.00094	0.00094	0.00083
	(!A1 * !A2 * !A3 * Y)	-0.00262	-0.00264	-0.00281
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00186	0.00185	0.00161
	(!A1 * !A2 * !A3 * Y)	-0.00519	-0.00519	-0.00562
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00339	0.00340	0.00293
	(!A1 * !A2 * !A3 * Y)	-0.00550	-0.00558	-0.00630

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)	-0.00053	-0.00054	-0.00051
	(!A1 * !A2 * !A3 * Y)	0.00302	0.00308	0.00304
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00102	-0.00104	-0.00099
	(!A1 * !A2 * !A3 * Y)	0.00603	0.00614	0.00606
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00175	-0.00177	-0.00168
	(!A1 * !A2 * !A3 * Y)	0.00714	0.00725	0.00718

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00269	0.00264	0.00262	0.00240	1.63323
sky130_fd_sc_hs__o31a_2	0.00285	0.00277	0.00278	0.00287	2.76466
sky130_fd_sc_hs__o31a_4	0.00490	0.00520	0.00512	0.00509	6.13152

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	971.08500	1907.25000
sky130_fd_sc_hs__o31a_2	0.00000	943.75400	1191.29000
sky130_fd_sc_hs__o31a_4	0.00000	1898.31000	2375.12000

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)	0.06746	0.41461	5.21341
	A2->X (RR)	0.06473	0.40369	5.01996
	A3->X (RR)	0.05466	0.38170	4.84874
	B1->X (RR)	0.06054	0.46994	6.19283
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.07149	0.34633	4.76476
	A2->X (RR)	0.06885	0.33803	4.60738
	A3->X (RR)	0.05849	0.31907	4.46686
	B1->X (RR)	0.06536	0.41139	5.98865
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.07778	0.29326	5.25016
	A2->X (RR)	0.07367	0.27907	4.99700
	A3->X (RR)	0.06134	0.26065	4.88128
	B1->X (RR)	0.07071	0.36165	6.32035

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.12492	0.51386	5.92222
	A2->X (FF)	0.11543	0.53809	6.26889
	A3->X (FF)	0.09647	0.54599	6.41297
	B1->X (FF)	0.04694	0.42013	5.57359
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.15585	0.50340	5.57295
	A2->X (FF)	0.14586	0.52873	5.89538
	A3->X (FF)	0.12641	0.54050	6.02759
	B1->X (FF)	0.05023	0.36862	4.94248
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.16236	0.48617	6.32393
	A2->X (FF)	0.15251	0.50955	6.49388
	A3->X (FF)	0.12525	0.51442	6.58623
	B1->X (FF)	0.04739	0.33552	5.43990

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.05846	0.06750	0.24929
	A1	0.04864	0.05765	0.23896
	A2	0.05640	0.06543	0.22783
	A2	0.04805	0.05707	0.22684
	A3	0.05994	0.06964	0.23404
	A3	0.05292	0.06260	0.22655
	B1	0.04470	0.06558	0.38253
	B1	0.03970	0.06056	0.37734
sky130_fd_sc_hs__o31a_2	A1	0.04603	0.05383	0.21311
	A1	0.03562	0.04348	0.20183
	A2	0.04377	0.05186	0.19524
	A2	0.03493	0.04305	0.18591
	A3	0.04705	0.05590	0.20131
	A3	0.03945	0.04830	0.19298
	B1	0.03093	0.05195	0.37618
	B1	0.02508	0.04608	0.37030
sky130_fd_sc_hs__o31a_4	A1	0.09320	0.11456	0.55455
	A1	0.07390	0.09526	0.53304
	A2	0.08789	0.10879	0.49833
	A2	0.07077	0.09168	0.47899
	A3	0.09248	0.11484	0.49459
	A3	0.07868	0.10104	0.47883
	B1	0.05995	0.10032	0.68797
	B1	0.04992	0.09033	0.67653

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01791	0.02629	0.22806
	A1	0.02775	0.03612	0.23796
	A2	0.01807	0.02627	0.21940
	A2	0.02641	0.03462	0.22693
	A3	0.01806	0.02773	0.22257
	A3	0.02509	0.03475	0.22975
	B1	0.01368	0.03439	0.34512
	B1	0.01869	0.03936	0.34995
sky130_fd_sc_hs__o31a_2	A1	0.03660	0.03735	0.22568
	A1	0.04700	0.04759	0.23463
	A2	0.03685	0.03751	0.21353
	A2	0.04570	0.04631	0.22238
	A3	0.03683	0.03896	0.21770
	A3	0.04443	0.04652	0.22560
	B1	0.02535	0.04432	0.34855
	B1	0.03120	0.05006	0.35422
sky130_fd_sc_hs__o31a_4	A1	0.08095	0.08287	0.49924
	A1	0.10023	0.10214	0.51838
	A2	0.08052	0.08210	0.45075
	A2	0.09763	0.09898	0.46584
	A3	0.08109	0.08499	0.44859
	A3	0.09486	0.09876	0.46245
	B1	0.05450	0.09137	0.68685
	B1	0.06451	0.10134	0.69488

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)**	0.01410	0.01387	0.01391
	(A2 * A3 * B1 * X)	0.00989	0.00966	0.00972
	(A2 * !B1 * !X)	0.00641	0.00643	0.00641
	(A2 * !B1 * !X)	0.00222	0.00220	0.00222
	(A2 * !A3 * B1 * X)	0.01471	0.01445	0.01613
	(A2 * !A3 * B1 * X)	0.01041	0.01010	0.01187
	(!A2 * A3 * B1 * X)	0.01517	0.01490	0.01796
	(!A2 * A3 * B1 * X)	0.01074	0.01042	0.01364
	(!A2 * A3 * !B1 * !X)	0.00640	0.00643	0.00641
	(!A2 * A3 * !B1 * !X)	0.00222	0.00220	0.00223
	(!A2 * !A3 * !B1 * !X)	0.00641	0.00643	0.00640
	(!A2 * !A3 * !B1 * !X)	0.00222	0.00220	0.00220
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00805	0.00781	0.00785
	(A2 * A3 * B1 * X)	0.00356	0.00331	0.00338
	(A2 * !B1 * !X)	0.01115	0.01118	0.01116
	(A2 * !B1 * !X)	0.00668	0.00667	0.00669
	(A2 * !A3 * B1 * X)	0.00868	0.00837	0.01008
	(A2 * !A3 * B1 * X)	0.00410	0.00379	0.00554
	(!A2 * A3 * B1 * X)	0.00914	0.00883	0.01192
	(!A2 * A3 * B1 * X)	0.00444	0.00411	0.00731
	(!A2 * A3 * !B1 * !X)	0.01114	0.01116	0.01116
	(!A2 * A3 * !B1 * !X)	0.00669	0.00668	0.00670
	(!A2 * !A3 * !B1 * !X)	0.01115	0.01115	0.01114
	(!A2 * !A3 * !B1 * !X)	0.00667	0.00667	0.00667

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.01534	0.01480	0.01480
	(A2 * A3 * B1 * X)	0.00728	0.00671	0.00680
	(A2 * !B1 * !X)	0.02180	0.02184	0.02181
	(A2 * !B1 * !X)	0.01380	0.01378	0.01382
	(A2 * !A3 * B1 * X)	0.01678	0.01606	0.01932
	(A2 * !A3 * B1 * X)	0.00850	0.00775	0.01117
	(!A2 * A3 * B1 * X)	0.01773	0.01691	0.02287
	(!A2 * A3 * B1 * X)	0.00918	0.00833	0.01459
	(!A2 * A3 * !B1 * !X)	0.02179	0.02183	0.02181
	(!A2 * A3 * !B1 * !X)	0.01380	0.01379	0.01384
	(!A2 * !A3 * !B1 * !X)	0.02181	0.02182	0.02177
	(!A2 * !A3 * !B1 * !X)	0.01376	0.01377	0.01375

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)**	0.00997	0.00995	0.00994
	(A2 * A3 * B1 * X)	0.01417	0.01420	0.01416
	(A2 * !B1 * !X)	0.00303	0.00302	0.00302
	(A2 * !B1 * !X)	0.00721	0.00722	0.00722
	(A2 * !A3 * B1 * X)	0.01227	0.01220	0.01185
	(A2 * !A3 * B1 * X)	0.01658	0.01654	0.01616
	(!A2 * A3 * B1 * X)	0.01461	0.01447	0.01364
	(!A2 * A3 * B1 * X)	0.01901	0.01892	0.01806
	(!A2 * A3 * !B1 * !X)	0.00303	0.00301	0.00302
	(!A2 * A3 * !B1 * !X)	0.00721	0.00724	0.00721
	(!A2 * !A3 * !B1 * !X)	0.00322	0.00303	0.00306
	(!A2 * !A3 * !B1 * !X)	0.00744	0.00729	0.00724

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00353	0.00352	0.00350
	(A2 * A3 * B1 * X)	0.00801	0.00801	0.00799
	(A2 * !B1 * !X)	0.00715	0.00714	0.00715
	(A2 * !B1 * !X)	0.01161	0.01163	0.01162
	(A2 * !A3 * B1 * X)	0.00584	0.00577	0.00542
	(A2 * !A3 * B1 * X)	0.01043	0.01039	0.01000
	(!A2 * A3 * B1 * X)	0.00818	0.00805	0.00721
	(!A2 * A3 * B1 * X)	0.01286	0.01277	0.01190
	(!A2 * A3 * !B1 * !X)	0.00715	0.00713	0.00715
	(!A2 * A3 * !B1 * !X)	0.01161	0.01163	0.01161
	(!A2 * !A3 * !B1 * !X)	0.00741	0.00721	0.00719
	(!A2 * !A3 * !B1 * !X)	0.01187	0.01172	0.01164
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00792	0.00788	0.00790
	(A2 * A3 * B1 * X)	0.01595	0.01601	0.01594
	(A2 * !B1 * !X)	0.01517	0.01514	0.01516
	(A2 * !B1 * !X)	0.02315	0.02321	0.02316
	(A2 * !A3 * B1 * X)	0.01249	0.01234	0.01160
	(A2 * !A3 * B1 * X)	0.02074	0.02065	0.01987
	(!A2 * A3 * B1 * X)	0.01727	0.01701	0.01530
	(!A2 * A3 * B1 * X)	0.02574	0.02552	0.02379
	(!A2 * A3 * !B1 * !X)	0.01516	0.01514	0.01516
	(!A2 * A3 * !B1 * !X)	0.02314	0.02319	0.02315
	(!A2 * !A3 * !B1 * !X)	0.01562	0.01519	0.01524
	(!A2 * !A3 * !B1 * !X)	0.02367	0.02332	0.02322

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)**	0.01402	0.01407	0.01420
	(A1 * A3 * B1 * X)	0.01063	0.01065	0.01083
	(A1 * A3 * !B1 * !X)	0.00646	0.00647	0.00646
	(A1 * A3 * !B1 * !X)	0.00290	0.00289	0.00293
	(A1 * !A3 * B1 * X)	0.01381	0.01387	0.01437
	(A1 * !A3 * B1 * X)	0.01098	0.01096	0.01151
	(A1 * !A3 * !B1 * !X)	0.00646	0.00646	0.00644
	(A1 * !A3 * !B1 * !X)	0.00241	0.00240	0.00242
	(!A1 * A3 * B1 * X)	0.01474	0.01444	0.01775
	(!A1 * A3 * B1 * X)	0.01062	0.01031	0.01367
	(!A1 * A3 * !B1 * !X)	0.00647	0.00648	0.00646
	(!A1 * A3 * !B1 * !X)	0.00242	0.00243	0.00244
	(!A1 * !A3 * !B1 * !X)	0.00647	0.00646	0.00645
	(!A1 * !A3 * !B1 * !X)	0.00243	0.00244	0.00241
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00796	0.00800	0.00812
	(A1 * A3 * B1 * X)	0.00432	0.00436	0.00453
	(A1 * A3 * !B1 * !X)	0.01108	0.01110	0.01108
	(A1 * A3 * !B1 * !X)	0.00730	0.00729	0.00734
	(A1 * !A3 * B1 * X)	0.00776	0.00782	0.00832
	(A1 * !A3 * B1 * X)	0.00470	0.00469	0.00524
	(A1 * !A3 * !B1 * !X)	0.01108	0.01108	0.01105
	(A1 * !A3 * !B1 * !X)	0.00681	0.00680	0.00681
	(!A1 * A3 * B1 * X)	0.00871	0.00839	0.01170
	(!A1 * A3 * B1 * X)	0.00437	0.00404	0.00740
	(!A1 * A3 * !B1 * !X)	0.01109	0.01111	0.01109
	(!A1 * A3 * !B1 * !X)	0.00683	0.00683	0.00685
	(!A1 * !A3 * !B1 * !X)	0.01107	0.01109	0.01106
	(!A1 * !A3 * !B1 * !X)	0.00683	0.00682	0.00683

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.01582	0.01593	0.01609
	(A1 * A3 * B1 * X)	0.00859	0.00864	0.00891
	(A1 * A3 * !B1 * !X)	0.02238	0.02241	0.02240
	(A1 * A3 * !B1 * !X)	0.01485	0.01482	0.01494
	(A1 * !A3 * B1 * X)	0.01576	0.01582	0.01665
	(A1 * !A3 * B1 * X)	0.00952	0.00952	0.01041
	(A1 * !A3 * !B1 * !X)	0.02234	0.02236	0.02233
	(A1 * !A3 * !B1 * !X)	0.01381	0.01376	0.01378
	(!A1 * A3 * B1 * X)	0.01754	0.01683	0.02333
	(!A1 * A3 * B1 * X)	0.00880	0.00802	0.01463
	(!A1 * A3 * !B1 * !X)	0.02237	0.02241	0.02240
	(!A1 * A3 * !B1 * !X)	0.01384	0.01384	0.01385
	(!A1 * !A3 * !B1 * !X)	0.02237	0.02243	0.02235
	(!A1 * !A3 * !B1 * !X)	0.01383	0.01378	0.01378

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)**	0.00979	0.00979	0.00988
	(A1 * A3 * B1 * X)	0.01327	0.01328	0.01322
	(A1 * A3 * !B1 * !X)	0.00298	0.00297	0.00298
	(A1 * A3 * !B1 * !X)	0.00666	0.00667	0.00650
	(A1 * !A3 * B1 * X)	0.01241	0.01229	0.01100
	(A1 * !A3 * B1 * X)	0.01528	0.01519	0.01389
	(A1 * !A3 * !B1 * !X)	0.00301	0.00298	0.00299
	(A1 * !A3 * !B1 * !X)	0.00702	0.00703	0.00702
	(!A1 * A3 * B1 * X)	0.01473	0.01460	0.01382
	(!A1 * A3 * B1 * X)	0.01883	0.01873	0.01792
	(!A1 * A3 * !B1 * !X)	0.00298	0.00296	0.00297
	(!A1 * A3 * !B1 * !X)	0.00699	0.00702	0.00700
	(!A1 * !A3 * !B1 * !X)	0.00320	0.00299	0.00301
	(!A1 * !A3 * !B1 * !X)	0.00724	0.00707	0.00702
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00336	0.00335	0.00345
	(A1 * A3 * B1 * X)	0.00705	0.00706	0.00700
	(A1 * A3 * !B1 * !X)	0.00723	0.00721	0.00722
	(A1 * A3 * !B1 * !X)	0.01113	0.01113	0.01097
	(A1 * !A3 * B1 * X)	0.00597	0.00586	0.00456
	(A1 * !A3 * B1 * X)	0.00907	0.00897	0.00766
	(A1 * !A3 * !B1 * !X)	0.00727	0.00724	0.00725
	(A1 * !A3 * !B1 * !X)	0.01150	0.01151	0.01149
	(!A1 * A3 * B1 * X)	0.00832	0.00818	0.00739
	(!A1 * A3 * B1 * X)	0.01264	0.01252	0.01171
	(!A1 * A3 * !B1 * !X)	0.00722	0.00720	0.00721
	(!A1 * A3 * !B1 * !X)	0.01145	0.01148	0.01146
	(!A1 * !A3 * !B1 * !X)	0.00750	0.00729	0.00727
	(!A1 * !A3 * !B1 * !X)	0.01173	0.01157	0.01148

sky130_fd_sc_hs__o31a_4	(A1 * A3 * B1 * X)	0.00680	0.00677	0.00697
	(A1 * A3 * B1 * X)	0.01416	0.01419	0.01410
	(A1 * A3 * !B1 * !X)	0.01459	0.01456	0.01457
	(A1 * A3 * !B1 * !X)	0.02236	0.02237	0.02206
	(A1 * !A3 * B1 * X)	0.01187	0.01166	0.00907
	(A1 * !A3 * B1 * X)	0.01817	0.01797	0.01538
	(A1 * !A3 * !B1 * !X)	0.01468	0.01462	0.01464
	(A1 * !A3 * !B1 * !X)	0.02322	0.02322	0.02320
	(!A1 * A3 * B1 * X)	0.01667	0.01639	0.01477
	(!A1 * A3 * B1 * X)	0.02541	0.02518	0.02353
	(!A1 * A3 * !B1 * !X)	0.01458	0.01455	0.01457
	(!A1 * A3 * !B1 * !X)	0.02311	0.02316	0.02313
	(!A1 * !A3 * !B1 * !X)	0.01503	0.01460	0.01466
	(!A1 * !A3 * !B1 * !X)	0.02362	0.02325	0.02319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	(A2 * B1 * X)	0.01359	0.01362	0.01361
	(A2 * B1 * X)	0.01077	0.01076	0.01079
	(A2 * !B1 * !X)	0.00642	0.00644	0.00642
	(A2 * !B1 * !X)	0.00239	0.00237	0.00238
	(A1 * !A2 * B1 * X)	0.01362	0.01364	0.01387
	(A1 * !A2 * B1 * X)	0.01130	0.01130	0.01153
	(A1 * !A2 * !B1 * !X)	0.00645	0.00644	0.00642
	(A1 * !A2 * !B1 * !X)	0.00238	0.00237	0.00239
	(!A1 * !A2 * !B1 * !X)	0.00646	0.00647	0.00643
	(!A1 * !A2 * !B1 * !X)	0.00239	0.00237	0.00237

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00763	0.00767	0.00765
	(A2 * B1 * X)	0.00451	0.00450	0.00454
	(A2 * !B1 * !X)	0.01111	0.01112	0.01111
	(A2 * !B1 * !X)	0.00678	0.00676	0.00677
	(A1 * !A2 * B1 * X)	0.00765	0.00768	0.00791
	(A1 * !A2 * B1 * X)	0.00504	0.00504	0.00527
	(A1 * !A2 * !B1 * !X)	0.01112	0.01112	0.01111
	(A1 * !A2 * !B1 * !X)	0.00679	0.00677	0.00678
	(!A1 * !A2 * !B1 * !X)	0.01113	0.01113	0.01111
	(!A1 * !A2 * !B1 * !X)	0.00678	0.00678	0.00678
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.01465	0.01469	0.01470
	(A2 * B1 * X)	0.00886	0.00885	0.00890
	(A2 * !B1 * !X)	0.02197	0.02200	0.02196
	(A2 * !B1 * !X)	0.01359	0.01352	0.01356
	(A1 * !A2 * B1 * X)	0.01470	0.01475	0.01517
	(A1 * !A2 * B1 * X)	0.00989	0.00990	0.01034
	(A1 * !A2 * !B1 * !X)	0.02197	0.02199	0.02196
	(A1 * !A2 * !B1 * !X)	0.01359	0.01354	0.01359
	(!A1 * !A2 * !B1 * !X)	0.02204	0.02205	0.02197
	(!A1 * !A2 * !B1 * !X)	0.01358	0.01354	0.01354

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.01016	0.01015	0.01007
	(A2 * B1 * X)	0.01300	0.01301	0.01293
	(A2 * !B1 * !X)	0.00304	0.00300	0.00301
	(A2 * !B1 * !X)	0.00707	0.00708	0.00705
	(A1 * !A2 * B1 * X)	0.01304	0.01295	0.01183
	(A1 * !A2 * B1 * X)	0.01553	0.01546	0.01434
	(A1 * !A2 * !B1 * !X)	0.00303	0.00300	0.00301
	(A1 * !A2 * !B1 * !X)	0.00705	0.00706	0.00705
	(!A1 * !A2 * !B1 * !X)	0.00322	0.00301	0.00303
	(!A1 * !A2 * !B1 * !X)	0.00729	0.00711	0.00706
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00362	0.00361	0.00353
	(A2 * B1 * X)	0.00675	0.00675	0.00668
	(A2 * !B1 * !X)	0.00722	0.00718	0.00720
	(A2 * !B1 * !X)	0.01155	0.01155	0.01153
	(A1 * !A2 * B1 * X)	0.00651	0.00642	0.00531
	(A1 * !A2 * B1 * X)	0.00929	0.00923	0.00811
	(A1 * !A2 * !B1 * !X)	0.00721	0.00718	0.00720
	(A1 * !A2 * !B1 * !X)	0.01153	0.01154	0.01153
	(!A1 * !A2 * !B1 * !X)	0.00746	0.00724	0.00722
	(!A1 * !A2 * !B1 * !X)	0.01179	0.01162	0.01153
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00784	0.00782	0.00760
	(A2 * B1 * X)	0.01368	0.01368	0.01351
	(A2 * !B1 * !X)	0.01509	0.01498	0.01501
	(A2 * !B1 * !X)	0.02344	0.02346	0.02342
	(A1 * !A2 * B1 * X)	0.01360	0.01344	0.01125
	(A1 * !A2 * B1 * X)	0.01877	0.01865	0.01647
	(A1 * !A2 * !B1 * !X)	0.01505	0.01499	0.01501
	(A1 * !A2 * !B1 * !X)	0.02343	0.02343	0.02340
	(!A1 * !A2 * !B1 * !X)	0.01557	0.01498	0.01506
	(!A1 * !A2 * !B1 * !X)	0.02402	0.02352	0.02343

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)	0.00555	0.00555	0.00538
	(!A1 * !A2 * !A3 * !X)	0.00269	0.00267	0.00248
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.01004	0.01005	0.00990
	(!A1 * !A2 * !A3 * !X)	0.00645	0.00644	0.00625
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.02006	0.02007	0.01972
	(!A1 * !A2 * !A3 * !X)	0.01363	0.01362	0.01317

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)	0.00417	0.00416	0.00420
	(!A1 * !A2 * !A3 * !X)	0.00697	0.00702	0.00700
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00850	0.00849	0.00852
	(!A1 * !A2 * !A3 * !X)	0.01206	0.01209	0.01209
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.01749	0.01749	0.01756
	(!A1 * !A2 * !A3 * !X)	0.02385	0.02396	0.02390

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00273	0.00300	0.00291	0.00287	0.00296	0.63377
sky130_fd_sc_hs__o32ai_2	0.00580	0.00542	0.00581	0.00551	0.00557	1.06333
sky130_fd_sc_hs__o32ai_4	0.01096	0.01097	0.01099	0.01124	0.01089	1.87873

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	318.81400	1026.67000
sky130_fd_sc_hs__o32ai_2	0.00000	635.48800	2041.20000
sky130_fd_sc_hs__o32ai_4	0.00000	1267.79000	4063.13000

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)	0.10532	0.72440	7.98314
	A2->Y (FR)	0.09789	0.76407	8.59900
	A3->Y (FR)	0.07883	0.78216	9.03936
	B1->Y (FR)	0.04195	0.54302	6.44928
	B2->Y (FR)	0.03363	0.58754	7.16266
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.11396	0.61677	7.65009
	A2->Y (FR)	0.10580	0.67041	8.45270
	A3->Y (FR)	0.08144	0.68624	8.89968
	B1->Y (FR)	0.04529	0.49576	6.63136
	B2->Y (FR)	0.03114	0.52913	7.24689
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.11560	0.53027	7.41801
	A2->Y (FR)	0.10688	0.58632	8.28709
	A3->Y (FR)	0.08162	0.61193	8.86098
	B1->Y (FR)	0.04308	0.40228	6.11924
	B2->Y (FR)	0.03005	0.44191	6.85083

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04570	0.31202	3.15897
	A2->Y (RF)	0.04468	0.31456	3.22304
	A3->Y (RF)	0.03693	0.30336	3.15533
	B1->Y (RF)	0.03504	0.37026	4.13195
	B2->Y (RF)	0.02897	0.35610	4.01330
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.03805	0.23647	2.76461
	A2->Y (RF)	0.03868	0.24368	2.89867
	A3->Y (RF)	0.03030	0.23016	2.83092
	B1->Y (RF)	0.03665	0.30894	3.83869
	B2->Y (RF)	0.02857	0.29984	3.83807
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.05108	0.22862	3.13911
	A2->Y (RF)	0.04423	0.20807	2.91718
	A3->Y (RF)	0.03138	0.18472	2.72436
	B1->Y (RF)	0.05288	0.32394	4.39139
	B2->Y (RF)	0.04327	0.32960	4.62191

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00265	0.00900	0.13841
	A1	0.01538	0.02199	0.15504
	A2	0.00281	0.00891	0.11972
	A2	0.01408	0.02029	0.13354
	A3	0.00279	0.01042	0.13117
	A3	0.01236	0.02017	0.14283
	B1	0.00009	0.00871	0.15230
	B1	0.00769	0.01634	0.15996
	B2	0.00015	0.01023	0.16039
	B2	0.00612	0.01618	0.16621
sky130_fd_sc_hs__o32ai_2	A1	0.00543	0.01894	0.27882
	A1	0.03142	0.04488	0.30489
	A2	0.00524	0.01682	0.21710
	A2	0.02874	0.04031	0.24113
	A3	0.00509	0.01951	0.23364
	A3	0.02499	0.04010	0.26386
	B1	-0.00008	0.01699	0.27960
	B1	0.01515	0.03222	0.29533
	B2	-0.00021	0.01864	0.27968
	B2	0.01202	0.03087	0.29487

sky130_fd_sc_hs__o32ai_4	**A1**	0.01082	0.03809	0.52504
	A1	0.06185	0.08912	0.57509
	A2	0.00991	0.03404	0.41906
	A2	0.05713	0.08226	0.48025
	A3	0.01115	0.04225	0.47236
	A3	0.05064	0.08133	0.50243
	B1	-0.00037	0.03238	0.49270
	B1	0.03051	0.06340	0.52218
	B2	-0.00018	0.03250	0.45266
	B2	0.02408	0.05664	0.47481

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.02675	0.03192	0.13874
	A1	0.01520	0.02036	0.12689
	A2	0.02428	0.02933	0.12403
	A2	0.01419	0.01914	0.11373
	A3	0.02376	0.02881	0.11644
	A3	0.01538	0.02039	0.10782
	B1	0.01420	0.02204	0.14904
	B1	0.00659	0.01440	0.14137
	B2	0.01428	0.02188	0.13955
	B2	0.00830	0.01589	0.13337

sky130_fd_sc_hs__o32ai_2	**A1**	0.05436	0.06569	0.27799
	A1	0.03018	0.04147	0.25371
	A2	0.04926	0.05937	0.23678
	A2	0.02892	0.03904	0.21627
	A3	0.04761	0.05830	0.22115
	A3	0.03009	0.04077	0.20379
	B1	0.02862	0.04439	0.28106
	B1	0.01341	0.02913	0.26561
	B2	0.02804	0.04316	0.25199
	B2	0.01580	0.03086	0.23969
sky130_fd_sc_hs__o32ai_4	**A1**	0.11654	0.14230	0.59031
	A1	0.06912	0.09473	0.54205
	A2	0.10374	0.12792	0.51511
	A2	0.06291	0.08706	0.47461
	A3	0.09989	0.12499	0.47607
	A3	0.06558	0.09063	0.44165
	B1	0.05814	0.09082	0.53959
	B1	0.02732	0.05985	0.50797
	B2	0.05984	0.08923	0.45501
	B2	0.03559	0.06488	0.42990

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)**	0.00307	0.00281	0.00287
	(A2 * A3 * B2 * !Y)	-0.00157	-0.00181	-0.00173
	(A2 * A3 * B1 * !B2 * !Y)	0.00539	0.00514	0.00520
	(A2 * A3 * B1 * !B2 * !Y)	0.00076	0.00052	0.00059
	(A2 * !B1 * !B2 * Y)	0.00228	0.00228	0.00228
	(A2 * !B1 * !B2 * Y)	-0.00232	-0.00232	-0.00232
	(A2 * !A3 * B2 * !Y)	0.00373	0.00343	0.00503
	(A2 * !A3 * B2 * !Y)	-0.00099	-0.00133	0.00036
	(A2 * !A3 * B1 * !B2 * !Y)	0.00605	0.00576	0.00735
	(A2 * !A3 * B1 * !B2 * !Y)	0.00134	0.00099	0.00269
	(!A2 * A3 * B2 * !Y)	0.00420	0.00386	0.00649
	(!A2 * A3 * B2 * !Y)	-0.00065	-0.00104	0.00177
	(!A2 * A3 * B1 * !B2 * !Y)	0.00653	0.00619	0.00882
	(!A2 * A3 * B1 * !B2 * !Y)	0.00168	0.00129	0.00409
	(!A2 * A3 * !B1 * !B2 * Y)	0.00228	0.00231	0.00228
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00232	-0.00234	-0.00231
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00229	0.00230	0.00227
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00233	-0.00234	-0.00234

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00635	0.00582	0.00588
	(A2 * A3 * B2 * !Y)	-0.00330	-0.00385	-0.00371
	(A2 * A3 * B1 * !B2 * !Y)	0.01099	0.01046	0.01052
	(A2 * A3 * B1 * !B2 * !Y)	0.00134	0.00080	0.00093
	(A2 * !B1 * !B2 * Y)	0.00469	0.00470	0.00469
	(A2 * !B1 * !B2 * Y)	-0.00490	-0.00491	-0.00489
	(A2 * !A3 * B2 * !Y)	0.00778	0.00707	0.01021
	(A2 * !A3 * B2 * !Y)	-0.00206	-0.00278	0.00049
	(A2 * !A3 * B1 * !B2 * !Y)	0.01242	0.01171	0.01485
	(A2 * !A3 * B1 * !B2 * !Y)	0.00258	0.00186	0.00513
	(!A2 * A3 * B2 * !Y)	0.00869	0.00796	0.01312
	(!A2 * A3 * B2 * !Y)	-0.00142	-0.00218	0.00328
	(!A2 * A3 * B1 * !B2 * !Y)	0.01333	0.01260	0.01776
	(!A2 * A3 * B1 * !B2 * !Y)	0.00322	0.00246	0.00792
	(!A2 * A3 * !B1 * !B2 * Y)	0.00468	0.00470	0.00469
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00489	-0.00491	-0.00487
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00470	0.00469	0.00466
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00492	-0.00491	-0.00493

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.01220	0.01116	0.01127
	(A2 * A3 * B2 * !Y)	-0.00633	-0.00744	-0.00715
	(A2 * A3 * B1 * !B2 * !Y)	0.02149	0.02045	0.02056
	(A2 * A3 * B1 * !B2 * !Y)	0.00295	0.00184	0.00213
	(A2 * !B1 * !B2 * Y)	0.00889	0.00897	0.00889
	(A2 * !B1 * !B2 * Y)	-0.00953	-0.00957	-0.00951
	(A2 * !A3 * B2 * !Y)	0.01503	0.01368	0.01991
	(A2 * !A3 * B2 * !Y)	-0.00390	-0.00534	0.00123
	(A2 * !A3 * B1 * !B2 * !Y)	0.02432	0.02296	0.02920
	(A2 * !A3 * B1 * !B2 * !Y)	0.00538	0.00394	0.01051
	(!A2 * A3 * B2 * !Y)	0.01686	0.01539	0.02568
	(!A2 * A3 * B2 * !Y)	-0.00268	-0.00417	0.00675
	(!A2 * A3 * B1 * !B2 * !Y)	0.02614	0.02467	0.03495
	(!A2 * A3 * B1 * !B2 * !Y)	0.00660	0.00512	0.01602
	(!A2 * A3 * !B1 * !B2 * Y)	0.00892	0.00894	0.00889
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00955	-0.00955	-0.00946
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00885	0.00896	0.00884
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00948	-0.00958	-0.00958

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)**	-0.00129	-0.00132	-0.00133
	(A2 * A3 * B2 * !Y)	0.00332	0.00335	0.00330
	(A2 * A3 * B1 * !B2 * !Y)	0.00103	0.00101	0.00100
	(A2 * A3 * B1 * !B2 * !Y)	0.00564	0.00567	0.00563
	(A2 * !B1 * !B2 * Y)	-0.00186	-0.00188	-0.00187
	(A2 * !B1 * !B2 * Y)	0.00272	0.00277	0.00274
	(A2 * !A3 * B2 * !Y)	0.00092	0.00084	0.00053
	(A2 * !A3 * B2 * !Y)	0.00561	0.00560	0.00525
	(A2 * !A3 * B1 * !B2 * !Y)	0.00325	0.00317	0.00286
	(A2 * !A3 * B1 * !B2 * !Y)	0.00794	0.00793	0.00757
	(!A2 * A3 * B2 * !Y)	0.00276	0.00264	0.00197
	(!A2 * A3 * B2 * !Y)	0.00755	0.00749	0.00680
	(!A2 * A3 * B1 * !B2 * !Y)	0.00508	0.00496	0.00430
	(!A2 * A3 * B1 * !B2 * !Y)	0.00988	0.00982	0.00912
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00186	-0.00188	-0.00187
	(!A2 * A3 * !B1 * !B2 * Y)	0.00272	0.00276	0.00273
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00161	-0.00186	-0.00183
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00301	0.00280	0.00275

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00271	-0.00274	-0.00277
	(A2 * A3 * B2 * !Y)	0.00690	0.00692	0.00686
	(A2 * A3 * B1 * !B2 * !Y)	0.00193	0.00190	0.00187
	(A2 * A3 * B1 * !B2 * !Y)	0.01154	0.01157	0.01151
	(A2 * !B1 * !B2 * Y)	-0.00385	-0.00388	-0.00386
	(A2 * !B1 * !B2 * Y)	0.00571	0.00577	0.00573
	(A2 * !A3 * B2 * !Y)	0.00165	0.00151	0.00086
	(A2 * !A3 * B2 * !Y)	0.01146	0.01140	0.01069
	(A2 * !A3 * B1 * !B2 * !Y)	0.00630	0.00616	0.00550
	(A2 * !A3 * B1 * !B2 * !Y)	0.01610	0.01604	0.01534
	(!A2 * A3 * B2 * !Y)	0.00533	0.00511	0.00377
	(!A2 * A3 * B2 * !Y)	0.01535	0.01521	0.01382
	(!A2 * A3 * B1 * !B2 * !Y)	0.00997	0.00975	0.00841
	(!A2 * A3 * B1 * !B2 * !Y)	0.01999	0.01985	0.01845
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00386	-0.00387	-0.00386
	(!A2 * A3 * !B1 * !B2 * Y)	0.00570	0.00573	0.00571
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00317	-0.00377	-0.00377
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00644	0.00595	0.00577

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00495	-0.00500	-0.00507
	(A2 * A3 * B2 * !Y)	0.01353	0.01357	0.01345
	(A2 * A3 * B1 * !B2 * !Y)	0.00433	0.00428	0.00422
	(A2 * A3 * B1 * !B2 * !Y)	0.02282	0.02285	0.02273
	(A2 * !B1 * !B2 * Y)	-0.00723	-0.00729	-0.00724
	(A2 * !B1 * !B2 * Y)	0.01116	0.01126	0.01118
	(A2 * !A3 * B2 * !Y)	0.00379	0.00352	0.00221
	(A2 * !A3 * B2 * !Y)	0.02266	0.02252	0.02113
	(A2 * !A3 * B1 * !B2 * !Y)	0.01307	0.01280	0.01150
	(A2 * !A3 * B1 * !B2 * !Y)	0.03194	0.03180	0.03041
	(!A2 * A3 * B2 * !Y)	0.01104	0.01059	0.00794
	(!A2 * A3 * B2 * !Y)	0.03035	0.03007	0.02729
	(!A2 * A3 * B1 * !B2 * !Y)	0.02031	0.01986	0.01722
	(!A2 * A3 * B1 * !B2 * !Y)	0.03962	0.03934	0.03656
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00724	-0.00727	-0.00724
	(!A2 * A3 * !B1 * !B2 * Y)	0.01114	0.01120	0.01115
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00597	-0.00715	-0.00708
	(!A2 * !A3 * !B1 * !B2 * Y)	0.01258	0.01155	0.01125

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)**	0.00308	0.00312	0.00326
	(A1 * A3 * B2 * !Y)	-0.00086	-0.00085	-0.00065
	(A1 * A3 * B1 * !B2 * !Y)	0.00540	0.00545	0.00559
	(A1 * A3 * B1 * !B2 * !Y)	0.00146	0.00148	0.00167
	(A1 * A3 * !B1 * !B2 * Y)	0.00221	0.00222	0.00221
	(A1 * A3 * !B1 * !B2 * Y)	-0.00192	-0.00192	-0.00188
	(A1 * !A3 * B2 * !Y)	0.00285	0.00291	0.00336
	(A1 * !A3 * B2 * !Y)	-0.00044	-0.00046	0.00005
	(A1 * !A3 * B1 * !B2 * !Y)	0.00518	0.00524	0.00569
	(A1 * !A3 * B1 * !B2 * !Y)	0.00189	0.00187	0.00238
	(A1 * !A3 * !B1 * !B2 * Y)	0.00222	0.00223	0.00221
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00245	-0.00245	-0.00243
	(!A1 * A3 * B2 * !Y)	0.00386	0.00347	0.00638
	(!A1 * A3 * B2 * !Y)	-0.00089	-0.00128	0.00168
	(!A1 * A3 * B1 * !B2 * !Y)	0.00618	0.00579	0.00871
	(!A1 * A3 * B1 * !B2 * !Y)	0.00144	0.00104	0.00401
	(!A1 * A3 * !B1 * !B2 * Y)	0.00222	0.00223	0.00221
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00245	-0.00245	-0.00243
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00221	0.00222	0.00220
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00243	-0.00244	-0.00245

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00615	0.00626	0.00644
	(A1 * A3 * B2 * !Y)	-0.00150	-0.00142	-0.00112
	(A1 * A3 * B1 * !B2 * !Y)	0.01079	0.01090	0.01108
	(A1 * A3 * B1 * !B2 * !Y)	0.00314	0.00322	0.00352
	(A1 * A3 * !B1 * !B2 * Y)	0.00435	0.00437	0.00433
	(A1 * A3 * !B1 * !B2 * Y)	-0.00367	-0.00367	-0.00356
	(A1 * !A3 * B2 * !Y)	0.00588	0.00596	0.00673
	(A1 * !A3 * B2 * !Y)	-0.00028	-0.00028	0.00055
	(A1 * !A3 * B1 * !B2 * !Y)	0.01052	0.01060	0.01138
	(A1 * !A3 * B1 * !B2 * !Y)	0.00436	0.00436	0.00519
	(A1 * !A3 * !B1 * !B2 * Y)	0.00434	0.00433	0.00433
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00471	-0.00469	-0.00469
	(!A1 * A3 * B2 * !Y)	0.00800	0.00698	0.01268
	(!A1 * A3 * B2 * !Y)	-0.00123	-0.00228	0.00355
	(!A1 * A3 * B1 * !B2 * !Y)	0.01264	0.01162	0.01732
	(!A1 * A3 * B1 * !B2 * !Y)	0.00341	0.00237	0.00819
	(!A1 * A3 * !B1 * !B2 * Y)	0.00435	0.00438	0.00433
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00472	-0.00473	-0.00469
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00432	0.00437	0.00430
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00469	-0.00473	-0.00472

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.01241	0.01262	0.01308
	(A1 * A3 * B2 * !Y)	-0.00311	-0.00296	-0.00230
	(A1 * A3 * B1 * !B2 * !Y)	0.02169	0.02191	0.02236
	(A1 * A3 * B1 * !B2 * !Y)	0.00617	0.00632	0.00699
	(A1 * A3 * !B1 * !B2 * Y)	0.00890	0.00895	0.00889
	(A1 * A3 * !B1 * !B2 * Y)	-0.00735	-0.00737	-0.00716
	(A1 * !A3 * B2 * !Y)	0.01169	0.01186	0.01358
	(A1 * !A3 * B2 * !Y)	-0.00089	-0.00092	0.00090
	(A1 * !A3 * B1 * !B2 * !Y)	0.02097	0.02115	0.02287
	(A1 * !A3 * B1 * !B2 * !Y)	0.00839	0.00836	0.01018
	(A1 * !A3 * !B1 * !B2 * Y)	0.00895	0.00890	0.00890
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00960	-0.00953	-0.00953
	(!A1 * A3 * B2 * !Y)	0.01607	0.01409	0.02549
	(!A1 * A3 * B2 * !Y)	-0.00280	-0.00479	0.00685
	(!A1 * A3 * B1 * !B2 * !Y)	0.02535	0.02338	0.03476
	(!A1 * A3 * B1 * !B2 * !Y)	0.00648	0.00449	0.01612
	(!A1 * A3 * !B1 * !B2 * Y)	0.00894	0.00899	0.00889
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00961	-0.00960	-0.00953
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00890	0.00894	0.00885
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00954	-0.00957	-0.00960

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)**	-0.00161	-0.00162	-0.00150
	(A1 * A3 * B2 * !Y)	0.00243	0.00243	0.00238
	(A1 * A3 * B1 * !B2 * !Y)	0.00071	0.00071	0.00082
	(A1 * A3 * B1 * !B2 * !Y)	0.00476	0.00476	0.00471
	(A1 * A3 * !B1 * !B2 * Y)	-0.00179	-0.00180	-0.00180
	(A1 * A3 * !B1 * !B2 * Y)	0.00247	0.00247	0.00230
	(A1 * !A3 * B2 * !Y)	0.00105	0.00095	-0.00027
	(A1 * !A3 * B2 * !Y)	0.00439	0.00430	0.00307
	(A1 * !A3 * B1 * !B2 * !Y)	0.00338	0.00327	0.00205
	(A1 * !A3 * B1 * !B2 * !Y)	0.00671	0.00662	0.00540
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00180	-0.00180	-0.00180
	(A1 * !A3 * !B1 * !B2 * Y)	0.00285	0.00285	0.00285
	(!A1 * A3 * B2 * !Y)	0.00279	0.00267	0.00205
	(!A1 * A3 * B2 * !Y)	0.00751	0.00742	0.00677
	(!A1 * A3 * B1 * !B2 * !Y)	0.00511	0.00500	0.00438
	(!A1 * A3 * B1 * !B2 * !Y)	0.00983	0.00975	0.00910
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00179	-0.00180	-0.00180
	(!A1 * A3 * !B1 * !B2 * Y)	0.00283	0.00286	0.00285
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00148	-0.00177	-0.00175
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00317	0.00294	0.00287

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00318	-0.00318	-0.00297
	(A1 * A3 * B2 * !Y)	0.00459	0.00459	0.00453
	(A1 * A3 * B1 * !B2 * !Y)	0.00146	0.00147	0.00167
	(A1 * A3 * B1 * !B2 * !Y)	0.00923	0.00923	0.00917
	(A1 * A3 * !B1 * !B2 * Y)	-0.00350	-0.00353	-0.00350
	(A1 * A3 * !B1 * !B2 * Y)	0.00473	0.00475	0.00442
	(A1 * !A3 * B2 * !Y)	0.00207	0.00188	-0.00055
	(A1 * !A3 * B2 * !Y)	0.00835	0.00817	0.00573
	(A1 * !A3 * B1 * !B2 * !Y)	0.00672	0.00652	0.00409
	(A1 * !A3 * B1 * !B2 * !Y)	0.01300	0.01281	0.01038
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00350	-0.00353	-0.00350
	(A1 * !A3 * !B1 * !B2 * Y)	0.00550	0.00554	0.00552
	(!A1 * A3 * B2 * !Y)	0.00564	0.00542	0.00413
	(!A1 * A3 * B2 * !Y)	0.01481	0.01460	0.01331
	(!A1 * A3 * B1 * !B2 * !Y)	0.01028	0.01005	0.00876
	(!A1 * A3 * B1 * !B2 * !Y)	0.01944	0.01924	0.01795
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00349	-0.00353	-0.00350
	(!A1 * A3 * !B1 * !B2 * Y)	0.00550	0.00557	0.00552
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00283	-0.00350	-0.00343
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00622	0.00566	0.00555

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00651	-0.00656	-0.00611
	(A1 * A3 * B2 * !Y)	0.00926	0.00933	0.00914
	(A1 * A3 * B1 * !B2 * !Y)	0.00278	0.00273	0.00317
	(A1 * A3 * B1 * !B2 * !Y)	0.01855	0.01862	0.01842
	(A1 * A3 * !B1 * !B2 * Y)	-0.00724	-0.00731	-0.00724
	(A1 * A3 * !B1 * !B2 * Y)	0.00954	0.00958	0.00888
	(A1 * !A3 * B2 * !Y)	0.00396	0.00357	-0.00129
	(A1 * !A3 * B2 * !Y)	0.01686	0.01648	0.01160
	(A1 * !A3 * B1 * !B2 * !Y)	0.01324	0.01285	0.00800
	(A1 * !A3 * B1 * !B2 * !Y)	0.02614	0.02576	0.02088
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00721	-0.00723	-0.00724
	(A1 * !A3 * !B1 * !B2 * Y)	0.01113	0.01115	0.01118
	(!A1 * A3 * B2 * !Y)	0.01096	0.01050	0.00798
	(!A1 * A3 * B2 * !Y)	0.02969	0.02930	0.02672
	(!A1 * A3 * B1 * !B2 * !Y)	0.02023	0.01977	0.01725
	(!A1 * A3 * B1 * !B2 * !Y)	0.03895	0.03856	0.03599
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00724	-0.00727	-0.00724
	(!A1 * A3 * !B1 * !B2 * Y)	0.01118	0.01123	0.01119
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00587	-0.00715	-0.00707
	(!A1 * !A3 * !B1 * !B2 * Y)	0.01262	0.01154	0.01126

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00256	0.00259	0.00259
	(A2 * B2 * !Y)	-0.00053	-0.00054	-0.00050
	(A2 * B1 * !B2 * !Y)	0.00489	0.00492	0.00492
	(A2 * B1 * !B2 * !Y)	0.00180	0.00179	0.00182
	(A2 * !B1 * !B2 * Y)	0.00221	0.00222	0.00220
	(A2 * !B1 * !B2 * Y)	-0.00230	-0.00231	-0.00229
	(A1 * !A2 * B2 * !Y)	0.00258	0.00261	0.00282
	(A1 * !A2 * B2 * !Y)	0.00003	0.00003	0.00024
	(A1 * !A2 * B1 * !B2 * !Y)	0.00491	0.00494	0.00515
	(A1 * !A2 * B1 * !B2 * !Y)	0.00235	0.00236	0.00257
	(A1 * !A2 * !B1 * !B2 * Y)	0.00221	0.00221	0.00220
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00230	-0.00230	-0.00228
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00220	0.00221	0.00219
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00229	-0.00230	-0.00231
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00562	0.00568	0.00564
	(A2 * B2 * !Y)	-0.00102	-0.00104	-0.00097
	(A2 * B1 * !B2 * !Y)	0.01026	0.01033	0.01029
	(A2 * B1 * !B2 * !Y)	0.00362	0.00361	0.00368
	(A2 * !B1 * !B2 * Y)	0.00430	0.00431	0.00431
	(A2 * !B1 * !B2 * Y)	-0.00503	-0.00504	-0.00503
	(A1 * !A2 * B2 * !Y)	0.00565	0.00570	0.00607
	(A1 * !A2 * B2 * !Y)	0.00015	0.00016	0.00052
	(A1 * !A2 * B1 * !B2 * !Y)	0.01030	0.01034	0.01072
	(A1 * !A2 * B1 * !B2 * !Y)	0.00480	0.00481	0.00517
	(A1 * !A2 * !B1 * !B2 * Y)	0.00429	0.00436	0.00431
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00502	-0.00507	-0.00501
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00432	0.00434	0.00428
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00505	-0.00507	-0.00507

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.01071	0.01083	0.01077
	(A2 * B2 * !Y)	-0.00201	-0.00204	-0.00189
	(A2 * B1 * !B2 * !Y)	0.02000	0.02012	0.02006
	(A2 * B1 * !B2 * !Y)	0.00728	0.00725	0.00740
	(A2 * !B1 * !B2 * Y)	0.00839	0.00843	0.00844
	(A2 * !B1 * !B2 * Y)	-0.00970	-0.00974	-0.00972
	(A1 * !A2 * B2 * !Y)	0.01079	0.01087	0.01163
	(A1 * !A2 * B2 * !Y)	0.00033	0.00037	0.00113
	(A1 * !A2 * B1 * !B2 * !Y)	0.02001	0.02017	0.02092
	(A1 * !A2 * B1 * !B2 * !Y)	0.00969	0.00966	0.01042
	(A1 * !A2 * !B1 * !B2 * Y)	0.00841	0.00852	0.00843
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00971	-0.00979	-0.00968
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00843	0.00840	0.00839
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00974	-0.00971	-0.00979

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00113	-0.00116	-0.00124
	(A2 * B2 * !Y)	0.00198	0.00199	0.00190
	(A2 * B1 * !B2 * !Y)	0.00119	0.00117	0.00109
	(A2 * B1 * !B2 * !Y)	0.00431	0.00432	0.00423
	(A2 * !B1 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(A2 * !B1 * !B2 * Y)	0.00269	0.00271	0.00271
	(A1 * !A2 * B2 * !Y)	0.00173	0.00165	0.00062
	(A1 * !A2 * B2 * !Y)	0.00447	0.00442	0.00340
	(A1 * !A2 * B1 * !B2 * !Y)	0.00405	0.00398	0.00295
	(A1 * !A2 * B1 * !B2 * !Y)	0.00680	0.00674	0.00573
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !B2 * Y)	0.00269	0.00271	0.00270
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00148	-0.00176	-0.00174
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00302	0.00279	0.00272
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00270	-0.00275	-0.00295
	(A2 * B2 * !Y)	0.00392	0.00394	0.00374
	(A2 * B1 * !B2 * !Y)	0.00194	0.00189	0.00168
	(A2 * B1 * !B2 * !Y)	0.00856	0.00858	0.00838
	(A2 * !B1 * !B2 * Y)	-0.00347	-0.00349	-0.00348
	(A2 * !B1 * !B2 * Y)	0.00584	0.00587	0.00586
	(A1 * !A2 * B2 * !Y)	0.00308	0.00294	0.00095
	(A1 * !A2 * B2 * !Y)	0.00900	0.00889	0.00692
	(A1 * !A2 * B1 * !B2 * !Y)	0.00772	0.00757	0.00558
	(A1 * !A2 * B1 * !B2 * !Y)	0.01364	0.01353	0.01155
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00348	-0.00351	-0.00348
	(A1 * !A2 * !B1 * !B2 * Y)	0.00583	0.00588	0.00584
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00284	-0.00352	-0.00341
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00654	0.00589	0.00590

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00485	-0.00495	-0.00536
	(A2 * B2 * !Y)	0.00781	0.00786	0.00747
	(A2 * B1 * !B2 * !Y)	0.00442	0.00432	0.00391
	(A2 * B1 * !B2 * !Y)	0.01710	0.01714	0.01675
	(A2 * !B1 * !B2 * Y)	-0.00676	-0.00680	-0.00678
	(A2 * !B1 * !B2 * Y)	0.01134	0.01140	0.01138
	(A1 * !A2 * B2 * !Y)	0.00662	0.00632	0.00233
	(A1 * !A2 * B2 * !Y)	0.01786	0.01766	0.01367
	(A1 * !A2 * B1 * !B2 * !Y)	0.01590	0.01561	0.01160
	(A1 * !A2 * B1 * !B2 * !Y)	0.02714	0.02692	0.02294
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00677	-0.00684	-0.00678
	(A1 * !A2 * !B1 * !B2 * Y)	0.01132	0.01142	0.01135
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00559	-0.00692	-0.00665
	(!A1 * !A2 * !B1 * !B2 * Y)	0.01263	0.01156	0.01145

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00361	0.00338	0.00640
	(A3 * B2 * !Y)	-0.00116	-0.00139	0.00164
	(A2 * !A3 * B2 * !Y)	0.00376	0.00353	0.00655
	(A2 * !A3 * B2 * !Y)	-0.00101	-0.00124	0.00179
	(A1 * !A2 * !A3 * B2 * !Y)	0.00590	0.00567	0.00869
	(A1 * !A2 * !A3 * B2 * !Y)	0.00113	0.00091	0.00394
	(!A1 * !A2 * !A3 * B2 * Y)	0.00085	0.00085	0.00086
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00293	-0.00293	-0.00288
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00104	0.00104	0.00090
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00255	-0.00258	-0.00280

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00733	0.00659	0.01240
	(A3 * B2 * !Y)	-0.00178	-0.00257	0.00333
	(A2 * !A3 * B2 * !Y)	0.00763	0.00689	0.01270
	(A2 * !A3 * B2 * !Y)	-0.00148	-0.00226	0.00363
	(A1 * !A2 * !A3 * B2 * !Y)	0.01191	0.01118	0.01699
	(A1 * !A2 * !A3 * B2 * !Y)	0.00281	0.00202	0.00791
	(!A1 * !A2 * !A3 * B2 * Y)	0.00141	0.00142	0.00144
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00575	-0.00579	-0.00567
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00178	0.00177	0.00149
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00504	-0.00506	-0.00556
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.01482	0.01345	0.02511
	(A3 * B2 * !Y)	-0.00384	-0.00530	0.00652
	(A2 * !A3 * B2 * !Y)	0.01542	0.01405	0.02571
	(A2 * !A3 * B2 * !Y)	-0.00324	-0.00469	0.00713
	(A1 * !A2 * !A3 * B2 * !Y)	0.02399	0.02263	0.03427
	(A1 * !A2 * !A3 * B2 * !Y)	0.00533	0.00389	0.01568
	(!A1 * !A2 * !A3 * B2 * Y)	0.00283	0.00284	0.00287
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01195	-0.01200	-0.01177
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00355	0.00354	0.00299
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.01053	-0.01058	-0.01154

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00249	0.00238	0.00176
	(A3 * B2 * !Y)	0.00725	0.00719	0.00654
	(A2 * !A3 * B2 * !Y)	0.00264	0.00253	0.00192
	(A2 * !A3 * B2 * !Y)	0.00740	0.00734	0.00669
	(A1 * !A2 * !A3 * B2 * !Y)	0.00478	0.00467	0.00406
	(A1 * !A2 * !A3 * B2 * !Y)	0.00955	0.00949	0.00883
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00034	-0.00034	-0.00038
	(!A1 * !A2 * !A3 * B2 * Y)	0.00342	0.00344	0.00335
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00061	-0.00061	-0.00059
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00301	0.00305	0.00301
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00536	0.00515	0.00387
	(A3 * B2 * !Y)	0.01450	0.01430	0.01299
	(A2 * !A3 * B2 * !Y)	0.00567	0.00546	0.00417
	(A2 * !A3 * B2 * !Y)	0.01480	0.01461	0.01330
	(A1 * !A2 * !A3 * B2 * !Y)	0.00995	0.00972	0.00846
	(A1 * !A2 * !A3 * B2 * !Y)	0.01908	0.01893	0.01758
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00041	-0.00041	-0.00047
	(!A1 * !A2 * !A3 * B2 * Y)	0.00677	0.00680	0.00661
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00088	-0.00090	-0.00086
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00595	0.00606	0.00599
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.01026	0.00983	0.00731
	(A3 * B2 * !Y)	0.02898	0.02862	0.02600
	(A2 * !A3 * B2 * !Y)	0.01086	0.01042	0.00792
	(A2 * !A3 * B2 * !Y)	0.02959	0.02927	0.02661
	(A1 * !A2 * !A3 * B2 * !Y)	0.01941	0.01903	0.01647
	(A1 * !A2 * !A3 * B2 * !Y)	0.03814	0.03770	0.03516
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00080	-0.00081	-0.00095
	(!A1 * !A2 * !A3 * B2 * Y)	0.01390	0.01391	0.01366
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00178	-0.00181	-0.00172
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01233	0.01254	0.01239

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00257	0.00263	0.00322
	(A3 * B1 * !Y)	-0.00057	-0.00058	0.00004
	(A2 * !A3 * B1 * !Y)	0.00272	0.00279	0.00337
	(A2 * !A3 * B1 * !Y)	-0.00042	-0.00042	0.00019
	(A1 * !A2 * !A3 * B1 * !Y)	0.00487	0.00489	0.00552
	(A1 * !A2 * !A3 * B1 * !Y)	0.00173	0.00174	0.00234
	(!A1 * !A2 * !A3 * B1 * Y)	0.00075	0.00075	0.00075
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00295	-0.00297	-0.00290
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00093	0.00092	0.00078
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00259	-0.00260	-0.00284
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00519	0.00531	0.00605
	(A3 * B1 * !Y)	-0.00107	-0.00108	-0.00025
	(A2 * !A3 * B1 * !Y)	0.00550	0.00562	0.00637
	(A2 * !A3 * B1 * !Y)	-0.00074	-0.00077	0.00006
	(A1 * !A2 * !A3 * B1 * !Y)	0.00982	0.00991	0.01067
	(A1 * !A2 * !A3 * B1 * !Y)	0.00351	0.00352	0.00436
	(!A1 * !A2 * !A3 * B1 * Y)	0.00148	0.00147	0.00150
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00589	-0.00587	-0.00579
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00185	0.00184	0.00155
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00517	-0.00518	-0.00567

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.01015	0.01024	0.01209
	(A3 * B1 * !Y)	-0.00209	-0.00206	-0.00027
	(A2 * !A3 * B1 * !Y)	0.01078	0.01087	0.01271
	(A2 * !A3 * B1 * !Y)	-0.00148	-0.00145	0.00035
	(A1 * !A2 * !A3 * B1 * !Y)	0.01936	0.01946	0.02130
	(A1 * !A2 * !A3 * B1 * !Y)	0.00711	0.00712	0.00893
	(!A1 * !A2 * !A3 * B1 * Y)	0.00286	0.00286	0.00289
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01171	-0.01169	-0.01149
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00357	0.00358	0.00301
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.01022	-0.01032	-0.01125

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	0.00118	0.00106	-0.00028
	(A3 * B1 * !Y)	0.00436	0.00427	0.00291
	(A2 * !A3 * B1 * !Y)	0.00132	0.00121	-0.00013
	(A2 * !A3 * B1 * !Y)	0.00453	0.00442	0.00307
	(A1 * !A2 * !A3 * B1 * !Y)	0.00346	0.00336	0.00202
	(A1 * !A2 * !A3 * B1 * !Y)	0.00668	0.00657	0.00521
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00024	-0.00024	-0.00027
	(!A1 * !A2 * !A3 * B1 * Y)	0.00345	0.00345	0.00337
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00048	-0.00049	-0.00047
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00303	0.00309	0.00305

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	0.00265	0.00244	-0.00017
	(A3 * B1 * !Y)	0.00900	0.00881	0.00619
	(A2 * !A3 * B1 * !Y)	0.00295	0.00273	0.00013
	(A2 * !A3 * B1 * !Y)	0.00930	0.00912	0.00649
	(A1 * !A2 * !A3 * B1 * !Y)	0.00724	0.00702	0.00440
	(A1 * !A2 * !A3 * B1 * !Y)	0.01358	0.01340	0.01077
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00046	-0.00048	-0.00053
	(!A1 * !A2 * !A3 * B1 * Y)	0.00686	0.00691	0.00672
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00095	-0.00097	-0.00092
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00606	0.00616	0.00609
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00532	0.00487	-0.00038
	(A3 * B1 * !Y)	0.01776	0.01740	0.01210
	(A2 * !A3 * B1 * !Y)	0.00593	0.00545	0.00022
	(A2 * !A3 * B1 * !Y)	0.01836	0.01803	0.01270
	(A1 * !A2 * !A3 * B1 * !Y)	0.01448	0.01406	0.00877
	(A1 * !A2 * !A3 * B1 * !Y)	0.02694	0.02656	0.02126
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00083	-0.00086	-0.00097
	(!A1 * !A2 * !A3 * B1 * Y)	0.01364	0.01372	0.01336
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00179	-0.00184	-0.00175
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01201	0.01223	0.01210

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00272	0.00265	0.00262	0.00263	0.00267	1.68953
sky130_fd_sc_hs__o32a_2	0.00285	0.00280	0.00283	0.00302	0.00282	3.14791
sky130_fd_sc_hs__o32a_4	0.00489	0.00522	0.00485	0.00645	0.00512	6.13985

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	531.27300	1172.50000
sky130_fd_sc_hs__o32a_2	0.00000	712.02300	1184.79000
sky130_fd_sc_hs__o32a_4	0.00000	1434.88000	2360.54000

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)	0.08128	0.44294	5.38666
	A2->X (RR)	0.07783	0.43387	5.18998
	A3->X (RR)	0.06818	0.41493	5.05209
	B1->X (RR)	0.07241	0.48099	6.10840
	B2->X (RR)	0.06332	0.45490	5.81404
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.08330	0.36431	5.02279
	A2->X (RR)	0.08061	0.35733	4.84929
	A3->X (RR)	0.07202	0.34152	4.71798
	B1->X (RR)	0.07504	0.40547	5.74232
	B2->X (RR)	0.06635	0.37973	5.43946
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.09775	0.33060	5.35308
	A2->X (RR)	0.08993	0.31368	5.10473
	A3->X (RR)	0.07667	0.29159	4.92098
	B1->X (RR)	0.09032	0.37988	6.06810
	B2->X (RR)	0.07603	0.34901	5.76675

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.14168	0.54078	6.10474
	A2->X (FF)	0.13209	0.56656	6.45182
	A3->X (FF)	0.11248	0.58967	6.59376
	B1->X (FF)	0.07340	0.45600	5.83290
	B2->X (FF)	0.06336	0.47508	6.10911
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.17442	0.53985	6.05152
	A2->X (FF)	0.16391	0.57528	6.38176
	A3->X (FF)	0.14506	0.58919	6.52936
	B1->X (FF)	0.09388	0.44151	5.73138
	B2->X (FF)	0.08296	0.46542	6.01621
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.18298	0.51257	6.37921
	A2->X (FF)	0.17136	0.53453	6.54240
	A3->X (FF)	0.14258	0.55419	6.69000
	B1->X (FF)	0.09001	0.39361	5.82128
	B2->X (FF)	0.07686	0.41404	6.09883

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.04092	0.04988	0.23381
	A1	0.03020	0.03915	0.22297
	A2	0.03890	0.04789	0.21273
	A2	0.02970	0.03869	0.20305
	A3	0.04252	0.05220	0.21877
	A3	0.03467	0.04432	0.21855
	B1	0.02248	0.03877	0.29808
	B1	0.01512	0.03141	0.29056
	B2	0.04082	0.05604	0.29497
	B2	0.03509	0.05032	0.28908
sky130_fd_sc_hs__o32a_2	A1	0.04683	0.05557	0.24414
	A1	0.03531	0.04406	0.23151
	A2	0.04466	0.05350	0.22145
	A2	0.03466	0.04350	0.21068
	A3	0.04788	0.05749	0.22649
	A3	0.03917	0.04876	0.21669
	B1	0.04143	0.05406	0.29836
	B1	0.03453	0.04924	0.29681
	B2	0.04578	0.06089	0.30291
	B2	0.03959	0.05470	0.29634

sky130_fd_sc_hs__o32a_4	**A1**	0.09594	0.11539	0.54951
	A1	0.07496	0.09453	0.52731
	A2	0.08989	0.10937	0.49430
	A2	0.07143	0.09094	0.47338
	A3	0.09354	0.11508	0.49275
	A3	0.07860	0.10016	0.47549
	B1	0.05513	0.08686	0.57769
	B1	0.03970	0.07141	0.56178
	B2	0.09019	0.11928	0.56762
	B2	0.07934	0.10847	0.55630

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.02020	0.02667	0.22477
	A1	0.03227	0.03874	0.23559
	A2	0.02038	0.02668	0.21394
	A2	0.03092	0.03723	0.22404
	A3	0.02037	0.02815	0.21711
	A3	0.02958	0.03733	0.22649
	B1	0.01497	0.02876	0.27362
	B1	0.02231	0.03606	0.28035
	B2	0.01507	0.02989	0.27267
	B2	0.02089	0.03568	0.27718

sky130_fd_sc_hs__o32a_2	**A1**	0.04337	0.04163	0.23877
	A1	0.05621	0.05438	0.24830
	A2	0.04365	0.04166	0.22606
	A2	0.05499	0.05301	0.23442
	A3	0.04366	0.04326	0.22810
	A3	0.05371	0.05331	0.23714
	B1	0.03178	0.04136	0.27814
	B1	0.03995	0.04927	0.28637
	B2	0.03206	0.04280	0.28038
	B2	0.04368	0.05151	0.26387
sky130_fd_sc_hs__o32a_4	**A1**	0.09170	0.08675	0.49666
	A1	0.11558	0.11062	0.51627
	A2	0.09187	0.08662	0.44360
	A2	0.11323	0.10792	0.46474
	A3	0.09197	0.09000	0.44629
	A3	0.10980	0.10771	0.46309
	B1	0.06426	0.08321	0.56176
	B1	0.07966	0.09858	0.57633
	B2	0.07087	0.08745	0.52954
	B2	0.08758	0.10379	0.54141

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)**	0.00297	0.00273	0.00278
	(A2 * A3 * B2 * X)	-0.00130	-0.00153	-0.00147
	(A2 * A3 * B1 * !B2 * X)	0.00541	0.00518	0.00522
	(A2 * A3 * B1 * !B2 * X)	0.00115	0.00092	0.00098
	(A2 * !B1 * !B2 * !X)	0.00661	0.00662	0.00662
	(A2 * !B1 * !B2 * !X)	0.00237	0.00238	0.00238
	(A2 * !A3 * B2 * X)	0.00358	0.00332	0.00500
	(A2 * !A3 * B2 * X)	-0.00077	-0.00108	0.00070
	(A2 * !A3 * B1 * !B2 * X)	0.00603	0.00576	0.00745
	(A2 * !A3 * B1 * !B2 * X)	0.00168	0.00137	0.00314
	(!A2 * A3 * B2 * X)	0.00404	0.00377	0.00685
	(!A2 * A3 * B2 * X)	-0.00044	-0.00075	0.00248
	(!A2 * A3 * B1 * !B2 * X)	0.00648	0.00622	0.00929
	(!A2 * A3 * B1 * !B2 * X)	0.00201	0.00169	0.00492
	(!A2 * A3 * !B1 * !B2 * !X)	0.00661	0.00664	0.00662
	(!A2 * A3 * !B1 * !B2 * !X)	0.00238	0.00236	0.00239
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00665	0.00665	0.00660
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00236	0.00236	0.00232

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00329	0.00305	0.00310
	(A2 * A3 * B2 * X)	-0.00120	-0.00143	-0.00137
	(A2 * A3 * B1 * !B2 * X)	0.00573	0.00550	0.00554
	(A2 * A3 * B1 * !B2 * X)	0.00125	0.00102	0.00108
	(A2 * !B1 * !B2 * !X)	0.01121	0.01121	0.01121
	(A2 * !B1 * !B2 * !X)	0.00675	0.00675	0.00675
	(A2 * !A3 * B2 * X)	0.00390	0.00364	0.00533
	(A2 * !A3 * B2 * X)	-0.00067	-0.00098	0.00080
	(A2 * !A3 * B1 * !B2 * X)	0.00635	0.00609	0.00777
	(A2 * !A3 * B1 * !B2 * X)	0.00178	0.00147	0.00324
	(!A2 * A3 * B2 * X)	0.00436	0.00410	0.00717
	(!A2 * A3 * B2 * X)	-0.00034	-0.00065	0.00258
	(!A2 * A3 * B1 * !B2 * X)	0.00681	0.00654	0.00962
	(!A2 * A3 * B1 * !B2 * X)	0.00211	0.00179	0.00502
	(!A2 * A3 * !B1 * !B2 * !X)	0.01119	0.01124	0.01121
	(!A2 * A3 * !B1 * !B2 * !X)	0.00675	0.00673	0.00676
	(!A2 * !A3 * !B1 * !B2 * !X)	0.01121	0.01122	0.01119
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00672	0.00673	0.00672

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00581	0.00526	0.00527
	(A2 * A3 * B2 * X)	-0.00227	-0.00286	-0.00276
	(A2 * A3 * B1 * !B2 * X)	0.01070	0.01015	0.01016
	(A2 * A3 * B1 * !B2 * X)	0.00262	0.00203	0.00213
	(A2 * !B1 * !B2 * !X)	0.02230	0.02234	0.02232
	(A2 * !B1 * !B2 * !X)	0.01428	0.01428	0.01430
	(A2 * !A3 * B2 * X)	0.00728	0.00655	0.00978
	(A2 * !A3 * B2 * X)	-0.00103	-0.00179	0.00160
	(A2 * !A3 * B1 * !B2 * X)	0.01217	0.01144	0.01467
	(A2 * !A3 * B1 * !B2 * X)	0.00387	0.00310	0.00649
	(!A2 * A3 * B2 * X)	0.00824	0.00744	0.01340
	(!A2 * A3 * B2 * X)	-0.00036	-0.00117	0.00509
	(!A2 * A3 * B1 * !B2 * X)	0.01313	0.01233	0.01829
	(!A2 * A3 * B1 * !B2 * X)	0.00453	0.00372	0.00997
	(!A2 * A3 * !B1 * !B2 * !X)	0.02230	0.02234	0.02232
	(!A2 * A3 * !B1 * !B2 * !X)	0.01426	0.01427	0.01432
	(!A2 * !A3 * !B1 * !B2 * !X)	0.02235	0.02237	0.02226
	(!A2 * !A3 * !B1 * !B2 * !X)	0.01422	0.01422	0.01415

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)**	-0.00123	-0.00125	-0.00125
	(A2 * A3 * B2 * X)	0.00303	0.00305	0.00301
	(A2 * A3 * B1 * !B2 * X)	0.00122	0.00120	0.00119
	(A2 * A3 * B1 * !B2 * X)	0.00547	0.00550	0.00545
	(A2 * !B1 * !B2 * !X)	0.00319	0.00319	0.00319
	(A2 * !B1 * !B2 * !X)	0.00743	0.00744	0.00743
	(A2 * !A3 * B2 * X)	0.00111	0.00102	0.00067
	(A2 * !A3 * B2 * X)	0.00544	0.00541	0.00502
	(A2 * !A3 * B1 * !B2 * X)	0.00355	0.00347	0.00311
	(A2 * !A3 * B1 * !B2 * X)	0.00788	0.00786	0.00747
	(!A2 * A3 * B2 * X)	0.00345	0.00331	0.00247
	(!A2 * A3 * B2 * X)	0.00790	0.00780	0.00693
	(!A2 * A3 * B1 * !B2 * X)	0.00589	0.00575	0.00491
	(!A2 * A3 * B1 * !B2 * X)	0.01034	0.01024	0.00937
	(!A2 * A3 * !B1 * !B2 * !X)	0.00319	0.00318	0.00319
	(!A2 * A3 * !B1 * !B2 * !X)	0.00742	0.00745	0.00743
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00332	0.00309	0.00321
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00761	0.00742	0.00745

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00135	-0.00135	-0.00137
	(A2 * A3 * B2 * X)	0.00314	0.00313	0.00311
	(A2 * A3 * B1 * !B2 * X)	0.00110	0.00109	0.00107
	(A2 * A3 * B1 * !B2 * X)	0.00558	0.00558	0.00556
	(A2 * !B1 * !B2 * !X)	0.00733	0.00733	0.00733
	(A2 * !B1 * !B2 * !X)	0.01179	0.01180	0.01179
	(A2 * !A3 * B2 * X)	0.00099	0.00091	0.00055
	(A2 * !A3 * B2 * X)	0.00554	0.00551	0.00513
	(A2 * !A3 * B1 * !B2 * X)	0.00343	0.00335	0.00300
	(A2 * !A3 * B1 * !B2 * X)	0.00799	0.00796	0.00757
	(!A2 * A3 * B2 * X)	0.00333	0.00320	0.00235
	(!A2 * A3 * B2 * X)	0.00800	0.00791	0.00704
	(!A2 * A3 * B1 * !B2 * X)	0.00577	0.00564	0.00479
	(!A2 * A3 * B1 * !B2 * X)	0.01044	0.01035	0.00948
	(!A2 * A3 * !B1 * !B2 * !X)	0.00733	0.00732	0.00733
	(!A2 * A3 * !B1 * !B2 * !X)	0.01178	0.01181	0.01179
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00761	0.00735	0.00738
	(!A2 * !A3 * !B1 * !B2 * !X)	0.01208	0.01188	0.01182

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00176	-0.00180	-0.00180
	(A2 * A3 * B2 * X)	0.00629	0.00635	0.00627
	(A2 * A3 * B1 * !B2 * X)	0.00313	0.00309	0.00309
	(A2 * A3 * B1 * !B2 * X)	0.01118	0.01124	0.01116
	(A2 * !B1 * !B2 * !X)	0.01543	0.01540	0.01542
	(A2 * !B1 * !B2 * !X)	0.02343	0.02349	0.02345
	(A2 * !A3 * B2 * X)	0.00282	0.00267	0.00192
	(A2 * !A3 * B2 * X)	0.01108	0.01099	0.01022
	(A2 * !A3 * B1 * !B2 * X)	0.00770	0.00756	0.00681
	(A2 * !A3 * B1 * !B2 * X)	0.01597	0.01587	0.01511
	(!A2 * A3 * B2 * X)	0.00755	0.00729	0.00558
	(!A2 * A3 * B2 * X)	0.01603	0.01582	0.01409
	(!A2 * A3 * B1 * !B2 * X)	0.01242	0.01217	0.01046
	(!A2 * A3 * B1 * !B2 * X)	0.02091	0.02069	0.01897
	(!A2 * A3 * !B1 * !B2 * !X)	0.01542	0.01540	0.01542
	(!A2 * A3 * !B1 * !B2 * !X)	0.02342	0.02347	0.02343
	(!A2 * !A3 * !B1 * !B2 * !X)	0.01580	0.01522	0.01549
	(!A2 * !A3 * !B1 * !B2 * !X)	0.02393	0.02345	0.02351

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)**	0.00286	0.00290	0.00303
	(A1 * A3 * B2 * X)	-0.00055	-0.00053	-0.00035
	(A1 * A3 * B1 * !B2 * X)	0.00530	0.00535	0.00548
	(A1 * A3 * B1 * !B2 * X)	0.00189	0.00192	0.00209
	(A1 * A3 * !B1 * !B2 * !X)	0.00665	0.00666	0.00665
	(A1 * A3 * !B1 * !B2 * !X)	0.00308	0.00307	0.00311
	(A1 * !A3 * B2 * X)	0.00266	0.00271	0.00322
	(A1 * !A3 * B2 * X)	-0.00020	-0.00020	0.00034
	(A1 * !A3 * B1 * !B2 * X)	0.00510	0.00515	0.00566
	(A1 * !A3 * B1 * !B2 * X)	0.00225	0.00224	0.00279
	(A1 * !A3 * !B1 * !B2 * !X)	0.00665	0.00665	0.00662
	(A1 * !A3 * !B1 * !B2 * !X)	0.00259	0.00258	0.00259
	(!A1 * A3 * B2 * X)	0.00359	0.00328	0.00661
	(!A1 * A3 * B2 * X)	-0.00054	-0.00085	0.00252
	(!A1 * A3 * B1 * !B2 * X)	0.00604	0.00573	0.00906
	(!A1 * A3 * B1 * !B2 * X)	0.00191	0.00159	0.00496
	(!A1 * A3 * !B1 * !B2 * !X)	0.00666	0.00667	0.00666
	(!A1 * A3 * !B1 * !B2 * !X)	0.00260	0.00261	0.00262
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00668	0.00670	0.00664
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00261	0.00259	0.00256

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00319	0.00324	0.00337
	(A1 * A3 * B2 * X)	-0.00046	-0.00043	-0.00026
	(A1 * A3 * B1 * !B2 * X)	0.00564	0.00569	0.00581
	(A1 * A3 * B1 * !B2 * X)	0.00199	0.00201	0.00219
	(A1 * A3 * !B1 * !B2 * !X)	0.01124	0.01125	0.01124
	(A1 * A3 * !B1 * !B2 * !X)	0.00742	0.00741	0.00746
	(A1 * !A3 * B2 * X)	0.00299	0.00305	0.00355
	(A1 * !A3 * B2 * X)	-0.00010	-0.00011	0.00044
	(A1 * !A3 * B1 * !B2 * X)	0.00544	0.00550	0.00600
	(A1 * !A3 * B1 * !B2 * X)	0.00234	0.00234	0.00289
	(A1 * !A3 * !B1 * !B2 * !X)	0.01122	0.01122	0.01119
	(A1 * !A3 * !B1 * !B2 * !X)	0.00692	0.00690	0.00691
	(!A1 * A3 * B2 * X)	0.00393	0.00362	0.00695
	(!A1 * A3 * B2 * X)	-0.00044	-0.00076	0.00262
	(!A1 * A3 * B1 * !B2 * X)	0.00638	0.00607	0.00940
	(!A1 * A3 * B1 * !B2 * X)	0.00200	0.00169	0.00506
	(!A1 * A3 * !B1 * !B2 * !X)	0.01125	0.01127	0.01125
	(!A1 * A3 * !B1 * !B2 * !X)	0.00695	0.00696	0.00697
	(!A1 * !A3 * !B1 * !B2 * !X)	0.01123	0.01125	0.01122
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00695	0.00694	0.00694

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00580	0.00592	0.00607
	(A1 * A3 * B2 * X)	-0.00122	-0.00114	-0.00087
	(A1 * A3 * B1 * !B2 * X)	0.01069	0.01081	0.01096
	(A1 * A3 * B1 * !B2 * X)	0.00367	0.00375	0.00402
	(A1 * A3 * !B1 * !B2 * !X)	0.02238	0.02240	0.02238
	(A1 * A3 * !B1 * !B2 * !X)	0.01503	0.01503	0.01515
	(A1 * !A3 * B2 * X)	0.00578	0.00583	0.00668
	(A1 * !A3 * B2 * X)	-0.00016	-0.00015	0.00077
	(A1 * !A3 * B1 * !B2 * X)	0.01067	0.01072	0.01157
	(A1 * !A3 * B1 * !B2 * X)	0.00473	0.00475	0.00567
	(A1 * !A3 * !B1 * !B2 * !X)	0.02233	0.02230	0.02225
	(A1 * !A3 * !B1 * !B2 * !X)	0.01390	0.01386	0.01388
	(!A1 * A3 * B2 * X)	0.00764	0.00688	0.01335
	(!A1 * A3 * B2 * X)	-0.00093	-0.00174	0.00486
	(!A1 * A3 * B1 * !B2 * X)	0.01254	0.01177	0.01824
	(!A1 * A3 * B1 * !B2 * X)	0.00396	0.00315	0.00974
	(!A1 * A3 * !B1 * !B2 * !X)	0.02239	0.02243	0.02240
	(!A1 * A3 * !B1 * !B2 * !X)	0.01397	0.01400	0.01404
	(!A1 * !A3 * !B1 * !B2 * !X)	0.02240	0.02245	0.02231
	(!A1 * !A3 * !B1 * !B2 * !X)	0.01397	0.01393	0.01388

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)**	-0.00138	-0.00138	-0.00129
	(A1 * A3 * B2 * X)	0.00212	0.00212	0.00206
	(A1 * A3 * B1 * !B2 * X)	0.00106	0.00106	0.00116
	(A1 * A3 * B1 * !B2 * X)	0.00456	0.00456	0.00451
	(A1 * A3 * !B1 * !B2 * !X)	0.00317	0.00315	0.00316
	(A1 * A3 * !B1 * !B2 * !X)	0.00686	0.00686	0.00670
	(A1 * !A3 * B2 * X)	0.00126	0.00114	-0.00016
	(A1 * !A3 * B2 * X)	0.00414	0.00404	0.00273
	(A1 * !A3 * B1 * !B2 * X)	0.00370	0.00359	0.00228
	(A1 * !A3 * B1 * !B2 * X)	0.00659	0.00649	0.00518
	(A1 * !A3 * !B1 * !B2 * !X)	0.00321	0.00318	0.00318
	(A1 * !A3 * !B1 * !B2 * !X)	0.00723	0.00723	0.00722
	(!A1 * A3 * B2 * X)	0.00360	0.00347	0.00268
	(!A1 * A3 * B2 * X)	0.00771	0.00760	0.00679
	(!A1 * A3 * B1 * !B2 * X)	0.00604	0.00591	0.00512
	(!A1 * A3 * B1 * !B2 * X)	0.01015	0.01004	0.00923
	(!A1 * A3 * !B1 * !B2 * !X)	0.00316	0.00314	0.00315
	(!A1 * A3 * !B1 * !B2 * !X)	0.00718	0.00721	0.00719
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00333	0.00307	0.00318
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00741	0.00719	0.00721

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00151	-0.00152	-0.00142
	(A1 * A3 * B2 * X)	0.00223	0.00223	0.00217
	(A1 * A3 * B1 * !B2 * X)	0.00093	0.00093	0.00102
	(A1 * A3 * B1 * !B2 * X)	0.00467	0.00467	0.00462
	(A1 * A3 * !B1 * !B2 * !X)	0.00731	0.00730	0.00730
	(A1 * A3 * !B1 * !B2 * !X)	0.01125	0.01125	0.01109
	(A1 * !A3 * B2 * X)	0.00112	0.00101	-0.00029
	(A1 * !A3 * B2 * X)	0.00425	0.00415	0.00284
	(A1 * !A3 * B1 * !B2 * X)	0.00356	0.00345	0.00215
	(A1 * !A3 * B1 * !B2 * X)	0.00670	0.00660	0.00529
	(A1 * !A3 * !B1 * !B2 * !X)	0.00739	0.00734	0.00735
	(A1 * !A3 * !B1 * !B2 * !X)	0.01165	0.01164	0.01163
	(!A1 * A3 * B2 * X)	0.00347	0.00334	0.00254
	(!A1 * A3 * B2 * X)	0.00782	0.00771	0.00690
	(!A1 * A3 * B1 * !B2 * X)	0.00591	0.00578	0.00499
	(!A1 * A3 * B1 * !B2 * X)	0.01026	0.01015	0.00934
	(!A1 * A3 * !B1 * !B2 * !X)	0.00730	0.00728	0.00729
	(!A1 * A3 * !B1 * !B2 * !X)	0.01156	0.01159	0.01157
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00763	0.00734	0.00735
	(!A1 * !A3 * !B1 * !B2 * !X)	0.01191	0.01168	0.01161

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00240	-0.00242	-0.00223
	(A1 * A3 * B2 * X)	0.00471	0.00475	0.00465
	(A1 * A3 * B1 * !B2 * X)	0.00249	0.00247	0.00266
	(A1 * A3 * B1 * !B2 * X)	0.00960	0.00964	0.00954
	(A1 * A3 * !B1 * !B2 * !X)	0.01539	0.01535	0.01537
	(A1 * A3 * !B1 * !B2 * !X)	0.02293	0.02296	0.02263
	(A1 * !A3 * B2 * X)	0.00257	0.00236	-0.00023
	(A1 * !A3 * B2 * X)	0.00857	0.00838	0.00577
	(A1 * !A3 * B1 * !B2 * X)	0.00745	0.00725	0.00466
	(A1 * !A3 * B1 * !B2 * X)	0.01346	0.01326	0.01066
	(A1 * !A3 * !B1 * !B2 * !X)	0.01558	0.01550	0.01550
	(A1 * !A3 * !B1 * !B2 * !X)	0.02395	0.02389	0.02387
	(!A1 * A3 * B2 * X)	0.00746	0.00718	0.00555
	(!A1 * A3 * B2 * X)	0.01600	0.01576	0.01411
	(!A1 * A3 * B1 * !B2 * X)	0.01233	0.01206	0.01043
	(!A1 * A3 * B1 * !B2 * X)	0.02088	0.02064	0.01899
	(!A1 * A3 * !B1 * !B2 * !X)	0.01535	0.01533	0.01535
	(!A1 * A3 * !B1 * !B2 * !X)	0.02371	0.02375	0.02372
	(!A1 * !A3 * !B1 * !B2 * !X)	0.01577	0.01519	0.01543
	(!A1 * !A3 * !B1 * !B2 * !X)	0.02424	0.02375	0.02379

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00243	0.00246	0.00245
	(A2 * B2 * X)	-0.00040	-0.00041	-0.00037
	(A2 * B1 * !B2 * X)	0.00487	0.00491	0.00490
	(A2 * B1 * !B2 * X)	0.00205	0.00204	0.00207
	(A2 * !B1 * !B2 * !X)	0.00663	0.00665	0.00663
	(A2 * !B1 * !B2 * !X)	0.00260	0.00258	0.00259
	(A1 * !A2 * B2 * X)	0.00245	0.00248	0.00271
	(A1 * !A2 * B2 * X)	0.00013	0.00014	0.00036
	(A1 * !A2 * B1 * !B2 * X)	0.00490	0.00493	0.00516
	(A1 * !A2 * B1 * !B2 * X)	0.00258	0.00258	0.00281
	(A1 * !A2 * !B1 * !B2 * !X)	0.00666	0.00664	0.00663
	(A1 * !A2 * !B1 * !B2 * !X)	0.00259	0.00258	0.00260
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00669	0.00670	0.00664
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00260	0.00258	0.00255
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00281	0.00285	0.00283
	(A2 * B2 * X)	-0.00029	-0.00031	-0.00027
	(A2 * B1 * !B2 * X)	0.00526	0.00529	0.00528
	(A2 * B1 * !B2 * X)	0.00215	0.00214	0.00217
	(A2 * !B1 * !B2 * !X)	0.01121	0.01122	0.01119
	(A2 * !B1 * !B2 * !X)	0.00689	0.00686	0.00687
	(A1 * !A2 * B2 * X)	0.00284	0.00286	0.00310
	(A1 * !A2 * B2 * X)	0.00023	0.00024	0.00047
	(A1 * !A2 * B1 * !B2 * X)	0.00528	0.00531	0.00554
	(A1 * !A2 * B1 * !B2 * X)	0.00268	0.00268	0.00291
	(A1 * !A2 * !B1 * !B2 * !X)	0.01123	0.01121	0.01119
	(A1 * !A2 * !B1 * !B2 * !X)	0.00688	0.00687	0.00688
	(!A1 * !A2 * !B1 * !B2 * !X)	0.01124	0.01124	0.01121
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00690	0.00690	0.00688

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00481	0.00484	0.00485
	(A2 * B2 * X)	-0.00057	-0.00058	-0.00054
	(A2 * B1 * !B2 * X)	0.00970	0.00973	0.00974
	(A2 * B1 * !B2 * X)	0.00432	0.00431	0.00435
	(A2 * !B1 * !B2 * !X)	0.02218	0.02219	0.02214
	(A2 * !B1 * !B2 * !X)	0.01432	0.01425	0.01428
	(A1 * !A2 * B2 * X)	0.00485	0.00487	0.00529
	(A1 * !A2 * B2 * X)	0.00050	0.00052	0.00090
	(A1 * !A2 * B1 * !B2 * X)	0.00974	0.00976	0.01018
	(A1 * !A2 * B1 * !B2 * X)	0.00539	0.00541	0.00579
	(A1 * !A2 * !B1 * !B2 * !X)	0.02219	0.02218	0.02215
	(A1 * !A2 * !B1 * !B2 * !X)	0.01433	0.01427	0.01430
	(!A1 * !A2 * !B1 * !B2 * !X)	0.02232	0.02233	0.02219
	(!A1 * !A2 * !B1 * !B2 * !X)	0.01434	0.01430	0.01423

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00100	-0.00102	-0.00110
	(A2 * B2 * X)	0.00184	0.00184	0.00176
	(A2 * B1 * !B2 * X)	0.00144	0.00143	0.00135
	(A2 * B1 * !B2 * X)	0.00428	0.00428	0.00421
	(A2 * !B1 * !B2 * !X)	0.00321	0.00318	0.00318
	(A2 * !B1 * !B2 * !X)	0.00724	0.00722	0.00722
	(A1 * !A2 * B2 * X)	0.00189	0.00180	0.00068
	(A1 * !A2 * B2 * X)	0.00438	0.00431	0.00319
	(A1 * !A2 * B1 * !B2 * X)	0.00433	0.00425	0.00312
	(A1 * !A2 * B1 * !B2 * X)	0.00683	0.00675	0.00563
	(A1 * !A2 * !B1 * !B2 * !X)	0.00320	0.00317	0.00318
	(A1 * !A2 * !B1 * !B2 * !X)	0.00723	0.00722	0.00721
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00333	0.00307	0.00318
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00743	0.00720	0.00722
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00118	-0.00119	-0.00128
	(A2 * B2 * X)	0.00194	0.00194	0.00186
	(A2 * B1 * !B2 * X)	0.00127	0.00125	0.00117
	(A2 * B1 * !B2 * X)	0.00437	0.00438	0.00431
	(A2 * !B1 * !B2 * !X)	0.00740	0.00736	0.00735
	(A2 * !B1 * !B2 * !X)	0.01171	0.01167	0.01167
	(A1 * !A2 * B2 * X)	0.00171	0.00162	0.00050
	(A1 * !A2 * B2 * X)	0.00448	0.00441	0.00329
	(A1 * !A2 * B1 * !B2 * X)	0.00415	0.00407	0.00295
	(A1 * !A2 * B1 * !B2 * X)	0.00693	0.00686	0.00574
	(A1 * !A2 * !B1 * !B2 * !X)	0.00739	0.00734	0.00735
	(A1 * !A2 * !B1 * !B2 * !X)	0.01169	0.01168	0.01167
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00764	0.00734	0.00736
	(!A1 * !A2 * !B1 * !B2 * !X)	0.01198	0.01173	0.01166

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00153	-0.00154	-0.00178
	(A2 * B2 * X)	0.00389	0.00389	0.00371
	(A2 * B1 * !B2 * X)	0.00336	0.00335	0.00311
	(A2 * B1 * !B2 * X)	0.00878	0.00878	0.00860
	(A2 * !B1 * !B2 * !X)	0.01570	0.01558	0.01560
	(A2 * !B1 * !B2 * !X)	0.02357	0.02352	0.02348
	(A1 * !A2 * B2 * X)	0.00435	0.00419	0.00201
	(A1 * !A2 * B2 * X)	0.00906	0.00895	0.00679
	(A1 * !A2 * B1 * !B2 * X)	0.00923	0.00907	0.00690
	(A1 * !A2 * B1 * !B2 * X)	0.01396	0.01384	0.01167
	(A1 * !A2 * !B1 * !B2 * !X)	0.01568	0.01559	0.01560
	(A1 * !A2 * !B1 * !B2 * !X)	0.02351	0.02347	0.02345
	(!A1 * !A2 * !B1 * !B2 * !X)	0.01590	0.01530	0.01556
	(!A1 * !A2 * !B1 * !B2 * !X)	0.02388	0.02336	0.02343

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00347	0.00329	0.00667
	(A3 * B2 * X)	-0.00091	-0.00114	0.00230
	(A2 * !A3 * B2 * X)	0.00360	0.00342	0.00680
	(A2 * !A3 * B2 * X)	-0.00078	-0.00100	0.00244
	(A1 * !A2 * !A3 * B2 * X)	0.00582	0.00564	0.00902
	(A1 * !A2 * !A3 * B2 * X)	0.00144	0.00121	0.00465
	(!A1 * !A2 * !A3 * B2 * !X)	0.00548	0.00548	0.00548
	(!A1 * !A2 * !A3 * B2 * !X)	0.00190	0.00191	0.00194
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00569	0.00569	0.00551
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00234	0.00232	0.00209

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00397	0.00377	0.00718
	(A3 * B2 * X)	-0.00101	-0.00121	0.00222
	(A2 * !A3 * B2 * X)	0.00410	0.00390	0.00731
	(A2 * !A3 * B2 * X)	-0.00088	-0.00108	0.00235
	(A1 * !A2 * !A3 * B2 * X)	0.00632	0.00612	0.00953
	(A1 * !A2 * !A3 * B2 * X)	0.00134	0.00114	0.00456
	(!A1 * !A2 * !A3 * B2 * !X)	0.00996	0.00996	0.00998
	(!A1 * !A2 * !A3 * B2 * !X)	0.00595	0.00596	0.00602
	(!A1 * !A2 * !A3 * !B2 * !X)	0.01015	0.01015	0.01000
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00633	0.00634	0.00607
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00766	0.00723	0.01391
	(A3 * B2 * X)	-0.00210	-0.00258	0.00420
	(A2 * !A3 * B2 * X)	0.00797	0.00754	0.01423
	(A2 * !A3 * B2 * X)	-0.00180	-0.00228	0.00451
	(A1 * !A2 * !A3 * B2 * X)	0.01243	0.01201	0.01872
	(A1 * !A2 * !A3 * B2 * X)	0.00265	0.00217	0.00897
	(!A1 * !A2 * !A3 * B2 * !X)	0.01976	0.01979	0.01978
	(!A1 * !A2 * !A3 * B2 * !X)	0.01162	0.01160	0.01169
	(!A1 * !A2 * !A3 * !B2 * !X)	0.02019	0.02023	0.01985
	(!A1 * !A2 * !A3 * !B2 * !X)	0.01249	0.01246	0.01197

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00334	0.00322	0.00242
	(A3 * B2 * X)	0.00773	0.00763	0.00680
	(A2 * !A3 * B2 * X)	0.00348	0.00335	0.00255
	(A2 * !A3 * B2 * X)	0.00786	0.00776	0.00693
	(A1 * !A2 * !A3 * B2 * X)	0.00569	0.00556	0.00476
	(A1 * !A2 * !A3 * B2 * X)	0.01008	0.00998	0.00915
	(!A1 * !A2 * !A3 * B2 * !X)	0.00445	0.00444	0.00442
	(!A1 * !A2 * !A3 * B2 * !X)	0.00799	0.00802	0.00794
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00406	0.00405	0.00408
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00735	0.00739	0.00739
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00304	0.00291	0.00211
	(A3 * B2 * X)	0.00802	0.00793	0.00709
	(A2 * !A3 * B2 * X)	0.00317	0.00304	0.00224
	(A2 * !A3 * B2 * X)	0.00816	0.00806	0.00723
	(A1 * !A2 * !A3 * B2 * X)	0.00538	0.00526	0.00446
	(A1 * !A2 * !A3 * B2 * X)	0.01037	0.01027	0.00944
	(!A1 * !A2 * !A3 * B2 * !X)	0.00871	0.00869	0.00866
	(!A1 * !A2 * !A3 * B2 * !X)	0.01269	0.01272	0.01261
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00843	0.00842	0.00845
	(!A1 * !A2 * !A3 * !B2 * !X)	0.01225	0.01228	0.01228
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00651	0.00627	0.00466
	(A3 * B2 * X)	0.01625	0.01601	0.01443
	(A2 * !A3 * B2 * X)	0.00672	0.00645	0.00487
	(A2 * !A3 * B2 * X)	0.01647	0.01629	0.01464
	(A1 * !A2 * !A3 * B2 * X)	0.01113	0.01085	0.00923
	(A1 * !A2 * !A3 * B2 * X)	0.02088	0.02071	0.01903
	(!A1 * !A2 * !A3 * B2 * !X)	0.01823	0.01819	0.01815
	(!A1 * !A2 * !A3 * B2 * !X)	0.02631	0.02634	0.02621
	(!A1 * !A2 * !A3 * !B2 * !X)	0.01738	0.01739	0.01744
	(!A1 * !A2 * !A3 * !B2 * !X)	0.02501	0.02506	0.02509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00238	0.00244	0.00298
	(A3 * B1 * X)	-0.00048	-0.00049	0.00008
	(A2 * !A3 * B1 * X)	0.00252	0.00258	0.00311
	(A2 * !A3 * B1 * X)	-0.00035	-0.00036	0.00021
	(A1 * !A2 * !A3 * B1 * X)	0.00474	0.00479	0.00533
	(A1 * !A2 * !A3 * B1 * X)	0.00187	0.00186	0.00243
	(!A1 * !A2 * !A3 * B1 * !X)	0.00536	0.00534	0.00533
	(!A1 * !A2 * !A3 * B1 * !X)	0.00194	0.00192	0.00195
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00557	0.00556	0.00539
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00238	0.00237	0.00213
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00272	0.00278	0.00333
	(A3 * B1 * X)	-0.00039	-0.00040	0.00018
	(A2 * !A3 * B1 * X)	0.00285	0.00291	0.00346
	(A2 * !A3 * B1 * X)	-0.00026	-0.00027	0.00031
	(A1 * !A2 * !A3 * B1 * X)	0.00507	0.00513	0.00568
	(A1 * !A2 * !A3 * B1 * X)	0.00196	0.00195	0.00253
	(!A1 * !A2 * !A3 * B1 * !X)	0.00975	0.00972	0.00972
	(!A1 * !A2 * !A3 * B1 * !X)	0.00628	0.00623	0.00628
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00998	0.00997	0.00981
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00666	0.00665	0.00640

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00481	0.00484	0.00594
	(A3 * B1 * X)	-0.00072	-0.00070	0.00035
	(A2 * !A3 * B1 * X)	0.00508	0.00512	0.00621
	(A2 * !A3 * B1 * X)	-0.00046	-0.00044	0.00062
	(A1 * !A2 * !A3 * B1 * X)	0.00951	0.00955	0.01064
	(A1 * !A2 * !A3 * B1 * X)	0.00397	0.00399	0.00505
	(!A1 * !A2 * !A3 * B1 * !X)	0.01968	0.01960	0.01955
	(!A1 * !A2 * !A3 * B1 * !X)	0.01295	0.01282	0.01288
	(!A1 * !A2 * !A3 * !B1 * !X)	0.02018	0.02018	0.01981
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01387	0.01384	0.01335

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	0.00153	0.00141	-0.00004
	(A3 * B1 * X)	0.00445	0.00434	0.00288
	(A2 * !A3 * B1 * X)	0.00166	0.00154	0.00009
	(A2 * !A3 * B1 * X)	0.00458	0.00447	0.00301
	(A1 * !A2 * !A3 * B1 * X)	0.00387	0.00376	0.00231
	(A1 * !A2 * !A3 * B1 * X)	0.00681	0.00669	0.00523
	(!A1 * !A2 * !A3 * B1 * !X)	0.00466	0.00459	0.00457
	(!A1 * !A2 * !A3 * B1 * !X)	0.00804	0.00800	0.00793
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00419	0.00417	0.00421
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00734	0.00738	0.00735

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	0.00139	0.00127	-0.00018
	(A3 * B1 * X)	0.00455	0.00444	0.00298
	(A2 * !A3 * B1 * X)	0.00152	0.00140	-0.00005
	(A2 * !A3 * B1 * X)	0.00468	0.00457	0.00311
	(A1 * !A2 * !A3 * B1 * X)	0.00373	0.00362	0.00217
	(A1 * !A2 * !A3 * B1 * X)	0.00690	0.00679	0.00533
	(!A1 * !A2 * !A3 * B1 * !X)	0.00906	0.00896	0.00891
	(!A1 * !A2 * !A3 * B1 * !X)	0.01252	0.01244	0.01235
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00863	0.00861	0.00864
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01195	0.01196	0.01195
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00347	0.00322	0.00033
	(A3 * B1 * X)	0.00908	0.00888	0.00596
	(A2 * !A3 * B1 * X)	0.00373	0.00349	0.00059
	(A2 * !A3 * B1 * X)	0.00935	0.00915	0.00623
	(A1 * !A2 * !A3 * B1 * X)	0.00816	0.00791	0.00502
	(A1 * !A2 * !A3 * B1 * X)	0.01378	0.01358	0.01066
	(!A1 * !A2 * !A3 * B1 * !X)	0.01871	0.01846	0.01838
	(!A1 * !A2 * !A3 * B1 * !X)	0.02539	0.02517	0.02502
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01747	0.01741	0.01749
	(!A1 * !A2 * !A3 * !B1 * !X)	0.02368	0.02376	0.02372

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00279	0.00286	0.00295	0.00292	0.00295	0.49090
sky130_fd_sc_hs__o41ai_2	0.00552	0.00560	0.00539	0.00545	0.00573	0.80244
sky130_fd_sc_hs__o41ai_4	0.01073	0.01066	0.01081	0.01092	0.00794	1.48105

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	306.27100	1026.90000
sky130_fd_sc_hs__o41ai_2	0.00000	611.89400	2043.94000
sky130_fd_sc_hs__o41ai_4	0.00000	735.77000	3038.62000

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)	0.13409	0.78654	7.89348
	A2->Y (FR)	0.12594	0.81615	8.36379
	A3->Y (FR)	0.10865	0.84001	8.82592
	A4->Y (FR)	0.08079	0.84622	9.13982
	B1->Y (FR)	0.01964	0.37989	4.44318
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.14748	0.68334	7.68197
	A2->Y (FR)	0.13713	0.70711	8.09403
	A3->Y (FR)	0.11690	0.74398	8.74878
	A4->Y (FR)	0.07579	0.74195	9.05021
	B1->Y (FR)	0.01542	0.30730	3.99979
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.14253	0.57579	7.50674
	A2->Y (FR)	0.13243	0.60705	8.01625
	A3->Y (FR)	0.11179	0.64330	8.69903
	A4->Y (FR)	0.07084	0.65033	9.11572
	B1->Y (FR)	0.02049	0.40485	5.96119

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03687	0.27880	2.49510
	A2->Y (RF)	0.03743	0.27181	2.43448
	A3->Y (RF)	0.03524	0.26392	2.38934
	A4->Y (RF)	0.02784	0.25094	2.31609
	B1->Y (RF)	0.02926	0.34620	3.49482
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03529	0.21773	2.13265
	A2->Y (RF)	0.03599	0.21082	2.07610
	A3->Y (RF)	0.03455	0.20012	1.99248
	A4->Y (RF)	0.02591	0.18593	1.93263
	B1->Y (RF)	0.02640	0.29945	3.34676
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.04072	0.17784	2.09946
	A2->Y (RF)	0.03896	0.16566	1.97118
	A3->Y (RF)	0.03461	0.15149	1.85294
	A4->Y (RF)	0.02330	0.12932	1.69237
	B1->Y (RF)	0.03075	0.28766	3.64812

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00268	0.00797	0.13996
	A1	0.01542	0.02070	0.15243
	A2	0.00276	0.00812	0.12438
	A2	0.01391	0.01926	0.13592
	A3	0.00276	0.00829	0.11353
	A3	0.01246	0.01796	0.12285
	A4	0.00273	0.01004	0.12582
	A4	0.01088	0.01816	0.13361
	B1	-0.00058	0.01385	0.23290
	B1	0.00531	0.01979	0.23892
sky130_fd_sc_hs__o41ai_2	A1	0.00451	0.01450	0.26355
	A1	0.03020	0.04017	0.28833
	A2	0.00460	0.01523	0.23637
	A2	0.02710	0.03764	0.25792
	A3	0.00476	0.01540	0.20652
	A3	0.02388	0.03445	0.22493
	A4	0.00462	0.01877	0.22697
	A4	0.02054	0.03463	0.24205
	B1	-0.00244	0.02872	0.46687
	B1	0.00901	0.04022	0.47852

sky130_fd_sc_hs__o41ai_4	**A1**	0.00813	0.02820	0.47887
	A1	0.05873	0.07869	0.52794
	A2	0.00833	0.02908	0.42191
	A2	0.05241	0.07306	0.46431
	A3	0.00840	0.02979	0.37757
	A3	0.04626	0.06752	0.41389
	A4	0.00818	0.03623	0.41733
	A4	0.03955	0.06758	0.44736
	B1	-0.00354	0.03406	0.52114
	B1	0.01288	0.05046	0.53855

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.02797	0.03246	0.14031
	A1	0.01523	0.01969	0.12747
	A2	0.02512	0.02967	0.12773
	A2	0.01396	0.01846	0.11661
	A3	0.02232	0.02703	0.11758
	A3	0.01261	0.01731	0.10788
	A4	0.02162	0.02653	0.11328
	A4	0.01345	0.01834	0.10508
	B1	0.01275	0.02341	0.19743
	B1	0.00686	0.01749	0.19148

sky130_fd_sc_hs__o41ai_2	**A1**	0.05746	0.06644	0.27245
	A1	0.03175	0.04069	0.24666
	A2	0.05072	0.06014	0.24715
	A2	0.02822	0.03759	0.22470
	A3	0.04484	0.05417	0.22024
	A3	0.02572	0.03504	0.20111
	A4	0.04163	0.05203	0.21156
	A4	0.02572	0.03609	0.19567
	B1	0.02474	0.04946	0.41095
	B1	0.01329	0.03797	0.39946
sky130_fd_sc_hs__o41ai_4	**A1**	0.09922	0.11958	0.52699
	A1	0.04861	0.06894	0.47672
	A2	0.08576	0.10644	0.47074
	A2	0.04166	0.06230	0.42687
	A3	0.07379	0.09441	0.41953
	A3	0.03592	0.05658	0.38184
	A4	0.06758	0.09069	0.40260
	A4	0.03623	0.05928	0.37122
	B1	0.03228	0.06204	0.44582
	B1	0.01588	0.04551	0.42918

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)**	0.00697	0.00682	0.00683
	(A2 * A4 * B1 * !Y)	0.00233	0.00219	0.00220
	(A2 * A3 * !A4 * B1 * !Y)	0.00718	0.00694	0.00698
	(A2 * A3 * !A4 * B1 * !Y)	0.00253	0.00230	0.00235
	(A2 * !B1 * Y)	0.00216	0.00216	0.00217
	(A2 * !B1 * Y)	-0.00246	-0.00246	-0.00245
	(A2 * !A3 * !A4 * B1 * !Y)	0.00794	0.00764	0.00901
	(A2 * !A3 * !A4 * B1 * !Y)	0.00316	0.00281	0.00431
	(!A2 * A3 * A4 * B1 * !Y)	0.00724	0.00700	0.00699
	(!A2 * A3 * A4 * B1 * !Y)	0.00258	0.00228	0.00237
	(!A2 * A3 * !B1 * Y)	0.00216	0.00219	0.00217
	(!A2 * A3 * !B1 * Y)	-0.00245	-0.00247	-0.00244
	(!A2 * A3 * !A4 * B1 * !Y)	0.00823	0.00784	0.00916
	(!A2 * A3 * !A4 * B1 * !Y)	0.00337	0.00293	0.00444
	(!A2 * !A3 * A4 * B1 * !Y)	0.00858	0.00826	0.01063
	(!A2 * !A3 * A4 * B1 * !Y)	0.00359	0.00321	0.00583
	(!A2 * !A3 * A4 * !B1 * Y)	0.00216	0.00219	0.00217
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00244	-0.00247	-0.00244
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00216	0.00217	0.00215
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00247	-0.00247	-0.00246

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.01400	0.01367	0.01363
	(A2 * A4 * B1 * !Y)	0.00475	0.00436	0.00440
	(A2 * A3 * !A4 * B1 * !Y)	0.01451	0.01394	0.01393
	(A2 * A3 * !A4 * B1 * !Y)	0.00521	0.00459	0.00469
	(A2 * !B1 * Y)	0.00429	0.00432	0.00430
	(A2 * !B1 * Y)	-0.00493	-0.00495	-0.00492
	(A2 * !A3 * !A4 * B1 * !Y)	0.01630	0.01546	0.01801
	(A2 * !A3 * !A4 * B1 * !Y)	0.00671	0.00582	0.00862
	(!A2 * A3 * A4 * B1 * !Y)	0.01460	0.01398	0.01395
	(!A2 * A3 * A4 * B1 * !Y)	0.00529	0.00460	0.00473
	(!A2 * A3 * !B1 * Y)	0.00429	0.00432	0.00430
	(!A2 * A3 * !B1 * Y)	-0.00491	-0.00494	-0.00490
	(!A2 * A3 * !A4 * B1 * !Y)	0.01681	0.01580	0.01831
	(!A2 * A3 * !A4 * B1 * !Y)	0.00706	0.00600	0.00887
	(!A2 * !A3 * A4 * B1 * !Y)	0.01753	0.01665	0.02120
	(!A2 * !A3 * A4 * B1 * !Y)	0.00752	0.00660	0.01164
	(!A2 * !A3 * A4 * !B1 * Y)	0.00429	0.00432	0.00430
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00489	-0.00493	-0.00488
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00428	0.00430	0.00426
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00495	-0.00496	-0.00494

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.01867	0.01797	0.01790
	(A2 * A4 * B1 * !Y)	0.00040	-0.00031	-0.00023
	(A2 * A3 * !A4 * B1 * !Y)	0.01964	0.01850	0.01850
	(A2 * A3 * !A4 * B1 * !Y)	0.00129	0.00016	0.00035
	(A2 * !B1 * Y)	0.00833	0.00837	0.00830
	(A2 * !B1 * Y)	-0.00987	-0.00989	-0.00982
	(A2 * !A3 * !A4 * B1 * !Y)	0.02304	0.02144	0.02665
	(A2 * !A3 * !A4 * B1 * !Y)	0.00414	0.00250	0.00819
	(!A2 * A3 * A4 * B1 * !Y)	0.01983	0.01860	0.01856
	(!A2 * A3 * A4 * B1 * !Y)	0.00142	0.00018	0.00042
	(!A2 * A3 * !B1 * Y)	0.00834	0.00833	0.00830
	(!A2 * A3 * !B1 * Y)	-0.00984	-0.00985	-0.00977
	(!A2 * A3 * !A4 * B1 * !Y)	0.02408	0.02218	0.02724
	(!A2 * A3 * !A4 * B1 * !Y)	0.00478	0.00290	0.00867
	(!A2 * !A3 * A4 * B1 * !Y)	0.02547	0.02384	0.03298
	(!A2 * !A3 * A4 * B1 * !Y)	0.00567	0.00405	0.01415
	(!A2 * !A3 * A4 * !B1 * Y)	0.00833	0.00833	0.00830
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00980	-0.00983	-0.00974
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00819	0.00833	0.00823
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00980	-0.00990	-0.00985

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)**	0.00269	0.00268	0.00269
	(A2 * A4 * B1 * !Y)	0.00733	0.00735	0.00732
	(A2 * A3 * !A4 * B1 * !Y)	0.00283	0.00281	0.00280
	(A2 * A3 * !A4 * B1 * !Y)	0.00746	0.00749	0.00745
	(A2 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(A2 * !B1 * Y)	0.00266	0.00270	0.00267
	(A2 * !A3 * !A4 * B1 * !Y)	0.00476	0.00471	0.00442
	(A2 * !A3 * !A4 * B1 * !Y)	0.00954	0.00950	0.00920
	(!A2 * A3 * A4 * B1 * !Y)	0.00286	0.00286	0.00284
	(!A2 * A3 * A4 * B1 * !Y)	0.00751	0.00751	0.00750
	(!A2 * A3 * !B1 * Y)	-0.00195	-0.00196	-0.00196
	(!A2 * A3 * !B1 * Y)	0.00265	0.00267	0.00266
	(!A2 * A3 * !A4 * B1 * !Y)	0.00507	0.00500	0.00468
	(!A2 * A3 * !A4 * B1 * !Y)	0.00990	0.00988	0.00951
	(!A2 * !A3 * A4 * B1 * !Y)	0.00685	0.00674	0.00608
	(!A2 * !A3 * A4 * B1 * !Y)	0.01177	0.01171	0.01102
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00195	-0.00196	-0.00196
	(!A2 * !A3 * A4 * !B1 * Y)	0.00264	0.00266	0.00265
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00167	-0.00189	-0.00191
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00293	0.00277	0.00268

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00544	0.00542	0.00543
	(A2 * A4 * B1 * !Y)	0.01468	0.01472	0.01467
	(A2 * A3 * !A4 * B1 * !Y)	0.00572	0.00568	0.00567
	(A2 * A3 * !A4 * B1 * !Y)	0.01497	0.01503	0.01494
	(A2 * !B1 * Y)	-0.00387	-0.00390	-0.00388
	(A2 * !B1 * Y)	0.00532	0.00538	0.00534
	(A2 * !A3 * !A4 * B1 * !Y)	0.00953	0.00938	0.00880
	(A2 * !A3 * !A4 * B1 * !Y)	0.01906	0.01903	0.01836
	(!A2 * A3 * A4 * B1 * !Y)	0.00577	0.00573	0.00573
	(!A2 * A3 * A4 * B1 * !Y)	0.01504	0.01510	0.01501
	(!A2 * A3 * !B1 * Y)	-0.00388	-0.00389	-0.00388
	(!A2 * A3 * !B1 * Y)	0.00531	0.00535	0.00532
	(!A2 * A3 * !A4 * B1 * !Y)	0.01011	0.00997	0.00932
	(!A2 * A3 * !A4 * B1 * !Y)	0.01977	0.01972	0.01899
	(!A2 * !A3 * A4 * B1 * !Y)	0.01364	0.01343	0.01212
	(!A2 * !A3 * A4 * B1 * !Y)	0.02349	0.02335	0.02199
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00388	-0.00389	-0.00388
	(!A2 * !A3 * A4 * !B1 * Y)	0.00529	0.00532	0.00530
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00328	-0.00378	-0.00379
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00591	0.00553	0.00537

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00211	0.00205	0.00207
	(A2 * A4 * B1 * !Y)	0.02029	0.02038	0.02026
	(A2 * A3 * !A4 * B1 * !Y)	0.00266	0.00256	0.00254
	(A2 * A3 * !A4 * B1 * !Y)	0.02084	0.02097	0.02079
	(A2 * !B1 * Y)	-0.00746	-0.00751	-0.00747
	(A2 * !B1 * Y)	0.01064	0.01074	0.01067
	(A2 * !A3 * !A4 * B1 * !Y)	0.01030	0.01005	0.00886
	(A2 * !A3 * !A4 * B1 * !Y)	0.02908	0.02894	0.02768
	(!A2 * A3 * A4 * B1 * !Y)	0.00277	0.00272	0.00269
	(!A2 * A3 * A4 * B1 * !Y)	0.02100	0.02105	0.02094
	(!A2 * A3 * !B1 * Y)	-0.00747	-0.00751	-0.00747
	(!A2 * A3 * !B1 * Y)	0.01060	0.01068	0.01061
	(!A2 * A3 * !A4 * B1 * !Y)	0.01147	0.01123	0.00989
	(!A2 * A3 * !A4 * B1 * !Y)	0.03049	0.03033	0.02893
	(!A2 * !A3 * A4 * B1 * !Y)	0.01842	0.01801	0.01540
	(!A2 * !A3 * A4 * B1 * !Y)	0.03784	0.03756	0.03485
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00747	-0.00750	-0.00747
	(!A2 * !A3 * A4 * !B1 * Y)	0.01056	0.01062	0.01057
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00640	-0.00727	-0.00730
	(!A2 * !A3 * !A4 * !B1 * Y)	0.01175	0.01105	0.01073

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)**	0.00691	0.00693	0.00676
	(A1 * A3 * A4 * B1 * !Y)	0.00306	0.00305	0.00298
	(A1 * A3 * !B1 * Y)	0.00211	0.00212	0.00210
	(A1 * A3 * !B1 * Y)	-0.00186	-0.00186	-0.00179
	(A1 * A3 * !A4 * B1 * !Y)	0.00711	0.00715	0.00716
	(A1 * A3 * !A4 * B1 * !Y)	0.00331	0.00332	0.00342
	(A1 * !A3 * A4 * B1 * !Y)	0.00722	0.00737	0.00728
	(A1 * !A3 * A4 * B1 * !Y)	0.00341	0.00351	0.00356
	(A1 * !A3 * A4 * !B1 * Y)	0.00209	0.00212	0.00210
	(A1 * !A3 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00175
	(A1 * !A3 * !A4 * B1 * !Y)	0.00716	0.00718	0.00762
	(A1 * !A3 * !A4 * B1 * !Y)	0.00389	0.00390	0.00436
	(A1 * !A3 * !A4 * !B1 * Y)	0.00211	0.00212	0.00210
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00241	-0.00242	-0.00240
	(!A1 * A3 * A4 * B1 * !Y)	0.00724	0.00691	0.00693
	(!A1 * A3 * A4 * B1 * !Y)	0.00269	0.00235	0.00243
	(!A1 * A3 * !B1 * Y)	0.00211	0.00212	0.00210
	(!A1 * A3 * !B1 * Y)	-0.00241	-0.00241	-0.00240
	(!A1 * A3 * !A4 * B1 * !Y)	0.00796	0.00751	0.00908
	(!A1 * A3 * !A4 * B1 * !Y)	0.00332	0.00287	0.00452
	(!A1 * !A3 * A4 * B1 * !Y)	0.00847	0.00794	0.01053
	(!A1 * !A3 * A4 * B1 * !Y)	0.00369	0.00317	0.00591
	(!A1 * !A3 * A4 * !B1 * Y)	0.00211	0.00212	0.00210
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00241	-0.00241	-0.00239
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00209	0.00210	0.00208
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00241	-0.00241	-0.00240

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.01402	0.01403	0.01364
	(A1 * A3 * A4 * B1 * !Y)	0.00600	0.00600	0.00586
	(A1 * A3 * !B1 * Y)	0.00432	0.00434	0.00430
	(A1 * A3 * !B1 * Y)	-0.00387	-0.00387	-0.00370
	(A1 * A3 * !A4 * B1 * !Y)	0.01438	0.01444	0.01438
	(A1 * A3 * !A4 * B1 * !Y)	0.00652	0.00653	0.00669
	(A1 * !A3 * A4 * B1 * !Y)	0.01455	0.01495	0.01472
	(A1 * !A3 * A4 * B1 * !Y)	0.00662	0.00692	0.00699
	(A1 * !A3 * A4 * !B1 * Y)	0.00431	0.00436	0.00430
	(A1 * !A3 * A4 * !B1 * Y)	-0.00393	-0.00395	-0.00368
	(A1 * !A3 * !A4 * B1 * !Y)	0.01466	0.01476	0.01533
	(A1 * !A3 * !A4 * B1 * !Y)	0.00801	0.00799	0.00871
	(A1 * !A3 * !A4 * !B1 * Y)	0.00431	0.00432	0.00430
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00501	-0.00501	-0.00500
	(!A1 * A3 * A4 * B1 * !Y)	0.01462	0.01394	0.01396
	(!A1 * A3 * A4 * B1 * !Y)	0.00521	0.00450	0.00466
	(!A1 * A3 * !B1 * Y)	0.00433	0.00435	0.00430
	(!A1 * A3 * !B1 * Y)	-0.00503	-0.00503	-0.00499
	(!A1 * A3 * !A4 * B1 * !Y)	0.01614	0.01523	0.01827
	(!A1 * A3 * !A4 * B1 * !Y)	0.00654	0.00561	0.00884
	(!A1 * !A3 * A4 * B1 * !Y)	0.01704	0.01613	0.02113
	(!A1 * !A3 * A4 * B1 * !Y)	0.00726	0.00625	0.01158
	(!A1 * !A3 * A4 * !B1 * Y)	0.00429	0.00435	0.00430
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00498	-0.00503	-0.00497
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00428	0.00431	0.00426
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00502	-0.00503	-0.00501

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.01853	0.01855	0.01781
	(A1 * A3 * A4 * B1 * !Y)	0.00331	0.00328	0.00301
	(A1 * A3 * !B1 * Y)	0.00824	0.00829	0.00823
	(A1 * A3 * !B1 * Y)	-0.00735	-0.00737	-0.00703
	(A1 * A3 * !A4 * B1 * !Y)	0.01931	0.01939	0.01933
	(A1 * A3 * !A4 * B1 * !Y)	0.00431	0.00433	0.00469
	(A1 * !A3 * A4 * B1 * !Y)	0.01965	0.02039	0.01995
	(A1 * !A3 * A4 * B1 * !Y)	0.00450	0.00505	0.00522
	(A1 * !A3 * A4 * !B1 * Y)	0.00821	0.00833	0.00823
	(A1 * !A3 * A4 * !B1 * Y)	-0.00748	-0.00755	-0.00702
	(A1 * !A3 * !A4 * B1 * !Y)	0.01987	0.02005	0.02127
	(A1 * !A3 * !A4 * B1 * !Y)	0.00701	0.00696	0.00851
	(A1 * !A3 * !A4 * !B1 * Y)	0.00828	0.00824	0.00823
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00987	-0.00981	-0.00980
	(!A1 * A3 * A4 * B1 * !Y)	0.01993	0.01843	0.01849
	(!A1 * A3 * A4 * B1 * !Y)	0.00166	0.00013	0.00045
	(!A1 * A3 * !B1 * Y)	0.00828	0.00831	0.00822
	(!A1 * A3 * !B1 * Y)	-0.00987	-0.00986	-0.00979
	(!A1 * A3 * !A4 * B1 * !Y)	0.02296	0.02097	0.02710
	(!A1 * A3 * !A4 * B1 * !Y)	0.00430	0.00229	0.00880
	(!A1 * !A3 * A4 * B1 * !Y)	0.02478	0.02278	0.03278
	(!A1 * !A3 * A4 * B1 * !Y)	0.00573	0.00356	0.01424
	(!A1 * !A3 * A4 * !B1 * Y)	0.00820	0.00832	0.00822
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00978	-0.00986	-0.00975
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00819	0.00824	0.00815
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00984	-0.00986	-0.00982

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)**	0.00265	0.00264	0.00268
	(A1 * A3 * A4 * B1 * !Y)	0.00654	0.00655	0.00646
	(A1 * A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * A3 * !B1 * Y)	0.00213	0.00214	0.00200
	(A1 * A3 * !A4 * B1 * !Y)	0.00265	0.00265	0.00273
	(A1 * A3 * !A4 * B1 * !Y)	0.00653	0.00653	0.00647
	(A1 * !A3 * A4 * B1 * !Y)	0.00256	0.00255	0.00269
	(A1 * !A3 * A4 * B1 * !Y)	0.00634	0.00635	0.00636
	(A1 * !A3 * A4 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * !A3 * A4 * !B1 * Y)	0.00210	0.00210	0.00196
	(A1 * !A3 * !A4 * B1 * !Y)	0.00494	0.00484	0.00371
	(A1 * !A3 * !A4 * B1 * !Y)	0.00824	0.00814	0.00700
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00189	-0.00189	-0.00189
	(A1 * !A3 * !A4 * !B1 * Y)	0.00261	0.00261	0.00261
	(!A1 * A3 * A4 * B1 * !Y)	0.00292	0.00289	0.00288
	(!A1 * A3 * A4 * B1 * !Y)	0.00742	0.00745	0.00741
	(!A1 * A3 * !B1 * Y)	-0.00188	-0.00189	-0.00189
	(!A1 * A3 * !B1 * Y)	0.00260	0.00262	0.00261
	(!A1 * A3 * !A4 * B1 * !Y)	0.00511	0.00504	0.00472
	(!A1 * A3 * !A4 * B1 * !Y)	0.00972	0.00967	0.00933
	(!A1 * !A3 * A4 * B1 * !Y)	0.00691	0.00679	0.00613
	(!A1 * !A3 * A4 * B1 * !Y)	0.01161	0.01153	0.01085
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00188	-0.00190	-0.00189
	(!A1 * !A3 * A4 * !B1 * Y)	0.00260	0.00263	0.00261
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00161	-0.00183	-0.00185
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00287	0.00270	0.00262

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00516	0.00514	0.00524
	(A1 * A3 * A4 * B1 * !Y)	0.01316	0.01318	0.01303
	(A1 * A3 * !B1 * Y)	-0.00388	-0.00391	-0.00389
	(A1 * A3 * !B1 * Y)	0.00437	0.00438	0.00412
	(A1 * A3 * !A4 * B1 * !Y)	0.00519	0.00521	0.00538
	(A1 * A3 * !A4 * B1 * !Y)	0.01315	0.01313	0.01306
	(A1 * !A3 * A4 * B1 * !Y)	0.00499	0.00497	0.00526
	(A1 * !A3 * A4 * B1 * !Y)	0.01281	0.01285	0.01287
	(A1 * !A3 * A4 * !B1 * Y)	-0.00388	-0.00390	-0.00389
	(A1 * !A3 * A4 * !B1 * Y)	0.00434	0.00433	0.00409
	(A1 * !A3 * !A4 * B1 * !Y)	0.00975	0.00957	0.00733
	(A1 * !A3 * !A4 * B1 * !Y)	0.01648	0.01631	0.01406
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00389	-0.00391	-0.00389
	(A1 * !A3 * !A4 * !B1 * Y)	0.00541	0.00545	0.00542
	(!A1 * A3 * A4 * B1 * !Y)	0.00571	0.00567	0.00566
	(!A1 * A3 * A4 * B1 * !Y)	0.01505	0.01509	0.01501
	(!A1 * A3 * !B1 * Y)	-0.00387	-0.00390	-0.00389
	(!A1 * A3 * !B1 * Y)	0.00539	0.00545	0.00542
	(!A1 * A3 * !A4 * B1 * !Y)	0.01001	0.00988	0.00923
	(!A1 * A3 * !A4 * B1 * !Y)	0.01954	0.01944	0.01877
	(!A1 * !A3 * A4 * B1 * !Y)	0.01362	0.01340	0.01208
	(!A1 * !A3 * A4 * B1 * !Y)	0.02334	0.02317	0.02183
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00388	-0.00390	-0.00389
	(!A1 * !A3 * A4 * !B1 * Y)	0.00539	0.00543	0.00540
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00324	-0.00378	-0.00379
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00602	0.00560	0.00544

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00170	0.00165	0.00181
	(A1 * A3 * A4 * B1 * !Y)	0.01696	0.01700	0.01665
	(A1 * A3 * !B1 * Y)	-0.00738	-0.00746	-0.00740
	(A1 * A3 * !B1 * Y)	0.00843	0.00847	0.00789
	(A1 * A3 * !A4 * B1 * !Y)	0.00173	0.00170	0.00206
	(A1 * A3 * !A4 * B1 * !Y)	0.01697	0.01701	0.01672
	(A1 * !A3 * A4 * B1 * !Y)	0.00131	0.00133	0.00185
	(A1 * !A3 * A4 * B1 * !Y)	0.01631	0.01631	0.01638
	(A1 * !A3 * A4 * !B1 * Y)	-0.00739	-0.00745	-0.00740
	(A1 * !A3 * A4 * !B1 * Y)	0.00839	0.00843	0.00786
	(A1 * !A3 * !A4 * B1 * !Y)	0.01079	0.01038	0.00588
	(A1 * !A3 * !A4 * B1 * !Y)	0.02370	0.02339	0.01887
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00738	-0.00741	-0.00739
	(A1 * !A3 * !A4 * !B1 * Y)	0.01063	0.01066	0.01064
	(!A1 * A3 * A4 * B1 * !Y)	0.00279	0.00268	0.00264
	(!A1 * A3 * A4 * B1 * !Y)	0.02082	0.02093	0.02077
	(!A1 * A3 * !B1 * Y)	-0.00737	-0.00742	-0.00739
	(!A1 * A3 * !B1 * Y)	0.01060	0.01068	0.01064
	(!A1 * A3 * !A4 * B1 * !Y)	0.01138	0.01109	0.00982
	(!A1 * A3 * !A4 * B1 * !Y)	0.02990	0.02974	0.02834
	(!A1 * !A3 * A4 * B1 * !Y)	0.01847	0.01803	0.01539
	(!A1 * !A3 * A4 * B1 * !Y)	0.03737	0.03700	0.03433
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00738	-0.00743	-0.00739
	(!A1 * !A3 * A4 * !B1 * Y)	0.01058	0.01068	0.01061
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00628	-0.00721	-0.00722
	(!A1 * !A3 * !A4 * !B1 * Y)	0.01168	0.01097	0.01068

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)**	0.00711	0.00712	0.00712
	(A2 * A4 * B1 * !Y)	0.00332	0.00332	0.00336
	(A2 * A4 * !B1 * Y)	0.00210	0.00212	0.00210
	(A2 * A4 * !B1 * Y)	-0.00190	-0.00190	-0.00183
	(A2 * !A4 * B1 * !Y)	0.00689	0.00692	0.00686
	(A2 * !A4 * B1 * !Y)	0.00367	0.00365	0.00366
	(A2 * !A4 * !B1 * Y)	0.00212	0.00213	0.00210
	(A2 * !A4 * !B1 * Y)	-0.00247	-0.00247	-0.00246
	(A1 * !A2 * A4 * B1 * !Y)	0.00740	0.00732	0.00754
	(A1 * !A2 * A4 * B1 * !Y)	0.00355	0.00344	0.00369
	(A1 * !A2 * A4 * !B1 * Y)	0.00210	0.00213	0.00210
	(A1 * !A2 * A4 * !B1 * Y)	-0.00191	-0.00193	-0.00181
	(A1 * !A2 * !A4 * B1 * !Y)	0.00703	0.00703	0.00720
	(A1 * !A2 * !A4 * B1 * !Y)	0.00428	0.00429	0.00444
	(A1 * !A2 * !A4 * !B1 * Y)	0.00212	0.00212	0.00210
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00247	-0.00247	-0.00245
	(!A1 * !A2 * A4 * B1 * !Y)	0.00804	0.00764	0.01054
	(!A1 * !A2 * A4 * B1 * !Y)	0.00338	0.00297	0.00592
	(!A1 * !A2 * A4 * !B1 * Y)	0.00211	0.00213	0.00210
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00247	-0.00247	-0.00246
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00209	0.00211	0.00209
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00247	-0.00248	-0.00246

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.01404	0.01411	0.01400
	(A2 * A4 * B1 * !Y)	0.00655	0.00658	0.00659
	(A2 * A4 * !B1 * Y)	0.00410	0.00412	0.00408
	(A2 * A4 * !B1 * Y)	-0.00382	-0.00382	-0.00365
	(A2 * !A4 * B1 * !Y)	0.01367	0.01373	0.01356
	(A2 * !A4 * B1 * !Y)	0.00741	0.00737	0.00735
	(A2 * !A4 * !B1 * Y)	0.00410	0.00413	0.00408
	(A2 * !A4 * !B1 * Y)	-0.00491	-0.00492	-0.00488
	(A1 * !A2 * A4 * B1 * !Y)	0.01476	0.01451	0.01483
	(A1 * !A2 * A4 * B1 * !Y)	0.00721	0.00689	0.00729
	(A1 * !A2 * A4 * !B1 * Y)	0.00407	0.00413	0.00408
	(A1 * !A2 * A4 * !B1 * Y)	-0.00382	-0.00386	-0.00360
	(A1 * !A2 * !A4 * B1 * !Y)	0.01410	0.01421	0.01439
	(A1 * !A2 * !A4 * B1 * !Y)	0.00881	0.00876	0.00905
	(A1 * !A2 * !A4 * !B1 * Y)	0.00407	0.00412	0.00408
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00487	-0.00491	-0.00486
	(!A1 * !A2 * A4 * B1 * !Y)	0.01634	0.01525	0.02083
	(!A1 * !A2 * A4 * B1 * !Y)	0.00715	0.00603	0.01175
	(!A1 * !A2 * A4 * !B1 * Y)	0.00410	0.00413	0.00408
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00491	-0.00492	-0.00488
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00405	0.00407	0.00404
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00490	-0.00491	-0.00489

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.01908	0.01927	0.01909
	(A2 * A4 * B1 * !Y)	0.00415	0.00416	0.00424
	(A2 * A4 * !B1 * Y)	0.00835	0.00845	0.00837
	(A2 * A4 * !B1 * Y)	-0.00750	-0.00756	-0.00719
	(A2 * !A4 * B1 * !Y)	0.01829	0.01846	0.01817
	(A2 * !A4 * B1 * !Y)	0.00576	0.00565	0.00563
	(A2 * !A4 * !B1 * Y)	0.00834	0.00838	0.00836
	(A2 * !A4 * !B1 * Y)	-0.00994	-0.00996	-0.00993
	(A1 * !A2 * A4 * B1 * !Y)	0.02055	0.02006	0.02079
	(A1 * !A2 * A4 * B1 * !Y)	0.00521	0.00465	0.00555
	(A1 * !A2 * A4 * !B1 * Y)	0.00840	0.00847	0.00836
	(A1 * !A2 * A4 * !B1 * Y)	-0.00765	-0.00767	-0.00713
	(A1 * !A2 * !A4 * B1 * !Y)	0.01907	0.01914	0.01970
	(A1 * !A2 * !A4 * B1 * !Y)	0.00836	0.00837	0.00896
	(A1 * !A2 * !A4 * !B1 * Y)	0.00834	0.00845	0.00835
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00994	-0.01001	-0.00988
	(!A1 * !A2 * A4 * B1 * !Y)	0.02345	0.02147	0.03270
	(!A1 * !A2 * A4 * B1 * !Y)	0.00488	0.00268	0.01420
	(!A1 * !A2 * A4 * !B1 * Y)	0.00833	0.00835	0.00835
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00994	-0.00995	-0.00995
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00834	0.00837	0.00829
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00999	-0.01001	-0.00997

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)**	0.00247	0.00247	0.00254
	(A2 * A4 * B1 * !Y)	0.00623	0.00622	0.00623
	(A2 * A4 * !B1 * Y)	-0.00189	-0.00191	-0.00189
	(A2 * A4 * !B1 * Y)	0.00218	0.00219	0.00205
	(A2 * !A4 * B1 * !Y)	0.00285	0.00283	0.00268
	(A2 * !A4 * B1 * !Y)	0.00606	0.00607	0.00595
	(A2 * !A4 * !B1 * Y)	-0.00189	-0.00189	-0.00189
	(A2 * !A4 * !B1 * Y)	0.00267	0.00266	0.00267
	(A1 * !A2 * A4 * B1 * !Y)	0.00248	0.00247	0.00269
	(A1 * !A2 * A4 * B1 * !Y)	0.00631	0.00632	0.00637
	(A1 * !A2 * A4 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * A4 * !B1 * Y)	0.00216	0.00216	0.00202
	(A1 * !A2 * !A4 * B1 * !Y)	0.00543	0.00535	0.00433
	(A1 * !A2 * !A4 * B1 * !Y)	0.00836	0.00830	0.00730
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * !A4 * !B1 * Y)	0.00265	0.00267	0.00266
	(!A1 * !A2 * A4 * B1 * !Y)	0.00682	0.00670	0.00609
	(!A1 * !A2 * A4 * B1 * !Y)	0.01146	0.01137	0.01073
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * A4 * !B1 * Y)	0.00266	0.00269	0.00267
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00161	-0.00183	-0.00185
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00293	0.00276	0.00268

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00518	0.00517	0.00530
	(A2 * A4 * B1 * !Y)	0.01253	0.01255	0.01258
	(A2 * A4 * !B1 * Y)	-0.00366	-0.00369	-0.00367
	(A2 * A4 * !B1 * Y)	0.00431	0.00433	0.00407
	(A2 * !A4 * B1 * !Y)	0.00580	0.00576	0.00546
	(A2 * !A4 * B1 * !Y)	0.01206	0.01209	0.01183
	(A2 * !A4 * !B1 * Y)	-0.00366	-0.00369	-0.00367
	(A2 * !A4 * !B1 * Y)	0.00528	0.00534	0.00530
	(A1 * !A2 * A4 * B1 * !Y)	0.00522	0.00522	0.00560
	(A1 * !A2 * A4 * B1 * !Y)	0.01266	0.01268	0.01280
	(A1 * !A2 * A4 * !B1 * Y)	-0.00366	-0.00370	-0.00367
	(A1 * !A2 * A4 * !B1 * Y)	0.00424	0.00427	0.00400
	(A1 * !A2 * !A4 * B1 * !Y)	0.01091	0.01077	0.00872
	(A1 * !A2 * !A4 * B1 * !Y)	0.01662	0.01651	0.01455
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00366	-0.00369	-0.00367
	(A1 * !A2 * !A4 * !B1 * Y)	0.00527	0.00532	0.00528
	(!A1 * !A2 * A4 * B1 * !Y)	0.01383	0.01359	0.01231
	(!A1 * !A2 * A4 * B1 * !Y)	0.02294	0.02272	0.02144
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00367	-0.00368	-0.00367
	(!A1 * !A2 * A4 * !B1 * Y)	0.00530	0.00533	0.00531
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00308	-0.00361	-0.00359
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00585	0.00544	0.00532

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00114	0.00109	0.00138
	(A2 * A4 * B1 * !Y)	0.01590	0.01597	0.01596
	(A2 * A4 * !B1 * Y)	-0.00753	-0.00755	-0.00753
	(A2 * A4 * !B1 * Y)	0.00860	0.00859	0.00806
	(A2 * !A4 * B1 * !Y)	0.00251	0.00238	0.00179
	(A2 * !A4 * B1 * !Y)	0.01513	0.01521	0.01466
	(A2 * !A4 * !B1 * Y)	-0.00750	-0.00754	-0.00752
	(A2 * !A4 * !B1 * Y)	0.01074	0.01080	0.01078
	(A1 * !A2 * A4 * B1 * !Y)	0.00120	0.00116	0.00196
	(A1 * !A2 * A4 * B1 * !Y)	0.01625	0.01633	0.01648
	(A1 * !A2 * A4 * !B1 * Y)	-0.00753	-0.00759	-0.00753
	(A1 * !A2 * A4 * !B1 * Y)	0.00851	0.00855	0.00797
	(A1 * !A2 * !A4 * B1 * !Y)	0.01265	0.01236	0.00824
	(A1 * !A2 * !A4 * B1 * !Y)	0.02418	0.02394	0.01999
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00751	-0.00757	-0.00752
	(A1 * !A2 * !A4 * !B1 * Y)	0.01072	0.01081	0.01074
	(!A1 * !A2 * A4 * B1 * !Y)	0.01831	0.01781	0.01531
	(!A1 * !A2 * A4 * B1 * !Y)	0.03689	0.03647	0.03392
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00749	-0.00755	-0.00752
	(!A1 * !A2 * A4 * !B1 * Y)	0.01074	0.01083	0.01079
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00636	-0.00745	-0.00734
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01188	0.01105	0.01083

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00679	0.00683	0.00681
	(A3 * B1 * !Y)	0.00360	0.00359	0.00362
	(A3 * !B1 * Y)	0.00210	0.00211	0.00209
	(A3 * !B1 * Y)	-0.00248	-0.00248	-0.00246
	(A2 * !A3 * B1 * !Y)	0.00679	0.00682	0.00682
	(A2 * !A3 * B1 * !Y)	0.00371	0.00370	0.00372
	(A2 * !A3 * !B1 * Y)	0.00210	0.00211	0.00209
	(A2 * !A3 * !B1 * Y)	-0.00246	-0.00247	-0.00245
	(A1 * !A2 * !A3 * B1 * !Y)	0.00681	0.00686	0.00700
	(A1 * !A2 * !A3 * B1 * !Y)	0.00435	0.00434	0.00450
	(A1 * !A2 * !A3 * !B1 * Y)	0.00210	0.00211	0.00209
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00246	-0.00247	-0.00245
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00208	0.00210	0.00207
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00246	-0.00248	-0.00247
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.01347	0.01351	0.01350
	(A3 * B1 * !Y)	0.00714	0.00713	0.00717
	(A3 * !B1 * Y)	0.00412	0.00418	0.00413
	(A3 * !B1 * Y)	-0.00493	-0.00497	-0.00493
	(A2 * !A3 * B1 * !Y)	0.01344	0.01355	0.01351
	(A2 * !A3 * B1 * !Y)	0.00735	0.00730	0.00737
	(A2 * !A3 * !B1 * Y)	0.00412	0.00418	0.00413
	(A2 * !A3 * !B1 * Y)	-0.00491	-0.00496	-0.00491
	(A1 * !A2 * !A3 * B1 * !Y)	0.01351	0.01355	0.01387
	(A1 * !A2 * !A3 * B1 * !Y)	0.00861	0.00862	0.00891
	(A1 * !A2 * !A3 * !B1 * Y)	0.00411	0.00417	0.00413
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00488	-0.00495	-0.00489
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00410	0.00412	0.00409
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00495	-0.00496	-0.00494

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.01814	0.01826	0.01816
	(A3 * B1 * !Y)	0.00534	0.00531	0.00542
	(A3 * !B1 * Y)	0.00839	0.00847	0.00837
	(A3 * !B1 * Y)	-0.00984	-0.00990	-0.00981
	(A2 * !A3 * B1 * !Y)	0.01807	0.01814	0.01820
	(A2 * !A3 * B1 * !Y)	0.00583	0.00581	0.00588
	(A2 * !A3 * !B1 * Y)	0.00834	0.00847	0.00837
	(A2 * !A3 * !B1 * Y)	-0.00976	-0.00988	-0.00976
	(A1 * !A2 * !A3 * B1 * !Y)	0.01816	0.01830	0.01892
	(A1 * !A2 * !A3 * B1 * !Y)	0.00846	0.00845	0.00903
	(A1 * !A2 * !A3 * !B1 * Y)	0.00836	0.00846	0.00837
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00974	-0.00985	-0.00973
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00832	0.00836	0.00828
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00985	-0.00988	-0.00983

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00272	0.00269	0.00260
	(A3 * B1 * !Y)	0.00589	0.00590	0.00582
	(A3 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A3 * !B1 * Y)	0.00266	0.00268	0.00267
	(A2 * !A3 * B1 * !Y)	0.00298	0.00295	0.00276
	(A2 * !A3 * B1 * !Y)	0.00607	0.00608	0.00594
	(A2 * !A3 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A2 * !A3 * !B1 * Y)	0.00265	0.00266	0.00266
	(A1 * !A2 * !A3 * B1 * !Y)	0.00578	0.00571	0.00485
	(A1 * !A2 * !A3 * B1 * !Y)	0.00851	0.00847	0.00764
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * !A3 * !B1 * Y)	0.00264	0.00265	0.00265
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00161	-0.00182	-0.00184
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00293	0.00277	0.00269
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00552	0.00547	0.00523
	(A3 * B1 * !Y)	0.01183	0.01185	0.01164
	(A3 * !B1 * Y)	-0.00371	-0.00374	-0.00372
	(A3 * !B1 * Y)	0.00533	0.00539	0.00535
	(A2 * !A3 * B1 * !Y)	0.00609	0.00604	0.00557
	(A2 * !A3 * B1 * !Y)	0.01223	0.01225	0.01190
	(A2 * !A3 * !B1 * Y)	-0.00371	-0.00374	-0.00372
	(A2 * !A3 * !B1 * Y)	0.00530	0.00536	0.00532
	(A1 * !A2 * !A3 * B1 * !Y)	0.01171	0.01158	0.00987
	(A1 * !A2 * !A3 * B1 * !Y)	0.01715	0.01709	0.01545
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00371	-0.00373	-0.00372
	(A1 * !A2 * !A3 * !B1 * Y)	0.00527	0.00530	0.00529
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00313	-0.00366	-0.00364
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00591	0.00550	0.00538

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	0.00180	0.00172	0.00128
	(A3 * B1 * !Y)	0.01449	0.01453	0.01416
	(A3 * !B1 * Y)	-0.00754	-0.00759	-0.00754
	(A3 * !B1 * Y)	0.01063	0.01073	0.01064
	(A2 * !A3 * B1 * !Y)	0.00293	0.00281	0.00194
	(A2 * !A3 * B1 * !Y)	0.01522	0.01526	0.01463
	(A2 * !A3 * !B1 * Y)	-0.00753	-0.00751	-0.00754
	(A2 * !A3 * !B1 * Y)	0.01056	0.01054	0.01058
	(A1 * !A2 * !A3 * B1 * !Y)	0.01412	0.01384	0.01044
	(A1 * !A2 * !A3 * B1 * !Y)	0.02499	0.02490	0.02158
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00755	-0.00756	-0.00754
	(A1 * !A2 * !A3 * !B1 * Y)	0.01051	0.01052	0.01050
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00643	-0.00747	-0.00736
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01176	0.01093	0.01071

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)	0.00111	0.00111	0.00095
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00260	-0.00262	-0.00286
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00247	0.00248	0.00216
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00494	-0.00499	-0.00548
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00390	0.00389	0.00333
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00474	-0.00478	-0.00575

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00055	-0.00056	-0.00053
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00315	0.00320	0.00316
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00138	-0.00139	-0.00133
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00605	0.00613	0.00606
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00174	-0.00175	-0.00164
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00690	0.00698	0.00693

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00267	0.00276	0.00276	0.00277	0.00253	1.68492
sky130_fd_sc_hs__o41a_2	0.00282	0.00295	0.00302	0.00286	0.00288	3.45364
sky130_fd_sc_hs__o41a_4	0.00514	0.00552	0.00554	0.00515	0.00473	5.98154

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	970.70000	1840.53000
sky130_fd_sc_hs__o41a_2	0.00000	904.31400	1122.17000
sky130_fd_sc_hs__o41a_4	0.00000	2501.68000	3694.11000

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)	0.07486	0.44534	5.60416
	A2->X (RR)	0.07224	0.42920	5.35301
	A3->X (RR)	0.06626	0.41091	5.13861
	A4->X (RR)	0.05577	0.38880	4.98384
	B1->X (RR)	0.06644	0.49525	6.30360
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.07609	0.36271	5.43906
	A2->X (RR)	0.07386	0.35066	5.22514
	A3->X (RR)	0.06878	0.33547	5.03505
	A4->X (RR)	0.05768	0.31518	4.88562
	B1->X (RR)	0.06838	0.41833	6.30470
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.08578	0.31258	5.33531
	A2->X (RR)	0.08337	0.30138	5.13010
	A3->X (RR)	0.07303	0.28113	4.89192
	A4->X (RR)	0.06269	0.26079	4.80758
	B1->X (RR)	0.07699	0.38571	6.35960

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.15904	0.54693	6.27187
	A2->X (FF)	0.15020	0.56496	6.41260
	A3->X (FF)	0.13215	0.57773	6.54741
	A4->X (FF)	0.10590	0.57767	6.64389
	B1->X (FF)	0.04394	0.41662	5.67741
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.18987	0.54791	6.56792
	A2->X (FF)	0.18229	0.56818	6.70175
	A3->X (FF)	0.16529	0.58458	6.84055
	A4->X (FF)	0.13605	0.58681	6.93970
	B1->X (FF)	0.04789	0.38875	5.82910
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.20247	0.51263	6.39086
	A2->X (FF)	0.19243	0.53035	6.50600
	A3->X (FF)	0.16811	0.54425	6.64205
	A4->X (FF)	0.13277	0.53848	6.71567
	B1->X (FF)	0.05538	0.36931	5.58395

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.06320	0.07391	0.30779
	A1	0.05121	0.06195	0.29578
	A2	0.06010	0.07023	0.27565
	A2	0.04972	0.05986	0.26513
	A3	0.05712	0.06708	0.25210
	A3	0.04833	0.05828	0.24280
	A4	0.05894	0.06984	0.25831
	A4	0.05161	0.06297	0.25052
	B1	0.04479	0.06315	0.33742
	B1	0.03988	0.05821	0.33228
sky130_fd_sc_hs__o41a_2	A1	0.05097	0.06164	0.30986
	A1	0.03817	0.04881	0.29700
	A2	0.04794	0.05819	0.27594
	A2	0.03669	0.04708	0.26465
	A3	0.04481	0.05502	0.25058
	A3	0.03503	0.04524	0.23965
	A4	0.04590	0.05722	0.25538
	A4	0.03774	0.04904	0.24607
	B1	0.03070	0.05123	0.36107
	B1	0.02505	0.04554	0.35483

sky130_fd_sc_hs__o41a_4	**A1**	0.14055	0.15879	0.60958
	A1	0.11663	0.13489	0.58429
	A2	0.13414	0.15254	0.55395
	A2	0.11256	0.13104	0.52959
	A3	0.12521	0.14453	0.50406
	A3	0.10701	0.12635	0.48308
	A4	0.12691	0.14805	0.51380
	A4	0.11246	0.13355	0.49698
	B1	0.09769	0.13799	0.72451
	B1	0.08825	0.12856	0.71350

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.02071	0.02838	0.27151
	A1	0.03268	0.04037	0.28223
	A2	0.02081	0.02815	0.24226
	A2	0.03117	0.03852	0.25223
	A3	0.02088	0.02821	0.22129
	A3	0.02966	0.03701	0.23039
	A4	0.02077	0.02968	0.22812
	A4	0.02810	0.03703	0.23582
	B1	0.01359	0.03454	0.34899
	B1	0.01848	0.03945	0.35427

sky130_fd_sc_hs__o41a_2	**A1**	0.04374	0.04288	0.28000
	A1	0.05653	0.05567	0.29291
	A2	0.04390	0.04265	0.24944
	A2	0.05514	0.05387	0.26079
	A3	0.04399	0.04266	0.22859
	A3	0.05376	0.05244	0.23734
	A4	0.04392	0.04432	0.23606
	A4	0.05208	0.05253	0.24292
	B1	0.02784	0.04753	0.36512
	B1	0.03351	0.05305	0.36772
sky130_fd_sc_hs__o41a_4	**A1**	0.08965	0.08642	0.53161
	A1	0.11353	0.11032	0.55343
	A2	0.08894	0.08595	0.47927
	A2	0.11052	0.10743	0.50133
	A3	0.08922	0.08652	0.43787
	A3	0.10744	0.10466	0.45659
	A4	0.08967	0.09004	0.45186
	A4	0.10414	0.10431	0.46677
	B1	0.05700	0.09507	0.71436
	B1	0.07181	0.10787	0.71634

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)**	0.01384	0.01369	0.01369
	(A2 * A4 * B1 * X)	0.00941	0.00926	0.00928
	(A2 * A3 * !A4 * B1 * X)	0.01405	0.01381	0.01384
	(A2 * A3 * !A4 * B1 * X)	0.00961	0.00937	0.00942
	(A2 * !B1 * !X)	0.00654	0.00654	0.00654
	(A2 * !B1 * !X)	0.00213	0.00213	0.00213
	(A2 * !A3 * !A4 * B1 * X)	0.01481	0.01450	0.01586
	(A2 * !A3 * !A4 * B1 * X)	0.01024	0.00988	0.01137
	(!A2 * A3 * A4 * B1 * X)	0.01412	0.01386	0.01386
	(!A2 * A3 * A4 * B1 * X)	0.00967	0.00935	0.00944
	(!A2 * A3 * !B1 * !X)	0.00653	0.00656	0.00654
	(!A2 * A3 * !B1 * !X)	0.00214	0.00211	0.00214
	(!A2 * A3 * !A4 * B1 * X)	0.01510	0.01470	0.01602
	(!A2 * A3 * !A4 * B1 * X)	0.01045	0.00999	0.01150
	(!A2 * !A3 * A4 * B1 * X)	0.01546	0.01511	0.01748
	(!A2 * !A3 * A4 * B1 * X)	0.01067	0.01027	0.01289
	(!A2 * !A3 * A4 * !B1 * !X)	0.00653	0.00656	0.00654
	(!A2 * !A3 * A4 * !B1 * !X)	0.00214	0.00211	0.00215
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00655	0.00656	0.00653
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00211	0.00211	0.00211

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00779	0.00765	0.00766
	(A2 * A4 * B1 * X)	0.00316	0.00303	0.00305
	(A2 * A3 * !A4 * B1 * X)	0.00800	0.00778	0.00781
	(A2 * A3 * !A4 * B1 * X)	0.00336	0.00314	0.00319
	(A2 * !B1 * !X)	0.01123	0.01126	0.01123
	(A2 * !B1 * !X)	0.00662	0.00661	0.00663
	(A2 * !A3 * !A4 * B1 * X)	0.00874	0.00843	0.00984
	(A2 * !A3 * !A4 * B1 * X)	0.00397	0.00367	0.00515
	(!A2 * A3 * A4 * B1 * X)	0.00807	0.00783	0.00782
	(!A2 * A3 * A4 * B1 * X)	0.00342	0.00312	0.00321
	(!A2 * A3 * !B1 * !X)	0.01122	0.01126	0.01123
	(!A2 * A3 * !B1 * !X)	0.00663	0.00661	0.00664
	(!A2 * A3 * !A4 * B1 * X)	0.00905	0.00867	0.00999
	(!A2 * A3 * !A4 * B1 * X)	0.00419	0.00376	0.00528
	(!A2 * !A3 * A4 * B1 * X)	0.00940	0.00909	0.01146
	(!A2 * !A3 * A4 * B1 * X)	0.00442	0.00405	0.00668
	(!A2 * !A3 * A4 * !B1 * !X)	0.01122	0.01126	0.01123
	(!A2 * !A3 * A4 * !B1 * !X)	0.00663	0.00661	0.00664
	(!A2 * !A3 * !A4 * !B1 * !X)	0.01121	0.01123	0.01121
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00661	0.00660	0.00661

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.02769	0.02735	0.02729
	(A2 * A4 * B1 * X)	0.01920	0.01882	0.01884
	(A2 * A3 * !A4 * B1 * X)	0.02821	0.02765	0.02762
	(A2 * A3 * !A4 * B1 * X)	0.01969	0.01909	0.01917
	(A2 * !B1 * !X)	0.02182	0.02187	0.02184
	(A2 * !B1 * !X)	0.01336	0.01334	0.01338
	(A2 * !A3 * !A4 * B1 * X)	0.02992	0.02911	0.03174
	(A2 * !A3 * !A4 * B1 * X)	0.02109	0.02026	0.02312
	(!A2 * A3 * A4 * B1 * X)	0.02833	0.02764	0.02760
	(!A2 * A3 * A4 * B1 * X)	0.01974	0.01901	0.01913
	(!A2 * A3 * !B1 * !X)	0.02183	0.02186	0.02184
	(!A2 * A3 * !B1 * !X)	0.01336	0.01335	0.01340
	(!A2 * A3 * !A4 * B1 * X)	0.03052	0.02943	0.03194
	(!A2 * A3 * !A4 * B1 * X)	0.02151	0.02039	0.02326
	(!A2 * !A3 * A4 * B1 * X)	0.03124	0.03027	0.03484
	(!A2 * !A3 * A4 * B1 * X)	0.02200	0.02097	0.02603
	(!A2 * !A3 * A4 * !B1 * !X)	0.02183	0.02186	0.02184
	(!A2 * !A3 * A4 * !B1 * !X)	0.01337	0.01335	0.01341
	(!A2 * !A3 * !A4 * !B1 * !X)	0.02183	0.02183	0.02180
	(!A2 * !A3 * !A4 * !B1 * !X)	0.01331	0.01333	0.01331

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)**	0.01005	0.01003	0.01004
	(A2 * A4 * B1 * X)	0.01447	0.01449	0.01446
	(A2 * A3 * !A4 * B1 * X)	0.01017	0.01015	0.01015
	(A2 * A3 * !A4 * B1 * X)	0.01460	0.01463	0.01459
	(A2 * !B1 * !X)	0.00291	0.00289	0.00290
	(A2 * !B1 * !X)	0.00731	0.00734	0.00732
	(A2 * !A3 * !A4 * B1 * X)	0.01210	0.01204	0.01176
	(A2 * !A3 * !A4 * B1 * X)	0.01668	0.01665	0.01633
	(!A2 * A3 * A4 * B1 * X)	0.01021	0.01019	0.01019
	(!A2 * A3 * A4 * B1 * X)	0.01465	0.01468	0.01463
	(!A2 * A3 * !B1 * !X)	0.00291	0.00290	0.00290
	(!A2 * A3 * !B1 * !X)	0.00730	0.00732	0.00731
	(!A2 * A3 * !A4 * B1 * X)	0.01241	0.01234	0.01202
	(!A2 * A3 * !A4 * B1 * X)	0.01702	0.01700	0.01664
	(!A2 * !A3 * A4 * B1 * X)	0.01417	0.01407	0.01341
	(!A2 * !A3 * A4 * B1 * X)	0.01889	0.01881	0.01814
	(!A2 * !A3 * A4 * !B1 * !X)	0.00291	0.00290	0.00290
	(!A2 * !A3 * A4 * !B1 * !X)	0.00729	0.00731	0.00730
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00314	0.00292	0.00294
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00757	0.00740	0.00734

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00352	0.00351	0.00351
	(A2 * A4 * B1 * X)	0.00815	0.00817	0.00814
	(A2 * A3 * !A4 * B1 * X)	0.00365	0.00363	0.00363
	(A2 * A3 * !A4 * B1 * X)	0.00828	0.00831	0.00826
	(A2 * !B1 * !X)	0.00711	0.00710	0.00711
	(A2 * !B1 * !X)	0.01171	0.01173	0.01172
	(A2 * !A3 * !A4 * B1 * X)	0.00558	0.00552	0.00524
	(A2 * !A3 * !A4 * B1 * X)	0.01035	0.01032	0.01001
	(!A2 * A3 * A4 * B1 * X)	0.00369	0.00368	0.00367
	(!A2 * A3 * A4 * B1 * X)	0.00833	0.00833	0.00831
	(!A2 * A3 * !B1 * !X)	0.00711	0.00711	0.00711
	(!A2 * A3 * !B1 * !X)	0.01171	0.01172	0.01171
	(!A2 * A3 * !A4 * B1 * X)	0.00590	0.00583	0.00550
	(!A2 * A3 * !A4 * B1 * X)	0.01071	0.01069	0.01032
	(!A2 * !A3 * A4 * B1 * X)	0.00767	0.00757	0.00691
	(!A2 * !A3 * A4 * B1 * X)	0.01259	0.01252	0.01184
	(!A2 * !A3 * A4 * !B1 * !X)	0.00711	0.00711	0.00711
	(!A2 * !A3 * A4 * !B1 * !X)	0.01170	0.01171	0.01170
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00740	0.00718	0.00716
	(!A2 * !A3 * !A4 * !B1 * !X)	0.01200	0.01183	0.01174

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.02050	0.02047	0.02050
	(A2 * A4 * B1 * X)	0.02897	0.02902	0.02898
	(A2 * A3 * !A4 * B1 * X)	0.02072	0.02067	0.02070
	(A2 * A3 * !A4 * B1 * X)	0.02920	0.02927	0.02921
	(A2 * !B1 * !X)	0.01514	0.01510	0.01513
	(A2 * !B1 * !X)	0.02357	0.02365	0.02359
	(A2 * !A3 * !A4 * B1 * X)	0.02447	0.02436	0.02378
	(A2 * !A3 * !A4 * B1 * X)	0.03328	0.03319	0.03257
	(!A2 * A3 * A4 * B1 * X)	0.02088	0.02084	0.02084
	(!A2 * A3 * A4 * B1 * X)	0.02938	0.02944	0.02936
	(!A2 * A3 * !B1 * !X)	0.01513	0.01512	0.01513
	(!A2 * A3 * !B1 * !X)	0.02355	0.02357	0.02357
	(!A2 * A3 * !A4 * B1 * X)	0.02526	0.02512	0.02447
	(!A2 * A3 * !A4 * B1 * X)	0.03413	0.03410	0.03337
	(!A2 * !A3 * A4 * B1 * X)	0.02873	0.02852	0.02721
	(!A2 * !A3 * A4 * B1 * X)	0.03782	0.03767	0.03632
	(!A2 * !A3 * A4 * !B1 * !X)	0.01514	0.01512	0.01513
	(!A2 * !A3 * A4 * !B1 * !X)	0.02353	0.02357	0.02355
	(!A2 * !A3 * !A4 * !B1 * !X)	0.01559	0.01517	0.01521
	(!A2 * !A3 * !A4 * !B1 * !X)	0.02410	0.02377	0.02365

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)**	0.01378	0.01379	0.01363
	(A1 * A3 * A4 * B1 * X)	0.01013	0.01012	0.01006
	(A1 * A3 * !B1 * !X)	0.00648	0.00649	0.00648
	(A1 * A3 * !B1 * !X)	0.00273	0.00273	0.00280
	(A1 * A3 * !A4 * B1 * X)	0.01397	0.01401	0.01403
	(A1 * A3 * !A4 * B1 * X)	0.01038	0.01039	0.01050
	(A1 * !A3 * A4 * B1 * X)	0.01408	0.01422	0.01414
	(A1 * !A3 * A4 * B1 * X)	0.01047	0.01058	0.01064
	(A1 * !A3 * A4 * !B1 * !X)	0.00647	0.00649	0.00647
	(A1 * !A3 * A4 * !B1 * !X)	0.00274	0.00272	0.00284
	(A1 * !A3 * !A4 * B1 * X)	0.01398	0.01400	0.01445
	(A1 * !A3 * !A4 * B1 * X)	0.01094	0.01095	0.01142
	(A1 * !A3 * !A4 * !B1 * !X)	0.00648	0.00648	0.00646
	(A1 * !A3 * !A4 * !B1 * !X)	0.00216	0.00215	0.00216
	(!A1 * A3 * A4 * B1 * X)	0.01410	0.01377	0.01379
	(!A1 * A3 * A4 * B1 * X)	0.00975	0.00942	0.00950
	(!A1 * A3 * !B1 * !X)	0.00649	0.00649	0.00648
	(!A1 * A3 * !B1 * !X)	0.00216	0.00217	0.00218
	(!A1 * A3 * !A4 * B1 * X)	0.01481	0.01436	0.01593
	(!A1 * A3 * !A4 * B1 * X)	0.01038	0.00992	0.01157
	(!A1 * !A3 * A4 * B1 * X)	0.01531	0.01479	0.01738
	(!A1 * !A3 * A4 * B1 * X)	0.01074	0.01022	0.01296
	(!A1 * !A3 * A4 * !B1 * !X)	0.00648	0.00649	0.00648
	(!A1 * !A3 * A4 * !B1 * !X)	0.00216	0.00217	0.00219
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00647	0.00650	0.00646
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00218	0.00216	0.00216

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00773	0.00775	0.00757
	(A1 * A3 * A4 * B1 * X)	0.00389	0.00388	0.00381
	(A1 * A3 * !B1 * !X)	0.01115	0.01116	0.01115
	(A1 * A3 * !B1 * !X)	0.00720	0.00720	0.00727
	(A1 * A3 * !A4 * B1 * X)	0.00793	0.00798	0.00797
	(A1 * A3 * !A4 * B1 * X)	0.00414	0.00416	0.00426
	(A1 * !A3 * A4 * B1 * X)	0.00804	0.00819	0.00809
	(A1 * !A3 * A4 * B1 * X)	0.00422	0.00433	0.00438
	(A1 * !A3 * A4 * !B1 * !X)	0.01114	0.01117	0.01115
	(A1 * !A3 * A4 * !B1 * !X)	0.00719	0.00717	0.00729
	(A1 * !A3 * !A4 * B1 * X)	0.00801	0.00803	0.00851
	(A1 * !A3 * !A4 * B1 * X)	0.00473	0.00474	0.00525
	(A1 * !A3 * !A4 * !B1 * !X)	0.01114	0.01115	0.01112
	(A1 * !A3 * !A4 * !B1 * !X)	0.00659	0.00658	0.00660
	(!A1 * A3 * A4 * B1 * X)	0.00807	0.00773	0.00774
	(!A1 * A3 * A4 * B1 * X)	0.00349	0.00314	0.00322
	(!A1 * A3 * !B1 * !X)	0.01116	0.01117	0.01115
	(!A1 * A3 * !B1 * !X)	0.00661	0.00662	0.00663
	(!A1 * A3 * !A4 * B1 * X)	0.00880	0.00834	0.00990
	(!A1 * A3 * !A4 * B1 * X)	0.00414	0.00367	0.00531
	(!A1 * !A3 * A4 * B1 * X)	0.00932	0.00878	0.01135
	(!A1 * !A3 * A4 * B1 * X)	0.00452	0.00398	0.00670
	(!A1 * !A3 * A4 * !B1 * !X)	0.01116	0.01117	0.01115
	(!A1 * !A3 * A4 * !B1 * !X)	0.00661	0.00662	0.00664
	(!A1 * !A3 * !A4 * !B1 * !X)	0.01113	0.01114	0.01112
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00661	0.00661	0.00661

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.02842	0.02847	0.02811
	(A1 * A3 * A4 * B1 * X)	0.02055	0.02055	0.02040
	(A1 * A3 * !B1 * !X)	0.02261	0.02265	0.02263
	(A1 * A3 * !B1 * !X)	0.01457	0.01454	0.01470
	(A1 * A3 * !A4 * B1 * X)	0.02881	0.02893	0.02885
	(A1 * A3 * !A4 * B1 * X)	0.02107	0.02113	0.02123
	(A1 * !A3 * A4 * B1 * X)	0.02903	0.02932	0.02912
	(A1 * !A3 * A4 * B1 * X)	0.02124	0.02148	0.02153
	(A1 * !A3 * A4 * !B1 * !X)	0.02260	0.02263	0.02262
	(A1 * !A3 * A4 * !B1 * !X)	0.01454	0.01452	0.01476
	(A1 * !A3 * !A4 * B1 * X)	0.02915	0.02920	0.02993
	(A1 * !A3 * !A4 * B1 * X)	0.02247	0.02248	0.02329
	(A1 * !A3 * !A4 * !B1 * !X)	0.02255	0.02256	0.02253
	(A1 * !A3 * !A4 * !B1 * !X)	0.01340	0.01335	0.01336
	(!A1 * A3 * A4 * B1 * X)	0.02907	0.02832	0.02839
	(!A1 * A3 * A4 * B1 * X)	0.01986	0.01908	0.01921
	(!A1 * A3 * !B1 * !X)	0.02260	0.02262	0.02263
	(!A1 * A3 * !B1 * !X)	0.01345	0.01345	0.01346
	(!A1 * A3 * !A4 * B1 * X)	0.03069	0.02962	0.03269
	(!A1 * A3 * !A4 * B1 * X)	0.02129	0.02020	0.02339
	(!A1 * !A3 * A4 * B1 * X)	0.03163	0.03054	0.03557
	(!A1 * !A3 * A4 * B1 * X)	0.02196	0.02076	0.02614
	(!A1 * !A3 * A4 * !B1 * !X)	0.02259	0.02263	0.02263
	(!A1 * !A3 * A4 * !B1 * !X)	0.01345	0.01345	0.01348
	(!A1 * !A3 * !A4 * !B1 * !X)	0.02259	0.02265	0.02258
	(!A1 * !A3 * !A4 * !B1 * !X)	0.01342	0.01339	0.01339

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)**	0.00999	0.00998	0.01002
	(A1 * A3 * A4 * B1 * X)	0.01368	0.01369	0.01360
	(A1 * A3 * !B1 * !X)	0.00297	0.00296	0.00297
	(A1 * A3 * !B1 * !X)	0.00678	0.00679	0.00665
	(A1 * A3 * !A4 * B1 * X)	0.00999	0.00999	0.01008
	(A1 * A3 * !A4 * B1 * X)	0.01366	0.01366	0.01360
	(A1 * !A3 * A4 * B1 * X)	0.00990	0.00990	0.01004
	(A1 * !A3 * A4 * B1 * X)	0.01349	0.01349	0.01350
	(A1 * !A3 * A4 * !B1 * !X)	0.00297	0.00296	0.00297
	(A1 * !A3 * A4 * !B1 * !X)	0.00675	0.00675	0.00661
	(A1 * !A3 * !A4 * B1 * X)	0.01230	0.01221	0.01108
	(A1 * !A3 * !A4 * B1 * X)	0.01536	0.01527	0.01415
	(A1 * !A3 * !A4 * !B1 * !X)	0.00299	0.00298	0.00298
	(A1 * !A3 * !A4 * !B1 * !X)	0.00728	0.00728	0.00728
	(!A1 * A3 * A4 * B1 * X)	0.01025	0.01024	0.01023
	(!A1 * A3 * A4 * B1 * X)	0.01457	0.01459	0.01455
	(!A1 * A3 * !B1 * !X)	0.00297	0.00295	0.00297
	(!A1 * A3 * !B1 * !X)	0.00726	0.00729	0.00726
	(!A1 * A3 * !A4 * B1 * X)	0.01244	0.01238	0.01206
	(!A1 * A3 * !A4 * B1 * X)	0.01685	0.01679	0.01647
	(!A1 * !A3 * A4 * B1 * X)	0.01423	0.01412	0.01346
	(!A1 * !A3 * A4 * B1 * X)	0.01873	0.01865	0.01798
	(!A1 * !A3 * A4 * !B1 * !X)	0.00297	0.00295	0.00297
	(!A1 * !A3 * A4 * !B1 * !X)	0.00725	0.00728	0.00726
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00320	0.00298	0.00300
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00751	0.00734	0.00728

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00350	0.00349	0.00352
	(A1 * A3 * A4 * B1 * X)	0.00739	0.00740	0.00729
	(A1 * A3 * !B1 * !X)	0.00720	0.00718	0.00719
	(A1 * A3 * !B1 * !X)	0.01122	0.01123	0.01108
	(A1 * A3 * !A4 * B1 * X)	0.00351	0.00350	0.00357
	(A1 * A3 * !A4 * B1 * X)	0.00736	0.00737	0.00730
	(A1 * !A3 * A4 * B1 * X)	0.00340	0.00340	0.00353
	(A1 * !A3 * A4 * B1 * X)	0.00718	0.00720	0.00720
	(A1 * !A3 * A4 * !B1 * !X)	0.00721	0.00719	0.00720
	(A1 * !A3 * A4 * !B1 * !X)	0.01119	0.01120	0.01106
	(A1 * !A3 * !A4 * B1 * X)	0.00572	0.00561	0.00448
	(A1 * !A3 * !A4 * B1 * X)	0.00901	0.00893	0.00778
	(A1 * !A3 * !A4 * !B1 * !X)	0.00724	0.00721	0.00722
	(A1 * !A3 * !A4 * !B1 * !X)	0.01175	0.01176	0.01175
	(!A1 * A3 * A4 * B1 * X)	0.00376	0.00374	0.00373
	(!A1 * A3 * A4 * B1 * X)	0.00829	0.00832	0.00828
	(!A1 * A3 * !B1 * !X)	0.00720	0.00719	0.00719
	(!A1 * A3 * !B1 * !X)	0.01170	0.01172	0.01172
	(!A1 * A3 * !A4 * B1 * X)	0.00594	0.00588	0.00556
	(!A1 * A3 * !A4 * B1 * X)	0.01058	0.01054	0.01019
	(!A1 * !A3 * A4 * B1 * X)	0.00775	0.00763	0.00697
	(!A1 * !A3 * A4 * B1 * X)	0.01248	0.01240	0.01171
	(!A1 * !A3 * A4 * !B1 * !X)	0.00720	0.00718	0.00719
	(!A1 * !A3 * A4 * !B1 * !X)	0.01170	0.01173	0.01171
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00748	0.00726	0.00725
	(!A1 * !A3 * !A4 * !B1 * !X)	0.01199	0.01182	0.01174

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.01945	0.01946	0.01952
	(A1 * A3 * A4 * B1 * X)	0.02737	0.02736	0.02725
	(A1 * A3 * !B1 * !X)	0.01435	0.01432	0.01434
	(A1 * A3 * !B1 * !X)	0.02251	0.02252	0.02228
	(A1 * A3 * !A4 * B1 * X)	0.01948	0.01947	0.01965
	(A1 * A3 * !A4 * B1 * X)	0.02733	0.02735	0.02726
	(A1 * !A3 * A4 * B1 * X)	0.01932	0.01931	0.01957
	(A1 * !A3 * A4 * B1 * X)	0.02701	0.02704	0.02706
	(A1 * !A3 * A4 * !B1 * !X)	0.01436	0.01432	0.01434
	(A1 * !A3 * A4 * !B1 * !X)	0.02246	0.02249	0.02221
	(A1 * !A3 * !A4 * B1 * X)	0.02390	0.02372	0.02147
	(A1 * !A3 * !A4 * B1 * X)	0.03061	0.03043	0.02818
	(A1 * !A3 * !A4 * !B1 * !X)	0.01446	0.01441	0.01443
	(A1 * !A3 * !A4 * !B1 * !X)	0.02362	0.02363	0.02360
	(!A1 * A3 * A4 * B1 * X)	0.02005	0.02003	0.02000
	(!A1 * A3 * A4 * B1 * X)	0.02925	0.02927	0.02922
	(!A1 * A3 * !B1 * !X)	0.01434	0.01431	0.01434
	(!A1 * A3 * !B1 * !X)	0.02349	0.02354	0.02351
	(!A1 * A3 * !A4 * B1 * X)	0.02442	0.02427	0.02362
	(!A1 * A3 * !A4 * B1 * X)	0.03380	0.03373	0.03304
	(!A1 * !A3 * A4 * B1 * X)	0.02793	0.02769	0.02639
	(!A1 * !A3 * A4 * B1 * X)	0.03753	0.03737	0.03601
	(!A1 * !A3 * A4 * !B1 * !X)	0.01435	0.01433	0.01434
	(!A1 * !A3 * A4 * !B1 * !X)	0.02347	0.02351	0.02350
	(!A1 * !A3 * !A4 * !B1 * !X)	0.01480	0.01432	0.01443
	(!A1 * !A3 * !A4 * !B1 * !X)	0.02400	0.02360	0.02357

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)**	0.01388	0.01390	0.01390
	(A2 * A4 * B1 * X)	0.01044	0.01044	0.01048
	(A2 * A4 * !B1 * !X)	0.00646	0.00648	0.00646
	(A2 * A4 * !B1 * !X)	0.00280	0.00280	0.00287
	(A2 * !A4 * B1 * X)	0.01364	0.01364	0.01362
	(A2 * !A4 * B1 * X)	0.01076	0.01077	0.01076
	(A2 * !A4 * !B1 * !X)	0.00647	0.00647	0.00645
	(A2 * !A4 * !B1 * !X)	0.00222	0.00221	0.00223
	(A1 * !A2 * A4 * B1 * X)	0.01416	0.01409	0.01432
	(A1 * !A2 * A4 * B1 * X)	0.01066	0.01055	0.01081
	(A1 * !A2 * A4 * !B1 * !X)	0.00646	0.00648	0.00646
	(A1 * !A2 * A4 * !B1 * !X)	0.00279	0.00278	0.00289
	(A1 * !A2 * !A4 * B1 * X)	0.01377	0.01378	0.01395
	(A1 * !A2 * !A4 * B1 * X)	0.01137	0.01138	0.01154
	(A1 * !A2 * !A4 * !B1 * !X)	0.00647	0.00646	0.00645
	(A1 * !A2 * !A4 * !B1 * !X)	0.00222	0.00221	0.00224
	(!A1 * !A2 * A4 * B1 * X)	0.01479	0.01440	0.01730
	(!A1 * !A2 * A4 * B1 * X)	0.01046	0.01007	0.01302
	(!A1 * !A2 * A4 * !B1 * !X)	0.00647	0.00648	0.00646
	(!A1 * !A2 * A4 * !B1 * !X)	0.00222	0.00222	0.00224
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00646	0.00648	0.00645
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00223	0.00221	0.00222

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00795	0.00797	0.00796
	(A2 * A4 * B1 * X)	0.00414	0.00413	0.00416
	(A2 * A4 * !B1 * !X)	0.01117	0.01118	0.01117
	(A2 * A4 * !B1 * !X)	0.00713	0.00713	0.00720
	(A2 * !A4 * B1 * X)	0.00774	0.00778	0.00771
	(A2 * !A4 * B1 * X)	0.00450	0.00448	0.00449
	(A2 * !A4 * !B1 * !X)	0.01117	0.01117	0.01114
	(A2 * !A4 * !B1 * !X)	0.00654	0.00653	0.00655
	(A1 * !A2 * A4 * B1 * X)	0.00824	0.00814	0.00837
	(A1 * !A2 * A4 * B1 * X)	0.00438	0.00428	0.00451
	(A1 * !A2 * A4 * !B1 * !X)	0.01116	0.01119	0.01117
	(A1 * !A2 * A4 * !B1 * !X)	0.00714	0.00712	0.00724
	(A1 * !A2 * !A4 * B1 * X)	0.00789	0.00794	0.00807
	(A1 * !A2 * !A4 * B1 * X)	0.00514	0.00513	0.00530
	(A1 * !A2 * !A4 * !B1 * !X)	0.01117	0.01116	0.01114
	(A1 * !A2 * !A4 * !B1 * !X)	0.00655	0.00654	0.00656
	(!A1 * !A2 * A4 * B1 * X)	0.00892	0.00851	0.01139
	(!A1 * !A2 * A4 * B1 * X)	0.00423	0.00380	0.00674
	(!A1 * !A2 * A4 * !B1 * !X)	0.01118	0.01120	0.01117
	(!A1 * !A2 * A4 * !B1 * !X)	0.00656	0.00656	0.00658
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01115	0.01117	0.01114
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00656	0.00655	0.00656

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.02868	0.02868	0.02870
	(A2 * A4 * B1 * X)	0.02108	0.02103	0.02113
	(A2 * A4 * !B1 * !X)	0.02253	0.02256	0.02255
	(A2 * A4 * !B1 * !X)	0.01457	0.01455	0.01470
	(A2 * !A4 * B1 * X)	0.02818	0.02825	0.02812
	(A2 * !A4 * B1 * X)	0.02184	0.02179	0.02179
	(A2 * !A4 * !B1 * !X)	0.02248	0.02250	0.02247
	(A2 * !A4 * !B1 * !X)	0.01342	0.01337	0.01339
	(A1 * !A2 * A4 * B1 * X)	0.02921	0.02899	0.02948
	(A1 * !A2 * A4 * B1 * X)	0.02154	0.02131	0.02179
	(A1 * !A2 * A4 * !B1 * !X)	0.02253	0.02256	0.02255
	(A1 * !A2 * A4 * !B1 * !X)	0.01454	0.01453	0.01476
	(A1 * !A2 * !A4 * B1 * X)	0.02851	0.02857	0.02882
	(A1 * !A2 * !A4 * B1 * X)	0.02309	0.02307	0.02336
	(A1 * !A2 * !A4 * !B1 * !X)	0.02249	0.02250	0.02247
	(A1 * !A2 * !A4 * !B1 * !X)	0.01343	0.01338	0.01341
	(!A1 * !A2 * A4 * B1 * X)	0.03042	0.02966	0.03538
	(!A1 * !A2 * A4 * B1 * X)	0.02121	0.02039	0.02619
	(!A1 * !A2 * A4 * !B1 * !X)	0.02253	0.02257	0.02256
	(!A1 * !A2 * A4 * !B1 * !X)	0.01347	0.01346	0.01347
	(!A1 * !A2 * !A4 * !B1 * !X)	0.02253	0.02258	0.02250
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01345	0.01340	0.01340

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)**	0.00991	0.00990	0.00997
	(A2 * A4 * B1 * X)	0.01332	0.01333	0.01333
	(A2 * A4 * !B1 * !X)	0.00299	0.00297	0.00298
	(A2 * A4 * !B1 * !X)	0.00672	0.00673	0.00658
	(A2 * !A4 * B1 * X)	0.01030	0.01028	0.01013
	(A2 * !A4 * B1 * X)	0.01319	0.01319	0.01307
	(A2 * !A4 * !B1 * !X)	0.00300	0.00299	0.00299
	(A2 * !A4 * !B1 * !X)	0.00723	0.00723	0.00722
	(A1 * !A2 * A4 * B1 * X)	0.00991	0.00991	0.01013
	(A1 * !A2 * A4 * B1 * X)	0.01340	0.01341	0.01346
	(A1 * !A2 * A4 * !B1 * !X)	0.00298	0.00297	0.00298
	(A1 * !A2 * A4 * !B1 * !X)	0.00670	0.00670	0.00656
	(A1 * !A2 * !A4 * B1 * X)	0.01287	0.01280	0.01177
	(A1 * !A2 * !A4 * B1 * X)	0.01546	0.01539	0.01441
	(A1 * !A2 * !A4 * !B1 * !X)	0.00301	0.00299	0.00299
	(A1 * !A2 * !A4 * !B1 * !X)	0.00721	0.00722	0.00721
	(!A1 * !A2 * A4 * B1 * X)	0.01424	0.01411	0.01351
	(!A1 * !A2 * A4 * B1 * X)	0.01851	0.01844	0.01781
	(!A1 * !A2 * A4 * !B1 * !X)	0.00299	0.00297	0.00298
	(!A1 * !A2 * A4 * !B1 * !X)	0.00719	0.00721	0.00720
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00322	0.00300	0.00302
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00746	0.00728	0.00723

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00328	0.00329	0.00335
	(A2 * A4 * B1 * X)	0.00707	0.00706	0.00708
	(A2 * A4 * !B1 * !X)	0.00718	0.00716	0.00717
	(A2 * A4 * !B1 * !X)	0.01128	0.01129	0.01115
	(A2 * !A4 * B1 * X)	0.00365	0.00363	0.00347
	(A2 * !A4 * B1 * X)	0.00688	0.00690	0.00677
	(A2 * !A4 * !B1 * !X)	0.00722	0.00719	0.00720
	(A2 * !A4 * !B1 * !X)	0.01181	0.01181	0.01179
	(A1 * !A2 * A4 * B1 * X)	0.00329	0.00329	0.00350
	(A1 * !A2 * A4 * B1 * X)	0.00713	0.00714	0.00719
	(A1 * !A2 * A4 * !B1 * !X)	0.00718	0.00717	0.00717
	(A1 * !A2 * A4 * !B1 * !X)	0.01125	0.01125	0.01111
	(A1 * !A2 * !A4 * B1 * X)	0.00622	0.00614	0.00511
	(A1 * !A2 * !A4 * B1 * X)	0.00916	0.00910	0.00809
	(A1 * !A2 * !A4 * !B1 * !X)	0.00722	0.00719	0.00720
	(A1 * !A2 * !A4 * !B1 * !X)	0.01179	0.01180	0.01179
	(!A1 * !A2 * A4 * B1 * X)	0.00763	0.00751	0.00690
	(!A1 * !A2 * A4 * B1 * X)	0.01230	0.01221	0.01156
	(!A1 * !A2 * A4 * !B1 * !X)	0.00717	0.00716	0.00717
	(!A1 * !A2 * A4 * !B1 * !X)	0.01176	0.01177	0.01176
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00748	0.00725	0.00723
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01205	0.01187	0.01179

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.01930	0.01930	0.01945
	(A2 * A4 * B1 * X)	0.02679	0.02681	0.02686
	(A2 * A4 * !B1 * !X)	0.01443	0.01440	0.01441
	(A2 * A4 * !B1 * !X)	0.02251	0.02253	0.02228
	(A2 * !A4 * B1 * X)	0.02004	0.02001	0.01963
	(A2 * !A4 * B1 * X)	0.02641	0.02642	0.02615
	(A2 * !A4 * !B1 * !X)	0.01454	0.01449	0.01449
	(A2 * !A4 * !B1 * !X)	0.02360	0.02359	0.02358
	(A1 * !A2 * A4 * B1 * X)	0.01934	0.01934	0.01977
	(A1 * !A2 * A4 * B1 * X)	0.02693	0.02696	0.02709
	(A1 * !A2 * A4 * !B1 * !X)	0.01442	0.01441	0.01441
	(A1 * !A2 * A4 * !B1 * !X)	0.02246	0.02246	0.02220
	(A1 * !A2 * !A4 * B1 * X)	0.02521	0.02506	0.02305
	(A1 * !A2 * !A4 * B1 * X)	0.03103	0.03092	0.02899
	(A1 * !A2 * !A4 * !B1 * !X)	0.01453	0.01446	0.01449
	(A1 * !A2 * !A4 * !B1 * !X)	0.02357	0.02360	0.02356
	(!A1 * !A2 * A4 * B1 * X)	0.02794	0.02771	0.02649
	(!A1 * !A2 * A4 * B1 * X)	0.03715	0.03695	0.03572
	(!A1 * !A2 * A4 * !B1 * !X)	0.01441	0.01438	0.01440
	(!A1 * !A2 * A4 * !B1 * !X)	0.02347	0.02352	0.02349
	(!A1 * !A2 * !A4 * !B1 * !X)	0.01493	0.01442	0.01451
	(!A1 * !A2 * !A4 * !B1 * !X)	0.02403	0.02359	0.02356

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.01364	0.01367	0.01365
	(A3 * B1 * X)	0.01071	0.01070	0.01073
	(A3 * !B1 * !X)	0.00647	0.00649	0.00647
	(A3 * !B1 * !X)	0.00219	0.00217	0.00219
	(A2 * !A3 * B1 * X)	0.01364	0.01367	0.01366
	(A2 * !A3 * B1 * X)	0.01081	0.01080	0.01083
	(A2 * !A3 * !B1 * !X)	0.00647	0.00649	0.00647
	(A2 * !A3 * !B1 * !X)	0.00220	0.00218	0.00220
	(A1 * !A2 * !A3 * B1 * X)	0.01365	0.01370	0.01385
	(A1 * !A2 * !A3 * B1 * X)	0.01146	0.01145	0.01161
	(A1 * !A2 * !A3 * !B1 * !X)	0.00647	0.00649	0.00647
	(A1 * !A2 * !A3 * !B1 * !X)	0.00221	0.00218	0.00220
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00650	0.00648	0.00647
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00219	0.00219	0.00217
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00757	0.00760	0.00758
	(A3 * B1 * X)	0.00442	0.00441	0.00444
	(A3 * !B1 * !X)	0.01114	0.01115	0.01114
	(A3 * !B1 * !X)	0.00664	0.00662	0.00663
	(A2 * !A3 * B1 * X)	0.00756	0.00759	0.00759
	(A2 * !A3 * B1 * X)	0.00453	0.00452	0.00454
	(A2 * !A3 * !B1 * !X)	0.01116	0.01115	0.01114
	(A2 * !A3 * !B1 * !X)	0.00663	0.00663	0.00664
	(A1 * !A2 * !A3 * B1 * X)	0.00758	0.00762	0.00778
	(A1 * !A2 * !A3 * B1 * X)	0.00519	0.00518	0.00534
	(A1 * !A2 * !A3 * !B1 * !X)	0.01114	0.01115	0.01114
	(A1 * !A2 * !A3 * !B1 * !X)	0.00666	0.00663	0.00665
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01115	0.01115	0.01113
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00664	0.00663	0.00664

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.02723	0.02726	0.02725
	(A3 * B1 * X)	0.02155	0.02154	0.02158
	(A3 * !B1 * !X)	0.02178	0.02180	0.02176
	(A3 * !B1 * !X)	0.01337	0.01330	0.01334
	(A2 * !A3 * B1 * X)	0.02727	0.02726	0.02729
	(A2 * !A3 * B1 * X)	0.02174	0.02176	0.02180
	(A2 * !A3 * !B1 * !X)	0.02177	0.02179	0.02176
	(A2 * !A3 * !B1 * !X)	0.01339	0.01332	0.01336
	(A1 * !A2 * !A3 * B1 * X)	0.02730	0.02735	0.02767
	(A1 * !A2 * !A3 * B1 * X)	0.02307	0.02307	0.02337
	(A1 * !A2 * !A3 * !B1 * !X)	0.02178	0.02179	0.02176
	(A1 * !A2 * !A3 * !B1 * !X)	0.01342	0.01334	0.01338
	(!A1 * !A2 * !A3 * !B1 * !X)	0.02184	0.02181	0.02178
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01337	0.01337	0.01334

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.01007	0.01006	0.00998
	(A3 * B1 * X)	0.01300	0.01300	0.01293
	(A3 * !B1 * !X)	0.00299	0.00296	0.00297
	(A3 * !B1 * !X)	0.00726	0.00727	0.00726
	(A2 * !A3 * B1 * X)	0.01033	0.01031	0.01014
	(A2 * !A3 * B1 * X)	0.01317	0.01318	0.01305
	(A2 * !A3 * !B1 * !X)	0.00299	0.00296	0.00297
	(A2 * !A3 * !B1 * !X)	0.00724	0.00725	0.00725
	(A1 * !A2 * !A3 * B1 * X)	0.01311	0.01306	0.01220
	(A1 * !A2 * !A3 * B1 * X)	0.01559	0.01555	0.01472
	(A1 * !A2 * !A3 * !B1 * !X)	0.00298	0.00297	0.00297
	(A1 * !A2 * !A3 * !B1 * !X)	0.00723	0.00723	0.00723
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00320	0.00298	0.00299
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00751	0.00732	0.00727
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00359	0.00358	0.00349
	(A3 * B1 * X)	0.00674	0.00674	0.00666
	(A3 * !B1 * !X)	0.00723	0.00720	0.00721
	(A3 * !B1 * !X)	0.01173	0.01172	0.01171
	(A2 * !A3 * B1 * X)	0.00384	0.00383	0.00363
	(A2 * !A3 * B1 * X)	0.00691	0.00691	0.00677
	(A2 * !A3 * !B1 * !X)	0.00723	0.00719	0.00721
	(A2 * !A3 * !B1 * !X)	0.01171	0.01172	0.01170
	(A1 * !A2 * !A3 * B1 * X)	0.00665	0.00659	0.00573
	(A1 * !A2 * !A3 * B1 * X)	0.00934	0.00930	0.00846
	(A1 * !A2 * !A3 * !B1 * !X)	0.00722	0.00720	0.00721
	(A1 * !A2 * !A3 * !B1 * !X)	0.01169	0.01169	0.01169
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00749	0.00725	0.00724
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01197	0.01179	0.01171

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.02051	0.02049	0.02032
	(A3 * B1 * X)	0.02619	0.02619	0.02605
	(A3 * !B1 * !X)	0.01529	0.01518	0.01521
	(A3 * !B1 * !X)	0.02369	0.02367	0.02362
	(A2 * !A3 * B1 * X)	0.02102	0.02099	0.02053
	(A2 * !A3 * B1 * X)	0.02653	0.02654	0.02622
	(A2 * !A3 * !B1 * !X)	0.01526	0.01519	0.01521
	(A2 * !A3 * !B1 * !X)	0.02362	0.02362	0.02359
	(A1 * !A2 * !A3 * B1 * X)	0.02659	0.02649	0.02477
	(A1 * !A2 * !A3 * B1 * X)	0.03139	0.03130	0.02967
	(A1 * !A2 * !A3 * !B1 * !X)	0.01525	0.01517	0.01520
	(A1 * !A2 * !A3 * !B1 * !X)	0.02358	0.02361	0.02356
	(!A1 * !A2 * !A3 * !B1 * !X)	0.01565	0.01519	0.01523
	(!A1 * !A2 * !A3 * !B1 * !X)	0.02411	0.02374	0.02362

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)**	0.00575	0.00575	0.00554
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00274	0.00273	0.00247
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.01006	0.01007	0.00990
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00663	0.00662	0.00636
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.02037	0.02040	0.01996
	(!A1 * !A2 * !A3 * !A4 * !X)	0.01475	0.01471	0.01417

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)	0.00419	0.00419	0.00423
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00713	0.00718	0.00716
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	0.00863	0.00864	0.00866
	(!A1 * !A2 * !A3 * !A4 * !X)	0.01205	0.01208	0.01207
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	0.01757	0.01758	0.01766
	(!A1 * !A2 * !A3 * !A4 * !X)	0.02311	0.02316	0.02317

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00241	1.76899
sky130_fd_sc_hs__or2b_2	0.00270	0.00233	2.72704
sky130_fd_sc_hs__or2b_4	0.00511	0.00288	6.11514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	1046.15000	1863.20000
sky130_fd_sc_hs__or2b_2	0.00000	1188.11000	2400.52000
sky130_fd_sc_hs__or2b_4	0.00000	1354.77000	2759.91000

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)	0.04674	0.41235	5.77477
	B_N->X (FR)	0.07304	0.55300	7.48521
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.04757	0.31755	4.79396
	B_N->X (FR)	0.08093	0.49426	7.25825
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.04417	0.24668	5.15772
	B_N->X (FR)	0.08360	0.43874	7.39648

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.06910	0.44691	5.74083
	B_N->X (RF)	0.07773	0.32871	3.65873
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.08800	0.42467	5.32259
	B_N->X (RF)	0.10060	0.28421	2.83896
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.08945	0.40032	5.98585
	B_N->X (RF)	0.10052	0.26099	3.10737

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.05319	0.06554	0.26425
	A	0.04828	0.06062	0.25898
	B_N	0.02545	0.04735	0.37514
	B_N	0.02962	0.05147	0.37886
sky130_fd_sc_hs__or2b_2	A	0.05725	0.07052	0.25552
	A	0.05206	0.06533	0.24948
	B_N	0.03041	0.05136	0.37036
	B_N	0.03455	0.05550	0.37425
sky130_fd_sc_hs__or2b_4	A	0.06133	0.09625	0.61482
	A	0.05162	0.08654	0.60283
	B_N	0.06009	0.08425	0.47571
	B_N	0.06468	0.08907	0.48014

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.04065	0.05233	0.24313
	A	0.04555	0.05722	0.24741
	B_N	0.04542	0.06604	0.39095
	B_N	0.04126	0.06167	0.38626
sky130_fd_sc_hs__or2b_2	A	0.05115	0.06002	0.27664
	A	0.05633	0.06512	0.28127
	B_N	0.05561	0.06947	0.37651
	B_N	0.05148	0.06528	0.37136
sky130_fd_sc_hs__or2b_4	A	0.07803	0.09869	0.59483
	A	0.08771	0.10818	0.59860
	B_N	0.08358	0.09923	0.48699
	B_N	0.07896	0.09454	0.47988

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00306	0.00289	0.00632
	(!B_N * X)	-0.00120	-0.00135	0.00207
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00331	0.00313	0.00655
	(!B_N * X)	-0.00119	-0.00137	0.00205
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00691	0.00643	0.01307
	(!B_N * X)	-0.00160	-0.00210	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00345	0.00332	0.00253
	(!B_N * X)	0.00770	0.00761	0.00678
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00342	0.00328	0.00249
	(!B_N * X)	0.00790	0.00782	0.00700
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00701	0.00675	0.00509
	(!B_N * X)	0.01550	0.01530	0.01360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.02015	0.03945	0.33339
	(A * X)	0.01534	0.03463	0.32858
sky130_fd_sc_hs__or2b_2	(A * X)	0.02054	0.03898	0.32366
	(A * X)	0.01573	0.03416	0.31885
sky130_fd_sc_hs__or2b_4	(A * X)	0.01926	0.03970	0.36458
	(A * X)	0.01357	0.03399	0.35889

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00172	0.02283	0.32925
	(A * X)	0.00654	0.02764	0.33404
sky130_fd_sc_hs__or2b_2	(A * X)	0.00187	0.02221	0.31937
	(A * X)	0.00668	0.02704	0.32418
sky130_fd_sc_hs__or2b_4	(A * X)	0.00486	0.02647	0.36004
	(A * X)	0.01057	0.03221	0.36574

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00236	0.00225	1.72287
sky130_fd_sc_hs__or2_2	0.00291	0.00256	2.77100
sky130_fd_sc_hs__or2_4	0.00461	0.00401	6.12258

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	638.45900	1304.51000
sky130_fd_sc_hs__or2_2	0.00000	524.44100	1084.27000
sky130_fd_sc_hs__or2_4	0.00000	1032.69000	2104.36000

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)	0.04453	0.39941	5.56950
	B->X (RR)	0.03995	0.38099	5.38644
sky130_fd_sc_hs__or2_2	A->X (RR)	0.04852	0.32033	4.87409
	B->X (RR)	0.04299	0.30138	4.67534
sky130_fd_sc_hs__or2_4	A->X (RR)	0.06549	0.34589	6.20628
	B->X (RR)	0.05330	0.30861	5.85879

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.07107	0.45209	5.73474
	B->X (FF)	0.06155	0.47466	6.23472
sky130_fd_sc_hs__or2_2	A->X (FF)	0.08701	0.42012	5.20051
	B->X (FF)	0.07514	0.44466	5.70963
sky130_fd_sc_hs__or2_4	A->X (FF)	0.08302	0.35458	5.02771
	B->X (FF)	0.07068	0.38034	5.59762

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.02751	0.04022	0.24291
	A	0.02169	0.03440	0.23706
	B	0.04269	0.05642	0.26589
	B	0.03805	0.05176	0.26108
sky130_fd_sc_hs__or2_2	A	0.02510	0.03814	0.22685
	A	0.01813	0.03115	0.21905
	B	0.02915	0.04286	0.23542
	B	0.02380	0.03748	0.22951
sky130_fd_sc_hs__or2_4	A	0.05044	0.07415	0.45444
	A	0.03892	0.06269	0.44272
	B	0.05670	0.08295	0.46956
	B	0.04865	0.07503	0.45940

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.01476	0.02695	0.22256
	A	0.02055	0.03269	0.22847
	B	0.01476	0.02936	0.26193
	B	0.01938	0.03401	0.26584
sky130_fd_sc_hs__or2_2	A	0.02876	0.03704	0.23856
	A	0.03572	0.04393	0.24225
	B	0.02905	0.03959	0.27084
	B	0.03439	0.04474	0.27474
sky130_fd_sc_hs__or2_4	A	0.06241	0.07582	0.40485
	A	0.07390	0.08724	0.41456
	B	0.06314	0.08150	0.47582
	B	0.07117	0.08930	0.48245

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00306	0.00330	0.01085
	(B * X)	-0.00068	-0.00047	0.00712
sky130_fd_sc_hs__or2_2	(B * X)	0.00348	0.00328	0.00671
	(B * X)	-0.00096	-0.00116	0.00228
sky130_fd_sc_hs__or2_4	(B * X)	0.00540	0.00492	0.01172
	(B * X)	-0.00189	-0.00236	0.00446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00954	0.00929	0.00724
	(B * X)	0.01328	0.01303	0.01098
sky130_fd_sc_hs__or2_2	(B * X)	0.00311	0.00297	0.00219
	(B * X)	0.00755	0.00746	0.00664
sky130_fd_sc_hs__or2_4	(B * X)	0.00796	0.00770	0.00608
	(B * X)	0.01526	0.01506	0.01339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00225	0.00232	0.00363
	(A * X)	-0.00032	-0.00029	0.00104
sky130_fd_sc_hs__or2_2	(A * X)	0.00228	0.00233	0.00294
	(A * X)	-0.00055	-0.00055	0.00008
sky130_fd_sc_hs__or2_4	(A * X)	0.00286	0.00294	0.00397
	(A * X)	-0.00106	-0.00107	-0.00000

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00418	0.00394	0.00087
	(A * X)	0.00677	0.00653	0.00345
sky130_fd_sc_hs__or2_2	(A * X)	0.00141	0.00128	-0.00017
	(A * X)	0.00427	0.00416	0.00270
sky130_fd_sc_hs__or2_4	(A * X)	0.00466	0.00442	0.00152
	(A * X)	0.00866	0.00846	0.00554

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00255	0.00278	0.00233	1.75847
sky130_fd_sc_hs__or3b_2	0.00272	0.00264	0.00232	2.77336
sky130_fd_sc_hs__or3b_4	0.00473	0.00435	0.00270	6.11565

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3b_1	0.00000	911.11200	1871.50000
sky130_fd_sc_hs__or3b_2	0.00000	989.00900	2423.13000
sky130_fd_sc_hs__or3b_4	0.00000	943.61900	2709.75000

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)	0.05238	0.41971	5.58894
	B->X (RR)	0.05068	0.40412	5.34303
	C_N->X (FR)	0.07600	0.55682	7.43557
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.05236	0.32578	4.70822
	B->X (RR)	0.05023	0.31307	4.51336
	C_N->X (FR)	0.08190	0.49481	7.26180
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.07183	0.35340	6.04498
	B->X (RR)	0.06624	0.33199	5.74580
	C_N->X (FR)	0.09803	0.45524	7.46748

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.10724	0.49628	5.98335
	B->X (FF)	0.09977	0.52403	6.47375
	C_N->X (RF)	0.10056	0.36595	3.71297
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.13484	0.48010	5.60485
	B->X (FF)	0.12439	0.50618	6.07197
	C_N->X (RF)	0.12723	0.33487	3.07554
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.12071	0.39276	5.22620
	B->X (FF)	0.11051	0.42162	5.73736
	C_N->X (RF)	0.11397	0.28282	3.20998

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.05525	0.06578	0.25170
	A	0.04877	0.05932	0.24517
	B	0.05367	0.06420	0.23435
	B	0.04823	0.05873	0.22874
	C_N	0.02572	0.04757	0.36995
	C_N	0.02928	0.05115	0.37318
sky130_fd_sc_hs__or3b_2	A	0.05948	0.06994	0.23707
	A	0.05283	0.06329	0.22943
	B	0.05750	0.06852	0.22138
	B	0.05219	0.06326	0.21496
	C_N	0.03036	0.05106	0.36175
	C_N	0.03417	0.05487	0.36512
sky130_fd_sc_hs__or3b_4	A	0.06858	0.08938	0.45785
	A	0.05690	0.07770	0.44705
	B	0.06330	0.08443	0.42077
	B	0.05470	0.07585	0.41076
	C_N	0.05901	0.08036	0.44577
	C_N	0.06333	0.08470	0.44849

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.04295	0.05140	0.23244
	A	0.04939	0.05784	0.23715
	B	0.04328	0.05185	0.23988
	B	0.04873	0.05729	0.23997
	C_N	0.04748	0.06618	0.38357
	C_N	0.04393	0.06253	0.37996
sky130_fd_sc_hs__or3b_2	A	0.05777	0.06044	0.24452
	A	0.06438	0.06696	0.25047
	B	0.05836	0.06099	0.24799
	B	0.06365	0.06631	0.25307
	C_N	0.06202	0.07213	0.36719
	C_N	0.05822	0.06827	0.36322
sky130_fd_sc_hs__or3b_4	A	0.08265	0.08782	0.40075
	A	0.09428	0.09925	0.41247
	B	0.08367	0.08978	0.41824
	B	0.09223	0.09823	0.42505
	C_N	0.08900	0.09774	0.45496
	C_N	0.08466	0.09332	0.44804

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)	0.01443	0.01417	0.01589
	(B * C_N * X)	0.01038	0.01008	0.01186
	(B * !C_N * X)	0.00241	0.00218	0.00222
	(B * !C_N * X)	-0.00159	-0.00182	-0.00176
	(!B * !C_N * X)	0.00346	0.00320	0.00630
	(!B * !C_N * X)	-0.00071	-0.00101	0.00221
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.01481	0.01451	0.01623
	(B * C_N * X)	0.01048	0.01018	0.01192
	(B * !C_N * X)	0.00272	0.00248	0.00252
	(B * !C_N * X)	-0.00156	-0.00180	-0.00175
	(!B * !C_N * X)	0.00381	0.00350	0.00660
	(!B * !C_N * X)	-0.00063	-0.00095	0.00223
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.01071	0.01012	0.01349
	(B * C_N * X)	0.00320	0.00253	0.00603
	(B * !C_N * X)	0.00424	0.00377	0.00381
	(B * !C_N * X)	-0.00317	-0.00370	-0.00355
	(!B * !C_N * X)	0.00643	0.00581	0.01198
	(!B * !C_N * X)	-0.00132	-0.00194	0.00441

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)	0.01263	0.01255	0.01220
	(B * C_N * X)	0.01666	0.01664	0.01625
	(B * !C_N * X)	-0.00121	-0.00123	-0.00123
	(B * !C_N * X)	0.00279	0.00281	0.00277
	(!B * !C_N * X)	0.00347	0.00334	0.00249
	(!B * !C_N * X)	0.00761	0.00752	0.00665
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.01243	0.01235	0.01200
	(B * C_N * X)	0.01675	0.01672	0.01633
	(B * !C_N * X)	-0.00130	-0.00132	-0.00133
	(B * !C_N * X)	0.00297	0.00300	0.00295
	(!B * !C_N * X)	0.00337	0.00324	0.00239
	(!B * !C_N * X)	0.00779	0.00769	0.00682
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00811	0.00798	0.00725
	(B * C_N * X)	0.01563	0.01554	0.01476
	(B * !C_N * X)	-0.00129	-0.00132	-0.00134
	(B * !C_N * X)	0.00608	0.00615	0.00606
	(!B * !C_N * X)	0.00806	0.00781	0.00610
	(!B * !C_N * X)	0.01575	0.01556	0.01382

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)	0.01396	0.01401	0.01454
	(A * C_N * X)	0.01090	0.01089	0.01145
	(A * !C_N * X)	0.00256	0.00261	0.00275
	(A * !C_N * X)	-0.00113	-0.00111	-0.00093
	(!A * !C_N * X)	0.00326	0.00298	0.00632
	(!A * !C_N * X)	-0.00109	-0.00136	0.00201
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.01409	0.01415	0.01466
	(A * C_N * X)	0.01108	0.01107	0.01162
	(A * !C_N * X)	0.00259	0.00264	0.00277
	(A * !C_N * X)	-0.00108	-0.00105	-0.00090
	(!A * !C_N * X)	0.00333	0.00304	0.00636
	(!A * !C_N * X)	-0.00097	-0.00126	0.00210
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00892	0.00900	0.00986
	(A * C_N * X)	0.00439	0.00437	0.00529
	(A * !C_N * X)	0.00391	0.00398	0.00424
	(A * !C_N * X)	-0.00198	-0.00194	-0.00163
	(!A * !C_N * X)	0.00531	0.00474	0.01141
	(!A * !C_N * X)	-0.00184	-0.00240	0.00432

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)	0.01234	0.01222	0.01092
	(A * C_N * X)	0.01543	0.01534	0.01403
	(A * !C_N * X)	-0.00162	-0.00162	-0.00153
	(A * !C_N * X)	0.00217	0.00217	0.00211
	(!A * !C_N * X)	0.00336	0.00322	0.00244
	(!A * !C_N * X)	0.00767	0.00757	0.00676
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.01237	0.01225	0.01095
	(A * C_N * X)	0.01540	0.01531	0.01401
	(A * !C_N * X)	-0.00145	-0.00145	-0.00136
	(A * !C_N * X)	0.00231	0.00231	0.00227
	(!A * !C_N * X)	0.00352	0.00338	0.00259
	(!A * !C_N * X)	0.00778	0.00768	0.00686
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00842	0.00820	0.00562
	(A * C_N * X)	0.01301	0.01284	0.01024
	(A * !C_N * X)	-0.00154	-0.00152	-0.00134
	(A * !C_N * X)	0.00453	0.00450	0.00443
	(!A * !C_N * X)	0.00845	0.00820	0.00661
	(!A * !C_N * X)	0.01557	0.01534	0.01370

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.01732	0.03666	0.32847
	(B * X)	0.01263	0.03198	0.32380
	(A * !B * X)	0.02022	0.03947	0.33061
	(A * !B * X)	0.01517	0.03442	0.32556
sky130_fd_sc_hs__or3b_2	(B * X)	0.01802	0.03663	0.32213
	(B * X)	0.01319	0.03180	0.31731
	(A * !B * X)	0.02090	0.03943	0.32422
	(A * !B * X)	0.01570	0.03423	0.31904
sky130_fd_sc_hs__or3b_4	(B * X)	0.01376	0.03441	0.35266
	(B * X)	0.00799	0.02861	0.34688
	(A * !B * X)	0.01957	0.04007	0.35690
	(A * !B * X)	0.01308	0.03355	0.35042

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00149	0.02242	0.32474
	(B * X)	0.00617	0.02711	0.32940
	(A * !B * X)	0.00152	0.02247	0.32565
	(A * !B * X)	0.00673	0.02770	0.33071
sky130_fd_sc_hs__or3b_2	(B * X)	0.00165	0.02194	0.31794
	(B * X)	0.00648	0.02678	0.32277
	(A * !B * X)	0.00167	0.02200	0.31884
	(A * !B * X)	0.00704	0.02735	0.32405
sky130_fd_sc_hs__or3b_4	(B * X)	0.00237	0.02386	0.34695
	(B * X)	0.00818	0.02967	0.35272
	(A * !B * X)	0.00247	0.02402	0.34880
	(A * !B * X)	0.00932	0.03087	0.35529

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00263	0.00261	0.00255	1.77151
sky130_fd_sc_hs__or3_2	0.00267	0.00271	0.00277	3.31119
sky130_fd_sc_hs__or3_4	0.00494	0.00442	0.00430	6.09692

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	244.43000	590.20800
sky130_fd_sc_hs__or3_2	0.00000	324.78000	1107.29000
sky130_fd_sc_hs__or3_4	0.00000	637.12400	2117.22000

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)	0.05236	0.41490	5.52797
	B->X (RR)	0.05050	0.39885	5.27150
	C->X (RR)	0.04449	0.37904	5.13079
sky130_fd_sc_hs__or3_2	A->X (RR)	0.05147	0.32265	5.14705
	B->X (RR)	0.04913	0.30810	4.91073
	C->X (RR)	0.04440	0.29099	4.76418
sky130_fd_sc_hs__or3_4	A->X (RR)	0.07262	0.35378	6.02269
	B->X (RR)	0.06697	0.33223	5.73039
	C->X (RR)	0.05712	0.30751	5.57537

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.10890	0.49883	5.99594
	B->X (FF)	0.09955	0.52622	6.49762
	C->X (FF)	0.08123	0.53115	6.63249
sky130_fd_sc_hs__or3_2	A->X (FF)	0.13115	0.48974	6.17982
	B->X (FF)	0.12086	0.51709	6.65582
	C->X (FF)	0.10401	0.52684	6.78574
sky130_fd_sc_hs__or3_4	A->X (FF)	0.12021	0.39354	5.21858
	B->X (FF)	0.10977	0.42160	5.72231
	C->X (FF)	0.08999	0.42738	5.86706

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.02304	0.03381	0.22863
	A	0.01461	0.02537	0.22019
	B	0.02111	0.03197	0.21001
	B	0.01417	0.02502	0.20308
	C	0.02511	0.03652	0.21600
	C	0.01945	0.03085	0.20982
sky130_fd_sc_hs__or3_2	A	0.02780	0.04071	0.25801
	A	0.01931	0.03221	0.24835
	B	0.02559	0.03885	0.23499
	B	0.01855	0.03182	0.22681
	C	0.02959	0.04295	0.23955
	C	0.02377	0.03715	0.23259
sky130_fd_sc_hs__or3_4	A	0.05664	0.07716	0.44587
	A	0.04155	0.06200	0.43164
	B	0.05089	0.07194	0.40853
	B	0.03936	0.06045	0.39566
	C	0.05728	0.07967	0.41584
	C	0.04835	0.07084	0.40632

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01711	0.02557	0.20847
	A	0.02551	0.03398	0.21517
	B	0.01734	0.02600	0.21109
	B	0.02426	0.03292	0.21801
	C	0.01724	0.02731	0.21646
	C	0.02288	0.03295	0.22153
sky130_fd_sc_hs__or3_2	A	0.03727	0.04100	0.24228
	A	0.04572	0.04933	0.24723
	B	0.03765	0.04135	0.24014
	B	0.04467	0.04828	0.24727
	C	0.03756	0.04254	0.24410
	C	0.04335	0.04830	0.24924
sky130_fd_sc_hs__or3_4	A	0.06905	0.07393	0.39072
	A	0.08414	0.08901	0.40320
	B	0.07041	0.07658	0.40652
	B	0.08189	0.08788	0.41453
	C	0.07007	0.07899	0.41863
	C	0.07897	0.08771	0.42174

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00247	0.00227	0.00229
	(B * C * X)	-0.00165	-0.00190	-0.00182
	(B * !C * X)	0.00310	0.00284	0.00451
	(B * !C * X)	-0.00111	-0.00141	0.00035
	(!B * C * X)	0.00354	0.00329	0.00636
	(!B * C * X)	-0.00080	-0.00110	0.00213
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00267	0.00246	0.00247
	(B * C * X)	-0.00157	-0.00182	-0.00174
	(B * !C * X)	0.00330	0.00303	0.00470
	(B * !C * X)	-0.00102	-0.00133	0.00043
	(!B * C * X)	0.00374	0.00348	0.00655
	(!B * C * X)	-0.00071	-0.00102	0.00221
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00450	0.00400	0.00407
	(B * C * X)	-0.00309	-0.00357	-0.00344
	(B * !C * X)	0.00583	0.00520	0.00854
	(B * !C * X)	-0.00195	-0.00258	0.00089
	(!B * C * X)	0.00671	0.00610	0.01224
	(!B * C * X)	-0.00133	-0.00195	0.00445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00141	-0.00143	-0.00144
	(B * C * X)	0.00270	0.00273	0.00268
	(B * !C * X)	0.00092	0.00085	0.00049
	(B * !C * X)	0.00513	0.00509	0.00470
	(!B * C * X)	0.00327	0.00314	0.00229
	(!B * C * X)	0.00757	0.00748	0.00661
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00139	-0.00142	-0.00142
	(B * C * X)	0.00282	0.00285	0.00281
	(B * !C * X)	0.00094	0.00086	0.00050
	(B * !C * X)	0.00526	0.00522	0.00482
	(!B * C * X)	0.00328	0.00315	0.00230
	(!B * C * X)	0.00769	0.00760	0.00673
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00193	-0.00195	-0.00197
	(B * C * X)	0.00565	0.00568	0.00559
	(B * !C * X)	0.00273	0.00261	0.00186
	(B * !C * X)	0.01049	0.01038	0.00962
	(!B * C * X)	0.00742	0.00716	0.00546
	(!B * C * X)	0.01538	0.01518	0.01344

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00239	0.00243	0.00258
	(A * C * X)	-0.00091	-0.00090	-0.00071
	(A * !C * X)	0.00219	0.00223	0.00269
	(A * !C * X)	-0.00057	-0.00058	-0.00007
	(!A * C * X)	0.00308	0.00280	0.00615
	(!A * C * X)	-0.00094	-0.00122	0.00217
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00253	0.00256	0.00271
	(A * C * X)	-0.00095	-0.00093	-0.00074
	(A * !C * X)	0.00232	0.00236	0.00283
	(A * !C * X)	-0.00062	-0.00063	-0.00010
	(!A * C * X)	0.00323	0.00294	0.00629
	(!A * C * X)	-0.00097	-0.00126	0.00213
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00373	0.00379	0.00406
	(A * C * X)	-0.00171	-0.00167	-0.00133
	(A * !C * X)	0.00350	0.00357	0.00439
	(A * !C * X)	-0.00078	-0.00080	0.00009
	(!A * C * X)	0.00520	0.00457	0.01123
	(!A * C * X)	-0.00171	-0.00233	0.00440

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00160	-0.00160	-0.00150
	(A * C * X)	0.00180	0.00179	0.00175
	(A * !C * X)	0.00110	0.00099	-0.00032
	(A * !C * X)	0.00388	0.00378	0.00248
	(!A * C * X)	0.00339	0.00326	0.00247
	(!A * C * X)	0.00739	0.00728	0.00647
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00152	-0.00153	-0.00143
	(A * C * X)	0.00203	0.00204	0.00199
	(A * !C * X)	0.00115	0.00105	-0.00026
	(A * !C * X)	0.00411	0.00400	0.00271
	(!A * C * X)	0.00345	0.00331	0.00253
	(!A * C * X)	0.00763	0.00753	0.00671
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00171	-0.00171	-0.00153
	(A * C * X)	0.00388	0.00388	0.00379
	(A * !C * X)	0.00357	0.00336	0.00076
	(A * !C * X)	0.00791	0.00773	0.00513
	(!A * C * X)	0.00826	0.00800	0.00640
	(!A * C * X)	0.01514	0.01490	0.01327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00201	0.00205	0.00204
	(B * X)	-0.00075	-0.00076	-0.00072
	(A * !B * X)	0.00204	0.00208	0.00230
	(A * !B * X)	-0.00023	-0.00023	0.00001
sky130_fd_sc_hs__or3_2	(B * X)	0.00233	0.00236	0.00235
	(B * X)	-0.00067	-0.00068	-0.00064
	(A * !B * X)	0.00235	0.00239	0.00261
	(A * !B * X)	-0.00015	-0.00016	0.00009
sky130_fd_sc_hs__or3_4	(B * X)	0.00307	0.00313	0.00313
	(B * X)	-0.00130	-0.00134	-0.00127
	(A * !B * X)	0.00316	0.00320	0.00366
	(A * !B * X)	-0.00023	-0.00023	0.00022

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00126	-0.00129	-0.00136
	(B * X)	0.00150	0.00152	0.00144
	(A * !B * X)	0.00162	0.00154	0.00042
	(A * !B * X)	0.00407	0.00399	0.00287
sky130_fd_sc_hs__or3_2	(B * X)	-0.00137	-0.00140	-0.00147
	(B * X)	0.00163	0.00164	0.00156
	(A * !B * X)	0.00151	0.00143	0.00031
	(A * !B * X)	0.00419	0.00412	0.00299
sky130_fd_sc_hs__or3_4	(B * X)	-0.00120	-0.00123	-0.00139
	(B * X)	0.00321	0.00323	0.00308
	(A * !B * X)	0.00459	0.00443	0.00221
	(A * !B * X)	0.00834	0.00821	0.00600

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00256	0.00238	0.00241	1.75395
sky130_fd_sc_hs__or4bb_2	0.00256	0.00270	0.00235	0.00233	2.70695
sky130_fd_sc_hs__or4bb_4	0.00404	0.00412	0.00260	0.00258	5.11763

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	1484.20000	3183.95000
sky130_fd_sc_hs__or4bb_2	0.00000	1535.84000	3772.63000
sky130_fd_sc_hs__or4bb_4	0.00000	1011.43000	3302.73000

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)	0.05333	0.42038	5.39102
	B->X (RR)	0.05348	0.41075	5.20764
	C_N->X (FR)	0.08968	0.57888	7.51237
	D_N->X (FR)	0.07890	0.56445	7.48983
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.05346	0.33214	4.70309
	B->X (RR)	0.05416	0.32488	4.53649
	C_N->X (FR)	0.08312	0.48747	6.97210
	D_N->X (FR)	0.08137	0.49158	7.16252
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.07991	0.36652	5.53819
	B->X (RR)	0.08044	0.35826	5.35902
	C_N->X (FR)	0.12224	0.50393	7.59224
	D_N->X (FR)	0.11722	0.50262	7.62299

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.15008	0.54441	6.22268
	B->X (FF)	0.13887	0.56603	6.67915
	C_N->X (RF)	0.14540	0.41731	3.71313
	D_N->X (RF)	0.11310	0.39265	3.68648
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.17962	0.52671	6.04797
	B->X (FF)	0.17252	0.54468	6.14999
	C_N->X (RF)	0.17419	0.38392	2.90305
	D_N->X (RF)	0.14941	0.37042	2.97650
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.20201	0.47434	5.39563
	B->X (FF)	0.19264	0.49278	5.51867
	C_N->X (RF)	0.19622	0.35329	2.65091
	D_N->X (RF)	0.15724	0.33297	2.57084

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.08964	0.09820	0.27080
	A	0.08335	0.09193	0.26437
	B	0.08745	0.09662	0.25543
	B	0.08230	0.09148	0.24976
	C_N	0.05560	0.07626	0.38754
	C_N	0.05964	0.08028	0.39125
	D_N	0.06096	0.08195	0.39165
	D_N	0.06455	0.08555	0.39483
sky130_fd_sc_hs__or4bb_2	A	0.09355	0.10666	0.33875
	A	0.08724	0.10037	0.33162
	B	0.09152	0.10385	0.30871
	B	0.08616	0.09845	0.30234
	C_N	0.05902	0.08021	0.40105
	C_N	0.06292	0.08415	0.40383
	D_N	0.06521	0.08577	0.40921
	D_N	0.06880	0.08938	0.41234
sky130_fd_sc_hs__or4bb_4	A	0.08824	0.10697	0.48682
	A	0.07691	0.09562	0.47518
	B	0.08195	0.10008	0.43312
	B	0.07348	0.09159	0.42385
	C_N	0.06826	0.08717	0.44580
	C_N	0.07193	0.09086	0.44739
	D_N	0.07728	0.09744	0.46820
	D_N	0.08099	0.10118	0.47252

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.07052	0.07554	0.24247
	A	0.07679	0.08180	0.24791
	B	0.07117	0.07665	0.24681
	B	0.07629	0.08177	0.25160
	C_N	0.07371	0.08890	0.39066
	C_N	0.06966	0.08488	0.38648
	D_N	0.07139	0.08804	0.39206
	D_N	0.06781	0.08435	0.38850
sky130_fd_sc_hs__or4bb_2	A	0.08535	0.08476	0.30048
	A	0.09165	0.09105	0.30740
	B	0.08516	0.08412	0.27321
	B	0.09051	0.08950	0.27918
	C_N	0.08571	0.09378	0.39831
	C_N	0.08181	0.08980	0.39451
	D_N	0.08445	0.09197	0.37829
	D_N	0.08088	0.08832	0.37468
sky130_fd_sc_hs__or4bb_4	A	0.10736	0.09930	0.44960
	A	0.11864	0.11043	0.45427
	B	0.10763	0.10059	0.40204
	B	0.11608	0.10850	0.40577
	C_N	0.11089	0.10678	0.42697
	C_N	0.10721	0.10298	0.42178
	D_N	0.10861	0.10590	0.42891
	D_N	0.10490	0.10218	0.42475

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)**	0.02591	0.02563	0.02710
	(B * C_N * D_N * X)	0.02182	0.02149	0.02303
	(B * !D_N * X)	0.01396	0.01377	0.01378
	(B * !D_N * X)	0.00992	0.00968	0.00975
	(B * !C_N * D_N * X)	0.01396	0.01376	0.01376
	(B * !C_N * D_N * X)	0.00992	0.00967	0.00973
	(!B * C_N * !D_N * X)	0.01516	0.01491	0.01782
	(!B * C_N * !D_N * X)	0.01097	0.01067	0.01370
	(!B * !C_N * D_N * X)	0.01492	0.01457	0.01602
	(!B * !C_N * D_N * X)	0.01075	0.01035	0.01192
	(!B * !C_N * !D_N * X)	0.00259	0.00236	0.00234
	(!B * !C_N * !D_N * X)	-0.00146	-0.00174	-0.00169
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.02624	0.02595	0.02746
	(B * C_N * D_N * X)	0.02206	0.02178	0.02330
	(B * !D_N * X)	0.01418	0.01397	0.01401
	(B * !D_N * X)	0.01005	0.00985	0.00990
	(B * !C_N * D_N * X)	0.01398	0.01375	0.01378
	(B * !C_N * D_N * X)	0.00984	0.00963	0.00967
	(!B * C_N * !D_N * X)	0.01537	0.01512	0.01801
	(!B * C_N * !D_N * X)	0.01109	0.01080	0.01381
	(!B * !C_N * D_N * X)	0.01493	0.01458	0.01603
	(!B * !C_N * D_N * X)	0.01066	0.01027	0.01184
	(!B * !C_N * !D_N * X)	0.00260	0.00237	0.00236
	(!B * !C_N * !D_N * X)	-0.00154	-0.00182	-0.00176

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.01571	0.01492	0.01771
	(B * C_N * D_N * X)	0.00863	0.00781	0.01071
	(B * !D_N * X)	0.00918	0.00866	0.00869
	(B * !D_N * X)	0.00223	0.00168	0.00177
	(B * !C_N * D_N * X)	0.00920	0.00865	0.00865
	(B * !C_N * D_N * X)	0.00225	0.00167	0.00173
	(!B * C_N * !D_N * X)	0.01183	0.01110	0.01670
	(!B * C_N * !D_N * X)	0.00455	0.00383	0.00961
	(!B * !C_N * D_N * X)	0.01133	0.01043	0.01316
	(!B * !C_N * D_N * X)	0.00408	0.00315	0.00610
	(!B * !C_N * !D_N * X)	0.00432	0.00375	0.00371
	(!B * !C_N * !D_N * X)	-0.00265	-0.00327	-0.00320

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)**	0.02364	0.02358	0.02326
	(B * C_N * D_N * X)	0.02774	0.02770	0.02736
	(B * !D_N * X)	0.01025	0.01023	0.01023
	(B * !D_N * X)	0.01428	0.01431	0.01427
	(B * !C_N * D_N * X)	0.01024	0.01022	0.01021
	(B * !C_N * D_N * X)	0.01427	0.01430	0.01426
	(!B * C_N * !D_N * X)	0.01502	0.01489	0.01404
	(!B * C_N * !D_N * X)	0.01918	0.01909	0.01822
	(!B * !C_N * D_N * X)	0.01263	0.01256	0.01218
	(!B * !C_N * D_N * X)	0.01678	0.01675	0.01635
	(!B * !C_N * !D_N * X)	-0.00116	-0.00118	-0.00118
	(!B * !C_N * !D_N * X)	0.00288	0.00290	0.00287

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.02379	0.02372	0.02341
	(B * C_N * D_N * X)	0.02796	0.02793	0.02759
	(B * !D_N * X)	0.01027	0.01025	0.01025
	(B * !D_N * X)	0.01441	0.01442	0.01438
	(B * !C_N * D_N * X)	0.01043	0.01041	0.01041
	(B * !C_N * D_N * X)	0.01457	0.01458	0.01454
	(!B * C_N * !D_N * X)	0.01499	0.01486	0.01402
	(!B * C_N * !D_N * X)	0.01924	0.01915	0.01828
	(!B * !C_N * D_N * X)	0.01282	0.01275	0.01237
	(!B * !C_N * D_N * X)	0.01705	0.01702	0.01662
	(!B * !C_N * !D_N * X)	-0.00097	-0.00099	-0.00100
	(!B * !C_N * !D_N * X)	0.00315	0.00318	0.00314
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.01321	0.01310	0.01242
	(B * C_N * D_N * X)	0.02029	0.02018	0.01950
	(B * !D_N * X)	0.00415	0.00412	0.00410
	(B * !D_N * X)	0.01108	0.01114	0.01106
	(B * !C_N * D_N * X)	0.00413	0.00411	0.00409
	(B * !C_N * D_N * X)	0.01108	0.01113	0.01105
	(!B * C_N * !D_N * X)	0.01349	0.01326	0.01158
	(!B * C_N * !D_N * X)	0.02072	0.02052	0.01880
	(!B * !C_N * D_N * X)	0.00881	0.00868	0.00793
	(!B * !C_N * D_N * X)	0.01602	0.01595	0.01513
	(!B * !C_N * !D_N * X)	-0.00078	-0.00078	-0.00081
	(!B * !C_N * !D_N * X)	0.00618	0.00617	0.00615

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)**	0.02525	0.02528	0.02578
	(A * C_N * D_N * X)	0.02228	0.02228	0.02278
	(A * C_N * !D_N * X)	0.01432	0.01447	0.01447
	(A * C_N * !D_N * X)	0.01052	0.01063	0.01067
	(A * !C_N * D_N * X)	0.01373	0.01376	0.01381
	(A * !C_N * D_N * X)	0.01011	0.01012	0.01020
	(A * !C_N * !D_N * X)	0.00211	0.00212	0.00197
	(A * !C_N * !D_N * X)	-0.00156	-0.00157	-0.00167
	(!A * C_N * !D_N * X)	0.01513	0.01473	0.01786
	(!A * C_N * !D_N * X)	0.01088	0.01048	0.01364
	(!A * !C_N * D_N * X)	0.01444	0.01407	0.01575
	(!A * !C_N * D_N * X)	0.01020	0.00982	0.01154
	(!A * !C_N * !D_N * X)	0.00239	0.00210	0.00211
	(!A * !C_N * !D_N * X)	-0.00185	-0.00214	-0.00209
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.02593	0.02596	0.02648
	(A * C_N * D_N * X)	0.02268	0.02269	0.02321
	(A * C_N * !D_N * X)	0.01487	0.01500	0.01499
	(A * C_N * !D_N * X)	0.01078	0.01089	0.01092
	(A * !C_N * D_N * X)	0.01435	0.01439	0.01443
	(A * !C_N * D_N * X)	0.01047	0.01049	0.01056
	(A * !C_N * !D_N * X)	0.00272	0.00275	0.00258
	(A * !C_N * !D_N * X)	-0.00120	-0.00122	-0.00131
	(!A * C_N * !D_N * X)	0.01565	0.01526	0.01834
	(!A * C_N * !D_N * X)	0.01117	0.01074	0.01387
	(!A * !C_N * D_N * X)	0.01506	0.01469	0.01636
	(!A * !C_N * D_N * X)	0.01059	0.01017	0.01189
	(!A * !C_N * !D_N * X)	0.00299	0.00271	0.00272
	(!A * !C_N * !D_N * X)	-0.00148	-0.00180	-0.00174

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.01416	0.01418	0.01484
	(A * C_N * D_N * X)	0.00975	0.00977	0.01042
	(A * C_N * !D_N * X)	0.00957	0.00989	0.00985
	(A * C_N * !D_N * X)	0.00346	0.00372	0.00374
	(A * !C_N * D_N * X)	0.00907	0.00908	0.00909
	(A * !C_N * D_N * X)	0.00332	0.00330	0.00338
	(A * !C_N * !D_N * X)	0.00373	0.00372	0.00338
	(A * !C_N * !D_N * X)	-0.00213	-0.00215	-0.00237
	(!A * C_N * !D_N * X)	0.01132	0.01054	0.01656
	(!A * C_N * !D_N * X)	0.00440	0.00355	0.00964
	(!A * !C_N * D_N * X)	0.01062	0.00979	0.01303
	(!A * !C_N * D_N * X)	0.00364	0.00281	0.00611
	(!A * !C_N * !D_N * X)	0.00428	0.00363	0.00364
	(!A * !C_N * !D_N * X)	-0.00268	-0.00333	-0.00325

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)**	0.02365	0.02354	0.02235
	(A * C_N * D_N * X)	0.02665	0.02657	0.02536
	(A * C_N * !D_N * X)	0.00964	0.00963	0.00970
	(A * C_N * !D_N * X)	0.01344	0.01344	0.01344
	(A * !C_N * D_N * X)	0.01023	0.01024	0.01031
	(A * !C_N * D_N * X)	0.01394	0.01394	0.01389
	(A * !C_N * !D_N * X)	-0.00117	-0.00118	-0.00115
	(A * !C_N * !D_N * X)	0.00254	0.00255	0.00246
	(!A * C_N * !D_N * X)	0.01493	0.01480	0.01396
	(!A * C_N * !D_N * X)	0.01916	0.01904	0.01818
	(!A * !C_N * D_N * X)	0.01284	0.01276	0.01240
	(!A * !C_N * D_N * X)	0.01706	0.01701	0.01663
	(!A * !C_N * !D_N * X)	-0.00096	-0.00097	-0.00098
	(!A * !C_N * !D_N * X)	0.00326	0.00327	0.00324
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.02347	0.02336	0.02217
	(A * C_N * D_N * X)	0.02674	0.02665	0.02545
	(A * C_N * !D_N * X)	0.00937	0.00936	0.00943
	(A * C_N * !D_N * X)	0.01342	0.01344	0.01343
	(A * !C_N * D_N * X)	0.00984	0.00984	0.00991
	(A * !C_N * D_N * X)	0.01380	0.01380	0.01374
	(A * !C_N * !D_N * X)	-0.00159	-0.00159	-0.00156
	(A * !C_N * !D_N * X)	0.00240	0.00241	0.00231
	(!A * C_N * !D_N * X)	0.01462	0.01448	0.01365
	(!A * C_N * !D_N * X)	0.01908	0.01898	0.01813
	(!A * !C_N * D_N * X)	0.01244	0.01235	0.01200
	(!A * !C_N * D_N * X)	0.01690	0.01688	0.01648
	(!A * !C_N * !D_N * X)	-0.00136	-0.00138	-0.00138
	(!A * !C_N * !D_N * X)	0.00310	0.00313	0.00309

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.01343	0.01323	0.01087
	(A * C_N * D_N * X)	0.01793	0.01775	0.01536
	(A * C_N * !D_N * X)	0.00314	0.00313	0.00329
	(A * C_N * !D_N * X)	0.00920	0.00921	0.00925
	(A * !C_N * D_N * X)	0.00374	0.00373	0.00387
	(A * !C_N * D_N * X)	0.00956	0.00958	0.00950
	(A * !C_N * !D_N * X)	-0.00123	-0.00124	-0.00117
	(A * !C_N * !D_N * X)	0.00465	0.00468	0.00453
	(!A * C_N * !D_N * X)	0.01355	0.01329	0.01162
	(!A * C_N * !D_N * X)	0.02050	0.02028	0.01856
	(!A * !C_N * D_N * X)	0.00884	0.00869	0.00795
	(!A * !C_N * D_N * X)	0.01575	0.01565	0.01489
	(!A * !C_N * !D_N * X)	-0.00074	-0.00077	-0.00079
	(!A * !C_N * !D_N * X)	0.00615	0.00620	0.00612

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.02937	0.04769	0.33091
	(B * X)	0.02442	0.04273	0.32598
	(A * !B * X) + (!A * !B * !D_N * X)	0.03205	0.05026	0.33293
	(A * !B * X) + (!A * !B * !D_N * X)	0.02674	0.04496	0.32764
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.02908	0.04835	0.34080
	(B * X)	0.02429	0.04356	0.33602
	(A * !B * X) + (!A * !B * !D_N * X)	0.03173	0.05086	0.34243
	(A * !B * X) + (!A * !B * !D_N * X)	0.02658	0.04571	0.33729
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.01789	0.03800	0.34893
	(B * X)	0.01278	0.03287	0.34384
	(A * !B * X) + (!A * !B * !D_N * X)	0.02323	0.04317	0.35308
	(A * !B * X) + (!A * !B * !D_N * X)	0.01747	0.03739	0.34732

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.01335	0.03336	0.32690
	(B * X)	0.01831	0.03832	0.33184
	(A * !B * X) + (!A * !B * !D_N * X)	0.01346	0.03349	0.32783
	(A * !B * X) + (!A * !B * !D_N * X)	0.01893	0.03895	0.33315
sky130_fd_sc_hs__or4bb_2	(B * X)	0.01331	0.03422	0.33716
	(B * X)	0.01810	0.03902	0.34193
	(A * !B * X) + (!A * !B * !D_N * X)	0.01342	0.03431	0.33776
	(A * !B * X) + (!A * !B * !D_N * X)	0.01873	0.03962	0.34288
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00872	0.02966	0.34533
	(B * X)	0.01383	0.03480	0.35043
	(A * !B * X) + (!A * !B * !D_N * X)	0.00906	0.03004	0.34736
	(A * !B * X) + (!A * !B * !D_N * X)	0.01515	0.03615	0.35315

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)	0.02859	0.04719	0.32967
	(B * C_N * X)	0.02415	0.04271	0.32521
	(A * !B * C_N * X)	0.03130	0.04984	0.33181
	(A * !B * C_N * X)	0.02662	0.04513	0.32711
	(!C_N * X)	0.01732	0.03601	0.32011
	(!C_N * X)	0.01289	0.03154	0.31566
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.02897	0.04766	0.33350
	(B * C_N * X)	0.02453	0.04321	0.32906
	(A * !B * C_N * X)	0.03166	0.05031	0.33561
	(A * !B * C_N * X)	0.02698	0.04562	0.33094
	(!C_N * X)	0.01757	0.03626	0.32210
	(!C_N * X)	0.01313	0.03182	0.31767
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.01899	0.03910	0.35432
	(B * C_N * X)	0.01390	0.03401	0.34925
	(A * !B * C_N * X)	0.02445	0.04448	0.35879
	(A * !B * C_N * X)	0.01893	0.03896	0.35329
	(!C_N * X)	0.01428	0.03440	0.34969
	(!C_N * X)	0.00924	0.02935	0.34465

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)	0.01328	0.03347	0.32623
	(B * C_N * X)	0.01774	0.03793	0.33069
	(A * !B * C_N * X)	0.01358	0.03377	0.32726
	(A * !B * C_N * X)	0.01839	0.03859	0.33197
	(!C_N * X)	0.00160	0.02189	0.31638
	(!C_N * X)	0.00602	0.02635	0.32084
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.01375	0.03409	0.33036
	(B * C_N * X)	0.01819	0.03854	0.33479
	(A * !B * C_N * X)	0.01403	0.03440	0.33139
	(A * !B * C_N * X)	0.01883	0.03921	0.33606
	(!C_N * X)	0.00197	0.02231	0.31858
	(!C_N * X)	0.00639	0.02673	0.32300
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00894	0.02988	0.34983
	(B * C_N * X)	0.01400	0.03495	0.35489
	(A * !B * C_N * X)	0.00948	0.03049	0.35193
	(A * !B * C_N * X)	0.01524	0.03624	0.35745
	(!C_N * X)	0.00322	0.02417	0.34413
	(!C_N * X)	0.00823	0.02920	0.34915

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00264	0.00253	0.00262	0.00244	1.67451
sky130_fd_sc_hs__or4b_2	0.00273	0.00264	0.00264	0.00232	2.77654
sky130_fd_sc_hs__or4b_4	0.00400	0.00452	0.00455	0.00255	6.32062

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	824.34100	1880.07000
sky130_fd_sc_hs__or4b_2	0.00000	869.35600	2446.29000
sky130_fd_sc_hs__or4b_4	0.00000	706.63200	2720.93000

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)	0.05595	0.42752	5.30396
	B->X (RR)	0.05597	0.41834	5.13717
	C->X (RR)	0.05307	0.40258	4.95588
	D_N->X (FR)	0.07934	0.56093	7.33358
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.05420	0.32886	4.54376
	B->X (RR)	0.05445	0.32183	4.41424
	C->X (RR)	0.05162	0.30930	4.26964
	D_N->X (FR)	0.08523	0.50030	7.25611
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.08171	0.36737	5.87685
	B->X (RR)	0.08032	0.35513	5.69873
	C->X (RR)	0.07126	0.33041	5.44887
	D_N->X (FR)	0.10375	0.46781	7.61784

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.15595	0.54721	6.06482
	B->X (FF)	0.14460	0.56828	6.51420
	C->X (FF)	0.12840	0.58184	6.64257
	D_N->X (RF)	0.11589	0.39934	3.61635
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.18809	0.53575	5.85283
	B->X (FF)	0.17695	0.55527	6.27280
	C->X (FF)	0.15754	0.56917	6.38486
	D_N->X (RF)	0.15290	0.38158	3.11114
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.19407	0.48607	6.04297
	B->X (FF)	0.18456	0.50317	6.18927
	C->X (FF)	0.15784	0.51510	6.34949
	D_N->X (RF)	0.14675	0.34109	3.49141

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.05807	0.06600	0.22749
	A	0.04985	0.05779	0.21910
	B	0.05573	0.06431	0.21249
	B	0.04911	0.05766	0.20530
	C	0.05380	0.06235	0.19867
	C	0.04820	0.05678	0.19254
	D_N	0.02603	0.04692	0.36333
	D_N	0.02934	0.05025	0.36647
sky130_fd_sc_hs__or4b_2	A	0.06234	0.07107	0.22734
	A	0.05402	0.06276	0.21783
	B	0.06005	0.06953	0.21275
	B	0.05328	0.06277	0.20512
	C	0.05786	0.06741	0.19777
	C	0.05215	0.06167	0.19154
	D_N	0.03102	0.05151	0.35813
	D_N	0.03455	0.05500	0.36123
sky130_fd_sc_hs__or4b_4	A	0.07649	0.09398	0.46392
	A	0.06207	0.07961	0.44757
	B	0.07152	0.08880	0.42078
	B	0.05931	0.07657	0.40710
	C	0.06456	0.08272	0.38391
	C	0.05484	0.07300	0.37304
	D_N	0.06084	0.08133	0.44597
	D_N	0.06407	0.08447	0.44944

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.04447	0.04896	0.21334
	A	0.05268	0.05716	0.21971
	B	0.04504	0.05001	0.21618
	B	0.05167	0.05663	0.22291
	C	0.04499	0.05009	0.20058
	C	0.05057	0.05567	0.20626
	D_N	0.04858	0.06565	0.37715
	D_N	0.04527	0.06229	0.37365
sky130_fd_sc_hs__or4b_2	A	0.06312	0.05996	0.22905
	A	0.07142	0.06824	0.23810
	B	0.06391	0.06110	0.23640
	B	0.07065	0.06787	0.24078
	C	0.06373	0.06110	0.21840
	C	0.06942	0.06682	0.22202
	D_N	0.06732	0.07355	0.36063
	D_N	0.06381	0.07006	0.35685
sky130_fd_sc_hs__or4b_4	A	0.10141	0.09275	0.43142
	A	0.11577	0.10706	0.43798
	B	0.10134	0.09312	0.39337
	B	0.11354	0.10508	0.39899
	C	0.10086	0.09467	0.36135
	C	0.11051	0.10300	0.36802
	D_N	0.10584	0.10398	0.45079
	D_N	0.10258	0.10075	0.44720

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)**	0.01399	0.01379	0.01379
	(B * C * D_N * X)	0.00990	0.00965	0.00972
	(B * !D_N * X)	0.00234	0.00219	0.00219
	(B * !D_N * X)	-0.00174	-0.00188	-0.00188
	(B * !C * D_N * X)	0.01468	0.01440	0.01584
	(B * !C * D_N * X)	0.01050	0.01017	0.01171
	(!B * C * D_N * X)	0.01495	0.01459	0.01603
	(!B * C * D_N * X)	0.01068	0.01027	0.01187
	(!B * C * !D_N * X)	0.00259	0.00235	0.00234
	(!B * C * !D_N * X)	-0.00151	-0.00180	-0.00173
	(!B * !C * !D_N * X)	0.00388	0.00361	0.00643
	(!B * !C * !D_N * X)	-0.00051	-0.00082	0.00220
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.01423	0.01400	0.01402
	(B * C * D_N * X)	0.00996	0.00972	0.00977
	(B * !D_N * X)	0.00253	0.00240	0.00239
	(B * !D_N * X)	-0.00173	-0.00188	-0.00186
	(B * !C * D_N * X)	0.01493	0.01461	0.01608
	(B * !C * D_N * X)	0.01055	0.01024	0.01176
	(!B * C * D_N * X)	0.01521	0.01481	0.01627
	(!B * C * D_N * X)	0.01076	0.01035	0.01192
	(!B * C * !D_N * X)	0.00280	0.00253	0.00254
	(!B * C * !D_N * X)	-0.00149	-0.00177	-0.00172
	(!B * !C * !D_N * X)	0.00411	0.00380	0.00663
	(!B * !C * !D_N * X)	-0.00046	-0.00078	0.00222

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00876	0.00823	0.00821
	(B * C * D_N * X)	0.00213	0.00157	0.00163
	(B * !D_N * X)	0.00332	0.00301	0.00296
	(B * !D_N * X)	-0.00329	-0.00362	-0.00362
	(B * !C * D_N * X)	0.01037	0.00961	0.01240
	(B * !C * D_N * X)	0.00350	0.00273	0.00568
	(!B * C * D_N * X)	0.01091	0.00992	0.01268
	(!B * C * D_N * X)	0.00390	0.00288	0.00591
	(!B * C * !D_N * X)	0.00389	0.00327	0.00323
	(!B * C * !D_N * X)	-0.00276	-0.00343	-0.00335
	(!B * !C * !D_N * X)	0.00678	0.00597	0.01144
	(!B * !C * !D_N * X)	-0.00047	-0.00131	0.00454

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)**	0.01013	0.01011	0.01011
	(B * C * D_N * X)	0.01421	0.01424	0.01420
	(B * !D_N * X)	-0.00145	-0.00146	-0.00146
	(B * !D_N * X)	0.00263	0.00264	0.00262
	(B * !C * D_N * X)	0.01218	0.01212	0.01180
	(B * !C * D_N * X)	0.01637	0.01633	0.01599
	(!B * C * D_N * X)	0.01252	0.01245	0.01207
	(!B * C * D_N * X)	0.01675	0.01671	0.01632
	(!B * C * !D_N * X)	-0.00130	-0.00132	-0.00133
	(!B * C * !D_N * X)	0.00278	0.00281	0.00277
	(!B * !C * !D_N * X)	0.00330	0.00317	0.00232
	(!B * !C * !D_N * X)	0.00763	0.00754	0.00667

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.01005	0.01002	0.01002
	(B * C * D_N * X)	0.01431	0.01434	0.01430
	(B * !D_N * X)	-0.00145	-0.00146	-0.00145
	(B * !D_N * X)	0.00282	0.00284	0.00281
	(B * !C * D_N * X)	0.01209	0.01202	0.01170
	(B * !C * D_N * X)	0.01645	0.01642	0.01607
	(!B * C * D_N * X)	0.01242	0.01235	0.01197
	(!B * C * D_N * X)	0.01684	0.01680	0.01641
	(!B * C * !D_N * X)	-0.00129	-0.00132	-0.00132
	(!B * C * !D_N * X)	0.00297	0.00300	0.00296
	(!B * !C * !D_N * X)	0.00330	0.00316	0.00232
	(!B * !C * !D_N * X)	0.00781	0.00772	0.00685
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00417	0.00414	0.00415
	(B * C * D_N * X)	0.01077	0.01083	0.01077
	(B * !D_N * X)	-0.00099	-0.00101	-0.00099
	(B * !D_N * X)	0.00560	0.00566	0.00561
	(B * !C * D_N * X)	0.00818	0.00805	0.00739
	(B * !C * D_N * X)	0.01500	0.01492	0.01424
	(!B * C * D_N * X)	0.00899	0.00885	0.00809
	(!B * C * D_N * X)	0.01591	0.01585	0.01504
	(!B * C * !D_N * X)	-0.00066	-0.00068	-0.00070
	(!B * C * !D_N * X)	0.00594	0.00596	0.00593
	(!B * !C * !D_N * X)	0.00846	0.00820	0.00651
	(!B * !C * !D_N * X)	0.01557	0.01539	0.01365

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)**	0.01378	0.01380	0.01386
	(A * C * D_N * X)	0.01060	0.01062	0.01072
	(A * C * !D_N * X)	0.00213	0.00214	0.00199
	(A * C * !D_N * X)	-0.00110	-0.00110	-0.00117
	(A * !C * D_N * X)	0.01374	0.01376	0.01423
	(A * !C * D_N * X)	0.01107	0.01108	0.01156
	(A * !C * !D_N * X)	0.00237	0.00250	0.00244
	(A * !C * !D_N * X)	-0.00083	-0.00073	-0.00069
	(!A * C * D_N * X)	0.01448	0.01409	0.01577
	(!A * C * D_N * X)	0.01059	0.01020	0.01193
	(!A * C * !D_N * X)	0.00240	0.00210	0.00211
	(!A * C * !D_N * X)	-0.00144	-0.00174	-0.00168
	(!A * !C * !D_N * X)	0.00353	0.00312	0.00616
	(!A * !C * !D_N * X)	-0.00046	-0.00088	0.00227
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.01403	0.01405	0.01411
	(A * C * D_N * X)	0.01066	0.01069	0.01077
	(A * C * !D_N * X)	0.00235	0.00236	0.00220
	(A * C * !D_N * X)	-0.00108	-0.00108	-0.00116
	(A * !C * D_N * X)	0.01403	0.01405	0.01455
	(A * !C * D_N * X)	0.01116	0.01118	0.01168
	(A * !C * !D_N * X)	0.00260	0.00274	0.00266
	(A * !C * !D_N * X)	-0.00081	-0.00071	-0.00068
	(!A * C * D_N * X)	0.01479	0.01438	0.01604
	(!A * C * D_N * X)	0.01069	0.01028	0.01199
	(!A * C * !D_N * X)	0.00266	0.00234	0.00235
	(!A * C * !D_N * X)	-0.00139	-0.00171	-0.00166
	(!A * !C * !D_N * X)	0.00383	0.00340	0.00641
	(!A * !C * !D_N * X)	-0.00039	-0.00082	0.00230

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00915	0.00923	0.00918
	(A * C * D_N * X)	0.00328	0.00336	0.00345
	(A * C * !D_N * X)	0.00373	0.00377	0.00341
	(A * C * !D_N * X)	-0.00221	-0.00220	-0.00238
	(A * !C * D_N * X)	0.00943	0.00949	0.01024
	(A * !C * D_N * X)	0.00460	0.00459	0.00544
	(A * !C * !D_N * X)	0.00428	0.00455	0.00433
	(A * !C * !D_N * X)	-0.00162	-0.00140	-0.00141
	(!A * C * D_N * X)	0.01092	0.00992	0.01309
	(!A * C * D_N * X)	0.00361	0.00261	0.00591
	(!A * C * !D_N * X)	0.00444	0.00370	0.00369
	(!A * C * !D_N * X)	-0.00274	-0.00348	-0.00340
	(!A * !C * !D_N * X)	0.00696	0.00599	0.01183
	(!A * !C * !D_N * X)	-0.00059	-0.00154	0.00455

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)**	0.01011	0.01011	0.01018
	(A * C * D_N * X)	0.01337	0.01337	0.01330
	(A * C * !D_N * X)	-0.00133	-0.00134	-0.00131
	(A * C * !D_N * X)	0.00192	0.00193	0.00184
	(A * !C * D_N * X)	0.01250	0.01239	0.01119
	(A * !C * D_N * X)	0.01518	0.01509	0.01388
	(A * !C * !D_N * X)	-0.00141	-0.00141	-0.00129
	(A * !C * !D_N * X)	0.00178	0.00178	0.00179
	(!A * C * D_N * X)	0.01272	0.01264	0.01229
	(!A * C * D_N * X)	0.01658	0.01654	0.01615
	(!A * C * !D_N * X)	-0.00110	-0.00111	-0.00112
	(!A * C * !D_N * X)	0.00271	0.00273	0.00269
	(!A * !C * !D_N * X)	0.00351	0.00338	0.00254
	(!A * !C * !D_N * X)	0.00747	0.00736	0.00650
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.01002	0.01001	0.01008
	(A * C * D_N * X)	0.01346	0.01347	0.01340
	(A * C * !D_N * X)	-0.00134	-0.00135	-0.00132
	(A * C * !D_N * X)	0.00212	0.00213	0.00203
	(A * !C * D_N * X)	0.01233	0.01222	0.01103
	(A * !C * D_N * X)	0.01521	0.01512	0.01391
	(A * !C * !D_N * X)	-0.00143	-0.00143	-0.00132
	(A * !C * !D_N * X)	0.00196	0.00197	0.00197
	(!A * C * D_N * X)	0.01260	0.01252	0.01216
	(!A * C * D_N * X)	0.01667	0.01662	0.01624
	(!A * C * !D_N * X)	-0.00112	-0.00115	-0.00115
	(!A * C * !D_N * X)	0.00288	0.00291	0.00287
	(!A * !C * !D_N * X)	0.00347	0.00334	0.00250
	(!A * !C * !D_N * X)	0.00764	0.00753	0.00667

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	0.00326	0.00326	0.00340
	(A * C * D_N * X)	0.00919	0.00920	0.00909
	(A * C * !D_N * X)	-0.00165	-0.00166	-0.00159
	(A * C * !D_N * X)	0.00430	0.00433	0.00420
	(A * !C * D_N * X)	0.00775	0.00754	0.00515
	(A * !C * D_N * X)	0.01261	0.01243	0.01002
	(A * !C * !D_N * X)	-0.00178	-0.00177	-0.00156
	(A * !C * !D_N * X)	0.00403	0.00405	0.00407
	(!A * C * D_N * X)	0.00850	0.00834	0.00759
	(!A * C * D_N * X)	0.01573	0.01566	0.01484
	(!A * C * !D_N * X)	-0.00115	-0.00118	-0.00120
	(!A * C * !D_N * X)	0.00596	0.00599	0.00592
	(!A * !C * !D_N * X)	0.00798	0.00772	0.00602
	(!A * !C * !D_N * X)	0.01541	0.01517	0.01346

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)	0.01373	0.01372	0.01372
	(B * D_N * X)	0.01087	0.01088	0.01087
	(B * !D_N * X)	0.00235	0.00237	0.00237
	(B * !D_N * X)	-0.00104	-0.00104	-0.00102
	(A * !B * D_N * X)	0.01383	0.01384	0.01404
	(A * !B * D_N * X)	0.01144	0.01145	0.01163
	(A * !B * !D_N * X)	0.00263	0.00256	0.00277
	(A * !B * !D_N * X)	-0.00081	-0.00091	-0.00070
	(!A * !B * !D_N * X)	0.00322	0.00293	0.00623
	(!A * !B * !D_N * X)	-0.00089	-0.00118	0.00215

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.01400	0.01404	0.01399
	(B * D_N * X)	0.01093	0.01091	0.01092
	(B * !D_N * X)	0.00243	0.00245	0.00244
	(B * !D_N * X)	-0.00121	-0.00121	-0.00120
	(A * !B * D_N * X)	0.01411	0.01416	0.01432
	(A * !B * D_N * X)	0.01152	0.01151	0.01170
	(A * !B * !D_N * X)	0.00270	0.00263	0.00282
	(A * !B * !D_N * X)	-0.00095	-0.00105	-0.00085
	(!A * !B * !D_N * X)	0.00333	0.00303	0.00631
	(!A * !B * !D_N * X)	-0.00100	-0.00130	0.00202
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00905	0.00910	0.00901
	(B * D_N * X)	0.00400	0.00397	0.00397
	(B * !D_N * X)	0.00405	0.00404	0.00406
	(B * !D_N * X)	-0.00226	-0.00229	-0.00223
	(A * !B * D_N * X)	0.00932	0.00939	0.00967
	(A * !B * D_N * X)	0.00518	0.00516	0.00551
	(A * !B * !D_N * X)	0.00453	0.00435	0.00479
	(A * !B * !D_N * X)	-0.00175	-0.00198	-0.00155
	(!A * !B * !D_N * X)	0.00572	0.00514	0.01168
	(!A * !B * !D_N * X)	-0.00190	-0.00247	0.00414

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)**	0.01012	0.01011	0.00999
	(B * D_N * X)	0.01298	0.01299	0.01288
	(B * !D_N * X)	-0.00156	-0.00157	-0.00151
	(B * !D_N * X)	0.00180	0.00181	0.00181
	(A * !B * D_N * X)	0.01276	0.01268	0.01159
	(A * !B * D_N * X)	0.01531	0.01524	0.01416
	(A * !B * !D_N * X)	-0.00155	-0.00156	-0.00137
	(A * !B * !D_N * X)	0.00186	0.00187	0.00192
	(!A * !B * !D_N * X)	0.00335	0.00322	0.00244
	(!A * !B * !D_N * X)	0.00744	0.00733	0.00653
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.01001	0.00998	0.00987
	(B * D_N * X)	0.01307	0.01308	0.01297
	(B * !D_N * X)	-0.00142	-0.00143	-0.00136
	(B * !D_N * X)	0.00218	0.00220	0.00220
	(A * !B * D_N * X)	0.01263	0.01254	0.01145
	(A * !B * D_N * X)	0.01539	0.01532	0.01424
	(A * !B * !D_N * X)	-0.00142	-0.00141	-0.00123
	(A * !B * !D_N * X)	0.00221	0.00222	0.00227
	(!A * !B * !D_N * X)	0.00348	0.00334	0.00256
	(!A * !B * !D_N * X)	0.00778	0.00766	0.00686
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00324	0.00322	0.00289
	(B * D_N * X)	0.00831	0.00831	0.00805
	(B * !D_N * X)	-0.00185	-0.00185	-0.00171
	(B * !D_N * X)	0.00433	0.00434	0.00438
	(A * !B * D_N * X)	0.00854	0.00839	0.00625
	(A * !B * D_N * X)	0.01304	0.01290	0.01079
	(A * !B * !D_N * X)	-0.00182	-0.00181	-0.00143
	(A * !B * !D_N * X)	0.00438	0.00440	0.00453
	(!A * !B * !D_N * X)	0.00792	0.00765	0.00608
	(!A * !B * !D_N * X)	0.01546	0.01524	0.01363

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.01731	0.03661	0.32879
	(C * X)	0.01251	0.03181	0.32400
	(B * !C * X)	0.01756	0.03685	0.32896
	(B * !C * X)	0.01266	0.03195	0.32408
	(A * !B * !C * X)	0.02040	0.03964	0.33117
	(A * !B * !C * X)	0.01513	0.03437	0.32591
sky130_fd_sc_hs__or4b_2	(C * X)	0.01808	0.03654	0.32230
	(C * X)	0.01316	0.03161	0.31739
	(B * !C * X)	0.01832	0.03678	0.32251
	(B * !C * X)	0.01330	0.03175	0.31751
	(A * !B * !C * X)	0.02114	0.03955	0.32474
	(A * !B * !C * X)	0.01576	0.03415	0.31936
sky130_fd_sc_hs__or4b_4	(C * X)	0.01318	0.03384	0.35352
	(C * X)	0.00781	0.02845	0.34815
	(B * !C * X)	0.01371	0.03437	0.35396
	(B * !C * X)	0.00813	0.02876	0.34840
	(A * !B * !C * X)	0.01935	0.03992	0.35857
	(A * !B * !C * X)	0.01306	0.03360	0.35227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00148	0.02238	0.32500
	(C * X)	0.00628	0.02719	0.32978
	(B * !C * X)	0.00148	0.02237	0.32498
	(B * !C * X)	0.00640	0.02729	0.32984
	(A * !B * !C * X)	0.00152	0.02243	0.32578
	(A * !B * !C * X)	0.00703	0.02795	0.33106
sky130_fd_sc_hs__or4b_2	(C * X)	0.00182	0.02202	0.31818
	(C * X)	0.00672	0.02695	0.32309
	(B * !C * X)	0.00182	0.02202	0.31822
	(B * !C * X)	0.00685	0.02706	0.32321
	(A * !B * !C * X)	0.00184	0.02207	0.31906
	(A * !B * !C * X)	0.00747	0.02771	0.32446
sky130_fd_sc_hs__or4b_4	(C * X)	0.00290	0.02436	0.34867
	(C * X)	0.00824	0.02976	0.35402
	(B * !C * X)	0.00291	0.02437	0.34879
	(B * !C * X)	0.00850	0.03001	0.35431
	(A * !B * !C * X)	0.00296	0.02449	0.35051
	(A * !B * !C * X)	0.00974	0.03129	0.35686

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00250	0.00256	0.00248	1.66254
sky130_fd_sc_hs__or4_2	0.00271	0.00268	0.00280	0.00277	3.34809
sky130_fd_sc_hs__or4_4	0.00395	0.00456	0.00461	0.00432	6.31418

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	157.60900	583.37700
sky130_fd_sc_hs__or4_2	0.00000	204.57400	1130.47000
sky130_fd_sc_hs__or4_4	0.00000	400.34300	2129.99000

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)	0.05414	0.42457	5.30139
	B->X (RR)	0.05481	0.41597	5.13382
	C->X (RR)	0.05176	0.39970	4.96246
	D->X (RR)	0.04511	0.37999	4.84882
sky130_fd_sc_hs__or4_2	A->X (RR)	0.05262	0.32380	4.99631
	B->X (RR)	0.05276	0.31507	4.82571
	C->X (RR)	0.05041	0.30221	4.66959
	D->X (RR)	0.04532	0.28643	4.56795
sky130_fd_sc_hs__or4_4	A->X (RR)	0.07436	0.35040	5.80519
	B->X (RR)	0.07582	0.34581	5.67769
	C->X (RR)	0.06800	0.31770	5.38865
	D->X (RR)	0.05952	0.29774	5.29101

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.15032	0.53719	5.99949
	B->X (FF)	0.13943	0.55817	6.44280
	C->X (FF)	0.12100	0.57030	6.57169
	D->X (FF)	0.09187	0.56724	6.65490
sky130_fd_sc_hs__or4_2	A->X (FF)	0.18205	0.54666	6.47965
	B->X (FF)	0.17112	0.56777	6.91072
	C->X (FF)	0.15496	0.58244	7.02976
	D->X (FF)	0.12709	0.58364	7.11166
sky130_fd_sc_hs__or4_4	A->X (FF)	0.18694	0.48061	6.09015
	B->X (FF)	0.17863	0.49367	5.91882
	C->X (FF)	0.15258	0.50907	6.37276
	D->X (FF)	0.11704	0.50438	6.44422

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.02571	0.03376	0.19757
	A	0.01573	0.02378	0.18742
	B	0.02350	0.03212	0.18210
	B	0.01504	0.02366	0.17312
	C	0.02129	0.02991	0.16732
	C	0.01415	0.02274	0.15964
	D	0.02514	0.03443	0.17629
	D	0.01927	0.02853	0.16988
sky130_fd_sc_hs__or4_2	A	0.03061	0.04149	0.24316
	A	0.02024	0.03109	0.23156
	B	0.02826	0.03970	0.22346
	B	0.01934	0.03077	0.21338
	C	0.02614	0.03739	0.20366
	C	0.01853	0.02976	0.19516
	D	0.02982	0.04144	0.21138
	D	0.02348	0.03508	0.20428
sky130_fd_sc_hs__or4_4	A	0.06385	0.08264	0.45982
	A	0.04616	0.06491	0.44050
	B	0.05911	0.07616	0.40329
	B	0.04348	0.06058	0.38680
	C	0.05204	0.07089	0.37729
	C	0.03943	0.05837	0.36367
	D	0.05798	0.07851	0.39017
	D	0.04813	0.06870	0.37909

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01806	0.02310	0.18839
	A	0.02803	0.03280	0.19695
	B	0.01827	0.02351	0.19110
	B	0.02671	0.03194	0.19924
	C	0.01833	0.02377	0.17499
	C	0.02546	0.03090	0.18222
	D	0.01813	0.02516	0.18289
	D	0.02400	0.03103	0.18894
sky130_fd_sc_hs__or4_2	A	0.04232	0.04035	0.22147
	A	0.05268	0.05044	0.23194
	B	0.04269	0.04091	0.22579
	B	0.05157	0.04978	0.23328
	C	0.04271	0.04073	0.20600
	C	0.05030	0.04832	0.21296
	D	0.04263	0.04220	0.21266
	D	0.04896	0.04855	0.21894
sky130_fd_sc_hs__or4_4	A	0.08439	0.07737	0.42073
	A	0.10204	0.09468	0.43051
	B	0.08385	0.07615	0.33612
	B	0.09943	0.09142	0.34572
	C	0.08442	0.07798	0.34931
	C	0.09702	0.09058	0.35895
	D	0.08362	0.08075	0.36503
	D	0.09344	0.09033	0.37212

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00224	0.00209	0.00209
	(B * D * X)	-0.00184	-0.00198	-0.00197
	(B * C * !D * X)	0.00244	0.00223	0.00222
	(B * C * !D * X)	-0.00165	-0.00190	-0.00184
	(B * !C * !D * X)	0.00318	0.00289	0.00430
	(B * !C * !D * X)	-0.00104	-0.00137	0.00016
	(!B * C * D * X)	0.00249	0.00226	0.00224
	(!B * C * D * X)	-0.00161	-0.00189	-0.00182
	(!B * C * !D * X)	0.00344	0.00308	0.00449
	(!B * C * !D * X)	-0.00085	-0.00126	0.00032
	(!B * !C * D * X)	0.00380	0.00353	0.00633
	(!B * !C * D * X)	-0.00063	-0.00094	0.00209
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00250	0.00239	0.00236
	(B * D * X)	-0.00177	-0.00193	-0.00190
	(B * C * !D * X)	0.00270	0.00249	0.00249
	(B * C * !D * X)	-0.00159	-0.00184	-0.00177
	(B * !C * !D * X)	0.00343	0.00315	0.00456
	(B * !C * !D * X)	-0.00099	-0.00132	0.00023
	(!B * C * D * X)	0.00275	0.00252	0.00250
	(!B * C * D * X)	-0.00154	-0.00183	-0.00175
	(!B * C * !D * X)	0.00369	0.00334	0.00475
	(!B * C * !D * X)	-0.00081	-0.00121	0.00039
	(!B * !C * D * X)	0.00404	0.00378	0.00660
	(!B * !C * D * X)	-0.00059	-0.00089	0.00216

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00313	0.00283	0.00278
	(B * D * X)	-0.00343	-0.00376	-0.00375
	(B * C * !D * X)	0.00361	0.00309	0.00306
	(B * C * !D * X)	-0.00299	-0.00353	-0.00347
	(B * !C * !D * X)	0.00528	0.00454	0.00728
	(B * !C * !D * X)	-0.00162	-0.00238	0.00058
	(!B * C * D * X)	0.00371	0.00309	0.00306
	(!B * C * D * X)	-0.00291	-0.00357	-0.00348
	(!B * C * !D * X)	0.00583	0.00486	0.00757
	(!B * C * !D * X)	-0.00122	-0.00222	0.00081
	(!B * !C * D * X)	0.00657	0.00577	0.01125
	(!B * !C * D * X)	-0.00074	-0.00157	0.00434

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00149	-0.00151	-0.00151
	(B * D * X)	0.00257	0.00259	0.00257
	(B * C * !D * X)	-0.00138	-0.00140	-0.00140
	(B * C * !D * X)	0.00270	0.00272	0.00268
	(B * !C * !D * X)	0.00063	0.00057	0.00025
	(B * !C * !D * X)	0.00485	0.00481	0.00446
	(!B * C * D * X)	-0.00135	-0.00137	-0.00137
	(!B * C * D * X)	0.00273	0.00275	0.00272
	(!B * C * !D * X)	0.00098	0.00091	0.00053
	(!B * C * !D * X)	0.00523	0.00519	0.00480
	(!B * !C * D * X)	0.00325	0.00312	0.00228
	(!B * !C * D * X)	0.00761	0.00753	0.00666

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00156	-0.00157	-0.00156
	(B * D * X)	0.00272	0.00273	0.00270
	(B * C * !D * X)	-0.00144	-0.00146	-0.00146
	(B * C * !D * X)	0.00283	0.00286	0.00282
	(B * !C * !D * X)	0.00058	0.00051	0.00020
	(B * !C * !D * X)	0.00499	0.00495	0.00461
	(!B * C * D * X)	-0.00141	-0.00141	-0.00143
	(!B * C * D * X)	0.00287	0.00286	0.00285
	(!B * C * !D * X)	0.00092	0.00085	0.00047
	(!B * C * !D * X)	0.00537	0.00533	0.00494
	(!B * !C * D * X)	0.00319	0.00306	0.00222
	(!B * !C * D * X)	0.00776	0.00767	0.00679
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00119	-0.00121	-0.00119
	(B * D * X)	0.00537	0.00542	0.00537
	(B * C * !D * X)	-0.00098	-0.00101	-0.00100
	(B * C * !D * X)	0.00558	0.00564	0.00558
	(B * !C * !D * X)	0.00295	0.00283	0.00217
	(B * !C * !D * X)	0.00980	0.00972	0.00904
	(!B * C * D * X)	-0.00086	-0.00087	-0.00090
	(!B * C * D * X)	0.00570	0.00573	0.00569
	(!B * C * !D * X)	0.00376	0.00363	0.00287
	(!B * C * !D * X)	0.01071	0.01065	0.00984
	(!B * !C * D * X)	0.00826	0.00802	0.00632
	(!B * !C * D * X)	0.01543	0.01523	0.01351

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)**	0.00205	0.00206	0.00190
	(A * C * D * X)	-0.00123	-0.00124	-0.00130
	(A * C * !D * X)	0.00222	0.00224	0.00227
	(A * C * !D * X)	-0.00100	-0.00098	-0.00090
	(A * !C * D * X)	0.00230	0.00243	0.00237
	(A * !C * D * X)	-0.00093	-0.00083	-0.00078
	(A * !C * !D * X)	0.00226	0.00228	0.00274
	(A * !C * !D * X)	-0.00049	-0.00048	-0.00002
	(!A * C * D * X)	0.00234	0.00203	0.00204
	(!A * C * D * X)	-0.00154	-0.00186	-0.00180
	(!A * C * !D * X)	0.00303	0.00262	0.00426
	(!A * C * !D * X)	-0.00094	-0.00135	0.00036
	(!A * !C * D * X)	0.00350	0.00307	0.00609
	(!A * !C * D * X)	-0.00061	-0.00103	0.00212
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00230	0.00231	0.00215
	(A * C * D * X)	-0.00121	-0.00121	-0.00127
	(A * C * !D * X)	0.00247	0.00249	0.00253
	(A * C * !D * X)	-0.00098	-0.00097	-0.00086
	(A * !C * D * X)	0.00254	0.00268	0.00261
	(A * !C * D * X)	-0.00092	-0.00082	-0.00076
	(A * !C * !D * X)	0.00250	0.00252	0.00298
	(A * !C * !D * X)	-0.00052	-0.00051	-0.00002
	(!A * C * D * X)	0.00258	0.00228	0.00230
	(!A * C * D * X)	-0.00157	-0.00187	-0.00180
	(!A * C * !D * X)	0.00324	0.00286	0.00452
	(!A * C * !D * X)	-0.00099	-0.00138	0.00035
	(!A * !C * D * X)	0.00373	0.00331	0.00635
	(!A * !C * D * X)	-0.00065	-0.00106	0.00212

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00363	0.00367	0.00332
	(A * C * D * X)	-0.00235	-0.00233	-0.00247
	(A * C * !D * X)	0.00399	0.00408	0.00398
	(A * C * !D * X)	-0.00189	-0.00180	-0.00172
	(A * !C * D * X)	0.00416	0.00444	0.00423
	(A * !C * D * X)	-0.00171	-0.00150	-0.00146
	(A * !C * !D * X)	0.00439	0.00446	0.00521
	(A * !C * !D * X)	-0.00058	-0.00060	0.00029
	(!A * C * D * X)	0.00430	0.00358	0.00357
	(!A * C * D * X)	-0.00292	-0.00366	-0.00355
	(!A * C * !D * X)	0.00591	0.00492	0.00805
	(!A * C * !D * X)	-0.00152	-0.00251	0.00079
	(!A * !C * D * X)	0.00681	0.00585	0.01170
	(!A * !C * D * X)	-0.00090	-0.00184	0.00431

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)**	-0.00140	-0.00141	-0.00138
	(A * C * D * X)	0.00190	0.00191	0.00183
	(A * C * !D * X)	-0.00139	-0.00140	-0.00132
	(A * C * !D * X)	0.00189	0.00189	0.00184
	(A * !C * D * X)	-0.00148	-0.00148	-0.00136
	(A * !C * D * X)	0.00173	0.00173	0.00174
	(A * !C * !D * X)	0.00092	0.00081	-0.00039
	(A * !C * !D * X)	0.00368	0.00359	0.00239
	(!A * C * D * X)	-0.00117	-0.00118	-0.00119
	(!A * C * D * X)	0.00269	0.00270	0.00267
	(!A * C * !D * X)	0.00115	0.00107	0.00071
	(!A * C * !D * X)	0.00509	0.00504	0.00466
	(!A * !C * D * X)	0.00344	0.00331	0.00247
	(!A * !C * D * X)	0.00749	0.00738	0.00652
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00144	-0.00145	-0.00142
	(A * C * D * X)	0.00209	0.00210	0.00201
	(A * C * !D * X)	-0.00144	-0.00144	-0.00137
	(A * C * !D * X)	0.00208	0.00208	0.00202
	(A * !C * D * X)	-0.00153	-0.00152	-0.00141
	(A * !C * D * X)	0.00192	0.00193	0.00193
	(A * !C * !D * X)	0.00087	0.00077	-0.00043
	(A * !C * !D * X)	0.00389	0.00380	0.00260
	(!A * C * D * X)	-0.00122	-0.00124	-0.00125
	(!A * C * D * X)	0.00289	0.00291	0.00287
	(!A * C * !D * X)	0.00109	0.00101	0.00066
	(!A * C * !D * X)	0.00530	0.00526	0.00487
	(!A * !C * D * X)	0.00338	0.00325	0.00241
	(!A * !C * D * X)	0.00771	0.00759	0.00674

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00191	-0.00193	-0.00186
	(A * C * D * X)	0.00404	0.00408	0.00394
	(A * C * !D * X)	-0.00187	-0.00188	-0.00174
	(A * C * !D * X)	0.00402	0.00405	0.00396
	(A * !C * D * X)	-0.00204	-0.00204	-0.00182
	(A * !C * D * X)	0.00375	0.00377	0.00378
	(A * !C * !D * X)	0.00247	0.00227	-0.00013
	(A * !C * !D * X)	0.00745	0.00725	0.00486
	(!A * C * D * X)	-0.00140	-0.00142	-0.00145
	(!A * C * D * X)	0.00575	0.00578	0.00572
	(!A * C * !D * X)	0.00320	0.00304	0.00230
	(!A * C * !D * X)	0.01055	0.01048	0.00967
	(!A * !C * D * X)	0.00773	0.00748	0.00578
	(!A * !C * D * X)	0.01531	0.01506	0.01336

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00218	0.00219	0.00220
	(B * D * X)	-0.00099	-0.00099	-0.00095
	(B * !D * X)	0.00197	0.00196	0.00195
	(B * !D * X)	-0.00071	-0.00071	-0.00072
	(A * !B * D * X)	0.00244	0.00237	0.00259
	(A * !B * D * X)	-0.00078	-0.00089	-0.00066
	(A * !B * !D * X)	0.00211	0.00212	0.00230
	(A * !B * !D * X)	-0.00015	-0.00014	0.00003
	(!A * !B * D * X)	0.00304	0.00274	0.00604
	(!A * !B * D * X)	-0.00092	-0.00122	0.00213

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00250	0.00252	0.00251
	(B * D * X)	-0.00089	-0.00089	-0.00085
	(B * !D * X)	0.00232	0.00235	0.00229
	(B * !D * X)	-0.00061	-0.00063	-0.00062
	(A * !B * D * X)	0.00278	0.00270	0.00291
	(A * !B * D * X)	-0.00069	-0.00079	-0.00056
	(A * !B * !D * X)	0.00245	0.00247	0.00265
	(A * !B * !D * X)	-0.00005	-0.00004	0.00014
	(!A * !B * D * X)	0.00340	0.00309	0.00639
	(!A * !B * D * X)	-0.00083	-0.00114	0.00221
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00397	0.00396	0.00398
	(B * D * X)	-0.00186	-0.00189	-0.00180
	(B * !D * X)	0.00350	0.00354	0.00343
	(B * !D * X)	-0.00122	-0.00125	-0.00124
	(A * !B * D * X)	0.00444	0.00426	0.00469
	(A * !B * D * X)	-0.00142	-0.00164	-0.00119
	(A * !B * !D * X)	0.00383	0.00389	0.00416
	(A * !B * !D * X)	-0.00005	-0.00007	0.00028
	(!A * !B * D * X)	0.00566	0.00504	0.01157
	(!A * !B * D * X)	-0.00170	-0.00230	0.00432

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00152	-0.00152	-0.00146
	(B * D * X)	0.00162	0.00162	0.00163
	(B * !D * X)	-0.00117	-0.00119	-0.00134
	(B * !D * X)	0.00149	0.00150	0.00139
	(A * !B * D * X)	-0.00151	-0.00151	-0.00132
	(A * !B * D * X)	0.00169	0.00171	0.00175
	(A * !B * !D * X)	0.00143	0.00135	0.00025
	(A * !B * !D * X)	0.00384	0.00378	0.00270
	(!A * !B * D * X)	0.00340	0.00326	0.00248
	(!A * !B * D * X)	0.00733	0.00722	0.00642
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00164	-0.00165	-0.00159
	(B * D * X)	0.00171	0.00172	0.00172
	(B * !D * X)	-0.00134	-0.00135	-0.00148
	(B * !D * X)	0.00160	0.00160	0.00150
	(A * !B * D * X)	-0.00164	-0.00164	-0.00145
	(A * !B * D * X)	0.00180	0.00181	0.00185
	(A * !B * !D * X)	0.00127	0.00118	0.00008
	(A * !B * !D * X)	0.00393	0.00386	0.00278
	(!A * !B * D * X)	0.00326	0.00312	0.00234
	(!A * !B * D * X)	0.00746	0.00735	0.00655
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00212	-0.00214	-0.00201
	(B * D * X)	0.00353	0.00357	0.00360
	(B * !D * X)	-0.00149	-0.00151	-0.00189
	(B * !D * X)	0.00324	0.00324	0.00296
	(A * !B * D * X)	-0.00210	-0.00210	-0.00172
	(A * !B * D * X)	0.00368	0.00370	0.00380
	(A * !B * !D * X)	0.00373	0.00358	0.00140
	(A * !B * !D * X)	0.00793	0.00781	0.00570
	(!A * !B * D * X)	0.00765	0.00738	0.00581
	(!A * !B * D * X)	0.01495	0.01470	0.01310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00192	0.00195	0.00193
	(C * X)	-0.00081	-0.00082	-0.00079
	(B * !C * X)	0.00192	0.00195	0.00194
	(B * !C * X)	-0.00072	-0.00073	-0.00070
	(A * !B * !C * X)	0.00195	0.00199	0.00215
	(A * !B * !C * X)	-0.00011	-0.00011	0.00006
sky130_fd_sc_hs__or4_2	(C * X)	0.00233	0.00237	0.00234
	(C * X)	-0.00070	-0.00071	-0.00068
	(B * !C * X)	0.00233	0.00237	0.00235
	(B * !C * X)	-0.00061	-0.00062	-0.00059
	(A * !B * !C * X)	0.00235	0.00239	0.00256
	(A * !B * !C * X)	0.00001	0.00001	0.00019
sky130_fd_sc_hs__or4_4	(C * X)	0.00330	0.00331	0.00333
	(C * X)	-0.00135	-0.00136	-0.00133
	(B * !C * X)	0.00332	0.00338	0.00337
	(B * !C * X)	-0.00117	-0.00120	-0.00114
	(A * !B * !C * X)	0.00338	0.00339	0.00377
	(A * !B * !C * X)	0.00007	0.00009	0.00039

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00134	-0.00134	-0.00143
	(C * X)	0.00139	0.00139	0.00132
	(B * !C * X)	-0.00111	-0.00112	-0.00129
	(B * !C * X)	0.00155	0.00155	0.00142
	(A * !B * !C * X)	0.00172	0.00166	0.00073
	(A * !B * !C * X)	0.00403	0.00398	0.00306
sky130_fd_sc_hs__or4_2	(C * X)	-0.00156	-0.00157	-0.00164
	(C * X)	0.00147	0.00147	0.00141
	(B * !C * X)	-0.00132	-0.00134	-0.00150
	(B * !C * X)	0.00163	0.00163	0.00152
	(A * !B * !C * X)	0.00152	0.00145	0.00051
	(A * !B * !C * X)	0.00410	0.00406	0.00314
sky130_fd_sc_hs__or4_4	(C * X)	-0.00172	-0.00174	-0.00192
	(C * X)	0.00293	0.00294	0.00280
	(B * !C * X)	-0.00126	-0.00127	-0.00173
	(B * !C * X)	0.00325	0.00324	0.00294
	(A * !B * !C * X)	0.00439	0.00428	0.00242
	(A * !B * !C * X)	0.00822	0.00813	0.00634

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00203	0.00187	0.00432	0.00188	0.00560	0.00303	1.71665	1.71958
sky130_fd_sc_hs__sdfbbn_2	0.00204	0.00188	0.00435	0.00175	0.00553	0.00300	3.43270	3.42223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	4692.13000	7707.23000
sky130_fd_sc_hs__sdfbbn_2	0.00000	4789.19000	8134.45000

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)	0.23622	0.73056	7.66848
	SET_B->Q (FR)	0.11783	0.65434	7.97372
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.26518	0.66847	7.65974
	SET_B->Q (FR)	0.13857	0.59127	7.97262

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)	0.24012	0.60778	5.37134
	RESET_B->Q (FF)	0.15923	0.54308	5.31219
	SET_B->Q (RF)	0.10644	0.35084	3.11120
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.26221	0.57922	5.41588
	RESET_B->Q (FF)	0.18285	0.51852	5.38373
	SET_B->Q (RF)	0.13007	0.33990	3.25964

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)	0.21625	0.72279	7.72568
	RESET_B->Q_N (FR)	0.13589	0.65961	7.64709
	SET_B->Q_N (RR)	0.08226	0.47881	5.95658
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.21884	0.63999	7.61930
	RESET_B->Q_N (FR)	0.14006	0.57935	7.56567
	SET_B->Q_N (RR)	0.08669	0.40621	5.88484

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)	0.20063	0.60978	5.45258
	SET_B->Q_N (FF)	0.08432	0.53844	6.13300
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.21190	0.57421	5.35091
	SET_B->Q_N (FF)	0.08902	0.49658	6.03306

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)	-0.04667	-0.02262	1.70556
	setup	CLK_N (F)	0.10401	0.07510	-1.68168
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05076	-0.02370	1.70553
	setup	CLK_N (F)	0.10745	0.07770	-1.68002

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)	-0.11351	-0.15111	-0.77708
	setup	CLK_N (F)	0.13262	0.16394	0.78465
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12511	-0.16483	-0.84495
	setup	CLK_N (F)	0.14623	0.17872	0.85384

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)	-0.04667	-0.02262	1.70556
	setup	CLK_N (F)	0.10401	0.07510	-1.68168
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05076	-0.02370	1.70553
	setup	CLK_N (F)	0.10745	0.07770	-1.68002

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)	-0.11351	-0.15111	-0.77708
	setup	CLK_N (F)	0.13262	0.16394	0.78465
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12511	-0.16483	-0.84495
	setup	CLK_N (F)	0.14623	0.17872	0.85384

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)	-0.06745	-0.02991	1.70151
	setup	CLK_N (F)	0.12964	0.08628	-1.67124
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06908	-0.03277	1.72165
	setup	CLK_N (F)	0.12845	0.08988	-1.68276

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)	-0.14774	-0.16400	-0.76560
	setup	CLK_N (F)	0.17344	0.17955	0.77972
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16025	-0.17987	-0.85295
	setup	CLK_N (F)	0.18539	0.19540	0.86435

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)	-0.06745	-0.02991	1.70151
	hold	CLK_N (F)	-0.06969	-0.03655	1.68998
	setup	CLK_N (F)	0.12379	0.08333	-1.67922
	setup	CLK_N (F)	0.12964	0.08628	-1.67124
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06908	-0.03277	1.72165
	hold	CLK_N (F)	-0.07363	-0.03785	1.70568
	setup	CLK_N (F)	0.12714	0.08227	-1.69535
	setup	CLK_N (F)	0.12845	0.08988	-1.68276

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)	-0.15193	-0.16532	-0.76560
	hold	CLK_N (F)	-0.14774	-0.16400	-0.77184
	setup	CLK_N (F)	0.17344	0.17955	0.77393
	setup	CLK_N (F)	0.16940	0.17949	0.77972
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16398	-0.17991	-0.85295
	hold	CLK_N (F)	-0.16025	-0.17987	-0.85331
	setup	CLK_N (F)	0.18338	0.19540	0.86068
	setup	CLK_N (F)	0.18539	0.19462	0.86435

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)	-0.06038	-0.04388	1.31609
	setup	CLK_N (F)	0.17589	0.13193	-1.28211
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06262	-0.04741	1.32909
	setup	CLK_N (F)	0.18624	0.14479	-1.27864

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)	-0.08235	-0.07502	0.03058
	setup	CLK_N (F)	0.14196	0.14222	0.38922
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08386	-0.08022	0.00993
	setup	CLK_N (F)	0.14968	0.15849	0.47810

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)	-0.15376	-0.11853	1.31609
	hold	CLK_N (F)	-0.06038	-0.04388	1.30882
	setup	CLK_N (F)	0.17589	0.13193	-1.30341
	setup	CLK_N (F)	0.11703	0.09462	-1.28211
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16431	-0.13190	1.29494
	hold	CLK_N (F)	-0.06262	-0.04741	1.32909
	setup	CLK_N (F)	0.18624	0.14479	-1.27864
	setup	CLK_N (F)	0.11828	0.09697	-1.29999

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)	-0.08235	-0.07502	0.03058
	hold	CLK_N (F)	-0.11621	-0.13121	-0.38273
	setup	CLK_N (F)	0.14196	0.13134	0.02682
	setup	CLK_N (F)	0.13546	0.14222	0.38922
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08386	-0.08022	0.00993
	hold	CLK_N (F)	-0.13053	-0.14433	-0.46739
	setup	CLK_N (F)	0.14291	0.13293	0.04789
	setup	CLK_N (F)	0.14968	0.15849	0.47810

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)	0.06769	0.01646	-1.66129
	removal	CLK_N (F)	0.00390	0.05111	1.82116
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.06419	0.01362	-1.64257
	removal	CLK_N (F)	0.00503	0.05230	1.81445

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)	0.06769	0.01610	-1.66181
	recovery	CLK_N (F)	0.06719	0.01646	-1.66223
	recovery	CLK_N (F)	0.06762	0.01619	-1.66129
	removal	CLK_N (F)	0.00390	0.05111	1.82116
	removal	CLK_N (F)	0.00390	0.05111	1.82010
	removal	CLK_N (F)	0.00390	0.05111	1.82010
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.06409	0.01356	-1.64408
	recovery	CLK_N (F)	0.06419	0.01358	-1.64641
	recovery	CLK_N (F)	0.06416	0.01362	-1.64257
	removal	CLK_N (F)	0.00503	0.05230	1.81445
	removal	CLK_N (F)	0.00503	0.05230	1.81445
	removal	CLK_N (F)	0.00503	0.05230	1.81445

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 ()	0.12347	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.11219	0.59937	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.13023	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.11896	0.59937	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)	-0.00657	-0.07157	-1.51601
	removal	CLK_N (F)	0.01821	0.08471	1.77269
	hold	RESET_B (R)	-0.03877	-0.06150	-0.44316
	setup	RESET_B (R)	0.06846	0.09019	1.00443
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.00365	-0.06454	-1.29456
	removal	CLK_N (F)	0.01651	0.08067	1.74745
	hold	RESET_B (R)	-0.05379	-0.08296	-0.51012
	setup	RESET_B (R)	0.07467	0.10646	1.00799

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)	-0.00692	-0.07157	-1.51610
	recovery	CLK_N (F)	-0.00696	-0.07157	-1.51601
	recovery	CLK_N (F)	-0.00657	-0.07157	-1.51896
	removal	CLK_N (F)	0.01790	0.08471	1.76577
	removal	CLK_N (F)	0.01790	0.08471	1.77269
	removal	CLK_N (F)	0.01821	0.08471	1.76977
	hold	RESET_B (R)	-0.03877	-0.06150	-0.46216
	hold	RESET_B (R)	-0.04020	-0.06218	-0.44316
	setup	RESET_B (R)	0.06846	0.09000	0.84123
	setup	RESET_B (R)	0.05640	0.09019	1.00443
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.00365	-0.06454	-1.30333
	recovery	CLK_N (F)	-0.00369	-0.06454	-1.30606
	recovery	CLK_N (F)	-0.00466	-0.06854	-1.29456
	removal	CLK_N (F)	0.01651	0.08067	1.74052
	removal	CLK_N (F)	0.01651	0.08067	1.74745
	removal	CLK_N (F)	0.01651	0.08067	1.74345
	hold	RESET_B (R)	-0.05653	-0.08500	-0.52470
	hold	RESET_B (R)	-0.05379	-0.08296	-0.51012
	setup	RESET_B (R)	0.07467	0.10646	0.96749
	setup	RESET_B (R)	0.06383	0.10266	1.00799

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 ()	0.09640	0.59937	16.50020
	min_pulse_width	SET_B ()	0.08287	0.59937	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.10542	0.59937	16.50020
	min_pulse_width	SET_B ()	0.09415	0.59937	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 ()	0.11896	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.09866	0.59937	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.10317	0.59937	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 ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.11670	0.59937	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.11219	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.12121	0.59937	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	0.09191	0.10247	0.30205
	CLK_N	0.09476	0.10532	0.30355
	SET_B	0.07908	0.09687	0.40977
	SET_B	0.08449	0.10227	0.41434
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.09763	0.10446	0.30706
	CLK_N	0.10036	0.10718	0.30686
	SET_B	0.08336	0.09921	0.41801
	SET_B	0.08865	0.10444	0.42131

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.07393	0.08571	0.28464
	CLK_N	0.07645	0.08822	0.28658
	RESET_B	0.06588	0.07301	0.19660
	RESET_B	0.06753	0.07464	0.19785
	SET_B	0.06373	0.08005	0.40088
	SET_B	0.05834	0.07461	0.39498
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.08548	0.09523	0.29113
	CLK_N	0.08805	0.09778	0.29318
	RESET_B	0.07792	0.08305	0.20372
	RESET_B	0.07962	0.08466	0.20482
	SET_B	0.07529	0.09008	0.41072
	SET_B	0.07003	0.08476	0.40489

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.10349	0.11530	0.31554
	CLK_N	0.10601	0.11782	0.31657
	RESET_B	0.08889	0.09604	0.22182
	RESET_B	0.09055	0.09767	0.22194
	SET_B	0.08791	0.10427	0.42592
	SET_B	0.08252	0.09881	0.41977
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.11658	0.12636	0.32287
	CLK_N	0.11915	0.12891	0.32477
	RESET_B	0.10256	0.10765	0.22970
	RESET_B	0.10426	0.10928	0.23042
	SET_B	0.10122	0.11611	0.43754
	SET_B	0.09595	0.11074	0.43162

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.06743	0.07798	0.27572
	CLK_N	0.07028	0.08083	0.27841
	SET_B	0.05989	0.07786	0.39014
	SET_B	0.06530	0.08320	0.39466
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.07355	0.08040	0.27979
	CLK_N	0.07628	0.08311	0.28175
	SET_B	0.06463	0.08051	0.39829
	SET_B	0.06991	0.08572	0.40189

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)**	0.03925	0.03929	0.04006
	(CLK_N * SCD * SCE)	0.03703	0.03704	0.03781
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.04808	0.05875	0.24755
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.04452	0.05516	0.24398
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.04502	0.05253	0.20161
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.04093	0.04842	0.19752
	(CLK_N * !SCD * SCE)	0.06762	0.06761	0.06757
	(CLK_N * !SCD * SCE)	0.06505	0.06501	0.06498
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04808	0.05535	0.20198
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04404	0.05130	0.19794
	(!CLK_N * SCD * SCE)	0.06467	0.06473	0.06548
	(!CLK_N * SCD * SCE)	0.06245	0.06246	0.06323
	(!CLK_N * !SCE)	0.06595	0.07436	0.22262
	(!CLK_N * !SCE)	0.06192	0.07030	0.21857
	(!CLK_N * !SCD * SCE)	0.05435	0.05436	0.05433
	(!CLK_N * !SCD * SCE)	0.05178	0.05177	0.05174

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.03752	0.03756	0.03834
	(CLK_N * SCD * SCE)	0.03526	0.03527	0.03605
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05303	0.06353	0.25064
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.04937	0.05985	0.24697
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.04346	0.05081	0.19803
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.03932	0.04664	0.19387
	(CLK_N * !SCD * SCE)	0.06593	0.06592	0.06588
	(CLK_N * !SCD * SCE)	0.06333	0.06329	0.06326
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05292	0.06003	0.20480
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04882	0.05591	0.20070
	(!CLK_N * SCD * SCE)	0.04254	0.04260	0.04336
	(!CLK_N * SCD * SCE)	0.04028	0.04029	0.04108
	(!CLK_N * !SCE)	0.04386	0.05243	0.20292
	(!CLK_N * !SCE)	0.03976	0.04832	0.19881
	(!CLK_N * !SCD * SCE)	0.04383	0.04381	0.04377
	(!CLK_N * !SCD * SCE)	0.04122	0.04118	0.04115

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)**	0.03938	0.03925	0.03758
	(CLK_N * SCD * SCE)	0.04162	0.04149	0.03982
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.06427	0.07336	0.24367
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.06783	0.07693	0.24724
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.03251	0.04122	0.19623
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.03659	0.04533	0.20031
	(CLK_N * !SCD * SCE)	0.06661	0.06658	0.06658
	(CLK_N * !SCD * SCE)	0.06919	0.06918	0.06916
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03274	0.04172	0.19943
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03677	0.04578	0.20347
	(!CLK_N * SCD * SCE)	0.06481	0.06467	0.06301
	(!CLK_N * SCD * SCE)	0.06704	0.06691	0.06524
	(!CLK_N * !SCE)	0.05067	0.06045	0.21954
	(!CLK_N * !SCE)	0.05470	0.06449	0.22358
	(!CLK_N * !SCD * SCE)	0.05316	0.05315	0.05316
	(!CLK_N * !SCD * SCE)	0.05574	0.05575	0.05574

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.03758	0.03743	0.03578
	(CLK_N * SCD * SCE)	0.03985	0.03973	0.03805
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.07024	0.07911	0.24726
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.07392	0.08279	0.25094
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.03110	0.03965	0.19280
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.03527	0.04381	0.19696
	(CLK_N * !SCD * SCE)	0.06485	0.06482	0.06483
	(CLK_N * !SCD * SCE)	0.06748	0.06746	0.06745
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03796	0.04678	0.20265
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04208	0.05089	0.20676
	(!CLK_N * SCD * SCE)	0.04260	0.04247	0.04081
	(!CLK_N * SCD * SCE)	0.04487	0.04474	0.04308
	(!CLK_N * !SCE)	0.04020	0.04934	0.20047
	(!CLK_N * !SCE)	0.04432	0.05344	0.20456
	(!CLK_N * !SCD * SCE)	0.04242	0.04239	0.04240
	(!CLK_N * !SCD * SCE)	0.04504	0.04503	0.04502

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)**	0.05097	0.05823	0.21323
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.04529	0.05255	0.20755
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05423	0.06445	0.25964
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.04907	0.05928	0.25448
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05403	0.06105	0.21357
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04840	0.05541	0.20794
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.05478	0.06157	0.21500
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.04887	0.05565	0.20908
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05809	0.06790	0.26171
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05270	0.06249	0.25632
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05784	0.06439	0.21534
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05197	0.05851	0.20947
	(!CLK_N * D * SCE)	0.07191	0.07983	0.23403
	(!CLK_N * D * SCE)	0.06628	0.07418	0.22841
	(!CLK_N * !D * SCE)	0.07573	0.08310	0.23580
	(!CLK_N * !D * SCE)	0.06986	0.07722	0.22995
	!SCE	0.03661	0.03652	0.04022
	!SCE	0.03361	0.03350	0.03724

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.04934	0.05643	0.20893
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.04370	0.05078	0.20329
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05910	0.06912	0.26170
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05394	0.06395	0.25654
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05880	0.06565	0.21568
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05320	0.06004	0.21008
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.05313	0.05976	0.21063
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.04726	0.05388	0.20476
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.06293	0.07256	0.26368
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05754	0.06716	0.25830
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.06258	0.06897	0.21738
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05675	0.06313	0.21155
	(!CLK_N * D * SCE)	0.04973	0.05780	0.21357
	(!CLK_N * D * SCE)	0.04414	0.05220	0.20797
	(!CLK_N * !D * SCE)	0.05352	0.06108	0.21528
	(!CLK_N * !D * SCE)	0.04770	0.05525	0.20946
	!SCE	0.03482	0.03473	0.03844
	!SCE	0.03183	0.03173	0.03545

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)**	0.04032	0.04803	0.20713
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.04601	0.05374	0.21278
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07253	0.08048	0.25394
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07769	0.08565	0.25907
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04056	0.04854	0.21041
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04619	0.05419	0.21602
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.03973	0.04772	0.20827
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.04564	0.05365	0.21415
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07214	0.08047	0.25561
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07753	0.08586	0.26098
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.03996	0.04822	0.21151
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04582	0.05410	0.21735
	(!CLK_N * D * SCE)	0.05852	0.06719	0.23028
	(!CLK_N * D * SCE)	0.06414	0.07284	0.23588
	(!CLK_N * !D * SCE)	0.05792	0.06696	0.23137
	(!CLK_N * !D * SCE)	0.06378	0.07284	0.23721
	!SCE	0.03850	0.03837	0.03746
	!SCE	0.04149	0.04138	0.04046

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.03893	0.04651	0.20309
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.04458	0.05218	0.20871
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07854	0.08625	0.25717
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.08370	0.09142	0.26230
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04579	0.05364	0.21299
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05139	0.05925	0.21856
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.03834	0.04619	0.20415
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.04421	0.05208	0.21000
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07815	0.08621	0.25835
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.08353	0.09161	0.26371
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04520	0.05332	0.21403
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05102	0.05915	0.21984
	(!CLK_N * D * SCE)	0.04801	0.05612	0.21051
	(!CLK_N * D * SCE)	0.05361	0.06172	0.21607
	(!CLK_N * !D * SCE)	0.04741	0.05583	0.21154
	(!CLK_N * !D * SCE)	0.05323	0.06167	0.21734
	!SCE	0.03671	0.03658	0.03569
	!SCE	0.03972	0.03960	0.03868

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.04258	0.05597	0.26338
	(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)	0.03509	0.04845	0.25590
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.07938	0.09296	0.31350
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.07376	0.08730	0.30784
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04722	0.06153	0.28897
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04212	0.05643	0.28382
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.04747	0.06197	0.29176
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.04232	0.05681	0.28656
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.05783	0.07904	0.43375
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.04846	0.06967	0.42437
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.06103	0.08557	0.48431
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.05218	0.07673	0.47548
	(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)	0.06022	0.07349	0.27796
	(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)	0.05350	0.06676	0.27121
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.06089	0.08185	0.43398
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.05157	0.07251	0.42466
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.07075	0.08413	0.29150
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.06325	0.07661	0.28401
	(!CLK_N * D * !SCD)	0.06572	0.08024	0.31099
	(!CLK_N * D * !SCD)	0.06057	0.07506	0.30578
	(!CLK_N * !D * SCD)	0.07892	0.10086	0.45452
	(!CLK_N * !D * SCD)	0.06959	0.09154	0.44520

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.04739	0.06080	0.26873
	(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)	0.03984	0.05323	0.26120
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.08545	0.09906	0.31975
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.07980	0.09339	0.31408
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04589	0.06026	0.28781
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04074	0.05507	0.28261
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05276	0.06730	0.29722
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.04755	0.06205	0.29197
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.05631	0.07736	0.43036
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.04687	0.06791	0.42093
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.06599	0.09052	0.48753
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.05703	0.08157	0.47859
	(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)	0.06505	0.07836	0.28337
	(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)	0.05825	0.07154	0.27653
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.06576	0.08658	0.43702
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.05637	0.07714	0.42761
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.04865	0.06206	0.26999
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.04110	0.05449	0.26246
	(!CLK_N * D * !SCD)	0.05529	0.06946	0.29574
	(!CLK_N * D * !SCD)	0.05008	0.06424	0.29048
	(!CLK_N * !D * SCD)	0.05684	0.07896	0.43503
	(!CLK_N * !D * SCD)	0.04746	0.06956	0.42564

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)**	0.03084	0.04495	0.25542
	(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)	0.03838	0.05252	0.26292
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.05247	0.06699	0.30080
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.05812	0.07263	0.30623
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04934	0.06290	0.28278
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.05447	0.06803	0.28770
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05238	0.06567	0.28276
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05756	0.07084	0.28772
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.03256	0.05500	0.42117
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.04198	0.06442	0.43051
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.06434	0.08704	0.46925
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.07323	0.09592	0.47809
	(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)	0.04764	0.06181	0.27161
	(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)	0.05437	0.06855	0.27835
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.03280	0.05550	0.42432
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.04216	0.06487	0.43362
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.05872	0.07284	0.28327
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.06626	0.08040	0.29077
	(!CLK_N * D * !SCD)	0.07016	0.08367	0.30198
	(!CLK_N * D * !SCD)	0.07534	0.08878	0.30694
	(!CLK_N * !D * SCD)	0.05059	0.07415	0.44440
	(!CLK_N * !D * SCD)	0.05996	0.08355	0.45372

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.03547	0.04962	0.26064
	(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)	0.04304	0.05722	0.26819
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.05726	0.07178	0.30573
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.06293	0.07745	0.31118
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.04763	0.06115	0.28118
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.05282	0.06634	0.28616
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05707	0.07036	0.28754
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.06229	0.07559	0.29255
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.03111	0.05335	0.41780
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.04058	0.06286	0.42721
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.07026	0.09275	0.47289
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.07925	0.10176	0.48185
	(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)	0.05233	0.06654	0.27686
	(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)	0.05914	0.07337	0.28368
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.03797	0.06048	0.42760
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.04739	0.06993	0.43696
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.03644	0.05060	0.26162
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.04402	0.05820	0.26917
	(!CLK_N * D * !SCD)	0.04795	0.06192	0.28605
	(!CLK_N * D * !SCD)	0.05318	0.06708	0.29107
	(!CLK_N * !D * SCD)	0.04004	0.06297	0.42539
	(!CLK_N * !D * SCD)	0.04946	0.07240	0.43478

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)	0.05119	0.06460	0.30056
	(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)	0.04756	0.06100	0.29694
	(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)	0.06289	0.07377	0.27142
	(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)	0.05879	0.06968	0.26733
	(!SET_B * Q * !Q_N)	0.04684	0.05854	0.26178
	(!SET_B * Q * !Q_N)	0.04264	0.05434	0.25759

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)**	0.05562	0.06909	0.30432
	(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)	0.05209	0.06554	0.30078
	(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)	0.06729	0.07816	0.27533
	(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)	0.06332	0.07417	0.27136
	(!SET_B * Q * !Q_N)	0.04492	0.05664	0.25955
	(!SET_B * Q * !Q_N)	0.04085	0.05256	0.25548

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)**	0.05624	0.06952	0.29756
	(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)	0.05986	0.07314	0.30117
	(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)	0.03785	0.05107	0.26769
	(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)	0.04194	0.05517	0.27177
	(!SET_B * Q * !Q_N)	0.03457	0.04735	0.25570
	(!SET_B * Q * !Q_N)	0.03878	0.05157	0.25989

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)**	0.06176	0.07500	0.30239
	(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)	0.06528	0.07853	0.30594
	(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)	0.04284	0.05604	0.27216
	(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)	0.04680	0.06000	0.27614
	(!SET_B * Q * !Q_N)	0.03285	0.04562	0.25364
	(!SET_B * Q * !Q_N)	0.03693	0.04972	0.25772

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)**	0.04197	0.04204	0.04195
	(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)	0.03250	0.03246	0.03247
	(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)	0.08149	0.09451	0.34918
	(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)	0.07133	0.08430	0.33899
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)**	0.04032	0.04035	0.04031
	(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)	0.03092	0.03090	0.03087
	(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)	0.08050	0.09334	0.34752
	(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)	0.07045	0.08321	0.33742

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)	0.03410	0.03365	0.03370
	(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)	0.04363	0.04324	0.04318
	(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)	0.03689	0.05435	0.33929
	(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)	0.04708	0.06458	0.34946

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)**	0.03224	0.03180	0.03182
	(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)	0.04167	0.04134	0.04125
	(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)	0.03497	0.05233	0.33691
	(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)	0.04507	0.06248	0.34698

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)	0.06182	0.08831	0.50814
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05690	0.08337	0.50321
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05332	0.07764	0.47353
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.04793	0.07223	0.46813
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05866	0.08514	0.50489
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05373	0.08021	0.49997
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05014	0.07445	0.47034
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.04474	0.06904	0.46494
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09558	0.12027	0.52390
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.08974	0.11443	0.51806
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06923	0.09346	0.48740
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06383	0.08804	0.48201
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05100	0.07687	0.49289
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04564	0.07149	0.48753
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06189	0.08716	0.49140
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05649	0.08177	0.48600
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05868	0.08396	0.48816
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05328	0.07857	0.48276
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06464	0.09113	0.51089
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05972	0.08619	0.50598
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05613	0.08045	0.47634
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05073	0.07504	0.47094
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08982	0.11453	0.51843
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08395	0.10866	0.51257
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09555	0.12031	0.52399
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.08970	0.11444	0.51814
	(!D * !SCE * SET_B * !Q * Q_N)	0.06358	0.08780	0.48179
	(!D * !SCE * SET_B * !Q * Q_N)	0.05818	0.08239	0.47639
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04535	0.07122	0.48763
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03998	0.06586	0.48227
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06921	0.09343	0.48742
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06381	0.08802	0.48202
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05099	0.07685	0.49295
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04562	0.07149	0.48759
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06469	0.08997	0.49419
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05929	0.08458	0.48879

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06694	0.09339	0.51263
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06204	0.08849	0.50775
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05149	0.07581	0.47128
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.04616	0.07047	0.46595
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.06376	0.09021	0.50940
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05887	0.08531	0.50451
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.04829	0.07261	0.46808
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.04296	0.06727	0.46276
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09456	0.11925	0.52255
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.08882	0.11353	0.51684
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07398	0.09822	0.49177
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06866	0.09288	0.48645
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04916	0.07500	0.49052
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04386	0.06970	0.48523
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06685	0.09210	0.49591
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06151	0.08678	0.49059
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.06363	0.08888	0.49267
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05829	0.08356	0.48734
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06975	0.09620	0.51542
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06486	0.09130	0.51053
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05429	0.07861	0.47408
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.04896	0.07328	0.46875
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08878	0.11348	0.51704
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08302	0.10773	0.51132
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09452	0.11929	0.52264
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.08877	0.11353	0.51692
	(!D * !SCE * SET_B * !Q * Q_N)	0.06832	0.09256	0.48611
	(!D * !SCE * SET_B * !Q * Q_N)	0.06299	0.08722	0.48079
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04349	0.06935	0.48522
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03820	0.06405	0.47993
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07396	0.09819	0.49175
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06863	0.09285	0.48642
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04914	0.07502	0.49057
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04385	0.06973	0.48528
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06964	0.09489	0.49870
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06431	0.08957	0.49338

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)**	0.05523	0.07956	0.47005
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.06061	0.08498	0.47545
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05184	0.07617	0.46667
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05722	0.08159	0.47206
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06671	0.09116	0.48359
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07208	0.09656	0.48899
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06215	0.08714	0.48924
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06749	0.09251	0.49461
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05864	0.08306	0.48048
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06402	0.08846	0.48588
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05524	0.07966	0.47706
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.06062	0.08505	0.48246
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05804	0.08238	0.47286
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.06342	0.08780	0.47826
	(!D * !SCE * SET_B * !Q * Q_N)	0.06085	0.08530	0.47776
	(!D * !SCE * SET_B * !Q * Q_N)	0.06623	0.09069	0.48316
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05631	0.08131	0.48392
	(!D * !SCE * !SET_B * Q * !Q_N)	0.06166	0.08668	0.48928
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06669	0.09109	0.48359
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07206	0.09650	0.48899
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06212	0.08715	0.48934
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06746	0.09252	0.49471
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06145	0.08587	0.48328
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06683	0.09127	0.48867

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.05348	0.07775	0.46767
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05878	0.08309	0.47299
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05010	0.07436	0.46429
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05540	0.07971	0.46961
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07142	0.09582	0.48768
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07671	0.10114	0.49300
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06042	0.08537	0.48677
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06568	0.09068	0.49206
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06362	0.08796	0.48468
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06892	0.09329	0.49001
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.06022	0.08457	0.48125
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.06552	0.08989	0.48655
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05629	0.08056	0.47047
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.06159	0.08590	0.47580
	(!D * !SCE * SET_B * !Q * Q_N)	0.06557	0.08997	0.48184
	(!D * !SCE * SET_B * !Q * Q_N)	0.07086	0.09529	0.48716
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05459	0.07954	0.48144
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05985	0.08486	0.48672
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07140	0.09574	0.48766
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07669	0.10107	0.49298
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06039	0.08538	0.48687
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06565	0.09069	0.49215
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06641	0.09077	0.48745
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.07171	0.09609	0.49275

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00202	0.00189	0.00421	0.00176	0.00629	0.00298	1.67961	1.58971

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	4693.91000	7706.83000

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)	0.23938	0.61971	5.78382
	SET_B->Q (FR)	0.10771	0.63844	7.94523

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.19452	0.43479	3.26183
	RESET_B->Q (FF)	0.15593	0.53702	5.28845
	SET_B->Q (RF)	0.10815	0.34310	3.04480

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)	0.17106	0.56626	5.78156
	RESET_B->Q_N (FR)	0.13305	0.67101	7.81562
	SET_B->Q_N (RR)	0.08488	0.48818	6.02381

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)	0.20281	0.47945	3.23506
	SET_B->Q_N (FF)	0.07531	0.50360	5.75272

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)	-0.07010	-0.12758	-0.87334
	setup	CLK (R)	0.08663	0.13776	0.87569

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)	-0.09494	-0.17353	-2.41535
	setup	CLK (R)	0.12244	0.20657	2.50774

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)	-0.07010	-0.12758	-0.87334
	setup	CLK (R)	0.08663	0.13776	0.87569

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)	-0.09494	-0.17353	-2.41535
	setup	CLK (R)	0.12244	0.20657	2.50774

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)	-0.09186	-0.13592	-0.81920
	setup	CLK (R)	0.11138	0.15245	0.82986

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)	-0.13106	-0.19129	-2.47217
	setup	CLK (R)	0.16428	0.22454	2.54914

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)	-0.09186	-0.13592	-0.81920
	hold	CLK (R)	-0.09725	-0.14312	-0.82678
	setup	CLK (R)	0.10852	0.14622	0.82086
	setup	CLK (R)	0.11138	0.15245	0.82986

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)	-0.13504	-0.19129	-2.47217
	hold	CLK (R)	-0.13106	-0.19208	-2.47258
	setup	CLK (R)	0.16428	0.22454	2.54611
	setup	CLK (R)	0.16196	0.22288	2.54914

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)	-0.08654	-0.14337	-0.36365
	setup	CLK (R)	0.16818	0.17601	1.23726

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)	-0.09564	-0.15325	-2.06051
	setup	CLK (R)	0.12708	0.19921	2.28892

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)	-0.13638	-0.14337	-0.36365
	hold	CLK (R)	-0.08654	-0.14977	-1.23424
	setup	CLK (R)	0.16818	0.17601	0.49273
	setup	CLK (R)	0.10335	0.16011	1.23726

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)	-0.10918	-0.19083	-2.28196
	hold	CLK (R)	-0.09564	-0.15325	-2.06051
	setup	CLK (R)	0.12585	0.19921	2.28892
	setup	CLK (R)	0.12708	0.18800	2.14969

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)	0.04216	0.04661	0.20149
	removal	CLK (R)	-0.02218	-0.02622	-0.05048

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)	0.04208	0.04651	0.20086
	recovery	CLK (R)	0.04215	0.04661	0.20116
	recovery	CLK (R)	0.04216	0.04661	0.20149
	removal	CLK (R)	-0.02218	-0.02622	-0.05048
	removal	CLK (R)	-0.02218	-0.02622	-0.05048
	removal	CLK (R)	-0.02218	-0.02622	-0.05048

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 ()	0.10994	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.11445	0.59937	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)	0.00200	0.01074	1.82464
	removal	CLK (R)	0.03992	0.05849	-0.18259
	hold	RESET_B (R)	-0.04340	-0.07236	-0.68388
	setup	RESET_B (R)	0.06670	0.10143	1.15496

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)	0.00190	0.01074	1.82160
	recovery	CLK (R)	0.00200	0.01067	1.82464
	recovery	CLK (R)	0.00191	0.01071	1.82365
	removal	CLK (R)	0.03992	0.05849	-0.18259
	removal	CLK (R)	0.03992	0.05849	-0.18259
	removal	CLK (R)	0.03992	0.05849	-0.18259
	hold	RESET_B (R)	-0.04429	-0.07358	-0.70269
	hold	RESET_B (R)	-0.04340	-0.07236	-0.68388
	setup	RESET_B (R)	0.06332	0.10143	1.15496
	setup	RESET_B (R)	0.06670	0.09551	1.09246

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 ()	0.07159	0.59937	16.50020
	min_pulse_width	SET_B ()	0.08287	0.59937	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 ()	0.07610	0.59937	16.50020
	min_pulse_width	CLK ()	0.08513	0.59937	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 ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	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	0.09183	0.10193	0.29295
	CLK	0.08906	0.09914	0.29000
	SET_B	0.07802	0.09720	0.41954
	SET_B	0.08382	0.10296	0.42419

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.07065	0.08337	0.29459
	CLK	0.06767	0.08035	0.29129
	RESET_B	0.06024	0.06758	0.20445
	RESET_B	0.06454	0.07164	0.19567
	SET_B	0.06152	0.07817	0.40630
	SET_B	0.05576	0.07240	0.40026

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.10224	0.11497	0.32713
	CLK	0.09926	0.11196	0.32390
	RESET_B	0.08490	0.09226	0.23056
	RESET_B	0.08904	0.09617	0.22127
	SET_B	0.08709	0.10378	0.43350
	SET_B	0.08133	0.09800	0.42733

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.06475	0.07483	0.26491
	CLK	0.06198	0.07207	0.26201
	SET_B	0.05671	0.07589	0.39749
	SET_B	0.06251	0.08165	0.40260

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.06486	0.06492	0.06567
	(CLK * SCD * SCE)	0.06263	0.06264	0.06341
	(CLK * !SCE)	0.06598	0.07466	0.22145
	(CLK * !SCE)	0.06191	0.07056	0.21736
	(CLK * !SCD * SCE)	0.05458	0.05458	0.05455
	(CLK * !SCD * SCE)	0.05199	0.05198	0.05196
	(!CLK * SCD * SCE)	0.03922	0.03927	0.04002
	(!CLK * SCD * SCE)	0.03699	0.03699	0.03777
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.04808	0.05890	0.24685
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.04421	0.05502	0.24296
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.04458	0.05210	0.19951
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.04017	0.04766	0.19508
	(!CLK * !SCD * SCE)	0.06763	0.06761	0.06757
	(!CLK * !SCD * SCE)	0.06504	0.06501	0.06497
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04793	0.05522	0.20018
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.04354	0.05081	0.19578

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.06497	0.06484	0.06318
	(CLK * SCD * SCE)	0.06721	0.06709	0.06542
	(CLK * !SCE)	0.04956	0.05953	0.21709
	(CLK * !SCE)	0.05363	0.06361	0.22117
	(CLK * !SCD * SCE)	0.05336	0.05336	0.05337
	(CLK * !SCD * SCE)	0.05594	0.05596	0.05595
	(!CLK * SCD * SCE)	0.03933	0.03919	0.03753
	(!CLK * SCD * SCE)	0.04157	0.04144	0.03977
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.06199	0.07121	0.24025
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.06586	0.07509	0.24413
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03230	0.04098	0.19430
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03671	0.04540	0.19872
	(!CLK * !SCD * SCE)	0.06661	0.06657	0.06658
	(!CLK * !SCD * SCE)	0.06919	0.06917	0.06916
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03235	0.04132	0.19736
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03674	0.04571	0.20176

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCE)	0.07193	0.07993	0.23167
	(CLK * D * SCE)	0.06628	0.07428	0.22603
	(CLK * !D * SCE)	0.07573	0.08318	0.23337
	(CLK * !D * SCE)	0.06985	0.07729	0.22749
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.05050	0.05767	0.20997
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04451	0.05168	0.20398
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05422	0.06449	0.25786
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.04877	0.05905	0.25241
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05385	0.06078	0.21062
sky130_fd_sc_hs__sdfbbp_1	**(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)**	0.04788	0.05481	0.20465
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.05431	0.06101	0.21167
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04809	0.05478	0.20546
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05808	0.06793	0.25990
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.05240	0.06225	0.25423
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05766	0.06414	0.21233
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.05146	0.05792	0.20613
	!SCE	0.06220	0.06211	0.06579
	!SCE	0.05919	0.05908	0.06279

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCE)	0.05739	0.06617	0.22667
	(CLK * D * SCE)	0.06303	0.07184	0.23229
	(CLK * !D * SCE)	0.05681	0.06593	0.22771
	(CLK * !D * SCE)	0.06268	0.07183	0.23357
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04007	0.04774	0.20408
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04607	0.05373	0.21004
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07032	0.07823	0.24957
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07577	0.08367	0.25499
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04013	0.04807	0.20719
sky130_fd_sc_hs__sdfbbp_1	**(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)**	0.04610	0.05404	0.21313
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.03950	0.04743	0.20514
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04572	0.05367	0.21133
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.06998	0.07827	0.25124
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.07566	0.08396	0.25690
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.03956	0.04777	0.20825
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.04575	0.05398	0.21443
	!SCE	0.06402	0.06389	0.06301
	!SCE	0.06706	0.06694	0.06602

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)	0.07072	0.08380	0.28784
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.06336	0.07642	0.28049
	(CLK * D * !SCD)	0.06448	0.07870	0.30564
	(CLK * D * !SCD)	0.05948	0.07367	0.30059
	(CLK * !D * SCD)	0.07876	0.10051	0.44900
	(CLK * !D * SCD)	0.06955	0.09131	0.43978
	(!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)	0.04279	0.05588	0.25996
	(!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)	0.03544	0.04849	0.25261
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.07737	0.09066	0.30735
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.07219	0.08543	0.30210
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04718	0.06120	0.28467
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04255	0.05654	0.27996
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.04725	0.06146	0.28729
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.04259	0.05677	0.28256
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.05759	0.07842	0.42771
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.04804	0.06883	0.41816
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.06123	0.08569	0.47967
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.05222	0.07668	0.47064
	(!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)	0.06062	0.07360	0.27474
	(!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)	0.05402	0.06698	0.26814
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.06094	0.08149	0.42827
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.05141	0.07196	0.41875

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)	0.05914	0.07297	0.28013
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.06653	0.08039	0.28747
	(CLK * D * !SCD)	0.07039	0.08378	0.29827
	(CLK * D * !SCD)	0.07541	0.08872	0.30308
	(CLK * !D * SCD)	0.04973	0.07325	0.43829
	(CLK * !D * SCD)	0.05898	0.08254	0.44750
	(!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)	0.03072	0.04459	0.25174
	(!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)	0.03810	0.05196	0.25907
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.05227	0.06656	0.29670
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.05749	0.07178	0.30171
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04870	0.06195	0.27801
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.05337	0.06664	0.28247
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05203	0.06507	0.27825
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.05673	0.06972	0.28273
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.03221	0.05437	0.41510
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.04181	0.06399	0.42464
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.06192	0.08446	0.46194
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.07097	0.09354	0.47094
	(!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)	0.04770	0.06159	0.26805
	(!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)	0.05429	0.06823	0.27466
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.03227	0.05471	0.41819
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.04184	0.06430	0.42771

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)	0.07125	0.08227	0.27663
	(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)	0.06783	0.07883	0.27321
	(!SET_B * Q * !Q_N)	0.05110	0.06294	0.26286
	(!SET_B * Q * !Q_N)	0.04758	0.05941	0.25934
	(!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)	0.05029	0.06370	0.29589
	(!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)	0.04739	0.06081	0.29300

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)	0.04678	0.06003	0.27376
	(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)	0.05020	0.06347	0.27718
	(!SET_B * Q * !Q_N)	0.03866	0.05146	0.25636
	(!SET_B * Q * !Q_N)	0.04220	0.05499	0.25988
	(!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)	0.05393	0.06713	0.29126
	(!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)	0.05683	0.07004	0.29416

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)	0.04718	0.04722	0.04714
	(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)	0.03653	0.03650	0.03650
	(!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)	0.07877	0.09275	0.35346
	(!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)	0.06746	0.08134	0.34208

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)	0.03884	0.03840	0.03845
	(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)	0.04945	0.04907	0.04909
	(!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)	0.03758	0.05592	0.34667
	(!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)	0.04892	0.06730	0.35801

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)**	0.06134	0.08501	0.47443
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05559	0.07925	0.46868
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05833	0.08201	0.47143
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.05259	0.07625	0.46568
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07217	0.09607	0.48777
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06642	0.09033	0.48203
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06826	0.09185	0.47991
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06217	0.08577	0.47385
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06354	0.08822	0.49302
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05813	0.08281	0.48760
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.06054	0.08520	0.48999
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05512	0.07979	0.48456
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.06414	0.08782	0.47724
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05840	0.08206	0.47148
	(!D * !SCE * SET_B * !Q * Q_N)	0.06671	0.09061	0.48230
	(!D * !SCE * SET_B * !Q * Q_N)	0.06095	0.08487	0.47657
	(!D * !SCE * !SET_B * Q * !Q_N)	0.06281	0.08641	0.47448
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05671	0.08031	0.46840
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07215	0.09607	0.48775
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06640	0.09032	0.48201
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06823	0.09181	0.47988
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06214	0.08572	0.47381
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06635	0.09101	0.49580
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06094	0.08560	0.49038

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)	0.05588	0.08247	0.49997
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06183	0.08840	0.50591
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.04739	0.07198	0.46531
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05316	0.07775	0.47104
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05233	0.07885	0.49637
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.05828	0.08480	0.50230
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.04383	0.06841	0.46175
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.04959	0.07418	0.46748
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09050	0.11457	0.51309
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09610	0.12018	0.51867
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.06448	0.08883	0.47947
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.07023	0.09460	0.48521
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04773	0.07322	0.47568
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05384	0.07931	0.48175
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05544	0.08060	0.48388
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06087	0.08601	0.48930
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05185	0.07699	0.48025
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.05728	0.08241	0.48567
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05868	0.08526	0.50274
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06463	0.09122	0.50867
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05019	0.07479	0.46811
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.05596	0.08056	0.47384
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08426	0.10847	0.50712
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.08985	0.11404	0.51268
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09054	0.11478	0.51323
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.09613	0.12037	0.51881
	(!D * !SCE * SET_B * !Q * Q_N)	0.05844	0.08278	0.47344
	(!D * !SCE * SET_B * !Q * Q_N)	0.06419	0.08855	0.47918
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04169	0.06717	0.46972
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04781	0.07328	0.47580
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.06445	0.08880	0.47945
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.07020	0.09457	0.48519
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04771	0.07332	0.47570
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05383	0.07944	0.48179
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.05823	0.08338	0.48664
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.06366	0.08880	0.49205

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00202	0.00437	0.00611	0.00312	1.72326	1.78821
sky130_fd_sc_hs__sdfrbp_2	0.00196	0.00204	0.00448	0.00618	0.00306	3.46798	3.41128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	3018.99000	4871.42000
sky130_fd_sc_hs__sdfrbp_2	0.00000	3313.77000	4667.35000

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)	0.14493	0.50982	5.51093
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.16613	0.45025	5.72979

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.14193	0.37546	3.13428
	RESET_B->Q (FF)	0.19132	0.59000	5.55837
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.16488	0.35577	3.36089
	RESET_B->Q (FF)	0.21301	0.56019	5.87979

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)	0.11790	0.49351	5.59924
	RESET_B->Q_N (FR)	0.15210	0.68120	8.01418
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.12215	0.41152	5.37085
	RESET_B->Q_N (FR)	0.16873	0.61745	7.88681

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)	0.11087	0.39856	3.51399
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.11612	0.34868	3.19570

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)	-0.06951	-0.16216	-1.58005
	setup	CLK (R)	0.12624	0.20150	1.61091
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06851	-0.16447	-1.62805
	setup	CLK (R)	0.13051	0.20684	1.65583

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)	-0.05508	-0.13125	-2.08337
	setup	CLK (R)	0.11353	0.19968	2.16936
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.05890	-0.13913	-2.14490
	setup	CLK (R)	0.11924	0.20837	2.24237

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)	-0.06951	-0.16216	-1.58005
	hold	CLK (R)	-0.07043	-0.16216	-1.58458
	setup	CLK (R)	0.12456	0.20092	1.60765
	setup	CLK (R)	0.12624	0.20150	1.61091
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06851	-0.16447	-1.62805
	hold	CLK (R)	-0.06946	-0.16476	-1.63199
	setup	CLK (R)	0.12986	0.20601	1.65262
	setup	CLK (R)	0.13051	0.20684	1.65583

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)	-0.05853	-0.13189	-2.09024
	hold	CLK (R)	-0.05508	-0.13125	-2.08337
	setup	CLK (R)	0.11263	0.19968	2.16936
	setup	CLK (R)	0.11353	0.19717	2.16082
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06126	-0.13913	-2.15237
	hold	CLK (R)	-0.05890	-0.13913	-2.14490
	setup	CLK (R)	0.11840	0.20837	2.24237
	setup	CLK (R)	0.11924	0.20392	2.23448

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)	-0.08478	-0.16755	-1.49778
	setup	CLK (R)	0.15112	0.21465	1.53399
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08728	-0.16776	-1.54003
	setup	CLK (R)	0.15537	0.21797	1.57987

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)	-0.08161	-0.14540	-2.17585
	setup	CLK (R)	0.15047	0.21533	2.25789
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08460	-0.15012	-2.24165
	setup	CLK (R)	0.15392	0.22295	2.32380

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)	-0.08478	-0.16755	-1.49778
	hold	CLK (R)	-0.09409	-0.17652	-1.50825
	setup	CLK (R)	0.14471	0.20818	1.52203
	setup	CLK (R)	0.15112	0.21465	1.53399
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08728	-0.16776	-1.54003
	hold	CLK (R)	-0.09417	-0.17904	-1.55221
	setup	CLK (R)	0.14795	0.21278	1.56451
	setup	CLK (R)	0.15537	0.21797	1.57987

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)	-0.08661	-0.14716	-2.18377
	hold	CLK (R)	-0.08161	-0.14540	-2.17585
	setup	CLK (R)	0.15047	0.21533	2.25789
	setup	CLK (R)	0.14572	0.21493	2.25235
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08561	-0.15400	-2.24958
	hold	CLK (R)	-0.08460	-0.15012	-2.24165
	setup	CLK (R)	0.15392	0.22295	2.32380
	setup	CLK (R)	0.15168	0.22047	2.32273

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)	-0.07372	-0.11160	-0.47308
	setup	CLK (R)	0.15413	0.20924	1.80602
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06949	-0.11468	-0.53701
	setup	CLK (R)	0.15956	0.21420	1.86203

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)	-0.06644	-0.12276	-1.88733
	setup	CLK (R)	0.16706	0.25442	2.62211
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06879	-0.12745	-1.93635
	setup	CLK (R)	0.16982	0.25565	2.68083

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)	-0.09024	-0.11160	-0.47308
	hold	CLK (R)	-0.07372	-0.16961	-1.78330
	setup	CLK (R)	0.15413	0.17473	0.50792
	setup	CLK (R)	0.13290	0.20924	1.80602
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09240	-0.11468	-0.53701
	hold	CLK (R)	-0.06949	-0.17031	-1.83633
	setup	CLK (R)	0.15956	0.17686	0.56539
	setup	CLK (R)	0.13322	0.21420	1.86203

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)	-0.10749	-0.21786	-2.59919
	hold	CLK (R)	-0.06644	-0.12276	-1.88733
	setup	CLK (R)	0.16706	0.25442	2.62211
	setup	CLK (R)	0.12442	0.18566	1.95502
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11086	-0.21854	-2.65930
	hold	CLK (R)	-0.06879	-0.12745	-1.93635
	setup	CLK (R)	0.16982	0.25565	2.68083
	setup	CLK (R)	0.12721	0.19058	2.00976

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)	0.17071	0.22070	2.76913
	removal	CLK (R)	-0.12998	-0.18647	-2.67091
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.17056	0.22470	2.82739
	removal	CLK (R)	-0.13467	-0.19190	-2.73385

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)	0.16132	0.21670	2.69052
	recovery	CLK (R)	0.15293	0.20465	2.76913
	recovery	CLK (R)	0.14924	0.19924	2.76882
	recovery	CLK (R)	0.17071	0.22070	2.68396
	removal	CLK (R)	-0.14512	-0.20287	-2.67660
	removal	CLK (R)	-0.13166	-0.19086	-2.75565
	removal	CLK (R)	-0.12998	-0.18647	-2.75846
	removal	CLK (R)	-0.14859	-0.20942	-2.67091
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.16613	0.22004	2.74067
	recovery	CLK (R)	0.15798	0.20827	2.82375
	recovery	CLK (R)	0.15144	0.20341	2.82739
	recovery	CLK (R)	0.17056	0.22470	2.74325
	removal	CLK (R)	-0.14592	-0.20840	-2.73636
	removal	CLK (R)	-0.13922	-0.19524	-2.82160
	removal	CLK (R)	-0.13467	-0.19190	-2.81959
	removal	CLK (R)	-0.15476	-0.21379	-2.73385

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 ()	0.09415	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.08738	0.59937	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.09640	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.09866	0.59937	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 ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.06257	0.59937	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.07385	0.59937	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 ()	0.11670	0.59937	16.50020
	min_pulse_width	CLK ()	0.11670	0.59937	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.11670	0.59937	16.50020
	min_pulse_width	CLK ()	0.11670	0.59937	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	0.08474	0.09507	0.29506
	CLK	0.08180	0.09213	0.29149
sky130_fd_sc_hs__sdfrbp_2	CLK	0.09127	0.09918	0.30347
	CLK	0.08827	0.09612	0.29962

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.03960	0.05142	0.25173
	CLK	0.03671	0.04845	0.24851
	RESET_B	0.03873	0.05137	0.25633
	RESET_B	0.04596	0.05856	0.26339
sky130_fd_sc_hs__sdfrbp_2	CLK	0.05100	0.06114	0.26134
	CLK	0.04829	0.05838	0.25800
	RESET_B	0.05176	0.06182	0.26565
	RESET_B	0.05913	0.06914	0.27231

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.05150	0.06322	0.26452
	CLK	0.04861	0.06033	0.26109
	RESET_B	0.05085	0.06349	0.26975
	RESET_B	0.05808	0.07069	0.27610
sky130_fd_sc_hs__sdfrbp_2	CLK	0.06385	0.07405	0.27590
	CLK	0.06114	0.07125	0.27205
	RESET_B	0.06480	0.07487	0.28145
	RESET_B	0.07218	0.08220	0.28633

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.06335	0.07370	0.27222
	CLK	0.06041	0.07073	0.26903
sky130_fd_sc_hs__sdfrbp_2	CLK	0.06759	0.07549	0.27876
	CLK	0.06459	0.07244	0.27483

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.03227	0.03231	0.03308
	(CLK * RESET_B * SCD * SCE)	0.03010	0.03011	0.03089
	(CLK * RESET_B * SCD * !SCE)	0.03426	0.04189	0.17666
	(CLK * RESET_B * SCD * !SCE)	0.02983	0.03744	0.17223
	(CLK * RESET_B * !SCD * !SCE)	0.03930	0.04674	0.17899
	(CLK * RESET_B * !SCD * !SCE)	0.03488	0.04229	0.17457
	(CLK * !SCD * SCE)	0.02141	0.02141	0.02138
	(CLK * !SCD * SCE)	0.01889	0.01887	0.01884
	(CLK * !RESET_B * SCD * SCE)	0.02130	0.02131	0.02129
	(CLK * !RESET_B * SCD * SCE)	0.01880	0.01879	0.01877
	(CLK * !RESET_B * SCD * !SCE)	0.01531	0.01531	0.01523
	(CLK * !RESET_B * SCD * !SCE)	0.01287	0.01285	0.01272
	(CLK * !RESET_B * !SCD * !SCE)	0.01531	0.01531	0.01524
	(CLK * !RESET_B * !SCD * !SCE)	0.01281	0.01279	0.01270
	(!CLK * RESET_B * SCD * SCE)	0.04051	0.04055	0.04132
	(!CLK * RESET_B * SCD * SCE)	0.03834	0.03836	0.03913
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.05335	0.06434	0.25030
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.04869	0.05967	0.24563
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05836	0.06916	0.25274
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05371	0.06450	0.24808
	(!CLK * !SCD * SCE)	0.04006	0.04006	0.04002
	(!CLK * !SCD * SCE)	0.03754	0.03752	0.03748
	(!CLK * !RESET_B * SCD * SCE)	0.02181	0.02181	0.02179
	(!CLK * !RESET_B * SCD * SCE)	0.01931	0.01929	0.01928
	(!CLK * !RESET_B * SCD * !SCE)	0.01582	0.01582	0.01574
	(!CLK * !RESET_B * SCD * !SCE)	0.01337	0.01336	0.01323
	(!CLK * !RESET_B * !SCD * !SCE)	0.01581	0.01582	0.01574
	(!CLK * !RESET_B * !SCD * !SCE)	0.01331	0.01330	0.01320

	(CLK * RESET_B * SCD * SCE)	0.03705	0.03709	0.03786
	(CLK * RESET_B * SCD * SCE)	0.03485	0.03486	0.03563
	(CLK * RESET_B * SCD * !SCE)	0.03937	0.04686	0.18154
	(CLK * RESET_B * SCD * !SCE)	0.03485	0.04233	0.17704
	(CLK * RESET_B * !SCD * !SCE)	0.04442	0.05171	0.18388
	(CLK * RESET_B * !SCD * !SCE)	0.03991	0.04719	0.17937
	(CLK * !SCD * SCE)	0.02616	0.02617	0.02613
	(CLK * !SCD * SCE)	0.02361	0.02359	0.02357
	(CLK * !RESET_B * SCD * SCE)	0.02605	0.02606	0.02604
	(CLK * !RESET_B * SCD * SCE)	0.02352	0.02351	0.02350
	(CLK * !RESET_B * SCD * !SCE)	0.02004	0.02004	0.01996
	(CLK * !RESET_B * SCD * !SCE)	0.01756	0.01754	0.01742
	(CLK * !RESET_B * !SCD * !SCE)	0.02003	0.02004	0.01997
	(CLK * !RESET_B * !SCD * !SCE)	0.01750	0.01748	0.01739
	(!CLK * RESET_B * SCD * SCE)	0.03878	0.03881	0.03958
	(!CLK * RESET_B * SCD * SCE)	0.03657	0.03658	0.03736
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.05205	0.06295	0.24927
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.04730	0.05818	0.24451
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05707	0.06775	0.25170
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05233	0.06302	0.24695
	(!CLK * !SCD * SCE)	0.03826	0.03826	0.03822
	(!CLK * !SCD * SCE)	0.03571	0.03569	0.03566
	(!CLK * !RESET_B * SCD * SCE)	0.02656	0.02656	0.02654
	(!CLK * !RESET_B * SCD * SCE)	0.02403	0.02401	0.02400
	(!CLK * !RESET_B * SCD * !SCE)	0.02055	0.02055	0.02046
	(!CLK * !RESET_B * SCD * !SCE)	0.01807	0.01805	0.01792
	(!CLK * !RESET_B * !SCD * !SCE)	0.02054	0.02054	0.02047
	(!CLK * !RESET_B * !SCD * !SCE)	0.01801	0.01799	0.01790

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.03250	0.03237	0.03071
	(CLK * RESET_B * SCD * SCE)	0.03468	0.03455	0.03289
	(CLK * RESET_B * SCD * !SCE)	0.01563	0.02469	0.17107
	(CLK * RESET_B * SCD * !SCE)	0.02006	0.02914	0.17551
	(CLK * RESET_B * !SCD * !SCE)	0.01561	0.02485	0.17334
	(CLK * RESET_B * !SCD * !SCE)	0.02004	0.02929	0.17777
	(CLK * !SCD * SCE)	0.01987	0.01987	0.01988
	(CLK * !SCD * SCE)	0.02241	0.02241	0.02240
	(CLK * !RESET_B * SCD * SCE)	0.01985	0.01985	0.01985
	(CLK * !RESET_B * SCD * SCE)	0.02237	0.02237	0.02236
	(CLK * !RESET_B * SCD * !SCE)	0.01435	0.01435	0.01436
	(CLK * !RESET_B * SCD * !SCE)	0.01685	0.01686	0.01686
	(CLK * !RESET_B * !SCD * !SCE)	0.01434	0.01434	0.01435
	(CLK * !RESET_B * !SCD * !SCE)	0.01687	0.01688	0.01687
	(!CLK * RESET_B * SCD * SCE)	0.04074	0.04060	0.03895
	(!CLK * RESET_B * SCD * SCE)	0.04292	0.04280	0.04113
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.04662	0.05774	0.24486
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.05128	0.06241	0.24953
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.04657	0.05792	0.24751
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05123	0.06258	0.25216
	(!CLK * !SCD * SCE)	0.03861	0.03859	0.03860
	(!CLK * !SCD * SCE)	0.04114	0.04114	0.04112
	(!CLK * !RESET_B * SCD * SCE)	0.02037	0.02036	0.02037
	(!CLK * !RESET_B * SCD * SCE)	0.02289	0.02289	0.02287
	(!CLK * !RESET_B * SCD * !SCE)	0.01487	0.01487	0.01487
	(!CLK * !RESET_B * SCD * !SCE)	0.01737	0.01738	0.01737
	(!CLK * !RESET_B * !SCD * !SCE)	0.01486	0.01486	0.01486
	(!CLK * !RESET_B * !SCD * !SCE)	0.01738	0.01739	0.01739

	(CLK * RESET_B * SCD * SCE)	0.03721	0.03708	0.03542
	(CLK * RESET_B * SCD * SCE)	0.03942	0.03929	0.03763
	(CLK * RESET_B * SCD * !SCE)	0.02050	0.02946	0.17579
	(CLK * RESET_B * SCD * !SCE)	0.02501	0.03398	0.18031
	(CLK * RESET_B * !SCD * !SCE)	0.02048	0.02962	0.17804
	(CLK * RESET_B * !SCD * !SCE)	0.02499	0.03413	0.18255
	(CLK * !SCD * SCE)	0.02460	0.02460	0.02461
	(CLK * !SCD * SCE)	0.02717	0.02717	0.02717
	(CLK * !RESET_B * SCD * SCE)	0.02458	0.02458	0.02458
	(CLK * !RESET_B * SCD * SCE)	0.02713	0.02713	0.02712
	(CLK * !RESET_B * SCD * !SCE)	0.01911	0.01911	0.01912
	(CLK * !RESET_B * SCD * !SCE)	0.02164	0.02168	0.02165
	(CLK * !RESET_B * !SCD * !SCE)	0.01911	0.01910	0.01911
	(CLK * !RESET_B * !SCD * !SCE)	0.02165	0.02168	0.02166
	(!CLK * RESET_B * SCD * SCE)	0.03893	0.03879	0.03713
	(!CLK * RESET_B * SCD * SCE)	0.04114	0.04102	0.03935
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.04510	0.05612	0.24341
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.04985	0.06087	0.24817
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.04507	0.05629	0.24603
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.04982	0.06103	0.25078
	(!CLK * !SCD * SCE)	0.03679	0.03677	0.03678
	(!CLK * !SCD * SCE)	0.03935	0.03935	0.03934
	(!CLK * !RESET_B * SCD * SCE)	0.02510	0.02509	0.02510
	(!CLK * !RESET_B * SCD * SCE)	0.02765	0.02765	0.02764
	(!CLK * !RESET_B * SCD * !SCE)	0.01963	0.01963	0.01963
	(!CLK * !RESET_B * SCD * !SCE)	0.02216	0.02218	0.02217
	(!CLK * !RESET_B * !SCD * !SCE)	0.01962	0.01962	0.01962
	(!CLK * !RESET_B * !SCD * !SCE)	0.02217	0.02219	0.02218

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.03984	0.04704	0.18660
	(CLK * D * RESET_B * SCE)	0.03387	0.04108	0.18063
	(CLK * D * RESET_B * !SCE)	0.02948	0.02951	0.03328
	(CLK * D * RESET_B * !SCE)	0.02643	0.02643	0.03023
	(CLK * D * !RESET_B * SCE)	0.02123	0.02124	0.02120
	(CLK * D * !RESET_B * SCE)	0.01872	0.01870	0.01872
	(CLK * D * !RESET_B * !SCE)	0.01526	0.01526	0.01528
	(CLK * D * !RESET_B * !SCE)	0.01283	0.01282	0.01284
	(CLK * !D * RESET_B * SCE)	0.04364	0.05034	0.18838
	(CLK * !D * RESET_B * SCE)	0.03745	0.04413	0.18220
	(CLK * !D * !RESET_B * SCE)	0.02123	0.02124	0.02120
	(CLK * !D * !RESET_B * SCE)	0.01871	0.01870	0.01872
	(!D * RESET_B * !SCE)	0.01601	0.01602	0.01601
	(!D * RESET_B * !SCE)	0.01294	0.01294	0.01295
	(!D * !RESET_B * !SCE)	0.01540	0.01540	0.01540
	(!D * !RESET_B * !SCE)	0.01265	0.01265	0.01266
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.05921	0.06957	0.25875
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.05301	0.06336	0.25256
	(!CLK * D * RESET_B * !SCE)	0.03774	0.03776	0.04154
	(!CLK * D * RESET_B * !SCE)	0.03469	0.03468	0.03848
	(!CLK * D * !RESET_B * SCE)	0.02174	0.02175	0.02171
	(!CLK * D * !RESET_B * SCE)	0.01922	0.01921	0.01923
	(!CLK * D * !RESET_B * !SCE)	0.01577	0.01577	0.01579
	(!CLK * D * !RESET_B * !SCE)	0.01334	0.01333	0.01335
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.06306	0.07300	0.26112
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.05665	0.06657	0.25470
	(!CLK * !D * !RESET_B * SCE)	0.02174	0.02175	0.02170
	(!CLK * !D * !RESET_B * SCE)	0.01922	0.01920	0.01922

	(CLK * D * RESET_B * SCE)	0.04483	0.05196	0.19142
	(CLK * D * RESET_B * SCE)	0.03878	0.04590	0.18537
	(CLK * D * RESET_B * !SCE)	0.03423	0.03427	0.03805
	(CLK * D * RESET_B * !SCE)	0.03115	0.03115	0.03496
	(CLK * D * !RESET_B * SCE)	0.02600	0.02601	0.02597
	(CLK * D * !RESET_B * SCE)	0.02345	0.02344	0.02346
	(CLK * D * !RESET_B * !SCE)	0.02002	0.02002	0.02003
	(CLK * D * !RESET_B * !SCE)	0.01755	0.01754	0.01757
	(CLK * !D * RESET_B * SCE)	0.04863	0.05525	0.19320
	(CLK * !D * RESET_B * SCE)	0.04236	0.04896	0.18692
	(CLK * !D * !RESET_B * SCE)	0.02600	0.02601	0.02597
	(CLK * !D * !RESET_B * SCE)	0.02345	0.02343	0.02346
	(!D * RESET_B * !SCE)	0.02078	0.02079	0.02077
	(!D * RESET_B * !SCE)	0.01767	0.01767	0.01768
	(!D * !RESET_B * !SCE)	0.02016	0.02016	0.02015
	(!D * !RESET_B * !SCE)	0.01738	0.01737	0.01739
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.05776	0.06804	0.25783
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.05148	0.06175	0.25155
	(!CLK * D * RESET_B * !SCE)	0.03597	0.03600	0.03979
	(!CLK * D * RESET_B * !SCE)	0.03288	0.03288	0.03669
	(!CLK * D * !RESET_B * SCE)	0.02651	0.02652	0.02648
	(!CLK * D * !RESET_B * SCE)	0.02396	0.02394	0.02396
	(!CLK * D * !RESET_B * !SCE)	0.02052	0.02053	0.02054
	(!CLK * D * !RESET_B * !SCE)	0.01806	0.01805	0.01807
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.06165	0.07153	0.26022
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.05514	0.06502	0.25372
	(!CLK * !D * !RESET_B * SCE)	0.02651	0.02652	0.02647
	(!CLK * !D * !RESET_B * SCE)	0.02396	0.02394	0.02396

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.02335	0.03154	0.18053
	(CLK * D * RESET_B * SCE)	0.02932	0.03753	0.18648
	(CLK * D * RESET_B * !SCE)	0.03139	0.03127	0.03043
	(CLK * D * RESET_B * !SCE)	0.03445	0.03434	0.03349
	(CLK * D * !RESET_B * SCE)	0.01994	0.01993	0.01993
	(CLK * D * !RESET_B * SCE)	0.02242	0.02245	0.02239
	(CLK * D * !RESET_B * !SCE)	0.01437	0.01437	0.01435
	(CLK * D * !RESET_B * !SCE)	0.01685	0.01686	0.01680
	(CLK * !D * RESET_B * SCE)	0.02266	0.03122	0.18161
	(CLK * !D * RESET_B * SCE)	0.02886	0.03743	0.18777
	(CLK * !D * !RESET_B * SCE)	0.01994	0.01993	0.01993
	(CLK * !D * !RESET_B * SCE)	0.02242	0.02244	0.02239
	(!D * RESET_B * !SCE)	0.01391	0.01379	0.01378
	(!D * RESET_B * !SCE)	0.01697	0.01687	0.01683
	(!D * !RESET_B * !SCE)	0.01422	0.01420	0.01415
	(!D * !RESET_B * !SCE)	0.01709	0.01707	0.01695
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.05512	0.06468	0.25005
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.06132	0.07089	0.25622
	(!CLK * D * RESET_B * !SCE)	0.03963	0.03951	0.03868
	(!CLK * D * RESET_B * !SCE)	0.04269	0.04259	0.04173
	(!CLK * D * !RESET_B * SCE)	0.02046	0.02046	0.02045
	(!CLK * D * !RESET_B * SCE)	0.02294	0.02294	0.02290
	(!CLK * D * !RESET_B * !SCE)	0.01489	0.01488	0.01486
	(!CLK * D * !RESET_B * !SCE)	0.01736	0.01737	0.01732
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.05471	0.06477	0.25239
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.06113	0.07122	0.25878
	(!CLK * !D * !RESET_B * SCE)	0.02046	0.02045	0.02045
	(!CLK * !D * !RESET_B * SCE)	0.02294	0.02296	0.02290

	(CLK * D * RESET_B * SCE)	0.02816	0.03633	0.18526
	(CLK * D * RESET_B * SCE)	0.03422	0.04238	0.19128
	(CLK * D * RESET_B * !SCE)	0.03610	0.03597	0.03515
	(CLK * D * RESET_B * !SCE)	0.03919	0.03909	0.03824
	(CLK * D * !RESET_B * SCE)	0.02466	0.02465	0.02465
	(CLK * D * !RESET_B * SCE)	0.02717	0.02719	0.02713
	(CLK * D * !RESET_B * !SCE)	0.01910	0.01910	0.01908
	(CLK * D * !RESET_B * !SCE)	0.02162	0.02164	0.02157
	(CLK * !D * RESET_B * SCE)	0.02756	0.03607	0.18637
	(CLK * !D * RESET_B * SCE)	0.03384	0.04236	0.19263
	(CLK * !D * !RESET_B * SCE)	0.02466	0.02465	0.02465
	(CLK * !D * !RESET_B * SCE)	0.02717	0.02719	0.02713
	(!D * RESET_B * !SCE)	0.01863	0.01851	0.01850
	(!D * RESET_B * !SCE)	0.02173	0.02163	0.02159
	(!D * !RESET_B * !SCE)	0.01896	0.01894	0.01889
	(!D * !RESET_B * !SCE)	0.02185	0.02184	0.02172
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.05354	0.06306	0.24866
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.05983	0.06934	0.25492
	(!CLK * D * RESET_B * !SCE)	0.03783	0.03770	0.03687
	(!CLK * D * RESET_B * !SCE)	0.04091	0.04081	0.03996
	(!CLK * D * !RESET_B * SCE)	0.02517	0.02517	0.02516
	(!CLK * D * !RESET_B * SCE)	0.02768	0.02769	0.02765
	(!CLK * D * !RESET_B * !SCE)	0.01962	0.01961	0.01959
	(!CLK * D * !RESET_B * !SCE)	0.02213	0.02215	0.02208
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.05323	0.06321	0.25100
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.05975	0.06973	0.25750
	(!CLK * !D * !RESET_B * SCE)	0.02517	0.02517	0.02516
	(!CLK * !D * !RESET_B * SCE)	0.02768	0.02768	0.02765

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)**	0.03916	0.05189	0.26046
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03125	0.04396	0.25257
	(CLK * D * RESET_B * !SCD)	0.03161	0.04575	0.27717
	(CLK * D * RESET_B * !SCD)	0.02641	0.04051	0.27192
	(CLK * !D * RESET_B * SCD)	0.04825	0.06835	0.40590
	(CLK * !D * RESET_B * SCD)	0.03811	0.05815	0.39572
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.04741	0.06014	0.26871
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.03949	0.05220	0.26082
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.06310	0.07693	0.30884
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.05813	0.07193	0.30383
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.02878	0.04172	0.24786
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.02135	0.03425	0.24041
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.06754	0.09137	0.48357
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.05717	0.08096	0.47317

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.04334	0.05622	0.26451
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03518	0.04803	0.25638
	(CLK * D * RESET_B * !SCD)	0.03597	0.05021	0.28165
	(CLK * D * RESET_B * !SCD)	0.03058	0.04478	0.27621
	(CLK * !D * RESET_B * SCD)	0.05271	0.07289	0.41081
	(CLK * !D * RESET_B * SCD)	0.04224	0.06240	0.40034
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.04507	0.05793	0.26624
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.03691	0.04976	0.25811
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.06109	0.07502	0.30703
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.05593	0.06982	0.30180
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.03306	0.04610	0.25198
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.02538	0.03840	0.24430
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.06559	0.08960	0.48296
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.05488	0.07888	0.47226

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)	0.02682	0.04062	0.25231
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03471	0.04856	0.26022
	(CLK * D * RESET_B * !SCD)	0.03894	0.05238	0.27177
	(CLK * D * RESET_B * !SCD)	0.04416	0.05756	0.27676
	(CLK * !D * RESET_B * SCD)	0.01620	0.03823	0.39296
	(CLK * !D * RESET_B * SCD)	0.02638	0.04843	0.40315
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.03507	0.04886	0.26055
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.04295	0.05680	0.26846
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.05803	0.07199	0.30147
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.06301	0.07701	0.30625
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01477	0.02859	0.24001
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.02219	0.03605	0.24745
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.04718	0.07063	0.46224
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.05759	0.08103	0.47264

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.03165	0.04552	0.25690
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03979	0.05369	0.26506
	(CLK * D * RESET_B * !SCD)	0.04410	0.05762	0.27681
	(CLK * D * RESET_B * !SCD)	0.04952	0.06304	0.28202
	(CLK * !D * RESET_B * SCD)	0.02106	0.04313	0.39822
	(CLK * !D * RESET_B * SCD)	0.03153	0.05364	0.40868
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.03337	0.04724	0.25863
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.04152	0.05542	0.26678
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.05676	0.07084	0.29997
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.06195	0.07605	0.30495
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01952	0.03343	0.24455
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.02718	0.04113	0.25222
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.04565	0.06910	0.46153
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.05635	0.07980	0.47224

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCD * SCE * !Q * Q_N)	0.04406	0.05272	0.23315
	(CLK * D * SCD * SCE * !Q * Q_N)	0.03020	0.03886	0.21927
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.04022	0.04907	0.22803
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.02693	0.03573	0.21473
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.02507	0.02516	0.02509
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01499	0.01491	0.01495
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.04453	0.05361	0.22989
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.03197	0.04101	0.21737
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.04787	0.05604	0.23489
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.03378	0.04196	0.22080
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.01934	0.01938	0.01932
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00918	0.00916	0.00920
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.02509	0.02513	0.02507
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01492	0.01490	0.01494
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01931	0.01935	0.01929
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00914	0.00912	0.00916
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * SCD * SCE * !Q * Q_N)**	0.05680	0.06966	0.34851
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.04276	0.05557	0.33441
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.05269	0.06583	0.34676
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.03922	0.05229	0.33323
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.02556	0.02563	0.02557
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.01543	0.01539	0.01543
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.05698	0.07042	0.34844
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.04421	0.05761	0.33570
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.06065	0.07301	0.35075
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.04638	0.05866	0.33646
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.01980	0.01985	0.01979
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00966	0.00964	0.00968
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.02553	0.02560	0.02554
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.01541	0.01538	0.01542
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01975	0.01982	0.01976
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00964	0.00960	0.00964

	(CLK * D * SCD * SCE * !Q * Q_N)	0.04888	0.05747	0.23757
	(CLK * D * SCD * SCE * !Q * Q_N)	0.03498	0.04353	0.22365
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.04518	0.05390	0.23250
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.03185	0.04052	0.21915
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.02971	0.02975	0.02969
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01956	0.01953	0.01958
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.04950	0.05844	0.23441
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.03691	0.04582	0.22180
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.05269	0.06078	0.23928
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.03856	0.04664	0.22515
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.02394	0.02397	0.02392
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.01380	0.01378	0.01382
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.02968	0.02973	0.02966
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01954	0.01952	0.01956
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02391	0.02394	0.02389
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01376	0.01374	0.01378
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * SCD * SCE * !Q * Q_N)**	0.06164	0.07442	0.35316
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.04758	0.06030	0.33902
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.05772	0.07072	0.35154
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.04422	0.05715	0.33796
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.03017	0.03021	0.03015
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.02000	0.02000	0.02004
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.06201	0.07534	0.35317
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.04919	0.06248	0.34039
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.06552	0.07785	0.35539
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.05123	0.06346	0.34104
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.02439	0.02443	0.02438
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.01426	0.01425	0.01428
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.03011	0.03018	0.03012
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.02002	0.01998	0.02002
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02435	0.02440	0.02435
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01422	0.01421	0.01425

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCD * SCE * !Q * Q_N)	0.02172	0.03287	0.22293
	(CLK * D * SCD * SCE * !Q * Q_N)	0.03559	0.04681	0.23673
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01449	0.02567	0.21603
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.02779	0.03902	0.22927
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01658	0.01627	0.01623
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.02669	0.02649	0.02635
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01409	0.02569	0.21801
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.02663	0.03830	0.23053
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.02105	0.03257	0.22390
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.03514	0.04674	0.23791
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.01087	0.01051	0.01048
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.02096	0.02072	0.02060
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01654	0.01624	0.01620
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.02663	0.02646	0.02633
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01081	0.01049	0.01045
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02091	0.02071	0.02058
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * SCD * SCE * !Q * Q_N)**	0.03244	0.05002	0.35030
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.04652	0.06413	0.36433
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02508	0.04251	0.34489
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.03859	0.05608	0.35837
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.01700	0.01674	0.01672
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.02710	0.02691	0.02685
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02459	0.04240	0.34657
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.03735	0.05523	0.35930
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.03179	0.04996	0.35190
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.04609	0.06436	0.36615
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.01128	0.01098	0.01098
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.02137	0.02119	0.02109
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.01695	0.01670	0.01670
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.02704	0.02687	0.02682
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01123	0.01096	0.01095
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02131	0.02117	0.02107

	(CLK * D * SCD * SCE * !Q * Q_N)	0.02666	0.03775	0.22753
	(CLK * D * SCD * SCE * !Q * Q_N)	0.04058	0.05167	0.24137
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01939	0.03050	0.22053
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.03273	0.04387	0.23382
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.02148	0.02115	0.02112
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.03156	0.03136	0.03122
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01899	0.03052	0.22252
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.03158	0.04315	0.23508
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.02608	0.03749	0.22854
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.04022	0.05169	0.24263
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.01576	0.01540	0.01537
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.02583	0.02561	0.02547
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.02143	0.02113	0.02109
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.03150	0.03133	0.03119
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01571	0.01538	0.01534
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02578	0.02558	0.02544
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * SCD * SCE * !Q * Q_N)**	0.03744	0.05491	0.35506
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.05158	0.06913	0.36915
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.03004	0.04740	0.34972
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.04360	0.06101	0.36323
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.02191	0.02164	0.02163
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.03198	0.03181	0.03173
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02955	0.04729	0.35137
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.04236	0.06015	0.36417
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.03688	0.05491	0.35673
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.05124	0.06934	0.37102
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.01619	0.01589	0.01588
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.02625	0.02605	0.02597
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.02186	0.02162	0.02160
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.03192	0.03175	0.03170
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01614	0.01587	0.01585
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.02620	0.02603	0.02595

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)**	0.05747	0.08005	0.45695
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.05163	0.07419	0.45112
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.05418	0.07675	0.45366
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.04834	0.07090	0.44783
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05937	0.08195	0.45886
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05353	0.07609	0.45302
	(D * !SCD * SCE * !Q * Q_N)	0.03847	0.06109	0.43840
	(D * !SCD * SCE * !Q * Q_N)	0.03263	0.05524	0.43257
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03840	0.06101	0.43831
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03257	0.05516	0.43248
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.03263	0.05525	0.43254
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02680	0.04940	0.42672
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.03263	0.05525	0.43254
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02680	0.04940	0.42672
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.06027	0.08285	0.45976
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05443	0.07700	0.45392
	(!D * !SCE * !Q * Q_N)	0.03272	0.05533	0.43264
	(!D * !SCE * !Q * Q_N)	0.02688	0.04948	0.42681
	(!D * !SCD * SCE * !Q * Q_N)	0.03845	0.06106	0.43837
	(!D * !SCD * SCE * !Q * Q_N)	0.03261	0.05521	0.43254
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03840	0.06100	0.43831
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03257	0.05516	0.43248

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.05583	0.07863	0.45909
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.05013	0.07290	0.45337
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.05253	0.07534	0.45580
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.04683	0.06960	0.45008
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05773	0.08053	0.46099
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05202	0.07480	0.45527
	(D * !SCD * SCE * !Q * Q_N)	0.04325	0.06611	0.44697
	(D * !SCD * SCE * !Q * Q_N)	0.03754	0.06037	0.44125
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.04318	0.06604	0.44688
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03748	0.06030	0.44116
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.03741	0.06028	0.44112
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.03171	0.05454	0.43540
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.03741	0.06028	0.44112
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.03171	0.05454	0.43540
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05863	0.08143	0.46190
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05292	0.07570	0.45617
	(!D * !SCE * !Q * Q_N)	0.03749	0.06036	0.44122
	(!D * !SCE * !Q * Q_N)	0.03179	0.05462	0.43550
	(!D * !SCD * SCE * !Q * Q_N)	0.04322	0.06606	0.44695
	(!D * !SCD * SCE * !Q * Q_N)	0.03752	0.06035	0.44123
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.04318	0.06601	0.44688
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03748	0.06030	0.44116

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)	0.04853	0.07214	0.45017
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.05438	0.07800	0.45600
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.05100	0.07565	0.47740
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.05656	0.08127	0.48301
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.04523	0.06884	0.44687
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.05107	0.07469	0.45270
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.04781	0.07238	0.47380
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.05337	0.07798	0.47940
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06159	0.08561	0.47592
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06769	0.09171	0.48200
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05041	0.07403	0.45205
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05626	0.07989	0.45788
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05298	0.07754	0.47884
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05854	0.08315	0.48444
	(D * !SCD * SCE * !Q * Q_N)	0.03023	0.05381	0.43145
	(D * !SCD * SCE * !Q * Q_N)	0.03602	0.05967	0.43728
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03017	0.05373	0.43138
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03596	0.05956	0.43721
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02440	0.04795	0.42562
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.03019	0.05380	0.43145
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02439	0.04795	0.42562
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.03018	0.05380	0.43145
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05133	0.07495	0.45297
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05717	0.08080	0.45880
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.05381	0.07842	0.48011
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.05938	0.08403	0.48571
	(!D * RESET_B * !SCE * Q * !Q_N)	0.05578	0.07975	0.47013
	(!D * RESET_B * !SCE * Q * !Q_N)	0.06185	0.08582	0.47618
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06159	0.08563	0.47596
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06768	0.09171	0.48202
	(!D * !SCE * !Q * Q_N)	0.02447	0.04804	0.42569
	(!D * !SCE * !Q * Q_N)	0.03027	0.05390	0.43153
	(!D * !SCD * SCE * !Q * Q_N)	0.03018	0.05378	0.43143
	(!D * !SCD * SCE * !Q * Q_N)	0.03602	0.05963	0.43726
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03016	0.05371	0.43138
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03595	0.05957	0.43721

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.04670	0.07086	0.45360
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.05240	0.07660	0.45932
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.05575	0.08100	0.48742
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.06122	0.08648	0.49291
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.04340	0.06755	0.45030
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.04910	0.07329	0.45602
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.05256	0.07775	0.48377
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.05803	0.08325	0.48926
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.05975	0.08432	0.47933
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06571	0.09029	0.48530
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.04859	0.07274	0.45548
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.05429	0.07849	0.46120
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.05773	0.08292	0.48881
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.06319	0.08839	0.49430
	(D * !SCD * SCE * !Q * Q_N)	0.03501	0.05917	0.44147
	(D * !SCD * SCE * !Q * Q_N)	0.04071	0.06492	0.44719
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03495	0.05908	0.44141
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.04064	0.06482	0.44712
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02918	0.05329	0.43564
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.03488	0.05901	0.44136
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02917	0.05331	0.43564
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.03487	0.05905	0.44136
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.04950	0.07366	0.45640
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.05520	0.07940	0.46212
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.05857	0.08379	0.49013
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.06403	0.08930	0.49562
	(!D * RESET_B * !SCE * Q * !Q_N)	0.05395	0.07846	0.47355
	(!D * RESET_B * !SCE * Q * !Q_N)	0.05989	0.08441	0.47949
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.05974	0.08432	0.47937
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.06569	0.09029	0.48534
	(!D * !SCE * !Q * Q_N)	0.02925	0.05340	0.43572
	(!D * !SCE * !Q * Q_N)	0.03495	0.05915	0.44144
	(!D * !SCD * SCE * !Q * Q_N)	0.03498	0.05914	0.44145
	(!D * !SCD * SCE * !Q * Q_N)	0.04068	0.06488	0.44717
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.03494	0.05908	0.44141
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.04063	0.06482	0.44712

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00204	0.00201	0.00431	0.00598	0.00294	1.73113

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	2834.56000	4348.69000

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)	0.15615	0.66724	7.78756

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)	0.13742	0.51327	5.32100
	RESET_B->Q (FF)	0.16009	0.54721	5.54866

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)	-0.03497	-0.03003	1.18788
	setup	CLK_N (F)	0.10189	0.09123	-1.10543

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)	-0.06382	-0.08863	-0.12381
	setup	CLK_N (F)	0.14092	0.15373	0.18686

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)	-0.03497	-0.03003	1.18788
	hold	CLK_N (F)	-0.03598	-0.03128	1.18648
	setup	CLK_N (F)	0.10189	0.09019	-1.11098
	setup	CLK_N (F)	0.10125	0.09123	-1.10543

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)	-0.06489	-0.09263	-0.13421
	hold	CLK_N (F)	-0.06382	-0.08863	-0.12381
	setup	CLK_N (F)	0.14092	0.15373	0.18686
	setup	CLK_N (F)	0.13993	0.15325	0.17909

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)	-0.05397	-0.03516	1.19049
	setup	CLK_N (F)	0.12698	0.10177	-1.10587

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)	-0.08805	-0.09458	-0.14289
	setup	CLK_N (F)	0.17376	0.16503	0.20148

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)	-0.05397	-0.03516	1.19049
	hold	CLK_N (F)	-0.06121	-0.04364	1.17670
	setup	CLK_N (F)	0.12276	0.09515	-1.11666
	setup	CLK_N (F)	0.12698	0.10177	-1.10587

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)	-0.09313	-0.09968	-0.14605
	hold	CLK_N (F)	-0.08805	-0.09458	-0.14289
	setup	CLK_N (F)	0.17376	0.16362	0.20148
	setup	CLK_N (F)	0.17178	0.16503	0.19990

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)	-0.03788	-0.03532	1.62695
	setup	CLK_N (F)	0.17922	0.12080	-0.93393

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)	-0.07576	-0.08043	0.03399
	setup	CLK_N (F)	0.15276	0.14429	0.17365

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)	-0.09786	-0.05921	1.62695
	hold	CLK_N (F)	-0.03788	-0.03532	1.01174
	setup	CLK_N (F)	0.17922	0.12080	-1.58679
	setup	CLK_N (F)	0.10639	0.09500	-0.93393

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)	-0.07594	-0.08798	-0.14333
	hold	CLK_N (F)	-0.07576	-0.08043	0.03399
	setup	CLK_N (F)	0.14539	0.13601	0.17365
	setup	CLK_N (F)	0.15276	0.14429	0.02018

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)	0.14333	0.10381	-0.30778
	removal	CLK_N (F)	-0.11097	-0.07345	0.33867

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)	0.13816	0.10000	-0.31837
	recovery	CLK_N (F)	0.12948	0.08560	-0.32826
	recovery	CLK_N (F)	0.12682	0.08230	-0.33422
	recovery	CLK_N (F)	0.14333	0.10381	-0.30778
	removal	CLK_N (F)	-0.12374	-0.08894	0.32094
	removal	CLK_N (F)	-0.11305	-0.07788	0.33133
	removal	CLK_N (F)	-0.11097	-0.07345	0.33867
	removal	CLK_N (F)	-0.12716	-0.09720	0.31037

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 ()	0.07836	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.09189	0.59937	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 ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.10994	0.59937	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 ()	0.08738	0.59937	16.50020
	min_pulse_width	CLK_N ()	0.08513	0.59937	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	0.15111	0.17594	0.56637
	CLK_N	0.15701	0.18182	0.57256

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.07052	0.09702	0.50752
	CLK_N	0.07571	0.10220	0.51185
	RESET_B	0.07312	0.09853	0.51162
	RESET_B	0.08647	0.11235	0.51747

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)**	0.03602	0.03606	0.03683
	(CLK_N * RESET_B * SCD * SCE)	0.03369	0.03370	0.03447
	(CLK_N * RESET_B * SCD * !SCE)	0.04953	0.06012	0.24365
	(CLK_N * RESET_B * SCD * !SCE)	0.04498	0.05556	0.23909
	(CLK_N * RESET_B * !SCD * !SCE)	0.05455	0.06494	0.24615
	(CLK_N * RESET_B * !SCD * !SCE)	0.05000	0.06037	0.24161
	(CLK_N * !SCD * SCE)	0.03543	0.03543	0.03540
	(CLK_N * !SCD * SCE)	0.03275	0.03273	0.03270
	(CLK_N * !RESET_B * SCD * SCE)	0.02179	0.02179	0.02177
	(CLK_N * !RESET_B * SCD * SCE)	0.01912	0.01910	0.01909
	(CLK_N * !RESET_B * SCD * !SCE)	0.01563	0.01563	0.01556
	(CLK_N * !RESET_B * SCD * !SCE)	0.01301	0.01299	0.01287
	(CLK_N * !RESET_B * !SCD * !SCE)	0.01562	0.01562	0.01556
	(CLK_N * !RESET_B * !SCD * !SCE)	0.01295	0.01293	0.01285
	(!CLK_N * RESET_B * SCD * SCE)	0.03221	0.03225	0.03302
	(!CLK_N * RESET_B * SCD * SCE)	0.02988	0.02989	0.03066
	(!CLK_N * RESET_B * SCD * !SCE)	0.03443	0.04172	0.17476
	(!CLK_N * RESET_B * SCD * !SCE)	0.02983	0.03709	0.17015
	(!CLK_N * RESET_B * !SCD * !SCE)	0.03948	0.04656	0.17717
	(!CLK_N * RESET_B * !SCD * !SCE)	0.03488	0.04195	0.17256
	(!CLK_N * !SCD * SCE)	0.02138	0.02139	0.02136
	(!CLK_N * !SCD * SCE)	0.01870	0.01869	0.01866
	(!CLK_N * !RESET_B * SCD * SCE)	0.02129	0.02130	0.02128
	(!CLK_N * !RESET_B * SCD * SCE)	0.01862	0.01861	0.01859
	(!CLK_N * !RESET_B * SCD * !SCE)	0.01513	0.01513	0.01506
	(!CLK_N * !RESET_B * SCD * !SCE)	0.01251	0.01249	0.01237
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.01512	0.01512	0.01506
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.01245	0.01243	0.01235

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)**	0.03612	0.03598	0.03433
	(CLK_N * RESET_B * SCD * SCE)	0.03847	0.03834	0.03668
	(CLK_N * RESET_B * SCD * !SCE)	0.04371	0.05446	0.23921
	(CLK_N * RESET_B * SCD * !SCE)	0.04826	0.05902	0.24378
	(CLK_N * RESET_B * !SCD * !SCE)	0.04368	0.05463	0.24199
	(CLK_N * RESET_B * !SCD * !SCE)	0.04823	0.05919	0.24655
	(CLK_N * !SCD * SCE)	0.03379	0.03377	0.03378
	(CLK_N * !SCD * SCE)	0.03649	0.03649	0.03648
	(CLK_N * !RESET_B * SCD * SCE)	0.02014	0.02013	0.02014
	(CLK_N * !RESET_B * SCD * SCE)	0.02283	0.02284	0.02282
	(CLK_N * !RESET_B * SCD * !SCE)	0.01483	0.01482	0.01483
	(CLK_N * !RESET_B * SCD * !SCE)	0.01750	0.01753	0.01750
	(CLK_N * !RESET_B * !SCD * !SCE)	0.01482	0.01481	0.01482
	(CLK_N * !RESET_B * !SCD * !SCE)	0.01751	0.01755	0.01752
	(!CLK_N * RESET_B * SCD * SCE)	0.03231	0.03217	0.03053
	(!CLK_N * RESET_B * SCD * SCE)	0.03466	0.03454	0.03287
	(!CLK_N * RESET_B * SCD * !SCE)	0.01620	0.02499	0.16971
	(!CLK_N * RESET_B * SCD * !SCE)	0.02080	0.02961	0.17432
	(!CLK_N * RESET_B * !SCD * !SCE)	0.01618	0.02515	0.17204
	(!CLK_N * RESET_B * !SCD * !SCE)	0.02078	0.02976	0.17665
	(!CLK_N * !SCD * SCE)	0.01967	0.01966	0.01967
	(!CLK_N * !SCD * SCE)	0.02237	0.02237	0.02236
	(!CLK_N * !RESET_B * SCD * SCE)	0.01963	0.01962	0.01963
	(!CLK_N * !RESET_B * SCD * SCE)	0.02232	0.02233	0.02231
	(!CLK_N * !RESET_B * SCD * !SCE)	0.01432	0.01431	0.01432
	(!CLK_N * !RESET_B * SCD * !SCE)	0.01699	0.01703	0.01700
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.01431	0.01431	0.01431
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.01700	0.01704	0.01701

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)	0.05532	0.06535	0.25314
	(CLK_N * D * RESET_B * SCE)	0.04938	0.05940	0.24718
	(CLK_N * D * RESET_B * !SCE)	0.03308	0.03312	0.03691
	(CLK_N * D * RESET_B * !SCE)	0.02999	0.03001	0.03382
	(CLK_N * D * !RESET_B * SCE)	0.02171	0.02172	0.02168
	(CLK_N * D * !RESET_B * SCE)	0.01917	0.01916	0.01918
	(CLK_N * D * !RESET_B * !SCE)	0.01566	0.01566	0.01567
	(CLK_N * D * !RESET_B * !SCE)	0.01320	0.01319	0.01321
	(CLK_N * !D * RESET_B * SCE)	0.05917	0.06884	0.25554
	(CLK_N * !D * RESET_B * SCE)	0.05299	0.06264	0.24935
	(CLK_N * !D * !RESET_B * SCE)	0.02171	0.02172	0.02168
	(CLK_N * !D * !RESET_B * SCE)	0.01917	0.01915	0.01918
	(!D * RESET_B * !SCE)	0.02999	0.03001	0.02999
	(!D * RESET_B * !SCE)	0.02691	0.02690	0.02691
	(!D * !RESET_B * !SCE)	0.01578	0.01578	0.01578
	(!D * !RESET_B * !SCE)	0.01302	0.01302	0.01303
	(!CLK_N * D * RESET_B * SCE)	0.03996	0.04702	0.18571
	(!CLK_N * D * RESET_B * SCE)	0.03397	0.04101	0.17970
	(!CLK_N * D * RESET_B * !SCE)	0.02926	0.02930	0.03309
	(!CLK_N * D * RESET_B * !SCE)	0.02618	0.02619	0.03000
	(!CLK_N * D * !RESET_B * SCE)	0.02121	0.02122	0.02118
	(!CLK_N * D * !RESET_B * SCE)	0.01867	0.01866	0.01868
	(!CLK_N * D * !RESET_B * !SCE)	0.01516	0.01516	0.01517
	(!CLK_N * D * !RESET_B * !SCE)	0.01270	0.01269	0.01271
	(!CLK_N * !D * RESET_B * SCE)	0.04373	0.05029	0.18746
	(!CLK_N * !D * RESET_B * SCE)	0.03751	0.04404	0.18124
	(!CLK_N * !D * !RESET_B * SCE)	0.02121	0.02122	0.02118
	(!CLK_N * !D * !RESET_B * SCE)	0.01867	0.01865	0.01868

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)	0.05182	0.06113	0.24537
	(CLK_N * D * RESET_B * SCE)	0.05778	0.06709	0.25130
	(CLK_N * D * RESET_B * !SCE)	0.03517	0.03504	0.03421
	(CLK_N * D * RESET_B * !SCE)	0.03825	0.03815	0.03730
	(CLK_N * D * !RESET_B * SCE)	0.02024	0.02023	0.02022
	(CLK_N * D * !RESET_B * SCE)	0.02274	0.02276	0.02271
	(CLK_N * D * !RESET_B * !SCE)	0.01477	0.01477	0.01474
	(CLK_N * D * !RESET_B * !SCE)	0.01727	0.01727	0.01723
	(CLK_N * !D * RESET_B * SCE)	0.05153	0.06130	0.24773
	(CLK_N * !D * RESET_B * SCE)	0.05771	0.06751	0.25390
	(CLK_N * !D * !RESET_B * SCE)	0.02024	0.02023	0.02022
	(CLK_N * !D * !RESET_B * SCE)	0.02274	0.02276	0.02271
	(!D * RESET_B * !SCE)	0.02787	0.02775	0.02774
	(!D * RESET_B * !SCE)	0.03096	0.03086	0.03082
	(!D * !RESET_B * !SCE)	0.01464	0.01462	0.01457
	(!D * !RESET_B * !SCE)	0.01750	0.01748	0.01738
	(!CLK_N * D * RESET_B * SCE)	0.02368	0.03176	0.17994
	(!CLK_N * D * RESET_B * SCE)	0.02969	0.03778	0.18592
	(!CLK_N * D * RESET_B * !SCE)	0.03136	0.03123	0.03041
	(!CLK_N * D * RESET_B * !SCE)	0.03444	0.03434	0.03349
	(!CLK_N * D * !RESET_B * SCE)	0.01973	0.01972	0.01972
	(!CLK_N * D * !RESET_B * SCE)	0.02223	0.02225	0.02220
	(!CLK_N * D * !RESET_B * !SCE)	0.01426	0.01427	0.01424
	(!CLK_N * D * !RESET_B * !SCE)	0.01677	0.01676	0.01672
	(!CLK_N * !D * RESET_B * SCE)	0.02310	0.03151	0.18107
	(!CLK_N * !D * RESET_B * SCE)	0.02934	0.03775	0.18727
	(!CLK_N * !D * !RESET_B * SCE)	0.01973	0.01972	0.01972
	(!CLK_N * !D * !RESET_B * SCE)	0.02223	0.02225	0.02220

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)	0.04223	0.05485	0.25935
	(CLK_N * D * RESET_B * SCD)	0.03423	0.04687	0.25140
	(CLK_N * D * RESET_B * !SCD)	0.05931	0.07299	0.30059
	(CLK_N * D * RESET_B * !SCD)	0.05401	0.06769	0.29524
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.02810	0.04093	0.24325
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.02059	0.03344	0.23574
	(CLK_N * !D * RESET_B * SCD)	0.06310	0.08619	0.46781
	(CLK_N * !D * RESET_B * SCD)	0.05292	0.07602	0.45761
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.03842	0.05105	0.25553
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.03042	0.04306	0.24759
	(!CLK_N * D * RESET_B * !SCD)	0.03144	0.04545	0.27278
	(!CLK_N * D * RESET_B * !SCD)	0.02619	0.04018	0.26749
	(!CLK_N * !D * RESET_B * SCD)	0.04779	0.06718	0.39430
	(!CLK_N * !D * RESET_B * SCD)	0.03756	0.05693	0.38407

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)	0.03057	0.04420	0.25179
	(CLK_N * D * RESET_B * SCD)	0.03855	0.05220	0.25977
	(CLK_N * D * RESET_B * !SCD)	0.05438	0.06811	0.29291
	(CLK_N * D * RESET_B * !SCD)	0.05969	0.07341	0.29803
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.01469	0.02834	0.23587
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.02217	0.03586	0.24336
	(CLK_N * !D * RESET_B * SCD)	0.04422	0.06666	0.44740
	(CLK_N * !D * RESET_B * SCD)	0.05440	0.07688	0.45760
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.02677	0.04040	0.24798
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.03475	0.04839	0.25596
	(!CLK_N * D * RESET_B * !SCD)	0.03930	0.05248	0.26760
	(!CLK_N * D * RESET_B * !SCD)	0.04456	0.05776	0.27266
	(!CLK_N * !D * RESET_B * SCD)	0.01671	0.03790	0.38210
	(!CLK_N * !D * RESET_B * SCD)	0.02694	0.04815	0.39235

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * SCD * SCE * !Q)**	0.05787	0.07030	0.34700
	(CLK_N * D * SCD * SCE * !Q)	0.04404	0.05638	0.33311
	(CLK_N * D * SCD * !SCE * !Q)	0.05399	0.06657	0.34474
	(CLK_N * D * SCD * !SCE * !Q)	0.04068	0.05327	0.33142
	(CLK_N * D * !SCD * SCE * !Q)	0.02601	0.02610	0.02603
	(CLK_N * D * !SCD * SCE * !Q)	0.01586	0.01582	0.01585
	(CLK_N * D * !SCD * !SCE * !Q)	0.05824	0.07110	0.34657
	(CLK_N * D * !SCD * !SCE * !Q)	0.04571	0.05855	0.33400
	(CLK_N * !D * SCD * SCE * !Q)	0.06172	0.07369	0.34918
	(CLK_N * !D * SCD * SCE * !Q)	0.04767	0.05954	0.33507
	(CLK_N * !D * SCD * !SCE * !Q)	0.02024	0.02030	0.02026
	(CLK_N * !D * SCD * !SCE * !Q)	0.01010	0.01008	0.01010
	(CLK_N * !D * !SCD * SCE * !Q)	0.02598	0.02604	0.02600
	(CLK_N * !D * !SCD * SCE * !Q)	0.01583	0.01581	0.01583
	(CLK_N * !D * !SCD * !SCE * !Q)	0.02021	0.02027	0.02023
	(CLK_N * !D * !SCD * !SCE * !Q)	0.01006	0.01004	0.01006
	(!CLK_N * D * SCD * SCE * !Q)	0.04465	0.05311	0.23220
	(!CLK_N * D * SCD * SCE * !Q)	0.03077	0.03918	0.21830
	(!CLK_N * D * SCD * !SCE * !Q)	0.04099	0.04961	0.22736
	(!CLK_N * D * SCD * !SCE * !Q)	0.02769	0.03621	0.21399
	(!CLK_N * D * !SCD * SCE * !Q)	0.02543	0.02549	0.02544
	(!CLK_N * D * !SCD * SCE * !Q)	0.01526	0.01522	0.01524
	(!CLK_N * D * !SCD * !SCE * !Q)	0.04532	0.05414	0.22926
	(!CLK_N * D * !SCD * !SCE * !Q)	0.03273	0.04148	0.21664
	(!CLK_N * !D * SCD * SCE * !Q)	0.04843	0.05643	0.23394
	(!CLK_N * !D * SCD * SCE * !Q)	0.03432	0.04225	0.21977
	(!CLK_N * !D * SCD * !SCE * !Q)	0.01966	0.01973	0.01967
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00951	0.00946	0.00950
	(!CLK_N * !D * !SCD * SCE * !Q)	0.02540	0.02546	0.02541
	(!CLK_N * !D * !SCD * SCE * !Q)	0.01524	0.01521	0.01523
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.01963	0.01970	0.01964
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00948	0.00943	0.00946

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * SCD * SCE * !Q)**	0.03306	0.05013	0.34861
	(CLK_N * D * SCD * SCE * !Q)	0.04692	0.06410	0.36243
	(CLK_N * D * SCD * !SCE * !Q)	0.02564	0.04257	0.34281
	(CLK_N * D * SCD * !SCE * !Q)	0.03893	0.05597	0.35607
	(CLK_N * D * !SCD * SCE * !Q)	0.01632	0.01599	0.01602
	(CLK_N * D * !SCD * SCE * !Q)	0.02645	0.02629	0.02619
	(CLK_N * D * !SCD * !SCE * !Q)	0.02517	0.04247	0.34449
	(CLK_N * D * !SCD * !SCE * !Q)	0.03770	0.05511	0.35701
	(CLK_N * !D * SCD * SCE * !Q)	0.03252	0.05013	0.35027
	(CLK_N * !D * SCD * SCE * !Q)	0.04660	0.06430	0.36433
	(CLK_N * !D * SCD * !SCE * !Q)	0.01062	0.01025	0.01028
	(CLK_N * !D * SCD * !SCE * !Q)	0.02073	0.02054	0.02045
	(CLK_N * !D * !SCD * SCE * !Q)	0.01627	0.01598	0.01600
	(CLK_N * !D * !SCD * SCE * !Q)	0.02639	0.02626	0.02617
	(CLK_N * !D * !SCD * !SCE * !Q)	0.01056	0.01022	0.01026
	(CLK_N * !D * !SCD * !SCE * !Q)	0.02068	0.02051	0.02042
	(!CLK_N * D * SCD * SCE * !Q)	0.02148	0.03239	0.22126
	(!CLK_N * D * SCD * SCE * !Q)	0.03540	0.04640	0.23512
	(!CLK_N * D * SCD * !SCE * !Q)	0.01419	0.02514	0.21443
	(!CLK_N * D * SCD * !SCE * !Q)	0.02754	0.03856	0.22774
	(!CLK_N * D * !SCD * SCE * !Q)	0.01603	0.01563	0.01566
	(!CLK_N * D * !SCD * SCE * !Q)	0.02617	0.02594	0.02583
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01379	0.02516	0.21642
	(!CLK_N * D * !SCD * !SCE * !Q)	0.02638	0.03785	0.22900
	(!CLK_N * !D * SCD * SCE * !Q)	0.02092	0.03220	0.22230
	(!CLK_N * !D * SCD * SCE * !Q)	0.03506	0.04639	0.23636
	(!CLK_N * !D * SCD * !SCE * !Q)	0.01033	0.00989	0.00992
	(!CLK_N * !D * SCD * !SCE * !Q)	0.02046	0.02020	0.02009
	(!CLK_N * !D * !SCD * SCE * !Q)	0.01599	0.01561	0.01563
	(!CLK_N * !D * !SCD * SCE * !Q)	0.02611	0.02591	0.02581
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.01027	0.00987	0.00989
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.02040	0.02017	0.02006

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)**	0.05084	0.07519	0.46448
	(D * RESET_B * SCD * SCE * Q)	0.04529	0.06961	0.45891
	(D * RESET_B * SCD * SCE * !Q)	0.05975	0.08484	0.48842
	(D * RESET_B * SCD * SCE * !Q)	0.05425	0.07930	0.48292
	(D * RESET_B * SCD * !SCE * Q)	0.04753	0.07188	0.46112
	(D * RESET_B * SCD * !SCE * Q)	0.04199	0.06631	0.45555
	(D * RESET_B * SCD * !SCE * !Q)	0.05657	0.08165	0.48494
	(D * RESET_B * SCD * !SCE * !Q)	0.05107	0.07611	0.47944
	(D * RESET_B * !SCD * SCE * Q)	0.06268	0.08768	0.49023
	(D * RESET_B * !SCD * SCE * Q)	0.05711	0.08208	0.48465
	(D * RESET_B * !SCD * !SCE * Q)	0.05272	0.07706	0.46622
	(D * RESET_B * !SCD * !SCE * Q)	0.04717	0.07149	0.46065
	(D * RESET_B * !SCD * !SCE * !Q)	0.06174	0.08664	0.48997
	(D * RESET_B * !SCD * !SCE * !Q)	0.05623	0.08110	0.48447
	(D * !SCD * SCE * !Q)	0.03743	0.06177	0.45071
	(D * !SCD * SCE * !Q)	0.03189	0.05619	0.44514
	(D * !RESET_B * SCD * SCE * !Q)	0.03739	0.06171	0.45062
	(D * !RESET_B * SCD * SCE * !Q)	0.03184	0.05613	0.44505
	(D * !RESET_B * SCD * !SCE * !Q)	0.03163	0.05600	0.44486
	(D * !RESET_B * SCD * !SCE * !Q)	0.02608	0.05044	0.43930
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03163	0.05595	0.44486
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02608	0.05038	0.43930
	(!D * RESET_B * SCD * SCE * Q)	0.05362	0.07797	0.46723
	(!D * RESET_B * SCD * SCE * Q)	0.04808	0.07240	0.46167
	(!D * RESET_B * SCD * SCE * !Q)	0.06254	0.08764	0.49115
	(!D * RESET_B * SCD * SCE * !Q)	0.05704	0.08211	0.48564
	(!D * RESET_B * !SCE * Q)	0.05690	0.08190	0.48448
	(!D * RESET_B * !SCE * Q)	0.05132	0.07628	0.47888
	(!D * RESET_B * !SCD * SCE * Q)	0.06261	0.08766	0.49029
	(!D * RESET_B * !SCD * SCE * Q)	0.05704	0.08205	0.48470
	(!D * !SCE * !Q)	0.03168	0.05603	0.44496
	(!D * !SCE * !Q)	0.02614	0.05045	0.43939
	(!D * !SCD * SCE * !Q)	0.03741	0.06173	0.45069
	(!D * !SCD * SCE * !Q)	0.03186	0.05616	0.44512
	(!D * !RESET_B * SCD * SCE * !Q)	0.03739	0.06171	0.45062
	(!D * !RESET_B * SCD * SCE * !Q)	0.03184	0.05613	0.44505

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)	0.04782	0.07220	0.45693
	(D * RESET_B * SCD * SCE * Q)	0.05337	0.07777	0.46249
	(D * RESET_B * SCD * !SCE * Q)	0.04453	0.06890	0.45358
	(D * RESET_B * SCD * !SCE * Q)	0.05007	0.07447	0.45914
	(D * RESET_B * !SCD * !SCE * Q)	0.04973	0.07410	0.45870
	(D * RESET_B * !SCD * !SCE * Q)	0.05527	0.07967	0.46427
	(D * !SCD * SCE * !Q)	0.03276	0.05716	0.44259
	(D * !SCD * SCE * !Q)	0.03831	0.06274	0.44816
	(D * !RESET_B * SCD * SCE * !Q)	0.03269	0.05707	0.44256
	(D * !RESET_B * SCD * SCE * !Q)	0.03824	0.06266	0.44812
	(D * !RESET_B * SCD * !SCE * !Q)	0.02694	0.05133	0.43680
	(D * !RESET_B * SCD * !SCE * !Q)	0.03248	0.05688	0.44237
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02694	0.05133	0.43680
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03248	0.05688	0.44237
	(!D * RESET_B * SCD * SCE * Q)	0.05061	0.07499	0.45969
	(!D * RESET_B * SCD * SCE * Q)	0.05616	0.08056	0.46525
	(!D * !SCE * !Q)	0.02702	0.05141	0.43688
	(!D * !SCE * !Q)	0.03256	0.05699	0.44244
	(!D * !SCD * SCE * !Q)	0.03274	0.05715	0.44261
	(!D * !SCD * SCE * !Q)	0.03829	0.06271	0.44817
	(!D * !RESET_B * SCD * SCE * !Q)	0.03269	0.05709	0.44256
	(!D * !RESET_B * SCD * SCE * !Q)	0.03824	0.06265	0.44812

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00196	0.00205	0.00431	0.00599	0.00313	1.73608
sky130_fd_sc_hs__sdfrtp_2	0.00190	0.00207	0.00440	0.00608	0.00313	3.43563
sky130_fd_sc_hs__sdfrtp_4	0.00190	0.00204	0.00443	0.00599	0.00313	6.32806

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	2835.17000	4349.04000
sky130_fd_sc_hs__sdfrtp_2	0.00000	2943.21000	4485.73000
sky130_fd_sc_hs__sdfrtp_4	0.00000	4331.31000	5699.74000

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)	0.13109	0.49505	5.49608
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.13739	0.41862	5.49536
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.16218	0.38490	5.49499

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.13433	0.36847	3.14579
	RESET_B->Q (FF)	0.18137	0.57983	5.56053
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.13927	0.32510	3.13554
	RESET_B->Q (FF)	0.18658	0.53762	5.55243
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.14375	0.28727	2.94294
	RESET_B->Q (FF)	0.18988	0.49893	5.36205

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)	-0.07852	-0.17279	-1.60612
	setup	CLK (R)	0.13601	0.21482	1.63873
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07725	-0.17228	-1.63804
	setup	CLK (R)	0.13534	0.20978	1.66403
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07730	-0.17228	-1.63043
	setup	CLK (R)	0.13160	0.20712	1.65535

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)	-0.06025	-0.13433	-2.04474
	setup	CLK (R)	0.11966	0.20535	2.18534
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.05846	-0.13187	-2.05314
	setup	CLK (R)	0.11306	0.19643	2.15735
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.05771	-0.13538	-2.04539
	setup	CLK (R)	0.11079	0.19551	2.14880

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)	-0.07852	-0.17279	-1.60612
	hold	CLK (R)	-0.07991	-0.17410	-1.60847
	setup	CLK (R)	0.13601	0.21482	1.63315
	setup	CLK (R)	0.13425	0.21472	1.63873
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07987	-0.17228	-1.63804
	hold	CLK (R)	-0.07725	-0.17279	-1.64245
	setup	CLK (R)	0.13487	0.20965	1.65944
	setup	CLK (R)	0.13534	0.20978	1.66403
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07774	-0.17228	-1.63043
	hold	CLK (R)	-0.07730	-0.17279	-1.63436
	setup	CLK (R)	0.13091	0.20709	1.65276
	setup	CLK (R)	0.13160	0.20712	1.65535

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)	-0.06025	-0.13505	-2.05422
	hold	CLK (R)	-0.06095	-0.13433	-2.04474
	setup	CLK (R)	0.11966	0.20535	2.18534
	setup	CLK (R)	0.11966	0.20535	2.18051
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.05846	-0.13309	-2.06379
	hold	CLK (R)	-0.06046	-0.13187	-2.05314
	setup	CLK (R)	0.11306	0.19643	2.15735
	setup	CLK (R)	0.11270	0.19551	2.14690
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.05771	-0.13576	-2.05079
	hold	CLK (R)	-0.05810	-0.13538	-2.04539
	setup	CLK (R)	0.11079	0.19551	2.14880
	setup	CLK (R)	0.10927	0.19442	2.13842

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)	-0.09371	-0.17821	-1.52922
	setup	CLK (R)	0.16157	0.22633	1.56983
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09740	-0.17945	-1.53903
	setup	CLK (R)	0.16001	0.22531	1.57368
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09885	-0.17848	-1.52113
	setup	CLK (R)	0.15574	0.22035	1.55359

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)	-0.08514	-0.14662	-2.13174
	setup	CLK (R)	0.15205	0.22190	2.26016
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08505	-0.14801	-2.17466
	setup	CLK (R)	0.14706	0.21476	2.25945
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08686	-0.14859	-2.17226
	setup	CLK (R)	0.14570	0.21476	2.26439

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)	-0.09371	-0.17821	-1.52922
	hold	CLK (R)	-0.10338	-0.18790	-1.54023
	setup	CLK (R)	0.15678	0.22078	1.55494
	setup	CLK (R)	0.16157	0.22633	1.56983
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09740	-0.17945	-1.53903
	hold	CLK (R)	-0.10625	-0.18737	-1.55370
	setup	CLK (R)	0.15525	0.21633	1.56073
	setup	CLK (R)	0.16001	0.22531	1.57368
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09885	-0.17848	-1.52113
	hold	CLK (R)	-0.10532	-0.18647	-1.53286
	setup	CLK (R)	0.14908	0.21388	1.53959
	setup	CLK (R)	0.15574	0.22035	1.55359

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)	-0.08953	-0.15099	-2.13199
	hold	CLK (R)	-0.08514	-0.14662	-2.13174
	setup	CLK (R)	0.15205	0.22190	2.26016
	setup	CLK (R)	0.14952	0.21847	2.25677
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09075	-0.15080	-2.17466
	hold	CLK (R)	-0.08505	-0.14801	-2.17473
	setup	CLK (R)	0.14706	0.21476	2.25945
	setup	CLK (R)	0.14496	0.21431	2.25896
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08973	-0.15327	-2.17226
	hold	CLK (R)	-0.08686	-0.14859	-2.17603
	setup	CLK (R)	0.14552	0.21476	2.26439
	setup	CLK (R)	0.14570	0.21306	2.25910

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)	-0.07978	-0.10939	-0.44294
	setup	CLK (R)	0.15858	0.22419	1.83820
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08168	-0.10973	-0.47188
	setup	CLK (R)	0.15016	0.22033	1.90388
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08398	-0.11060	-0.47022
	setup	CLK (R)	0.15015	0.21768	1.88499

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)	-0.06907	-0.12167	-1.83987
	setup	CLK (R)	0.17382	0.26245	2.63824
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06695	-0.11928	-1.80950
	setup	CLK (R)	0.17164	0.25572	2.60586
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06719	-0.12009	-1.81324
	setup	CLK (R)	0.16682	0.25120	2.59669

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)	-0.09540	-0.10939	-0.44294
	hold	CLK (R)	-0.07978	-0.17970	-1.81155
	setup	CLK (R)	0.15858	0.17620	0.51068
	setup	CLK (R)	0.13801	0.22419	1.83820
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09266	-0.10973	-0.47188
	hold	CLK (R)	-0.08168	-0.18170	-1.88419
	setup	CLK (R)	0.15016	0.16864	0.53184
	setup	CLK (R)	0.14021	0.22033	1.90388
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09568	-0.11060	-0.47022
	hold	CLK (R)	-0.08398	-0.18170	-1.86223
	setup	CLK (R)	0.15015	0.16824	0.52496
	setup	CLK (R)	0.13514	0.21768	1.88499

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)	-0.11778	-0.22659	-2.61165
	hold	CLK (R)	-0.06907	-0.12167	-1.83987
	setup	CLK (R)	0.17382	0.26245	2.63824
	setup	CLK (R)	0.12861	0.19107	1.96276
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11490	-0.22112	-2.58462
	hold	CLK (R)	-0.06695	-0.11928	-1.80950
	setup	CLK (R)	0.17164	0.25572	2.60586
	setup	CLK (R)	0.11723	0.18051	1.89562
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11752	-0.22054	-2.57395
	hold	CLK (R)	-0.06719	-0.12009	-1.81324
	setup	CLK (R)	0.16682	0.25120	2.59669
	setup	CLK (R)	0.11694	0.17975	1.89494

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)	0.17762	0.23195	2.86364
	removal	CLK (R)	-0.13756	-0.19387	-2.67389
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.17791	0.23195	2.79215
	removal	CLK (R)	-0.13451	-0.19190	-2.67656
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.17157	0.22599	2.79081
	removal	CLK (R)	-0.13504	-0.19070	-2.66058

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)	0.17419	0.22788	2.78197
	recovery	CLK (R)	0.16101	0.21509	2.86364
	recovery	CLK (R)	0.15895	0.21165	2.86201
	recovery	CLK (R)	0.17762	0.23195	2.77781
	removal	CLK (R)	-0.14991	-0.21060	-2.67689
	removal	CLK (R)	-0.13823	-0.19733	-2.75314
	removal	CLK (R)	-0.13756	-0.19387	-2.75337
	removal	CLK (R)	-0.15531	-0.21613	-2.67389
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.17133	0.22388	2.71442
	recovery	CLK (R)	0.16058	0.21388	2.79156
	recovery	CLK (R)	0.15618	0.20737	2.79215
	recovery	CLK (R)	0.17791	0.23195	2.71114
	removal	CLK (R)	-0.15138	-0.20839	-2.67706
	removal	CLK (R)	-0.14123	-0.19733	-2.75144
	removal	CLK (R)	-0.13451	-0.19190	-2.75482
	removal	CLK (R)	-0.15528	-0.21393	-2.67656
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.16848	0.22237	2.70524
	recovery	CLK (R)	0.15635	0.20987	2.78898
	recovery	CLK (R)	0.15385	0.20418	2.79081
	recovery	CLK (R)	0.17157	0.22599	2.70426
	removal	CLK (R)	-0.14747	-0.20732	-2.66568
	removal	CLK (R)	-0.13821	-0.19631	-2.74040
	removal	CLK (R)	-0.13504	-0.19070	-2.74310
	removal	CLK (R)	-0.15162	-0.21278	-2.66058

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 ()	0.09189	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.07610	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.09189	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.07610	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.09189	0.59937	16.50020
	min_pulse_width	RESET_B ()	0.07836	0.59937	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 ()	0.06934	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.07385	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.08513	0.59937	16.50020
	min_pulse_width	CLK ()	0.06032	0.59937	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 ()	0.11670	0.59937	16.50020
	min_pulse_width	CLK ()	0.11219	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.11445	0.59937	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK ()	0.11219	0.59937	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	0.14811	0.17256	0.57929
	CLK	0.14223	0.16668	0.57346
sky130_fd_sc_hs__sdfrtp_2	CLK	0.13525	0.15929	0.57127
	CLK	0.12919	0.15325	0.56525
sky130_fd_sc_hs__sdfrtp_4	CLK	0.20142	0.22162	0.62527
	CLK	0.19550	0.21564	0.61899

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.07415	0.09844	0.49720
	CLK	0.06839	0.09268	0.49120
	RESET_B	0.07166	0.09818	0.50482
	RESET_B	0.08608	0.11253	0.51918
sky130_fd_sc_hs__sdfrtp_2	CLK	0.08803	0.11056	0.50533
	CLK	0.08237	0.10493	0.49718
	RESET_B	0.08679	0.11431	0.50864
	RESET_B	0.10132	0.12868	0.52312
sky130_fd_sc_hs__sdfrtp_4	CLK	0.11670	0.13736	0.53639
	CLK	0.11093	0.13162	0.52704
	RESET_B	0.11725	0.14010	0.54172
	RESET_B	0.13159	0.15406	0.55626

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)**	0.03221	0.03224	0.03301
	(CLK * RESET_B * SCD * SCE)	0.02995	0.02996	0.03073
	(CLK * RESET_B * SCD * !SCE)	0.03520	0.04255	0.17732
	(CLK * RESET_B * SCD * !SCE)	0.03065	0.03799	0.17276
	(CLK * RESET_B * !SCD * !SCE)	0.04025	0.04740	0.17966
	(CLK * RESET_B * !SCD * !SCE)	0.03571	0.04285	0.17512
	(CLK * !SCD * SCE)	0.02132	0.02132	0.02129
	(CLK * !SCD * SCE)	0.01871	0.01870	0.01867
	(CLK * !RESET_B * SCD * SCE)	0.02121	0.02122	0.02120
	(CLK * !RESET_B * SCD * SCE)	0.01863	0.01861	0.01860
	(CLK * !RESET_B * SCD * !SCE)	0.01522	0.01523	0.01514
	(CLK * !RESET_B * SCD * !SCE)	0.01269	0.01267	0.01255
	(CLK * !RESET_B * !SCD * !SCE)	0.01522	0.01522	0.01515
	(CLK * !RESET_B * !SCD * !SCE)	0.01263	0.01261	0.01252
	(!CLK * RESET_B * SCD * SCE)	0.03601	0.03604	0.03682
	(!CLK * RESET_B * SCD * SCE)	0.03375	0.03377	0.03454
	(!CLK * RESET_B * SCD * !SCE)	0.05009	0.06088	0.24700
	(!CLK * RESET_B * SCD * !SCE)	0.04531	0.05608	0.24220
	(!CLK * RESET_B * !SCD * !SCE)	0.05510	0.06569	0.24921
	(!CLK * RESET_B * !SCD * !SCE)	0.05032	0.06090	0.24443
	(!CLK * !SCD * SCE)	0.03537	0.03536	0.03533
	(!CLK * !SCD * SCE)	0.03276	0.03274	0.03271
	(!CLK * !RESET_B * SCD * SCE)	0.02172	0.02172	0.02170
	(!CLK * !RESET_B * SCD * SCE)	0.01913	0.01912	0.01910
	(!CLK * !RESET_B * SCD * !SCE)	0.01573	0.01573	0.01565
	(!CLK * !RESET_B * SCD * !SCE)	0.01320	0.01318	0.01305
	(!CLK * !RESET_B * !SCD * !SCE)	0.01573	0.01573	0.01566
	(!CLK * !RESET_B * !SCD * !SCE)	0.01314	0.01312	0.01303

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.03677	0.03680	0.03758
	(CLK * RESET_B * SCD * SCE)	0.03463	0.03465	0.03542
	(CLK * RESET_B * SCD * !SCE)	0.03875	0.04644	0.18226
	(CLK * RESET_B * SCD * !SCE)	0.03440	0.04206	0.17790
	(CLK * RESET_B * !SCD * !SCE)	0.04379	0.05128	0.18455
	(CLK * RESET_B * !SCD * !SCE)	0.03944	0.04691	0.18020
	(CLK * !SCD * SCE)	0.02593	0.02594	0.02591
	(CLK * !SCD * SCE)	0.02345	0.02344	0.02341
	(CLK * !RESET_B * SCD * SCE)	0.02583	0.02584	0.02581
	(CLK * !RESET_B * SCD * SCE)	0.02336	0.02335	0.02334
	(CLK * !RESET_B * SCD * !SCE)	0.01984	0.01984	0.01976
	(CLK * !RESET_B * SCD * !SCE)	0.01743	0.01741	0.01729
	(CLK * !RESET_B * !SCD * !SCE)	0.01983	0.01984	0.01977
	(CLK * !RESET_B * !SCD * !SCE)	0.01737	0.01735	0.01726
	(!CLK * RESET_B * SCD * SCE)	0.02957	0.02960	0.03037
	(!CLK * RESET_B * SCD * SCE)	0.02743	0.02744	0.02822
	(!CLK * RESET_B * SCD * !SCE)	0.04271	0.05350	0.23876
	(!CLK * RESET_B * SCD * !SCE)	0.03813	0.04892	0.23418
	(!CLK * RESET_B * !SCD * !SCE)	0.04771	0.05832	0.24115
	(!CLK * RESET_B * !SCD * !SCE)	0.04314	0.05373	0.23657
	(!CLK * !SCD * SCE)	0.02878	0.02878	0.02875
	(!CLK * !SCD * SCE)	0.02630	0.02628	0.02625
	(!CLK * !RESET_B * SCD * SCE)	0.02633	0.02634	0.02632
	(!CLK * !RESET_B * SCD * SCE)	0.02387	0.02385	0.02384
	(!CLK * !RESET_B * SCD * !SCE)	0.02035	0.02035	0.02027
	(!CLK * !RESET_B * SCD * !SCE)	0.01794	0.01792	0.01779
	(!CLK * !RESET_B * !SCD * !SCE)	0.02034	0.02034	0.02028
	(!CLK * !RESET_B * !SCD * !SCE)	0.01788	0.01786	0.01777

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.04574	0.04578	0.04655
	(CLK * RESET_B * SCD * SCE)	0.04361	0.04362	0.04439
	(CLK * RESET_B * SCD * !SCE)	0.04781	0.05548	0.19113
	(CLK * RESET_B * SCD * !SCE)	0.04341	0.05105	0.18672
	(CLK * RESET_B * !SCD * !SCE)	0.05285	0.06031	0.19341
	(CLK * RESET_B * !SCD * !SCE)	0.04845	0.05590	0.18902
	(CLK * !SCD * SCE)	0.03490	0.03490	0.03487
	(CLK * !SCD * SCE)	0.03241	0.03240	0.03236
	(CLK * !RESET_B * SCD * SCE)	0.03479	0.03480	0.03478
	(CLK * !RESET_B * SCD * SCE)	0.03232	0.03231	0.03229
	(CLK * !RESET_B * SCD * !SCE)	0.02882	0.02882	0.02874
	(CLK * !RESET_B * SCD * !SCE)	0.02641	0.02639	0.02627
	(CLK * !RESET_B * !SCD * !SCE)	0.02881	0.02882	0.02875
	(CLK * !RESET_B * !SCD * !SCE)	0.02635	0.02634	0.02625
	(!CLK * RESET_B * SCD * SCE)	0.04768	0.04772	0.04849
	(!CLK * RESET_B * SCD * SCE)	0.04555	0.04556	0.04634
	(!CLK * RESET_B * SCD * !SCE)	0.06112	0.07213	0.25938
	(!CLK * RESET_B * SCD * !SCE)	0.05649	0.06749	0.25473
	(!CLK * RESET_B * !SCD * !SCE)	0.06612	0.07693	0.26176
	(!CLK * RESET_B * !SCD * !SCE)	0.06150	0.07230	0.25713
	(!CLK * !SCD * SCE)	0.04756	0.04756	0.04752
	(!CLK * !SCD * SCE)	0.04507	0.04505	0.04501
	(!CLK * !RESET_B * SCD * SCE)	0.03530	0.03530	0.03528
	(!CLK * !RESET_B * SCD * SCE)	0.03283	0.03282	0.03280
	(!CLK * !RESET_B * SCD * !SCE)	0.02933	0.02933	0.02925
	(!CLK * !RESET_B * SCD * !SCE)	0.02692	0.02690	0.02678
	(!CLK * !RESET_B * !SCD * !SCE)	0.02932	0.02932	0.02926
	(!CLK * !RESET_B * !SCD * !SCE)	0.02686	0.02684	0.02675

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)	0.03235	0.03222	0.03056
	(CLK * RESET_B * SCD * SCE)	0.03462	0.03449	0.03283
	(CLK * RESET_B * SCD * !SCE)	0.01560	0.02447	0.17094
	(CLK * RESET_B * SCD * !SCE)	0.02015	0.02904	0.17549
	(CLK * RESET_B * !SCD * !SCE)	0.01559	0.02463	0.17321
	(CLK * RESET_B * !SCD * !SCE)	0.02013	0.02918	0.17776
	(CLK * !SCD * SCE)	0.01974	0.01974	0.01975
	(CLK * !SCD * SCE)	0.02236	0.02237	0.02236
	(CLK * !RESET_B * SCD * SCE)	0.01973	0.01972	0.01972
	(CLK * !RESET_B * SCD * SCE)	0.02231	0.02233	0.02231
	(CLK * !RESET_B * SCD * !SCE)	0.01423	0.01422	0.01423
	(CLK * !RESET_B * SCD * !SCE)	0.01681	0.01685	0.01682
	(CLK * !RESET_B * !SCD * !SCE)	0.01422	0.01422	0.01422
	(CLK * !RESET_B * !SCD * !SCE)	0.01682	0.01684	0.01683
	(!CLK * RESET_B * SCD * SCE)	0.03615	0.03601	0.03436
	(!CLK * RESET_B * SCD * SCE)	0.03842	0.03830	0.03663
	(!CLK * RESET_B * SCD * !SCE)	0.04236	0.05344	0.24085
	(!CLK * RESET_B * SCD * !SCE)	0.04714	0.05824	0.24564
	(!CLK * RESET_B * !SCD * !SCE)	0.04233	0.05354	0.24352
	(!CLK * RESET_B * !SCD * !SCE)	0.04711	0.05832	0.24831
	(!CLK * !SCD * SCE)	0.03389	0.03386	0.03387
	(!CLK * !SCD * SCE)	0.03648	0.03649	0.03648
	(!CLK * !RESET_B * SCD * SCE)	0.02025	0.02024	0.02024
	(!CLK * !RESET_B * SCD * SCE)	0.02283	0.02285	0.02283
	(!CLK * !RESET_B * SCD * !SCE)	0.01475	0.01474	0.01475
	(!CLK * !RESET_B * SCD * !SCE)	0.01732	0.01735	0.01733
	(!CLK * !RESET_B * !SCD * !SCE)	0.01474	0.01473	0.01474
	(!CLK * !RESET_B * !SCD * !SCE)	0.01734	0.01735	0.01735

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.03708	0.03694	0.03528
	(CLK * RESET_B * SCD * SCE)	0.03922	0.03909	0.03743
	(CLK * RESET_B * SCD * !SCE)	0.02030	0.02943	0.17686
	(CLK * RESET_B * SCD * !SCE)	0.02466	0.03380	0.18122
	(CLK * RESET_B * !SCD * !SCE)	0.02029	0.02958	0.17908
	(CLK * RESET_B * !SCD * !SCE)	0.02464	0.03394	0.18344
	(CLK * !SCD * SCE)	0.02441	0.02441	0.02442
	(CLK * !SCD * SCE)	0.02691	0.02691	0.02691
	(CLK * !RESET_B * SCD * SCE)	0.02439	0.02438	0.02439
	(CLK * !RESET_B * SCD * SCE)	0.02687	0.02688	0.02686
	(CLK * !RESET_B * SCD * !SCE)	0.01888	0.01888	0.01889
	(CLK * !RESET_B * SCD * !SCE)	0.02134	0.02138	0.02135
	(CLK * !RESET_B * !SCD * !SCE)	0.01887	0.01887	0.01888
	(CLK * !RESET_B * !SCD * !SCE)	0.02137	0.02137	0.02136
	(!CLK * RESET_B * SCD * SCE)	0.02986	0.02973	0.02807
	(!CLK * RESET_B * SCD * SCE)	0.03201	0.03189	0.03022
	(!CLK * RESET_B * SCD * !SCE)	0.03631	0.04724	0.23313
	(!CLK * RESET_B * SCD * !SCE)	0.04088	0.05183	0.23771
	(!CLK * RESET_B * !SCD * !SCE)	0.03627	0.04734	0.23567
	(!CLK * RESET_B * !SCD * !SCE)	0.04084	0.05192	0.24025
	(!CLK * !SCD * SCE)	0.02734	0.02733	0.02734
	(!CLK * !SCD * SCE)	0.02984	0.02983	0.02982
	(!CLK * !RESET_B * SCD * SCE)	0.02491	0.02490	0.02491
	(!CLK * !RESET_B * SCD * SCE)	0.02739	0.02739	0.02738
	(!CLK * !RESET_B * SCD * !SCE)	0.01940	0.01940	0.01940
	(!CLK * !RESET_B * SCD * !SCE)	0.02186	0.02187	0.02187
	(!CLK * !RESET_B * !SCD * !SCE)	0.01938	0.01939	0.01939
	(!CLK * !RESET_B * !SCD * !SCE)	0.02188	0.02189	0.02188

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.04605	0.04592	0.04425
	(CLK * RESET_B * SCD * SCE)	0.04819	0.04806	0.04640
	(CLK * RESET_B * SCD * !SCE)	0.02921	0.03832	0.18558
	(CLK * RESET_B * SCD * !SCE)	0.03361	0.04274	0.18999
	(CLK * RESET_B * !SCD * !SCE)	0.02919	0.03848	0.18780
	(CLK * RESET_B * !SCD * !SCE)	0.03359	0.04288	0.19220
	(CLK * !SCD * SCE)	0.03339	0.03339	0.03340
	(CLK * !SCD * SCE)	0.03590	0.03590	0.03589
	(CLK * !RESET_B * SCD * SCE)	0.03337	0.03337	0.03337
	(CLK * !RESET_B * SCD * SCE)	0.03586	0.03587	0.03585
	(CLK * !RESET_B * SCD * !SCE)	0.02785	0.02785	0.02785
	(CLK * !RESET_B * SCD * !SCE)	0.03031	0.03032	0.03031
	(CLK * !RESET_B * !SCD * !SCE)	0.02784	0.02784	0.02784
	(CLK * !RESET_B * !SCD * !SCE)	0.03032	0.03033	0.03033
	(!CLK * RESET_B * SCD * SCE)	0.04799	0.04785	0.04619
	(!CLK * RESET_B * SCD * SCE)	0.05013	0.05001	0.04834
	(!CLK * RESET_B * SCD * !SCE)	0.05476	0.06583	0.25316
	(!CLK * RESET_B * SCD * !SCE)	0.05939	0.07047	0.25780
	(!CLK * RESET_B * !SCD * !SCE)	0.05473	0.06600	0.25572
	(!CLK * RESET_B * !SCD * !SCE)	0.05936	0.07065	0.26036
	(!CLK * !SCD * SCE)	0.04614	0.04612	0.04613
	(!CLK * !SCD * SCE)	0.04864	0.04863	0.04862
	(!CLK * !RESET_B * SCD * SCE)	0.03390	0.03389	0.03389
	(!CLK * !RESET_B * SCD * SCE)	0.03638	0.03639	0.03637
	(!CLK * !RESET_B * SCD * !SCE)	0.02836	0.02836	0.02837
	(!CLK * !RESET_B * SCD * !SCE)	0.03082	0.03084	0.03083
	(!CLK * !RESET_B * !SCD * !SCE)	0.02835	0.02835	0.02836
	(!CLK * !RESET_B * !SCD * !SCE)	0.03084	0.03084	0.03084

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)	0.04059	0.04762	0.18685
	(CLK * D * RESET_B * SCE)	0.03454	0.04156	0.18080
	(CLK * D * RESET_B * !SCE)	0.02939	0.02943	0.03321
	(CLK * D * RESET_B * !SCE)	0.02628	0.02628	0.03009
	(CLK * D * !RESET_B * SCE)	0.02117	0.02118	0.02114
	(CLK * D * !RESET_B * SCE)	0.01860	0.01858	0.01860
	(CLK * D * !RESET_B * !SCE)	0.01517	0.01517	0.01519
	(CLK * D * !RESET_B * !SCE)	0.01268	0.01267	0.01269
	(CLK * !D * RESET_B * SCE)	0.04439	0.05092	0.18862
	(CLK * !D * RESET_B * SCE)	0.03811	0.04462	0.18234
	(CLK * !D * !RESET_B * SCE)	0.02117	0.02118	0.02114
	(CLK * !D * !RESET_B * SCE)	0.01859	0.01858	0.01860
	(!D * RESET_B * !SCE)	0.01593	0.01595	0.01593
	(!D * RESET_B * !SCE)	0.01281	0.01280	0.01281
	(!D * !RESET_B * !SCE)	0.01531	0.01531	0.01530
	(!D * !RESET_B * !SCE)	0.01250	0.01250	0.01251
	(!CLK * D * RESET_B * SCE)	0.05574	0.06589	0.25457
	(!CLK * D * RESET_B * SCE)	0.04945	0.05959	0.24827
	(!CLK * D * RESET_B * !SCE)	0.03320	0.03324	0.03703
	(!CLK * D * RESET_B * !SCE)	0.03009	0.03009	0.03391
	(!CLK * D * !RESET_B * SCE)	0.02168	0.02169	0.02165
	(!CLK * D * !RESET_B * SCE)	0.01910	0.01909	0.01911
	(!CLK * D * !RESET_B * !SCE)	0.01568	0.01568	0.01570
	(!CLK * D * !RESET_B * !SCE)	0.01319	0.01318	0.01320
	(!CLK * !D * RESET_B * SCE)	0.05961	0.06936	0.25695
	(!CLK * !D * RESET_B * SCE)	0.05309	0.06285	0.25042
	(!CLK * !D * !RESET_B * SCE)	0.02168	0.02169	0.02164
	(!CLK * !D * !RESET_B * SCE)	0.01910	0.01908	0.01910

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.04440	0.05157	0.19105
	(CLK * D * RESET_B * SCE)	0.03842	0.04557	0.18506
	(CLK * D * RESET_B * !SCE)	0.03407	0.03410	0.03787
	(CLK * D * RESET_B * !SCE)	0.03097	0.03096	0.03476
	(CLK * D * !RESET_B * SCE)	0.02577	0.02577	0.02573
	(CLK * D * !RESET_B * SCE)	0.02320	0.02318	0.02320
	(CLK * D * !RESET_B * !SCE)	0.01979	0.01980	0.01981
	(CLK * D * !RESET_B * !SCE)	0.01731	0.01730	0.01732
	(CLK * !D * RESET_B * SCE)	0.04821	0.05486	0.19281
	(CLK * !D * RESET_B * SCE)	0.04200	0.04865	0.18662
	(CLK * !D * !RESET_B * SCE)	0.02577	0.02577	0.02573
	(CLK * !D * !RESET_B * SCE)	0.02319	0.02318	0.02320
	(!D * RESET_B * !SCE)	0.02056	0.02057	0.02055
	(!D * RESET_B * !SCE)	0.01743	0.01743	0.01744
	(!D * !RESET_B * !SCE)	0.01993	0.01993	0.01992
	(!D * !RESET_B * !SCE)	0.01713	0.01714	0.01714
	(!CLK * D * RESET_B * SCE)	0.04861	0.05870	0.24606
	(!CLK * D * RESET_B * SCE)	0.04241	0.05250	0.23987
	(!CLK * D * RESET_B * !SCE)	0.02687	0.02690	0.03067
	(!CLK * D * RESET_B * !SCE)	0.02377	0.02376	0.02756
	(!CLK * D * !RESET_B * SCE)	0.02627	0.02628	0.02624
	(!CLK * D * !RESET_B * SCE)	0.02370	0.02369	0.02371
	(!CLK * D * !RESET_B * !SCE)	0.02030	0.02031	0.02032
	(!CLK * D * !RESET_B * !SCE)	0.01782	0.01781	0.01783
	(!CLK * !D * RESET_B * SCE)	0.05249	0.06218	0.24848
	(!CLK * !D * RESET_B * SCE)	0.04606	0.05574	0.24205
	(!CLK * !D * !RESET_B * SCE)	0.02627	0.02628	0.02624
	(!CLK * !D * !RESET_B * SCE)	0.02370	0.02369	0.02371

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.05341	0.06062	0.20026
	(CLK * D * RESET_B * SCE)	0.04741	0.05461	0.19426
	(CLK * D * RESET_B * !SCE)	0.04301	0.04304	0.04681
	(CLK * D * RESET_B * !SCE)	0.03994	0.03994	0.04373
	(CLK * D * !RESET_B * SCE)	0.03473	0.03474	0.03470
	(CLK * D * !RESET_B * SCE)	0.03220	0.03219	0.03221
	(CLK * D * !RESET_B * !SCE)	0.02877	0.02877	0.02878
	(CLK * D * !RESET_B * !SCE)	0.02632	0.02631	0.02633
	(CLK * !D * RESET_B * SCE)	0.05721	0.06389	0.20205
	(CLK * !D * RESET_B * SCE)	0.05099	0.05766	0.19584
	(CLK * !D * !RESET_B * SCE)	0.03473	0.03474	0.03470
	(CLK * !D * !RESET_B * SCE)	0.03220	0.03219	0.03221
	(!D * RESET_B * !SCE)	0.02953	0.02954	0.02952
	(!D * RESET_B * !SCE)	0.02644	0.02643	0.02644
	(!D * !RESET_B * !SCE)	0.02890	0.02890	0.02890
	(!D * !RESET_B * !SCE)	0.02614	0.02615	0.02615
	(!CLK * D * RESET_B * SCE)	0.06698	0.07734	0.26695
	(!CLK * D * RESET_B * SCE)	0.06075	0.07109	0.26072
	(!CLK * D * RESET_B * !SCE)	0.04496	0.04499	0.04876
	(!CLK * D * RESET_B * !SCE)	0.04189	0.04188	0.04568
	(!CLK * D * !RESET_B * SCE)	0.03524	0.03525	0.03521
	(!CLK * D * !RESET_B * SCE)	0.03271	0.03270	0.03272
	(!CLK * D * !RESET_B * !SCE)	0.02927	0.02928	0.02929
	(!CLK * D * !RESET_B * !SCE)	0.02683	0.02682	0.02684
	(!CLK * !D * RESET_B * SCE)	0.07085	0.08078	0.26938
	(!CLK * !D * RESET_B * SCE)	0.06440	0.07431	0.26292
	(!CLK * !D * !RESET_B * SCE)	0.03524	0.03525	0.03521
	(!CLK * !D * !RESET_B * SCE)	0.03271	0.03269	0.03272

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)	0.02331	0.03138	0.18012
	(CLK * D * RESET_B * SCE)	0.02938	0.03745	0.18616
	(CLK * D * RESET_B * !SCE)	0.03125	0.03112	0.03029
	(CLK * D * RESET_B * !SCE)	0.03436	0.03426	0.03342
	(CLK * D * !RESET_B * SCE)	0.01979	0.01978	0.01978
	(CLK * D * !RESET_B * SCE)	0.02233	0.02235	0.02229
	(CLK * D * !RESET_B * !SCE)	0.01425	0.01424	0.01422
	(CLK * D * !RESET_B * !SCE)	0.01679	0.01682	0.01674
	(CLK * !D * RESET_B * SCE)	0.02271	0.03111	0.18125
	(CLK * !D * RESET_B * SCE)	0.02900	0.03741	0.18750
	(CLK * !D * !RESET_B * SCE)	0.01979	0.01978	0.01978
	(CLK * !D * !RESET_B * SCE)	0.02233	0.02235	0.02229
	(!D * RESET_B * !SCE)	0.01377	0.01365	0.01364
	(!D * RESET_B * !SCE)	0.01690	0.01680	0.01676
	(!D * !RESET_B * !SCE)	0.01410	0.01408	0.01403
	(!D * !RESET_B * !SCE)	0.01702	0.01701	0.01689
	(!CLK * D * RESET_B * SCE)	0.05082	0.06028	0.24541
	(!CLK * D * RESET_B * SCE)	0.05712	0.06660	0.25169
	(!CLK * D * RESET_B * !SCE)	0.03505	0.03493	0.03410
	(!CLK * D * RESET_B * !SCE)	0.03817	0.03807	0.03722
	(!CLK * D * !RESET_B * SCE)	0.02030	0.02029	0.02029
	(!CLK * D * !RESET_B * SCE)	0.02284	0.02287	0.02281
	(!CLK * D * !RESET_B * !SCE)	0.01476	0.01476	0.01474
	(!CLK * D * !RESET_B * !SCE)	0.01731	0.01733	0.01725
	(!CLK * !D * RESET_B * SCE)	0.05053	0.06046	0.24784
	(!CLK * !D * RESET_B * SCE)	0.05706	0.06700	0.25433
	(!CLK * !D * !RESET_B * SCE)	0.02030	0.02029	0.02029
	(!CLK * !D * !RESET_B * SCE)	0.02284	0.02287	0.02281

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.02793	0.03610	0.18501
	(CLK * D * RESET_B * SCE)	0.03391	0.04210	0.19097
	(CLK * D * RESET_B * !SCE)	0.03586	0.03574	0.03491
	(CLK * D * RESET_B * !SCE)	0.03899	0.03887	0.03802
	(CLK * D * !RESET_B * SCE)	0.02447	0.02446	0.02446
	(CLK * D * !RESET_B * SCE)	0.02701	0.02703	0.02697
	(CLK * D * !RESET_B * !SCE)	0.01890	0.01890	0.01887
	(CLK * D * !RESET_B * !SCE)	0.02143	0.02144	0.02138
	(CLK * !D * RESET_B * SCE)	0.02732	0.03583	0.18613
	(CLK * !D * RESET_B * SCE)	0.03353	0.04205	0.19232
	(CLK * !D * !RESET_B * SCE)	0.02447	0.02446	0.02446
	(CLK * !D * !RESET_B * SCE)	0.02701	0.02703	0.02697
	(!D * RESET_B * !SCE)	0.01843	0.01831	0.01830
	(!D * RESET_B * !SCE)	0.02154	0.02144	0.02140
	(!D * !RESET_B * !SCE)	0.01876	0.01874	0.01869
	(!D * !RESET_B * !SCE)	0.02166	0.02165	0.02153
	(!CLK * D * RESET_B * SCE)	0.04470	0.05400	0.23702
	(!CLK * D * RESET_B * SCE)	0.05091	0.06022	0.24320
	(!CLK * D * RESET_B * !SCE)	0.02865	0.02853	0.02770
	(!CLK * D * RESET_B * !SCE)	0.03178	0.03167	0.03081
	(!CLK * D * !RESET_B * SCE)	0.02499	0.02499	0.02498
	(!CLK * D * !RESET_B * SCE)	0.02752	0.02753	0.02749
	(!CLK * D * !RESET_B * !SCE)	0.01941	0.01941	0.01939
	(!CLK * D * !RESET_B * !SCE)	0.02195	0.02195	0.02190
	(!CLK * !D * RESET_B * SCE)	0.04439	0.05416	0.23936
	(!CLK * !D * RESET_B * SCE)	0.05083	0.06061	0.24577
	(!CLK * !D * !RESET_B * SCE)	0.02499	0.02499	0.02498
	(!CLK * !D * !RESET_B * SCE)	0.02752	0.02752	0.02749

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.03694	0.04511	0.19421
	(CLK * D * RESET_B * SCE)	0.04294	0.05113	0.20019
	(CLK * D * RESET_B * !SCE)	0.04487	0.04475	0.04391
	(CLK * D * RESET_B * !SCE)	0.04795	0.04784	0.04699
	(CLK * D * !RESET_B * SCE)	0.03345	0.03344	0.03344
	(CLK * D * !RESET_B * SCE)	0.03594	0.03597	0.03591
	(CLK * D * !RESET_B * !SCE)	0.02787	0.02787	0.02785
	(CLK * D * !RESET_B * !SCE)	0.03037	0.03038	0.03032
	(CLK * !D * RESET_B * SCE)	0.03625	0.04478	0.19528
	(CLK * !D * RESET_B * SCE)	0.04247	0.05102	0.20149
	(CLK * !D * !RESET_B * SCE)	0.03345	0.03344	0.03344
	(CLK * !D * !RESET_B * SCE)	0.03594	0.03596	0.03591
	(!D * RESET_B * !SCE)	0.02740	0.02728	0.02727
	(!D * RESET_B * !SCE)	0.03048	0.03038	0.03034
	(!D * !RESET_B * !SCE)	0.02773	0.02771	0.02766
	(!D * !RESET_B * !SCE)	0.03060	0.03059	0.03047
	(!CLK * D * RESET_B * SCE)	0.06337	0.07279	0.25726
	(!CLK * D * RESET_B * SCE)	0.06961	0.07904	0.26346
	(!CLK * D * RESET_B * !SCE)	0.04681	0.04669	0.04585
	(!CLK * D * RESET_B * !SCE)	0.04989	0.04979	0.04893
	(!CLK * D * !RESET_B * SCE)	0.03396	0.03396	0.03395
	(!CLK * D * !RESET_B * SCE)	0.03646	0.03646	0.03642
	(!CLK * D * !RESET_B * !SCE)	0.02839	0.02838	0.02836
	(!CLK * D * !RESET_B * !SCE)	0.03088	0.03089	0.03083
	(!CLK * !D * RESET_B * SCE)	0.06298	0.07286	0.25959
	(!CLK * !D * RESET_B * SCE)	0.06943	0.07933	0.26603
	(!CLK * !D * !RESET_B * SCE)	0.03396	0.03396	0.03395
	(!CLK * !D * !RESET_B * SCE)	0.03646	0.03645	0.03642

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)	0.03834	0.05127	0.25969
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03045	0.04336	0.25183
	(CLK * D * RESET_B * !SCD)	0.03099	0.04528	0.27663
	(CLK * D * RESET_B * !SCD)	0.02584	0.04011	0.27145
	(CLK * !D * RESET_B * SCD)	0.04830	0.06841	0.40564
	(CLK * !D * RESET_B * SCD)	0.03814	0.05824	0.39546
	(!CLK * D * RESET_B * SCD)	0.04215	0.05507	0.26349
	(!CLK * D * RESET_B * SCD)	0.03426	0.04716	0.25563
	(!CLK * D * RESET_B * !SCD)	0.05826	0.07223	0.30431
	(!CLK * D * RESET_B * !SCD)	0.05335	0.06732	0.29934
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02810	0.04121	0.24723
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02069	0.03379	0.23982
	(!CLK * !D * RESET_B * SCD)	0.06339	0.08731	0.47917
	(!CLK * !D * RESET_B * SCD)	0.05300	0.07689	0.46877

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.04303	0.05617	0.26703
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03505	0.04818	0.25908
	(CLK * D * RESET_B * !SCD)	0.03552	0.05006	0.28384
	(CLK * D * RESET_B * !SCD)	0.03021	0.04471	0.27849
	(CLK * !D * RESET_B * SCD)	0.05210	0.07287	0.41648
	(CLK * !D * RESET_B * SCD)	0.04193	0.06264	0.40628
	(!CLK * D * RESET_B * SCD)	0.03583	0.04897	0.25983
	(!CLK * D * RESET_B * SCD)	0.02785	0.04097	0.25188
	(!CLK * D * RESET_B * !SCD)	0.05205	0.06629	0.30013
	(!CLK * D * RESET_B * !SCD)	0.04697	0.06116	0.29502
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.03266	0.04608	0.25425
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02516	0.03856	0.24675
	(!CLK * !D * RESET_B * SCD)	0.05625	0.08050	0.47688
	(!CLK * !D * RESET_B * SCD)	0.04588	0.07009	0.46646

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.05202	0.06517	0.27603
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.04402	0.05716	0.26807
	(CLK * D * RESET_B * !SCD)	0.04452	0.05907	0.29283
	(CLK * D * RESET_B * !SCD)	0.03925	0.05376	0.28751
	(CLK * !D * RESET_B * SCD)	0.06115	0.08193	0.42573
	(CLK * !D * RESET_B * SCD)	0.05092	0.07164	0.41546
	(!CLK * D * RESET_B * SCD)	0.05396	0.06711	0.27798
	(!CLK * D * RESET_B * SCD)	0.04597	0.05910	0.27001
	(!CLK * D * RESET_B * !SCD)	0.07072	0.08494	0.31876
	(!CLK * D * RESET_B * !SCD)	0.06568	0.07986	0.31366
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.04162	0.05495	0.26322
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.03411	0.04742	0.25571
	(!CLK * !D * RESET_B * SCD)	0.07465	0.09918	0.49795
	(!CLK * !D * RESET_B * SCD)	0.06419	0.08867	0.48746

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)**	0.02684	0.04076	0.25225
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03470	0.04865	0.26014
	(CLK * D * RESET_B * !SCD)	0.03992	0.05336	0.27249
	(CLK * D * RESET_B * !SCD)	0.04511	0.05853	0.27744
	(CLK * !D * RESET_B * SCD)	0.01620	0.03817	0.39255
	(CLK * !D * RESET_B * SCD)	0.02637	0.04836	0.40274
	(!CLK * D * RESET_B * SCD)	0.03064	0.04456	0.25605
	(!CLK * D * RESET_B * SCD)	0.03851	0.05245	0.26394
	(!CLK * D * RESET_B * !SCD)	0.05479	0.06879	0.29801
	(!CLK * D * RESET_B * !SCD)	0.05974	0.07374	0.30273
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01466	0.02861	0.23987
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02207	0.03604	0.24727
	(!CLK * !D * RESET_B * SCD)	0.04294	0.06632	0.45824
	(!CLK * !D * RESET_B * SCD)	0.05335	0.07674	0.46866

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.03131	0.04544	0.25939
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.03928	0.05344	0.26738
	(CLK * D * RESET_B * !SCD)	0.04340	0.05719	0.27888
	(CLK * D * RESET_B * !SCD)	0.04873	0.06251	0.28400
	(CLK * !D * RESET_B * SCD)	0.02083	0.04343	0.40424
	(CLK * !D * RESET_B * SCD)	0.03100	0.05365	0.41445
	(!CLK * D * RESET_B * SCD)	0.02410	0.03823	0.25219
	(!CLK * D * RESET_B * SCD)	0.03207	0.04624	0.26017
	(!CLK * D * RESET_B * !SCD)	0.04734	0.06157	0.29274
	(!CLK * D * RESET_B * !SCD)	0.05245	0.06670	0.29764
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01926	0.03342	0.24693
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02674	0.04088	0.25442
	(!CLK * !D * RESET_B * SCD)	0.03680	0.06055	0.45625
	(!CLK * !D * RESET_B * SCD)	0.04719	0.07100	0.46667

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.04024	0.05438	0.26833
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.04822	0.06240	0.27634
	(CLK * D * RESET_B * !SCD)	0.05241	0.06619	0.28781
	(CLK * D * RESET_B * !SCD)	0.05770	0.07148	0.29289
	(CLK * !D * RESET_B * SCD)	0.02973	0.05233	0.41332
	(CLK * !D * RESET_B * SCD)	0.03996	0.06263	0.42359
	(!CLK * D * RESET_B * SCD)	0.04218	0.05632	0.27027
	(!CLK * D * RESET_B * SCD)	0.05016	0.06434	0.27828
	(!CLK * D * RESET_B * !SCD)	0.06571	0.07996	0.31178
	(!CLK * D * RESET_B * !SCD)	0.07077	0.08506	0.31663
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.02821	0.04237	0.25591
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.03570	0.04988	0.26340
	(!CLK * !D * RESET_B * SCD)	0.05530	0.07918	0.47641
	(!CLK * !D * RESET_B * SCD)	0.06576	0.08971	0.48690

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)**	0.04468	0.05309	0.23310
	(CLK * D * SCD * SCE * !Q)	0.03092	0.03928	0.21929
	(CLK * D * SCD * !SCE * !Q)	0.04102	0.04957	0.22814
	(CLK * D * SCD * !SCE * !Q)	0.02783	0.03629	0.21488
	(CLK * D * !SCD * SCE * !Q)	0.02486	0.02495	0.02488
	(CLK * D * !SCD * SCE * !Q)	0.01490	0.01482	0.01486
	(CLK * D * !SCD * !SCE * !Q)	0.04533	0.05410	0.23001
	(CLK * D * !SCD * !SCE * !Q)	0.03290	0.04158	0.21755
	(CLK * !D * SCD * SCE * !Q)	0.04849	0.05641	0.23482
	(CLK * !D * SCD * SCE * !Q)	0.03450	0.04237	0.22079
	(CLK * !D * SCD * !SCE * !Q)	0.01913	0.01916	0.01911
	(CLK * !D * SCD * !SCE * !Q)	0.00909	0.00906	0.00910
	(CLK * !D * !SCD * SCE * !Q)	0.02488	0.02492	0.02486
	(CLK * !D * !SCD * SCE * !Q)	0.01483	0.01480	0.01485
	(CLK * !D * !SCD * !SCE * !Q)	0.01910	0.01913	0.01908
	(CLK * !D * !SCD * !SCE * !Q)	0.00905	0.00902	0.00907
	(!CLK * D * SCD * SCE * !Q)	0.05765	0.07014	0.34847
	(!CLK * D * SCD * SCE * !Q)	0.04364	0.05613	0.33444
	(!CLK * D * SCD * !SCE * !Q)	0.05375	0.06647	0.34662
	(!CLK * D * SCD * !SCE * !Q)	0.04030	0.05300	0.33314
	(!CLK * D * !SCD * SCE * !Q)	0.02536	0.02543	0.02537
	(!CLK * D * !SCD * SCE * !Q)	0.01536	0.01532	0.01536
	(!CLK * D * !SCD * !SCE * !Q)	0.05801	0.07107	0.34843
	(!CLK * D * !SCD * !SCE * !Q)	0.04534	0.05832	0.33573
	(!CLK * !D * SCD * SCE * !Q)	0.06153	0.07358	0.35071
	(!CLK * !D * SCD * SCE * !Q)	0.04730	0.05930	0.33646
	(!CLK * !D * SCD * !SCE * !Q)	0.01958	0.01965	0.01960
	(!CLK * !D * SCD * !SCE * !Q)	0.00960	0.00956	0.00960
	(!CLK * !D * !SCD * SCE * !Q)	0.02535	0.02540	0.02534
	(!CLK * !D * !SCD * SCE * !Q)	0.01532	0.01530	0.01534
	(!CLK * !D * !SCD * !SCE * !Q)	0.01957	0.01962	0.01957
	(!CLK * !D * !SCD * !SCE * !Q)	0.00954	0.00952	0.00956

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.04847	0.05714	0.23736
	(CLK * D * SCD * SCE * !Q)	0.03471	0.04335	0.22359
	(CLK * D * SCD * !SCE * !Q)	0.04461	0.05347	0.23226
	(CLK * D * SCD * !SCE * !Q)	0.03142	0.04024	0.21905
	(CLK * D * !SCD * SCE * !Q)	0.02955	0.02960	0.02953
	(CLK * D * !SCD * SCE * !Q)	0.01946	0.01943	0.01947
	(CLK * D * !SCD * !SCE * !Q)	0.04892	0.05801	0.23414
	(CLK * D * !SCD * !SCE * !Q)	0.03647	0.04552	0.22171
	(CLK * !D * SCD * SCE * !Q)	0.05228	0.06047	0.23908
	(CLK * !D * SCD * SCE * !Q)	0.03829	0.04643	0.22509
	(CLK * !D * SCD * !SCE * !Q)	0.02377	0.02381	0.02375
	(CLK * !D * SCD * !SCE * !Q)	0.01369	0.01367	0.01371
	(CLK * !D * !SCD * SCE * !Q)	0.02952	0.02957	0.02950
	(CLK * !D * !SCD * SCE * !Q)	0.01944	0.01941	0.01945
	(CLK * !D * !SCD * !SCE * !Q)	0.02374	0.02378	0.02372
	(CLK * !D * !SCD * !SCE * !Q)	0.01365	0.01363	0.01367
	(!CLK * D * SCD * SCE * !Q)	0.06142	0.07406	0.34989
	(!CLK * D * SCD * SCE * !Q)	0.04744	0.06003	0.33594
	(!CLK * D * SCD * !SCE * !Q)	0.05731	0.07018	0.34774
	(!CLK * D * SCD * !SCE * !Q)	0.04390	0.05677	0.33435
	(!CLK * D * !SCD * SCE * !Q)	0.03000	0.03005	0.02999
	(!CLK * D * !SCD * SCE * !Q)	0.01991	0.01989	0.01993
	(!CLK * D * !SCD * !SCE * !Q)	0.06157	0.07477	0.34952
	(!CLK * D * !SCD * !SCE * !Q)	0.04891	0.06207	0.33688
	(!CLK * !D * SCD * SCE * !Q)	0.06530	0.07741	0.35209
	(!CLK * !D * SCD * SCE * !Q)	0.05109	0.06321	0.33788
	(!CLK * !D * SCD * !SCE * !Q)	0.02422	0.02426	0.02421
	(!CLK * !D * SCD * !SCE * !Q)	0.01415	0.01413	0.01417
	(!CLK * !D * !SCD * SCE * !Q)	0.02997	0.03002	0.02996
	(!CLK * !D * !SCD * SCE * !Q)	0.01989	0.01988	0.01992
	(!CLK * !D * !SCD * !SCE * !Q)	0.02419	0.02423	0.02418
	(!CLK * !D * !SCD * !SCE * !Q)	0.01411	0.01410	0.01413

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.05746	0.06616	0.24639
	(CLK * D * SCD * SCE * !Q)	0.04379	0.05240	0.23266
	(CLK * D * SCD * !SCE * !Q)	0.05363	0.06247	0.24124
	(CLK * D * SCD * !SCE * !Q)	0.04048	0.04927	0.22806
	(CLK * D * !SCD * SCE * !Q)	0.03842	0.03851	0.03844
	(CLK * D * !SCD * SCE * !Q)	0.02851	0.02843	0.02848
	(CLK * D * !SCD * !SCE * !Q)	0.05793	0.06701	0.24310
	(CLK * D * !SCD * !SCE * !Q)	0.04552	0.05455	0.23070
	(CLK * !D * SCD * SCE * !Q)	0.06128	0.06949	0.24814
	(CLK * !D * SCD * SCE * !Q)	0.04738	0.05550	0.23419
	(CLK * !D * SCD * !SCE * !Q)	0.03268	0.03272	0.03267
	(CLK * !D * SCD * !SCE * !Q)	0.02269	0.02267	0.02271
	(CLK * !D * !SCD * SCE * !Q)	0.03844	0.03848	0.03842
	(CLK * !D * !SCD * SCE * !Q)	0.02844	0.02841	0.02846
	(CLK * !D * !SCD * !SCE * !Q)	0.03265	0.03269	0.03263
	(CLK * !D * !SCD * !SCE * !Q)	0.02266	0.02263	0.02267
	(!CLK * D * SCD * SCE * !Q)	0.07059	0.08341	0.36084
	(!CLK * D * SCD * SCE * !Q)	0.05668	0.06945	0.34688
	(!CLK * D * SCD * !SCE * !Q)	0.06649	0.07955	0.35890
	(!CLK * D * SCD * !SCE * !Q)	0.05315	0.06615	0.34551
	(!CLK * D * !SCD * SCE * !Q)	0.03890	0.03895	0.03889
	(!CLK * D * !SCD * SCE * !Q)	0.02891	0.02889	0.02893
	(!CLK * D * !SCD * !SCE * !Q)	0.07073	0.08412	0.36064
	(!CLK * D * !SCD * !SCE * !Q)	0.05816	0.07146	0.34799
	(!CLK * !D * SCD * SCE * !Q)	0.07446	0.08677	0.36314
	(!CLK * !D * SCD * SCE * !Q)	0.06032	0.07255	0.34896
	(!CLK * !D * SCD * !SCE * !Q)	0.03312	0.03317	0.03312
	(!CLK * !D * SCD * !SCE * !Q)	0.02314	0.02313	0.02317
	(!CLK * !D * !SCD * SCE * !Q)	0.03887	0.03891	0.03887
	(!CLK * !D * !SCD * SCE * !Q)	0.02888	0.02888	0.02891
	(!CLK * !D * !SCD * !SCE * !Q)	0.03307	0.03314	0.03308
	(!CLK * !D * !SCD * !SCE * !Q)	0.02313	0.02309	0.02313

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)**	0.02182	0.03278	0.22256
	(CLK * D * SCD * SCE * !Q)	0.03564	0.04667	0.23630
	(CLK * D * SCD * !SCE * !Q)	0.01451	0.02548	0.21561
	(CLK * D * SCD * !SCE * !Q)	0.02775	0.03879	0.22879
	(CLK * D * !SCD * SCE * !Q)	0.01659	0.01627	0.01622
	(CLK * D * !SCD * SCE * !Q)	0.02658	0.02636	0.02623
	(CLK * D * !SCD * !SCE * !Q)	0.01411	0.02550	0.21759
	(CLK * D * !SCD * !SCE * !Q)	0.02660	0.03808	0.23005
	(CLK * !D * SCD * SCE * !Q)	0.02123	0.03254	0.22357
	(CLK * !D * SCD * SCE * !Q)	0.03527	0.04664	0.23756
	(CLK * !D * SCD * !SCE * !Q)	0.01088	0.01050	0.01048
	(CLK * !D * SCD * !SCE * !Q)	0.02085	0.02054	0.02048
	(CLK * !D * !SCD * SCE * !Q)	0.01655	0.01624	0.01620
	(CLK * !D * !SCD * SCE * !Q)	0.02652	0.02633	0.02621
	(CLK * !D * !SCD * !SCE * !Q)	0.01082	0.01047	0.01045
	(CLK * !D * !SCD * !SCE * !Q)	0.02080	0.02051	0.02046
	(!CLK * D * SCD * SCE * !Q)	0.03276	0.05019	0.35031
	(!CLK * D * SCD * SCE * !Q)	0.04680	0.06426	0.36429
	(!CLK * D * SCD * !SCE * !Q)	0.02532	0.04259	0.34482
	(!CLK * D * SCD * !SCE * !Q)	0.03879	0.05610	0.35824
	(!CLK * D * !SCD * SCE * !Q)	0.01699	0.01671	0.01671
	(!CLK * D * !SCD * SCE * !Q)	0.02697	0.02677	0.02671
	(!CLK * D * !SCD * !SCE * !Q)	0.02483	0.04248	0.34648
	(!CLK * D * !SCD * !SCE * !Q)	0.03755	0.05526	0.35917
	(!CLK * !D * SCD * SCE * !Q)	0.03220	0.05015	0.35197
	(!CLK * !D * SCD * SCE * !Q)	0.04646	0.06449	0.36618
	(!CLK * !D * SCD * !SCE * !Q)	0.01128	0.01096	0.01096
	(!CLK * !D * SCD * !SCE * !Q)	0.02125	0.02102	0.02096
	(!CLK * !D * !SCD * SCE * !Q)	0.01694	0.01665	0.01668
	(!CLK * !D * !SCD * SCE * !Q)	0.02691	0.02678	0.02669
	(!CLK * !D * !SCD * !SCE * !Q)	0.01122	0.01093	0.01093
	(!CLK * !D * !SCD * !SCE * !Q)	0.02119	0.02099	0.02094

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.02632	0.03748	0.22736
	(CLK * D * SCD * SCE * !Q)	0.04010	0.05134	0.24106
	(CLK * D * SCD * !SCE * !Q)	0.01912	0.03031	0.22052
	(CLK * D * SCD * !SCE * !Q)	0.03232	0.04356	0.23367
	(CLK * D * !SCD * SCE * !Q)	0.02122	0.02090	0.02086
	(CLK * D * !SCD * SCE * !Q)	0.03125	0.03105	0.03091
	(CLK * D * !SCD * !SCE * !Q)	0.01872	0.03033	0.22250
	(CLK * D * !SCD * !SCE * !Q)	0.03116	0.04285	0.23492
	(CLK * !D * SCD * SCE * !Q)	0.02573	0.03726	0.22838
	(CLK * !D * SCD * SCE * !Q)	0.03973	0.05128	0.24229
	(CLK * !D * SCD * !SCE * !Q)	0.01551	0.01514	0.01511
	(CLK * !D * SCD * !SCE * !Q)	0.02552	0.02529	0.02515
	(CLK * !D * !SCD * SCE * !Q)	0.02118	0.02087	0.02084
	(CLK * !D * !SCD * SCE * !Q)	0.03119	0.03102	0.03088
	(CLK * !D * !SCD * !SCE * !Q)	0.01545	0.01512	0.01508
	(CLK * !D * !SCD * !SCE * !Q)	0.02547	0.02526	0.02513
	(!CLK * D * SCD * SCE * !Q)	0.03791	0.05496	0.35106
	(!CLK * D * SCD * SCE * !Q)	0.05190	0.06899	0.36497
	(!CLK * D * SCD * !SCE * !Q)	0.03058	0.04747	0.34555
	(!CLK * D * SCD * !SCE * !Q)	0.04399	0.06097	0.35888
	(!CLK * D * !SCD * SCE * !Q)	0.02165	0.02138	0.02137
	(!CLK * D * !SCD * SCE * !Q)	0.03167	0.03148	0.03142
	(!CLK * D * !SCD * !SCE * !Q)	0.03010	0.04738	0.34716
	(!CLK * D * !SCD * !SCE * !Q)	0.04275	0.06011	0.35979
	(!CLK * !D * SCD * SCE * !Q)	0.03735	0.05496	0.35269
	(!CLK * !D * SCD * SCE * !Q)	0.05155	0.06922	0.36680
	(!CLK * !D * SCD * !SCE * !Q)	0.01594	0.01563	0.01562
	(!CLK * !D * SCD * !SCE * !Q)	0.02594	0.02572	0.02566
	(!CLK * !D * !SCD * SCE * !Q)	0.02161	0.02135	0.02135
	(!CLK * !D * !SCD * SCE * !Q)	0.03162	0.03145	0.03139
	(!CLK * !D * !SCD * !SCE * !Q)	0.01588	0.01560	0.01559
	(!CLK * !D * !SCD * !SCE * !Q)	0.02589	0.02574	0.02564

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.03532	0.04646	0.23635
	(CLK * D * SCD * SCE * !Q)	0.04905	0.06021	0.25002
	(CLK * D * SCD * !SCE * !Q)	0.02811	0.03925	0.22944
	(CLK * D * SCD * !SCE * !Q)	0.04127	0.05250	0.24255
	(CLK * D * !SCD * SCE * !Q)	0.03025	0.02993	0.02989
	(CLK * D * !SCD * SCE * !Q)	0.04019	0.03997	0.03985
	(CLK * D * !SCD * !SCE * !Q)	0.02771	0.03929	0.23142
	(CLK * D * !SCD * !SCE * !Q)	0.04011	0.05174	0.24380
	(CLK * !D * SCD * SCE * !Q)	0.03464	0.04617	0.23733
	(CLK * !D * SCD * SCE * !Q)	0.04860	0.06016	0.25120
	(CLK * !D * SCD * !SCE * !Q)	0.02454	0.02416	0.02414
	(CLK * !D * SCD * !SCE * !Q)	0.03446	0.03414	0.03409
	(CLK * !D * !SCD * SCE * !Q)	0.03021	0.02989	0.02987
	(CLK * !D * !SCD * SCE * !Q)	0.04013	0.03987	0.03982
	(CLK * !D * !SCD * !SCE * !Q)	0.02448	0.02414	0.02411
	(CLK * !D * !SCD * !SCE * !Q)	0.03440	0.03411	0.03407
	(!CLK * D * SCD * SCE * !Q)	0.04660	0.06397	0.36223
	(!CLK * D * SCD * SCE * !Q)	0.06056	0.07800	0.37612
	(!CLK * D * SCD * !SCE * !Q)	0.03925	0.05651	0.35680
	(!CLK * D * SCD * !SCE * !Q)	0.05264	0.06999	0.37013
	(!CLK * D * !SCD * SCE * !Q)	0.03069	0.03041	0.03041
	(!CLK * D * !SCD * SCE * !Q)	0.04062	0.04043	0.04037
	(!CLK * D * !SCD * !SCE * !Q)	0.03878	0.05645	0.35844
	(!CLK * D * !SCD * !SCE * !Q)	0.05141	0.06915	0.37105
	(!CLK * !D * SCD * SCE * !Q)	0.04595	0.06392	0.36382
	(!CLK * !D * SCD * SCE * !Q)	0.06013	0.07815	0.37795
	(!CLK * !D * SCD * !SCE * !Q)	0.02497	0.02465	0.02466
	(!CLK * !D * SCD * !SCE * !Q)	0.03489	0.03467	0.03461
	(!CLK * !D * !SCD * SCE * !Q)	0.03065	0.03040	0.03039
	(!CLK * !D * !SCD * SCE * !Q)	0.04057	0.04037	0.04034
	(!CLK * !D * !SCD * !SCE * !Q)	0.02492	0.02463	0.02463
	(!CLK * !D * !SCD * !SCE * !Q)	0.03484	0.03465	0.03459

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)	0.05317	0.07567	0.45229
	(D * RESET_B * SCD * SCE * Q)	0.04735	0.06987	0.44647
	(D * RESET_B * SCD * !SCE * Q)	0.04987	0.07238	0.44899
	(D * RESET_B * SCD * !SCE * Q)	0.04405	0.06658	0.44318
	(D * RESET_B * !SCD * !SCE * Q)	0.05507	0.07758	0.45419
	(D * RESET_B * !SCD * !SCE * Q)	0.04925	0.07177	0.44838
	(D * !SCD * SCE * !Q)	0.03859	0.06115	0.43817
	(D * !SCD * SCE * !Q)	0.03277	0.05531	0.43235
	(D * !RESET_B * SCD * SCE * !Q)	0.03852	0.06107	0.43808
	(D * !RESET_B * SCD * SCE * !Q)	0.03270	0.05524	0.43227
	(D * !RESET_B * SCD * !SCE * !Q)	0.03275	0.05531	0.43231
	(D * !RESET_B * SCD * !SCE * !Q)	0.02693	0.04948	0.42650
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03275	0.05531	0.43231
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02693	0.04948	0.42650
	(!D * RESET_B * SCD * SCE * Q)	0.05597	0.07848	0.45509
	(!D * RESET_B * SCD * SCE * Q)	0.05014	0.07267	0.44927
	(!D * !SCE * !Q)	0.03283	0.05539	0.43241
	(!D * !SCE * !Q)	0.02701	0.04956	0.42660
	(!D * !SCD * SCE * !Q)	0.03856	0.06112	0.43814
	(!D * !SCD * SCE * !Q)	0.03274	0.05529	0.43233
	(!D * !RESET_B * SCD * SCE * !Q)	0.03852	0.06107	0.43807
	(!D * !RESET_B * SCD * SCE * !Q)	0.03270	0.05524	0.43227

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.04678	0.06931	0.44641
	(D * RESET_B * SCD * SCE * Q)	0.04091	0.06345	0.44056
	(D * RESET_B * SCD * !SCE * Q)	0.04348	0.06602	0.44312
	(D * RESET_B * SCD * !SCE * Q)	0.03762	0.06016	0.43726
	(D * RESET_B * !SCD * !SCE * Q)	0.04867	0.07121	0.44831
	(D * RESET_B * !SCD * !SCE * Q)	0.04281	0.06535	0.44245
	(D * !SCD * SCE * !Q)	0.04329	0.06587	0.44333
	(D * !SCD * SCE * !Q)	0.03743	0.05999	0.43748
	(D * !RESET_B * SCD * SCE * !Q)	0.04322	0.06579	0.44324
	(D * !RESET_B * SCD * SCE * !Q)	0.03736	0.05992	0.43739
	(D * !RESET_B * SCD * !SCE * !Q)	0.03745	0.06003	0.43747
	(D * !RESET_B * SCD * !SCE * !Q)	0.03159	0.05415	0.43162
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03745	0.06003	0.43747
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03159	0.05415	0.43162
	(!D * RESET_B * SCD * SCE * Q)	0.04958	0.07212	0.44922
	(!D * RESET_B * SCD * SCE * Q)	0.04372	0.06626	0.44336
	(!D * !SCE * !Q)	0.03753	0.06011	0.43757
	(!D * !SCE * !Q)	0.03167	0.05424	0.43172
	(!D * !SCD * SCE * !Q)	0.04327	0.06585	0.44331
	(!D * !SCD * SCE * !Q)	0.03741	0.05997	0.43745
	(!D * !RESET_B * SCD * SCE * !Q)	0.04322	0.06579	0.44324
	(!D * !RESET_B * SCD * SCE * !Q)	0.03736	0.05992	0.43739

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.06464	0.08720	0.46386
	(D * RESET_B * SCD * SCE * Q)	0.05878	0.08134	0.45801
	(D * RESET_B * SCD * !SCE * Q)	0.06134	0.08390	0.46056
	(D * RESET_B * SCD * !SCE * Q)	0.05548	0.07805	0.45471
	(D * RESET_B * !SCD * !SCE * Q)	0.06653	0.08909	0.46576
	(D * RESET_B * !SCD * !SCE * Q)	0.06067	0.08324	0.45991
	(D * !SCD * SCE * !Q)	0.05197	0.07458	0.45164
	(D * !SCD * SCE * !Q)	0.04611	0.06871	0.44579
	(D * !RESET_B * SCD * SCE * !Q)	0.05190	0.07458	0.45155
	(D * !RESET_B * SCD * SCE * !Q)	0.04605	0.06870	0.44571
	(D * !RESET_B * SCD * !SCE * !Q)	0.04613	0.06873	0.44578
	(D * !RESET_B * SCD * !SCE * !Q)	0.04028	0.06286	0.43994
	(D * !RESET_B * !SCD * !SCE * !Q)	0.04613	0.06873	0.44578
	(D * !RESET_B * !SCD * !SCE * !Q)	0.04027	0.06286	0.43994
	(!D * RESET_B * SCD * SCE * Q)	0.06744	0.09000	0.46666
	(!D * RESET_B * SCD * SCE * Q)	0.06158	0.08415	0.46082
	(!D * !SCE * !Q)	0.04621	0.06882	0.44588
	(!D * !SCE * !Q)	0.04035	0.06295	0.44004
	(!D * !SCD * SCE * !Q)	0.05195	0.07455	0.45162
	(!D * !SCD * SCE * !Q)	0.04609	0.06868	0.44577
	(!D * !RESET_B * SCD * SCE * !Q)	0.05190	0.07450	0.45155
	(!D * !RESET_B * SCD * SCE * !Q)	0.04605	0.06863	0.44571

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)**	0.04398	0.06753	0.44524
	(D * RESET_B * SCD * SCE * Q)	0.04977	0.07337	0.45105
	(D * RESET_B * SCD * SCE * !Q)	0.05090	0.07554	0.47697
	(D * RESET_B * SCD * SCE * !Q)	0.05646	0.08111	0.48255
	(D * RESET_B * SCD * !SCE * Q)	0.04068	0.06422	0.44194
	(D * RESET_B * SCD * !SCE * Q)	0.04647	0.07006	0.44775
	(D * RESET_B * SCD * !SCE * !Q)	0.04770	0.07225	0.47339
	(D * RESET_B * SCD * !SCE * !Q)	0.05326	0.07784	0.47896
	(D * RESET_B * !SCD * SCE * Q)	0.05702	0.08100	0.47040
	(D * RESET_B * !SCD * SCE * Q)	0.06308	0.08708	0.47647
	(D * RESET_B * !SCD * !SCE * Q)	0.04587	0.06942	0.44712
	(D * RESET_B * !SCD * !SCE * Q)	0.05166	0.07526	0.45294
	(D * RESET_B * !SCD * !SCE * !Q)	0.05287	0.07741	0.47843
	(D * RESET_B * !SCD * !SCE * !Q)	0.05844	0.08300	0.48401
	(D * !SCD * SCE * !Q)	0.03012	0.05366	0.43098
	(D * !SCD * SCE * !Q)	0.03592	0.05950	0.43680
	(D * !RESET_B * SCD * SCE * !Q)	0.03004	0.05357	0.43091
	(D * !RESET_B * SCD * SCE * !Q)	0.03584	0.05941	0.43673
	(D * !RESET_B * SCD * !SCE * !Q)	0.02427	0.04781	0.42515
	(D * !RESET_B * SCD * !SCE * !Q)	0.03007	0.05362	0.43096
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02427	0.04780	0.42515
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03007	0.05364	0.43096
	(!D * RESET_B * SCD * SCE * Q)	0.04677	0.07033	0.44803
	(!D * RESET_B * SCD * SCE * Q)	0.05257	0.07617	0.45385
	(!D * RESET_B * SCD * SCE * !Q)	0.05372	0.07834	0.47968
	(!D * RESET_B * SCD * SCE * !Q)	0.05928	0.08390	0.48526
	(!D * RESET_B * !SCE * Q)	0.05122	0.07515	0.46459
	(!D * RESET_B * !SCE * Q)	0.05725	0.08120	0.47064
	(!D * RESET_B * !SCD * SCE * Q)	0.05700	0.08101	0.47043
	(!D * RESET_B * !SCD * SCE * Q)	0.06305	0.08709	0.47650
	(!D * !SCE * !Q)	0.02435	0.04790	0.42523
	(!D * !SCE * !Q)	0.03016	0.05374	0.43104
	(!D * !SCD * SCE * !Q)	0.03008	0.05364	0.43096
	(!D * !SCD * SCE * !Q)	0.03589	0.05947	0.43678
	(!D * !RESET_B * SCD * SCE * !Q)	0.03004	0.05357	0.43091
	(!D * !RESET_B * SCD * SCE * !Q)	0.03584	0.05941	0.43673

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.03763	0.06124	0.43955
	(D * RESET_B * SCD * SCE * Q)	0.04346	0.06712	0.44540
	(D * RESET_B * SCD * SCE * !Q)	0.05574	0.08038	0.48193
	(D * RESET_B * SCD * SCE * !Q)	0.06136	0.08603	0.48755
	(D * RESET_B * SCD * !SCE * Q)	0.03432	0.05794	0.43624
	(D * RESET_B * SCD * !SCE * Q)	0.04016	0.06382	0.44210
	(D * RESET_B * SCD * !SCE * !Q)	0.05254	0.07710	0.47833
	(D * RESET_B * SCD * !SCE * !Q)	0.05816	0.08274	0.48396
	(D * RESET_B * !SCD * SCE * Q)	0.05128	0.07529	0.46485
	(D * RESET_B * !SCD * SCE * Q)	0.05736	0.08138	0.47096
	(D * RESET_B * !SCD * !SCE * Q)	0.03950	0.06312	0.44142
	(D * RESET_B * !SCD * !SCE * Q)	0.04534	0.06900	0.44728
	(D * RESET_B * !SCD * !SCE * !Q)	0.05771	0.08226	0.48337
	(D * RESET_B * !SCD * !SCE * !Q)	0.06332	0.08790	0.48900
	(D * !SCD * SCE * !Q)	0.03478	0.05838	0.43626
	(D * !SCD * SCE * !Q)	0.04062	0.06426	0.44211
	(D * !RESET_B * SCD * SCE * !Q)	0.03471	0.05829	0.43618
	(D * !RESET_B * SCD * SCE * !Q)	0.04055	0.06417	0.44204
	(D * !RESET_B * SCD * !SCE * !Q)	0.02894	0.05252	0.43042
	(D * !RESET_B * SCD * !SCE * !Q)	0.03478	0.05840	0.43628
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02894	0.05252	0.43042
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03478	0.05840	0.43627
	(!D * RESET_B * SCD * SCE * Q)	0.04043	0.06405	0.44235
	(!D * RESET_B * SCD * SCE * Q)	0.04626	0.06992	0.44820
	(!D * RESET_B * SCD * SCE * !Q)	0.05856	0.08318	0.48463
	(!D * RESET_B * SCD * SCE * !Q)	0.06418	0.08883	0.49026
	(!D * RESET_B * !SCE * Q)	0.04540	0.06936	0.45902
	(!D * RESET_B * !SCE * Q)	0.05146	0.07545	0.46510
	(!D * RESET_B * !SCD * SCE * Q)	0.05129	0.07531	0.46488
	(!D * RESET_B * !SCD * SCE * Q)	0.05736	0.08142	0.47098
	(!D * !SCE * !Q)	0.02902	0.05262	0.43050
	(!D * !SCE * !Q)	0.03486	0.05850	0.43635
	(!D * !SCD * SCE * !Q)	0.03476	0.05836	0.43623
	(!D * !SCD * SCE * !Q)	0.04060	0.06424	0.44209
	(!D * !RESET_B * SCD * SCE * !Q)	0.03471	0.05829	0.43619
	(!D * !RESET_B * SCD * SCE * !Q)	0.04055	0.06417	0.44204

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.05573	0.07934	0.45705
	(D * RESET_B * SCD * SCE * Q)	0.06156	0.08522	0.46290
	(D * RESET_B * SCD * SCE * !Q)	0.06473	0.08939	0.49090
	(D * RESET_B * SCD * SCE * !Q)	0.07033	0.09502	0.49652
	(D * RESET_B * SCD * !SCE * Q)	0.05242	0.07603	0.45375
	(D * RESET_B * SCD * !SCE * Q)	0.05825	0.08191	0.45960
	(D * RESET_B * SCD * !SCE * !Q)	0.06155	0.08615	0.48731
	(D * RESET_B * SCD * !SCE * !Q)	0.06715	0.09178	0.49293
	(D * RESET_B * !SCD * SCE * Q)	0.06975	0.09376	0.48411
	(D * RESET_B * !SCD * SCE * Q)	0.07584	0.09988	0.49024
	(D * RESET_B * !SCD * !SCE * Q)	0.05761	0.08122	0.45893
	(D * RESET_B * !SCD * !SCE * Q)	0.06344	0.08710	0.46478
	(D * RESET_B * !SCD * !SCE * !Q)	0.06671	0.09131	0.49235
	(D * RESET_B * !SCD * !SCE * !Q)	0.07231	0.09693	0.49797
	(D * !SCD * SCE * !Q)	0.04367	0.06725	0.44461
	(D * !SCD * SCE * !Q)	0.04950	0.07312	0.45046
	(D * !RESET_B * SCD * SCE * !Q)	0.04358	0.06716	0.44454
	(D * !RESET_B * SCD * SCE * !Q)	0.04942	0.07304	0.45039
	(D * !RESET_B * SCD * !SCE * !Q)	0.03781	0.06139	0.43877
	(D * !RESET_B * SCD * !SCE * !Q)	0.04365	0.06726	0.44462
	(D * !RESET_B * !SCD * !SCE * !Q)	0.03781	0.06139	0.43877
	(D * !RESET_B * !SCD * !SCE * !Q)	0.04365	0.06726	0.44462
	(!D * RESET_B * SCD * SCE * Q)	0.05853	0.08215	0.45985
	(!D * RESET_B * SCD * SCE * Q)	0.06436	0.08802	0.46570
	(!D * RESET_B * SCD * SCE * !Q)	0.06755	0.09220	0.49361
	(!D * RESET_B * SCD * SCE * !Q)	0.07315	0.09781	0.49923
	(!D * RESET_B * !SCE * Q)	0.06387	0.08783	0.47829
	(!D * RESET_B * !SCE * Q)	0.06994	0.09393	0.48437
	(!D * RESET_B * !SCD * SCE * Q)	0.06976	0.09378	0.48416
	(!D * RESET_B * !SCD * SCE * Q)	0.07584	0.09989	0.49027
	(!D * !SCE * !Q)	0.03790	0.06149	0.43885
	(!D * !SCE * !Q)	0.04373	0.06736	0.44470
	(!D * !SCD * SCE * !Q)	0.04363	0.06723	0.44459
	(!D * !SCD * SCE * !Q)	0.04947	0.07310	0.45044
	(!D * !RESET_B * SCD * SCE * !Q)	0.04358	0.06716	0.44454
	(!D * !RESET_B * SCD * SCE * !Q)	0.04942	0.07303	0.45039

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00361	0.00303	1.64410	1.58646
sky130_fd_sc_hs__sdfsbp_2	0.00203	0.00212	0.00436	0.00368	0.00306	3.39734	3.40341

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	3059.27000	4000.77000
sky130_fd_sc_hs__sdfsbp_2	0.00000	3439.72000	5779.06000

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)	0.17696	0.53360	5.36828
	SET_B->Q (FR)	0.15175	0.69455	7.90122
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.19672	0.47428	5.48922
	SET_B->Q (FR)	0.20411	0.66656	8.06123

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.16459	0.39062	2.92922
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.17653	0.37511	3.24958

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)	0.14117	0.53232	5.55287
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.13403	0.44085	5.58671

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)	0.14300	0.41115	2.83739
	SET_B->Q_N (FF)	0.11705	0.56386	5.32593
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.14393	0.37547	3.22058
	SET_B->Q_N (FF)	0.14406	0.57325	5.76984

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)	-0.07132	-0.14821	-1.10078
	setup	CLK (R)	0.10096	0.17002	1.10121
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08897	-0.16357	-1.08341
	setup	CLK (R)	0.12595	0.19243	1.11280

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)	-0.05813	-0.14021	-2.64398
	setup	CLK (R)	0.12450	0.21855	2.68478
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.07563	-0.15018	-2.29731
	setup	CLK (R)	0.14987	0.23840	2.58849

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)	-0.07132	-0.14821	-1.10078
	setup	CLK (R)	0.10096	0.17002	1.10121
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08897	-0.16357	-1.08341
	setup	CLK (R)	0.12595	0.19243	1.11280

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)	-0.05813	-0.14021	-2.64398
	setup	CLK (R)	0.12450	0.21855	2.68478
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.07563	-0.15018	-2.29731
	setup	CLK (R)	0.14987	0.23840	2.58849

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)	-0.08841	-0.15252	-1.05669
	setup	CLK (R)	0.12345	0.17943	1.06516
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10546	-0.16476	-0.99298
	setup	CLK (R)	0.14780	0.19691	1.03574

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)	-0.08114	-0.14925	-2.66103
	setup	CLK (R)	0.15763	0.22967	2.69998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10005	-0.15997	-2.36988
	setup	CLK (R)	0.18418	0.25236	2.62632

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)	-0.08841	-0.15252	-1.05669
	hold	CLK (R)	-0.09117	-0.15710	-1.06844
	setup	CLK (R)	0.11802	0.17377	1.05719
	setup	CLK (R)	0.12345	0.17943	1.06516
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10546	-0.16476	-0.99298
	hold	CLK (R)	-0.11016	-0.17231	-1.00199
	setup	CLK (R)	0.14062	0.19178	1.02720
	setup	CLK (R)	0.14780	0.19691	1.03574

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)	-0.08243	-0.15250	-2.66103
	hold	CLK (R)	-0.08114	-0.14925	-2.66430
	setup	CLK (R)	0.15763	0.22967	2.69819
	setup	CLK (R)	0.15286	0.22888	2.69998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10598	-0.16229	-2.37664
	hold	CLK (R)	-0.10005	-0.15997	-2.36988
	setup	CLK (R)	0.18418	0.25236	2.62632
	setup	CLK (R)	0.18074	0.24940	2.62520

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)	-0.07810	-0.10246	-0.51179
	setup	CLK (R)	0.15720	0.18386	1.32392
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09601	-0.11130	-0.40849
	setup	CLK (R)	0.18782	0.20424	1.37913

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)	-0.06944	-0.13194	-2.41557
	setup	CLK (R)	0.13837	0.22493	2.56346
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08326	-0.13694	-2.03027
	setup	CLK (R)	0.16040	0.23995	2.43278

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)	-0.08702	-0.10246	-0.51179
	hold	CLK (R)	-0.07810	-0.16032	-1.32326
	setup	CLK (R)	0.15720	0.17562	0.55998
	setup	CLK (R)	0.11238	0.18386	1.32392
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10589	-0.11130	-0.40849
	hold	CLK (R)	-0.09601	-0.17770	-1.35009
	setup	CLK (R)	0.18782	0.19661	0.48477
	setup	CLK (R)	0.13427	0.20424	1.37913

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)	-0.10766	-0.20771	-2.56672
	hold	CLK (R)	-0.06944	-0.13194	-2.41557
	setup	CLK (R)	0.13837	0.22493	2.56346
	setup	CLK (R)	0.13651	0.20786	2.45104
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12341	-0.21360	-2.39621
	hold	CLK (R)	-0.08326	-0.13694	-2.03027
	setup	CLK (R)	0.16040	0.23995	2.43278
	setup	CLK (R)	0.15914	0.22355	2.28846

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)	-0.05558	-0.08296	-0.17200
	removal	CLK (R)	0.07970	0.10689	0.36738
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.08787	-0.13717	-0.39758
	removal	CLK (R)	0.10720	0.16845	1.89885

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)	-0.05560	-0.08296	-0.17214
	recovery	CLK (R)	-0.05558	-0.08298	-0.17212
	recovery	CLK (R)	-0.05565	-0.08310	-0.17200
	removal	CLK (R)	0.07970	0.10689	0.36738
	removal	CLK (R)	0.07970	0.10689	0.36738
	removal	CLK (R)	0.07970	0.10689	0.36738
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.08836	-0.13717	-0.39758
	recovery	CLK (R)	-0.08836	-0.13717	-0.39758
	recovery	CLK (R)	-0.08787	-0.13717	-0.39758
	removal	CLK (R)	0.10720	0.16845	1.88020
	removal	CLK (R)	0.10720	0.16845	1.89885
	removal	CLK (R)	0.10671	0.16845	1.89861

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 ()	0.13023	0.59937	16.50020
	min_pulse_width	SET_B ()	0.11670	0.59937	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.15053	0.59937	16.50020
	min_pulse_width	SET_B ()	0.15504	0.59937	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 ()	0.10768	0.59937	16.50020
	min_pulse_width	CLK ()	0.07836	0.59937	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.10768	0.59937	16.50020
	min_pulse_width	CLK ()	0.07836	0.59937	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 ()	0.11219	0.59937	16.50020
	min_pulse_width	CLK ()	0.14151	0.59937	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.14377	0.59937	16.50020
	min_pulse_width	CLK ()	0.17760	0.59937	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	0.07544	0.08468	0.28452
	CLK	0.07269	0.08183	0.28130
	SET_B	0.05866	0.06600	0.19443
	SET_B	0.06214	0.06944	0.19641
sky130_fd_sc_hs__sdfsbp_2	CLK	0.08413	0.09266	0.31743
	CLK	0.08126	0.08975	0.31336
	SET_B	0.06775	0.07056	0.20152
	SET_B	0.07121	0.07400	0.20318

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.04041	0.05139	0.24266
	CLK	0.03749	0.04840	0.23971
sky130_fd_sc_hs__sdfsbp_2	CLK	0.06131	0.07136	0.26957
	CLK	0.05843	0.06842	0.26552

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.05321	0.06421	0.25734
	CLK	0.05029	0.06121	0.25412
sky130_fd_sc_hs__sdfsbp_2	CLK	0.08060	0.09061	0.29004
	CLK	0.07773	0.08772	0.28597

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.05455	0.06372	0.26266
	CLK	0.05179	0.06093	0.25956
	SET_B	0.04195	0.04931	0.17712
	SET_B	0.04543	0.05275	0.17931
sky130_fd_sc_hs__sdfsbp_2	CLK	0.06564	0.07413	0.29704
	CLK	0.06277	0.07124	0.29329
	SET_B	0.05315	0.05593	0.18554
	SET_B	0.05662	0.05937	0.18771

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * SCD * SCE)	0.03341	0.03347	0.03422
	(CLK * SCD * SCE)	0.03120	0.03121	0.03198
	(CLK * !SCE)	0.03418	0.04324	0.19306
	(CLK * !SCE)	0.03006	0.03912	0.18895
	(CLK * !SCD * SCE)	0.03020	0.03020	0.03017
	(CLK * !SCD * SCE)	0.02764	0.02762	0.02759
	(!CLK * SCD * SCE)	0.03281	0.03284	0.03361
	(!CLK * SCD * SCE)	0.03059	0.03060	0.03137
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.04351	0.05240	0.21750
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.03897	0.04784	0.21295
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.04001	0.04732	0.19383
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03532	0.04261	0.18914
	(!CLK * !SCD * SCE)	0.03037	0.03038	0.03035
	(!CLK * !SCD * SCE)	0.02781	0.02780	0.02777

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.03994	0.04000	0.04075
	(CLK * SCD * SCE)	0.03766	0.03767	0.03845
	(CLK * !SCE)	0.04084	0.04993	0.20112
	(CLK * !SCE)	0.03664	0.04573	0.19693
	(CLK * !SCD * SCE)	0.03474	0.03475	0.03472
	(CLK * !SCD * SCE)	0.03211	0.03210	0.03207
	(!CLK * SCD * SCE)	0.03118	0.03122	0.03199
	(!CLK * SCD * SCE)	0.02890	0.02891	0.02969
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.04417	0.05279	0.21896
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.03975	0.04834	0.21453
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.04047	0.04750	0.19483
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03587	0.04289	0.19024
	(!CLK * !SCD * SCE)	0.02889	0.02889	0.02886
	(!CLK * !SCD * SCE)	0.02626	0.02624	0.02621

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.03361	0.03347	0.03182
	(CLK * SCD * SCE)	0.03584	0.03572	0.03405
	(CLK * !SCE)	0.02455	0.03446	0.18891
	(CLK * !SCE)	0.02865	0.03858	0.19303
	(CLK * !SCD * SCE)	0.02861	0.02860	0.02861
	(CLK * !SCD * SCE)	0.03119	0.03119	0.03118
	(!CLK * SCD * SCE)	0.03300	0.03286	0.03121
	(!CLK * SCD * SCE)	0.03523	0.03510	0.03344
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.03511	0.04455	0.21313
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.03965	0.04911	0.21769
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.02758	0.03599	0.18848
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03227	0.04071	0.19318
	(!CLK * !SCD * SCE)	0.02882	0.02881	0.02882
	(!CLK * !SCD * SCE)	0.03140	0.03140	0.03139

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.03996	0.03981	0.03816
	(CLK * SCD * SCE)	0.04225	0.04213	0.04045
	(CLK * !SCE)	0.02924	0.03924	0.19678
	(CLK * !SCE)	0.03342	0.04344	0.20097
	(CLK * !SCD * SCE)	0.03308	0.03308	0.03309
	(CLK * !SCD * SCE)	0.03573	0.03573	0.03573
	(!CLK * SCD * SCE)	0.03119	0.03105	0.02939
	(!CLK * SCD * SCE)	0.03349	0.03336	0.03169
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.03674	0.04583	0.21585
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.04116	0.05027	0.22028
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.02849	0.03658	0.19008
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.03308	0.04119	0.19469
	(!CLK * !SCD * SCE)	0.02724	0.02723	0.02724
	(!CLK * !SCD * SCE)	0.02988	0.02989	0.02988

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.04000	0.04870	0.20487
	(CLK * D * SCE)	0.03400	0.04269	0.19887
	(CLK * !D * SCE)	0.04381	0.05194	0.20674
	(CLK * !D * SCE)	0.03758	0.04569	0.20051
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04924	0.05788	0.22880
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04280	0.05144	0.22236
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04565	0.05298	0.20595
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.03907	0.04640	0.19937
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.05306	0.06129	0.23103
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.04639	0.05462	0.22438
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04946	0.05631	0.20780
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04264	0.04949	0.20098
	!SCE	0.03101	0.03105	0.03489
	!SCE	0.02755	0.02757	0.03144

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.04645	0.05510	0.21065
	(CLK * D * SCE)	0.04054	0.04917	0.20474
	(CLK * !D * SCE)	0.05027	0.05835	0.21252
	(CLK * !D * SCE)	0.04413	0.05219	0.20638
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04973	0.05814	0.22803
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04358	0.05197	0.22188
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04594	0.05308	0.20498
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.03962	0.04675	0.19865
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.05355	0.06159	0.23022
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.04717	0.05520	0.22383
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04975	0.05644	0.20682
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04320	0.04986	0.20026
	!SCE	0.03734	0.03738	0.04121
	!SCE	0.03397	0.03398	0.03785

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.03188	0.04096	0.19963
	(CLK * D * SCE)	0.03788	0.04697	0.20560
	(CLK * !D * SCE)	0.03128	0.04071	0.20081
	(CLK * !D * SCE)	0.03751	0.04695	0.20701
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04283	0.05139	0.22361
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04926	0.05784	0.23000
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.03505	0.04278	0.19980
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04165	0.04936	0.20635
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.04234	0.05126	0.22490
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.04901	0.05794	0.23154
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.03446	0.04247	0.20097
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04128	0.04930	0.20775
	!SCE	0.03223	0.03210	0.03126
	!SCE	0.03569	0.03558	0.03472

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.03667	0.04577	0.20552
	(CLK * D * SCE)	0.04258	0.05170	0.21141
	(CLK * !D * SCE)	0.03606	0.04551	0.20670
	(CLK * !D * SCE)	0.04221	0.05167	0.21282
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.04458	0.05272	0.22375
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.05074	0.05889	0.22988
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.03602	0.04340	0.19948
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.04235	0.04974	0.20578
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.04408	0.05255	0.22531
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.05047	0.05895	0.23167
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.03542	0.04306	0.20067
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.04198	0.04964	0.20720
	!SCE	0.03875	0.03863	0.03779
	!SCE	0.04213	0.04201	0.04116

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)**	0.03925	0.05201	0.25665
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03168	0.04445	0.24911
	(CLK * D * !SCD)	0.03957	0.05353	0.27958
	(CLK * D * !SCD)	0.03434	0.04828	0.27431
	(CLK * !D * SCD)	0.04707	0.06806	0.40936
	(CLK * !D * SCD)	0.03763	0.05859	0.39993
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.03864	0.05141	0.25605
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.03107	0.04384	0.24850
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.04999	0.06391	0.28963
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.04523	0.05909	0.28480
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04224	0.05618	0.28084
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.03764	0.05154	0.27616
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.05648	0.07763	0.43580
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.04660	0.06772	0.42594
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.05290	0.07243	0.41082
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.04287	0.06240	0.40079
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.03621	0.04894	0.25144
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.02931	0.04203	0.24452

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.04594	0.05895	0.26715
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03812	0.05113	0.25937
	(CLK * D * !SCD)	0.04449	0.05877	0.28900
	(CLK * D * !SCD)	0.03905	0.05329	0.28352
	(CLK * !D * SCD)	0.05386	0.07546	0.42667
	(CLK * !D * SCD)	0.04417	0.06573	0.41699
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.03718	0.05019	0.25839
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.02936	0.04237	0.25061
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.05191	0.06602	0.29476
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.04669	0.06076	0.28949
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04338	0.05752	0.28513
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.03834	0.05245	0.28004
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.05728	0.07873	0.44665
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.04735	0.06878	0.43670
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.05350	0.07341	0.42132
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.04339	0.06329	0.41119
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.03485	0.04780	0.25353
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.02770	0.04064	0.24637

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)**	0.02804	0.04178	0.24945
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03558	0.04933	0.25701
	(CLK * D * !SCD)	0.03918	0.05285	0.27261
	(CLK * D * !SCD)	0.04440	0.05798	0.27763
	(CLK * !D * SCD)	0.02503	0.04738	0.39907
	(CLK * !D * SCD)	0.03446	0.05685	0.40851
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.02743	0.04117	0.24884
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.03498	0.04872	0.25640
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.04846	0.06179	0.28149
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.05324	0.06659	0.28609
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04494	0.05815	0.27526
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04958	0.06282	0.27969
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.03560	0.05729	0.42178
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.04546	0.06717	0.43166
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02807	0.04889	0.39848
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.03809	0.05894	0.40851
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.02400	0.03772	0.24552
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.03089	0.04463	0.25243

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.03425	0.04823	0.25948
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04204	0.05606	0.26730
	(CLK * D * !SCD)	0.04546	0.05926	0.28165
	(CLK * D * !SCD)	0.05092	0.06465	0.28693
	(CLK * !D * SCD)	0.02973	0.05277	0.41607
	(CLK * !D * SCD)	0.03942	0.06249	0.42577
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.02549	0.03947	0.25072
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.03328	0.04729	0.25853
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.04872	0.06225	0.28497
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.05395	0.06752	0.28999
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.04500	0.05843	0.27861
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.05006	0.06350	0.28345
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.03722	0.05914	0.43337
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.04716	0.06909	0.44331
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02898	0.05008	0.40919
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.03909	0.06022	0.41929
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.02233	0.03628	0.24732
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.02947	0.04347	0.25448

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)	0.03542	0.03546	0.03541
	(CLK * Q * !Q_N)	0.02894	0.02893	0.02895
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.03499	0.03504	0.03500
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.02850	0.02851	0.02853
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.03653	0.04469	0.18291
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.02981	0.03794	0.17618
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.03391	0.03395	0.03391
	(CLK * Q * !Q_N)	0.02729	0.02727	0.02728
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.03326	0.03333	0.03328
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.02663	0.02662	0.02664
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.03535	0.04340	0.18032
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.02845	0.03645	0.17341

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)	0.02875	0.02864	0.02865
	(CLK * Q * !Q_N)	0.03526	0.03517	0.03512
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.02804	0.02786	0.02786
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.03455	0.03440	0.03433
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.02785	0.03687	0.17666
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.03460	0.04358	0.18336
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.02712	0.02699	0.02698
	(CLK * Q * !Q_N)	0.03373	0.03365	0.03361
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.02634	0.02614	0.02614
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.03296	0.03285	0.03277
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.02606	0.03492	0.17352
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.03294	0.04185	0.18040

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)	0.05040	0.07296	0.45355
	(D * SCD * SCE * Q * !Q_N)	0.04474	0.06728	0.44787
	(D * !SCE * Q * !Q_N)	0.04712	0.06969	0.45027
	(D * !SCE * Q * !Q_N)	0.04146	0.06400	0.44460
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03936	0.06187	0.44190
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03368	0.05617	0.43621
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06911	0.09216	0.47457
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06286	0.08590	0.46831
	(!D * SCD * SCE * Q * !Q_N)	0.05320	0.07576	0.45635
	(!D * SCD * SCE * Q * !Q_N)	0.04753	0.07008	0.45067
	(!D * !SCE * SET_B * !Q * Q_N)	0.03361	0.05612	0.43616
	(!D * !SCE * SET_B * !Q * Q_N)	0.02794	0.05043	0.43046
	(!D * !SCE * !SET_B * Q * !Q_N)	0.06335	0.08644	0.46882
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05709	0.08015	0.46255
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03934	0.06184	0.44188
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03366	0.05615	0.43618
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06912	0.09214	0.47458
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06287	0.08586	0.46831

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.05434	0.07792	0.47776
	(D * SCD * SCE * Q * !Q_N)	0.04858	0.07215	0.47201
	(D * !SCE * Q * !Q_N)	0.05106	0.07464	0.47449
	(D * !SCE * Q * !Q_N)	0.04530	0.06887	0.46874
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.05795	0.08114	0.47684
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.05219	0.07537	0.47108
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.10629	0.13122	0.53622
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.10013	0.12506	0.53007
	(!D * SCD * SCE * Q * !Q_N)	0.05715	0.08073	0.48057
	(!D * SCD * SCE * Q * !Q_N)	0.05139	0.07496	0.47482
	(!D * !SCE * SET_B * !Q * Q_N)	0.05220	0.07538	0.47109
	(!D * !SCE * SET_B * !Q * Q_N)	0.04643	0.06961	0.46533
	(!D * !SCE * !SET_B * Q * !Q_N)	0.10054	0.12548	0.53047
	(!D * !SCE * !SET_B * Q * !Q_N)	0.09438	0.11932	0.52431
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.05793	0.08111	0.47680
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.05217	0.07534	0.47107
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.10633	0.13113	0.53628
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.10016	0.12498	0.53012

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.04573	0.07058	0.47663
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.05097	0.07584	0.48188
	(D * SCD * SCE * Q * !Q_N)	0.04146	0.06552	0.44903
	(D * SCD * SCE * Q * !Q_N)	0.04712	0.07120	0.45473
	(D * !SCE * SET_B * !Q * Q_N)	0.04242	0.06726	0.47339
	(D * !SCE * SET_B * !Q * Q_N)	0.04766	0.07253	0.47864
	(D * !SCE * Q * !Q_N)	0.03818	0.06223	0.44575
	(D * !SCE * Q * !Q_N)	0.04383	0.06792	0.45144
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.05208	0.07669	0.46586
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.05820	0.08282	0.47202
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02966	0.05378	0.43801
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03533	0.05948	0.44369
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04477	0.06932	0.45927
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05102	0.07562	0.46555
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.04852	0.07336	0.47949
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.05375	0.07863	0.48474
	(!D * SCD * SCE * Q * !Q_N)	0.04423	0.06832	0.45183
	(!D * SCD * SCE * Q * !Q_N)	0.04994	0.07400	0.45752
	(!D * !SCE * SET_B * Q * !Q_N)	0.04632	0.07085	0.46009
	(!D * !SCE * SET_B * Q * !Q_N)	0.05241	0.07699	0.46622
	(!D * !SCE * SET_B * !Q * Q_N)	0.02391	0.04803	0.43227
	(!D * !SCE * SET_B * !Q * Q_N)	0.02958	0.05373	0.43795
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03902	0.06358	0.45353
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04527	0.06988	0.45981
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.05207	0.07661	0.46586
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.05818	0.08277	0.47200
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02964	0.05376	0.43800
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03531	0.05946	0.44369
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04476	0.06939	0.45929
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05101	0.07569	0.46557

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.07162	0.09640	0.53058
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.07715	0.10193	0.53609
	(D * SCD * SCE * Q * !Q_N)	0.04213	0.06647	0.46591
	(D * SCD * SCE * Q * !Q_N)	0.04789	0.07224	0.47166
	(D * !SCE * SET_B * !Q * Q_N)	0.06830	0.09306	0.52695
	(D * !SCE * SET_B * !Q * Q_N)	0.07383	0.09859	0.53247
	(D * !SCE * Q * !Q_N)	0.03885	0.06318	0.46263
	(D * !SCE * Q * !Q_N)	0.04461	0.06895	0.46838
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.05691	0.08177	0.48706
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.06294	0.08780	0.49307
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03690	0.06151	0.46517
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.04267	0.06729	0.47093
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04865	0.07351	0.47947
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05483	0.07967	0.48564
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.07440	0.09918	0.53325
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.07993	0.10471	0.53877
	(!D * SCD * SCE * Q * !Q_N)	0.04493	0.06928	0.46871
	(!D * SCD * SCE * Q * !Q_N)	0.05069	0.07504	0.47446
	(!D * !SCE * SET_B * Q * !Q_N)	0.05104	0.07593	0.48126
	(!D * !SCE * SET_B * Q * !Q_N)	0.05704	0.08193	0.48726
	(!D * !SCE * SET_B * !Q * Q_N)	0.03114	0.05575	0.45942
	(!D * !SCE * SET_B * !Q * Q_N)	0.03691	0.06153	0.46518
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04290	0.06776	0.47373
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04908	0.07393	0.47990
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.05691	0.08179	0.48709
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.06293	0.08781	0.49309
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03687	0.06149	0.46515
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.04264	0.06726	0.47091
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04864	0.07358	0.47948
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05482	0.07976	0.48566

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00195	0.00219	0.00415	0.00352	0.00302	1.64771
sky130_fd_sc_hs__sdfstp_2	0.00195	0.00215	0.00415	0.00362	0.00302	3.37183
sky130_fd_sc_hs__sdfstp_4	0.00196	0.00219	0.00421	0.00363	0.00302	6.22293

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfstp_1	0.00000	2708.82000	3480.74000
sky130_fd_sc_hs__sdfstp_2	0.00000	2736.14000	5748.62000
sky130_fd_sc_hs__sdfstp_4	0.00000	4463.95000	6773.87000

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)	0.14867	0.50607	5.31288
	SET_B->Q (FR)	0.17677	0.70994	7.84688
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.14044	0.40928	5.26089
	SET_B->Q (FR)	0.14833	0.60460	7.92089
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.16585	0.37466	5.18728
	SET_B->Q (FR)	0.22337	0.60703	7.84549

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.15419	0.38108	2.93962
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.15818	0.34715	3.07591
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.16100	0.31397	3.01099

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)	-0.07247	-0.14795	-1.08882
	setup	CLK (R)	0.10393	0.16932	1.09086
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08447	-0.16443	-1.13187
	setup	CLK (R)	0.12148	0.19257	1.12982
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08586	-0.16421	-1.13711
	setup	CLK (R)	0.12158	0.19257	1.14384

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)	-0.05360	-0.13514	-2.59631
	setup	CLK (R)	0.12132	0.21311	2.66921
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.06247	-0.14295	-2.73999
	setup	CLK (R)	0.14452	0.23600	2.72920
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.06727	-0.14510	-2.66539
	setup	CLK (R)	0.14124	0.23370	2.73155

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)	-0.07247	-0.14795	-1.08882
	setup	CLK (R)	0.10393	0.16932	1.09086
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08447	-0.16443	-1.13187
	setup	CLK (R)	0.12148	0.19257	1.12982
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08586	-0.16421	-1.13711
	setup	CLK (R)	0.12158	0.19257	1.14384

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)	-0.05360	-0.13514	-2.59631
	setup	CLK (R)	0.12132	0.21311	2.66921
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.06247	-0.14295	-2.73999
	setup	CLK (R)	0.14452	0.23600	2.72920
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.06727	-0.14510	-2.66539
	setup	CLK (R)	0.14124	0.23370	2.73155

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)	-0.08915	-0.15252	-1.04739
	setup	CLK (R)	0.12656	0.17977	1.05704
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10480	-0.16818	-1.07952
	setup	CLK (R)	0.14620	0.20221	1.08687
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10534	-0.16843	-1.08239
	setup	CLK (R)	0.14537	0.20020	1.10111

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)	-0.07259	-0.14233	-2.62007
	setup	CLK (R)	0.15280	0.22285	2.68906
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08734	-0.14845	-2.74741
	setup	CLK (R)	0.17461	0.24642	2.74064
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08749	-0.15325	-2.67850
	setup	CLK (R)	0.17319	0.24376	2.74065

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)	-0.08915	-0.15252	-1.04739
	hold	CLK (R)	-0.09359	-0.15920	-1.06151
	setup	CLK (R)	0.12305	0.17572	1.04746
	setup	CLK (R)	0.12656	0.17977	1.05704
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10480	-0.16818	-1.07952
	hold	CLK (R)	-0.10969	-0.17337	-1.09119
	setup	CLK (R)	0.14171	0.19624	1.07570
	setup	CLK (R)	0.14620	0.20221	1.08687
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10534	-0.16843	-1.08239
	hold	CLK (R)	-0.10821	-0.17337	-1.09203
	setup	CLK (R)	0.13834	0.19457	1.08662
	setup	CLK (R)	0.14537	0.20020	1.10111

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)	-0.07905	-0.14394	-2.62007
	hold	CLK (R)	-0.07259	-0.14233	-2.62089
	setup	CLK (R)	0.15280	0.22285	2.68548
	setup	CLK (R)	0.14995	0.22245	2.68906
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09188	-0.15172	-2.74741
	hold	CLK (R)	-0.08734	-0.14845	-2.74830
	setup	CLK (R)	0.17461	0.24376	2.73930
	setup	CLK (R)	0.17325	0.24642	2.74064
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09267	-0.15615	-2.67904
	hold	CLK (R)	-0.08749	-0.15325	-2.67850
	setup	CLK (R)	0.17114	0.24376	2.74065
	setup	CLK (R)	0.17319	0.24280	2.74027

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)	-0.08115	-0.09666	-0.49211
	setup	CLK (R)	0.15360	0.18454	1.31597
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09251	-0.10301	-0.56393
	setup	CLK (R)	0.17644	0.20756	1.35154
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09426	-0.10708	-0.56362
	setup	CLK (R)	0.17458	0.20583	1.35889

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)	-0.06217	-0.12515	-2.36618
	setup	CLK (R)	0.13719	0.22601	2.56092
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07531	-0.13186	-2.50175
	setup	CLK (R)	0.15792	0.24406	2.56815
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07644	-0.13614	-2.43822
	setup	CLK (R)	0.15897	0.24399	2.58015

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)	-0.08154	-0.09666	-0.49211
	hold	CLK (R)	-0.08115	-0.15884	-1.31416
	setup	CLK (R)	0.15360	0.17148	0.54948
	setup	CLK (R)	0.11376	0.18454	1.31597
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09251	-0.10301	-0.56393
	hold	CLK (R)	-0.09524	-0.17684	-1.35303
	setup	CLK (R)	0.17644	0.19068	0.56500
	setup	CLK (R)	0.13391	0.20756	1.35154
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09426	-0.10708	-0.56362
	hold	CLK (R)	-0.09581	-0.17737	-1.35409
	setup	CLK (R)	0.17458	0.19030	0.56405
	setup	CLK (R)	0.13035	0.20583	1.35889

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)	-0.10788	-0.20884	-2.56219
	hold	CLK (R)	-0.06217	-0.12515	-2.36618
	setup	CLK (R)	0.13719	0.22601	2.56092
	setup	CLK (R)	0.13024	0.20522	2.43730
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12049	-0.21907	-2.56857
	hold	CLK (R)	-0.07531	-0.13186	-2.50175
	setup	CLK (R)	0.15792	0.24406	2.56815
	setup	CLK (R)	0.15113	0.22350	2.49690
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12133	-0.22010	-2.57138
	hold	CLK (R)	-0.07644	-0.13614	-2.43822
	setup	CLK (R)	0.15897	0.24399	2.58015
	setup	CLK (R)	0.15372	0.22350	2.50041

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)	-0.05930	-0.09435	-0.21635
	removal	CLK (R)	0.08171	0.11496	0.49721
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09728	-0.12706	-0.15781
	removal	CLK (R)	0.14439	0.34084	5.74639
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.09197	-0.12706	-0.23286
	removal	CLK (R)	0.13792	0.32269	5.57311

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)	-0.05931	-0.09435	-0.21636
	recovery	CLK (R)	-0.05931	-0.09435	-0.21636
	recovery	CLK (R)	-0.05930	-0.09438	-0.21635
	removal	CLK (R)	0.07864	0.11496	0.49614
	removal	CLK (R)	0.07864	0.11496	0.49614
	removal	CLK (R)	0.08171	0.11496	0.49721
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09728	-0.12706	-0.15781
	recovery	CLK (R)	-0.09728	-0.12706	-0.15781
	recovery	CLK (R)	-0.09728	-0.12706	-0.15781
	removal	CLK (R)	0.14439	0.34084	5.69756
	removal	CLK (R)	0.14439	0.34084	5.68147
	removal	CLK (R)	0.14439	0.34084	5.74639
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.09197	-0.12706	-0.23286
	recovery	CLK (R)	-0.09197	-0.12706	-0.23286
	recovery	CLK (R)	-0.09197	-0.12706	-0.23286
	removal	CLK (R)	0.13792	0.32269	5.49271
	removal	CLK (R)	0.13792	0.32269	5.57311
	removal	CLK (R)	0.13715	0.32269	5.56762

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 ()	0.11896	0.59937	16.50020
	min_pulse_width	SET_B ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.13023	0.59937	16.50020
	min_pulse_width	SET_B ()	0.10994	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.13475	0.59937	16.50020
	min_pulse_width	SET_B ()	0.12121	0.59937	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 ()	0.07836	0.59937	16.50020
	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.07836	0.59937	16.50020
	min_pulse_width	CLK ()	0.06708	0.59937	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 ()	0.11219	0.59937	16.50020
	min_pulse_width	CLK ()	0.13926	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.14377	0.59937	16.50020
	min_pulse_width	CLK ()	0.17083	0.59937	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.13926	0.59937	16.50020
	min_pulse_width	CLK ()	0.16632	0.59937	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	0.12619	0.14916	0.55144
	CLK	0.12083	0.14378	0.54593
	SET_B	0.09301	0.11152	0.36629
	SET_B	0.09977	0.11822	0.37330
sky130_fd_sc_hs__sdfstp_2	CLK	0.11657	0.14130	0.57053
	CLK	0.11126	0.13602	0.56475
	SET_B	0.08114	0.09906	0.36525
	SET_B	0.08809	0.10590	0.37227
sky130_fd_sc_hs__sdfstp_4	CLK	0.18099	0.20259	0.62405
	CLK	0.17576	0.19731	0.61622
	SET_B	0.15004	0.16439	0.41776
	SET_B	0.15698	0.17131	0.42495

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.07559	0.09799	0.47889
	CLK	0.06976	0.09213	0.47294
sky130_fd_sc_hs__sdfstp_2	CLK	0.10948	0.12972	0.50267
	CLK	0.10376	0.12384	0.49480
sky130_fd_sc_hs__sdfstp_4	CLK	0.13920	0.15745	0.52924
	CLK	0.13336	0.15144	0.52231

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.02887	0.02893	0.02968
	(CLK * SCD * SCE)	0.02668	0.02669	0.02746
	(CLK * !SCE)	0.02971	0.03883	0.18869
	(CLK * !SCE)	0.02562	0.03474	0.18460
	(CLK * !SCD * SCE)	0.02567	0.02567	0.02564
	(CLK * !SCD * SCE)	0.02312	0.02310	0.02308
	(!CLK * SCD * SCE)	0.02827	0.02831	0.02908
	(!CLK * SCD * SCE)	0.02607	0.02608	0.02686
	(!CLK * !SCE * SET_B)	0.03858	0.04751	0.21266
	(!CLK * !SCE * SET_B)	0.03415	0.04306	0.20822
	(!CLK * !SCE * !SET_B * Q)	0.03525	0.04259	0.18919
	(!CLK * !SCE * !SET_B * Q)	0.03069	0.03800	0.18462
	(!CLK * !SCD * SCE)	0.02584	0.02584	0.02581
	(!CLK * !SCD * SCE)	0.02329	0.02328	0.02325
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.02273	0.02279	0.02354
	(CLK * SCD * SCE)	0.02054	0.02054	0.02132
	(CLK * !SCE)	0.02351	0.03263	0.18245
	(CLK * !SCE)	0.01943	0.02854	0.17836
	(CLK * !SCD * SCE)	0.01953	0.01953	0.01950
	(CLK * !SCD * SCE)	0.01698	0.01696	0.01693
	(!CLK * SCD * SCE)	0.02200	0.02204	0.02280
	(!CLK * SCD * SCE)	0.01980	0.01981	0.02058
	(!CLK * !SCE * SET_B)	0.03479	0.04339	0.20783
	(!CLK * !SCE * SET_B)	0.03021	0.03880	0.20324
	(!CLK * !SCE * !SET_B * Q)	0.03107	0.03808	0.18368
	(!CLK * !SCE * !SET_B * Q)	0.02635	0.03336	0.17895
	(!CLK * !SCD * SCE)	0.01974	0.01974	0.01971
	(!CLK * !SCD * SCE)	0.01719	0.01718	0.01715

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.04858	0.04864	0.04939
	(CLK * SCD * SCE)	0.04639	0.04640	0.04718
	(CLK * !SCE)	0.04952	0.05851	0.20763
	(CLK * !SCE)	0.04544	0.05441	0.20354
	(CLK * !SCD * SCE)	0.04345	0.04346	0.04342
	(CLK * !SCD * SCE)	0.04090	0.04089	0.04087
	(!CLK * SCD * SCE)	0.04007	0.04011	0.04088
	(!CLK * SCD * SCE)	0.03788	0.03789	0.03866
	(!CLK * !SCE * SET_B)	0.05277	0.06137	0.22582
	(!CLK * !SCE * SET_B)	0.04829	0.05686	0.22134
	(!CLK * !SCE * !SET_B * Q)	0.04907	0.05606	0.20165
	(!CLK * !SCE * !SET_B * Q)	0.04446	0.05145	0.19703
	(!CLK * !SCD * SCE)	0.03786	0.03786	0.03783
	(!CLK * !SCD * SCE)	0.03532	0.03530	0.03527

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.02910	0.02895	0.02731
	(CLK * SCD * SCE)	0.03131	0.03119	0.02952
	(CLK * !SCE)	0.01990	0.02983	0.18436
	(CLK * !SCE)	0.02398	0.03393	0.18846
	(CLK * !SCD * SCE)	0.02409	0.02408	0.02409
	(CLK * !SCD * SCE)	0.02665	0.02665	0.02664
	(!CLK * SCD * SCE)	0.02849	0.02835	0.02669
	(!CLK * SCD * SCE)	0.03070	0.03057	0.02891
	(!CLK * !SCE * SET_B)	0.03051	0.03997	0.20862
	(!CLK * !SCE * SET_B)	0.03495	0.04440	0.21306
	(!CLK * !SCE * !SET_B * Q)	0.02319	0.03162	0.18422
	(!CLK * !SCE * !SET_B * Q)	0.02775	0.03620	0.18879
	(!CLK * !SCD * SCE)	0.02429	0.02428	0.02430
	(!CLK * !SCD * SCE)	0.02686	0.02686	0.02685
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.02296	0.02281	0.02117
	(CLK * SCD * SCE)	0.02517	0.02505	0.02338
	(CLK * !SCE)	0.01383	0.02375	0.17825
	(CLK * !SCE)	0.01790	0.02784	0.18234
	(CLK * !SCD * SCE)	0.01795	0.01794	0.01795
	(CLK * !SCD * SCE)	0.02051	0.02051	0.02051
	(!CLK * SCD * SCE)	0.02222	0.02208	0.02043
	(!CLK * SCD * SCE)	0.02443	0.02430	0.02264
	(!CLK * !SCE * SET_B)	0.02651	0.03569	0.20367
	(!CLK * !SCE * SET_B)	0.03110	0.04027	0.20827
	(!CLK * !SCE * !SET_B * Q)	0.01858	0.02672	0.17840
	(!CLK * !SCE * !SET_B * Q)	0.02330	0.03147	0.18313
	(!CLK * !SCD * SCE)	0.01819	0.01818	0.01820
	(!CLK * !SCD * SCE)	0.02076	0.02076	0.02075

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.04882	0.04868	0.04703
	(CLK * SCD * SCE)	0.05102	0.05089	0.04923
	(CLK * !SCE)	0.03791	0.04785	0.20333
	(CLK * !SCE)	0.04199	0.05194	0.20742
	(CLK * !SCD * SCE)	0.04188	0.04188	0.04189
	(CLK * !SCD * SCE)	0.04444	0.04445	0.04444
	(!CLK * SCD * SCE)	0.04030	0.04016	0.03851
	(!CLK * SCD * SCE)	0.04251	0.04238	0.04071
	(!CLK * !SCE * SET_B)	0.04474	0.05388	0.22188
	(!CLK * !SCE * SET_B)	0.04922	0.05838	0.22637
	(!CLK * !SCE * !SET_B * Q)	0.03682	0.04496	0.19659
	(!CLK * !SCE * !SET_B * Q)	0.04143	0.04958	0.20121
	(!CLK * !SCD * SCE)	0.03631	0.03630	0.03631
	(!CLK * !SCD * SCE)	0.03886	0.03887	0.03886

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.03552	0.04422	0.20028
	(CLK * D * SCE)	0.02952	0.03821	0.19428
	(CLK * !D * SCE)	0.03933	0.04745	0.20209
	(CLK * !D * SCE)	0.03310	0.04121	0.19587
	(!CLK * D * SCE * SET_B)	0.04432	0.05298	0.22375
	(!CLK * D * SCE * SET_B)	0.03797	0.04662	0.21741
	(!CLK * D * SCE * !SET_B * Q)	0.04089	0.04822	0.20109
	(!CLK * D * SCE * !SET_B * Q)	0.03441	0.04174	0.19463
	(!CLK * !D * SCE * SET_B)	0.04813	0.05639	0.22600
	(!CLK * !D * SCE * SET_B)	0.04155	0.04979	0.21942
	(!CLK * !D * SCE * !SET_B * Q)	0.04469	0.05155	0.20294
	(!CLK * !D * SCE * !SET_B * Q)	0.03798	0.04484	0.19623
	!SCE	0.02648	0.02652	0.03035
	!SCE	0.02301	0.02303	0.02689
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.02927	0.03796	0.19410
	(CLK * D * SCE)	0.02333	0.03200	0.18816
	(CLK * !D * SCE)	0.03308	0.04120	0.19597
	(CLK * !D * SCE)	0.02691	0.03501	0.18979
	(!CLK * D * SCE * SET_B)	0.04048	0.04887	0.21907
	(!CLK * D * SCE * SET_B)	0.03403	0.04242	0.21261
	(!CLK * D * SCE * !SET_B * Q)	0.03667	0.04381	0.19580
	(!CLK * D * SCE * !SET_B * Q)	0.03009	0.03721	0.18921
	(!CLK * !D * SCE * SET_B)	0.04430	0.05234	0.22127
	(!CLK * !D * SCE * SET_B)	0.03762	0.04565	0.21459
	(!CLK * !D * SCE * !SET_B * Q)	0.04048	0.04714	0.19764
	(!CLK * !D * SCE * !SET_B * Q)	0.03367	0.04032	0.19083
	!SCE	0.02029	0.02033	0.02417
	!SCE	0.01688	0.01689	0.02075

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.05533	0.06393	0.21934
	(CLK * D * SCE)	0.04934	0.05792	0.21335
	(CLK * !D * SCE)	0.05915	0.06716	0.22121
	(CLK * !D * SCE)	0.05292	0.06092	0.21498
	(!CLK * D * SCE * SET_B)	0.05849	0.06690	0.23708
	(!CLK * D * SCE * SET_B)	0.05210	0.06049	0.23068
	(!CLK * D * SCE * !SET_B * Q)	0.05471	0.06182	0.21380
	(!CLK * D * SCE * !SET_B * Q)	0.04818	0.05528	0.20727
	(!CLK * !D * SCE * SET_B)	0.06231	0.07035	0.23928
	(!CLK * !D * SCE * SET_B)	0.05568	0.06371	0.23264
	(!CLK * !D * SCE * !SET_B * Q)	0.05851	0.06515	0.21564
	(!CLK * !D * SCE * !SET_B * Q)	0.05175	0.05839	0.20888
	!SCE	0.04617	0.04622	0.05006
	!SCE	0.04273	0.04274	0.04660

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.02725	0.03634	0.19490
	(CLK * D * SCE)	0.03325	0.04234	0.20087
	(CLK * !D * SCE)	0.02665	0.03609	0.19608
	(CLK * !D * SCE)	0.03288	0.04233	0.20227
	(!CLK * D * SCE * SET_B)	0.03824	0.04681	0.21891
	(!CLK * D * SCE * SET_B)	0.04459	0.05318	0.22523
	(!CLK * D * SCE * !SET_B * Q)	0.03067	0.03840	0.19528
	(!CLK * D * SCE * !SET_B * Q)	0.03716	0.04488	0.20173
	(!CLK * !D * SCE * SET_B)	0.03776	0.04668	0.22021
	(!CLK * !D * SCE * SET_B)	0.04434	0.05328	0.22675
	(!CLK * !D * SCE * !SET_B * Q)	0.03008	0.03809	0.19647
	(!CLK * !D * SCE * !SET_B * Q)	0.03679	0.04481	0.20316
	!SCE	0.02771	0.02759	0.02675
	!SCE	0.03118	0.03107	0.03021
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.02126	0.03035	0.18898
	(CLK * D * SCE)	0.02721	0.03630	0.19490
	(CLK * !D * SCE)	0.02066	0.03010	0.19017
	(CLK * !D * SCE)	0.02684	0.03629	0.19631
	(!CLK * D * SCE * SET_B)	0.03433	0.04256	0.21383
	(!CLK * D * SCE * SET_B)	0.04079	0.04902	0.22026
	(!CLK * D * SCE * !SET_B * Q)	0.02614	0.03359	0.18978
	(!CLK * D * SCE * !SET_B * Q)	0.03273	0.04018	0.19633
	(!CLK * !D * SCE * SET_B)	0.03384	0.04241	0.21540
	(!CLK * !D * SCE * SET_B)	0.04053	0.04910	0.22206
	(!CLK * !D * SCE * !SET_B * Q)	0.02554	0.03327	0.19096
	(!CLK * !D * SCE * !SET_B * Q)	0.03237	0.04010	0.19775
	!SCE	0.02162	0.02149	0.02065
	!SCE	0.02503	0.02492	0.02406

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.04526	0.05436	0.21399
	(CLK * D * SCE)	0.05126	0.06037	0.21996
	(CLK * !D * SCE)	0.04466	0.05411	0.21517
	(CLK * !D * SCE)	0.05089	0.06035	0.22136
	(!CLK * D * SCE * SET_B)	0.05248	0.06070	0.23195
	(!CLK * D * SCE * SET_B)	0.05889	0.06710	0.23833
	(!CLK * D * SCE * !SET_B * Q)	0.04430	0.05174	0.20789
	(!CLK * D * SCE * !SET_B * Q)	0.05085	0.05827	0.21440
	(!CLK * !D * SCE * SET_B)	0.05200	0.06055	0.23352
	(!CLK * !D * SCE * SET_B)	0.05863	0.06720	0.24013
	(!CLK * !D * SCE * !SET_B * Q)	0.04371	0.05141	0.20908
	(!CLK * !D * SCE * !SET_B * Q)	0.05048	0.05819	0.21582
	!SCE	0.04743	0.04730	0.04646
	!SCE	0.05089	0.05078	0.04992

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03474	0.04750	0.25213
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02719	0.03995	0.24461
	(CLK * D * !SCD)	0.03495	0.04892	0.27498
	(CLK * D * !SCD)	0.02974	0.04369	0.26973
	(CLK * !D * SCD)	0.04262	0.06361	0.40491
	(CLK * !D * SCD)	0.03320	0.05417	0.39550
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.03414	0.04689	0.25153
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.02659	0.03935	0.24400
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.04543	0.05935	0.28508
	(!CLK * D * !SCD * SET_B)	0.04060	0.05447	0.28018
	(!CLK * D * !SCD * !SET_B * Q)	0.03789	0.05183	0.27647
	(!CLK * D * !SCD * !SET_B * Q)	0.03319	0.04710	0.27170
	(!CLK * !D * SCD * SET_B)	0.05157	0.07273	0.43089
	(!CLK * !D * SCD * SET_B)	0.04180	0.06296	0.42112
	(!CLK * !D * SCD * !SET_B * Q)	0.04815	0.06769	0.40610
	(!CLK * !D * SCD * !SET_B * Q)	0.03825	0.05779	0.39619
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.03171	0.04444	0.24693
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.02484	0.03755	0.24003

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02862	0.04134	0.24576
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02105	0.03378	0.23824
	(CLK * D * !SCD)	0.02893	0.04291	0.26874
	(CLK * D * !SCD)	0.02372	0.03765	0.26349
	(CLK * !D * SCD)	0.03641	0.05738	0.39841
	(CLK * !D * SCD)	0.02701	0.04794	0.38900
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.02788	0.04060	0.24502
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.02031	0.03305	0.23750
sky130_fd_sc_hs__sdfstp_2	**(!CLK * D * !SCD * SET_B)**	0.04148	0.05533	0.28046
	(!CLK * D * !SCD * SET_B)	0.03677	0.05060	0.27569
	(!CLK * D * !SCD * !SET_B * Q)	0.03332	0.04724	0.27123
	(!CLK * D * !SCD * !SET_B * Q)	0.02874	0.04261	0.26662
	(!CLK * !D * SCD * SET_B)	0.04777	0.06863	0.42606
	(!CLK * !D * SCD * SET_B)	0.03786	0.05872	0.41613
	(!CLK * !D * SCD * !SET_B * Q)	0.04397	0.06325	0.40052
	(!CLK * !D * SCD * !SET_B * Q)	0.03393	0.05320	0.39045
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.02563	0.03833	0.24063
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01874	0.03143	0.23372

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.05452	0.06726	0.27190
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04690	0.05964	0.26430
	(CLK * D * !SCD)	0.05301	0.06702	0.29377
	(CLK * D * !SCD)	0.04772	0.06171	0.28845
	(CLK * !D * SCD)	0.06249	0.08336	0.42400
	(CLK * !D * SCD)	0.05301	0.07384	0.41452
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.04601	0.05875	0.26339
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.03839	0.05113	0.25579
	(!CLK * D * !SCD * SET_B)	0.05970	0.07354	0.29885
	(!CLK * D * !SCD * SET_B)	0.05482	0.06864	0.29393
	(!CLK * D * !SCD * !SET_B * Q)	0.05156	0.06543	0.28966
	(!CLK * D * !SCD * !SET_B * Q)	0.04681	0.06069	0.28486
	(!CLK * !D * SCD * SET_B)	0.06581	0.08671	0.44444
	(!CLK * !D * SCD * SET_B)	0.05593	0.07678	0.43454
	(!CLK * !D * SCD * !SET_B * Q)	0.06203	0.08131	0.41888
	(!CLK * !D * SCD * !SET_B * Q)	0.05202	0.07129	0.40885
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.04379	0.05650	0.25900
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.03684	0.04954	0.25203

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02354	0.03726	0.24492
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03108	0.04478	0.25246
	(CLK * D * !SCD)	0.03475	0.04840	0.26813
	(CLK * D * !SCD)	0.03995	0.05349	0.27314
	(CLK * !D * SCD)	0.02038	0.04274	0.39442
	(CLK * !D * SCD)	0.02980	0.05219	0.40384
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.02294	0.03665	0.24431
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.03047	0.04416	0.25185
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.04356	0.05688	0.27661
	(!CLK * D * !SCD * SET_B)	0.04844	0.06174	0.28126
	(!CLK * D * !SCD * !SET_B * Q)	0.04021	0.05341	0.27050
	(!CLK * D * !SCD * !SET_B * Q)	0.04496	0.05816	0.27503
	(!CLK * !D * SCD * SET_B)	0.03101	0.05270	0.41718
	(!CLK * !D * SCD * SET_B)	0.04077	0.06249	0.42695
	(!CLK * !D * SCD * !SET_B * Q)	0.02369	0.04450	0.39409
	(!CLK * !D * SCD * !SET_B * Q)	0.03358	0.05441	0.40399
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01949	0.03318	0.24097
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.02635	0.04006	0.24785

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01739	0.03110	0.23858
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02495	0.03864	0.24613
	(CLK * D * !SCD)	0.02853	0.04218	0.26171
	(CLK * D * !SCD)	0.03376	0.04731	0.26674
	(CLK * !D * SCD)	0.01431	0.03666	0.38808
	(CLK * !D * SCD)	0.02373	0.04611	0.39750
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01667	0.03037	0.23783
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.02420	0.03789	0.24539
sky130_fd_sc_hs__sdfstp_2	**(!CLK * D * !SCD * SET_B)**	0.03974	0.05302	0.27210
	(!CLK * D * !SCD * SET_B)	0.04446	0.05778	0.27663
	(!CLK * D * !SCD * !SET_B * Q)	0.03601	0.04919	0.26561
	(!CLK * D * !SCD * !SET_B * Q)	0.04060	0.05377	0.27000
	(!CLK * !D * SCD * SET_B)	0.02700	0.04835	0.41180
	(!CLK * !D * SCD * SET_B)	0.03693	0.05830	0.42174
	(!CLK * !D * SCD * !SET_B * Q)	0.01907	0.03960	0.38801
	(!CLK * !D * SCD * !SET_B * Q)	0.02914	0.04969	0.39808
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01337	0.02705	0.23466
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.02024	0.03394	0.24156

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04319	0.05692	0.26459
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.05081	0.06452	0.27220
	(CLK * D * !SCD)	0.05448	0.06804	0.28680
	(CLK * D * !SCD)	0.05977	0.07323	0.29188
	(CLK * !D * SCD)	0.03835	0.06073	0.41344
	(CLK * !D * SCD)	0.04784	0.07022	0.42294
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.03468	0.04840	0.25607
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.04230	0.05601	0.26369
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.05767	0.07095	0.29020
	(!CLK * D * !SCD * SET_B)	0.06255	0.07587	0.29489
	(!CLK * D * !SCD * !SET_B * Q)	0.05396	0.06712	0.28371
	(!CLK * D * !SCD * !SET_B * Q)	0.05871	0.07191	0.28827
	(!CLK * !D * SCD * SET_B)	0.04518	0.06653	0.43027
	(!CLK * !D * SCD * SET_B)	0.05508	0.07645	0.44018
	(!CLK * !D * SCD * !SET_B * Q)	0.03726	0.05779	0.40648
	(!CLK * !D * SCD * !SET_B * Q)	0.04729	0.06785	0.41652
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.03144	0.04515	0.25295
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.03838	0.05210	0.25991

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.03065	0.03070	0.03065
	(CLK * Q)	0.02442	0.02439	0.02441
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.03030	0.03035	0.03030
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.02403	0.02403	0.02405
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.03177	0.03999	0.17811
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.02528	0.03347	0.17162
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.02482	0.02487	0.02483
	(CLK * Q)	0.01832	0.01830	0.01833
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.02442	0.02447	0.02443
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.01791	0.01789	0.01792
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.02600	0.03422	0.17328
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01926	0.02745	0.16653

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.04265	0.04268	0.04265
	(CLK * Q)	0.03625	0.03623	0.03625
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.04216	0.04223	0.04219
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.03577	0.03576	0.03578
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.04386	0.05199	0.18910
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.03724	0.04532	0.18246

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.02447	0.02434	0.02436
	(CLK * Q)	0.03074	0.03065	0.03060
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.02370	0.02352	0.02351
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.02999	0.02983	0.02975
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.02329	0.03231	0.17198
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.02978	0.03882	0.17844

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.01805	0.01790	0.01790
	(CLK * Q)	0.02453	0.02447	0.02440
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.01708	0.01686	0.01684
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.02356	0.02344	0.02335
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01706	0.02613	0.16681
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.02384	0.03289	0.17355
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.03639	0.03624	0.03624
	(CLK * Q)	0.04276	0.04270	0.04264
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.03546	0.03526	0.03523
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.04183	0.04173	0.04163
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.03532	0.04426	0.18298
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.04199	0.05092	0.18959

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)**	0.04597	0.06852	0.44864
	(D * SCD * SCE * Q)	0.04040	0.06291	0.44305
	(D * !SCE * Q)	0.04269	0.06524	0.44536
	(D * !SCE * Q)	0.03712	0.05963	0.43977
	(D * !SCD * SCE * SET_B * !Q)	0.03922	0.06171	0.44130
	(D * !SCD * SCE * SET_B * !Q)	0.03363	0.05609	0.43569
	(D * !SCD * SCE * !SET_B * Q)	0.06368	0.08665	0.46842
	(D * !SCD * SCE * !SET_B * Q)	0.05763	0.08057	0.46235
	(!D * SCD * SCE * Q)	0.04877	0.07132	0.45144
	(!D * SCD * SCE * Q)	0.04320	0.06571	0.44585
	(!D * !SCE * SET_B * !Q)	0.03347	0.05596	0.43556
	(!D * !SCE * SET_B * !Q)	0.02789	0.05034	0.42995
	(!D * !SCE * !SET_B * Q)	0.05792	0.08092	0.46266
	(!D * !SCE * !SET_B * Q)	0.05186	0.07482	0.45659
	(!D * !SCD * SCE * SET_B * !Q)	0.03920	0.06169	0.44128
	(!D * !SCD * SCE * SET_B * !Q)	0.03361	0.05607	0.43567
	(!D * !SCD * SCE * !SET_B * Q)	0.06368	0.08660	0.46842
	(!D * !SCD * SCE * !SET_B * Q)	0.05763	0.08051	0.46234

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.04262	0.06451	0.44397
	(D * SCD * SCE * Q)	0.03707	0.05896	0.43845
	(D * !SCE * Q)	0.03934	0.06123	0.44070
	(D * !SCE * Q)	0.03379	0.05568	0.43518
	(D * !SCD * SCE * SET_B * !Q)	0.05574	0.07718	0.45257
	(D * !SCD * SCE * SET_B * !Q)	0.05016	0.07160	0.44699
	(D * !SCD * SCE * !SET_B * Q)	0.08111	0.10420	0.48807
	(D * !SCD * SCE * !SET_B * Q)	0.07502	0.09807	0.48195
	(!D * SCD * SCE * Q)	0.04542	0.06731	0.44677
	(!D * SCD * SCE * Q)	0.03987	0.06176	0.44125
	(!D * !SCE * SET_B * !Q)	0.05000	0.07144	0.44682
	(!D * !SCE * SET_B * !Q)	0.04441	0.06585	0.44125
	(!D * !SCE * !SET_B * Q)	0.07535	0.09845	0.48232
	(!D * !SCE * !SET_B * Q)	0.06925	0.09231	0.47619
	(!D * !SCD * SCE * SET_B * !Q)	0.05572	0.07716	0.45254
	(!D * !SCD * SCE * SET_B * !Q)	0.05014	0.07157	0.44697
	(!D * !SCD * SCE * !SET_B * Q)	0.08115	0.10414	0.48810
	(!D * !SCD * SCE * !SET_B * Q)	0.07502	0.09801	0.48198

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.06051	0.08248	0.46203
	(D * SCD * SCE * Q)	0.05494	0.07692	0.45650
	(D * !SCE * Q)	0.05723	0.07921	0.45876
	(D * !SCE * Q)	0.05166	0.07364	0.45322
	(D * !SCD * SCE * SET_B * !Q)	0.06446	0.08598	0.46145
	(D * !SCD * SCE * SET_B * !Q)	0.05887	0.08039	0.45587
	(D * !SCD * SCE * !SET_B * Q)	0.10294	0.12644	0.51183
	(D * !SCD * SCE * !SET_B * Q)	0.09693	0.12039	0.50581
	(!D * SCD * SCE * Q)	0.06331	0.08528	0.46483
	(!D * SCD * SCE * Q)	0.05774	0.07972	0.45930
	(!D * !SCE * SET_B * !Q)	0.05871	0.08023	0.45571
	(!D * !SCE * SET_B * !Q)	0.05312	0.07464	0.45013
	(!D * !SCE * !SET_B * Q)	0.09719	0.12070	0.50609
	(!D * !SCE * !SET_B * Q)	0.09116	0.11463	0.50005
	(!D * !SCD * SCE * SET_B * !Q)	0.06444	0.08595	0.46143
	(!D * !SCD * SCE * SET_B * !Q)	0.05885	0.08036	0.45585
	(!D * !SCD * SCE * !SET_B * Q)	0.10298	0.12638	0.51187
	(!D * !SCD * SCE * !SET_B * Q)	0.09697	0.12031	0.50585

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)**	0.04521	0.07002	0.47604
	(D * SCD * SCE * SET_B * !Q)	0.05046	0.07531	0.48132
	(D * SCD * SCE * Q)	0.03687	0.06089	0.44400
	(D * SCD * SCE * Q)	0.04247	0.06648	0.44961
	(D * !SCE * SET_B * !Q)	0.04191	0.06671	0.47267
	(D * !SCE * SET_B * !Q)	0.04715	0.07199	0.47794
	(D * !SCE * Q)	0.03358	0.05760	0.44072
	(D * !SCE * Q)	0.03919	0.06320	0.44633
	(D * !SCD * SCE * SET_B * Q)	0.04765	0.07220	0.46096
	(D * !SCD * SCE * SET_B * Q)	0.05363	0.07818	0.46694
	(D * !SCD * SCE * SET_B * !Q)	0.02968	0.05375	0.43756
	(D * !SCD * SCE * SET_B * !Q)	0.03527	0.05936	0.44316
	(D * !SCD * SCE * !SET_B * Q)	0.04052	0.06504	0.45456
	(D * !SCD * SCE * !SET_B * Q)	0.04659	0.07113	0.46065
	(!D * SCD * SCE * SET_B * !Q)	0.04800	0.07281	0.47876
	(!D * SCD * SCE * SET_B * !Q)	0.05325	0.07809	0.48403
	(!D * SCD * SCE * Q)	0.03966	0.06369	0.44680
	(!D * SCD * SCE * Q)	0.04526	0.06928	0.45240
	(!D * !SCE * SET_B * Q)	0.04188	0.06644	0.45519
	(!D * !SCE * SET_B * Q)	0.04784	0.07240	0.46114
	(!D * !SCE * SET_B * !Q)	0.02393	0.04800	0.43182
	(!D * !SCE * SET_B * !Q)	0.02952	0.05361	0.43741
	(!D * !SCE * !SET_B * Q)	0.03477	0.05929	0.44880
	(!D * !SCE * !SET_B * Q)	0.04084	0.06540	0.45488
	(!D * !SCD * SCE * SET_B * Q)	0.04764	0.07221	0.46096
	(!D * !SCD * SCE * SET_B * Q)	0.05360	0.07817	0.46692
	(!D * !SCD * SCE * SET_B * !Q)	0.02965	0.05373	0.43755
	(!D * !SCD * SCE * SET_B * !Q)	0.03524	0.05934	0.44315
	(!D * !SCD * SCE * !SET_B * Q)	0.04050	0.06509	0.45457
	(!D * !SCD * SCE * !SET_B * Q)	0.04659	0.07119	0.46065

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.07006	0.09399	0.50965
	(D * SCD * SCE * SET_B * !Q)	0.07513	0.09907	0.51469
	(D * SCD * SCE * Q)	0.03229	0.05582	0.43829
	(D * SCD * SCE * Q)	0.03784	0.06138	0.44384
	(D * !SCE * SET_B * !Q)	0.06674	0.09066	0.50624
	(D * !SCE * SET_B * !Q)	0.07181	0.09574	0.51128
	(D * !SCE * Q)	0.02901	0.05254	0.43501
	(D * !SCE * Q)	0.03456	0.05810	0.44056
	(D * !SCD * SCE * SET_B * Q)	0.04589	0.06994	0.45827
	(D * !SCD * SCE * SET_B * Q)	0.05191	0.07596	0.46428
	(D * !SCD * SCE * SET_B * !Q)	0.03550	0.05931	0.44574
	(D * !SCD * SCE * SET_B * !Q)	0.04107	0.06488	0.45132
	(D * !SCD * SCE * !SET_B * Q)	0.03801	0.06205	0.45101
	(D * !SCD * SCE * !SET_B * Q)	0.04415	0.06821	0.45715
	(!D * SCD * SCE * SET_B * !Q)	0.07284	0.09677	0.51215
	(!D * SCD * SCE * SET_B * !Q)	0.07791	0.10185	0.51719
	(!D * SCD * SCE * Q)	0.03509	0.05862	0.44109
	(!D * SCD * SCE * Q)	0.04063	0.06418	0.44663
	(!D * !SCE * SET_B * Q)	0.04009	0.06415	0.45252
	(!D * !SCE * SET_B * Q)	0.04609	0.07016	0.45851
	(!D * !SCE * SET_B * !Q)	0.02975	0.05356	0.43999
	(!D * !SCE * SET_B * !Q)	0.03533	0.05913	0.44557
	(!D * !SCE * !SET_B * Q)	0.03226	0.05631	0.44527
	(!D * !SCE * !SET_B * Q)	0.03840	0.06246	0.45142
	(!D * !SCD * SCE * SET_B * Q)	0.04589	0.06995	0.45829
	(!D * !SCD * SCE * SET_B * Q)	0.05190	0.07598	0.46430
	(!D * !SCD * SCE * SET_B * !Q)	0.03547	0.05929	0.44573
	(!D * !SCD * SCE * SET_B * !Q)	0.04105	0.06485	0.45131
	(!D * !SCD * SCE * !SET_B * Q)	0.03799	0.06211	0.45104
	(!D * !SCD * SCE * !SET_B * Q)	0.04413	0.06827	0.45717

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.07841	0.10242	0.51799
	(D * SCD * SCE * SET_B * !Q)	0.08359	0.10761	0.52314
	(D * SCD * SCE * Q)	0.05009	0.07369	0.45618
	(D * SCD * SCE * Q)	0.05565	0.07926	0.46174
	(D * !SCE * SET_B * !Q)	0.07510	0.09910	0.51455
	(D * !SCE * SET_B * !Q)	0.08028	0.10426	0.51972
	(D * !SCE * Q)	0.04681	0.07040	0.45290
	(D * !SCE * Q)	0.05237	0.07598	0.45846
	(D * !SCD * SCE * SET_B * Q)	0.06346	0.08759	0.47589
	(D * !SCD * SCE * SET_B * Q)	0.06941	0.09356	0.48182
	(D * !SCD * SCE * SET_B * !Q)	0.04413	0.06802	0.45453
	(D * !SCD * SCE * SET_B * !Q)	0.04971	0.07359	0.46010
	(D * !SCD * SCE * !SET_B * Q)	0.05565	0.07976	0.46880
	(D * !SCD * SCE * !SET_B * Q)	0.06171	0.08583	0.47485
	(!D * SCD * SCE * SET_B * !Q)	0.08119	0.10520	0.52045
	(!D * SCD * SCE * SET_B * !Q)	0.08637	0.11038	0.52561
	(!D * SCD * SCE * Q)	0.05289	0.07649	0.45898
	(!D * SCD * SCE * Q)	0.05844	0.08206	0.46453
	(!D * !SCE * SET_B * Q)	0.05766	0.08181	0.47013
	(!D * !SCE * SET_B * Q)	0.06359	0.08773	0.47603
	(!D * !SCE * SET_B * !Q)	0.03838	0.06226	0.44878
	(!D * !SCE * SET_B * !Q)	0.04396	0.06782	0.45436
	(!D * !SCE * !SET_B * Q)	0.04990	0.07402	0.46306
	(!D * !SCE * !SET_B * Q)	0.05596	0.08008	0.46911
	(!D * !SCD * SCE * SET_B * Q)	0.06345	0.08764	0.47590
	(!D * !SCD * SCE * SET_B * Q)	0.06939	0.09357	0.48183
	(!D * !SCD * SCE * SET_B * !Q)	0.04411	0.06799	0.45450
	(!D * !SCD * SCE * SET_B * !Q)	0.04969	0.07356	0.46008
	(!D * !SCD * SCE * !SET_B * Q)	0.05563	0.07983	0.46881
	(!D * !SCD * SCE * !SET_B * Q)	0.06170	0.08590	0.47486

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00196	0.00201	0.00421	0.00301	1.76493	1.67697
sky130_fd_sc_hs__sdfxbp_2	0.00194	0.00198	0.00427	0.00301	3.38252	3.37734

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	3839.40000	5269.88000
sky130_fd_sc_hs__sdfxbp_2	0.00000	4006.42000	5458.27000

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)	0.14077	0.50718	5.61175
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.13564	0.41686	5.45851

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.14675	0.39473	3.31561
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.15599	0.35301	3.13619

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)	0.17201	0.54155	5.61642
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.20045	0.47605	5.55717

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)	0.16468	0.39510	3.11426
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.17477	0.36039	3.24305

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)	-0.04540	-0.10894	-0.93013
	setup	CLK (R)	0.08992	0.14605	0.96622
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04387	-0.11294	-0.96796
	setup	CLK (R)	0.08966	0.14721	1.00257

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)	-0.04999	-0.12609	-2.31964
	setup	CLK (R)	0.10311	0.19327	2.52084
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05120	-0.12757	-2.37872
	setup	CLK (R)	0.10413	0.19800	2.56870

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)	-0.04540	-0.10894	-0.93013
	setup	CLK (R)	0.08992	0.14605	0.96622
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04387	-0.11294	-0.96796
	setup	CLK (R)	0.08966	0.14721	1.00257

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)	-0.04999	-0.12609	-2.31964
	setup	CLK (R)	0.10311	0.19327	2.52084
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05120	-0.12757	-2.37872
	setup	CLK (R)	0.10413	0.19800	2.56870

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)	-0.06326	-0.11694	-0.84643
	setup	CLK (R)	0.11632	0.16334	0.88435
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06166	-0.11694	-0.84917
	setup	CLK (R)	0.11392	0.16134	0.88730

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)	-0.07441	-0.14720	-2.61864
	setup	CLK (R)	0.13645	0.21187	2.68847
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07372	-0.15034	-2.73609
	setup	CLK (R)	0.13919	0.21561	2.80375

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)	-0.06326	-0.11694	-0.84643
	hold	CLK (R)	-0.06545	-0.12387	-0.85663
	setup	CLK (R)	0.11106	0.15934	0.87422
	setup	CLK (R)	0.11632	0.16334	0.88435
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06166	-0.11694	-0.84917
	hold	CLK (R)	-0.06764	-0.12407	-0.86072
	setup	CLK (R)	0.11083	0.15712	0.88090
	setup	CLK (R)	0.11392	0.16134	0.88730

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)	-0.07626	-0.15179	-2.62439
	hold	CLK (R)	-0.07441	-0.14720	-2.61864
	setup	CLK (R)	0.13645	0.21187	2.68715
	setup	CLK (R)	0.13409	0.21100	2.68847
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07717	-0.15464	-2.74151
	hold	CLK (R)	-0.07372	-0.15034	-2.73609
	setup	CLK (R)	0.13919	0.21418	2.80228
	setup	CLK (R)	0.13802	0.21561	2.80375

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)	-0.05452	-0.10499	-0.55216
	setup	CLK (R)	0.13951	0.17012	1.31903
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05436	-0.10873	-0.59810
	setup	CLK (R)	0.14199	0.16803	1.31309

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)	-0.06098	-0.11203	-1.56239
	setup	CLK (R)	0.12862	0.20581	2.39207
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06171	-0.11403	-1.89595
	setup	CLK (R)	0.12945	0.20743	2.43390

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)	-0.07788	-0.10499	-0.55216
	hold	CLK (R)	-0.05452	-0.12624	-1.26208
	setup	CLK (R)	0.13951	0.16278	0.57516
	setup	CLK (R)	0.10351	0.17012	1.31903
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07906	-0.10873	-0.59810
	hold	CLK (R)	-0.05436	-0.12707	-1.26982
	setup	CLK (R)	0.14199	0.16344	0.62051
	setup	CLK (R)	0.10361	0.16803	1.31309

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)	-0.07955	-0.17548	-2.36684
	hold	CLK (R)	-0.06098	-0.11203	-1.56239
	setup	CLK (R)	0.12862	0.20581	2.39207
	setup	CLK (R)	0.11351	0.18063	2.09532
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08329	-0.17748	-2.40975
	hold	CLK (R)	-0.06171	-0.11403	-1.89595
	setup	CLK (R)	0.12945	0.20743	2.43390
	setup	CLK (R)	0.11794	0.18371	2.20298

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 ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.06708	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	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 ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12121	0.59937	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	0.06098	0.07432	0.28962
	CLK	0.05816	0.07152	0.28640
sky130_fd_sc_hs__sdfxbp_2	CLK	0.07308	0.08546	0.30047
	CLK	0.07027	0.08263	0.29664

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.05694	0.06950	0.27099
	CLK	0.05413	0.06660	0.26767
sky130_fd_sc_hs__sdfxbp_2	CLK	0.06070	0.07165	0.27799
	CLK	0.05789	0.06881	0.27389

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.07836	0.09091	0.29384
	CLK	0.07554	0.08803	0.29050
sky130_fd_sc_hs__sdfxbp_2	CLK	0.08179	0.09280	0.29981
	CLK	0.07898	0.08993	0.29569

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.04480	0.05823	0.27225
	CLK	0.04198	0.05535	0.26921
sky130_fd_sc_hs__sdfxbp_2	CLK	0.05580	0.06818	0.28133
	CLK	0.05299	0.06534	0.27787

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.04454	0.04460	0.04536
	(CLK * SCD * SCE)	0.04225	0.04225	0.04303
	(CLK * !SCE)	0.04537	0.05453	0.20580
	(CLK * !SCE)	0.04111	0.05024	0.20152
	(CLK * !SCD * SCE)	0.03945	0.03946	0.03943
	(CLK * !SCD * SCE)	0.03679	0.03678	0.03676
	(!CLK * SCD * SCE)	0.02584	0.02587	0.02665
	(!CLK * SCD * SCE)	0.02353	0.02354	0.02432
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.03510	0.04777	0.24901
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.03084	0.04348	0.24474
	(!CLK * !SCD * SCE)	0.04372	0.04371	0.04367
	(!CLK * !SCD * SCE)	0.04107	0.04104	0.04100
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.04284	0.04288	0.04365
	(CLK * SCD * SCE)	0.04054	0.04055	0.04132
	(CLK * !SCE)	0.04353	0.05264	0.20390
	(CLK * !SCE)	0.03931	0.04839	0.19967
	(CLK * !SCD * SCE)	0.03777	0.03777	0.03773
	(CLK * !SCD * SCE)	0.03509	0.03509	0.03506
	(!CLK * SCD * SCE)	0.03049	0.03053	0.03130
	(!CLK * SCD * SCE)	0.02818	0.02820	0.02897
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.03983	0.05245	0.25355
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.03560	0.04823	0.24932
	(!CLK * !SCD * SCE)	0.04839	0.04838	0.04834
	(!CLK * !SCD * SCE)	0.04574	0.04570	0.04567

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.04456	0.04443	0.04276
	(CLK * SCD * SCE)	0.04688	0.04675	0.04508
	(CLK * !SCE)	0.03385	0.04391	0.20156
	(CLK * !SCE)	0.03811	0.04819	0.20583
	(CLK * !SCD * SCE)	0.03763	0.03762	0.03763
	(CLK * !SCD * SCE)	0.04030	0.04030	0.04029
	(!CLK * SCD * SCE)	0.02585	0.02570	0.02405
	(!CLK * SCD * SCE)	0.02817	0.02804	0.02637
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.04936	0.05975	0.24117
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.05363	0.06402	0.24544
	(!CLK * !SCD * SCE)	0.04208	0.04205	0.04206
	(!CLK * !SCD * SCE)	0.04475	0.04473	0.04472
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.04282	0.04268	0.04102
	(CLK * SCD * SCE)	0.04514	0.04501	0.04334
	(CLK * !SCE)	0.03227	0.04232	0.19992
	(CLK * !SCE)	0.03649	0.04656	0.20415
	(CLK * !SCD * SCE)	0.03587	0.03586	0.03587
	(CLK * !SCD * SCE)	0.03854	0.03854	0.03854
	(!CLK * SCD * SCE)	0.03046	0.03032	0.02866
	(!CLK * SCD * SCE)	0.03278	0.03266	0.03098
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.05405	0.06443	0.24573
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.05827	0.06865	0.24996
	(!CLK * !SCD * SCE)	0.04668	0.04665	0.04666
	(!CLK * !SCD * SCE)	0.04935	0.04933	0.04932

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.05105	0.05962	0.21444
	(CLK * D * SCE)	0.04532	0.05386	0.20869
	(CLK * !D * SCE)	0.05487	0.06286	0.21630
	(CLK * !D * SCE)	0.04891	0.05687	0.21033
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.04107	0.05299	0.25779
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.03533	0.04724	0.25204
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.04495	0.05641	0.26022
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.03898	0.05044	0.25424
	!SCE	0.04175	0.04178	0.04559
	!SCE	0.03861	0.03862	0.04245
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.04918	0.05776	0.21312
	(CLK * D * SCE)	0.04351	0.05209	0.20744
	(CLK * !D * SCE)	0.05300	0.06104	0.21498
	(CLK * !D * SCE)	0.04710	0.05512	0.20908
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.04573	0.05765	0.26268
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.04006	0.05198	0.25700
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.04960	0.06110	0.26514
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.04370	0.05519	0.25923
	!SCE	0.03997	0.04000	0.04381
	!SCE	0.03686	0.03686	0.04070

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.04133	0.05037	0.20937
	(CLK * D * SCE)	0.04707	0.05612	0.21510
	(CLK * !D * SCE)	0.04072	0.05011	0.21056
	(CLK * !D * SCE)	0.04669	0.05610	0.21651
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.05753	0.06667	0.24787
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.06327	0.07244	0.25359
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.05726	0.06683	0.25007
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.06323	0.07282	0.25602
	!SCE	0.04358	0.04345	0.04261
	!SCE	0.04672	0.04662	0.04575
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.03972	0.04882	0.20834
	(CLK * D * SCE)	0.04539	0.05451	0.21399
	(CLK * !D * SCE)	0.03911	0.04856	0.20953
	(CLK * !D * SCE)	0.04502	0.05448	0.21541
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.06222	0.07135	0.25283
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.06790	0.07705	0.25848
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.06192	0.07151	0.25500
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.06782	0.07743	0.26088
	!SCE	0.04190	0.04177	0.04093
	!SCE	0.04502	0.04491	0.04405

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)**	0.05067	0.06393	0.27205
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04282	0.05606	0.26423
	(CLK * D * !SCD)	0.04898	0.06331	0.29361
	(CLK * D * !SCD)	0.04354	0.05785	0.28814
	(CLK * !D * SCD)	0.05876	0.08046	0.43167
	(CLK * !D * SCD)	0.04895	0.07064	0.42186
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.03196	0.04522	0.25334
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.02411	0.03735	0.24552
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.06486	0.07847	0.30203
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.05941	0.07299	0.29654
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.04874	0.07435	0.48027
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.03893	0.06453	0.47046
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04969	0.06274	0.26878
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04253	0.05555	0.26158

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.04918	0.06238	0.27059
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04119	0.05437	0.26261
	(CLK * D * !SCD)	0.04763	0.06194	0.29230
	(CLK * D * !SCD)	0.04200	0.05629	0.28664
	(CLK * !D * SCD)	0.05719	0.07882	0.43041
	(CLK * !D * SCD)	0.04726	0.06887	0.42048
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.03683	0.05003	0.25824
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.02884	0.04201	0.25026
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.06978	0.08335	0.30703
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.06415	0.07768	0.30134
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.05370	0.07921	0.48534
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.04377	0.06927	0.47543
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.05457	0.06757	0.27365
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04725	0.06021	0.26631

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)**	0.03884	0.05272	0.26411
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04666	0.06058	0.27195
	(CLK * D * !SCD)	0.05010	0.06389	0.28636
	(CLK * D * !SCD)	0.05557	0.06925	0.29162
	(CLK * !D * SCD)	0.03427	0.05718	0.42053
	(CLK * !D * SCD)	0.04405	0.06700	0.43033
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.02011	0.03399	0.24539
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.02794	0.04185	0.25323
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.03988	0.05449	0.29144
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.04535	0.05994	0.29669
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.04978	0.07275	0.46016
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.05956	0.08258	0.46997
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.03717	0.05108	0.26243
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04437	0.05828	0.26963

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.03707	0.05089	0.26234
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04506	0.05890	0.27035
	(CLK * D * !SCD)	0.04824	0.06196	0.28457
	(CLK * D * !SCD)	0.05391	0.06751	0.29002
	(CLK * !D * SCD)	0.03265	0.05549	0.41922
	(CLK * !D * SCD)	0.04255	0.06543	0.42914
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.02470	0.03852	0.24999
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.03269	0.04654	0.25799
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.04458	0.05913	0.29619
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.05025	0.06481	0.30164
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.05444	0.07731	0.46494
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.06434	0.08725	0.47486
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04180	0.05563	0.26706
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.04912	0.06299	0.27442

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)	0.04220	0.06679	0.45603
	(D * SCD * SCE * Q * !Q_N)	0.03659	0.06115	0.45040
	(D * !SCE * Q * !Q_N)	0.03891	0.06353	0.45311
	(D * !SCE * Q * !Q_N)	0.03330	0.05789	0.44750
	(D * !SCD * SCE * !Q * Q_N)	0.05521	0.07991	0.47082
	(D * !SCD * SCE * !Q * Q_N)	0.04961	0.07427	0.46520
	(!D * SCD * SCE * Q * !Q_N)	0.04500	0.06960	0.45880
	(!D * SCD * SCE * Q * !Q_N)	0.03940	0.06396	0.45317
	(!D * !SCE * !Q * Q_N)	0.04946	0.07412	0.46420
	(!D * !SCE * !Q * Q_N)	0.04385	0.06848	0.45858
	(!D * !SCD * SCE * !Q * Q_N)	0.05519	0.07988	0.47080
	(!D * !SCD * SCE * !Q * Q_N)	0.04959	0.07426	0.46518
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.04716	0.07180	0.46369
	(D * SCD * SCE * Q * !Q_N)	0.04156	0.06617	0.45810
	(D * !SCE * Q * !Q_N)	0.04387	0.06854	0.46083
	(D * !SCE * Q * !Q_N)	0.03827	0.06291	0.45521
	(D * !SCD * SCE * !Q * Q_N)	0.05385	0.07863	0.47222
	(D * !SCD * SCE * !Q * Q_N)	0.04826	0.07298	0.46661
	(!D * SCD * SCE * Q * !Q_N)	0.04996	0.07460	0.46649
	(!D * SCD * SCE * Q * !Q_N)	0.04437	0.06897	0.46087
	(!D * !SCE * !Q * Q_N)	0.04811	0.07313	0.46560
	(!D * !SCE * !Q * Q_N)	0.04248	0.06748	0.45998
	(!D * !SCD * SCE * !Q * Q_N)	0.05383	0.07860	0.47220
	(!D * !SCD * SCE * !Q * Q_N)	0.04824	0.07295	0.46658

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)**	0.03450	0.05902	0.44494
	(D * SCD * SCE * Q * !Q_N)	0.04011	0.06467	0.45056
	(D * SCD * SCE * !Q * Q_N)	0.06077	0.08612	0.49631
	(D * SCD * SCE * !Q * Q_N)	0.06637	0.09176	0.50193
	(D * !SCE * Q * !Q_N)	0.03123	0.05575	0.44209
	(D * !SCE * Q * !Q_N)	0.03683	0.06140	0.44771
	(D * !SCE * !Q * Q_N)	0.05747	0.08311	0.49597
	(D * !SCE * !Q * Q_N)	0.06307	0.08874	0.50158
	(D * !SCD * SCE * Q * !Q_N)	0.06593	0.09041	0.48429
	(D * !SCD * SCE * Q * !Q_N)	0.07156	0.09607	0.48995
	(D * !SCD * SCE * !Q * Q_N)	0.04971	0.07434	0.46075
	(D * !SCD * SCE * !Q * Q_N)	0.05531	0.07998	0.46637
	(!D * SCD * SCE * Q * !Q_N)	0.03731	0.06183	0.44771
	(!D * SCD * SCE * Q * !Q_N)	0.04291	0.06746	0.45333
	(!D * SCD * SCE * !Q * Q_N)	0.06357	0.08891	0.49903
	(!D * SCD * SCE * !Q * Q_N)	0.06917	0.09455	0.50465
	(!D * !SCE * Q * !Q_N)	0.05979	0.08414	0.47612
	(!D * !SCE * Q * !Q_N)	0.06540	0.08977	0.48174
	(!D * !SCE * !Q * Q_N)	0.04386	0.06843	0.45442
	(!D * !SCE * !Q * Q_N)	0.04947	0.07407	0.46004
	(!D * !SCD * SCE * Q * !Q_N)	0.06599	0.09051	0.48446
	(!D * !SCD * SCE * Q * !Q_N)	0.07161	0.09615	0.49008
	(!D * !SCD * SCE * !Q * Q_N)	0.04968	0.07431	0.46074
	(!D * !SCD * SCE * !Q * Q_N)	0.05529	0.07995	0.46636

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.03930	0.06394	0.45230
	(D * SCD * SCE * Q * !Q_N)	0.04490	0.06958	0.45791
	(D * SCD * SCE * !Q * Q_N)	0.05940	0.08502	0.49818
	(D * SCD * SCE * !Q * Q_N)	0.06500	0.09063	0.50380
	(D * !SCE * Q * !Q_N)	0.03603	0.06069	0.44947
	(D * !SCE * Q * !Q_N)	0.04162	0.06632	0.45508
	(D * !SCE * !Q * Q_N)	0.05610	0.08199	0.49687
	(D * !SCE * !Q * Q_N)	0.06170	0.08759	0.50249
	(D * !SCD * SCE * Q * !Q_N)	0.07062	0.09526	0.49127
	(D * !SCD * SCE * Q * !Q_N)	0.07625	0.10092	0.49690
	(D * !SCD * SCE * !Q * Q_N)	0.04811	0.07286	0.46170
	(D * !SCD * SCE * !Q * Q_N)	0.05371	0.07850	0.46732
	(!D * SCD * SCE * Q * !Q_N)	0.04211	0.06675	0.45508
	(!D * SCD * SCE * Q * !Q_N)	0.04770	0.07238	0.46069
	(!D * SCD * SCE * !Q * Q_N)	0.06220	0.08781	0.50091
	(!D * SCD * SCE * !Q * Q_N)	0.06780	0.09344	0.50654
	(!D * !SCE * Q * !Q_N)	0.06448	0.08891	0.48395
	(!D * !SCE * Q * !Q_N)	0.07008	0.09454	0.48957
	(!D * !SCE * !Q * Q_N)	0.04227	0.06697	0.45535
	(!D * !SCE * !Q * Q_N)	0.04787	0.07261	0.46097
	(!D * !SCD * SCE * Q * !Q_N)	0.07068	0.09536	0.49146
	(!D * !SCD * SCE * Q * !Q_N)	0.07629	0.10101	0.49710
	(!D * !SCD * SCE * !Q * Q_N)	0.04809	0.07284	0.46169
	(!D * !SCD * SCE * !Q * Q_N)	0.05369	0.07848	0.46732

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00198	0.00210	0.00436	0.00299	1.72570
sky130_fd_sc_hs__sdfxtp_2	0.00201	0.00206	0.00422	0.00302	3.25242
sky130_fd_sc_hs__sdfxtp_4	0.00199	0.00204	0.00435	0.00299	6.28949

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	3270.95000	5158.68000
sky130_fd_sc_hs__sdfxtp_2	0.00000	3167.72000	4455.59000
sky130_fd_sc_hs__sdfxtp_4	0.00000	4744.86000	6614.25000

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)**	0.12855	0.49556	5.55809
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.13033	0.41267	5.37794
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.15590	0.38194	5.58200

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.13876	0.37861	3.20648
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.14497	0.33573	3.04698
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.14351	0.29618	3.12336

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)	-0.04694	-0.11294	-0.93027
	setup	CLK (R)	0.09355	0.14921	0.96640
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04853	-0.11294	-0.93424
	setup	CLK (R)	0.09353	0.15062	0.97365
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04381	-0.10894	-0.92357
	setup	CLK (R)	0.08910	0.14321	0.95939

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)	-0.04982	-0.12459	-2.31840
	setup	CLK (R)	0.10730	0.19833	2.51906
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05185	-0.12745	-2.32655
	setup	CLK (R)	0.11257	0.20203	2.53937
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05102	-0.12957	-2.34332
	setup	CLK (R)	0.10789	0.19707	2.52064

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)	-0.04694	-0.11294	-0.93027
	setup	CLK (R)	0.09355	0.14921	0.96640
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04853	-0.11294	-0.93424
	setup	CLK (R)	0.09353	0.15062	0.97365
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04381	-0.10894	-0.92357
	setup	CLK (R)	0.08910	0.14321	0.95939

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)	-0.04982	-0.12459	-2.31840
	setup	CLK (R)	0.10730	0.19833	2.51906
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05185	-0.12745	-2.32655
	setup	CLK (R)	0.11257	0.20203	2.53937
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05102	-0.12957	-2.34332
	setup	CLK (R)	0.10789	0.19707	2.52064

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)	-0.06331	-0.11694	-0.84803
	setup	CLK (R)	0.12032	0.16918	0.89118
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06509	-0.11701	-0.85496
	setup	CLK (R)	0.12068	0.16943	0.89812
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06327	-0.11294	-0.84056
	setup	CLK (R)	0.11355	0.16134	0.87947

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)	-0.07575	-0.15133	-2.60240
	setup	CLK (R)	0.14125	0.21526	2.67500
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07856	-0.15353	-2.62554
	setup	CLK (R)	0.14600	0.21971	2.69704
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07730	-0.15297	-2.60896
	setup	CLK (R)	0.14070	0.21537	2.68145

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)	-0.06331	-0.11694	-0.84803
	hold	CLK (R)	-0.06795	-0.12507	-0.85946
	setup	CLK (R)	0.11373	0.16134	0.87952
	setup	CLK (R)	0.12032	0.16918	0.89118
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06509	-0.11701	-0.85496
	hold	CLK (R)	-0.06978	-0.12676	-0.86392
	setup	CLK (R)	0.11592	0.16334	0.88479
	setup	CLK (R)	0.12068	0.16943	0.89812
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06327	-0.11294	-0.84056
	hold	CLK (R)	-0.06519	-0.12121	-0.84928
	setup	CLK (R)	0.10944	0.15734	0.86917
	setup	CLK (R)	0.11355	0.16134	0.87947

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)	-0.07875	-0.15302	-2.60941
	hold	CLK (R)	-0.07575	-0.15133	-2.60240
	setup	CLK (R)	0.14031	0.21526	2.67277
	setup	CLK (R)	0.14125	0.21518	2.67500
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08324	-0.15531	-2.63038
	hold	CLK (R)	-0.07856	-0.15353	-2.62554
	setup	CLK (R)	0.14443	0.21971	2.69704
	setup	CLK (R)	0.14600	0.21905	2.69415
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08204	-0.15602	-2.61580
	hold	CLK (R)	-0.07730	-0.15297	-2.60896
	setup	CLK (R)	0.14070	0.21498	2.68145
	setup	CLK (R)	0.14015	0.21537	2.68049

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)	-0.05306	-0.11057	-0.54620
	setup	CLK (R)	0.14452	0.17343	1.32912
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05459	-0.11097	-0.55363
	setup	CLK (R)	0.14885	0.17392	1.33110
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05530	-0.11246	-0.55142
	setup	CLK (R)	0.14416	0.16749	1.31606

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)	-0.06067	-0.11241	-1.46251
	setup	CLK (R)	0.13210	0.20975	2.40156
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06340	-0.11408	-1.51776
	setup	CLK (R)	0.13007	0.20849	2.40030
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06021	-0.11360	-1.53195
	setup	CLK (R)	0.12656	0.20424	2.38819

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)	-0.08327	-0.11057	-0.54620
	hold	CLK (R)	-0.05306	-0.12697	-1.26794
	setup	CLK (R)	0.14452	0.16500	0.56937
	setup	CLK (R)	0.10481	0.17343	1.32912
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08415	-0.11097	-0.55363
	hold	CLK (R)	-0.05459	-0.12707	-1.27025
	setup	CLK (R)	0.14885	0.16957	0.57757
	setup	CLK (R)	0.10778	0.17392	1.33110
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08502	-0.11246	-0.55142
	hold	CLK (R)	-0.05530	-0.12294	-1.25529
	setup	CLK (R)	0.14416	0.16558	0.57246
	setup	CLK (R)	0.10153	0.16749	1.31606

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)	-0.08557	-0.17949	-2.37606
	hold	CLK (R)	-0.06067	-0.11241	-1.46251
	setup	CLK (R)	0.13210	0.20975	2.40156
	setup	CLK (R)	0.11746	0.18371	2.08652
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08407	-0.17748	-2.37382
	hold	CLK (R)	-0.06340	-0.11408	-1.51776
	setup	CLK (R)	0.13007	0.20849	2.40030
	setup	CLK (R)	0.12252	0.18854	2.10832
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08381	-0.17748	-2.36397
	hold	CLK (R)	-0.06021	-0.11360	-1.53195
	setup	CLK (R)	0.12656	0.20424	2.38819
	setup	CLK (R)	0.11972	0.18612	2.09441

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 ()	0.06257	0.59937	16.50020
	min_pulse_width	CLK ()	0.05355	0.59937	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.06483	0.59937	16.50020
	min_pulse_width	CLK ()	0.05580	0.59937	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.08513	0.59937	16.50020
	min_pulse_width	CLK ()	0.05806	0.59937	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 ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.10768	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.10091	0.59937	16.50020
	min_pulse_width	CLK ()	0.12121	0.59937	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	0.11729	0.14427	0.56891
	CLK	0.11173	0.13870	0.56339
sky130_fd_sc_hs__sdfxtp_2	CLK	0.10399	0.13060	0.55910
	CLK	0.09837	0.12499	0.55315
sky130_fd_sc_hs__sdfxtp_4	CLK	0.17109	0.19381	0.61488
	CLK	0.16551	0.18817	0.60884

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.08176	0.10837	0.52376
	CLK	0.07619	0.10264	0.51817
sky130_fd_sc_hs__sdfxtp_2	CLK	0.09546	0.11970	0.52883
	CLK	0.08983	0.11399	0.52269
sky130_fd_sc_hs__sdfxtp_4	CLK	0.12517	0.14770	0.56484
	CLK	0.11958	0.14214	0.55611

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.03295	0.03300	0.03376
	(CLK * SCD * SCE)	0.03060	0.03061	0.03139
	(CLK * !SCE)	0.03376	0.04286	0.19395
	(CLK * !SCE)	0.02938	0.03847	0.18957
	(CLK * !SCD * SCE)	0.02785	0.02785	0.02782
	(CLK * !SCD * SCE)	0.02513	0.02514	0.02511
	(!CLK * SCD * SCE)	0.02756	0.02760	0.02838
	(!CLK * SCD * SCE)	0.02522	0.02523	0.02601
	(!CLK * !SCE)	0.03711	0.04976	0.25105
	(!CLK * !SCE)	0.03274	0.04538	0.24667
	(!CLK * !SCD * SCE)	0.04578	0.04578	0.04574
	(!CLK * !SCD * SCE)	0.04310	0.04306	0.04303
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.03756	0.03762	0.03837
	(CLK * SCD * SCE)	0.03516	0.03517	0.03595
	(CLK * !SCE)	0.03872	0.04770	0.19884
	(CLK * !SCE)	0.03427	0.04323	0.19438
	(CLK * !SCD * SCE)	0.03244	0.03245	0.03241
	(CLK * !SCD * SCE)	0.02968	0.02968	0.02965
	(!CLK * SCD * SCE)	0.02132	0.02136	0.02213
	(!CLK * SCD * SCE)	0.01892	0.01893	0.01971
	(!CLK * !SCE)	0.03179	0.04427	0.24512
	(!CLK * !SCE)	0.02734	0.03980	0.24066
	(!CLK * !SCD * SCE)	0.03922	0.03920	0.03916
	(!CLK * !SCD * SCE)	0.03645	0.03644	0.03640

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.04658	0.04663	0.04740
	(CLK * SCD * SCE)	0.04422	0.04423	0.04501
	(CLK * !SCE)	0.04737	0.05650	0.20773
	(CLK * !SCE)	0.04301	0.05212	0.20336
	(CLK * !SCD * SCE)	0.04150	0.04150	0.04146
	(CLK * !SCD * SCE)	0.03876	0.03876	0.03873
	(!CLK * SCD * SCE)	0.03946	0.03950	0.04027
	(!CLK * SCD * SCE)	0.03710	0.03711	0.03789
	(!CLK * !SCE)	0.04895	0.06159	0.26311
	(!CLK * !SCE)	0.04460	0.05721	0.25876
	(!CLK * !SCD * SCE)	0.05849	0.05848	0.05844
	(!CLK * !SCD * SCE)	0.05578	0.05574	0.05571

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.03287	0.03272	0.03107
	(CLK * SCD * SCE)	0.03522	0.03510	0.03343
	(CLK * !SCE)	0.02232	0.03233	0.18980
	(CLK * !SCE)	0.02668	0.03672	0.19418
	(CLK * !SCD * SCE)	0.02594	0.02593	0.02595
	(CLK * !SCD * SCE)	0.02865	0.02865	0.02865
	(!CLK * SCD * SCE)	0.02748	0.02734	0.02568
	(!CLK * SCD * SCE)	0.02984	0.02971	0.02804
	(!CLK * !SCE)	0.05128	0.06161	0.24272
	(!CLK * !SCE)	0.05565	0.06599	0.24710
	(!CLK * !SCD * SCE)	0.04407	0.04404	0.04405
	(!CLK * !SCD * SCE)	0.04678	0.04676	0.04675

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.03738	0.03723	0.03558
	(CLK * SCD * SCE)	0.03978	0.03966	0.03799
	(CLK * !SCE)	0.02694	0.03687	0.19439
	(CLK * !SCE)	0.03141	0.04132	0.19885
	(CLK * !SCD * SCE)	0.03046	0.03046	0.03047
	(CLK * !SCD * SCE)	0.03322	0.03323	0.03322
	(!CLK * SCD * SCE)	0.02113	0.02098	0.01933
	(!CLK * SCD * SCE)	0.02354	0.02342	0.02174
	(!CLK * !SCE)	0.04490	0.05515	0.23618
	(!CLK * !SCE)	0.04937	0.05962	0.24063
	(!CLK * !SCD * SCE)	0.03742	0.03739	0.03740
	(!CLK * !SCD * SCE)	0.04018	0.04017	0.04015
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.04646	0.04632	0.04466
	(CLK * SCD * SCE)	0.04883	0.04870	0.04703
	(CLK * !SCE)	0.03587	0.04591	0.20352
	(CLK * !SCE)	0.04023	0.05028	0.20788
	(CLK * !SCD * SCE)	0.03952	0.03951	0.03952
	(CLK * !SCD * SCE)	0.04225	0.04225	0.04225
	(!CLK * SCD * SCE)	0.03933	0.03918	0.03753
	(!CLK * SCD * SCE)	0.04171	0.04158	0.03991
	(!CLK * !SCE)	0.06423	0.07452	0.25515
	(!CLK * !SCE)	0.06859	0.07890	0.25951
	(!CLK * !SCD * SCE)	0.05671	0.05667	0.05668
	(!CLK * !SCD * SCE)	0.05943	0.05942	0.05941

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.03955	0.04803	0.20237
	(CLK * D * SCE)	0.03362	0.04209	0.19644
	(CLK * !D * SCE)	0.04337	0.05128	0.20424
	(CLK * !D * SCE)	0.03721	0.04511	0.19808
	(!CLK * D * SCE)	0.04321	0.05508	0.25963
	(!CLK * D * SCE)	0.03728	0.04913	0.25370
	(!CLK * !D * SCE)	0.04708	0.05852	0.26205
	(!CLK * !D * SCE)	0.04092	0.05234	0.25589
	!SCE	0.03013	0.03016	0.03397
	!SCE	0.02688	0.02689	0.03072
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.04430	0.05271	0.20710
	(CLK * D * SCE)	0.03842	0.04682	0.20123
	(CLK * !D * SCE)	0.04812	0.05597	0.20898
	(CLK * !D * SCE)	0.04200	0.04984	0.20286
	(!CLK * D * SCE)	0.03766	0.04938	0.25363
	(!CLK * D * SCE)	0.03177	0.04349	0.24774
	(!CLK * !D * SCE)	0.04154	0.05283	0.25605
	(!CLK * !D * SCE)	0.03542	0.04671	0.24993
	!SCE	0.03468	0.03472	0.03854
	!SCE	0.03150	0.03151	0.03536
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.05311	0.06165	0.21646
	(CLK * D * SCE)	0.04730	0.05582	0.21063
	(CLK * !D * SCE)	0.05693	0.06489	0.21832
	(CLK * !D * SCE)	0.05089	0.05883	0.21227
	(!CLK * D * SCE)	0.05498	0.06688	0.27195
	(!CLK * D * SCE)	0.04917	0.06105	0.26613
	(!CLK * !D * SCE)	0.05886	0.07031	0.27443
	(!CLK * !D * SCE)	0.05282	0.06425	0.26838
	!SCE	0.04371	0.04374	0.04755
	!SCE	0.04053	0.04054	0.04437

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.02970	0.03867	0.19719
	(CLK * D * SCE)	0.03563	0.04460	0.20309
	(CLK * !D * SCE)	0.02909	0.03841	0.19838
	(CLK * !D * SCE)	0.03526	0.04458	0.20451
	(!CLK * D * SCE)	0.05939	0.06842	0.24898
	(!CLK * D * SCE)	0.06532	0.07437	0.25489
	(!CLK * !D * SCE)	0.05910	0.06858	0.25121
	(!CLK * !D * SCE)	0.06526	0.07475	0.25734
	!SCE	0.03190	0.03177	0.03093
	!SCE	0.03517	0.03505	0.03419
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.03445	0.04337	0.20197
	(CLK * D * SCE)	0.04034	0.04928	0.20783
	(CLK * !D * SCE)	0.03384	0.04312	0.20315
	(CLK * !D * SCE)	0.03996	0.04924	0.20924
	(!CLK * D * SCE)	0.05313	0.06207	0.24264
	(!CLK * D * SCE)	0.05903	0.06797	0.24850
	(!CLK * !D * SCE)	0.05283	0.06222	0.24480
	(!CLK * !D * SCE)	0.05895	0.06834	0.25089
	!SCE	0.03645	0.03633	0.03549
	!SCE	0.03964	0.03953	0.03867

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.04329	0.05231	0.21130
	(CLK * D * SCE)	0.04911	0.05814	0.21710
	(CLK * !D * SCE)	0.04269	0.05205	0.21249
	(CLK * !D * SCE)	0.04873	0.05812	0.21851
	(!CLK * D * SCE)	0.07233	0.08138	0.26184
	(!CLK * D * SCE)	0.07814	0.08722	0.26763
	(!CLK * !D * SCE)	0.07207	0.08153	0.26403
	(!CLK * !D * SCE)	0.07811	0.08759	0.27005
	!SCE	0.04555	0.04542	0.04458
	!SCE	0.04873	0.04863	0.04776

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)	0.03940	0.05256	0.26087
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03117	0.04433	0.25265
	(CLK * D * !SCD)	0.03782	0.05210	0.28248
	(CLK * D * !SCD)	0.03207	0.04632	0.27669
	(CLK * !D * SCD)	0.04753	0.06936	0.42014
	(CLK * !D * SCD)	0.03725	0.05907	0.40987
	(!CLK * D * SCD)	0.03402	0.04718	0.25548
	(!CLK * D * SCD)	0.02579	0.03895	0.24726
	(!CLK * D * !SCD)	0.06716	0.08068	0.30415
	(!CLK * D * !SCD)	0.06140	0.07489	0.29833
	(!CLK * !D * SCD)	0.05115	0.07667	0.48265
	(!CLK * !D * SCD)	0.04086	0.06638	0.47237
	(!CLK * !D * !SCD)	0.05210	0.06507	0.27123
	(!CLK * !D * !SCD)	0.04453	0.05748	0.26365

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.04365	0.05688	0.26499
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03568	0.04890	0.25706
	(CLK * D * !SCD)	0.04223	0.05658	0.28681
	(CLK * D * !SCD)	0.03679	0.05109	0.28131
	(CLK * !D * SCD)	0.05207	0.07359	0.42448
	(CLK * !D * SCD)	0.04205	0.06356	0.41448
	(!CLK * D * SCD)	0.02741	0.04064	0.24876
	(!CLK * D * SCD)	0.01944	0.03266	0.24083
	(!CLK * D * !SCD)	0.06057	0.07415	0.29763
	(!CLK * D * !SCD)	0.05513	0.06868	0.29212
	(!CLK * !D * SCD)	0.04538	0.07078	0.47635
	(!CLK * !D * SCD)	0.03536	0.06076	0.46633
	(!CLK * !D * !SCD)	0.04527	0.05828	0.26429
	(!CLK * !D * !SCD)	0.03799	0.05098	0.25699
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.05300	0.06612	0.27418
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04479	0.05790	0.26598
	(CLK * D * !SCD)	0.05136	0.06560	0.29578
	(CLK * D * !SCD)	0.04559	0.05980	0.28997
	(CLK * !D * SCD)	0.06115	0.08297	0.43370
	(CLK * !D * SCD)	0.05092	0.07273	0.42347
	(!CLK * D * SCD)	0.04588	0.05900	0.26705
	(!CLK * D * SCD)	0.03766	0.05078	0.25885
	(!CLK * D * !SCD)	0.08007	0.09353	0.31641
	(!CLK * D * !SCD)	0.07429	0.08773	0.31057
	(!CLK * !D * SCD)	0.06297	0.08843	0.49448
	(!CLK * !D * SCD)	0.05274	0.07819	0.48426
	(!CLK * !D * !SCD)	0.06474	0.07767	0.28361
	(!CLK * !D * !SCD)	0.05720	0.07010	0.27602

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)	0.02715	0.04093	0.25248
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03538	0.04919	0.26073
	(CLK * D * !SCD)	0.03848	0.05214	0.27469
	(CLK * D * !SCD)	0.04428	0.05781	0.28028
	(CLK * !D * SCD)	0.02270	0.04542	0.40859
	(CLK * !D * SCD)	0.03294	0.05572	0.41887
	(!CLK * D * SCD)	0.02176	0.03553	0.24709
	(!CLK * D * SCD)	0.02998	0.04379	0.25534
	(!CLK * D * !SCD)	0.04189	0.05640	0.29385
	(!CLK * D * !SCD)	0.04769	0.06216	0.29944
	(!CLK * !D * SCD)	0.05164	0.07444	0.46149
	(!CLK * !D * SCD)	0.06189	0.08473	0.47177
	(!CLK * !D * !SCD)	0.03918	0.05299	0.26451
	(!CLK * !D * !SCD)	0.04678	0.06059	0.27211

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.03177	0.04562	0.25698
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.03971	0.05359	0.26494
	(CLK * D * !SCD)	0.04340	0.05710	0.27947
	(CLK * D * !SCD)	0.04888	0.06248	0.28474
	(CLK * !D * SCD)	0.02734	0.05007	0.41306
	(CLK * !D * SCD)	0.03733	0.06009	0.42307
	(!CLK * D * SCD)	0.01551	0.02936	0.24073
	(!CLK * D * SCD)	0.02345	0.03733	0.24869
	(!CLK * D * !SCD)	0.03652	0.05106	0.28790
	(!CLK * D * !SCD)	0.04200	0.05654	0.29317
	(!CLK * !D * SCD)	0.04529	0.06805	0.45485
	(!CLK * !D * SCD)	0.05528	0.07807	0.46487
	(!CLK * !D * !SCD)	0.03255	0.04640	0.25776
	(!CLK * !D * !SCD)	0.03985	0.05372	0.26507
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.04080	0.05457	0.26588
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.04901	0.06281	0.27410
	(CLK * D * !SCD)	0.05213	0.06579	0.28819
	(CLK * D * !SCD)	0.05795	0.07151	0.29380
	(CLK * !D * SCD)	0.03629	0.05904	0.42221
	(CLK * !D * SCD)	0.04649	0.06927	0.43243
	(!CLK * D * SCD)	0.03366	0.04743	0.25875
	(!CLK * D * SCD)	0.04187	0.05568	0.26698
	(!CLK * D * !SCD)	0.05378	0.06831	0.30574
	(!CLK * D * !SCD)	0.05959	0.07414	0.31134
	(!CLK * !D * SCD)	0.06465	0.08739	0.47388
	(!CLK * !D * SCD)	0.07485	0.09762	0.48410
	(!CLK * !D * !SCD)	0.05190	0.06570	0.27697
	(!CLK * !D * !SCD)	0.05947	0.07328	0.28455

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)	0.04367	0.06822	0.45682
	(D * SCD * SCE * Q)	0.03812	0.06264	0.45125
	(D * !SCE * Q)	0.04038	0.06496	0.45392
	(D * !SCE * Q)	0.03483	0.05938	0.44835
	(D * !SCD * SCE * !Q)	0.04357	0.06823	0.45850
	(D * !SCD * SCE * !Q)	0.03801	0.06266	0.45293
	(!D * SCD * SCE * Q)	0.04648	0.07103	0.45959
	(!D * SCD * SCE * Q)	0.04093	0.06545	0.45402
	(!D * !SCE * !Q)	0.03782	0.06242	0.45188
	(!D * !SCE * !Q)	0.03226	0.05687	0.44631
	(!D * !SCD * SCE * !Q)	0.04355	0.06820	0.45848
	(!D * !SCD * SCE * !Q)	0.03799	0.06261	0.45291
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.03776	0.06216	0.45072
	(D * SCD * SCE * Q)	0.03214	0.05652	0.44510
	(D * !SCE * Q)	0.03445	0.05890	0.44780
	(D * !SCE * Q)	0.02886	0.05326	0.44220
	(D * !SCD * SCE * !Q)	0.04863	0.07316	0.46340
	(D * !SCD * SCE * !Q)	0.04304	0.06752	0.45778
	(!D * SCD * SCE * Q)	0.04057	0.06497	0.45349
	(!D * SCD * SCE * Q)	0.03494	0.05933	0.44787
	(!D * !SCE * !Q)	0.04288	0.06737	0.45679
	(!D * !SCE * !Q)	0.03729	0.06172	0.45117
	(!D * !SCD * SCE * !Q)	0.04862	0.07313	0.46337
	(!D * !SCD * SCE * !Q)	0.04300	0.06749	0.45776

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.05570	0.08023	0.46899
	(D * SCD * SCE * Q)	0.05013	0.07463	0.46340
	(D * !SCE * Q)	0.05241	0.07697	0.46606
	(D * !SCE * Q)	0.04684	0.07137	0.46050
	(D * !SCD * SCE * !Q)	0.05728	0.08192	0.47232
	(D * !SCD * SCE * !Q)	0.05173	0.07634	0.46673
	(!D * SCD * SCE * Q)	0.05851	0.08304	0.47176
	(!D * SCD * SCE * Q)	0.05294	0.07744	0.46617
	(!D * !SCE * !Q)	0.05154	0.07614	0.46571
	(!D * !SCE * !Q)	0.04598	0.07053	0.46012
	(!D * !SCD * SCE * !Q)	0.05726	0.08191	0.47229
	(!D * !SCD * SCE * !Q)	0.05170	0.07630	0.46671

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)**	0.03637	0.06084	0.44614
	(D * SCD * SCE * Q)	0.04192	0.06643	0.45170
	(D * SCD * SCE * !Q)	0.04945	0.07471	0.48426
	(D * SCD * SCE * !Q)	0.05499	0.08029	0.48980
	(D * !SCE * Q)	0.03310	0.05758	0.44330
	(D * !SCE * Q)	0.03864	0.06316	0.44887
	(D * !SCE * !Q)	0.04614	0.07175	0.48424
	(D * !SCE * !Q)	0.05169	0.07732	0.48981
	(D * !SCD * SCE * Q)	0.06781	0.09224	0.48560
	(D * !SCD * SCE * Q)	0.07338	0.09784	0.49118
	(D * !SCD * SCE * !Q)	0.03804	0.06261	0.44841
	(D * !SCD * SCE * !Q)	0.04359	0.06820	0.45399
	(!D * SCD * SCE * Q)	0.03918	0.06365	0.44890
	(!D * SCD * SCE * Q)	0.04473	0.06923	0.45447
	(!D * SCD * SCE * !Q)	0.05225	0.07750	0.48698
	(!D * SCD * SCE * !Q)	0.05779	0.08307	0.49253
	(!D * !SCE * Q)	0.06166	0.08595	0.47738
	(!D * !SCE * Q)	0.06720	0.09153	0.48295
	(!D * !SCE * !Q)	0.03220	0.05672	0.44208
	(!D * !SCE * !Q)	0.03775	0.06231	0.44765
	(!D * !SCD * SCE * Q)	0.06786	0.09233	0.48582
	(!D * !SCD * SCE * Q)	0.07342	0.09792	0.49141
	(!D * !SCD * SCE * !Q)	0.03801	0.06259	0.44841
	(!D * !SCD * SCE * !Q)	0.04356	0.06818	0.45398

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.03049	0.05487	0.43999
	(D * SCD * SCE * Q)	0.03609	0.06050	0.44561
	(D * SCD * SCE * !Q)	0.05498	0.08017	0.48922
	(D * SCD * SCE * !Q)	0.06059	0.08580	0.49485
	(D * !SCE * Q)	0.02721	0.05161	0.43717
	(D * !SCE * Q)	0.03282	0.05724	0.44279
	(D * !SCE * !Q)	0.05168	0.07718	0.48911
	(D * !SCE * !Q)	0.05728	0.08282	0.49473
	(D * !SCD * SCE * Q)	0.06169	0.08607	0.47904
	(D * !SCD * SCE * Q)	0.06732	0.09173	0.48467
	(D * !SCD * SCE * !Q)	0.04287	0.06737	0.45305
	(D * !SCD * SCE * !Q)	0.04848	0.07301	0.45867
	(!D * SCD * SCE * Q)	0.03329	0.05768	0.44277
	(!D * SCD * SCE * Q)	0.03890	0.06331	0.44839
	(!D * SCD * SCE * !Q)	0.05778	0.08296	0.49195
	(!D * SCD * SCE * !Q)	0.06338	0.08859	0.49757
	(!D * !SCE * Q)	0.05556	0.07975	0.47081
	(!D * !SCE * Q)	0.06116	0.08536	0.47643
	(!D * !SCE * !Q)	0.03703	0.06149	0.44668
	(!D * !SCE * !Q)	0.04264	0.06713	0.45228
	(!D * !SCD * SCE * Q)	0.06174	0.08615	0.47923
	(!D * !SCD * SCE * Q)	0.06736	0.09180	0.48488
	(!D * !SCD * SCE * !Q)	0.04285	0.06735	0.45304
	(!D * !SCD * SCE * !Q)	0.04845	0.07299	0.45866

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.04819	0.07267	0.45809
	(D * SCD * SCE * Q)	0.05376	0.07827	0.46367
	(D * SCD * SCE * !Q)	0.06304	0.08834	0.49781
	(D * SCD * SCE * !Q)	0.06861	0.09391	0.50340
	(D * !SCE * Q)	0.04492	0.06940	0.45524
	(D * !SCE * Q)	0.05048	0.07500	0.46082
	(D * !SCE * !Q)	0.05974	0.08532	0.49757
	(D * !SCE * !Q)	0.06531	0.09093	0.50316
	(D * !SCD * SCE * Q)	0.08087	0.10527	0.49990
	(D * !SCD * SCE * Q)	0.08646	0.11087	0.50552
	(D * !SCD * SCE * !Q)	0.05169	0.07628	0.46221
	(D * !SCD * SCE * !Q)	0.05726	0.08188	0.46780
	(!D * SCD * SCE * Q)	0.05100	0.07548	0.46086
	(!D * SCD * SCE * Q)	0.05656	0.08108	0.46644
	(!D * SCD * SCE * !Q)	0.06584	0.09112	0.50053
	(!D * SCD * SCE * !Q)	0.07141	0.09671	0.50611
	(!D * !SCE * Q)	0.07473	0.09900	0.49177
	(!D * !SCE * Q)	0.08029	0.10458	0.49735
	(!D * !SCE * !Q)	0.04584	0.07037	0.45589
	(!D * !SCE * !Q)	0.05141	0.07597	0.46148
	(!D * !SCD * SCE * Q)	0.08092	0.10536	0.50010
	(!D * !SCD * SCE * Q)	0.08650	0.11098	0.50571
	(!D * !SCD * SCE * !Q)	0.05166	0.07625	0.46220
	(!D * !SCD * SCE * !Q)	0.05723	0.08186	0.46779

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00242	0.00224	0.00481	1.64906
sky130_fd_sc_hs__sdlclkp_2	0.00241	0.00223	0.00509	3.15522
sky130_fd_sc_hs__sdlclkp_4	0.00229	0.00211	0.00519	6.20678

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	3746.45000	5356.52000
sky130_fd_sc_hs__sdlclkp_2	0.00000	3610.99000	5454.49000
sky130_fd_sc_hs__sdlclkp_4	0.00000	4265.51000	6494.21000

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)	0.05008	0.40855	5.74692
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.05361	0.32814	5.43012
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.07292	0.32175	5.85877

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.05482	0.44677	5.80503
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.06158	0.41995	5.76577
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.07739	0.40713	5.73918

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)	-0.02962	-0.08067	-0.65103
	setup	CLK (R)	0.09694	0.19448	0.77461
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03131	-0.08067	-0.65278
	setup	CLK (R)	0.09450	0.17790	0.77283
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03131	-0.08067	-0.64466
	setup	CLK (R)	0.08967	0.15647	0.78046

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)	-0.05423	-0.15602	-3.07561
	setup	CLK (R)	0.08517	0.20104	3.15997
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05619	-0.15535	-3.06634
	setup	CLK (R)	0.07996	0.19257	3.14886
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06060	-0.15827	-3.07994
	setup	CLK (R)	0.08329	0.19569	3.15398

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)	-0.02962	-0.08067	-0.65103
	setup	CLK (R)	0.09694	0.19448	0.77461
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03131	-0.08067	-0.65278
	setup	CLK (R)	0.09450	0.17790	0.77283
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03131	-0.08067	-0.64466
	setup	CLK (R)	0.08967	0.15647	0.78046

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)	-0.05423	-0.15602	-3.07561
	setup	CLK (R)	0.08517	0.20104	3.15997
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05619	-0.15535	-3.06634
	setup	CLK (R)	0.07996	0.19257	3.14886
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06060	-0.15827	-3.07994
	setup	CLK (R)	0.08329	0.19569	3.15398

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)	-0.03432	-0.09277	-0.92132
	setup	CLK (R)	0.09925	0.20384	1.02245
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03468	-0.09076	-0.91372
	setup	CLK (R)	0.09768	0.19060	1.02659
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03468	-0.09076	-0.90266
	setup	CLK (R)	0.09636	0.16845	1.02369

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)	-0.06358	-0.14414	-2.83004
	setup	CLK (R)	0.09173	0.18673	2.90788
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06272	-0.14277	-2.82062
	setup	CLK (R)	0.08862	0.18364	2.89561
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06789	-0.14571	-2.83610
	setup	CLK (R)	0.09062	0.18588	2.90400

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)	-0.03432	-0.09277	-0.92132
	setup	CLK (R)	0.09925	0.20384	1.02245
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03468	-0.09076	-0.91372
	setup	CLK (R)	0.09768	0.19060	1.02659
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03468	-0.09076	-0.90266
	setup	CLK (R)	0.09636	0.16845	1.02369

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)	-0.06358	-0.14414	-2.83004
	setup	CLK (R)	0.09173	0.18673	2.90788
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06272	-0.14277	-2.82062
	setup	CLK (R)	0.08862	0.18364	2.89561
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06789	-0.14571	-2.83610
	setup	CLK (R)	0.09062	0.18588	2.90400

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 ()	0.03776	0.59937	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.04453	0.59937	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.06483	0.59937	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 ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
	min_pulse_width	CLK ()	0.10091	0.59937	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	0.14417	0.18374	0.80696
	CLK	0.13530	0.17484	0.79782
sky130_fd_sc_hs__sdlclkp_2	CLK	0.11104	0.15020	0.77860
	CLK	0.10164	0.14079	0.76881
sky130_fd_sc_hs__sdlclkp_4	CLK	0.12116	0.16077	0.82662
	CLK	0.11152	0.15115	0.81539

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.05735	0.09886	0.73428
	CLK	0.06624	0.10769	0.74307
sky130_fd_sc_hs__sdlclkp_2	CLK	0.07150	0.10962	0.73086
	CLK	0.08094	0.11901	0.73883
sky130_fd_sc_hs__sdlclkp_4	CLK	0.10670	0.14110	0.78498
	CLK	0.11636	0.15073	0.79216

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.03394	0.03400	0.03532
	(CLK * SCE)	0.03129	0.03133	0.03266
	(CLK * !SCE)	0.04880	0.06330	0.28923
	(CLK * !SCE)	0.04417	0.05865	0.28461
	(!CLK * SCE * !GCLK)	0.01873	0.01878	0.02011
	(!CLK * SCE * !GCLK)	0.01606	0.01611	0.01745
	(!CLK * !SCE * !GCLK)	0.04337	0.06023	0.33581
	(!CLK * !SCE * !GCLK)	0.03925	0.05611	0.33168
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.03842	0.03849	0.03981
	(CLK * SCE)	0.03578	0.03582	0.03715
	(CLK * !SCE)	0.05324	0.06775	0.29368
	(CLK * !SCE)	0.04863	0.06315	0.28908
	(!CLK * SCE * !GCLK)	0.02319	0.02324	0.02457
	(!CLK * SCE * !GCLK)	0.02053	0.02058	0.02191
	(!CLK * !SCE * !GCLK)	0.04762	0.06466	0.34164
	(!CLK * !SCE * !GCLK)	0.04355	0.06057	0.33758
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.04739	0.04746	0.04877
	(CLK * SCE)	0.04487	0.04490	0.04622
	(CLK * !SCE)	0.06213	0.07657	0.30195
	(CLK * !SCE)	0.05772	0.07217	0.29754
	(!CLK * SCE * !GCLK)	0.03217	0.03223	0.03356
	(!CLK * SCE * !GCLK)	0.02964	0.02968	0.03101
	(!CLK * !SCE * !GCLK)	0.05676	0.07374	0.35019
	(!CLK * !SCE * !GCLK)	0.05286	0.06982	0.34629

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.03584	0.03559	0.03254
	(CLK * SCE)	0.03848	0.03825	0.03519
	(CLK * !SCE)	0.02190	0.03844	0.28393
	(CLK * !SCE)	0.02652	0.04309	0.28856
	(!CLK * SCE * !GCLK)	0.02072	0.02048	0.01742
	(!CLK * SCE * !GCLK)	0.02339	0.02315	0.02007
	(!CLK * !SCE * !GCLK)	0.03702	0.05410	0.33166
	(!CLK * !SCE * !GCLK)	0.04112	0.05822	0.33578
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.04034	0.04009	0.03703
	(CLK * SCE)	0.04297	0.04275	0.03968
	(CLK * !SCE)	0.02639	0.04293	0.28846
	(CLK * !SCE)	0.03099	0.04754	0.29307
	(!CLK * SCE * !GCLK)	0.02520	0.02496	0.02189
	(!CLK * SCE * !GCLK)	0.02786	0.02761	0.02454
	(!CLK * !SCE * !GCLK)	0.04165	0.05885	0.33778
	(!CLK * !SCE * !GCLK)	0.04570	0.06292	0.34185
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.04947	0.04923	0.04618
	(CLK * SCE)	0.05202	0.05178	0.04871
	(CLK * !SCE)	0.03578	0.05222	0.29719
	(CLK * !SCE)	0.04020	0.05664	0.30160
	(!CLK * SCE * !GCLK)	0.03433	0.03409	0.03102
	(!CLK * SCE * !GCLK)	0.03687	0.03663	0.03355
	(!CLK * !SCE * !GCLK)	0.05112	0.06822	0.34667
	(!CLK * !SCE * !GCLK)	0.05502	0.07213	0.35058

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.03457	0.03481	0.04233
	(CLK * GATE)	0.03085	0.03105	0.03862
	(CLK * !GATE)	0.04494	0.05908	0.28593
	(CLK * !GATE)	0.03926	0.05337	0.28022
	(!CLK * GATE * !GCLK)	0.01940	0.01964	0.02719
	(!CLK * GATE * !GCLK)	0.01568	0.01588	0.02348
	(!CLK * !GATE * !GCLK)	0.03959	0.05665	0.33819
	(!CLK * !GATE * !GCLK)	0.03440	0.05144	0.33299
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.03905	0.03929	0.04681
	(CLK * GATE)	0.03535	0.03555	0.04311
	(CLK * !GATE)	0.04937	0.06352	0.29037
	(CLK * !GATE)	0.04372	0.05785	0.28469
	(!CLK * GATE * !GCLK)	0.02385	0.02410	0.03164
	(!CLK * GATE * !GCLK)	0.02015	0.02036	0.02795
	(!CLK * !GATE * !GCLK)	0.04383	0.06105	0.34425
	(!CLK * !GATE * !GCLK)	0.03871	0.05593	0.33914
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.04804	0.04827	0.05579
	(CLK * GATE)	0.04444	0.04464	0.05220
	(CLK * !GATE)	0.05828	0.07239	0.29900
	(CLK * !GATE)	0.05282	0.06692	0.29351
	(!CLK * GATE * !GCLK)	0.03285	0.03309	0.04063
	(!CLK * GATE * !GCLK)	0.02925	0.02945	0.03704
	(!CLK * !GATE * !GCLK)	0.05298	0.07016	0.35308
	(!CLK * !GATE * !GCLK)	0.04802	0.06519	0.34811

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.04135	0.04109	0.03907
	(CLK * GATE)	0.04505	0.04482	0.04279
	(CLK * !GATE)	0.02195	0.03724	0.27882
	(CLK * !GATE)	0.02764	0.04295	0.28453
	(!CLK * GATE * !GCLK)	0.02622	0.02596	0.02392
	(!CLK * GATE * !GCLK)	0.02992	0.02969	0.02764
	(!CLK * !GATE * !GCLK)	0.03701	0.05264	0.32724
	(!CLK * !GATE * !GCLK)	0.04218	0.05783	0.33244
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.04585	0.04559	0.04357
	(CLK * GATE)	0.04954	0.04931	0.04728
	(CLK * !GATE)	0.02645	0.04174	0.28335
	(CLK * !GATE)	0.03210	0.04742	0.28902
	(!CLK * GATE * !GCLK)	0.03070	0.03044	0.02840
	(!CLK * GATE * !GCLK)	0.03439	0.03415	0.03211
	(!CLK * !GATE * !GCLK)	0.04164	0.05740	0.33343
	(!CLK * !GATE * !GCLK)	0.04676	0.06253	0.33857
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.05497	0.05472	0.05269
	(CLK * GATE)	0.05856	0.05832	0.05629
	(CLK * !GATE)	0.03584	0.05106	0.29243
	(CLK * !GATE)	0.04129	0.05654	0.29791
	(!CLK * GATE * !GCLK)	0.03982	0.03956	0.03752
	(!CLK * GATE * !GCLK)	0.04341	0.04317	0.04112
	(!CLK * !GATE * !GCLK)	0.05111	0.06679	0.34258
	(!CLK * !GATE * !GCLK)	0.05606	0.07175	0.34756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.03447	0.05830	0.42499
	(!GATE * !SCE * !GCLK)	0.02593	0.04971	0.41647
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.03907	0.06319	0.43072
	(!GATE * !SCE * !GCLK)	0.03009	0.05412	0.42168
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.04831	0.07231	0.44065
	(!GATE * !SCE * !GCLK)	0.03911	0.06304	0.43142

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.03342	0.05948	0.52162
	(GATE * SCE * !GCLK)	0.04259	0.06871	0.53082
	(GATE * !SCE * !GCLK)	0.04416	0.07015	0.53011
	(GATE * !SCE * !GCLK)	0.05332	0.07939	0.53930
	(!GATE * SCE * !GCLK)	0.03847	0.06450	0.52567
	(!GATE * SCE * !GCLK)	0.04764	0.07371	0.53487
	(!GATE * !SCE * !GCLK)	0.02770	0.05120	0.41476
	(!GATE * !SCE * !GCLK)	0.03622	0.05980	0.42331
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.03746	0.06367	0.53477
	(GATE * SCE * !GCLK)	0.04716	0.07344	0.54450
	(GATE * !SCE * !GCLK)	0.04821	0.07435	0.54348
	(GATE * !SCE * !GCLK)	0.05791	0.08409	0.55321
	(!GATE * SCE * !GCLK)	0.04252	0.06874	0.53938
	(!GATE * SCE * !GCLK)	0.05222	0.07850	0.54911
	(!GATE * !SCE * !GCLK)	0.03194	0.05550	0.42002
	(!GATE * !SCE * !GCLK)	0.04093	0.06457	0.42904
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.04707	0.07331	0.54914
	(GATE * SCE * !GCLK)	0.05695	0.08322	0.55904
	(GATE * !SCE * !GCLK)	0.05782	0.08392	0.55682
	(GATE * !SCE * !GCLK)	0.06769	0.09383	0.56673
	(!GATE * SCE * !GCLK)	0.05213	0.07831	0.55272
	(!GATE * SCE * !GCLK)	0.06200	0.08824	0.56261
	(!GATE * !SCE * !GCLK)	0.04131	0.06485	0.43007
	(!GATE * !SCE * !GCLK)	0.05050	0.07409	0.43930

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00206	0.00398	0.00186	0.00398	0.00286	1.72889	1.71356
sky130_fd_sc_hs__sedfxbp_2	0.00215	0.00403	0.00188	0.00406	0.00286	2.78031	2.88236

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	3714.35000	6013.75000
sky130_fd_sc_hs__sedfxbp_2	0.00000	4205.09000	6473.70000

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)	0.13459	0.51088	5.58943
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.14133	0.44094	5.24467

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.11595	0.39478	3.36685
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.12680	0.33882	2.50379

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)	0.17245	0.53795	5.58272
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.20290	0.48419	5.31313

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)	0.18676	0.43826	3.28294
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.20234	0.38475	2.68296

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)	-0.12621	-0.21181	-1.18533
	setup	CLK (R)	0.15210	0.23126	1.20116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12668	-0.21316	-1.24167
	setup	CLK (R)	0.15545	0.23256	1.25873

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)	-0.15042	-0.24887	-2.66361
	setup	CLK (R)	0.19540	0.29682	2.74064
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15017	-0.24874	-2.71932
	setup	CLK (R)	0.19377	0.29930	2.78573

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)	-0.12621	-0.21181	-1.18533
	setup	CLK (R)	0.15210	0.23126	1.20116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12668	-0.21316	-1.24167
	setup	CLK (R)	0.15545	0.23256	1.25873

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)	-0.15042	-0.24887	-2.66361
	setup	CLK (R)	0.19540	0.29682	2.74064
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15017	-0.24874	-2.71932
	setup	CLK (R)	0.19377	0.29930	2.78573

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)	-0.03405	-0.04103	0.18659
	setup	CLK (R)	0.22439	0.23938	0.98344
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03510	-0.04328	0.13367
	setup	CLK (R)	0.22208	0.24069	1.03690

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)	-0.15697	-0.23721	-2.53946
	setup	CLK (R)	0.17931	0.26900	2.70668
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15615	-0.23692	-2.60033
	setup	CLK (R)	0.18011	0.27304	2.76161

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)	-0.03405	-0.04103	0.18659
	hold	CLK (R)	-0.08945	-0.09673	-0.28629
	setup	CLK (R)	0.15274	0.20666	0.98344
	setup	CLK (R)	0.22439	0.23938	0.58044
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03510	-0.04328	0.13367
	hold	CLK (R)	-0.08688	-0.09486	-0.34221
	setup	CLK (R)	0.15488	0.20801	1.03690
	setup	CLK (R)	0.22208	0.24069	0.62022

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)	-0.15697	-0.23721	-2.70073
	hold	CLK (R)	-0.16406	-0.26210	-2.53946
	setup	CLK (R)	0.16887	0.24587	2.70668
	setup	CLK (R)	0.17931	0.26900	2.54366
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15615	-0.23692	-2.75760
	hold	CLK (R)	-0.16484	-0.26602	-2.60033
	setup	CLK (R)	0.17204	0.25017	2.76161
	setup	CLK (R)	0.18011	0.27304	2.60189

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)	-0.08225	-0.13603	-0.91834
	setup	CLK (R)	0.09499	0.14521	0.92083
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08294	-0.13891	-0.97581
	setup	CLK (R)	0.09535	0.14783	0.97936

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)	-0.10339	-0.17358	-2.49217
	setup	CLK (R)	0.14218	0.22019	2.56939
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10448	-0.17593	-2.54685
	setup	CLK (R)	0.14247	0.22200	2.61529

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)	-0.08225	-0.13603	-0.91834
	setup	CLK (R)	0.09499	0.14521	0.92083
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08294	-0.13891	-0.97581
	setup	CLK (R)	0.09535	0.14783	0.97936

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)	-0.10339	-0.17358	-2.49217
	setup	CLK (R)	0.14218	0.22019	2.56939
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10448	-0.17593	-2.54685
	setup	CLK (R)	0.14247	0.22200	2.61529

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)	0.00372	0.00807	0.43885
	setup	CLK (R)	0.15764	0.18188	0.68893
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00247	0.00605	0.36314
	setup	CLK (R)	0.15933	0.18501	0.74583

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)	-0.07096	-0.16205	-2.64230
	setup	CLK (R)	0.13226	0.22806	2.81464
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07063	-0.16599	-2.71208
	setup	CLK (R)	0.13587	0.23481	2.86199

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)	-0.12076	-0.13034	-0.28238
	hold	CLK (R)	0.00372	0.00807	0.43885
	hold	CLK (R)	-0.06606	-0.12981	-0.63389
	hold	CLK (R)	-0.05970	-0.06964	-0.15520
	setup	CLK (R)	0.15758	0.18188	0.41856
	setup	CLK (R)	0.08274	0.14117	0.68893
	setup	CLK (R)	0.08052	0.14319	0.68885
	setup	CLK (R)	0.15764	0.18179	0.42127
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12109	-0.13532	-0.34956
	hold	CLK (R)	0.00247	0.00605	0.36314
	hold	CLK (R)	-0.06756	-0.13296	-0.68685
	hold	CLK (R)	-0.05808	-0.07206	-0.21527
	setup	CLK (R)	0.15932	0.18501	0.46444
	setup	CLK (R)	0.08237	0.14521	0.74583
	setup	CLK (R)	0.08179	0.14521	0.74533
	setup	CLK (R)	0.15933	0.18496	0.46396

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)	-0.10806	-0.21562	-2.67472
	hold	CLK (R)	-0.07246	-0.16205	-2.72204
	hold	CLK (R)	-0.07096	-0.16253	-2.74813
	hold	CLK (R)	-0.10483	-0.21095	-2.64230
	setup	CLK (R)	0.13226	0.22806	2.68055
	setup	CLK (R)	0.08596	0.17332	2.72826
	setup	CLK (R)	0.11732	0.21210	2.81464
	setup	CLK (R)	0.11995	0.21758	2.64714
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11144	-0.22150	-2.74578
	hold	CLK (R)	-0.07383	-0.16714	-2.78020
	hold	CLK (R)	-0.07063	-0.16599	-2.80916
	hold	CLK (R)	-0.10683	-0.21517	-2.71208
	setup	CLK (R)	0.13587	0.23481	2.75156
	setup	CLK (R)	0.08765	0.17757	2.78707
	setup	CLK (R)	0.11690	0.21557	2.86199
	setup	CLK (R)	0.12256	0.22237	2.71761

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 ()	0.07159	0.59937	16.50020
	min_pulse_width	CLK ()	0.07159	0.59937	16.50020
	min_pulse_width	CLK ()	0.09189	0.59937	16.50020
	min_pulse_width	CLK ()	0.07159	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
	min_pulse_width	CLK ()	0.07159	0.59937	16.50020
	min_pulse_width	CLK ()	0.09189	0.59937	16.50020
	min_pulse_width	CLK ()	0.09189	0.59937	16.50020
	min_pulse_width	CLK ()	0.07159	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.12121	0.59937	16.50020
	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
	min_pulse_width	CLK ()	0.11896	0.59937	16.50020
	min_pulse_width	CLK ()	0.08287	0.59937	16.50020
	min_pulse_width	CLK ()	0.12121	0.59937	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 ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.13023	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.13023	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	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	0.07255	0.08373	0.27981
	CLK	0.06994	0.08111	0.27658
sky130_fd_sc_hs__sedfxbp_2	CLK	0.08507	0.09405	0.29049
	CLK	0.08251	0.09143	0.28744

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.07164	0.08280	0.28996
	CLK	0.06884	0.07995	0.28686
sky130_fd_sc_hs__sedfxbp_2	CLK	0.07514	0.08287	0.29121
	CLK	0.07230	0.08003	0.28796

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.09932	0.11051	0.31924
	CLK	0.09652	0.10764	0.31589
sky130_fd_sc_hs__sedfxbp_2	CLK	0.11368	0.12148	0.33108
	CLK	0.11085	0.11859	0.32770

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.05328	0.06444	0.25907
	CLK	0.05066	0.06182	0.25604
sky130_fd_sc_hs__sedfxbp_2	CLK	0.05984	0.06880	0.26398
	CLK	0.05729	0.06618	0.26094

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.05698	0.06539	0.21503
	(DE * SCE)	0.05285	0.06124	0.21087
	(CLK * DE * !SCE)	0.05504	0.06193	0.20727
	(CLK * DE * !SCE)	0.04951	0.05641	0.20173
	(CLK * !DE * !SCE)	0.02675	0.02675	0.02672
	(CLK * !DE * !SCE)	0.02402	0.02402	0.02399
	(!DE * SCE)	0.04237	0.04233	0.04230
	(!DE * SCE)	0.03964	0.03959	0.03957
	(!CLK * DE * !SCE * Q * !Q_N)	0.04941	0.06049	0.26004
	(!CLK * DE * !SCE * Q * !Q_N)	0.04391	0.05498	0.25453
	(!CLK * DE * !SCE * !Q * Q_N)	0.05494	0.06558	0.26195
	(!CLK * DE * !SCE * !Q * Q_N)	0.04941	0.06003	0.25641
	(!CLK * !DE * !SCE)	0.02652	0.02650	0.02647
	(!CLK * !DE * !SCE)	0.02380	0.02378	0.02374
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.06110	0.06956	0.21915
	(DE * SCE)	0.05681	0.06524	0.21483
	(CLK * DE * !SCE)	0.05932	0.06619	0.21143
	(CLK * DE * !SCE)	0.05359	0.06046	0.20571
	(CLK * !DE * !SCE)	0.03077	0.03076	0.03074
	(CLK * !DE * !SCE)	0.02792	0.02792	0.02790
	(!DE * SCE)	0.04639	0.04634	0.04632
	(!DE * SCE)	0.04355	0.04350	0.04347
	(!CLK * DE * !SCE * Q * !Q_N)	0.05408	0.06513	0.26455
	(!CLK * DE * !SCE * Q * !Q_N)	0.04836	0.05943	0.25885
	(!CLK * DE * !SCE * !Q * Q_N)	0.05903	0.06966	0.26590
	(!CLK * DE * !SCE * !Q * Q_N)	0.05329	0.06392	0.26017
	(!CLK * !DE * !SCE)	0.03054	0.03052	0.03049
	(!CLK * !DE * !SCE)	0.02770	0.02768	0.02765

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.04981	0.05940	0.21223
	(DE * SCE)	0.05398	0.06356	0.21639
	(CLK * DE * !SCE)	0.03621	0.04496	0.20016
	(CLK * DE * !SCE)	0.04175	0.05051	0.20570
	(CLK * !DE * !SCE)	0.02587	0.02586	0.02588
	(CLK * !DE * !SCE)	0.02860	0.02860	0.02859
	(!DE * SCE)	0.04134	0.04132	0.04133
	(!DE * SCE)	0.04407	0.04406	0.04404
	(!CLK * DE * !SCE * Q * !Q_N)	0.05303	0.06286	0.25001
	(!CLK * DE * !SCE * Q * !Q_N)	0.05852	0.06838	0.25551
	(!CLK * DE * !SCE * !Q * Q_N)	0.05392	0.06420	0.25576
	(!CLK * DE * !SCE * !Q * Q_N)	0.05946	0.06972	0.26129
	(!CLK * !DE * !SCE)	0.02582	0.02581	0.02581
	(!CLK * !DE * !SCE)	0.02855	0.02855	0.02853
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.05352	0.06313	0.21596
	(DE * SCE)	0.05785	0.06745	0.22027
	(CLK * DE * !SCE)	0.04004	0.04877	0.20389
	(CLK * DE * !SCE)	0.04578	0.05451	0.20962
	(CLK * !DE * !SCE)	0.02985	0.02985	0.02986
	(CLK * !DE * !SCE)	0.03270	0.03270	0.03269
	(!DE * SCE)	0.04533	0.04531	0.04531
	(!DE * SCE)	0.04817	0.04814	0.04814
	(!CLK * DE * !SCE * Q * !Q_N)	0.05728	0.06703	0.25419
	(!CLK * DE * !SCE * Q * !Q_N)	0.06296	0.07273	0.25988
	(!CLK * DE * !SCE * !Q * Q_N)	0.05767	0.06796	0.25942
	(!CLK * DE * !SCE * !Q * Q_N)	0.06342	0.07368	0.26515
	(!CLK * !DE * !SCE)	0.02982	0.02980	0.02980
	(!CLK * !DE * !SCE)	0.03266	0.03265	0.03263

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.06295	0.08350	0.42764
	SCE	0.05391	0.07446	0.41857
	(CLK * !SCE)	0.06100	0.08010	0.42013
	(CLK * !SCE)	0.05057	0.06965	0.40970
	(!CLK * D * !SCE * Q * !Q_N)	0.03098	0.04357	0.24563
	(!CLK * D * !SCE * Q * !Q_N)	0.02363	0.03620	0.23826
	(!CLK * D * !SCE * !Q * Q_N)	0.06087	0.08308	0.47134
	(!CLK * D * !SCE * !Q * Q_N)	0.05045	0.07264	0.46091
	(!CLK * !D * !SCE * Q * !Q_N)	0.06164	0.07462	0.29363
	(!CLK * !D * !SCE * Q * !Q_N)	0.05735	0.07028	0.28932
	(!CLK * !D * !SCE * !Q * Q_N)	0.03935	0.05187	0.25321
	(!CLK * !D * !SCE * !Q * Q_N)	0.03196	0.04444	0.24580
sky130_fd_sc_hs__sedfxbp_2	SCE	0.06698	0.08762	0.43166
	SCE	0.05779	0.07839	0.42245
	(CLK * !SCE)	0.06519	0.08433	0.42418
	(CLK * !SCE)	0.05458	0.07368	0.41355
	(!CLK * D * !SCE * Q * !Q_N)	0.03548	0.04810	0.25012
	(!CLK * D * !SCE * Q * !Q_N)	0.02802	0.04061	0.24264
	(!CLK * D * !SCE * !Q * Q_N)	0.06487	0.08713	0.47521
	(!CLK * D * !SCE * !Q * Q_N)	0.05426	0.07649	0.46459
	(!CLK * !D * !SCE * Q * !Q_N)	0.06595	0.07895	0.29793
	(!CLK * !D * !SCE * Q * !Q_N)	0.06162	0.07457	0.29359
	(!CLK * !D * !SCE * !Q * Q_N)	0.04336	0.05592	0.25722
	(!CLK * !D * !SCE * !Q * Q_N)	0.03586	0.04837	0.24969

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.04510	0.06712	0.41958
	SCE	0.05414	0.07621	0.42859
	(CLK * !SCE)	0.03142	0.05261	0.40759
	(CLK * !SCE)	0.04185	0.06306	0.41802
	(!CLK * D * !SCE * Q * !Q_N)	0.01758	0.03089	0.23840
	(!CLK * D * !SCE * Q * !Q_N)	0.02493	0.03827	0.24578
	(!CLK * D * !SCE * !Q * Q_N)	0.04845	0.07047	0.45706
	(!CLK * D * !SCE * !Q * Q_N)	0.05887	0.08091	0.46747
	(!CLK * !D * !SCE * Q * !Q_N)	0.04628	0.06001	0.28790
	(!CLK * !D * !SCE * Q * !Q_N)	0.05061	0.06435	0.29222
	(!CLK * !D * !SCE * !Q * Q_N)	0.02589	0.03931	0.24582
	(!CLK * !D * !SCE * !Q * Q_N)	0.03327	0.04673	0.25322
sky130_fd_sc_hs__sedfxbp_2	SCE	0.04880	0.07086	0.42324
	SCE	0.05800	0.08011	0.43241
	(CLK * !SCE)	0.03524	0.05641	0.41127
	(CLK * !SCE)	0.04585	0.06707	0.42188
	(!CLK * D * !SCE * Q * !Q_N)	0.02208	0.03539	0.24287
	(!CLK * D * !SCE * Q * !Q_N)	0.02954	0.04290	0.25035
	(!CLK * D * !SCE * !Q * Q_N)	0.05218	0.07422	0.46069
	(!CLK * D * !SCE * !Q * Q_N)	0.06279	0.08487	0.47129
	(!CLK * !D * !SCE * Q * !Q_N)	0.05083	0.06456	0.29242
	(!CLK * !D * !SCE * Q * !Q_N)	0.05518	0.06893	0.29678
	(!CLK * !D * !SCE * !Q * Q_N)	0.02981	0.04324	0.24971
	(!CLK * !D * !SCE * !Q * Q_N)	0.03730	0.05077	0.25723

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.05818	0.06665	0.22297
	(CLK * SCE)	0.05366	0.06211	0.21844
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.05698	0.06851	0.27258
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.05246	0.06397	0.26806
	!SCE	0.04399	0.04403	0.04786
	!SCE	0.04099	0.04100	0.04486
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.06234	0.07079	0.22703
	(CLK * SCE)	0.05773	0.06616	0.22242
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.06096	0.07249	0.27649
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.05635	0.06786	0.27188
	!SCE	0.04798	0.04803	0.05186
	!SCE	0.04493	0.04495	0.04881

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.05570	0.06455	0.21982
	(CLK * SCE)	0.06023	0.06909	0.22432
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.07012	0.07985	0.26619
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.07465	0.08438	0.27069
	!SCE	0.04618	0.04606	0.04523
	!SCE	0.04919	0.04908	0.04823
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.05966	0.06848	0.22369
	(CLK * SCE)	0.06427	0.07311	0.22828
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.07403	0.08374	0.27005
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.07865	0.08837	0.27464
	!SCE	0.05019	0.05008	0.04923
	!SCE	0.05325	0.05314	0.05229

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.05284	0.07300	0.39736
	(CLK * D)	0.04509	0.06521	0.38957
	(CLK * !D)	0.05855	0.07851	0.39954
	(CLK * !D)	0.05080	0.07072	0.39175
	(!CLK * D * SCD * Q * !Q_N)	0.03841	0.05104	0.25079
	(!CLK * D * SCD * Q * !Q_N)	0.03201	0.04462	0.24441
	(!CLK * D * DE * SCD * !Q * Q_N)	0.04509	0.05772	0.25747
	(!CLK * D * DE * SCD * !Q * Q_N)	0.03870	0.05130	0.25109
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.07755	0.09013	0.37996
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.07247	0.08501	0.37484
	(!CLK * D * !SCD * Q * !Q_N)	0.07526	0.08769	0.37562
	(!CLK * D * !SCD * Q * !Q_N)	0.07018	0.08257	0.37049
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.05153	0.07497	0.44781
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.04379	0.06717	0.44003
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.03897	0.05172	0.25339
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.03240	0.04516	0.24681
	(!CLK * !D * SCD * !Q * Q_N)	0.05725	0.08046	0.44978
	(!CLK * !D * SCD * !Q * Q_N)	0.04947	0.07266	0.44199
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.05436	0.07771	0.44894
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.04658	0.06991	0.44115
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.04575	0.05851	0.26018
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.03918	0.05194	0.25359
	(!CLK * !D * !SCD * !Q * Q_N)	0.04470	0.05748	0.25912
	(!CLK * !D * !SCD * !Q * Q_N)	0.03813	0.05088	0.25254
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.03548	0.04810	0.24786
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.02908	0.04169	0.24148
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.07234	0.08476	0.37282
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.06726	0.07964	0.36768

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.05704	0.07716	0.40137
	(CLK * D)	0.04907	0.06916	0.39336
	(CLK * !D)	0.06274	0.08266	0.40346
	(CLK * !D)	0.05477	0.07466	0.39546
	(!CLK * D * SCD * Q * !Q_N)	0.04308	0.05564	0.25519
	(!CLK * D * SCD * Q * !Q_N)	0.03651	0.04905	0.24863
	(!CLK * D * DE * SCD * !Q * Q_N)	0.04925	0.06182	0.26137
	(!CLK * D * DE * SCD * !Q * Q_N)	0.04268	0.05522	0.25481
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.08171	0.09418	0.38387
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.07649	0.08892	0.37861
	(!CLK * D * !SCD * Q * !Q_N)	0.07987	0.09218	0.37997
	(!CLK * D * !SCD * Q * !Q_N)	0.07465	0.08692	0.37471
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.05554	0.07896	0.45161
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.04758	0.07094	0.44361
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.04318	0.05590	0.25733
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.03643	0.04911	0.25057
	(!CLK * !D * SCD * !Q * Q_N)	0.06124	0.08444	0.45348
	(!CLK * !D * SCD * !Q * Q_N)	0.05327	0.07643	0.44550
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.05893	0.08226	0.45323
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.05096	0.07425	0.44522
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.05048	0.06319	0.26463
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.04373	0.05641	0.25787
	(!CLK * !D * !SCD * !Q * Q_N)	0.04892	0.06163	0.26306
	(!CLK * !D * !SCD * !Q * Q_N)	0.04217	0.05485	0.25630
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.04015	0.05271	0.25226
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.03357	0.04612	0.24570
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.07694	0.08925	0.37717
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.07172	0.08399	0.37190

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.02761	0.05020	0.38892
	(CLK * D)	0.03540	0.05797	0.39670
	(CLK * !D)	0.03335	0.05581	0.39144
	(CLK * !D)	0.04114	0.06362	0.39922
	(!CLK * D * SCD * Q * !Q_N)	0.02301	0.03684	0.24426
	(!CLK * D * SCD * Q * !Q_N)	0.02941	0.04324	0.25066
	(!CLK * D * DE * SCD * !Q * Q_N)	0.03016	0.04400	0.25140
	(!CLK * D * DE * SCD * !Q * Q_N)	0.03656	0.05039	0.25781
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.05411	0.07503	0.38884
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.05922	0.08013	0.39373
	(!CLK * D * !SCD * Q * !Q_N)	0.04795	0.06904	0.38525
	(!CLK * D * !SCD * Q * !Q_N)	0.05306	0.07414	0.39014
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.04370	0.06676	0.44239
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.05149	0.07458	0.45017
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.02561	0.03931	0.24619
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.03219	0.04591	0.25278
	(!CLK * !D * SCD * !Q * Q_N)	0.04983	0.07279	0.44704
	(!CLK * !D * SCD * !Q * Q_N)	0.05762	0.08060	0.45482
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.04979	0.07241	0.44402
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.05758	0.08022	0.45180
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.03192	0.04563	0.25251
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.03850	0.05223	0.25910
	(!CLK * !D * !SCD * !Q * Q_N)	0.03134	0.04504	0.25193
	(!CLK * !D * !SCD * !Q * Q_N)	0.03792	0.05165	0.25852
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.02007	0.03391	0.24132
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.02647	0.04030	0.24773
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.04477	0.06590	0.38254
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.04987	0.07101	0.38742

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.03167	0.05413	0.39270
	(CLK * D)	0.03967	0.06216	0.40069
	(CLK * !D)	0.03740	0.05975	0.39514
	(CLK * !D)	0.04541	0.06778	0.40313
	(!CLK * D * SCD * Q * !Q_N)	0.02765	0.04140	0.24862
	(!CLK * D * SCD * Q * !Q_N)	0.03424	0.04797	0.25520
	(!CLK * D * DE * SCD * !Q * Q_N)	0.03425	0.04801	0.25521
	(!CLK * D * DE * SCD * !Q * Q_N)	0.04084	0.05457	0.26180
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.05825	0.07909	0.39290
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.06350	0.08433	0.39792
	(!CLK * D * !SCD * Q * !Q_N)	0.05269	0.07380	0.38992
	(!CLK * D * !SCD * Q * !Q_N)	0.05794	0.07904	0.39496
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.04767	0.07063	0.44594
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.05567	0.07867	0.45394
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.02965	0.04325	0.24993
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.03641	0.05003	0.25670
	(!CLK * !D * SCD * !Q * Q_N)	0.05380	0.07666	0.45050
	(!CLK * !D * SCD * !Q * Q_N)	0.06181	0.08469	0.45850
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.05425	0.07677	0.44800
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.06226	0.08480	0.45600
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.03651	0.05012	0.25680
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.04328	0.05690	0.26357
	(!CLK * !D * !SCD * !Q * Q_N)	0.03537	0.04898	0.25566
	(!CLK * !D * !SCD * !Q * Q_N)	0.04214	0.05576	0.26243
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.02471	0.03846	0.24568
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.03130	0.04503	0.25227
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.04950	0.07066	0.38722
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.05475	0.07591	0.39223

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)	0.05300	0.07733	0.46569
	(SCD * SCE * Q * !Q_N)	0.04759	0.07190	0.46027
	(D * !SCE * Q * !Q_N)	0.04444	0.06877	0.45714
	(D * !SCE * Q * !Q_N)	0.03903	0.06334	0.45172
	(D * !DE * !SCE * !Q * Q_N)	0.04494	0.06941	0.45905
	(D * !DE * !SCE * !Q * Q_N)	0.03953	0.06398	0.45364
	(!SCD * SCE * !Q * Q_N)	0.07083	0.09532	0.48506
	(!SCD * SCE * !Q * Q_N)	0.06542	0.08989	0.47965
	(!D * !SCE * !Q * Q_N)	0.05067	0.07514	0.46477
	(!D * !SCE * !Q * Q_N)	0.04526	0.06971	0.45938
	(!D * !DE * !SCE * Q * !Q_N)	0.04151	0.06584	0.45420
	(!D * !DE * !SCE * Q * !Q_N)	0.03609	0.06041	0.44879
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.05741	0.08203	0.47464
	(SCD * SCE * Q * !Q_N)	0.05201	0.07662	0.46923
	(D * !SCE * Q * !Q_N)	0.04884	0.07347	0.46608
	(D * !SCE * Q * !Q_N)	0.04344	0.06805	0.46068
	(D * !DE * !SCE * !Q * Q_N)	0.04898	0.07375	0.46760
	(D * !DE * !SCE * !Q * Q_N)	0.04358	0.06833	0.46219
	(!SCD * SCE * !Q * Q_N)	0.07489	0.09967	0.49362
	(!SCD * SCE * !Q * Q_N)	0.06948	0.09425	0.48822
	(!D * !SCE * !Q * Q_N)	0.05471	0.07948	0.47335
	(!D * !SCE * !Q * Q_N)	0.04931	0.07406	0.46794
	(!D * !DE * !SCE * Q * !Q_N)	0.04590	0.07053	0.46314
	(!D * !DE * !SCE * Q * !Q_N)	0.04050	0.06512	0.45774

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)	0.04205	0.06654	0.45386
	(SCD * SCE * Q * !Q_N)	0.04744	0.07197	0.45928
	(SCD * SCE * !Q * Q_N)	0.05992	0.08586	0.49125
	(SCD * SCE * !Q * Q_N)	0.06531	0.09126	0.49667
	(D * DE * !SCE * !Q * Q_N)	0.05154	0.07739	0.48312
	(D * DE * !SCE * !Q * Q_N)	0.05693	0.08282	0.48854
	(D * !SCE * Q * !Q_N)	0.03351	0.05799	0.44531
	(D * !SCE * Q * !Q_N)	0.03890	0.06342	0.45072
	(D * !DE * !SCE * !Q * Q_N)	0.03708	0.06136	0.44712
	(D * !DE * !SCE * !Q * Q_N)	0.04247	0.06678	0.45254
	(!SCD * SCE * Q * !Q_N)	0.07541	0.10001	0.49506
	(!SCD * SCE * Q * !Q_N)	0.08082	0.10545	0.50048
	(!SCD * SCE * !Q * Q_N)	0.06321	0.08752	0.47312
	(!SCD * SCE * !Q * Q_N)	0.06860	0.09294	0.47854
	(!D * DE * !SCE * Q * !Q_N)	0.05948	0.08413	0.47855
	(!D * DE * !SCE * Q * !Q_N)	0.06488	0.08955	0.48396
	(!D * !SCE * !Q * Q_N)	0.04281	0.06710	0.45286
	(!D * !SCE * !Q * Q_N)	0.04820	0.07252	0.45827
	(!D * !DE * !SCE * Q * !Q_N)	0.03057	0.05506	0.44237
	(!D * !DE * !SCE * Q * !Q_N)	0.03597	0.06048	0.44778

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.04675	0.07154	0.46259
	(SCD * SCE * Q * !Q_N)	0.05214	0.07696	0.46800
	(SCD * SCE * !Q * Q_N)	0.06378	0.08997	0.49876
	(SCD * SCE * !Q * Q_N)	0.06916	0.09538	0.50417
	(D * DE * !SCE * !Q * Q_N)	0.05541	0.08153	0.49055
	(D * DE * !SCE * !Q * Q_N)	0.06079	0.08694	0.49594
	(D * !SCE * Q * !Q_N)	0.03823	0.06300	0.45406
	(D * !SCE * Q * !Q_N)	0.04361	0.06842	0.45947
	(D * !DE * !SCE * !Q * Q_N)	0.04110	0.06567	0.45521
	(D * !DE * !SCE * !Q * Q_N)	0.04648	0.07108	0.46062
	(!SCD * SCE * Q * !Q_N)	0.07997	0.10484	0.50353
	(!SCD * SCE * Q * !Q_N)	0.08537	0.11026	0.50894
	(!SCD * SCE * !Q * Q_N)	0.06722	0.09182	0.48117
	(!SCD * SCE * !Q * Q_N)	0.07260	0.09723	0.48657
	(!D * DE * !SCE * Q * !Q_N)	0.06401	0.08892	0.48707
	(!D * DE * !SCE * Q * !Q_N)	0.06940	0.09435	0.49248
	(!D * !SCE * !Q * Q_N)	0.04684	0.07141	0.46094
	(!D * !SCE * !Q * Q_N)	0.05222	0.07683	0.46635
	(!D * !DE * !SCE * Q * !Q_N)	0.03529	0.06007	0.45113
	(!D * !DE * !SCE * Q * !Q_N)	0.04068	0.06549	0.45654

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00207	0.00405	0.00190	0.00394	0.00284	1.72636
sky130_fd_sc_hs__sedfxtp_2	0.00217	0.00408	0.00192	0.00398	0.00286	3.41232
sky130_fd_sc_hs__sedfxtp_4	0.00217	0.00406	0.00192	0.00396	0.00296	6.42149

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	3476.46000	6076.33000
sky130_fd_sc_hs__sedfxtp_2	0.00000	3742.88000	6597.80000
sky130_fd_sc_hs__sedfxtp_4	0.00000	4275.17000	7639.35000

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)**	0.13114	0.50489	5.56832
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.13758	0.43379	5.61126
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.15987	0.39950	5.61097

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.10897	0.37477	3.23393
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.12246	0.35356	3.29013
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.16046	0.36847	3.36333

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)	-0.12565	-0.21084	-1.19023
	setup	CLK (R)	0.15329	0.23087	1.20550
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12693	-0.21303	-1.19365
	setup	CLK (R)	0.15296	0.23202	1.20862
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12845	-0.21348	-1.19383
	setup	CLK (R)	0.15192	0.23126	1.20719

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)	-0.15065	-0.24874	-2.67681
	setup	CLK (R)	0.19559	0.29878	2.74948
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14946	-0.24887	-2.66877
	setup	CLK (R)	0.19567	0.29930	2.75159
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14855	-0.24896	-2.67468
	setup	CLK (R)	0.19120	0.29130	2.76764

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)	-0.03425	-0.04103	0.18074
	setup	CLK (R)	0.22343	0.23997	0.98944
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03405	-0.04103	0.18077
	setup	CLK (R)	0.22281	0.23967	0.99350
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03425	-0.04103	0.18077
	setup	CLK (R)	0.21546	0.23403	0.99213

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)	-0.15938	-0.23721	-2.55407
	setup	CLK (R)	0.18012	0.26983	2.72180
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15826	-0.23692	-2.55805
	setup	CLK (R)	0.18127	0.27315	2.71384
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15781	-0.23721	-2.55466
	setup	CLK (R)	0.17820	0.27092	2.71887

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)	-0.03425	-0.04103	0.18074
	hold	CLK (R)	-0.08970	-0.09580	-0.29412
	setup	CLK (R)	0.15198	0.20666	0.98944
	setup	CLK (R)	0.22343	0.23997	0.57668
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03405	-0.04103	0.18077
	hold	CLK (R)	-0.08767	-0.09292	-0.28508
	setup	CLK (R)	0.15237	0.20700	0.99350
	setup	CLK (R)	0.22281	0.23967	0.58536
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03425	-0.04103	0.18077
	hold	CLK (R)	-0.08627	-0.09292	-0.28608
	setup	CLK (R)	0.15146	0.20596	0.99213
	setup	CLK (R)	0.21546	0.23403	0.59777

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)	-0.15938	-0.23721	-2.71715
	hold	CLK (R)	-0.16477	-0.26308	-2.55407
	setup	CLK (R)	0.17060	0.24876	2.72180
	setup	CLK (R)	0.18012	0.26983	2.55942
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15826	-0.23692	-2.70743
	hold	CLK (R)	-0.16606	-0.26517	-2.55805
	setup	CLK (R)	0.16977	0.24730	2.71384
	setup	CLK (R)	0.18127	0.27315	2.56407
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15781	-0.23721	-2.71287
	hold	CLK (R)	-0.16610	-0.26600	-2.55466
	setup	CLK (R)	0.17114	0.24876	2.71887
	setup	CLK (R)	0.17820	0.27092	2.55907

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)	-0.07956	-0.13493	-0.92979
	setup	CLK (R)	0.09558	0.14721	0.93098
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08022	-0.13530	-0.92739
	setup	CLK (R)	0.09564	0.14721	0.93045
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07980	-0.13569	-0.92773
	setup	CLK (R)	0.09584	0.14721	0.92988

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)	-0.10691	-0.17482	-2.50714
	setup	CLK (R)	0.14319	0.22200	2.57248
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10529	-0.17482	-2.49935
	setup	CLK (R)	0.14234	0.22114	2.58271
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10472	-0.17572	-2.50734
	setup	CLK (R)	0.13899	0.21685	2.60170

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)	0.00372	0.00807	0.42733
	setup	CLK (R)	0.16243	0.18382	0.69774
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00372	0.00807	0.43603
	setup	CLK (R)	0.15848	0.18307	0.69524
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00372	0.00807	0.43611
	setup	CLK (R)	0.15718	0.18004	0.69567

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)	-0.07168	-0.16405	-2.66605
	setup	CLK (R)	0.13522	0.23143	2.82258
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.06927	-0.16191	-2.66529
	setup	CLK (R)	0.13398	0.23222	2.82336
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07309	-0.16478	-2.66921
	setup	CLK (R)	0.13330	0.23128	2.84605

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)	-0.12193	-0.13328	-0.30120
	hold	CLK (R)	0.00372	0.00807	0.42733
	hold	CLK (R)	-0.06657	-0.13081	-0.64268
	hold	CLK (R)	-0.05894	-0.07000	-0.16911
	setup	CLK (R)	0.16243	0.18378	0.42635
	setup	CLK (R)	0.08156	0.14117	0.69620
	setup	CLK (R)	0.08052	0.14319	0.69774
	setup	CLK (R)	0.16018	0.18382	0.42614
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12093	-0.13259	-0.29514
	hold	CLK (R)	0.00372	0.00807	0.43603
	hold	CLK (R)	-0.06831	-0.13079	-0.63745
	hold	CLK (R)	-0.05657	-0.06964	-0.16516
	setup	CLK (R)	0.15805	0.18307	0.43746
	setup	CLK (R)	0.08423	0.14319	0.69524
	setup	CLK (R)	0.08426	0.14319	0.69480
	setup	CLK (R)	0.15848	0.18297	0.43741
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12161	-0.13532	-0.29570
	hold	CLK (R)	0.00372	0.00807	0.43611
	hold	CLK (R)	-0.06748	-0.13140	-0.63670
	hold	CLK (R)	-0.05738	-0.07000	-0.16218
	setup	CLK (R)	0.15718	0.18004	0.44397
	setup	CLK (R)	0.07938	0.14117	0.69240
	setup	CLK (R)	0.08278	0.14319	0.69567
	setup	CLK (R)	0.15713	0.17988	0.44774

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)	-0.10960	-0.21991	-2.69615
	hold	CLK (R)	-0.07554	-0.16405	-2.73624
	hold	CLK (R)	-0.07168	-0.16480	-2.76479
	hold	CLK (R)	-0.10630	-0.21233	-2.66605
	setup	CLK (R)	0.13522	0.23143	2.70366
	setup	CLK (R)	0.08834	0.17614	2.74048
	setup	CLK (R)	0.11740	0.21364	2.82258
	setup	CLK (R)	0.12085	0.21934	2.67059
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.11273	-0.21904	-2.69565
	hold	CLK (R)	-0.07455	-0.16191	-2.72730
	hold	CLK (R)	-0.06927	-0.16280	-2.75510
	hold	CLK (R)	-0.10877	-0.21256	-2.66529
	setup	CLK (R)	0.13398	0.23222	2.70143
	setup	CLK (R)	0.08565	0.17476	2.73246
	setup	CLK (R)	0.11945	0.21542	2.82336
	setup	CLK (R)	0.11937	0.21963	2.66889
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11141	-0.22150	-2.70123
	hold	CLK (R)	-0.07324	-0.16605	-2.73645
	hold	CLK (R)	-0.07309	-0.16478	-2.76572
	hold	CLK (R)	-0.10654	-0.21462	-2.66921
	setup	CLK (R)	0.13330	0.23128	2.70584
	setup	CLK (R)	0.08584	0.17614	2.74048
	setup	CLK (R)	0.11276	0.21109	2.84605
	setup	CLK (R)	0.11777	0.22096	2.67401

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 ()**	0.06708	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.06708	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08964	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.06934	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08964	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.06934	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08738	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08738	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.06934	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08964	0.59937	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.07836	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.07836	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11445	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08061	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11445	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.07836	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11219	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11445	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.08061	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11445	0.59937	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.15730	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.15955	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.15730	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.15730	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.15955	0.59937	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 ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.13023	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
	min_pulse_width	CLK ()	0.09640	0.59937	16.50020
	min_pulse_width	CLK ()	0.12572	0.59937	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
	min_pulse_width	CLK ()	0.10317	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
	min_pulse_width	CLK ()	0.12798	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	16.50020
	min_pulse_width	CLK ()	0.09415	0.59937	16.50020
	min_pulse_width	CLK ()	0.12347	0.59937	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.09415	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.10091	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11896	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.09415	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11896	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.09415	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.12347	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11896	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.09415	0.59937	16.50020
	min_pulse_width	**CLK ()**	0.11896	0.59937	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	0.12368	0.14825	0.54441
	CLK	0.11863	0.14320	0.53941
sky130_fd_sc_hs__sedfxtp_2	CLK	0.13079	0.15366	0.55197
	CLK	0.12574	0.14859	0.54671
sky130_fd_sc_hs__sedfxtp_4	CLK	0.14674	0.16405	0.56488
	CLK	0.14154	0.15880	0.55921

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.13337	0.15759	0.57363
	CLK	0.12770	0.15173	0.56683
sky130_fd_sc_hs__sedfxtp_2	CLK	0.15425	0.17261	0.58527
	CLK	0.14851	0.16686	0.57893
sky130_fd_sc_hs__sedfxtp_4	CLK	0.20021	0.20255	0.60429
	CLK	0.19428	0.19636	0.59623

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.05746	0.06595	0.21557
	(DE * SCE)	0.05332	0.06177	0.21140
	(CLK * DE * !SCE)	0.05559	0.06250	0.20783
	(CLK * DE * !SCE)	0.05002	0.05693	0.20226
	(CLK * !DE * !SCE)	0.02730	0.02730	0.02728
	(CLK * !DE * !SCE)	0.02456	0.02455	0.02453
	(!DE * SCE)	0.04292	0.04288	0.04285
	(!DE * SCE)	0.04018	0.04013	0.04010
	(!CLK * DE * !SCE * Q)	0.04471	0.05581	0.25531
	(!CLK * DE * !SCE * Q)	0.03919	0.05026	0.24976
	(!CLK * DE * !SCE * !Q)	0.05548	0.06614	0.26245
	(!CLK * DE * !SCE * !Q)	0.04991	0.06055	0.25688
	(!CLK * !DE * !SCE)	0.02708	0.02706	0.02703
	(!CLK * !DE * !SCE)	0.02433	0.02431	0.02428
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.06220	0.07064	0.22021
	(DE * SCE)	0.05786	0.06627	0.21585
	(CLK * DE * !SCE)	0.06040	0.06727	0.21253
	(CLK * DE * !SCE)	0.05463	0.06150	0.20676
	(CLK * !DE * !SCE)	0.03184	0.03183	0.03181
	(CLK * !DE * !SCE)	0.02897	0.02896	0.02894
	(!DE * SCE)	0.04746	0.04741	0.04739
	(!DE * SCE)	0.04460	0.04454	0.04452
	(!CLK * DE * !SCE * Q)	0.04501	0.05606	0.25550
	(!CLK * DE * !SCE * Q)	0.03925	0.05031	0.24976
	(!CLK * DE * !SCE * !Q)	0.06026	0.07088	0.26716
	(!CLK * DE * !SCE * !Q)	0.05447	0.06511	0.26138
	(!CLK * !DE * !SCE)	0.03162	0.03160	0.03157
	(!CLK * !DE * !SCE)	0.02875	0.02873	0.02870

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.07125	0.07971	0.22929
	(DE * SCE)	0.06691	0.07533	0.22492
	(CLK * DE * !SCE)	0.06951	0.07635	0.22154
	(CLK * DE * !SCE)	0.06373	0.07058	0.21576
	(CLK * !DE * !SCE)	0.04089	0.04088	0.04086
	(CLK * !DE * !SCE)	0.03801	0.03801	0.03798
	(!DE * SCE)	0.05651	0.05647	0.05644
	(!DE * SCE)	0.05364	0.05358	0.05356
	(!CLK * DE * !SCE * Q)	0.04509	0.05615	0.25557
	(!CLK * DE * !SCE * Q)	0.03933	0.05040	0.24983
	(!CLK * DE * !SCE * !Q)	0.06913	0.07976	0.27603
	(!CLK * DE * !SCE * !Q)	0.06334	0.07398	0.27025
	(!CLK * !DE * !SCE)	0.04069	0.04066	0.04063
	(!CLK * !DE * !SCE)	0.03781	0.03779	0.03776

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.05024	0.05984	0.21270
	(DE * SCE)	0.05438	0.06402	0.21687
	(CLK * DE * !SCE)	0.03666	0.04542	0.20062
	(CLK * DE * !SCE)	0.04222	0.05100	0.20618
	(CLK * !DE * !SCE)	0.02640	0.02640	0.02641
	(CLK * !DE * !SCE)	0.02915	0.02916	0.02915
	(!DE * SCE)	0.04188	0.04185	0.04186
	(!DE * SCE)	0.04463	0.04463	0.04460
	(!CLK * DE * !SCE * Q)	0.04810	0.05796	0.24511
	(!CLK * DE * !SCE * Q)	0.05363	0.06351	0.25065
	(!CLK * DE * !SCE * !Q)	0.05425	0.06452	0.25608
	(!CLK * DE * !SCE * !Q)	0.05981	0.07010	0.26165
	(!CLK * !DE * !SCE)	0.02636	0.02634	0.02635
	(!CLK * !DE * !SCE)	0.02911	0.02910	0.02908
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.05468	0.06427	0.21708
	(DE * SCE)	0.05905	0.06864	0.22143
	(CLK * DE * !SCE)	0.04108	0.04982	0.20496
	(CLK * DE * !SCE)	0.04687	0.05560	0.21071
	(CLK * !DE * !SCE)	0.03093	0.03093	0.03094
	(CLK * !DE * !SCE)	0.03380	0.03381	0.03380
	(!DE * SCE)	0.04641	0.04639	0.04639
	(!DE * SCE)	0.04928	0.04924	0.04924
	(!CLK * DE * !SCE * Q)	0.04813	0.05783	0.24503
	(!CLK * DE * !SCE * Q)	0.05385	0.06357	0.25077
	(!CLK * DE * !SCE * !Q)	0.05863	0.06891	0.26038
	(!CLK * DE * !SCE * !Q)	0.06442	0.07468	0.26615
	(!CLK * !DE * !SCE)	0.03090	0.03088	0.03089
	(!CLK * !DE * !SCE)	0.03377	0.03376	0.03375

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.06366	0.07328	0.22609
	(DE * SCE)	0.06804	0.07765	0.23046
	(CLK * DE * !SCE)	0.05035	0.05906	0.21412
	(CLK * DE * !SCE)	0.05614	0.06484	0.21987
	(CLK * !DE * !SCE)	0.03998	0.03998	0.03999
	(CLK * !DE * !SCE)	0.04286	0.04286	0.04285
	(!DE * SCE)	0.05545	0.05544	0.05544
	(!DE * SCE)	0.05833	0.05830	0.05830
	(!CLK * DE * !SCE * Q)	0.04846	0.05828	0.24532
	(!CLK * DE * !SCE * Q)	0.05419	0.06401	0.25106
	(!CLK * DE * !SCE * !Q)	0.06790	0.07820	0.26962
	(!CLK * DE * !SCE * !Q)	0.07370	0.08398	0.27539
	(!CLK * !DE * !SCE)	0.03997	0.03995	0.03995
	(!CLK * !DE * !SCE)	0.04285	0.04284	0.04282

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.06350	0.08414	0.42836
	SCE	0.05434	0.07494	0.41918
	(CLK * !SCE)	0.06161	0.08076	0.42086
	(CLK * !SCE)	0.05105	0.07016	0.41028
	(!CLK * D * !SCE * Q)	0.02635	0.03896	0.24123
	(!CLK * D * !SCE * Q)	0.01887	0.03145	0.23374
	(!CLK * D * !SCE * !Q)	0.06149	0.08374	0.47205
	(!CLK * D * !SCE * !Q)	0.05093	0.07316	0.46148
	(!CLK * !D * !SCE * Q)	0.05682	0.06979	0.28903
	(!CLK * !D * !SCE * Q)	0.05240	0.06540	0.28462
	(!CLK * !D * !SCE * !Q)	0.03996	0.05252	0.25406
	(!CLK * !D * !SCE * !Q)	0.03244	0.04496	0.24653

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.06820	0.08883	0.43306
	SCE	0.05887	0.07945	0.42371
	(CLK * !SCE)	0.06638	0.08550	0.42561
	(CLK * !SCE)	0.05563	0.07472	0.41485
	(!CLK * D * !SCE * Q)	0.02649	0.03911	0.24140
	(!CLK * D * !SCE * Q)	0.01891	0.03149	0.23380
	(!CLK * D * !SCE * !Q)	0.06622	0.08846	0.47681
	(!CLK * D * !SCE * !Q)	0.05548	0.07768	0.46605
	(!CLK * !D * !SCE * Q)	0.05691	0.06991	0.28912
	(!CLK * !D * !SCE * Q)	0.05248	0.06547	0.28469
	(!CLK * !D * !SCE * !Q)	0.04454	0.05710	0.25866
	(!CLK * !D * !SCE * !Q)	0.03691	0.04944	0.25102
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.07722	0.09786	0.44212
	SCE	0.06793	0.08851	0.43280
	(CLK * !SCE)	0.07546	0.09460	0.43462
	(CLK * !SCE)	0.06475	0.08386	0.42390
	(!CLK * D * !SCE * Q)	0.02667	0.03930	0.24160
	(!CLK * D * !SCE * Q)	0.01913	0.03172	0.23404
	(!CLK * D * !SCE * !Q)	0.07507	0.09731	0.48567
	(!CLK * D * !SCE * !Q)	0.06436	0.08659	0.47495
	(!CLK * !D * !SCE * Q)	0.05724	0.07023	0.28943
	(!CLK * !D * !SCE * Q)	0.05283	0.06582	0.28503
	(!CLK * !D * !SCE * !Q)	0.05359	0.06615	0.26773
	(!CLK * !D * !SCE * !Q)	0.04600	0.05853	0.26013

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.04551	0.06753	0.42006
	SCE	0.05468	0.07672	0.42918
	(CLK * !SCE)	0.03187	0.05302	0.40806
	(CLK * !SCE)	0.04244	0.06361	0.41862
	(!CLK * D * !SCE * Q)	0.01286	0.02614	0.23386
	(!CLK * D * !SCE * Q)	0.02033	0.03366	0.24136
	(!CLK * D * !SCE * !Q)	0.04877	0.07074	0.45740
	(!CLK * D * !SCE * !Q)	0.05935	0.08133	0.46794
	(!CLK * !D * !SCE * Q)	0.04155	0.05532	0.28338
	(!CLK * !D * !SCE * Q)	0.04597	0.05975	0.28781
	(!CLK * !D * !SCE * !Q)	0.02640	0.03980	0.24651
	(!CLK * !D * !SCE * !Q)	0.03391	0.04734	0.25403
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.05004	0.07201	0.42458
	SCE	0.05938	0.08139	0.43388
	(CLK * !SCE)	0.03636	0.05747	0.41254
	(CLK * !SCE)	0.04711	0.06826	0.42329
	(!CLK * D * !SCE * Q)	0.01294	0.02621	0.23395
	(!CLK * D * !SCE * Q)	0.02051	0.03383	0.24155
	(!CLK * D * !SCE * !Q)	0.05322	0.07517	0.46184
	(!CLK * D * !SCE * !Q)	0.06397	0.08594	0.47257
	(!CLK * !D * !SCE * Q)	0.04169	0.05536	0.28334
	(!CLK * !D * !SCE * Q)	0.04614	0.05983	0.28779
	(!CLK * !D * !SCE * !Q)	0.03091	0.04431	0.25103
	(!CLK * !D * !SCE * !Q)	0.03852	0.05195	0.25865

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.05902	0.08101	0.43361
	SCE	0.06833	0.09034	0.44287
	(CLK * !SCE)	0.04563	0.06670	0.42172
	(CLK * !SCE)	0.05634	0.07744	0.43243
	(!CLK * D * !SCE * Q)	0.01315	0.02642	0.23417
	(!CLK * D * !SCE * Q)	0.02069	0.03401	0.24174
	(!CLK * D * !SCE * !Q)	0.06250	0.08444	0.47110
	(!CLK * D * !SCE * !Q)	0.07321	0.09519	0.48179
	(!CLK * !D * !SCE * Q)	0.04177	0.05554	0.28342
	(!CLK * !D * !SCE * Q)	0.04619	0.05998	0.28784
	(!CLK * !D * !SCE * !Q)	0.03997	0.05338	0.26011
	(!CLK * !D * !SCE * !Q)	0.04756	0.06099	0.26770

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.05873	0.06720	0.22343
	(CLK * SCE)	0.05411	0.06256	0.21880
	(!CLK * SCE)	0.05754	0.06906	0.27305
	(!CLK * SCE)	0.05292	0.06442	0.26842
	!SCE	0.04450	0.04455	0.04838
	!SCE	0.04143	0.04145	0.04531
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.06341	0.07188	0.22821
	(CLK * SCE)	0.05875	0.06718	0.22353
	(!CLK * SCE)	0.06218	0.07371	0.27776
	(!CLK * SCE)	0.05751	0.06901	0.27308
	!SCE	0.04907	0.04912	0.05295
	!SCE	0.04595	0.04597	0.04983
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.07247	0.08088	0.23716
	(CLK * SCE)	0.06782	0.07621	0.23250
	(!CLK * SCE)	0.07100	0.08253	0.28662
	(!CLK * SCE)	0.06635	0.07785	0.28196
	!SCE	0.05811	0.05815	0.06199
	!SCE	0.05500	0.05502	0.05888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.05627	0.06512	0.22031
	(CLK * SCE)	0.06090	0.06976	0.22492
	(!CLK * SCE)	0.07060	0.08033	0.26660
	(!CLK * SCE)	0.07523	0.08498	0.27121
	!SCE	0.04675	0.04663	0.04579
	!SCE	0.04983	0.04972	0.04887
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.06068	0.06953	0.22482
	(CLK * SCE)	0.06536	0.07423	0.22948
	(!CLK * SCE)	0.07495	0.08469	0.27105
	(!CLK * SCE)	0.07963	0.08938	0.27571
	!SCE	0.05125	0.05113	0.05029
	!SCE	0.05438	0.05427	0.05341
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.07008	0.07886	0.23409
	(CLK * SCE)	0.07474	0.08353	0.23873
	(!CLK * SCE)	0.08436	0.09407	0.28042
	(!CLK * SCE)	0.08903	0.09873	0.28506
	!SCE	0.06031	0.06019	0.05935
	!SCE	0.06342	0.06331	0.06246

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.05324	0.07342	0.39757
	(CLK * D)	0.04550	0.06565	0.38980
	(CLK * !D)	0.05894	0.07893	0.39970
	(CLK * !D)	0.05120	0.07117	0.39193
	(!CLK * D * SCD * Q)	0.03356	0.04618	0.24583
	(!CLK * D * SCD * Q)	0.02721	0.03981	0.23948
	(!CLK * D * DE * SCD * !Q)	0.04552	0.05814	0.25779
	(!CLK * D * DE * SCD * !Q)	0.03917	0.05177	0.25144
	(!CLK * D * DE * !SCD * !Q)	0.07810	0.09063	0.38037
	(!CLK * D * DE * !SCD * !Q)	0.07309	0.08559	0.37535
	(!CLK * D * !SCD * Q)	0.07049	0.08286	0.37071
	(!CLK * D * !SCD * Q)	0.06549	0.07782	0.36566
	(!CLK * D * !DE * SCD * !Q)	0.05193	0.07539	0.44798
	(!CLK * D * !DE * SCD * !Q)	0.04420	0.06761	0.44021
	(!CLK * D * !DE * !SCD * !Q)	0.03951	0.05225	0.25380
	(!CLK * D * !DE * !SCD * !Q)	0.03299	0.04574	0.24726
	(!CLK * !D * SCD * !Q)	0.05763	0.08088	0.44991
	(!CLK * !D * SCD * !Q)	0.04989	0.07310	0.44213
	(!CLK * !D * DE * SCD * Q)	0.04949	0.07287	0.44381
	(!CLK * !D * DE * SCD * Q)	0.04175	0.06509	0.43604
	(!CLK * !D * DE * !SCD * Q)	0.04101	0.05375	0.25530
	(!CLK * !D * DE * !SCD * Q)	0.03449	0.04724	0.24876
	(!CLK * !D * !SCD * !Q)	0.04525	0.05801	0.25953
	(!CLK * !D * !SCD * !Q)	0.03872	0.05146	0.25299
	(!CLK * !D * !DE * SCD * Q)	0.03063	0.04325	0.24290
	(!CLK * !D * !DE * SCD * Q)	0.02428	0.03688	0.23655
	(!CLK * !D * !DE * !SCD * Q)	0.06756	0.07993	0.36792
	(!CLK * !D * !DE * !SCD * Q)	0.06256	0.07489	0.36287

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.05797	0.07813	0.40236
	(CLK * D)	0.05012	0.07025	0.39448
	(CLK * !D)	0.06367	0.08362	0.40444
	(CLK * !D)	0.05582	0.07575	0.39656
	(!CLK * D * SCD * Q)	0.03375	0.04635	0.24588
	(!CLK * D * SCD * Q)	0.02730	0.03988	0.23944
	(!CLK * D * DE * SCD * !Q)	0.05017	0.06277	0.26229
	(!CLK * D * DE * SCD * !Q)	0.04372	0.05630	0.25586
	(!CLK * D * DE * !SCD * !Q)	0.08256	0.09505	0.38470
	(!CLK * D * DE * !SCD * !Q)	0.07747	0.08992	0.37959
	(!CLK * D * !SCD * Q)	0.07056	0.08289	0.37066
	(!CLK * D * !SCD * Q)	0.06547	0.07776	0.36552
	(!CLK * D * !DE * SCD * !Q)	0.05661	0.08006	0.45267
	(!CLK * D * !DE * SCD * !Q)	0.04877	0.07218	0.44480
	(!CLK * D * !DE * !SCD * !Q)	0.04412	0.05684	0.25828
	(!CLK * D * !DE * !SCD * !Q)	0.03750	0.05024	0.25165
	(!CLK * !D * SCD * !Q)	0.06230	0.08555	0.45453
	(!CLK * !D * SCD * !Q)	0.05446	0.07765	0.44668
	(!CLK * !D * DE * SCD * Q)	0.04966	0.07304	0.44395
	(!CLK * !D * DE * SCD * Q)	0.04182	0.06515	0.43607
	(!CLK * !D * DE * !SCD * Q)	0.04117	0.05392	0.25533
	(!CLK * !D * DE * !SCD * Q)	0.03455	0.04727	0.24870
	(!CLK * !D * !SCD * !Q)	0.04986	0.06260	0.26401
	(!CLK * !D * !SCD * !Q)	0.04323	0.05595	0.25738
	(!CLK * !D * !DE * SCD * Q)	0.03082	0.04342	0.24294
	(!CLK * !D * !DE * SCD * Q)	0.02437	0.03695	0.23651
	(!CLK * !D * !DE * !SCD * Q)	0.06763	0.07996	0.36784
	(!CLK * !D * !DE * !SCD * Q)	0.06254	0.07483	0.36269

	(CLK * D)	0.06702	0.08714	0.41155
	(CLK * D)	0.05924	0.07931	0.40373
	(CLK * !D)	0.07273	0.09264	0.41364
	(CLK * !D)	0.06494	0.08481	0.40581
	(!CLK * D * SCD * Q)	0.03390	0.04653	0.24635
	(!CLK * D * SCD * Q)	0.02750	0.04011	0.23995
	(!CLK * D * DE * SCD * !Q)	0.05919	0.07182	0.27164
	(!CLK * D * DE * SCD * !Q)	0.05279	0.06540	0.26524
	(!CLK * D * DE * !SCD * !Q)	0.09191	0.10444	0.39442
	(!CLK * D * DE * !SCD * !Q)	0.08685	0.09935	0.38933
	(!CLK * D * !SCD * Q)	0.07098	0.08335	0.37142
	(!CLK * D * !SCD * Q)	0.06592	0.07826	0.36632
	(!CLK * D * !DE * SCD * !Q)	0.06543	0.08890	0.46181
	(!CLK * D * !DE * SCD * !Q)	0.05765	0.08107	0.45399
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	0.05316	0.06590	0.26762
	(!CLK * D * !DE * !SCD * !Q)	0.04658	0.05934	0.26103
	(!CLK * !D * SCD * !Q)	0.07112	0.09438	0.46367
	(!CLK * !D * SCD * !Q)	0.06334	0.08655	0.45587
	(!CLK * !D * DE * SCD * Q)	0.04968	0.07306	0.44428
	(!CLK * !D * DE * SCD * Q)	0.04189	0.06524	0.43646
	(!CLK * !D * DE * !SCD * Q)	0.04135	0.05409	0.25581
	(!CLK * !D * DE * !SCD * Q)	0.03478	0.04754	0.24923
	(!CLK * !D * !SCD * !Q)	0.05889	0.07166	0.27335
	(!CLK * !D * !SCD * !Q)	0.05231	0.06506	0.26676
	(!CLK * !D * !DE * SCD * Q)	0.03097	0.04359	0.24342
	(!CLK * !D * !DE * SCD * Q)	0.02457	0.03717	0.23702
	(!CLK * !D * !DE * !SCD * Q)	0.06805	0.08038	0.36863
	(!CLK * !D * !DE * !SCD * Q)	0.06299	0.07529	0.36353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.02828	0.05081	0.38928
	(CLK * D)	0.03605	0.05855	0.39704
	(CLK * !D)	0.03401	0.05641	0.39175
	(CLK * !D)	0.04178	0.06420	0.39951
	(!CLK * D * SCD * Q)	0.01858	0.03237	0.23965
	(!CLK * D * SCD * Q)	0.02494	0.03871	0.24601
	(!CLK * D * DE * SCD * !Q)	0.03091	0.04471	0.25198
	(!CLK * D * DE * SCD * !Q)	0.03727	0.05105	0.25834
	(!CLK * D * DE * !SCD * !Q)	0.05496	0.07585	0.38981
	(!CLK * D * DE * !SCD * !Q)	0.05999	0.08088	0.39461
	(!CLK * D * !SCD * Q)	0.04365	0.06471	0.38106
	(!CLK * D * !SCD * Q)	0.04868	0.06973	0.38588
	(!CLK * D * !DE * SCD * !Q)	0.04424	0.06725	0.44253
	(!CLK * D * !DE * SCD * !Q)	0.05201	0.07505	0.45029
	(!CLK * D * !DE * !SCD * !Q)	0.02626	0.03991	0.24666
	(!CLK * D * !DE * !SCD * !Q)	0.03280	0.04646	0.25320
	(!CLK * !D * SCD * !Q)	0.05037	0.07327	0.44710
	(!CLK * !D * SCD * !Q)	0.05814	0.08107	0.45487
	(!CLK * !D * DE * SCD * Q)	0.04511	0.06766	0.43889
	(!CLK * !D * DE * SCD * Q)	0.05288	0.07543	0.44666
	(!CLK * !D * DE * !SCD * Q)	0.02739	0.04104	0.24780
	(!CLK * !D * DE * !SCD * Q)	0.03392	0.04759	0.25433
	(!CLK * !D * !SCD * !Q)	0.03199	0.04564	0.25240
	(!CLK * !D * !SCD * !Q)	0.03852	0.05219	0.25894
	(!CLK * !D * !DE * SCD * Q)	0.01564	0.02943	0.23671
	(!CLK * !D * !DE * SCD * Q)	0.02200	0.03577	0.24307
	(!CLK * !D * !DE * !SCD * Q)	0.04046	0.06157	0.37837
	(!CLK * !D * !DE * !SCD * Q)	0.04549	0.06659	0.38316

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.03273	0.05524	0.39384
	(CLK * D)	0.04061	0.06314	0.40170
	(CLK * !D)	0.03847	0.06086	0.39626
	(CLK * !D)	0.04635	0.06876	0.40413
	(!CLK * D * SCD * Q)	0.01863	0.03240	0.23959
	(!CLK * D * SCD * Q)	0.02509	0.03885	0.24605
	(!CLK * D * DE * SCD * !Q)	0.03539	0.04917	0.25635
	(!CLK * D * DE * SCD * !Q)	0.04186	0.05562	0.26281
	(!CLK * D * DE * !SCD * !Q)	0.05947	0.08034	0.39415
	(!CLK * D * DE * !SCD * !Q)	0.06459	0.08547	0.39905
	(!CLK * D * !SCD * Q)	0.04368	0.06472	0.38094
	(!CLK * D * !SCD * Q)	0.04880	0.06985	0.38582
	(!CLK * D * !DE * SCD * !Q)	0.04862	0.07164	0.44709
	(!CLK * D * !DE * SCD * !Q)	0.05650	0.07954	0.45496
	(!CLK * D * !DE * !SCD * !Q)	0.03077	0.04440	0.25105
	(!CLK * D * !DE * !SCD * !Q)	0.03740	0.05105	0.25768
	(!CLK * !D * SCD * !Q)	0.05475	0.07766	0.45166
	(!CLK * !D * SCD * !Q)	0.06263	0.08557	0.45953
	(!CLK * !D * DE * SCD * Q)	0.04512	0.06769	0.43907
	(!CLK * !D * DE * SCD * Q)	0.05300	0.07559	0.44694
	(!CLK * !D * DE * !SCD * Q)	0.02747	0.04110	0.24776
	(!CLK * !D * DE * !SCD * Q)	0.03410	0.04775	0.25439
	(!CLK * !D * !SCD * !Q)	0.03649	0.05013	0.25678
	(!CLK * !D * !SCD * !Q)	0.04313	0.05678	0.26342
	(!CLK * !D * !DE * SCD * Q)	0.01569	0.02946	0.23665
	(!CLK * !D * !DE * SCD * Q)	0.02215	0.03591	0.24311
	(!CLK * !D * !DE * !SCD * Q)	0.04049	0.06159	0.37820
	(!CLK * !D * !DE * !SCD * Q)	0.04561	0.06669	0.38309

	(CLK * D)	0.04212	0.06459	0.40337
	(CLK * D)	0.04995	0.07239	0.41118
	(CLK * !D)	0.04786	0.07018	0.40580
	(CLK * !D)	0.05568	0.07802	0.41361
	(!CLK * D * SCD * Q)	0.01887	0.03267	0.24013
	(!CLK * D * SCD * Q)	0.02529	0.03906	0.24654
	(!CLK * D * DE * SCD * !Q)	0.04451	0.05833	0.26576
	(!CLK * D * DE * SCD * !Q)	0.05092	0.06471	0.27217
	(!CLK * D * DE * !SCD * !Q)	0.06835	0.08927	0.40348
	(!CLK * D * DE * !SCD * !Q)	0.07343	0.09434	0.40833
	(!CLK * D * !SCD * Q)	0.04375	0.06484	0.38146
	(!CLK * D * !SCD * Q)	0.04883	0.06990	0.38632
	(!CLK * D * !DE * SCD * !Q)	0.05804	0.08095	0.45662
	(!CLK * D * !DE * SCD * !Q)	0.06586	0.08879	0.46443
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	0.03985	0.05352	0.26043
	(!CLK * D * !DE * !SCD * !Q)	0.04644	0.06012	0.26702
	(!CLK * !D * SCD * !Q)	0.06417	0.08698	0.46116
	(!CLK * !D * SCD * !Q)	0.07199	0.09482	0.46898
	(!CLK * !D * DE * SCD * Q)	0.04561	0.06814	0.43965
	(!CLK * !D * DE * SCD * Q)	0.05343	0.07599	0.44747
	(!CLK * !D * DE * !SCD * Q)	0.02770	0.04136	0.24828
	(!CLK * !D * DE * !SCD * Q)	0.03428	0.04796	0.25487
	(!CLK * !D * !SCD * !Q)	0.04558	0.05925	0.26617
	(!CLK * !D * !SCD * !Q)	0.05217	0.06585	0.27276
	(!CLK * !D * !DE * SCD * Q)	0.01593	0.02973	0.23719
	(!CLK * !D * !DE * SCD * Q)	0.02235	0.03612	0.24360
	(!CLK * !D * !DE * !SCD * Q)	0.04057	0.06169	0.37873
	(!CLK * !D * !DE * !SCD * Q)	0.04565	0.06676	0.38358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.04783	0.07227	0.46143
	(SCD * SCE * Q)	0.04248	0.06690	0.45607
	(D * !SCE * Q)	0.03927	0.06370	0.45287
	(D * !SCE * Q)	0.03391	0.05833	0.44751
	(D * !DE * !SCE * !Q)	0.04534	0.06991	0.46034
	(D * !DE * !SCE * !Q)	0.03998	0.06455	0.45498
	(!SCD * SCE * !Q)	0.07124	0.09582	0.48636
	(!SCD * SCE * !Q)	0.06589	0.09045	0.48100
	(!D * !SCE * !Q)	0.05107	0.07564	0.46607
	(!D * !SCE * !Q)	0.04572	0.07028	0.46071
	(!D * !DE * !SCE * Q)	0.03633	0.06076	0.44993
	(!D * !DE * !SCE * Q)	0.03097	0.05539	0.44457
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.04817	0.07260	0.46222
	(SCD * SCE * Q)	0.04277	0.06721	0.45683
	(D * !SCE * Q)	0.03961	0.06405	0.45365
	(D * !SCE * Q)	0.03421	0.05865	0.44827
	(D * !DE * !SCE * !Q)	0.05009	0.07467	0.46556
	(D * !DE * !SCE * !Q)	0.04470	0.06926	0.46017
	(!SCD * SCE * !Q)	0.07599	0.10059	0.49159
	(!SCD * SCE * !Q)	0.07060	0.09519	0.48621
	(!D * !SCE * !Q)	0.05582	0.08040	0.47130
	(!D * !SCE * !Q)	0.05043	0.07499	0.46591
	(!D * !DE * !SCE * Q)	0.03667	0.06111	0.45071
	(!D * !DE * !SCE * Q)	0.03127	0.05571	0.44533

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.04835	0.07275	0.46172
	(SCD * SCE * Q)	0.04280	0.06717	0.45616
	(D * !SCE * Q)	0.03978	0.06418	0.45315
	(D * !SCE * Q)	0.03423	0.05861	0.44759
	(D * !DE * !SCE * !Q)	0.05899	0.08351	0.47378
	(D * !DE * !SCE * !Q)	0.05343	0.07793	0.46822
	(!SCD * SCE * !Q)	0.08489	0.10943	0.49978
	(!SCD * SCE * !Q)	0.07934	0.10385	0.49422
	(!D * !SCE * !Q)	0.06472	0.08925	0.47950
	(!D * !SCE * !Q)	0.05916	0.08367	0.47393
	(!D * !DE * !SCE * Q)	0.03684	0.06125	0.45021
	(!D * !DE * !SCE * Q)	0.03129	0.05567	0.44465

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.03747	0.06209	0.45016
	(SCD * SCE * Q)	0.04281	0.06746	0.45552
	(SCD * SCE * !Q)	0.06028	0.08634	0.49240
	(SCD * SCE * !Q)	0.06562	0.09171	0.49776
	(D * DE * !SCE * !Q)	0.05193	0.07791	0.48429
	(D * DE * !SCE * !Q)	0.05727	0.08326	0.48964
	(D * !SCE * Q)	0.02894	0.05355	0.44162
	(D * !SCE * Q)	0.03428	0.05893	0.44699
	(D * !DE * !SCE * !Q)	0.03741	0.06183	0.44833
	(D * !DE * !SCE * !Q)	0.04275	0.06719	0.45368
	(!SCD * SCE * Q)	0.07063	0.09536	0.49115
	(!SCD * SCE * Q)	0.07599	0.10074	0.49652
	(!SCD * SCE * !Q)	0.06354	0.08797	0.47430
	(!SCD * SCE * !Q)	0.06888	0.09334	0.47966
	(!D * DE * !SCE * Q)	0.05468	0.07946	0.47469
	(!D * DE * !SCE * Q)	0.06003	0.08483	0.48004
	(!D * !SCE * !Q)	0.04315	0.06757	0.45407
	(!D * !SCE * !Q)	0.04848	0.07293	0.45943
	(!D * !DE * !SCE * Q)	0.02600	0.05062	0.43869
	(!D * !DE * !SCE * Q)	0.03135	0.05599	0.44405

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.03764	0.06224	0.45075
	(SCD * SCE * Q)	0.04301	0.06765	0.45614
	(SCD * SCE * !Q)	0.06479	0.09084	0.49734
	(SCD * SCE * !Q)	0.07015	0.09624	0.50273
	(D * DE * !SCE * !Q)	0.05643	0.08240	0.48920
	(D * DE * !SCE * !Q)	0.06179	0.08780	0.49457
	(D * !SCE * Q)	0.02910	0.05370	0.44221
	(D * !SCE * Q)	0.03447	0.05911	0.44760
	(D * !DE * !SCE * !Q)	0.04201	0.06641	0.45332
	(D * !DE * !SCE * !Q)	0.04737	0.07181	0.45870
	(!SCD * SCE * Q)	0.07080	0.09549	0.49150
	(!SCD * SCE * Q)	0.07618	0.10088	0.49689
	(!SCD * SCE * !Q)	0.06815	0.09256	0.47930
	(!SCD * SCE * !Q)	0.07351	0.09797	0.48469
	(!D * DE * !SCE * Q)	0.05483	0.07957	0.47500
	(!D * DE * !SCE * Q)	0.06020	0.08498	0.48037
	(!D * !SCE * !Q)	0.04775	0.07215	0.45905
	(!D * !SCE * !Q)	0.05311	0.07755	0.46443
	(!D * !DE * !SCE * Q)	0.02617	0.05076	0.43928
	(!D * !DE * !SCE * Q)	0.03154	0.05617	0.44466

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.03756	0.06215	0.45006
	(SCD * SCE * Q)	0.04311	0.06772	0.45562
	(SCD * SCE * !Q)	0.07351	0.09954	0.50528
	(SCD * SCE * !Q)	0.07905	0.10510	0.51084
	(D * DE * !SCE * !Q)	0.06514	0.09110	0.49717
	(D * DE * !SCE * !Q)	0.07068	0.09665	0.50272
	(D * !SCE * Q)	0.02903	0.05361	0.44155
	(D * !SCE * Q)	0.03457	0.05919	0.44710
	(D * !DE * !SCE * !Q)	0.05097	0.07536	0.46167
	(D * !DE * !SCE * !Q)	0.05650	0.08092	0.46721
	(!SCD * SCE * Q)	0.07057	0.09527	0.49108
	(!SCD * SCE * Q)	0.07613	0.10085	0.49665
	(!SCD * SCE * !Q)	0.07709	0.10150	0.48763
	(!SCD * SCE * !Q)	0.08263	0.10707	0.49320
	(!D * DE * !SCE * Q)	0.05458	0.07939	0.47454
	(!D * DE * !SCE * Q)	0.06012	0.08495	0.48012
	(!D * !SCE * !Q)	0.05670	0.08110	0.46740
	(!D * !SCE * !Q)	0.06224	0.08667	0.47295
	(!D * !DE * !SCE * Q)	0.02610	0.05068	0.43859
	(!D * !DE * !SCE * Q)	0.03164	0.05626	0.44416

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00517	0.00539	0.90733
sky130_fd_sc_hs__xnor2_2	0.00858	0.00859	1.58100
sky130_fd_sc_hs__xnor2_4	0.01537	0.01532	2.48319

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	1144.54000	2651.05000
sky130_fd_sc_hs__xnor2_2	0.00000	1248.46000	2074.43000
sky130_fd_sc_hs__xnor2_4	0.00000	2699.39000	5275.33000

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	0.05345	0.30413	2.97714
	A->Y (FR)	!B	0.05179	0.63870	8.22222
	B->Y (RR)	A	0.04790	0.31416	3.21887
	B->Y (FR)	!A	0.04322	0.68144	8.92703
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.05747	0.24499	2.52615
	A->Y (FR)	!B	0.05127	0.52770	7.76135
	B->Y (RR)	A	0.05531	0.26237	2.71751
	B->Y (FR)	!A	0.04086	0.56604	8.40293
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.06768	0.36219	5.41333
	A->Y (FR)	!B	0.05364	0.46252	7.52193
	B->Y (RR)	A	0.06500	0.37382	5.55194
	B->Y (FR)	!A	0.04111	0.51315	8.36801

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	0.06197	0.43648	4.82471
	A->Y (RF)	!B	0.03342	0.35938	4.50083
	B->Y (FF)	A	0.06079	0.43676	4.88982
	B->Y (RF)	!A	0.02561	0.34151	4.35506
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.07290	0.43102	5.04469
	A->Y (RF)	!B	0.03145	0.27553	4.02607
	B->Y (FF)	A	0.06867	0.38764	4.47285
	B->Y (RF)	!A	0.02620	0.27042	4.06287
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.06549	0.37284	4.80399
	A->Y (RF)	!B	0.03373	0.21494	3.57844
	B->Y (FF)	A	0.06287	0.33642	4.27510
	B->Y (RF)	!A	0.02651	0.20604	3.61342

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	0.05619	0.07588	0.38810
	A	B	0.04547	0.06510	0.37658
	A	!B	-0.00057	0.00655	0.12201
	A	!B	0.01047	0.01755	0.13210
	B	A	0.05523	0.07491	0.37900
	B	A	0.04721	0.06686	0.37006
	B	!A	0.00075	0.00955	0.13449
	B	!A	0.00924	0.01800	0.14207
sky130_fd_sc_hs__xnor2_2	A	B	0.03945	0.05743	0.35979
	A	B	0.02375	0.04153	0.34102
	A	!B	0.00082	0.01598	0.23879
	A	!B	0.02019	0.03525	0.25637
	B	A	0.03829	0.05483	0.31572
	B	A	0.02673	0.04320	0.30267
	B	!A	0.00176	0.01896	0.24127
	B	!A	0.01721	0.03426	0.25498
sky130_fd_sc_hs__xnor2_4	A	B	0.16999	0.20426	0.78483
	A	B	0.14167	0.17565	0.75192
	A	!B	0.00086	0.03090	0.44099
	A	!B	0.03787	0.06790	0.47513
	B	A	0.16822	0.19894	0.69556
	B	A	0.14805	0.17857	0.67277
	B	!A	0.00221	0.03376	0.41583
	B	!A	0.03174	0.06310	0.44148

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	0.01940	0.04060	0.36004
	A	B	0.03010	0.05129	0.37013
	A	!B	0.02760	0.03317	0.12712
	A	!B	0.01657	0.02214	0.11552
	B	A	0.01940	0.03927	0.35211
	B	A	0.02738	0.04721	0.35928
	B	!A	0.02628	0.03172	0.11662
	B	!A	0.01797	0.02335	0.10731
sky130_fd_sc_hs__xnor2_2	A	B	0.04255	0.06018	0.34792
	A	B	0.05826	0.07588	0.36371
	A	!B	0.05304	0.06564	0.25276
	A	!B	0.03366	0.04619	0.23284
	B	A	0.03797	0.05442	0.33878
	B	A	0.04947	0.06589	0.35035
	B	!A	0.05380	0.06600	0.23179
	B	!A	0.03862	0.05076	0.21617
sky130_fd_sc_hs__xnor2_4	A	B	0.06480	0.10152	0.68959
	A	B	0.09322	0.12985	0.71849
	A	!B	0.08468	0.11292	0.50032
	A	!B	0.04764	0.07581	0.46187
	B	A	0.05389	0.08776	0.64682
	B	A	0.07402	0.10789	0.66754
	B	!A	0.08689	0.11354	0.44257
	B	!A	0.05799	0.08455	0.41266

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00686	0.00436	1.66187
sky130_fd_sc_hs__xnor3_2	0.00274	0.00691	0.00441	3.27586
sky130_fd_sc_hs__xnor3_4	0.00272	0.00691	0.00431	6.27663

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	4511.83000	5301.49000
sky130_fd_sc_hs__xnor3_2	0.00000	4799.03000	5890.81000
sky130_fd_sc_hs__xnor3_4	0.00000	5414.23000	7092.42000

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)	0.17516	0.70854	7.80721
	B->X (-R)	0.12094	0.62967	7.84243
	C->X (-R)	0.08614	0.58576	7.65479
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.18912	0.64738	7.88532
	B->X (-R)	0.13240	0.56133	7.82105
	C->X (-R)	0.09570	0.51739	7.65526
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.22310	0.62251	7.73164
	B->X (-R)	0.16952	0.54419	7.78355
	C->X (-R)	0.13021	0.49295	7.51254

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.12314	0.59954	6.07947
	B->X (-F)	0.11525	0.59202	6.65970
	C->X (-F)	0.06615	0.51775	6.35287
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.13806	0.57336	6.00990
	B->X (-F)	0.12637	0.55347	6.50058
	C->X (-F)	0.07561	0.48282	6.20105
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.16523	0.56709	5.94014
	B->X (-F)	0.15974	0.55840	6.50102
	C->X (-F)	0.11087	0.48900	6.21663

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.14104	0.16103	0.51718
	A	0.13427	0.15424	0.51061
	B	0.15431	0.19266	0.86829
	B	0.14017	0.17848	0.85360
	C	0.14026	0.16182	0.50363
	C	0.13200	0.15356	0.49529
sky130_fd_sc_hs__xnor3_2	A	0.14855	0.16628	0.51299
	A	0.14166	0.15943	0.50552
	B	0.16137	0.19796	0.87297
	B	0.14722	0.18379	0.85805
	C	0.14712	0.16840	0.51819
	C	0.13877	0.16003	0.50977
sky130_fd_sc_hs__xnor3_4	A	0.16942	0.18423	0.56578
	A	0.16263	0.17742	0.55715
	B	0.18233	0.21441	0.91173
	B	0.16834	0.20051	0.89899
	C	0.16770	0.18556	0.57877
	C	0.15951	0.17736	0.56954

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.11773	0.13318	0.47847
	A	0.12452	0.13997	0.48362
	B	0.10760	0.14399	0.81507
	B	0.12173	0.15812	0.82780
	C	0.09280	0.11446	0.46675
	C	0.10104	0.12270	0.47430
sky130_fd_sc_hs__xnor3_2	A	0.13761	0.14529	0.47433
	A	0.14451	0.15219	0.47901
	B	0.12654	0.15565	0.81676
	B	0.14067	0.16979	0.82820
	C	0.11138	0.12709	0.48746
	C	0.11972	0.13539	0.49335
sky130_fd_sc_hs__xnor3_4	A	0.19277	0.18506	0.51977
	A	0.19954	0.19187	0.52283
	B	0.18041	0.19349	0.85285
	B	0.19437	0.20682	0.86148
	C	0.16624	0.16536	0.53390
	C	0.17443	0.17318	0.53595

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00529	0.00546	0.80213
sky130_fd_sc_hs__xor2_2	0.00809	0.00800	1.45969
sky130_fd_sc_hs__xor2_4	0.01642	0.01591	2.42030

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	528.45400	629.56400
sky130_fd_sc_hs__xor2_2	0.00000	817.11100	1219.67000
sky130_fd_sc_hs__xor2_4	0.00000	1620.16000	2437.76000

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	0.06088	0.49168	4.87942
	A->X (FR)	B	0.06387	0.67117	8.27492
	B->X (RR)	!A	0.06881	0.50253	4.96991
	B->X (FR)	A	0.04745	0.62943	7.91253
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.05418	0.38099	4.57774
	A->X (FR)	B	0.05509	0.56201	8.13599
	B->X (RR)	!A	0.05855	0.35222	4.18834
	B->X (FR)	A	0.04396	0.54848	8.06236
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.05008	0.28329	4.14866
	A->X (FR)	B	0.05587	0.46067	7.45238
	B->X (RR)	!A	0.05114	0.24853	3.62674
	B->X (FR)	A	0.04631	0.45536	7.56858

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	0.07307	0.37170	3.72406
	A->X (RF)	B	0.03243	0.32492	3.83307
	B->X (FF)	!A	0.06571	0.38851	3.96195
	B->X (RF)	A	0.02560	0.36305	4.45004
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.09775	0.48220	5.71283
	A->X (RF)	B	0.02928	0.26642	3.82325
	B->X (FF)	!A	0.08625	0.50073	5.97231
	B->X (RF)	A	0.02626	0.35053	5.09397
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.10075	0.44237	5.61633
	A->X (RF)	B	0.03108	0.20900	3.46900
	B->X (FF)	!A	0.08582	0.45568	5.70132
	B->X (RF)	A	0.02809	0.26963	4.45323

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	0.01695	0.02412	0.14757
	A	B	0.02809	0.03525	0.15828
	A	!B	0.02332	0.03842	0.28637
	A	!B	0.01201	0.02712	0.27514
	B	A	0.00937	0.01647	0.13524
	B	A	0.01763	0.02470	0.14338
	B	!A	0.02830	0.04225	0.28175
	B	!A	0.01989	0.03381	0.27310
sky130_fd_sc_hs__xor2_2	A	B	0.01864	0.03293	0.24898
	A	B	0.03686	0.05112	0.26604
	A	!B	0.02909	0.04599	0.31975
	A	!B	0.01350	0.03037	0.30337
	B	A	0.01023	0.02382	0.22276
	B	A	0.02425	0.03780	0.23548
	B	!A	0.03442	0.04916	0.31340
	B	!A	0.02300	0.03770	0.30100
sky130_fd_sc_hs__xor2_4	A	B	0.03476	0.06407	0.46719
	A	B	0.07303	0.10235	0.50271
	A	!B	0.05784	0.08894	0.60445
	A	!B	0.02723	0.05823	0.57157
	B	A	0.02076	0.04932	0.42580
	B	A	0.05011	0.07857	0.45204
	B	!A	0.06299	0.09100	0.57687
	B	!A	0.04130	0.06918	0.55223

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	0.02164	0.02734	0.13028
	A	B	0.01052	0.01616	0.11883
	A	!B	0.00958	0.02344	0.26292
	A	!B	0.02086	0.03471	0.27410
	B	A	0.01986	0.02611	0.12423
	B	A	0.01163	0.01782	0.11566
	B	!A	0.01133	0.02579	0.26076
	B	!A	0.02009	0.03450	0.26951
sky130_fd_sc_hs__xor2_2	A	B	0.04037	0.05268	0.24297
	A	B	0.02221	0.03441	0.22485
	A	!B	0.02233	0.03552	0.29330
	A	!B	0.03787	0.05104	0.30888
	B	A	0.03847	0.04998	0.20790
	B	A	0.02446	0.03582	0.19306
	B	!A	0.02509	0.03881	0.29126
	B	!A	0.03728	0.05103	0.30296
sky130_fd_sc_hs__xor2_4	A	B	0.08277	0.11006	0.49872
	A	B	0.04455	0.07185	0.45951
	A	!B	0.04650	0.07227	0.56574
	A	!B	0.07703	0.10276	0.59546
	B	A	0.07681	0.10197	0.42933
	B	A	0.04745	0.07250	0.39924
	B	!A	0.05243	0.07900	0.52506
	B	!A	0.07553	0.10206	0.54767

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ff_1.95v_150C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00706	0.00435	1.68763
sky130_fd_sc_hs__xor3_2	0.00270	0.00719	0.00434	3.18659
sky130_fd_sc_hs__xor3_4	0.00268	0.00730	0.00430	6.23274

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	4512.21000	5431.90000
sky130_fd_sc_hs__xor3_2	0.00000	4810.81000	6010.87000
sky130_fd_sc_hs__xor3_4	0.00000	5410.80000	7167.79000

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)	0.17213	0.70033	7.75427
	B->X (-R)	0.11663	0.61354	7.70107
	C->X (-R)	0.08273	0.58066	7.58092
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.18306	0.63133	7.61092
	B->X (-R)	0.12979	0.54661	7.54193
	C->X (-R)	0.09249	0.51040	7.39454
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.21250	0.60951	7.70259
	B->X (-R)	0.16356	0.52920	7.65381
	C->X (-R)	0.11743	0.48541	7.50563

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.12158	0.59009	5.95008
	B->X (-F)	0.11238	0.57360	6.50716
	C->X (-F)	0.06373	0.51259	6.31082
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.13443	0.55990	5.81772
	B->X (-F)	0.12575	0.54225	6.35886
	C->X (-F)	0.07539	0.48633	6.19153
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.16837	0.57176	5.93991
	B->X (-F)	0.16249	0.55477	6.48441
	C->X (-F)	0.10594	0.49674	6.30523

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.15539	0.17505	0.52948
	A	0.14858	0.16823	0.52215
	B	0.14095	0.18049	0.87637
	B	0.12631	0.16581	0.86119
	C	0.13622	0.15803	0.50440
	C	0.12795	0.14977	0.49597
sky130_fd_sc_hs__xor3_2	A	0.16231	0.18148	0.54459
	A	0.15568	0.17489	0.53735
	B	0.14804	0.18616	0.88700
	B	0.13328	0.17136	0.87155
	C	0.13637	0.15766	0.53089
	C	0.12811	0.14944	0.52209
sky130_fd_sc_hs__xor3_4	A	0.18238	0.19790	0.57920
	A	0.17568	0.19118	0.57038
	B	0.16876	0.20206	0.92381
	B	0.15399	0.18733	0.91013
	C	0.15905	0.17445	0.56912
	C	0.15091	0.16634	0.56210

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.12466	0.13972	0.48280
	A	0.13146	0.14652	0.48859
	B	0.09241	0.12972	0.81585
	B	0.10710	0.14437	0.82930
	C	0.08883	0.11034	0.46550
	C	0.09709	0.11857	0.47273
sky130_fd_sc_hs__xor3_2	A	0.14566	0.15366	0.49370
	A	0.15229	0.16027	0.49853
	B	0.11189	0.14251	0.82359
	B	0.12669	0.15727	0.83742
	C	0.10912	0.12424	0.48350
	C	0.11735	0.13242	0.48928
sky130_fd_sc_hs__xor3_4	A	0.20437	0.19585	0.52979
	A	0.21108	0.20258	0.53289
	B	0.18457	0.19461	0.84825
	B	0.19898	0.20900	0.86026
	C	0.16840	0.16578	0.52741
	C	0.17656	0.17373	0.52875